I. Action Items

A. Approval of the minutes of the April 6, 2017 meeting

B. Policy Calendar

1. The Graduate School and University Center – MA in Digital Humanities and MS in Data Analysis and Visualization

2. The Graduate School and University Center – MA in International Migration Studies

3. The Graduate School and University Center – MS in Data Science

4. John Jay College – BS in Human Services and Community Justice

5. City College – MS in Data Science and Engineering

6. City College – Transfer of Degree Granting Authority for the Ph.D. in Clinical Psychology from the Graduate School and University Center to City College

7. Brooklyn College – Establishment of the Feirstein School of Cinema at Brooklyn College as an academic department

8. York College – MS in Clinical Trial Management

9. School of Professional Studies – BS in Health Services Administration

10. School of Professional Studies – MS in Research Administration and Compliance

11. LaGuardia Community College – AS in Public and Community Health

12. Medgar Evers College – Establishment of the School of Education, the Department of Developmental and Special Education, the Department of Multicultural Early Childhood and Elementary Education as well as the closing of the Department of Education

13. City University of New York – Revised Advanced Placement Policy

14. City University of New York – International Baccalaureate Transfer Credit Award Policy

15. The Graduate School and University Center – Establishment of the CUNY School of Labor and Urban Studies

16. City University of New York – Revised CUNY Research Misconduct Policy

C. Information Item

1. Medgar Evers College – The Center for Cognitive Development
Committee Chair Wellington Chen called the meeting to order at 3:32 p.m.

The following people were present:

**Committee Members:**
- Hon. Wellington Z. Chen, Chair
- Hon. Jill O'Donnell-Tormey, Vice Chair
- Hon. Mayra Linares-Garcia
- Hon. Charles A. Shorter
- Prof. Karen Kaplowitz, faculty member
- Ms. Alyssa Desouza, student member (arrived @ 3:43 p.m.)
- President Russell K. Hotzler, COP Liaison

**Trustee Observer:**
- Hon. Chika Onyejiukwa

**Trustee Staff:**
- Senior Advisor to the Chancellor and Secretary of the Board Gayle M. Horwitz
- Interim General Counsel and Vice Chancellor Jane Sovern
- Deputy to the Secretary Hourig Messerlian
- Ms. Towanda Lewis
- Mr. Anthony Vargas

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The agenda items were considered and acted upon in the following order:

**I. ACTION ITEMS:**

A. **APPROVAL OF THE MINUTES OF THE MEETING OF FEBRUARY 6, 2017.** Moved by Committee Chair Chen and seconded by Prof. Karen Kaplowitz, the minutes were approved as submitted.

B. **POLICY CALENDAR**

1. **Brooklyn College – MM in Global and Contemporary Jazz.** Executive Vice Chancellor and University Provost (EVC&UP) Vita Rabinowitz stated that the Master of Music in Global and Contemporary Jazz is the newest addition to Brooklyn College's already impressive array of professional graduate programs in music performance. It will address the growing field of jazz and world music. The goal of this program will be to offer advanced training in jazz performance, history, arranging/theory, pedagogy, technology, and music industry practice. The program's unique focus will be on the intersection of various forms of jazz originating in the United States with the music of Africa, Latin America, the Caribbean, the Middle East, and southern Asia. The college has sufficient full-time faculty members to launch the program and additional expenses are minimal.

   Trustee Charles Shorter stated that this is a fantastic program. He added that he recently came back from the Association of Governing Boards of Universities and Colleges (AGB)
conference where the subject of adjuncts versus tenure track was discussed. This program is a good example of that topic as the adjuncts make perfect sense.

EVC&UP Vita Rabinowitz stated that the music faculty at Brooklyn College is robust, and the program was designed both to take advantage of the array of existing faculty and to hire a rich vein of adjunct faculty who are performers and people from the industry. This is what will make the program unique because Brooklyn is becoming a hub of jazz music.

Moved by Prof. Kaplowitz and seconded by Trustee Mayra Linares-Garcia, and following discussion, the item was approved for submission to the Board.

2. Medgar Evers College – Establishment of the Department of Social Work. EVC&UP Rabinowitz stated that the social work faculty at Medgar Evers College is currently housed in the Department of Social and Behavioral Sciences. The professional program in which these faculty teach, the BS in Social Work, is decidedly different from the liberal arts offerings of the department, and its curriculum is driven by professional accreditation requirements. The College has already approved two searches commencing in late summer 2017 for full-time social work faculty, bringing the total number of full-time faculty in the new department to five, which can support this growing degree program. The program director is expected to become the chair of the new department and the faculty already has their support staff, so there will be no additional cost to the college to establish this new department.

Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.

3. Brooklyn College – Honorary Degree.
   Bernard Sanders
   Doctor of Humane Letters

EVC&UP Rabinowitz stated that Brooklyn College proposes to award an Honorary Degree to Senator Bernard Sanders, representing the State of Vermont. He is known worldwide for his campaign for the Democratic Party’s 2016 U.S. presidential nomination. The longest-serving independent in U.S. congressional history, Senator Sanders served as a congressman for 16 years before he was elected to the Senate in 2006. During his outstanding career of public service, Senator Sanders has maintained an enduring commitment to progressive causes and justice for all. He has been an unwavering advocate of working- and middle-class Americans, spearheading legislation for veterans, and advancing the causes of civil, immigrant, women, disability, and LGBTQ rights as well as affordable higher education, environmental protection, and renewable energy.

Moved by Prof. Kaplowitz and seconded by Trustee Jill O’Donnell-Tormey, and following discussion, the item was approved for submission to the Board.

4. Hunter College – Honorary Degrees.
   Arthur Elgort
   Doctor of Fine Arts

EVC&UP Rabinowitz stated that Hunter College proposes to award an Honorary Degree to Arthur Elgort, Class of ’64. He is known for his “snapshot style” which liberated models from the studio, mussed their hair, toned down their makeup, and let them fill the frame with movement and emotion. He inspired a generation of photographers, changing the industry and its portrayal of women. Over the years, Mr. Elgort’s work has appeared in
Vogue, Glamour, and other top fashion magazines, and he shot ad campaigns for Chanel, Valentino, Yves Saint Laurent, and others. His work has been exhibited in permanent collections at London's Victoria and Albert Museum and the Museum of Fine Arts in Houston. In 2011, Mr. Elgort won the Council of Fashion Designers of America Board of Directors Award.

Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.

Elena Kagan
Doctor of Humane Letters

EVC&UP Rabinowitz stated that Hunter College also proposes to award an Honorary Degree to Supreme Court Justice Elena Kagan. She earned her JD from Harvard Law School, where she was a supervising editor of the Harvard Law Review. Her illustrious career spans private sector law practice and academia, as a professor at the University of Chicago Law School, and later as dean of Harvard Law School. Supreme Court Justice Kagan also clerked for Justice Thurgood Marshall and served for four years in the Clinton Administration. In 2009, President Barack Obama appointed her to be the first woman Solicitor General of the United States. Two months after the U.S. Senate confirmed her for that role, President Obama nominated her to replace retiring Justice John Paul Stevens on the Supreme Court.

Moved by Prof. Kaplowitz and seconded by Trustee Charles Shorter, and following discussion, the item was approved for submission to the Board.

5. CUNY School of Law – Honorary Degree.
Sherrilyn Ifill
Doctor of Laws

EVC&UP Rabinowitz stated that the CUNY School of Law proposes to award an Honorary Degree to Sherrilyn Ifill. She is the seventh President and Director-Counsel of the NAACP Legal Defense and Education Fund, the nation's premier civil rights legal organization. After graduating law school, Ms. Ifill served first as a fellow at the American Civil Liberties Union and then for five years as an Assistant Counsel in the Legal Defense Fund's (LDF) New York office, where she litigated voting rights cases in the South. In 1993, Ms. Ifill left LDF to join the faculty at the University of the Maryland School of Law. While at Maryland, she developed an Environmental Justice Clinic and co-founded one of the first legal clinics in the nation that focused on removing legal barriers to formerly incarcerated persons seeking to responsibly re-enter society.

Moved by Prof. Kaplowitz and seconded by Trustee Shorter, and following discussion, the item was approved for submission to the Board.

6. College of Staten Island – Honorary Degrees.
Margaret Ricciardi
Doctor of Fine Arts

EVC&UP Rabinowitz stated that the College of Staten Island (CSI) proposes to award an Honorary Degree to Margaret Ricciardi, who has long-standing ties with Staten Island and the CSI community as a resident, entrepreneur, student, artist, and benefactor. Ms. Ricciardi studied sculpture at CSI with many faculty members in the Department of Performing and Creative Arts who consider her a serious artist. Her venerable age of 103
notwithstanding, she continues to make art that challenges the viewer. Ms. Ricciardi had a solo exhibit in the CSI Student Art Gallery and subsequently she has shown her work at the Museo dell'Emigrante in Naples and the Snug Harbor Cultural Arts Center in Staten Island.

Moved by Prof. Kaplowitz and seconded by Trustee O'Donnell-Tormey, and following discussion, the item was approved for submission to the Board.

Andy Shih
Doctor of Science

EVC&UP Rabinowitz stated that CSI also proposes to award an Honorary Degree to Dr. Andy Shih. He is the Senior Vice President for Public Health and Inclusion at Autism Speaks, an autism advocacy organization in the United States that sponsors autism research and conducts awareness and outreach activities aimed at families, governments, and the public. Autism Speaks has been an important source of funding directed toward the causes and treatment of autism spectrum disorders.

Moved by Prof. Kaplowitz and seconded by Ms. Alyssa Desouza, and following discussion, the item was approved for submission to the Board.

Deirdre DeAngelis
Doctor of Humane Letters

EVC&UP Rabinowitz stated that CSI proposes a third nominee for an Honorary Degree, Principal Deirdre DeAngelis, who has led New Dorp High School since 1999. She has been honored locally and by the State for her accomplishments, and is the longest serving high school principal on Staten Island. The New York Daily News chose her as one of eleven top educators in 2012 and honored her as a "Hometown Hero" in part for her leadership during and following the crisis of Super Storm Sandy. Principal DeAngelis has partnered with CSI and other schools to launch the 30,000 Degrees initiative to increase the college-completing population on Staten Island. New Dorp High School has also engaged with CSI School of Health Sciences for a current Healthy Neighborhood initiative, one aspect of which will focus on the New Dorp community.

Moved by Prof. Kaplowitz and seconded by Trustee O'Donnell-Tormey, and following discussion, the item was approved for submission to the Board.

Peter and Robin Jovanovich
Doctor of Humane Letters

EVC&UP Rabinowitz stated that CSI proposes to award a fourth Honorary Degree to Peter and Robin Jovanovich. They have been uniquely supportive and generous friends of the College. The Jovanovich's efforts over the last five years have resulted in over $250,000 in Ellen Knowles Harcourt Scholarships awarded to Teacher Education Honors Academy students and an ongoing annual commitment of $135,000. This scholarship money guarantees that the recipients will graduate with no debt, which is critically important for students who are committed to a career in teaching.

Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.
In response to a question from Prof. Kaplowitz on whether Robin and Peter Jovanovich are receiving separate Honorary Degrees:

President William Fritz stated that it would be a shared degree. They feel that the recognition is deserved by their foundation, the Harcourt Foundation, so CSI is anticipating to hood both of them together simultaneously, so each will receive a hood but the College will give them a single degree with both of their names on it.

7. CUNY Graduate School of Public Health and Health Policy – Honorary Degree.
    Chirlane McCray
    Doctor of Science

EVC&UP Rabinowitz stated that the CUNY Graduate School of Public Health and Health Policy proposes to award an Honorary Degree to First Lady of New York City Chirlane McCray, who spearheads Thrive NYC, a broad public health initiative aimed at providing mental health and addiction services to all New Yorkers. Ms. McCray has been a friend to the School, and a supporter of several Thrive NYC-based collaborations with the City's Department of Health and Mental Hygiene, CUNY Center for Innovation in Mental Health. She is an exemplar of the School's mission and vision, who has made a powerful difference in the lives of all New Yorkers.

Trustee Linares-Garcia stated that this is a well-deserved program. Highlighting mental health is critical. It covers many different demographics and cultural lines. She added that Ms. McCray is also particularly involved in helping children become more successful.

USS Chair and Trustee Onyejiukwa stated that she agrees with Trustee Linares-Garcia’s comments, and is currently working on a campaign with Thrive NYC to connect college students to mental health.

Moved by Prof. Kaplowitz and seconded by Ms. Desouza, and following discussion, the item was approved for submission to the Board.

8. Graduate School and University Center – Honorary Degrees.
    Vanita Gupta
    Doctor of Humane Letters

EVC&UP Rabinowitz stated that the Graduate School and University Center (GSUC) proposes to award an Honorary Degree to Vanita Gupta, a prominent attorney, who was until recently the Principal Deputy Assistant Attorney General and head of the Civil Rights Division of the Department of Justice, emerging as one of President Obama's prominent advocates for social justice. Ms. Gupta began her legal career at the NAACP Legal Defense Fund and later worked for the ACLU. Throughout her career, she has won the support of liberal and conservative activists, as well as law enforcement leaders, for finding common ground on policing and criminal justice reform.

Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.

Wael Shawky
Doctor of Humane Letters

EVC&UP Rabinowitz stated that GSUC also proposes to award an Honorary Degree to Wael Shawky, one of the most celebrated artists of the Middle East, achieving
international acclaim for his films and performances that examine the role of historical narrative in the development of culture. Mr. Shawky is best known for his epic trilogy of films, *The Cabaret Crusades*. He was the recipient of the Ernst Schering Foundation Art Award in 2011, which included a solo exhibition at KW Institute for Contemporary Art in Berlin. His work can be found in the Museum of Modern Art in New York City, the National Gallery of Canada, and the Tate Collection in London. He earned his BFA from Alexandria University and an MFA from the University of Pennsylvania's School of Fine Arts.

Moved by Prof. Kaplowitz and seconded by Trustee Shorter, and following discussion, the item was approved for submission to the Board.

Lord Nicholas Stern
Doctor of Humane Letters

EVC&UP Rabinowitz stated that GSUC proposes to award a third Honorary Degree to Lord Nicholas Stern, the current Chair of the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science, where he is also the IG Patel Professor of Economics and Government and the Head of the India Observatory. In addition, since 2013, he has served as President of the British Academy, in 2014 he was elected a fellow of the Royal Society, and he is world-renowned for his research on the economics of global warming. In 2004, he was knighted for his work in economics. The recipient of numerous awards, Mr. Stern is the author of more than 15 books and 100 articles.

Moved by Prof. Kaplowitz and seconded by Trustee O'Donnell-Tormey, and following discussion, the item was approved for submission to the Board.


Jose Antonio Vargas
Doctor of Humane Letters

EVC&UP Rabinowitz stated that John Jay College proposes to award an Honorary Degree to Jose Antonio Vargas. Mr. Vargas is a Pulitzer Prize winning journalist, a filmmaker, and an activist who is best known for his work in advocating for immigration reform. He has courageously, and at great personal risk, stepped forward to give voice to the millions of Americans who live on the margins of society as undocumented persons. In so doing, and through his work, he has been a shining example of strength, pride, and hope for a community in desperate need of all three.

Moved by Prof. Kaplowitz and seconded by Ms. Desouza, and following discussion, the item was approved for submission to the Board.

Mary Bonauto
Doctor of Law

EVC&UP Rabinowitz stated that John Jay College also proposes to award an Honorary Degree to Mary Bonauto. Over the last fifteen years, gay and lesbian Americans have fought and won many important legal victories toward full marriage and family equality. Every step of the way, Ms. Bonauto has led the charge. Through her tireless advocacy and unmatched skills in the courtroom, she has been the principle legal architect of marriage equality in the United States, and a hero to its millions of beneficiaries. Ms. Bonauto's legal leadership of the marriage equality movement was made most apparent by her being chosen as lead counsel for the oral arguments in *Obergefell v. Hodges*. She
won that case on behalf of millions of Americans, and full marriage equality became the law of the land in the United States in 2015.

Moved by Prof. Kaplowitz and seconded by Trustee Shorter, and following discussion, the item was approved for submission to the Board.

11. Macaulay Honors College – Honorary Degree.
   Garry Trudeau
   Doctor of Humane Letters

EVC&UP Rabinowitz stated that Macaulay Honors College proposes to award an Honorary Degree to Gary Trudeau, the first comic strip artist ever to be awarded a Pulitzer Prize for editorial cartooning, and he has received many other prestigious prizes including the Mental Health Research Advocacy Award from the Yale School of Medicine. He has made significant contributions to enhancing critical thinking (often through humor), political analysis and social commentary, to exploring new uses for new media (specifically cartooning, but also television comedy and even 3d streaming animation), and to exploring issues of mental health, military service, and the lived experiences of people from diverse backgrounds. All these areas match very well with the principles that are at the center of the University's purpose and mission as well as those of Macaulay Honors College specifically.

In response to a question from Prof. Kaplowitz on whether the Macaulay Honors College has a faculty governance body:

Dean Mary Pearl stated that Macaulay Honors College has a College Council, and this proposed Honorary Degree was unanimously supported not only by the College Council, which consists of a body of all the people who teach the core curriculum. They elect a body of ten individuals and then five are appointed by the Dean and this group of fifteen constitutes the College Council. The Curriculum Committee of the College Council unanimously endorsed this proposal as well. Macaulay Honors College also invited the Scholars Council, which is the student government, to weigh in and they also unanimously support this recommendation.

Moved by Prof. Kaplowitz and seconded by Trustee O'Donnell-Tormey, and following discussion, the item was approved for submission to the Board.

12. Graduate School and University Center – Honorary Degree.
   Kareem Abdul Jabbar
   Doctor of Humane Letters

EVC&UP Rabinowitz stated that GSUC proposes to award another an Honorary Degree to Kareem Abdul Jabbar, who is considered by countless players, coaches, and fans to be the all-time greatest basketball star ever. Mr. Jabbar is a six-time NBA Most Valuable Player and a 19-time NBA All Star. In his 20 seasons in the NBA, where he played for the Milwaukee Bucks and the Los Angeles Lakers, he was a member of six NBA championship teams as a player and two as an assistant coach. In 1996, he was named one of the 50 Greatest Players in NBA history. According to the NBA, his combined individual and team successes remain unparalleled. He is also an actor, author, and political columnist whose writing has appeared in the Washington Post, Esquire, and the Huffington Post. He has published more than ten books.
Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.

13. City College – Honorary Degree.

David Diaz
Doctor of Letters

EVC&UP Rabinowitz stated that City College is pleased to nominate David Diaz, Class of 1965, for an Honorary Degree. Mr. Diaz has had an exemplary career in media, winning numerous awards and having the distinction of being the first Latino anchor for a major New York television news organization. In addition, he served the City College community as a Distinguished Lecturer in the departments of Political Science and Media and Communication Arts. He received his BA from City College and his Masters Degree in Journalism from Columbia University. Mr. Diaz then attended the CUNY Graduate Center, pursuing a doctorate in Political Science. Although he completed all of his coursework, he never finished his dissertation, choosing instead to enter a career in media. City College believes he deserves a belated honorary doctorate for his stellar career and dedication to both City College and the City of New York.

Moved by Prof. Kaplowitz and seconded by Ms. Desouza, and following discussion, the item was approved for submission to the Board.

In response to a question from Prof. Kaplowitz on whether honorary degree nominations are recommended by the appropriate faculty body:

EVC&UP Rabinowitz stated that it is certainly the practice of all the colleges to submit nominations to the Faculty Personnel and Budget Committee.

Prof. Kaplowitz noted that she received an email prior to the meeting stating that the GSUC faculty had not considered these candidates. The faculty governance was doing an electronic vote and expected to approve them but did not know in time for the Committee on Academic Policy, Programs, and Research meeting.

EVC&UP Rabinowitz stated that these nominations are all supposed to go through governance. She added that electronic voting is unusual, and that different colleges have different procedures.

Prof. Kaplowitz stated that she just wanted to make sure that there is a protocol in place because there was a time when nominations did not go through faculty governance even though they were supposed to.

City College Interim Provost Mary Driscoll stated that the process at City College involves a committee of both faculty and administrators who do the initial vetting of the nominees. They are then recommended to the President, who then brings them as a matter of course to the Senate who also votes on them.

Director of Program Review, Articulation and Transfer Ekaterina Sukhanova stated that faculty governance is provided with an approval form but it does not always take the same shape because governance plans are different at each of the colleges. She added that the Office of Academic Affairs (OAA) has not been informed of an electronic vote at GSUC in this case.
EVC&UP Rabinowitz stated that she wants to apologize for these three late-breaking nominations. Obviously, OAA appreciates the prominence of these individuals, and in the case of very prominent people, it is sometimes difficult to work with their schedules and those processes are out of sync with Board schedules. She added that OAA does indeed no longer supports walk-on items. This is unusual and the entire matter of Honorary Degrees is challenging because there are times when OAA simply does not have confirmation even though negotiations are underway so OAA will work on this process together with the Board. EVC&UP Rabinowitz stated that she also wants to thank Senior Advisor to the Chancellor and Secretary of the Board Gayle Horwitz.

10. The City University of New York – Approval of Start-Up New York Initiatives at Medgar Evers and York Colleges. EVC&UP Rabinowitz stated that Medgar Evers College has four proposals to participate in the Start-Up New York initiatives. This program authorizes the creation of tax-free zones on eligible university campuses in New York State for new and expanding businesses. Under New York State law five CUNY campuses, which include Medgar Evers and York Colleges, have been designated by the Board to participate in Start-Up New York. CUNY campuses other than the five may apply to host tax-free zones in competition with other universities. Medgar Evers College has proposed four new companies: BlocPower, Derbywire, SelfiePay, and Tuki, to participate and these have each been authorized by the President of the Medgar Evers Council and the General Counsel to execute and submit all necessary documents to effectuate the participation of those four companies. The participation of the program shall be subject to all CUNY and New York State requirements. CUNY is delighted with Medgar Evers College’s entrepreneurship in attracting viable companies to this program. There is also a program, Pro Drones, through York College. In all cases, CUNY expects that faculty and students will benefit from these programs. She added that there will be student internship opportunities and faculty collaborative opportunities. In some cases, there will be curricular development and alignment. At times, these companies will also attract modest philanthropic support. In the case of York College’s program, a local employer will publish job opportunities with the College’s Career Services Office.

Associate Planner Meghan Mulgrew stated that each business goes through a committee at the college level that consists of faculty in the applicable areas of what the business’ industry is. With approval from the college committee, it comes to a Central Office committee, consisting of a robust network of CUNY’s own entrepreneurial experts. As a result, all of these companies were approved by the Central Office committee, then approved by EVC&UP Rabinowitz and the college President.

EVC&UP Rabinowitz stated that the Office of Research, which includes commercialization entrepreneurship, is working with the Office of Facilities Planning, Construction and Management (OFPCM) to ensure that the programs have academic merit, and the University can accommodate the companies.

In response to a question from Committee Chair Chen on whether the five designated colleges have the same standard process:

Associate Planner Mulgrew stated that the process is standardized across the colleges.

In response to a question from EVC&UP Rabinowitz on what would the process look like if another CUNY college, excluding the five designated colleges, were to participate:

Associate Planner Mulgrew stated that the five designated colleges can contribute an unlimited amount of square footage into the program. Beyond that, any CUNY college
would have to compete as "a private college" for a maximum of 150,000 square feet of space per borough. They would develop a campus plan, very similar to the campus plans developed for the five approved colleges. Their campus plans would then be submitted to the Empire State Development (ESD) Corporation, which is the agency that administers this program, and their campus plan would be approved by the board of Start-Up New York. For the five designated colleges, their campus plans are approved directly by the Commissioner.

In response to a question from Trustee Shorter on whether job projections are cumulative or annual:

Associate Planner Mulgrew stated that the job projections are 5-year cumulative.

In response to another question from Trustee Shorter on whether Pro Drones would have a 5-year job projection of five people:

Associate Planner Mulgrew confirmed it did.

In response to a third question from Trustee Shorter on whether there is a website that the Trustees can access that would provide more background information on the businesses:

Associate Planner Mulgrew stated that there is not a website set up because some of the information is a bit sensitive but OFPCM will work on developing a process to make more information about the businesses available.

York College Dean of Arts and Sciences Donna Chirico stated that in New York State, there is a drone testing area between Rome and Syracuse. Pro Drones has been operating in that area with one of the SUNY colleges and now they want to bring that technology to CUNY. Basically they are trying to develop technology and patents to do photography work of surfaces with drones being sent out to map areas; so York College would be involved not only in the jobs, internships, and faculty work but with potential future patents.

Trustee Shorter stated that CUNY has been working with Start-Up New York since its inception and each of these businesses have a significant impact on outcomes with regard to the colleges, so it behooves the Trustees to know what these businesses are.

In response to a fourth question from Trustee Shorter on whether there is a monitoring process in place:

Associate Planner Mulgrew stated that CUNY had its first business officially approved earlier this year. So OFPCM actually has not had a very long track record in terms of working with approved businesses. The next steps, now that CUNY is getting a critical mass of businesses—OFPCM has two approved, two with ESD for approval, and now these five going to the Board for approval—is to come up with a mechanism by which to check that they are meeting the goals. OFPCM does require that all the reporting that is required to be submitted to the State on job creation, is also being submitted to both the college and Central Office, to ensure that the academic benefits are being met.

Medgar Evers College (MEC) Chief Operating Officer/Senior Vice President Jerald Posman stated that the MEC faculty has been heavily involved with the administration in terms of approving the programs. The reason the Start-Up New York initiative worked at MEC was because of its collaboration with the Brooklyn Navy Yard. The College, itself,
could not have done any of this with the Brooklyn Navy Yard because once a lease is signed, as per what Trustee Shorter said, fifty percent is a high number for success and these entrepreneur firms’ rates are much less. He added that the Brooklyn Navy Yard devoted 18,000 square feet of its space to MEC’s programs, which now number five to eight programs. One of the things that the faculty and the administration have requested is a reporting back to them. MEC will then report to the Central administration on the internships and collaborations.

Trustee Shorter stated that this information is very helpful and encouraging. He added that he would also like to encourage that the reporting process include not just the successes or failures with job creation but how the business itself is doing. A monitoring process for a program like this is critical to all concerned.

In response to a question from Committee Chair Chen to York College Dean of Arts and Sciences Chirico on who has the ownership of the patent:

York College Arts and Sciences Dean Chirico stated that this was the one sticking point that almost stopped York College from working with Pro Drones because CUNY has a policy about intellectual ownership and scholarship, and if they are done together it would be joint ownership because after all CUNY will be using their facilities and materials, but it will be a CUNY faculty/student recognition, if that is how it turns out. This is why the businesses are interested in being involved with the colleges. They are looking for individuals who are being innovative on the technology front. She added that both of the organizations that York College has already dealt with, had successes in Start-Up New York with other enterprises in the SUNY system.

In response to a question from Ms. Desouza on what are the academic benefits of this initiative:

MEC Chief Operating Officer/Senior Vice President Posman stated that at MEC, there are three to four academic benefits to having Start-Up New York initiatives. The three basic ones are one, internships that lead to jobs. The second is faculty collaboration because without it, these programs could not work. It might be a research collaboration where they do a paper, or consultancies that take place on both ends. Lastly, it is an infusion into the curriculum. If one goes to a place like the Brooklyn Navy Yard, there is something taking place out there that the students have to be aware of in the 21st Century workplace. The best thing for MEC would have been to place an office in the Brooklyn Navy Yard but the College is requiring that each one of these companies have a presence on campus, in terms of dealing with students and faculty. It might mean a lecture series, tutorials for students, or a certificate program.

York College Arts and Sciences Dean Chirico stated that York College houses the CUNY Aviation Institute, so for it not to get involved with the latest technology in drones would be like AT&T saying they are not going to adopt smartphones. This is cutting edge; it is popping up all over the place. It is taking the place of standard flight technology. She added that it is critical that the Aviation Institute students become aware of what drones are, how they work, and how they can contribute to the future of this industry.

In response to another question from Ms. Desouza about the process:

York College Arts and Sciences Dean Chirico stated that these are internships so they would have regular weekly meetings, just as is the case now for interns in the chemistry or biology labs. Students and faculty would be going to the site to work in both facilities at
York College, working together, being advised, and being mentored and guided. This is a regular faculty type relationship. This is why faculty have to be involved as well as students so there is a pipeline working towards an end result.

Associate Planner Mulgrew stated that in the contracts that CUNY has with these companies, OFPCM has specific requirements and they take many forms. For example, CUNY has one company that for over the term of ten years, every semester will come in and do a hardware demonstration in the appropriate class. OFPCM has relationships where the business is required to work with faculty for a minimum number of hours to develop either a course or a specific class in an applicable area. There have been situations where OFPCM has asked companies to develop their own continuing education class that CUNY could offer to the community. The way that the University has infused this into the curricula happens in many different ways, but the most important piece is that CUNY has specifics in a contract to ensure that the University is getting the full benefits that were promised in the beginning.

MEC Chief Operating Officer/Senior Vice President Posman stated that four of MEC’s eight companies have graduated from the NYU Incubator Lab. He added that MEC did its reference checking in terms of, as York College Arts and Sciences Dean Chirico said, if you are not going to come to this campus and you are not going to deal with faculty, it is not going to work. The company can get tax benefits but they have to be able to get involved with the faculty.

Trustee Linares-Garcia stated that she is really excited that CUNY is getting involved with Start-Up New York, and applauds all the hard work that has been done. There is no way that CUNY should not be getting a benefit and finding a way to make this connection. The cost of business in general is really high for people, so to have a startup and to have this type of support is really going to enable success, bringing synergies of what the school can bring as well as the entrepreneurs to the school.

Committee Chair Chen stated that this is truly a good public/private partnership.

Moved by Prof. Kaplowitz and seconded by Trustee Linares-Garcia, and following discussion, the item was approved for submission to the Board.

The meeting was adjourned at 4:36 p.m.
RESOLVED, that the program in Digital Humanities and the program in Data Analysis and Visualization offered at the Graduate School and University Center and leading to the Master of Arts and the Master of Science respectively, be approved effective, June 26, 2017, subject to financial ability.

EXPLANATION: These two separate but related programs are part of a new initiative by the Graduate School and University Center to offer professional oriented and intellectually stimulating master's degrees that leverage the impressive scholarly expertise of the GC faculty by creating new programs generally not offered on the senior campuses. Digital Humanities is a developing field of study that lies at the intersection of emerging technologies, traditional humanities disciplines and the research methods used by scholars and other research professionals. The program in Data Analysis and Visualization is more technically oriented and teaches formal methods of data analysis and the skills needed to communicate findings in new and interesting ways. Graduates of both of these programs will be sought after by corporations in the information industries, university libraries, cultural organizations and other non-profit sector employers.
Graduate School and University Center of the City University of New York

Proposal to Establish Linked Programs Leading to

The Master of Arts Degree in Digital Humanities

and The Master of Science Degree in Data Analysis and Visualization

Submitted to the Graduate Center Curriculum Committee on

April 3, 2016
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Proposal to Establish Linked Programs Leading to
The Master of Arts Degree in Digital Humanities and
The Master of Science Degree in Data Analysis and Visualization

I. EXECUTIVE SUMMARY

We propose the creation of two new, closely aligned interdisciplinary programs of study: a Master of Arts Degree in Digital Humanities and a Master of Science Degree in Data Analysis and Visualization. Initially conceived as part of an ongoing CUNY 2020 grant awarded to the Graduate Center in 2014, the creation of the MA/MS Programs in Digital Humanities and Data Analysis and Visualization will build upon existing strategic initiatives at the Graduate Center designed to leverage leading-edge technology in all stages of its research, public engagement, and pedagogy. The Graduate Center aims to be at the forefront of conversations around visions of the 21st-century graduate school experience, and it has therefore prioritized the integration of digital tools and research methods into its programs and strategic goals. The proposed MA/MS Programs will build upon the Graduate Center's Digital Initiatives, expand existing support for student and faculty pursuit of digital research methods, and address a pressing and growing need for Master's degree-level training in key cultural and technological industry and non-profit employment sectors.

The MA/MS Programs in Digital Humanities and in Data Analysis and Visualization would advance the mission of the Graduate Center by improving student access across all GC programs to courses in digital research methodologies, by promoting research by our nationally and internationally-renowned faculty, and by attracting new revenue, while at the same time continuing to establish the Graduate Center as a leader in graduate education reform and professional development.

The Graduate Center is uniquely positioned to offer this Program for a number of reasons:

1. A combination of the existing resources and ongoing digital initiatives position the Graduate Center to support two highly-sought after programs with little competition in the NYC area.

In 2011, the inauguration of GC Digital Initiatives set an ambitious agenda for the Graduate Center to bring together leading scholars and technologists to pioneer new modes of inquiry that integrate digital tools and methods into the research, teaching, and service missions of the institution. Over the next five years, the Graduate Center Digital Initiatives attracted ongoing local, national, and international interest, graduated leaders in the areas of digital humanities and data visualization, produced award and grant-winning digital scholarly projects, and developed
short courses in digital methods that consistently filled beyond capacity. Linked initiatives, such as the Futures Initiative (instantiated at the Graduate Center in 2014) and the Software Studies Lab (added to the GC in 2013) have strengthened existing resources and opened up new opportunities for GC students and faculty.

The Master of Arts in Liberal Studies Program (MALS), founded in 1981, added a specific Digital Humanities track in 2013. Enrollment in the program’s Digital Humanities track has grown consistently for the past five semesters, and the MALS Digital Praxis course—an introduction to digital methods in humanities and social sciences—frequently enrolls students from a variety of humanities and social sciences PhD programs. In 2015, MALS created a new track in Data Visualization as part of its CUNY 2020 initiative; the first data visualization methods course was offered in Spring 2016. Relatively few MA programs in Digital Humanities exist in the US, whereas certificate programs are becoming common. Our MA program would offer access to our high-quality humanities programs, close proximity to the rich cultural heritage and arts communities that New York City has to offer, and opportunities to engage with workshops, events, and programming made available through the GC Digital Initiatives and related programs. Students would select from course options in the areas of digital textuality, visualization and mapping, or digital pedagogy.

In concert with the MA in Digital Humanities, the MS program in Data Analysis and Visualization will complement the interdisciplinary strengths of existing faculty, fill a local need for such interdisciplinary programs, and better address the growing need at the Graduate Center for a curriculum combining digital research methods with critical conversations about the impact of those methods on students’ disciplines. Overwhelming interest from students and faculty in the Graduate Center’s Digital Research Bootcamp demonstrates a shared enthusiasm for exploring new modes of scholarship, as well as a profound need for and interest in training in digital methods and digital project management as an increasing number of scholars incorporate computational methods into their research and teaching.

2. **An MA/MS Program will enhance employment opportunities and preparation for PhD Programs.**

Students who graduate with an MA in Digital Humanities or an MS in Data Analysis and Visualization will possess skills that are in high demand in a wide variety of fields. Nearly every profession—from fashion to publishing to international relations to finance to health and public service—relies on data and digital tools. Our new MA/MS program will prepare students to contend with 21st-century problems, to articulate their findings to new audiences, and to do so with an informed awareness of the ethics and social impact of the tools they use. While Data Analysis and Visualization are tightly linked in practice, there is no single program that studies them together. Our curriculum is unique in teaching students advanced skills in both areas. Students in both the MA and MS programs will also have opportunities to find internships in industry, non-profit, cultural heritage, arts, publishing, media, and design companies in the city.
The online job search site “Indeed” listed more than 13,000 positions in February 2017 that were indexed under “data visualization.” It listed almost 600 jobs under “digital humanities.” The jobs in these two fields ranged from positions in universities to tech start-ups to foundations and non-profits.

In combination with technical skills, coursework from both programs will be particularly useful for students who will continue in PhD programs in humanities and social sciences and who want to incorporate critical and theoretical perspectives with the use of qualitative and big data methods in research.

3. **The curriculum will include research methods, social theory, and the foundational texts of digital humanities, data analysis, and data visualization.**

The MA/MS Program will prepare students for a variety of industry positions or advanced study through coursework in digital humanities, data analysis, and data visualization. Digital humanities coursework will introduce students to a range of digital research methods, including text analysis, mapping, public scholarly communication, project management, and web design, along with theoretical frameworks to employ those methods with sophistication. Coursework in data analysis will take students from the very basics of working with data to advanced computational methods. Students will also benefit from courses in data visualization—the technical and design skills to create data visualizations that communicate effectively—and data studies—a unique component of the program in which students learn to think critically and historically about data and methods, techniques and software for manipulating it. Students in both the MA and MS programs will benefit from the cross-pollination of research questions and methods across the two degree programs.

4. **The programs will advance the Graduate Center's Strategic Goals to remain a leader in graduate education reform and digital public scholarship.**

As an institution focused entirely on graduate study, the Graduate Center has an opportunity to sustain its position as a national and international leader in graduate education at a moment of rapid change. The Graduate Center’s collection of existing programs and resources—including GC Digital Initiatives, the GC Digital Scholarship Lab, the New Media Lab, the Interactive Technology and Pedagogy Doctoral Certificate Program, the Futures Initiative, the Career Planning and Professional Development Office, the Mina Rees Library, the Teaching and Learning Center—and the faculty and staff associated with these offices, labs, and programs have already positioned the Graduate Center as a leading force in the areas of digital humanities and data visualization. These MA/MS Programs will build on the existing strengths of the Graduate Center, offering a unique vision of 21st-century graduate education that is built from the ground-up around digital research methods. In addition, the programs include theoretical perspectives that are not part of any other data analysis or visualization graduate or certificate
programs. They take advantage of being situated in New York City, strengthening existing relationships with cultural partners on the GC’s CUNY 2020 grant such as the Museum of Modern Art, the New-York Historical Society, and the New York Public Library, extending those partnerships to include leading NYC companies, design studios, museums, libraries, and non-profits.

5. **Revenues will significantly exceed expenses.**

We estimate that revenue from the programs will significantly exceed expenses, providing fiscal stability for the Graduate Center and strengthening its ability to provide world-class graduate educational opportunities for all of its students. See Appendix E for projected expenses and revenues.
Proposal to Establish Linked Programs Leading to
The Master of Arts Degree in Digital Humanities
And the Master of Science Degree in Data Analysis and Visualization

II. Purpose and Goals/Needs and Justification

A. Purpose and Goals

Advancements and growth in computational technologies are generating increasing amounts of data in every aspect of contemporary life: industry, finance, communications, health, cultural heritage, education, publication, and scientific research. More than ever before, we need professionals who are trained not only in the collection and generation of data, but also the ability to contextualize it, interpret it, and present it in cogent and often nuanced ways to new audiences. The MA/MS Programs in Digital Humanities and in Data Analysis and Visualization will prepare students to become leaders in this burgeoning and critical field. Graduates of both the MA and MS programs will develop confidence working with quantitative and qualitative data to identify salient questions, develop sound research practices, draw inferences based on subject-area expertise, and effectively communicate data-intensive results to broad public audiences using effective visualizations. They will be well-prepared to expand knowledge, influence policy, and become decision-makers in the increasing number of industries in which an ability to understand and analyze data has become a necessity.

Digital Humanities Master's degree programs are still relatively rare in the United States, but they enjoy broader popularity internationally. Canadian institutions such as Carleton College (http://graduate.carleton.ca/programs/digital-humanities-collaborative-masters/), University of Alberta (called humanities computing: https://uofa.ualberta.ca/interdisciplinary-studies/humanities-computing) and Simon Frasier University (http://www.sfu.ca/siat/grad/degree.html) offer master’s programs in digital arts and humanities, humanities computing, and interactive technology and design, as do programs at King’s College, London, and University College London. In the United States, Loyola University Chicago offers an MA in Digital Humanities, and George Mason University offers an online Digital Public Humanities MA degree. Many U.S. universities offer graduate certificate programs in digital humanities, including UCLA, University of North Carolina, Northeastern University, and University of Nebraska, Lincoln. The majority of these programs require students to study a humanities field and develop competencies in digital humanities methods. The Digital Humanities MA program will follow this model by building an interdisciplinary focus that allows students to cut across humanities disciplines, creating trans-disciplinary conversations about digital methodologies, and allowing students to pursue elective courses across a variety of programs that will enable them to explore humanities research questions more deeply. Students will be able to select courses in one or more possible areas: Digital Textuality, Visualization and Mapping, or Digital Pedagogy.
Similarly, the MS in Data Analysis and Visualization represents a unique approach to data methods and practice. In New York City, the closest competitor is the MS in Data Visualization Program at Parsons (http://www.newschool.edu/parsons/ms-data-visualization/). There are significant differences in costs—according to the 2016-2017 Parsons catalog, graduate tuition is over $46,000 a year, many times the cost of Graduate Center tuition. Further, what distinguishes our proposed MS in Data Analysis and Visualization from the Parsons program is access to GC doctoral programs for elective coursework, including high-level doctoral courses in computer science and in quantitative social science fields taught by dozens of faculty. The CUNY School of Professional Studies offers an MS in Data Analysis, but the program is entirely online. The GC’s proposed MS in Data Analysis and Visualization will bring data analysis and visualization together, grounding practice in an engagement with critical theory. Designed to be an in-person academic program, the GC program will take advantage of the Graduate Center’s resources, including the Center for Digital Scholarship and Data Visualization (currently being planned as part of the CUNY 2020 grant), as well as the services of the GC Digital Fellows Program, which offers regular workshops, office hours, and events.

The Graduate Center is the ideal location for these new interdisciplinary MA/MS programs because of its nationally and internationally recognized core faculty, because of its commitment to demonstrating the value of research and scholarship in service of a public good, and because students are placed in close proximity to a diverse cross-section of partners from the arts organizations, cultural heritage institutions, and industry. The public profile that the Graduate Center offers will allow the program to prepare students to work with some of the most influential scholars in a wide variety of fields and at the same time provide them with ample opportunities to make their work publicly visible and useful to the City of New York.

A number of related activities over the past five years have resulted in an increased demand for coursework that will be offered through the MA/MS programs while at the same time positioning the GC as a leader in work relating to Digital Humanities and to Data Analysis and Visualization. These activities, grouped in the GC’s Strategic Plan under “GC Digital Initiatives” and the “Digital GC,” include:

- Digital Praxis course—a two-semester introduction to digital research methods and digital humanities scholarship for first-year students
- GC Digital Fellows program—a fellowship program for doctoral students at the GC whose members serve as a think-and-do tank for digital projects at the GC
- Provost’s Digital Innovation Grants—a grant program that supports digital projects by GC students
- The GC Digital Scholarship Lab—a lab and meeting space used by the GC Digital Fellows Program for office hours and consulting activities around GC digital projects
- CUNY 2020 Grant—a $15M grant led by the Graduate Center and The College of Staten Island that created the CUNY Big Data Consortium and that is funding the building of the Center for Digital Scholarship and Data Visualization at the Graduate Center
- Strategic Investments Initiatives Grant—a 2015-2016 grant that funded the creation of a digital research infrastructure at the Graduate Center, including the creation of two boot camps to help GC faculty and students build digital skills
- Program Social Media Fellows and Videography Fellows—two fellowship programs at the Graduate Center that help GC programs share the intellectual work of their faculty and students with the public through the use of social media and videos
- New Media Lab—a lab at the Graduate Center that supports GC student digital projects
- Interactive Technology and Pedagogy Certificate Program—a doctoral certificate program that helps Graduate Center doctoral students to think creatively and critically about the uses of instructional technology to improve teaching, learning, and research.
- The Futures Initiative—a program that is housed at the GC but that reaches throughout the CUNY system, empowering the next generation of intellectual leaders with bold, public, and engaged teaching and learning.
- A $3.15M grant from the Andrew W. Mellon Foundation to support the Humanities Teaching and Learning Alliance, a partnership between the GC and LaGuardia Community College that places Graduate Center doctoral students as teaching fellows at LaGuardia Community College.

As a measure of the success and excitement around these efforts, it is notable that projects that are part of the GC Digital Initiatives Program—DH Box, Social Paper, and Beyond Citation—have won three consecutive highly competitive Start-Up Grants (for a total of nearly $154,000) from the NEH Office of Digital Humanities. Workshops offered by the GC Digital Fellows routinely fill beyond capacity, sometimes with waiting lists of 70 students for workshops such as “Introduction to Python.” A Digital Skills Boot Camp offered in January 2016, saw more than 135 CUNY faculty and graduate students apply for the 35 spots available in the four-day intensive program. Coverage of the GC’s digital research has been featured in The Chronicle of Higher Education, Fast Company, and The New York Times. Together, these programs, grants, fellowships, and initiatives have created a rich and active ecosystem around digital research at the Graduate Center.

The MA/MS programs will build on the ongoing Graduate Center commitment to increasing digital scholarship throughout the disciplines by offering courses that would serve to build students' digital research capacities by offering cross-listed courses open to students from programs across the GC. By bringing in Master's level students, the GC will be better prepared to support a broader array of course offerings in digital methods which PhD students from any number of disciplines would also benefit from. The GC's ongoing strategic planning process demonstrates a continued commitment to establishing itself as a nationally and internationally regarded leader in the areas of digital scholarly publication, digital humanities, data analytics,
and data visualization. The MA/MS Programs in Digital Humanities and in Data Analysis and Visualization will enhance that effort, further contributing to the intellectual, professional, and cultural life of New York City.

**B. Needs and Justification**

First conceived as part of the Graduate Center’s successful CUNY 2020 Big Data Consortium proposal in 2014, the MA/MS Programs respond to marketplace trends:

**Broad market demand for Master’s Degrees**

Those with Master’s degrees, regardless of discipline, are more likely to find employment and to experience higher earning potential over their lifetime. According to the U.S. Bureau of Labor and Statistics, the average earnings of students who have received a Master’s degree (in any discipline) is over $10,000 annually more than those with a Bachelor’s degree, and the average unemployment rate for those with Master’s degrees is 2.4%, compared to 2.8% among Bachelor’s degrees recipients (U.S. Bureau of Labor and Statistics, *General Population Survey 2015*). Since 1987, demand for Master’s degrees in the Humanities has trended upward, though 2012 through 2014 witnessed a slight decline in completion of core humanities Master’s degrees. Such a drop off, however, is not seen in “other humanities disciplines,” which remained relatively flat.

**Areas of Proficiency and skills in high-demand by employers**

According to a Georgetown University Center on Education and the Workforce analysis of U. S. Census Bureau *American Community Survey* micro data, 2009-2013, students who graduate with a Bachelor’s degree in a core humanities discipline are 45% more likely than the average college graduate to go on to complete a Master’s degree. The median annual wages of advanced-degree holders with humanities and liberal arts degrees is $78,000, regardless of their area of study. In a 2013 National Survey of Business and Non Profit Leaders, 95% of employers surveyed reported that they preferred “college graduates with skills that will enable them to contribute to innovation in the workplace.” Moreover, employers cite the value of programs of study that require students “to demonstrate both acquisition of knowledge and its application,” often through “educational practices that involve students in active, effortful work—practices including collaborative problem-solving, internships, senior projects, and community engagements.” Similarly, 20% of employers “say an electronic portfolio would be useful to them,” and most agree that it is students’ ability to negotiate complex problems while balancing field-specific knowledge with skill proficiency that serves as the best indicator of later success.

Job advertisements in data analysis and visualization frequently call for at least one or more of the following computer skills: Structured Query Language (SQL), business intelligence, SAS Business analytics software, data warehousing, data analysis, Oracle, business analytics, and data management. Technical skills represent only a small portion of the qualities most often sought in
a data analyst or data manager, though. A willingness to explore complex social and quantitative questions, to structure and organize large amounts of information, and to convey findings in either writing, speech, or visualizations to lay audiences are frequently cited by employers as critical competencies—ones that the interdisciplinary MA/MS programs will promote through shared resources, curriculum design, and cross-listed coursework.

National and Local Demand for Digital Humanities and for Data Analysis and Visualization

According to *Humanities Indicators*, a publication of the American Academy of Arts and Sciences, humanities-related employment accounts for approximately 2.6% of all employment (an explanation of how this figure was determined can be found [here](http://www.nsf.gov/statistics/seind14/index.cfm/chapter-2/c2h.htm#s3)). By completing the MA in Digital Humanities, students would not only improve their competitiveness in fields traditionally considered “humanities-related,” but would improve their ability to demonstrate crossover skills into fields less frequently considered by humanities graduates. According to an NSF Science and Engineering Indicators 2014 report, the number of Master’s degrees awarded in Science and Engineering increased from about 100,000 in 2000 to about 151,000 in 2011—a 57% rate of growth that exceeds the number of bachelor’s and doctorates (http://www.nsf.gov/statistics/seind14/index.cfm/chapter-2). Doctorate institutions with very high research activity, a designation the Graduate Center shares, award 42% of MS degrees (http://www.nsf.gov/statistics/seind14/index.cfm/chapter-2).

Local Need and Local Demand

New York City has seen rapid growth in the technology sector in recent years; large companies such as Google, Twitter, and Tumblr have opened offices in the city, and demand for employees with advanced technology skills is growing. According to a recent report, “The New York City Tech Ecosystem” (http://www.nyctechconomy.com/), NYC’s technology ecosystem employs 291,000 workers—roughly 7% of city’s entire workforce. The sector added 45,000 jobs between 2003 and 2013, growing more quickly than employment in the city and nationally. In fields such as data analytics, data science, data management, and data visualization—fields most likely to make use of an explosion in the area of big data—there is a predicted shortage of 140,000 to 190,000 available personnel to fill jobs (“Big data: The next frontier for innovation, competition, and productivity,” McKinsey Global Institute, May 2011). Companies recruiting graduates with backgrounds in data analytics include Accenture, Amazon, IBM, UnitedHealth Group, Deloitte, JP Morgan Chase, and Citi—all with major offices in the NYC area.

The GC Digital Initiatives Program has begun to network with local employers through industry contacts, GC alumni, and the recently created CUNY Tech Consortium. Industry partners on the Graduate Center’s CUNY 2020 proposal included Tableau Software, Alteryx Software, and Microsoft Research. In his letter of support for that proposal, Ned Harding, Chief Technology Officer at Alteryx, wrote that “Alteryx is continually on the lookout for employees with data visualization skills . . . The Graduate Center’s plans to focus on degree and non-degree
education to teach workers visualization skills will provide potential employees with very marketable skills.” Other partners, including cultural institutions such as the Museum of Modern Art and the New-York Historical Society, noted a need for employees with advanced digital skills; Jim Coddington of the Museum of Modern Art pointed out in his letter of support that the Graduate Center’s Center for Digital Scholarship and Data Visualization “would be a source of training for staff from cultural institutions who need to acquire [digital] tools and skills,” adding that “this is something I can see MoMA readily taking advantage of and I am sure would be true of sister institutions throughout the city.” These sentiments align with the Graduate Center’s experience with its MALs tracks in digital humanities and data visualization, which have drawn interest from full-time employees at institutions such as the Andrew W. Mellon Foundation, the Museum of Modern Art, The Museum of the City of New York, Ithaka S+R, and Penguin Random House.

**Occupational Opportunities**

Students who graduate from the MA/MS Programs in Digital Humanities and in Data Analysis and Visualization would emerge with a broad range of occupational opportunities in a variety of fields ranging from industry to public service to scientific research to finance and education. With core competencies in high-demand technical skills combined with demonstrated experience in collaboration, project management, and communication of complex ideas to new audiences, graduates with a MS in Data Analysis and Visualization could apply for positions with the following titles: business analyst, data analyst, systems analyst, business intelligence developer, business systems analyst, financial analyst, web developer, and data architect. Students with an MA in Digital Humanities would be competitive in areas such as user interface design, user experience, information science, information architecture, information modeling and taxonomy, data modeling, educational technology, content strategy, project management, museum technology, and museum experience design. Graduates from either the MA or MS program would be well positioned to work in public service positions, as well as not-for-profit research organizations, assisting them as they make public datasets available for popular use.

The job search web site “Indeed” lists thousands of positions under the heading “data visualization.” These positions include such titles as Data Visualization Engineer who would be tasked with “building custom visualizations for communicating data”; Data Visualization Specialist “to create and maintain documentation of data design tools. Create, maintain, and iteratively refine suite of comparative exploratory data visualizations…”; Data Visualization Consultant to “Lead and mentor data visualization developers in information presentation and delivery”; Data Visualization Developers and Data Visualization Analysts are also in demand. Candidates with skills in these areas are also being sought by universities for positions in libraries and other data-rich environments.

Candidates with credentials and expertise in the digital humanities are most extensively sought by universities. An example is a tenure-track position as an Assistant Professor of Digital
Humanities at the English Department of George Mason University, with the ideal candidate specified as as having expertise in coding and building digital humanities project: “Specific specializations might include, but are not limited to, the impact of digital media on subjectivity and community; the role of social media in contemporary culture; digital culture and new digital divides; software theory; and/or digital technology in globalization.” Stony Brook University, SUNY, advertised for an assistant professor of English in the Digital Humanities in Fall 2016, seeking a candidate with research and teaching that “critically engage and employ digital technologies, including digital editing and publishing.” Michigan State University sought a candidate for a rank-open professorial appointment in Social Media, Emerging Technologies, and Computational Analytics. The University of Notre Dame advertises for a tenure-track assistant professor in Digital Critical Studies, “a major addition to the Department’s growing concentration in area of digital culture and digital media.” Many other universities advertise positions in the burgeoning fields of digital humanities, critical studies, and related areas.

**Issues of Overlap and Duplication with Existing CUNY Programs**

At the Graduate Center, the MA/MS Programs will overlap most closely with the Masters of Arts in Liberal Studies (MALS) tracks in Digital Humanities and in Data Visualization. In Fall 2015, the MALS Digital Humanities track had an enrollment of 26 students. But the DH-related coursework offered through the MALS program is small—each track has only two core courses, with the DH and Data Visualization tracks having only three between them, since they share one core course. Since courses can be cross-listed across the MALS program and the newly proposed MA/MS Programs, we anticipating continuing the MALS tracks to offer options for students who wish to pursue DH or Data Visualization less intensively, focusing instead on these areas as a supplementary component to coursework in the liberal arts. Such options might be attractive, for instance, to students who wish to apply to doctoral programs in areas such as English and History; the MALS program would allow them to take DH or Data Visualization courses, but to focus the bulk of their coursework on elective classes in the doctoral programs of their choice. Since the MA/MS Program will have fewer free electives than the MALS Program, we anticipate that the MALS tracks may continue to be attractive to a different pool of prospective students, who wish to focus primarily on digital tools and methods and their impact on the Humanities.

As noted above, the MA/MS Program has some overlap with the MS in Data Analytics Program at the CUNY School of Professional Studies, though that program is designed as an entirely online program. The GC program combines data analysis with data visualization and media theory and is a program designed for in-person students, taking advantage of the physical and research support infrastructure that the GC has been building through its GC Digital Initiatives and related programs.
III. STUDENT INTEREST AND ENROLLMENT

A. Interest/Demand

Existing student interest in digital skills development, data analysis, digitally-inflected research methods, and cultural heritage data visualization points toward a growing interest in and need for additional curricula, particularly coursework that interrogates the ethical, social, and cultural effects of various research technologies. Five semesters of consistent growth in the Master of Arts in Liberal Studies program Digital Humanities track (18, 20, 23, 25, 26 students enrolled in the track respectively) reveals an interest in and need for more robust digital humanities degree programs. The Interactive Technology and Pedagogy (ITP) certificate program has enrolled more than 150 students, 47 of whom are actively working toward certification.

Consistently filled to capacity, workshops on particular digital technologies, programming languages, and software sponsored by groups such as the Digital Fellows, the ITP certificate program, and the library, demonstrate that interest in learning about, using, and producing scholarship via digital methods continues to grow each year. Since Fall 2011, the Digital Fellows have presented over 70 workshops topics ranging from how to create a WordPress installation to how to develop a mobile application; these workshops have reached over 600 unique students and faculty at the Graduate Center. Some workshops have become so popular that they have waitlists of over 60 students. In January 2016, the Digital Fellows hosted the Graduate Center’s first Digital Research Bootcamp, where over 135 CUNY faculty and students applied to spend a full week in digital skill building workshops. During the course of the bootcamp, students shared their research methods, ongoing projects, and challenges, offering one another support and feedback across disciplinary differences.

B. Enrollment Projections

It is projected that the MA/MS Program in Digital Humanities, Data Analysis and Visualization will have an initial cohort of 20 students split evenly between the MA and MS degrees. It is expected that attrition rates will be in line with other MA programs at the Graduate Center, averaging 2 students per year. The MA/MS programs will have a time to degree of 18 months when pursued full time.

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C. Admission Requirements

Applicants to the MA program in Digital Humanities should submit the following required materials:

- A transcript showing a bachelor’s degree (or equivalent) from an accredited college or university, as of date of matriculation in the program;
- A demonstrated aptitude for graduate study as shown by a B average (3.0) in undergraduate or graduate coursework;
- Two letters of recommendation;
- A statement of purpose explaining why the student wants to obtain this degree and how the student’s interests and academic/professional background are relevant to the degree program; and
- TOEFL scores of at least 500 if the student’s prior academic records are from a non-English speaking country.

Graduate Record Examination (GRE) scores are optional but may be submitted.

Applicants to the MS program in Data Analysis and Visualization must submit all materials above as well as the following required materials:

- A CV showing academic degrees, professional experience, or record of personal creative work relevant to the program (design, programming, data analysis, web development). The CV should include links to any relevant projects available online, such as personal websites, online portfolios, websites created for clients, videos, data visualizations, data repositories, code repositories, or other projects;
- Graduate Record Examination (GRE) scores;
- Evidence of previous coursework or professional experience in one of the following two areas:

  1) Programming, quantitative data analysis, and/or web development, as evidenced by:

    - A transcript showing a minimum of 15 credits of undergraduate or graduate coursework in computer science with a B (3.0) or better average; or
• A graduation certificate from an accredited college or university showing completion of a program or series of courses in programming, data analysis, web development, or app development (graduation certificates from nationally recognized coding academies may also be considered); or
• A minimum of one year of professional experience in software development, data analysis, web development, app development, or related areas as described in a CV (at least one recommendation letter must speak to this professional experience);

2) Design and/or other creative work in visual media, as shown by a portfolio containing samples of the applicant’s creative work in any of the following areas:

• Graphic design, web design, user experience design, digital art, software art, product design, motion graphics, digital video and film, or related digital media.

In addition, applicants may also submit the following:

• An academic transcript showing a minimum of 15 credits of undergraduate coursework in computer-assisted design or digital media creation with a B (3.0) or better average;

• A graduation certificate from an accredited college or university showing completion of a program or series of courses in design, digital media creation, or web development (graduation certificates from nationally recognized coding academies may also be considered).

IV. PROGRAM CURRICULA

A. MA Program Curriculum

1. Overview and Objectives of Curriculum
The M.A. in Digital Humanities program will provide students with both the practical skills and the humanistic knowledge needed to work on digital humanities-related projects in universities, libraries, museums, and elsewhere. The first core course, Introduction to Digital Humanities, will introduce students to the key ideas, theories, and debates in the field, providing them with an understanding of how digital humanities works in an institutional context and an appreciation for the cultural and interpretive issues that surround digital scholarship. The second core course, Software Design Lab, will provide hands-on experience with digital tools, giving students the
technical know-how needed to build digital projects. Students will have the opportunity to apply these skills during summer internships, as well as to develop their own digital project in a humanities field of their choice as a final Capstone project.

In addition to these core courses, students will choose courses drawn from three major areas in the digital humanities: Digital Textuality, Data Visualization and Mapping, and Digital Pedagogy. Each area will typically be addressed in three core courses, which will provide students with a thorough understanding not just of the tools that are used in these forms of scholarship, but of the humanistic goals that underlie them—the recovery and critical analysis of textual evidence, the production of new cartographic forms to reflect new social and political situations, and the use of technology to bring students into an active role in humanistic inquiry. Students will discuss a selection of courses from among these areas with their advisors. The curriculum also includes three electives, which students may choose to take in either technical fields that are related to their goals as project developers, or humanistic fields that are related to their research interests. These electives will allow students to build deeper understandings of multiple disciplines, technical and humanistic, preparing them for interdisciplinary work.

2. Descriptions of Areas within the Digital Humanities

Digital Textuality Area
The Digital Textuality area is intended for students interested in the ways that reading, publishing, and scholarship are changing given the widespread adoption of computers. The coursework will provide students with a broad range of theoretical, historical, and practical perspectives on the nature of text in the 21st century and its relation to technology, along with hands-on experience working with some of the new technologies that have emerged for the distribution, storage, and analysis of text. These courses will provide students with the skills and knowledge they need for Capstone projects involving text analysis research, digital archiving, and the rethinking of publishing paradigms. Courses in this area will prepare students for careers working with text in archives, museums, research centers, and digital publishers, and for ongoing study in the humanities and library science.

Data Visualization and Mapping Area
The Data Visualization and Mapping area is intended for students interested in the wide variety of tools and methods that have arisen in recent years for the visual exploration of quantitative, textual, and cartographic data. Students will learn about the principles of statistical visualization and cartography and apply these theoretical approaches to the development of visual representations of data sets. Courses in the area will also cover some basic aspects of graphic design that are particularly relevant to visualization, including considerations of aesthetics, clarity and understandability, and visual storytelling. These courses will prepare students for
careers in data visualization, cartography, and data-driven graphic design, both in digital humanities and in industry.

**Digital Pedagogy Area**
Courses in the Digital Pedagogy area are intended for students interested in expanding their teaching repertoire with pedagogical approaches and digital methodologies that enhance the classroom experience for both students and instructors. By engaging with the coursework in this area, students will expand their capabilities as teachers and contribute to the burgeoning field of digital pedagogy. Students will build their skills in the first two courses in the area., a process that will culminate in the Digital Pedagogy Practicum, a capstone course in which students create a teaching portfolio while developing their ability to incorporate digital methods into an effective classroom practice.

3. Proposed Required and Elective Courses for M.A. Program in Digital Humanities

(*) = Existing Graduate Course
(~) = Proposed New Graduate Course

**Required Core Courses (9 credits Total): Credits/Hours**
- XXXX Introduction to Digital Humanities (~) 3/3
- XXXX Software Design Lab (~) 3/3
- XXXX Capstone Project (~) 3/3

**In-Degree Electives (12 credits total): Credits/Hours**
Students must take at least four courses from among the areas below, with the selection approved by their advisor.

**Digital Textuality Courses: Credits/Hours**
- XXXX Textual Studies in the Digital Age (~) 3/3
- XXXX Methods of Text Analysis (~) 3/3
- XXXX The Future of the Book: Publishing and Scholarly Communications (~) 3/3

**Data Visualization and Mapping Courses: Credits/Hours**
- XXXX Visualization and Design: Fundamentals (~) 3/3
- XXXX Working With Data: Fundamentals (~) 3/3
- XXXX Spatial Data & Cartographic Theory (~) 3/3

**Digital Pedagogy Courses: Credits/Hours**
- ITP 70010 ITP Core I: Interactive Media: History, Theory, and Practice (*) 3/3
- ITP 70020 ITP Core II: Interactive Technology and the University: Theory, Design, and Practice (*) 3/3
XXXXX Teaching Practicum (~) 3/3

XXXX Internship (~) 3/3

**Free Electives (9 credits total): Credits/Hours**

Students may choose electives from among all GC course offerings for which they are eligible to register after consulting with an advisor. Humanities course offerings vary from semester to semester; the following are examples from the Spring 2016 semester.

- ART 79400 Aesthetics of Film (*) 3/3
- CL 85500 - Faulkner, Garcia Marquez and the Global South (*) 4/4
- ENGL 88000: Feminism, Autobiography, Theory: Women Writing Witness (*) 4/4
- HIST 75800: History of the City of New York (*) 3/3
- MALS 71500 Critical Issues in International Studies: Migration and Human Rights (*) 3/3

**TOTAL FOR M.A. in Digital Humanities = 30 credits**

(9 credits Core Courses + 12 credits In-Degree Electives + 9 credits Free Electives)

All students are required to take XXXX Introduction to Digital Humanities in the Fall semester of their first year in the program, and XXXX Software Design Lab in the Spring semester of their first year. These will provide students with a basic knowledge of the conceptual terrain of digital humanities and with the practical skills they will need in their Capstone projects. Students will also select four courses from at least two of the areas that provide focused study in a specific area of digital humanities. The remainder of the coursework consists of electives, which students may choose from a range of technical, humanities and social science fields based on their interest. In addition to the coursework, students may take on an internship working on a DH-related project in industry or in a university setting for course credit; and, in their final semester, they will complete a Capstone in which they will apply the skills they learned in the program to a project of their own design.

4. **Proposed Student Schedule**

**Sample schedule for full-time students:**

- **Fall Semester, Year 1**
  - Introduction to Digital Humanities
  - Area-specific course 1
  - Area-specific course 2
  - Elective 1
Spring Semester, Year 1
Software Design Lab
Area-specific course 3
Area-specific course 4
Elective 2

Fall Semester, Year 2
Internship
Elective 3
Capstone project

Part-time students will require an additional one or two semesters, taking from three to nine credits of coursework per semester.

5. Residency Requirements and Transfer Credits

Graduate students in the MA in Digital Humanities program must complete their coursework as matriculated students at the Graduate Center. With appropriate permission, matriculated graduate students may apply as transfer credit towards their Master’s program a total of twelve credits of graduate courses completed prior to matriculation in the MA in Digital Humanities program. Within the total of twelve credits may be included: courses that have not been applied toward a previously awarded graduate degree at the Graduate Center or elsewhere; courses taken at the Graduate Center in a non-matriculated status; and courses taken at other colleges where no degree has been awarded. See the Graduate Center Bulletin for additional limitations regarding transfer credits.

B. MS Program Curriculum

1. Overview and Objectives of Curriculum

Data—its production, curation, analysis, and visualization—impacts every area of modern society, including political campaigning, higher education, medicine, and engineering, as well as research in the sciences, social sciences and humanities. It also affects our everyday existence. More and more of our most quotidian decisions are guided by software processing massive amounts of data: what route should we take? What news should we read? What media should we consume? What websites should we visit?
While graduate programs in “big data” or “data science” are arising across the country, our program has two distinctive curricular features. First, it combines Data Analysis and Visualization: while these two practices are closely linked in practice, it is rare for a program to teach them together. Second, our program is designed to allow students to acquire both practical and theoretical skills: practical skills in the foundations and techniques of data analysis and visualization, and theoretical skills in discerning the possibilities, implications, and limitations of these increasingly pervasive practices.

That is, this program is designed to attract students with both a variety of backgrounds (humanistic, design, technical) and a variety of aspirations (advanced academic study, employment in industry or the non-profit sector), and to prepare these students with a unique set of capabilities.

This program is uniquely advantaged by its location at the Graduate Center and in New York City. The Graduate Center’s deep faculty expertise in both the digital humanities and the critical analysis of emergent technologies is a necessary precondition for a curriculum equally grounded in theory and praxis. The City allows us to expose students, in situ, to a stunning array of contemporary work: research labs which are on the cutting edge of advanced data analysis and visualization; companies and design studios that are leading the way on commercial applications of big data, and a variety of cultural institutions—museums, libraries, non-profits—undertaking daring experiments with the relationship between data, knowledge, and the City’s lived reality.

The program of courses is divided into three parallel parts. In Data Analysis, students will begin with the very basics of working with data—“cleaning” data, preparing it for analysis, and working with a variety of data formats. Students will also learn fundamental concepts and methods of statistical analysis, with an emphasis on application to real-world datasets using R, the most popular open-source language for data analysis. Finally, students will learn key contemporary methods for analyzing medium and big data sets, including applications of machine learning.

In Data Visualization, students will learn basic and advanced visualization methods as well as principles of design and visual communication, ultimately acquiring the skills to create effective and engaging visualizations. Students will work with network, text, spatial and temporal data, learning the key principles of modern design as they apply to the creation of static, animated and interactive visualizations, data-centric publications, and maps.

Finally, in Data Studies, students will consider data through the lenses of media theory, software studies and cultural theory. The courses in this area will encourage students to think critically and historically about contemporary methods, techniques and software for working with data. While the courses in this part will be obviously useful for students who plan to pursue PhD programs in humanities and social sciences, they will give all students the crucial skill of critical
reflection, an ability that will support them as they employ these methods in a variety of employment contexts.

2. Proposed Required and Elective Courses for M.S. Program

(*) = Existing Graduate Course
(~) = Proposed New Graduate Course

Required Core Courses—Data Analysis (9 credits): Credits/Hours
XXXX Working With Data: Fundamentals (~) 3/3
XXXX Data Analysis Methods (~) 3/3
XXXX Advanced Data Analysis (~) 3/3

Required Core Courses—Data Studies (6 credits): Credits/Hours
XXXX Data, Culture, and Society (~) 3/3
XXXX Media Theory and History (~) 3/3

Required Core Courses—Data Visualization (6 credits): Credits/Hours
XXXX Visualization and Design: Fundamentals (~) 3/3
XXXX Interactive Visualization (~) 3/3

Required Core Courses—Capstone Project (3 credits): Credits/Hours
XXXX Capstone Project (~) 3/3

Total Required Core Courses = 24 credits

Free Electives (6 credits): 6 Credits/Hours

Students may choose electives from all Graduate Center courses offerings for which they are eligible to register. The Graduate Center has more than thirty doctoral granting programs covering humanities, social sciences and bench sciences. Every semester hundreds of courses are offered.

Note that not all listed courses are offered every semester; students need to consult offerings for every semester to choose their electives. While some courses are part of permanent programs at GC, many others may be offered only once.

The following are examples of courses that can be taken as electives.
The courses listed below will allow students to gain more technical knowledge in analysis of various types of data: images, video, and text. (Note that some of these courses require permission from the EO of their program due to the technical background required.)

CSc 74030: Computer Vision and Image Processing (*) 3/3
CSc 83040: Text Mining (*) 3/3
CSc 84010/LING 83600: Advanced Natural Language Processing (*) 3/3
LING 83800: Practical and Design Issues in Natural Language Processing Systems (*) 3/3

The following examples are courses cover topics in digital humanities, and humanistic study of culture and media.

MALS 75500: Digital Humanities Methods and Practices (*) 3/3
MALS 71500: Critical Issues in International Studies: Migration and Human Rights (*) 3/3
ART 79400: Aesthetics of Film (*) 3/3
ART 76040: Topics in Contemporary Art: Global Contemporary Art
HIST 75800: History of the City of New York (*) 3/3
ENGL 85800: The Digital Caribbean (*) 3/3
ENGL 80600: Contemporary Narrative Theory (*) 3/3
PHIL 77800: Classics in the Philosophy of Art (*) 3/3

The following are examples of electives in social sciences. Some of these courses cover use of data analysis techniques in particular social science fields (sociology, political science, psychology, etc.)

SOC 81900: Methods of Demographic Analysis
ECON 82100: Econometrics I
ECON 82900: Spatial Econometrics
PSC 89101: Quantitative Analysis
PSC 71900: After Theory
PSC 72500: Urban Politics
ANTH 70400: Contemporary Anthropological Theory

Total Electives Required = 6 credits

TOTAL FOR M.S. in Data Analysis and Visualization = 30 credits

The program has seven required courses, divided into three areas of focus (Data Analysis, Data Studies, and Data Visualization). The courses within each area of focus are meant to be taken in order. These will provide students with comprehensive background and skills in contemporary
data analysis and visualization, understanding of social and cultural issues related to these practices, and the practical skills to analyze and visualize real-world datasets. Students will also take two elective courses, which they may choose from a range of scientific, social science and humanities fields based on their interests. In addition to the coursework, students will complete a Capstone Project course in which they will apply the skills they learned to develop a portfolio of their own projects.

3. Proposed Student Schedule

Sample schedule for full-time students:

Fall Semester, Year 1
Working With Data: Fundamentals
Data, Culture, and Society
Visualization and Design: Fundamentals
Elective 1

Spring Semester, Year 1
Data Analysis Methods
Interactive Visualization
Media Theory and History
Elective 2

Fall Semester, Year 2
Advanced Data Analysis
Capstone Project

Part-time students will require an additional one or two semesters, taking from three to nine credits of coursework per semester.

4. Residency Requirements and Transfer Credits

Graduate students in the MS in Data Analysis and Visualization program must complete as matriculated students at the Graduate Center at least eighteen of the total graduate credits required to complete their program.

Graduate students in the MS in Data Analysis and Visualization program must complete their coursework as matriculated students at the Graduate Center. With appropriate permission, matriculated graduate students may apply as transfer credit towards their master’s program a total of twelve credits of graduate courses completed prior to matriculation in the MS in Data Analysis and Visualization. Within the total of twelve credits may be included: courses that have
not been applied toward a previously awarded graduate degree at the Graduate Center or elsewhere; courses taken at the Graduate Center in a non-matriculated status; and courses taken at other colleges where no degree has been awarded. See the Graduate Center Bulletin for additional limitations regarding transfer credits.

**IV. COST ASSESSMENT**

It is expected that this program will pay for itself in the first year and will generate revenue. It will be cost-effective because the program would share resources with the MALS Program and GC Digital Initiatives and will build on the CUNY 2020 grant.

**A. Faculty**

Currently, the Master of Arts Program in Liberal Studies maintains two tracks relevant to the current proposal: a track in Digital Humanities and a track in Data Visualization. The MALS program offers 3 core courses a year across these tracks, and students take advantage of many cross-listed courses with other humanities and computer science themed courses across the Graduate Center. In recent semesters, the GC Digital Fellows program has produced a list of “Computational Courses Across the Graduate Center” that has resulted in a centralized list of relevant elective courses across the Graduate Center. Given the widespread and growing interest across the Graduate Center in programs that include English (which offers at least one digital humanities course a year), the MA in Computational Linguistics Program, and the Ph.D. in Computer Science (all three of which have accepted MALS students for elective courses), we do not anticipate a need to hire new faculty to staff the MA or MS programs. However, we do anticipate a need to call on consortial CUNY faculty as well as experts in the field of digital public humanities, data analytics, and data visualization from a rich pool of industry and non-profit partners within the NYC area, since we will increase to 6-8 core course offerings across the MA/MS Program by its second or third year. To compensate colleges whose faculty members teach in the program, $5,000 will be transferred to the campus for each course through the allocation system. Other costs include one course release a semester for the Director of the program, college assistants, advertising costs, student support costs, and office supplies costs.

CUNY already has in place a policy that allows faculty a course release if they oversee a combination of five dissertations, MA theses, independent studies, or honors theses (in whatever time frame this occurs). We expect this will help significantly to ease the burden of faculty asked to oversee MA capstone projects.

**B. Administration**

The Director of the MA/MS Program will receive one course release per semester to administer the program. The Program will have its own budget, but will share an Assistant Program Officer
with the MALS Program, and OTPS and facilities with GC Digital Initiatives. Once construction is complete on a new Center for Digital Scholarship and Data Visualization (funded by the CUNY 2020 grant), the MA/MS Programs will move their operations to that space.

C. Projected Budget

1. Anticipated Revenues

Funding for the MA will come primarily from tuition.

Anticipated revenue is based on the following:

- Using the ratio of students in the MALS program as a model, it is estimated that 90% of students will enroll part-time and will take three years to complete their degree.
- According to aggregate numbers from the registrar for all MA students at the GC, approximately 75% of students are in state and 25% of students are out of state.
- Full-time students are expected to take 12 credits per semester for their first two semesters and 6 credits in their third and last semester. Time to degree for full-time students will be three semesters years. Time limit for degree is eight semesters. Students in the MA/MS Programs, like other Master’s-level students at the GC, will not be eligible for Graduate Center financial aid, which is restricted to doctoral students. GC Digital Initiatives will pursue grants from government and non-government sources to help fund students in the MA/MS programs.
- Attrition is estimated at two students per year per cohort.

See Appendix E for Projected Tuition Revenue. Projected revenue in year 1 is $132,600; in year 5 it is $418,200.

2. Anticipated Expenses

Expenses for the programs include:

- Reimbursement for 8 units (at a cost of $5,000 per unit) for faculty members to teach the core courses
- Reimbursement for 3 units for capstone advising beginning in Year 3 of the program. Faculty members advising 5 student capstones would receive one course credit.
- Released time for the Director at 1 course unit per semester.
- Assistant Program Officer (APO): the MALS Program already has an APO, who will take on the responsibilities of the MA/MS Program as well.
• College Assistant: Funding for a part-time College Assistant: (20 hrs/wk) at $22,000 per year. In the third year, depending on enrollment, a second college assistant position would be added at $22,000 per year.
• Equipment and Other than Personnel Services (OTPS) includes cost of paper, letterhead, publicity, website construction, and newsletter: The MA/MS program will share resources with MALS and GC Digital Initiatives

See Appendix E for Projected Expenses.

3. Budget Calculations
In the first year, tuition will exceed expenses by about $29,600. In Year 2, tuition will exceed expenses by $152,100. In Year 3, tuition will exceed expenses by $233,900. In Year 4, tuition will exceed expenses by $259,500. In Year 5, tuition will exceed expenses by $295,200.

See Appendix E for Detailed Budget Calculations.

V. GOVERNANCE
The MA/MS Program will establish program bylaws according to the Graduate Center’s governance, including an Executive Committee and other standing committees. In addition, the Program will convene an Advisory Board composed of GC faculty, external faculty members, and representatives from industry and non-profit organizations doing work related to digital humanities, data analysis, and data visualization.
APPENDIX A: COURSE DESCRIPTIONS FOR REQUIRED COURSES

AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: INTRODUCTION TO THE DIGITAL HUMANITIES

Hours: 3.0 / Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
This course provides an overview of the field of digital humanities, which considers the role of
digital technology in humanities-based research and work environments. The course will explore
the field from both a methodological and theoretical perspective, and introduce students to a
wide range of topics in preparation for specific tracks within the Master of Arts in Digital
Humanities degree program. Course subjects range from specific practices within digital
humanities, such as geospatial mapping and text analysis, to the discourse on material culture,
critical race theory, feminism, and beyond. The course will delineate what it means to practice
humanities research from digital and computational perspectives, based on a series of thematic
and methodological approaches.

Rationale
The digital humanities represents a field of interdisciplinary study and cross-institutional
opportunities, and the complexity of this field necessitates a dedicated course for students to
understand the theoretical and methodological practices upon which this field is built. The course
will be a necessary step of students envisioning their specific tracks, projects, and research
interests in the program, and a site of community for tracks within the larger MA program.

Learning Goals/Outcomes
By the end of this course, students will be able to answer the question, “what are the digital
humanities, and where do you see your potential research and work situated in this field?”
Students will also learn how to engage the process of writing as an act of thinking and reflection,
as well as demonstrate leadership in classroom and pedagogical environments. In order to
accomplish these objectives, learning goals may be distilled into the following steps.

Students will survey the field of digital humanities through essays and academic criticism, but
primarily by means of digital projects that have been developed by academic and cultural
institutions as well as industry. Surveying areas of researching including geospatial mapping,
textual analysis, statistical analysis, data visualization, media archeology, digital pedagogy,
communication platforms, and beyond, students will develop a foundation for the types of digital innovation that are emerging and the type of thinking that underlies these developments.

After a thorough introduction to the field, students will theorize at greater length the qualities that define digital humanities work, as opposed to digital work without the qualification of ‘humanities.’ Students will distill the theoretical and methodological choices that accompany digital humanities research, and contrast these approaches to other discipline-specific techniques in the production of digital work.

Students will begin to situate their own critical interests in digital humanities by writing on the platform Social Paper, evoking the blog formats used in many other courses in the Master of Arts in Digital Humanities except in a way that privileges experimental writing in a small, shared community as opposed to public internet spaces. Students will write biweekly journal or reflective entries, both with and without assigned prompts, and comment and engage each others’ entries in order to think through the course themes. This process promotes reflection, creative assimilation of the course concepts, and ultimately assists students in situating their personal research goals within the context of the course’s overview.

**Assessment**

In order to prepare for active class discussions, students will be expected to complete weekly activities that engage course readings, as well as longer reflective assignments to demonstrate mastery of course themes by the end of the semester.

a. At the beginning of the course, students will sign up to lead discussions of four readings, over the course of the semester, to the class. At the beginning of each class, students will present on the reading’s main argument, and lead a short class discussion on the material.

b. Using the new platform Social Paper, developed through digital humanities scholarship at The Graduate Center on the Commons, students will write short, biweekly responses to readings or course themes that can be shared with classmates in an Introduction to Digital Humanities group on the platform. This writing space, as opposed to a blog, allows students to develop their own perspectives and thoughts with greater privacy control as they begin to familiarize themselves with the field of digital humanities and use writing as a tool for thinking through course materials.

c. At the end of the course, students will choose a project or paper topic from a list of set prompts. These prompts include writing a traditional academic research paper of approximately twenty pages on a specific dimension of the course materials, writing a review of a tool or digital humanities event for publication in a specific journal, writing a project proposal for a digital project, or writing a grant for a project the student would like to accomplish.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: SOFTWARE DESIGN LAB (DIGITAL PROJECT DESIGN)

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
Introduction to the software engineering tools, techniques, and methodologies used to develop reliable, maintainable, and usable software. Typically biweekly small assignments on individual topics and a final cumulative group project.

Rationale
Many digital humanities projects require the creation of software, oftentimes large complex projects that may be used by many people. Understand the process of designing and developing software is crucial to building robust projects. This course will give students a foundation in software development methodologies that they can draw from throughout their coursework and career. Because this course takes a humanities centered approach rather than a computer science one, it does not overlap with an existing course and no course will be dropped to accommodate this offering.

Learning Goals/Outcomes
This course serves as an introduction to the software engineering methods that underpin each stage of a digital project’s life cycle. Students will learn how to incorporate user and client requirements at every stage of a project's development.

The course will introduce students to:
1. Software development environments
2. Version control systems
3. Software design patterns such as model view controller
4. Storing and manipulating data in a database and on disk
5. Techniques for rigorously testing at all levels: unit, integration, function, usability, etc.

And will discuss:
1. Estimating the budget of a project and how long it will take to complete
2. Choosing an appropriate software development life cycle model
3. Methodologies for analyzing, designing and evaluating the requirements of a project
4. Identifying and assessing language, database, software architecture and quality issues
5. Evaluating the maintainability of a project
The lab component of this course will allow students to work with the tools as they are introduced, and short homework assignments will reinforce these topics. The final project will give students the opportunity to develop a robust user focused digital project incorporating all the topics taught in class.

Assessment
Students are expected to experiment with the tools and techniques as they are taught; as such, the course will be taught in the style of a laboratory course. Students are assessed in several ways:

1. Small projects (labs) on each individual topic
2. Group project that requires competency in course material to successfully execute
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: INTERNSHIP

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
In lieu of a traditional academic class, students enrolled in this course will complete a semester-long internship with either an industry partner of the Master of Arts in Digital Humanities Program, or with an approved institution of their choosing. Students will apply their digital skills in active work environments in order to refine their understanding of digital work from an industry and institutional perspective, develop job-specific skills, and gain experience in the workplace. Weekly hours and schedule for the internship will be agreed upon by the employer and the Master of Arts in Digital Humanities Program, but will not exceed 10-15 hours per week.

Rationale
Digital humanities work in academic environments is often a precursor to so-called “alternative academic” career paths, and many students seeking degrees in digital humanities or who have practiced digital humanities during their academic career often seek post-graduate work in industry or cultural institutions. However, many academic institutions offering graduate degrees in the humanities neglect an important aspect of career placement and student development by failing to offer internship opportunities to students. By encouraging students to experiment and engage in workplace environments for course credit, and in advance of their graduation date, academic institutions better prepare students for their careers beyond graduate school and for career success. Particularly in fields that are historically accessible only to wealthy or well-connected members of the population, including computational work, the internship program at the Master of Arts in Digital Humanities Program can act as an advocate for students by offering network connections and scaffolding the workplace experience to the student’s advantage.

Learning Goals/Outcomes
While the learning goals and outcomes of the internship program will largely depend on the student’s choice of internship and the particular aims of that institution, the goals of the internship program in the Master of Arts in Digital Humanities is to develop robust connections between academic communities and industry partners to facilitate job placement for graduates of the program. Internships increase the competitiveness of student resumes, and also provide a working environment in which the student can gain specific skill sets that they will need for post-graduate work. By exposing students to modern work environments that will capitalize on their digital humanities expertise upon graduation from the program, this program allows students to
negotiate both the theory and praxis of digital humanities work from both a critical academic research perspective as well as in task-oriented, project-based work environments.

Broadly, students engaged in the internship program will complete their programs with the following skills and knowledge:

1. The ability to summarize new skill sets gained in the workplace, and to contextualize the relationship of these skills to those already learned in the Master of Arts in Digital Humanities program
2. Awareness of institutional or industry approaches to digital humanities, and the ability to reflect on differences between these communities and their academic counterparts
3. Concrete work experience that can be listed on a resume or in a curriculum vitae to further career goals
4. A network of industry or institutional support that can aid them in future scholarship, job searches, and community building upon graduation.

Assessment

Given that learning will occur in the workplace, and that the purpose of the course is for students to fully engage in their industry or institutional environment, assessment is minimal and provides feedback as to the effectiveness of the program.

a. Students will be required to log hours spent at their internship, with brief notes on tasks that they completed, worked on, or were assigned. This practice ensures fair student work hours, with a weekly cap to be agreed upon by student, employer, and the Master of Arts in Digital Humanities. This type of record-keeping also allows students to clearly see their work, to prompt reflection on types of skills and tasks completed in the internship.

b. At the end of their work period, students will submit a five-page report of their experience at the internship, which is a chance to reflect and consider future career partnerships. To encourage student reflection, this paper will be kept confidential and will not be shared with the student’s employer.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: CAPSTONE PROJECT

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description:
Students complete the MA in Digital Humanities by working with an advisor to complete a capstone project. Student should enroll in this course once they have completed at least 24 credits of coursework.

The capstone project enables students to integrate and synthesize the knowledge that they have developed during their MA coursework into a culminating digital project.

Students will select an advisor from the Graduate Center Faculty, who will supervise the thesis or the capstone project.

Rationale:
The capstone project serves as a culminating experience for students seeking to refine their work as they pursue professional goals. The capstone will allow students will integrate higher substantive experience with developing intellectual, organizational, communication, social and other skills appropriate to potential career development or further academic study.

Learning Goals and Outcomes:
Integrate and synthesize accumulated knowledge from a student's graduate studies into a culminating project. Develop a digital project that refines and demonstrates appropriate technical facilities, creativity, analytical thought, clear and accurate communication, and that delivers a high-quality final work. Drawing on their academic experiences in the program as a whole, students will be encouraged to incorporate the resources of New York City museums, collections, archives, and neighborhood cultures into work of an original character that reflects their developed academic or other expressive interests.

The creation of a final capstone project will enhance critical thinking skills. Students will gain confidence in working independently, responding to criticism and supervision positively, and completing projects of a contemporary professional and technical standard in a timely manner.
Outcomes/Assessment:
The project will be evaluated by the faculty advisor and will be submitted to the Director MA/MS Program, who must also approve the project.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: TEXTUAL STUDIES IN THE DIGITAL AGE

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
This course addresses the question, “what is a text?” and interrogates the extent to which the modifier “digital” in “digital textuality” alters prior conceptions of textuality. To that end, it surveys the history and practices of textual studies from a three-part perspective, including critical, material, and digital approaches. Beginning with textual scholarship, or the study of critical editions, students will explore how ideas of authorship and readership shape textuality itself. The course will explore materiality by considering bibliography and codicology, the respective study of print or manuscript materiality, as a way of opening the discussion whether text is material property and how this question applies digital text. In this course, we will also reconceive of digital textuality not just as a new interface or practice of new media composition, but also as a subset of critical code studies that addresses code as a text-beneath-a-text. Students will choose one of the course themes—critical, material, or digital textuality—in order to develop a final paper or digital project that takes a stance on the current conversation in the field and posits a new critical or methodological approach to their chosen topic.

Rationale
The roots of textual scholarship are entangled in the very foundations of English departments in American universities, and constitute a rich trove of contemporary and historical thinking about what constitutes a text. Given the rapid development of digital technologies, students must be equipped to understand the continuities and divergences between prior eras of textual production and transmission and our own. In order to accomplish this, students will consider the ways that digital innovation both reinforces traditional ideas about textuality, and complicates them in productive ways.

Learning Goals/Outcomes
The objective of the course is for each student to become familiar with the fields of textual scholarship, bibliography, and digital humanities approaches to textuality. At the end of the course, students will be able to contextualize the history of traditional textual scholarship, demonstrate knowledge of the material components of both digital and analog texts, and trace continuities and identify differences between digital texts and analog texts.
This course aims to convey ideas, but also to develop graduate education levels of reading comprehension, writing, and critical analysis. In order to ensure proficiency in comprehension, students will be required to teach a text to the class twice a semester. This activity encourages active reading as a means of transmitting knowledge and provoking conversation, and also encourages the student to develop pedagogical strategies, leadership skills, and greater familiarity with leading a classroom.

Writing and reading are the main ways that we engage textuality in daily life, and this course will emphasize writing as a space for thinking, idea transmission, and conversation. Short writing assigns will be completed four times over the course of the semester on the socialized writing platform Social Paper will enable students to use writing as a reflective and critical tool, comment on their peers’ work, and receive instructor feedback on idea development and prose quality.

The topics of this course have primarily been taught within English departments, but given the fact that textual materials are the foundation of most humanities disciplines, the themes of this course will contribute to student understanding of what it means to critically engage primary sources at a graduate level. This critical understanding will allow students to develop further research in their capstone project for the digital textuality track, as well as consider facets of professional work—such as in libraries or museums or publishing companies—from a critically rigorous perspective.

**Assessment**

Students will be required to complete weekly assignments that engage the readings, as well as an end-of-semester paper that engages the course’s larger themes. In addition to regular and engaged classroom discussion, students will also be expected to participate in the following requirements.

a. At the beginning of the course, students will sign up to teach two readings, over the course of the semester, to the class. At the beginning of each class, students will present on the reading’s main argument, and lead a short class discussion on the material.

b. Using the new platform Social Paper, developed through digital humanities scholarship at The Graduate Center on the Commons, students will write two-page responses to readings or course themes that can be shared with classmates. Four of these papers are due over the course of the semester, and assignments will be evenly spaced. In these papers, students will use writing as a tool for thinking through the very medium they are engaging: textuality.

c. At the end of the course, students will choose one of the course themes—critical, material, or digital textuality—in order to develop a final paper or digital project that takes a stance on the current conversation in the field and posits a new critical or methodological approach to their chosen topic. Given the emphasis on writing throughout the course, this paper will be 12-17 pages.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXX

Title: METHODS OF TEXT ANALYSIS

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
Humanities scholars have been experimenting with computerized methods of text analysis since the 1940s, when Father Roberto Busa collaborated with IBM to produce a concordance of the works of Thomas Aquinas using early, punch-card based computers. In recent decades, text analysis methods have grown much more sophisticated, complex, and, in many cases, more difficult to interpret. There has also been an increasing adoption of text-analysis methods in search engines, marketing research, and surveillance, making them an important part of the institutional structures of the modern Internet. This course will explore methods of text analysis including the fundamentals of statistical modeling, natural language processing, feature selection, text tagging/annotation, and text classification. We will also consider the social, political, and philosophical implications of these technologies, both in the practice of scholarship and in their use in commercial and military applications. Students will complete a project applying text analysis to a research problem and/or write a final paper on a topic relating to the history, theory, or practice of text analysis.

Rationale
Text analysis methods are becoming increasingly common in humanities and social science research, and they often play an important role in the technological infrastructures of libraries and research archives. Approaching these methods in a nuanced way requires both a base of technical skills and a familiarity with the various theoretical perspectives from which text-analysis tools have been developed and deployed in research. This course will provide students with hands-on experience with a number of analysis techniques, as well as the knowledge that is needed to judge what techniques are appropriate for particular purposes and think through the broader implications of the adoptions of these technologies.

Learning Goals/Outcomes
The overall objective of the course is for each student to develop a base of knowledge about the various text-analysis methods available and a familiarity with some of the major scholarly debates surrounding the practice of text analysis. Students will learn to identify problems that can be addressed with text analysis, select appropriate text-analysis methods and tools, and
prepare texts for analysis. The course will also give students hands-on experience analyzing text and ensure that they have the technical competencies needed to work with advanced text-analysis software, including the use of the command line, very basic programming skills, and an understanding of text encoding.

In particular the student will become proficient in the following objectives:
1. to gain the basic technical knowledge needed to employ the tools and methods of text analysis
2. to be able to make reasoned choices concerning appropriate tools and methods for text analysis problems
3. to think critically about text analysis methods
4. to gain a basic understanding of the theoretical underpinnings of some of the most common text analysis methods
5. to become familiar with the major theoretical works dealing with the use of text-analysis techniques in research

The course will include discussions of a selection of scholarly projects that have employed text-analysis methods in a variety of ways. Exposure to a broad sampling of approaches to textual analysis will provide the student with the background necessary to appreciate the work of others and see the possibilities for their own work.

The student will become familiar with the process of text analysis including the choice of tools and methods appropriate to a given problem, the proper preparation of a digital text, and the interpretation and statistical significance of results obtained.

The student will be able to present reasoned critiques of methodological problems in text analyses. An understanding of the theoretical assumptions on which different text-analysis methods rely will aid the student in appreciating the interpretive challenges that these methods present; and a knowledge of the history of text analysis will enable the student to consider the broader institutional consequences of these techniques.

**Assessment**

Student performance will be assessed based on the following factors:

a. Students will write a paper on a topic related to text analysis. The instructor may give students the option to conduct a text analysis project as an alternative to the paper.

b. Students will each give a presentation and lead class discussion on a selected piece of secondary literature.

c. Students will participate in class discussions on assigned secondary literature.

Students will attend at least three workshops teaching specific technical skills related to text analysis.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: THE FUTURE OF THE BOOK: PUBLISHING AND SCHOLARLY COMMUNICATIONS

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
In the digital age, is the academic book dead, dormant, or developing into a new form of writerly communication? This course addresses these questions by providing a survey of the history and current state of scholarly communications and academic publishing, with particular focus on their intersection with digital technology. Students will become familiar with the theory and praxis of scholarly communications in the digital age, and learn to engage the informal and formal practices that characterize academic knowledge distribution through hands-on writing projects and critical readings. This course will dovetail with the themes established in the “Textual Studies in the Digital Age” course by considering, in brief, the history of academic publishing in print, using this topic to critique and reconceive of current digital practice and the future of the scholarly monograph or book. We will consider how new modes of scholarly communication and publishing intersect with questions of interdisciplinarity, pedagogy, and public knowledge distribution, as well as how these topics play out in both academic, corporate, and institutional environments. Other topics include digital dissertations, public humanities, the theory and praxis of social media engagement, and collaborative writing. Students will develop their own critical approach to a current facet of either scholarly communications, publishing, or the future of the book through a series of semester-long Wikipedia activities, blog posts, creative communication exercises, and through their final project, which may be conceived of as a proofing ground for grant proposals, an academic article, or their capstone proposal for the Digital Textuality track.

Rationale
As scholarly communications and publishing platforms transform higher education, students must be equipped to effectively communicate, successfully publish, and critically engage new digital platforms. By understanding how and why we accomplish academic writing, students will conceive of new ways to expand and improve these processes using digital technology. This course offers students the opportunity to learn how to communicate humanities research and scholarship effectively and to a wide audience, in the context of cultural institutions, alternative academic environments, and the academy itself.
**Learning Goals/Outcomes**

The overall objective of this course is for students to situate their own perspectives and practices on scholarly publishing, communication, and the future of the book within the field’s larger conversation, and to implement their own strategies for engaging in publishing and communication as graduate students. The learning goals of this class are threefold, and involve students achieving familiarity with digital technologies and platforms that facilitate communication and publication, demonstrable proficiency in one digital technology that relates to course themes, and the ability to articulate an extended theoretical or methodological approach to one of the course’s themes.

Firstly, in order to produce familiarity with digital technologies that relate to the course topics, class time will feature small group work, discussions, and in-class activities to promote deeper understand of assigned readings and of the role of digital tools in the course themes. Students will engage in a semester-long Wikipedia project in order to produce public knowledge from humanities research, practice regular writing, and learn to collaborate digitally with both scholars and non-scholars in digital environments.

Secondly, in order to assist students in developing proficiency in digital tools that facilitate communication and publication, students will be expected to participate in three labs over the course of the semester. These labs, which will be fully explained in the next section, will offer interactive spaces outside the classroom for applied learning, and provide specific skill-sets that students can apply to their final projects.

Thirdly, students will develop the ability to articulate and argue for their own approach to the course themes, which can be explored in their final project. This final project, which is meant to act as a thinking space for the course themes, will expose students to the critical thinking and writing skills necessary to produce an academic article, grant proposal, or other extended piece or proposal.

**Assessment**

This course requires active engagement in scholarly communication and publishing, which will be assessed through a series of weekly and semesterly requirements. The purpose of these assignments is to facilitate ongoing and engaged student development in practices of scholarly communication and the ideas expressed in the course. To that end, the final assignment is not a traditional seminar paper, but rather a shorter opportunity to think about developing further work according to themes addressed in the course.

a. Each, students will add between two sentences and one well-research paragraph to a Wikipedia entry on one of the course readings for the week. The purpose of this activity is to engage in public-facing humanities, hone writing skills, and practice working
collaboratively in digital environments. This process will become a source of reflection and class discussion for students each week.

b. Students will maintain a course blog on the CUNY Academic Commons, where they will write a total of three entries over the course of the semester that either reflect on their Wikipedia experience, a series of course readings, a relevant event that they attended, or their process for developing a final project. Likewise, students will be responsible for six total comments on the blog to acknowledge and discuss their colleagues’ work.

c. Students will be expected to participate in three labs over the course of the semester that will be offered through The Graduate Center Digital Initiatives and the Interactive Technology and Pedagogy certificate program. These labs will allow students to develop familiarity with digital tools that will help their engagement in the course materials.

d. Students will be required to submit a midterm report on their final project that explains their topic of interest as well as their researching and thinking process. This midterm report should be conceived of creatively in a format of their choosing—such as an archive of twitter hashtags that have been used to reflect, a blog post, a presentation, or a teaching activity. Midterm reports will be discussed in class.

e. For the final project, students will propose what they consider an ideal, or even useful, method for distributing research according to their synthesis of course materials, considering trends in scholarly communications, academic publishing, and the future of the book. This project is meant to be a short paper, given the extensive workload of the rest of the course, or can also be conceived of as a grant proposal, initial proposal for a larger-scale grant, or proposal for a capstone project in the Digital Textuality track.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX

Title: SPATIAL DATA AND CARTOGRAPHIC THEORY

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: Visualization and Design: Fundamentals

Course Description
This course combines an introduction to basic cartographic theory and techniques with practical experience in the analysis, manipulation, and the graphical representation of spatial information. The course examines the storage, processing, compilation, and symbolization of spatial data; basic spatial analysis and spatial statistics; and visual design principles involved in conveying spatial information. Emphasis is placed on digital mapping technologies, including online and offline computer based geographic informations science tools.

Rationale
Digital mapping technologies and the use of geospatial informatics are increasingly ubiquitous in both our daily lives and across a range of professional fields. The representation and analysis of spatial data is crucial for informed decision making and communicating ideas. This course provides students with a grounding in cartographic theory to help them understand and design effective graphical representations of spatial information. It also provides hands-on experience using digital tools to manipulate spatial data and create visual representations of that data to prepare students for advanced coursework and careers that rely on knowledge of GIS and spatial science.

Learning Goals/Outcomes
The overarching objective of this course is to familiarize students with GIS and spatial analysis tools and techniques used in professional and scholarly fields. By the conclusion of this course, students will be able to:

1. Gather and manipulate geospatial data
2. Interact with geospatial data stored in a database
3. Interact with geospatial data stored in hierarchical data formats
4. Use cartographic theory to design effective graphical representations of geospatial data
5. Use cartographic theory to interpret, analyze, and critique graphical representations of spatial phenomena
6. Create both static and interactive maps containing different representations of geospatial information

Prerequisites
Students are required to have taken the Introduction to Data Visualization (Course ##). It is recommended that students take Conceptual Analytics (Course ##), either previously or concurrently.

**Assessment**
The class calls for active student learning and participation. Students are assessed in several ways.

a. Each week students are responsible for developing discussion questions for the whole class to address based on the readings.

b. Students are responsible for leading discussion on particular readings in about a third of the classes;

c. Students are required to write four brief essays during the course. Each covers the way particular authors understand the relationship of individual experience and action with the social and material context of experience and action. Essays are chosen from a variety of topics (one for each of three essays) such as perceiving and knowing the environment, social and environmental contributions to human development, environmental meaning, and social context as it contributes to experience and action at the individual and group level. The final essay is more synthetic and open to student formation of the theme.

Sample syllabi:
- [https://www.e-education.psu.edu/geog486/syllabus](https://www.e-education.psu.edu/geog486/syllabus)
- [http://isites.harvard.edu/fs/docs/icb.topic1336030.files/gsd5345_syllabus_v13.pdf](http://isites.harvard.edu/fs/docs/icb.topic1336030.files/gsd5345_syllabus_v13.pdf)
- [http://pages.geo.wvu.edu/~elmes/Geog462/Fall%202014%20Syllabus.pdf](http://pages.geo.wvu.edu/~elmes/Geog462/Fall%202014%20Syllabus.pdf)
- [http://maps.unomaha.edu/Peterson/carta/Syllabus.htm](http://maps.unomaha.edu/Peterson/carta/Syllabus.htm)
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX
(cross-listed from ITCP)

Title: ITP CORE I: INTERACTIVE MEDIA: HISTORY, THEORY, PRACTICE

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
This is the first core course in the Interactive Technology and Pedagogy certificate program. Students will examine the economic, social, and intellectual history of the design and use of technology in general and of interactive media in particular. The course will also focus on the mutual shaping of technology and academic teaching, learning and research—how people and ideas have shaped these (largely) classroom and academic research interactions in the past, and how we are now transforming them in the present. By examining the use and design of technologies inside and outside of the university, students will reflect on what it means to be human in a world increasingly dominated and controlled by various technologies.

The course also explores the history and theory of digital media, including hypertext and multimedia, highlighting the theoretical and practical possibilities for research, reading, writing, presentation, interaction, and play. Students will be encouraged to explore the possibilities that new, nonlinear, digital tools have opened up for teaching and research, including the emergence of the new field of digital humanities.

Rationale
More than ever before, scholars and educators across disciplines are experimenting with digital tools and methods to conduct their research and teaching, as well as facilitate new forms of collaboration and publishing. At the same time, there is an increasing demand within the academic job market for scholars and educators who utilize digital methods and can assist in broadening and deepening a university or department’s digital literacy. While workshops and online tutorials may help expose students to these trends, there are few spaces within graduate education to better understand the social and historical forces behind their development. ITP Core Course I will introduce students to a diverse range of critical and historical perspectives on digital technologies, labor, and education in order to provide a strong foundation for choosing digital approaches in the following semester.
**Learning Goals/Outcome**
At the end of ITP Core Course I, students will have a broad understanding of the historical and social background digital research and pedagogy and critical issues related therewithin. In their two papers, students will be encouraged to develop critical positions and/or imaginative possibilities regarding the use of digital technologies within the university as well as begin to focus on a particular digital tool, method, or practice that relates to their broader research interests.

**Assessment**
Students will write two papers: an interim essay focused on the readings from the first two parts of the course and a larger research paper linking selected readings with aspects of teaching, learning and/or research in one’s area of academic interest. Students will be expected to lead at least one in-class discussion as well as to motivate one online discussion focused on the readings and online materials during the course of the semester.
MA in Digital Humanities/MS in Data Analysis and Visualization Proposal

AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXXXX
(cross-listed from ITCP)

Title: ITP CORE II: INTERACTIVE TECHNOLOGY AND THE UNIVERSITY: THEORY, DESIGN, AND PRACTICE

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
In the first core course of the Interactive Technology and Pedagogy certificate program students were introduced to the history and contexts within which technology has been integrated into teaching, learning, and research at the college level. In the second core course, students will continue with that investigation as they begin to carve out space for their own work. The focus of the course reading will be the contemporary academy, and the goal of course discussions will be for students to better understand the place of their work within it. By the end of the semester students will produce a polished proposal for a multimedia-based project in their discipline related to research, pedagogy, or both.

Connected with the course will be a series of hands-on introductions to key educational uses of new-media applications. Instructors will arrange several of these workshops in advance and can also arrange others in response to student request.

Rationale
Following ITP Core Course I which introduced students to the historical and social forces at play in the use and development of digital technology, ITP Core Course II will broaden their awareness of current projects and trends within the sphere of digital research and pedagogy and enable students to begin experimenting with digital tools for their own research interests and teaching. Few venues within graduate education offer students an opportunity to explore and reflect at length on the numerous issues at play within the use of digital technology in education. This course will introduce students to the rich range of digital possibilities happening within education so that they might critically assess their value and develop a personalized approach to digital pedagogy and research.

Learning Goals/Outcomes
At the end of ITP Core Course II, students will develop a proposal for a digital pedagogy project with a rationale that situates it within broader contemporary trends as well as their
personal approach to pedagogy. Students will be encouraged to seek out resources—such as funding, collaborative possibilities, and mentors—to assist them in the development of their project as well as given opportunities to practice pitching their project in a variety of different contexts (i.e. the elevator pitch or grant proposal).

**Assessment**

Students will write two papers for the course: a project brief justifying their project choice, and a final, polished proposal. Students will present their projects to the class over the final two meetings. Students will be expected to complete weekly reading and blogging assignments, and to come to class prepared to discuss the topic at hand. Each student will lead at least one in-class discussion as well as motivate one online discussion focused on the readings and online materials covered during the semester.
AIV.I Master of Arts in Digital Humanities

Course Number: XXXXXX

Title: DIGITAL PEDAGOGY PRACTICUM

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: ITCP 70010 and ITCP 70020

Course Description
Analysis of digital pedagogy as a strategy for enhancing college-level learning and teaching outcomes. Includes analysis of digital tools and techniques as related to classroom goals and objectives. Reflection on success of various tools and methods for improvement of digital pedagogy. Students complete a portfolio of 15-25 pages of material. Students also evaluated on blog posts and participation in classroom discussion.

Rationale
The culminating course in this program is a hands-on practicum allowing students to apply the digital tools and methods they have developed in the preceding courses. Increasingly, digital methods are facilitating a new approach to pedagogy that favors open-ended, project-based, and discursive methodologies over traditional drill- or lecture-based teaching. This shift toward student-centered learning has been supported by the development of new digital methodologies and teaching practices, including incorporation of social media, use of online writing and publishing platforms, and the use of rich media in support of a “flipped” pedagogical model. In this teaching practicum, students will engage with the theory and practice of digital pedagogy, learning core approaches such as scaffolding, critical evaluation, differentiated instruction, and collaborative learning in conjunction with innovative digital methods.

Learning Goals/Outcomes
Students will learn to create classroom assignments that incorporate digital methods and tools. Students will create a course syllabus, sample course assignments, a course website, and support materials to prepare classroom experiments with technology. The Digital Pedagogy Practicum aims to give students hands-on experience in preparing classroom materials.

Assessment
Students will be evaluated on their classroom participation and will complete a culminating portfolio combining reflections, sample syllabuses, and a statement of teaching philosophy.
AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: DATA, CULTURE AND SOCIETY

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
Big data and computational methods for its analysis are changing scientific and humanities research, financial markets, political campaigning, higher education and countless other areas, and also affect our everyday lives. Our daily existence is increasingly structured by software systems that process massive amounts of data and generate results such as music and book recommendations, search engines outputs, car routes, airline prices, etc.

In this course, we explore the social, political and cultural impact of reliance of our society on massive (and often real-time) data analysis. We will discuss the concepts behind data collection, organization, analysis, visualization, and publication. We will also discuss possibilities, limitations, and implications of using big data-centric methods in social science and humanities research, and the already developed work in computational social science, digital humanities and cultural analytics fields. The students will become familiar with the history and basic concepts of the fundamental paradigms developed by modern societies to analyze patterns in data - statistics, visualization, data mining, and machine learning.

Finally, we also want to ask general questions about society and culture in a data-centric society. The arrival of social media and the gradual move of knowledge and media distribution and cultural communication to digital networks in the early 21st century has created a new cultural landscape which challenges our existing methods for the study of and assumptions about culture. What new theoretical concepts and do we need to deal with the new scale of born-digital culture? What data analysis and visualization techniques developed by industry and sciences are most useful for cultural analysis? How we use big cultural data to question what we know about culture and generate new questions?

Rationale
Digital data has transformed the world, impacting virtually every area of science, culture and society. Data, Culture, and Society course introduces students to a number of theoretical issues related to how data is collected, managed, analyzed, visualized and used...
today. The students become familiar with the histories and key concepts that underlie contemporary data practices, and learn to think about their uses critically.

**Learning Goals/Outcomes**

- Students will be able to understand and explain the roles that data plays in contemporary culture and society as well as its limitations in various areas of research, industry and modern life.
- Students will be able to read, understand, assess, and discuss data-oriented professional and popular publications and articles.
- They will also be able to advance arguments about data analysis cases, data infrastructure, and data applications.

**Assessment**

- Class participation is crucial in this course. There will be ample opportunities for discussion in each class, and graded weekly presentations on the readings will be assigned.
- In lieu of a midterm exam, students will write a series of blog posts examining theoretical concepts discussed in class.
- The final assignment consists of an oral presentation and a research paper.
AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: MEDIA THEORY AND HISTORY

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description
The course is designed to introduce students to the key theoretical ideas and the works by most influential modern and contemporary thinkers about media cultures and technologies. Because historically these ideas were developed in relation to particular technologies and practices prominent in different times, we will be also discussing aspects of media history - from photo photography, film, and radio to social media, apps, and data art and design.

Our discussion of media technologies and their use will be organized around the general concepts such as capture, storage and access, editing, generation, reproduction and distribution, reuse, and analysis. For example, “capture” includes 19th photography (capture of visible light) and contemporary technologies for recording of aspects of cognitive and perceptual activity of media consumers (eye movements, fMRI). Similarly, “editing” encompasses darkroom techniques of analog photography, use of filters in Instagram, and digital compositing of video.

The classical figures to be discussed include academic theorists and artists who created new media languages and theorized them. They represent the periods of the early 20th century “new media” avant-garde (Benjamin, Adorno, Brecht, Moholy-Nagy, Rodchenko, Eisenstein,), the era of mass media and media art (McLuhan, Paik, Barthes, Debord, Baudrillard, Virilio), the development of computational networked media (Kittler, Zelinski, Manovich, Lunenfeld, Bolter, Turkle, Rushkoff, Wardrip-Fruin), and emergent work in social mobile media.

Along with such figures from the fields of humanities, media theory and the arts, we will also look at the writings of selected engineers and scientists as form of media theory. (The example of these figures are Claude Shannon, Douglas Engelbart and Alan Kay). Finally, we will also analyze the two special forms of media most relevant to our master program – big data and data visualization.

Rationale
The course provides historical knowledge and theoretical tools that are necessary to navigate the media and understand—and effectively produce—media content in a today’s highly mediated environment.

**Learning Goals/Outcomes**

- Students will learn key ideas of media theory developed over last 100 years.
- Students will also learn how each new major generation of media technology led to new communication and artistic techniques, specific cultural forms and new theoretical ideas about media and communication.
- They will also become familiar with the key academic thinkers, scientists and engineers, and artists who contributed most influential ideas about media.
- They will learn how to both use existing concepts from media theory in analyzing particular empirical media phenomena, and how to use concrete phenomena to question these ideas.

**Assessment**

- Class participation is an essential part of this class. Students are expected to complete all the assigned readings before each class and actively engage in the discussions.
- A series of short blog posts responding to the media theories and media practices learned in class.
- Midterm assignment—a shorter paper that tests if some of the media theories developed in the earlier media periods can be applied to contemporary computational networked mobile media.
- Final assignment—a longer paper that looks at how a particular theoretical media concept (such as author, audience, interaction, etc.) was approached by a few different media theorists.
MA in Digital Humanities/MS in Data Analysis and Visualization

AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: VISUALIZATION AND DESIGN: FUNDAMENTALS

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description

This course covers fundamentals of data visualization and graphic design. We will study and practice common visualization techniques for a single and multiple variables, quantitative and categorical data, networks, spatial and temporal data. Students will also learn the key principles of modern design as they apply to design of static, animated and interactive visualizations, data-centric publications, maps, and other common types of data design. The principles cover use of form, proportion, color, composition, design grids, basics of typography, hierarchical organization of information, systematic use of design variables, rhythm, and design patterns. Finally, students will be also introduced to the fields of user experience and user interaction that today underlie professional interaction design.

Students will complete a number of practical assignments to understand and start mastering principles and techniques being introduced in class. The class time will be divided in three parts – 1/3 for instructor presentations, 1/3 for discussions of outstanding visualizations, design projects and readings, and 1/3 for critique of student work. Selected historical and theoretical readings will be used to introduce students to the histories of visualization and modern design and to help them start thinking critically about the common practices of these fields, and their use in commercial, non-profit, and scientific settings. In this way, the class aims to both teach students solid practical skills and critical reflexive attitude towards the material.

Rationale

Data visualization is increasingly important today in more and more fields. Its growing popularity corresponds to important cultural and technological shifts in our societies – adoption of data-centric analysis research and arguments across dozens of new areas, and also arrival of massive data sets. Data visualization techniques allow people to use perception and cognition to see patterns in data, communicate and form research hypotheses. The goal of this course is to introduce students to fundamentals of data visualization and relevant design principles. Students will learn the basic data visualization techniques, when and how to use them, how to design visualizations that best exploit...
human visual perception, and how to visualize various types of data (quantitative, categorical, spatial, temporal, networks).

Learning Goals/Outcomes
The key goals of this course are to learn how to use modern visualization techniques to help analysis and understanding of data, how to use principles of design in creating effective and engaging visualizations, and how to approach visualization of various data types.

- Students will be able to understand data visualization medium theoretically and historically in relation to other major visual and communication media, past and present.
- They will learn how to use the basic modern visualization techniques.
- They will also learn basic principles of modern graphic design relevant for design of visualizations, and interactive data projects.
- They will learn to reason about visualizations and data patterns, and critique visualizations.
- They will learn how to approach design process, present initial multiple proposals and refine the chosen design though many iterations.

Assessment
- Class participation: students are expected to participate in discussions of the assigned visualizations, designs, and data projects.
- Weekly practical assignments: students will complete a number of homeworks assigned during most of the weeks of the course.
- Final project: creation of a larger scale visualization project and a short paper those discusses the chosen dataset, the choice of visualization techniques and the findings.
AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: INTERACTIVE DATA VISUALIZATION

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: Visualization and Design: Fundamentals, and Working with Data: Fundamentals.

Course Description
Creation of effective and engaging interactive visualizations requires knowledge of visualization principles, visual design, and web development. Building on the skills learned in Visualization and Design: Fundamentals, and Working with Data: Fundamentals, in this class students learn new skills needed to create interactive visualization. This includes introduction to HTML, CSS, Javascript, and D3. (the most widely used programming system for interactive web visualization.) Students are first introduced to interactive visualization using Google Charts. Next, they will be learning more advanced D3.js Javascript library. They will learn how to generate visual elements from data using the D3.js, style visualizations, and create both basic graph types and more advanced visualizations. They are also introduced to another way of creating web visualizations using R and one of the commonly used libraries such as Plotly. Finally, they also learn creation of interactive web maps using Mapbox software.

Rationale
Interactive Data Visualization is one of the most important forms of communication today. Such visualizations are embedded in web sites, blogs, apps, and other digital platforms. They allow visitors to better understand patterns in the data, explore interactions of multiple variables, and access and download underlying data.

Learning Goals/Outcomes
● Students will learn how to choose appropriate graphic forms to represent patterns in data effectively.
● How to combine various visualization types together with text and other visual elements such as photographs to create engaging narratives.
● How to use d3.js library to create data charts and maps, and also animations, and interaction.
● How to use interactive maps using Mapbox.
● How to embed interactive visualizations and maps into websites and blogs.
Assessment

- Class participation: students are expected to participate in discussions of the assigned visualizations, designs, and data projects.
- Weekly practical assignments: students will complete a number of homeworks assigned during most of the weeks of the course.
- Students need to demonstrate working knowledge of D3.js and use of Plotly with R.
- Final project: creation of a larger scale project that combines interactive visualizations, maps, and text to tell an engaging story using data.

AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: DATA ANALYSIS METHODS

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: Working with Data: Fundamental.

Course Description
The goal of this course is to provide students with an introduction to basic statistical techniques for analyzing data. Students will develop an understanding of concepts underlying modern statistics and statistical reasoning that will equip them with tools to analyze variety of data types and data sources and also visualize it. We will first learn principles of descriptive statistics. Next, we will cover principles and techniques of inferential statistics, and design of experiments. The course will use R, the most popular open-source language for data analysis. We will learn many different statistical measures and techniques for analyzing data, and practice applying this knowledge to real-world data problems. We will also discuss historical development of statistics in the larger historical context including industrialization, growth of urban populations, development of modern administrative bureaucracy, Panopticum system of power, and the concepts of normal and average human and deviance, etc. We will also ask if statistical concepts and techniques developed well before before modern digital computing, contemporary massive datasets, and interactive data visualization are always appropriate for analyzing data today. Practical topics include: descriptive and inferential statistics, sampling, experimental design, statistical models, parametric and non-parametric tests, ordinary least squares regression,
logistic regression, and explorative data analysis paradigm developed by John Tukey in the 1970s together with interactive data visualization that led to R language.

Rationale
We live in a world where data are increasingly available, in ever-larger quantities, and are increasingly expected to form the basis for decisions by governments, businesses, and other organizations, as well as by individuals in their daily lives. The hard sciences were first to adopt statistical data analysis, followed by social sciences, since the 2000s quantitative statistical approach is also gradually being adopted in humanities.

To cope effectively, every informed citizen must be statistically literate. This course will provide an introduction to basic concepts of statistics, fundamental statistical measures, and techniques for summarizing data, designing experiments to acquire it, and analyze it using classical statistical techniques.

Learning Goals/Outcomes
After taking this course, students will:

- Learn about historical development of statistics and its use in social sciences, industry, government and, more recently, humanities;
- Learn about basic parts of modern statistics: descriptive statistics, inferential statistics and explorative data analysis;
- Learn how to use techniques of descriptive statistics for summarizing data;
- Learn to work with both discrete and continuous data;
- Learn techniques for experiment design and sampling;
- Learn analysis of variance, correlation, and linear regression.

Assessment
1. bi-weekly practical assignments: students will complete a number of homeworks assigned every two weeks during the course.
2. Students need to demonstrate working knowledge of a number of statistical concepts and techniques (using R).
3. Final project: a short paper that discusses patterns in some social or cultural datasets analyzed using a number of statistical techniques learned in the course.
AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: WORKING WITH DATA: FUNDAMENTAL

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: none.

Course Description
This course covers the fundamentals of working with data. Students will be introduced to key disciplines that provide techniques used for working with small, medium and big data today - classical statistics, contemporary data science, machine learning, and data visualization. They will learn about different data types; what constitutes a valid dataset that can be analyzed quantitatively; how data should be formatted to create a valid dataset. We also explore fundamental theoretical questions that arise than we want to represent social or cultural phenomena as data. The particular attention will be focused on working with social network services data, user generated content, and other types of data about societies and individuals that emerge recently (such as sensor data) and massive media datasets (images, video, text, sound, code, etc.). We will discuss fundamental database technologies and more recent techniques for working with real-time data flows.

Students will develop intuitions for identifying interesting questions that can be studied quantitatively, and understanding where and how to look for datasets that could be used to answer these questions. They will learn practical techniques for collecting, organizing, structuring, and cleaning the data using Google Sheets and R data analysis programming language. Students will acquire working knowledge of R, including importing and exporting data in different formats, data management, selecting parts of a dataset using various conditions, combining data sets, and creating basic data graphs.

Rationale
The ‘data revolution’ has transformed the way we understand and interact with the world around us. The availability of large datasets, progress in computer hardware and software, and use of the web to share data and acquire it from numerous sources (including social network services, libraries, museums, city governments, non-profits, etc.) has created many new possibilities in many fields including computer science, social science, humanities, business, economics and medicine. These developments also lead to emergence of a number of new research fields in the end of 2000s: social computing, computational social science, digital humanities, cultural analytics and culturomics. This course introduces students to fundamental concepts and practical techniques and skills needed to work with data.
Learning Goals/Outcomes:
Students will learn the most fundamental concepts and skills of data analysis, required before they can use more advanced analysis techniques and also do data visualization. While focusing on fundamentals, the course also introduces students to new ideas for data analysis, new types and sources of data, and recently emerged fields that are taking advantage of these sources, increasing computing power for data processing and new open source comprehensive data analysis programming environments.

After taking this course, participants will:
- have a general understanding of how to use quantitative data to research topics in many fields;
- understand both benefits and limitations of using quantitative methods in research;
- learn concepts and practical techniques for downloading data from various sources, cleaning data, managing and structuring datasets using Google Sheets and R data analysis programming language.
- students will acquire working knowledge of R, including importing and exporting data in different formats, data management, selecting parts of a dataset using various conditions, combining data sets, and creating basic data graphs.
AIV.I Master of Science in Data Analysis and Visualization

Course Number: XXXXXX

Title: ADVANCED DATA ANALYSIS

Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: none.

Course Description
This course is designed to provide students with skills in contemporary methods of data analysis used today in numerous fields. By the end of this course, students will be able to apply machine learning techniques to data, and interpret and communicate their results. Students will learn how to use many popular machine learning algorithms using R language. This is an applied machine learning class, which emphasizes the intuitions and know-how needed to get learning algorithms to work in practice, rather than the mathematical derivations.

Topics covered in this class include supervised learning (classification, generative/discriminative learning, parametric/non-parametric learning, neural networks, support vector machines, deep learning) and unsupervised learning (clustering, dimensionality reduction, kernel methods). We will also cover use of unsupervised learning for exploratory data analysis and visualization of large multi-dimensional datasets.

Rationale
Machine learning is the science of getting computers to act without being explicitly programmed. In the past decade, machine learning has given us self-driving cars, practical speech recognition, effective web search, and a vastly improved understanding of the human genome. Machine learning is so pervasive today that you probably use it dozens of times a day without knowing it. In this class, you will learn about the most effective machine learning techniques, and gain practice implementing them and getting them to work for yourself. More importantly, students will gain the practical know-how needed to quickly and powerfully apply these techniques to new problems.

Learning Goals/Outcomes:
Students will learn key concepts and most widely used algorithms used today in practice to analyze large datasets in numerous fields. After taking this course, students will be able to:

- Discuss key machine learning concepts such as feature extraction, features space, classification, cross-validation, generalization and over-fitting, prediction, curse of dimensionality;
• understand advantages and limitations of machine learning methods in comparison to traditional statistics, social science research methods (i.e., observation, experiment) and also humanities methods.
• match practical problems to standard data modeling techniques such as regression, classification, density estimation, clustering and association mining;
• Use many machine learning techniques in R;
• Combine data modeling tools in order to analyze their own data sets (using R).

Assessment
Students are assessed in several ways.
1. Each week students are responsible for developing discussion questions for the whole class to address based on the readings.
2. Students will complete three practical assignments where they will develop data modeling techniques and learn to program complex models.
3. Students will present a final project at the end of the course that will cover the topics seen in this course. For this project, students will use machine learning and data modeling techniques to unravel interesting patterns in the dataset.
APPENDIX B: POTENTIAL FACULTY MEMBERS

Dr. Stephen Brier (Urban Education, Liberal Studies, Interactive Technology and Pedagogy)

Dr. Joshua Brown (Interactive Technology and Pedagogy)

Dr. Cathy Davidson (English)

Dr. Scott Dexter (Computer Science)

Dr. Duncan Faherty (English)

Dr. Matthew K. Gold (English, Liberal Studies, Interactive Technology and Pedagogy, American Studies)

Dr. Delaram Kahrobaei (Computer Science)

Dr. Michael Mandiberg (Interactive Technology and Pedagogy)

Dr. Lev Manovich (Computer Science)

Dr. George Otte (English, Urban Education, Interactive Technology and Pedagogy)

Dr. Anthony Picciano (Urban Education, Interactive Technology and Pedagogy)

Dr. Lisa Rhody (GC Digital Initiatives)

Dr. Katina Rogers (Futures Initiative)

Dr. Maura Smale (Interactive Technology and Pedagogy)

Dr. Joseph Ugoretz (Interactive Technology and Pedagogy)

Dr. Luke Waltzer (Interactive Technology and Pedagogy)
APPENDIX C: EXTERNAL REVIEWS
April 10, 2017

Dear Graduate Center Curriculum Committee:

I am pleased to extend my enthusiastic endorsement of the M.A. degree in Digital Humanities and M.S. degree in Data Analysis and Visualization proposed by the Graduate School and University Center of the City University of New York.

I have been in the School of Information at the University of Texas at Austin for over five years. In that time I have consistently been the go-to person on campus in Digital Humanities for students, faculty, and staff. Having published widely in DH journals and books, presented at numerous conferences and other DH venues and won multiple grants for projects based on developing social and technological infrastructure for digital humanities research and teaching, I call DH my primary area of research. I remain the only instructor on the UT campus who teaches a survey DH course for graduate students, and I am currently leading the charge for creating an interdisciplinary DH undergraduate certificate and graduate portfolio as well as an Institute for DH research. I believe I have a good idea of the type of program that will have a positive impact on the research and applied worlds of DH scholarship.

The purpose of the GC’s proposal represents a much needed program of study as demonstrated in the proposal's purpose and goals section. This special focus in the program on data studies well complements the more "traditional" aspects of the program, where a focus on textual studies and textual analysis is emphasized. These linkages between traditions in textual
studies and "big data" questions, place the program at the cutting edge of DH research. Yet, as the proposal suggests, DH research must continue to consider culturally situated critical perspectives by which students can question the nature of textual and data work in their own studies and in society at large. The curriculum as described successfully covers this broad ground with wide base of theoretical and cultural study as well as thoughtful attention to opportunities for learning the more technical aspects of code, data work, and visualization.

Based on the Graduate Center’s longstanding reputation in rigorous research and teaching in Digital Humanities, I am certain that the structure and proposed mechanisms for program administration and monitoring are well-founded. The clear success of the Graduate Center’s Digital Initiatives and its Digital Research Institute is reflected in the top-notch faculty mentioned in the proposal and the robust community of graduate student fellows who have consistently been drawn to the Center. In all, the degree proposal meets a high professional standard and speaks to the great value the Graduate Center already has and will continue to have in the wider DH community.

Please let me know if you have any further questions. I look forward to hearing from you.

Sincerely,

Tanya E. Clement
Assistant Professor
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

M.A. in Digital Humanities / M.S. in Data Visualization

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Tanya Clement

Signature:

Date: 4/11/17
Dear Professor Gold,

Thank you for the opportunity to review a new degree proposal in Data Analysis and Visualization that is part of a combined proposal that includes both the MS in Data Analysis and Visualization and an MA in Digital Humanities. I am writing to endorse the proposal of the Master of Science Degree in Data Analysis and Visualization at the Graduate School and University Center of the City University of New York.

The need
The new interdisciplinary program in Data Analysis and Visualization addresses a growing need for graduate education dedicated to data-driven research and methodologies that includes visualization. The proposal describes recent trends, and demonstrates that people who received similar graduate education are in high-demand in academia, industry, and government. Furthermore, recent studies show that this trend will not slow down in the near future. As a researcher and educator in information design and visualization, I attest to the need of creating graduate programs in these highly-sought after areas of study.

The proposal describes a fair representation of national and international academic programs in the area. The enrollment numbers of existent data-related courses at the Graduate Center are impressive and reflect my knowledge of the situation in higher education institutions in the U.S. and Canada. It points to the desire of current students in engaging with interdisciplinary and data-driven areas of studies. The projections of enrollment in the Data Analysis and Visualization program seem correct.

The faculty
The new MS in Data Analysis and Visualization is well tied into existent digital initiatives at the Graduate Center that includes faculty and facilities. I am familiar with the research of most faculty listed in the proposal. Their expertise and accomplishments support the proposed curriculum. Many are leading scholars in their fields, with successful record of funded research in data studies and data visualization. I agree that the renowned faculty will indeed attract prospect students willing to engage with their ongoing research agendas.
The curriculum
The curriculum for the new MS in Data Analysis and Visualization is well designed and meaningful in terms of needed qualifications. It is structured around three categories focusing on Data Analysis, Data Visualization, and Data Studies. There is a heavier load of required courses that is justified given the unique combined focus on data analysis and visualization, and what it takes to provide a comprehensive foundation in these areas.

In general, there is clear commitment to integrate practical skills and hands-on experience with research methods and critical thinking. The proposed courses expand existent offerings and digital initiatives at the Graduate Center while leveraging expertise of the faculty. Furthermore, I was pleased to see that the MS Program includes theoretical perspectives, as they are seminal to developing critical and ethical standards necessary to working with data.

While the MS in Data Analysis and Visualization aims at attracting students with a variety of backgrounds, the requirements for the application are specific and consistent with the proposed program of study. In my experience, this is the correct strategy. It is challenging to have students successfully complete interdisciplinary programs of this nature when they don't share a minimum level of computational experience in areas relevant to the program.

The program also taps into New York City rich cultural environment and the relationships CUNY has built with local cultural institutions, like the Museum of Modern Art and the New York Historical Society, as well as with technology partners, such as Tableau Software and Microsoft Research. The strategic location of the Graduate Centre offers a myriad of research opportunities that includes placement of present and future graduates.

Final considerations
I was impressed with the level of commitment and current initiatives in digital and data-driven scholarship at the Graduate Centre. Worth noting the CUNY 2020 Grant that supported the CUNY Big Data Consortium together with the Center for Digital Scholarship and Data Analysis & Visualization. It feels like an exciting moment at the Graduate Center.

Given the demand on one hand, and the high professional standards on the other, I have everything to believe that this new interdisciplinary program of study will succeed as planned. I endorse the proposal of the Master of Science Degree in Data Analysis and Visualization without reservations.

I thank you for the opportunity to provide this evaluation. If I can be of any further help, please do not hesitate to get in contact.

Sincerely,

Isabel Meirelles
Professor, Faculty of Design
Principal Investigator, Visual Analytics Lab
OCAD University
imeirelles@faculty.ocadu.ca
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

Graduate School and University Center of the City University of New York

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

The Master of Science Degree in Data Analysis and Visualization

(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Isabel Meirelles

Signature:

Date: 15 April, 2017
APPENDIX D: SAMPLE JOB LISTINGS RELATED TO THE PROPOSAL
Job Description

Academic Technology Specialist, Department of History - 74400

Description

JOB PURPOSE:

The Academic Technology Specialist (ATS) is a staff member of the Stanford University Libraries, closely collaborating with (and jointly funded by) the University's Department of History. The ATS's primary responsibilities are to promote, develop, and deploy innovative technological solutions in support of research, pedagogy, and publication. The ideal candidate will have a record of innovation and creativity in making technology accessible, understandable, and appealing to an academic audience. The ATS must demonstrate a fundamental understanding of the ideas and practices that form the foundation of instruction and research in History. The History ATS is expected to bring the leadership and technical expertise necessary to envision and execute exceptional, innovative projects for faculty in the Department of History and often as part of a team of SUL staff in providing such support. Within the Department of History this will involve innovations in pedagogy and research, and in the department's Web presence. The ATS should be able to guide students in pursuing digitally based research and methodologies, assist faculty and students in developing digital presentations, and guide faculty in understanding some of the possibilities for incorporating a digital component into their work. This is a job for an historian with technical expertise, enthusiasm for digital methods, and a desire to push faculty and students to explore new methodologies and build things with us.

The ATS will have an office in the History Department, engaging independently with faculty and students in that department, and reporting to a manager in the Libraries' Center for Interdisciplinary Digital Research (CIDR); the ATS will work frequently with CIDR colleagues as well as the various Library Curators and Departments; all Library staff,
namely the ATS for History, CIDR colleagues, and the Library Curators, will communicate and coordinate among themselves on regular and as needed bases in supporting research, teaching, and learning emanating from the History Dept. In particular, the ATS serves as a conduit for knowledge and leveraging of the Libraries’ digital resources and infrastructures in the History Department, as well as advocating and fostering in the Libraries an appreciation for the needs of the Department and of the profession more broadly.

Stanford’s Academic Technology Specialists always work in alignment with the University’s commitment to excellence in education and its general vision to improve teaching, learning, and research by implementing and developing new technologies.

CORE DUTIES:

• Assist with providing departmental academic staff support for use of technology in teaching, learning, community building and/or research. Oversee or provide assistance in the direct integration of technology into course curricula, extracurricular or co-curricular learning, library products and services, and/or research projects.
• Lead the development and/or adoption of resources, seminars, courses, or workshops to disseminate information about uses of technology.
• Actively encourage and support the use of computer-based tools by developing and implementing new tools and resources for instructors or students, assisting them with the tools, disseminating knowledge of these tools throughout the program or university, and creating and supporting an infrastructure that allows use of the tools in research, teaching and learning.
• Lead projects to develop innovative uses of technology for research, student learning, library applications, and/or community building. Consult on development of software applications, or work with on- or off-campus resources to develop or adapt software solutions.
• Consult with and help instructors, library staff, and/or departments to incorporate technologies into faculty research projects, course design and curricula and/or co-curricula in support of student learning goals.
• Stay abreast of educational and library technology research and participate in academic and professional conferences.
• Provide outreach and advocacy within and across departments for effective uses of educational technology in the classroom, in research, and in the library.
• Teach or co-teach occasional classes in digital scholarship techniques and methods, and engage professionally in
related scholarship through publication and other research presentation.

Qualifications

MINIMUM REQUIREMENTS:

Education & Experience:

• Bachelor’s degree in an historical discipline plus four years of relevant experience in the Digital Humanities, or combination of education and relevant experience
• Strongly preferred: an advanced degree in History
• Preferred: expertise in GIS and computational social sciences, including skills such as R, Python, ArcGIS, Processing, d3. Ideally, candidates should be conversant in one or more language/method.

Knowledge, Skills and Abilities:

• Expertise in utilizing technology to enhance teaching and research.
• Ability to define and solve logical problems for technical applications.
• Ability to plan, design, develop and evaluate engaging multimedia learning/training objects.
• Experience with delivering applications in a networked environment.
• Excellent teaching, communication and interpersonal skills.
• Ability to interact effectively and tactfully with members of the academic community; demonstrated experience working in an environment with colleagues of diverse backgrounds and customs.
• Demonstrated expertise with instructional design methodologies, pedagogical issues and best practices for classroom, online and hybrid learning.
• Excellent time management and project management skills. Demonstrated ability to manage a complex workload, prioritize tasks and use good judgment in providing services based on goal.
• Expert knowledge of Macintosh and Windows environments, and facility with Unix.
• Demonstrated experience developing and delivering technical training to a non-technical audience.
• Excellent customer service skills, strong interpersonal skills and the ability to build strong working relationships with a diverse community of faculty, staff and students.

PHYSICAL REQUIREMENTS*:

• Constantly perform desk-based computer tasks.
• Frequently sitting, grasp lightly/fine manipulation.
• Occasionally stand/walk, lift/carry/push/pull objects that weigh 11-20 pounds.
• Rarely writing by hand, use a telephone.
* - Consistent with its obligations under the law, the University will provide reasonable accommodation to any employee with a disability who requires accommodation to perform the essential functions of his or her job.

WORKING CONDITIONS:

• Extended hours and weekends.
• Occasional overnight travel.

WORK STANDARDS:

• Interpersonal Skills: Demonstrates the ability to work well with Stanford colleagues and clients and with external organizations.
• Promote Culture of Safety: Demonstrates commitment to personal responsibility and value for safety; communicates safety concerns; uses and promotes safe behaviors based on training and lessons learned.
• Subject to and expected to comply with all applicable University policies and procedures, including but not limited to the personnel policies and other policies found in the University’s Administrative Guide, http://adminguide.stanford.edu.

Job: Information Technology Services
Location: University Libraries
Schedule: Full-time
Grade: I
Job Code: 4722

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Digital Scholarship Strategist

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Posting Details

Position Information

Position Title Digital Scholarship Strategist

Additional Information

FLSA Learned Professional Exemption
Hrs/Week 40
Length of Assignment Fiscal Year - FT Continuing Contract
Provide support for digital scholarship, digital publishing, scholarly communications, and digital repository solutions that support faculty and student research; create content, and maintain services, programs, assessment, and online solutions critical to research support in the University Libraries.

Bachelor’s or Master’s degree in information science/management, MIS, MLIS or related field.

More than one year of experience with digital scholarship/humanities project management and utilization of digital tools in a research environment. Knowledge of research methods and technical applications in a digital publishing or repository environment. Strong technical, problem-solving and communication skills required. Working knowledge of Microsoft Office applications, demonstrated ability to collaborate well with colleagues.

Effective oral and written communication skills; ability to work some evenings and/or weekends.

2nd Master’s degree or Ph.D. in related field. Experience with text mining, data visualization applications, augmented reality, and/or data management; experience with research analysis technologies to support digital scholarship, learning, and scholarly publishing; experience with grant writing.

Requires successful completion of a background check.

None.

Ball State University is an Equal Opportunity/Affirmative Action employer that is strongly and actively committed to diversity within its community. Women, minorities, individuals with disabilities and protected veterans are strongly encouraged to apply. All qualified applicants will receive equal consideration for employment without regard to race, color, religion, sex, national origin, age, disability, protected veteran status or any other legally
protected status.

EEO/AA Employer/Veterans/Disabled.

Ball State University is located in Muncie, Indiana, on an attractive campus 45 miles northeast of Indianapolis. Approximately 22,000 graduate and undergraduate students enroll in one of eight academic colleges that offer 190 undergraduate programs. We offer more than 140 master’s, doctoral, certificate, and specialist degrees, with many of them ranking among the best in the nation. Ball State aspires to be the model of the most student-centered and community-engaged of the 21st century public research universities, transforming entrepreneurial learners into impactful leaders – committed to improving the quality of life for all.

**Duties & Responsibilities**

**Ranking 1**

**Job Duty** Assist with the creation and implementation of digital scholarship projects and programs to support faculty research and scholarship, including design, development and project management assistance.

**Ranking 2**

**Job Duty** Support the Digital Scholarship Lab initiative assisting with technology identification and implementation strategies, including coding, data optimization and migration and access management for scholarly solutions.

**Ranking 3**

**Job Duty** Provide direction for online library and content management solutions operated by the University Libraries to support publication and preservation of digital scholarship and other assets.

**Ranking 4**

**Job Duty** Integrate new technologies and methodologies for library and research applications and systems; enhance library services involving access through discovery and digital repository solutions.
Ranking 5

**Job Duty** Update, maintain, and document both locally and remotely hosted applications and databases in the University Libraries.

Ranking 6

**Job Duty** Develop and recommend policies, procedures, and standards that guide the University Libraries role in the Digital Scholarship Lab initiative and other digital activity.

Ranking 7

**Job Duty** Participate in and coordinate special projects as requested.

Ranking 8

**Job Duty** Actively contribute to professional literature, activities of professional organizations, and scholarly developments in areas of specialization.

Ranking 9

**Job Duty** Perform other related duties as assigned.

**Posting Detail Information**

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**Supplemental Questions**

Required fields are indicated with an asterisk (*).

**Applicant Documents**
Required Documents

1. Resume
2. Cover Letter
3. Undergraduate Transcripts

Optional Documents

1. Master's Transcripts
2. Doctorate Transcripts

Copyright © 2015 Ball State University 2000 W. University Ave. Muncie, IN 47306
800-382-8540 and 765-289-1241
October 20, 2015

**Hiring! Devops energy wanted.**

Posted by Matt Phillips

The Harvard Library Innovation Lab is looking for a devops engineer to help us build tools to explore the open internet and see deep into the future of libraries.

Our projects range in scope from fast-moving prototypes to long-term innovations. The best way to get a feel for what we do is by looking at some of our current efforts.

- **Perma.cc**, a web archiving service that is powered by libraries
- **H2O**, a platform for creating, sharing and adapting open course materials
- **Awesome Box**, an alternate returns box used by hundreds of libraries

What you’ll do

- Own the production infrastructure that ensures Lab applications are responding quickly to people and bots on the internet
- Write code that will monitor systems and develop logic that will automate common deployment and maintenance tasks
- Act as a core member of our fun and dynamic team by helping us shape ideas and efforts in libraries, technology, and law. We’re freewheelin’. We fully encourage the pursuit of interests and opportunities

We’re hiring a person and not a skillset, but our current stack of keywords might be helpful:

- Heroku
- AWS
- S3
- Python
- Django
- Fabric
- git and GitHub
- Ruby
- Rails
- MySQL
Find details and apply using the Harvard Recruitment Management System. If you have questions, email us directly at lil@law.harvard.edu.

Comments are closed.
Data Visualization Design Expert (Contractor)

New York
Posted Feb 17, 2016 - Requisition No. 48826

APPLY NOW
Sorry, we are no longer accepting applications for this job.

The Role:

Bloomberg is looking for an experienced Data Visualization Design Expert to join our User Experience team. The successful candidate will lead a design-driven process to enhance and integrate the data visualization capabilities of the Bloomberg Terminal.

The nature of the position involves designing visualizations for individual applications as well as defining data visualization systems and patterns for Bloomberg's suite of professional products.

In addition to creating data visualization solutions, the role will encompass the presentation and communication of concepts and solutions to senior stakeholders using sketches, mockups, user workflows, and functional prototypes.

Succeeding in this role will require an ability to understand and communicate the complex relationships between financial markets, governments, businesses, and people via the analysis - and visualization - of very large datasets.

The Data Visualization Design Expert will work with an interdisciplinary team of interaction designers, visual designers, developers, data scientists, subject-matter experts, and product managers to implement and deploy data visualization tools.

Qualifications:

- 10+ years design experience with a focus on complex interactive data visualization.
- Deep expertise in data visualization theory and techniques.
- Financial background/subject matter expertise is highly desirable.
• Ability to rapidly iterate through conceptual ideas or designs and effectively communicate these using low- to medium-fidelity prototypes, such as sketches, paper prototypes, storyboards, interactive click-throughs, and data visualizations.

• Strategic project leadership: experience leading and facilitating projects through concept, pitch, iterative design and development, delivery, and ongoing support.

• Prior experience working in an interdisciplinary team of developers, designers, and/or subject-matter experts.

• Ability to communicate with and present to stakeholders at senior levels within the organization.

• Graduate Degree or equivalent experience in any of the following fields: Information Design, Interaction Design, User Experience, Human-Computer Interaction, Graphic Design, or Statistics.

• Knowledge of visual perception and cognitive theory.

Application & Portfolio:

We would like to see examples of interactive data visualizations you have designed. Your visualization portfolio may include, but is not limited to: sketches, wireframes, user workflows, interactive prototypes, and production software. We are especially interested in how you have leveraged interaction to allow users to explore and understand complex datasets. Please include at least two projects in which you can give us a "deep-dive" into your design process.

Please provide the portfolio link in your application. If you require an alternate method of showing your work (e.g. emailing it, through an online real-time screen-share or in person) we will contact you to make arrangements.

Please do not, without proper consent, share or disclose to Bloomberg any confidential or proprietary information that you may have obtained in connection with employment with any other employer, or which may be considered the Work Product of any another individual or entity.

The Company:
Bloomberg, the global business and financial information and news leader, gives influential decision makers a critical edge by connecting them to a dynamic network of information, people and ideas. The company's strength - delivering data, news and analytics through innovative technology, quickly and accurately - is at the core of the Bloomberg Professional service, which provides real time financial information to more than 315,000 subscribers globally. Bloomberg's enterprise solutions build on the company's core strength, leveraging technology to allow customers to access, integrate, distribute and manage data and information across organizations more efficiently and effectively. Through Bloomberg Law, Bloomberg Government, Bloomberg New Energy Finance and Bloomberg BNA, the company provides data, news and analytics to decision makers in industries beyond finance. And Bloomberg News, delivered through the Bloomberg Professional service, television, radio, mobile, the Internet and three magazines, Bloomberg Businessweek, Bloomberg Markets and Bloomberg Pursuits, covers the world with more than 2,400 news and multimedia professionals at more than 150 bureaus in 73 countries. Headquartered in New York, Bloomberg employs more than 15,000 people in 192 locations around the world.

APPLY NOW
Data Librarian

University of Toronto
University of Toronto Libraries
Job Location: Ontario
Apply By: 04-16-2017
Date Created: 03-17-2017

POSITION: Data Services Librarian (Librarian I/II position, permanent status stream)

DEPARTMENT: University of Toronto Scarborough (UTSC) Library

DATE REQUIRED: May 1, 2017

Are you looking for challenging, meaningful work in a supportive and diverse environment? Are you looking for a career at one of Canada's top employers? Work where the world comes to think, discover and learn. Consider a career at the University of Toronto.

About the University of Toronto Libraries
The University of Toronto Libraries (UTL) system is the largest academic library in Canada and is ranked fourth among peer institutions in North America. The system consists of 44 libraries located on three university campuses: St. George, Mississauga, and Scarborough. This array of college libraries, special collections, and specialized libraries and information centres supports the teaching and research requirements of 215 graduate programs, over 60 professional programs, and more than 700 undergraduate degree programs. In addition to more than 12 million print volumes, the library system currently provides access to millions of electronic resources in various forms and over 29,554 linear metres of archival material. More than 150,000 new print volumes are acquired each year. The Libraries' data centre houses more than 200 servers with a storage capacity of 1.5 petabytes.

The Opportunity
The University of Toronto Scarborough Library is seeking a Data Librarian to develop programs and services to support current and emerging data needs of faculty and students. Reporting to the Coordinator, Liaison Librarian Program, the successful candidate will work collaboratively with colleagues within the unit, across the library and the campus on initiatives that assist faculty and students to navigate social sciences data-related issues, including data discovery, analysis, visualization, and management in teaching and research. In addition, the
candidate will serve as a liaison librarian to one or more social science programs providing collections, teaching, and research support.

Responsibilities:
1. Provide instruction in locating and using qualitative and quantitative data
2. Provide support and instruction in the use of tools, technologies and methods to transform, manage, analyze, share, preserve and present data to faculty and students
3. Liaise with faculty regarding the management, curation, use and preservation of their research data
4. Collaborate with librarians to develop and deliver instructional content and resources related to data
5. Maintain awareness of new developments in data services, policy and relevant technologies
6. Maintain and develop collections as related to their liaison area(s)
7. Participate in professional forums, which may include presenting at academic conferences, and preparing work for publication
8. Participate in various library and university committees and task forces as appropriate

Required Qualifications

The successful candidate will have:

1. A Master's degree in Library or Information Science from an ALA-accredited institution
2. Proven knowledge of teaching practices and the development of instructional content
3. Experience using statistical software applications and tools such as SAS, SPSS, R, NVivo.
4. Knowledge of issues related to the social sciences data life cycle, including data management planning, finding, use, visualization and preservation
5. Evidence of effective analytical, organizational abilities and excellent oral and written communication skills
6. Demonstrated strong interpersonal skills with the ability to establish positive and productive collaborations with faculty members and colleagues.
7. Strong initiative and ability to manage multiple tasks and priorities effectively.

Preferred Qualifications
1. 2-3 years of relevant academic library experience
2. An advanced degree in a relevant social science discipline
3. Experience with ArcGIS or geospatial datasets and applications
4. Aptitude for technology
Salary and Terms of Appointment
This is a permanent status stream position to be filled at the Librarian I/II level, based on experience. Rank and salary will be commensurate with experience and academic/professional qualifications.

NOTE: Librarians at the University of Toronto are members of the University of Toronto Faculty Association.

Application Materials Required: A cover letter, curriculum vitae, and contact information for three references of which at least two have supervised your work. Please send a single electronic file (MS Word or pdf) with a file name convention of [Surname, FirstName.UTSCDataServicesLibn] to Library Human Resources at utlhr@utoronto.ca; or to Room 1140, 130 St. George Street, University of Toronto Libraries, Toronto, Ontario M5S 1A5; or by fax to (416) 946-5543 by April 16, 2017.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. The University of Toronto Scarborough Library thanks all applicants for their interest, however, only those applicants selected for an interview will be contacted.

University of Toronto Scarborough Library: http://www.library.utoronto.ca/utsc/
University of Toronto Scarborough: http://www.utsc.utoronto.ca/
Policies for Librarians: http://www.hrmandequity.utoronto.ca/about-hrmandequity/policies-guidelines-agreements.htm#agreements
Learn about the University of Toronto Faculty Association: http://www.utfa.org/

Related Documents
There are no related documents for this job post.
**TITLE**
Digital Archivist

**DESCRIPTION**
Reporting to the Associate Director of Digital Management Services (DMS), the Digital Archivist works cross-departmentally with Academy curators, preservationists and archivists to manage efforts to preserve, describe and make accessible digitized and born-digital archival materials.

**Responsibilities and Duties**
- Act as liaison to curatorial staff and internal content producers to manage the selection, description, preservation, and archiving of digital assets
- Perform content audits of born digital collections
- Monitor file-based workflows for preservation ingest and proxy creation; identify preservation issues and report problems to AMPAS staff and system vendors
- Train and onboard new users
- Field helpdesk tickets and system error reports using JIRA ticketing system; provide ongoing user support
- Participate in interdepartmental working groups to define data governance and workflows
- Assist DMS Manager with documentation, implementation and monitoring of data governance, policies and processes
- Assist DMS Manager with data migration, quality control and testing of systems

**POSITION REQUIREMENTS**
- Advanced degree in archive studies or library information

**WE ALSO RECOMMEND**

**OTHER JOBS WITHIN SAME CATEGORY**
- None found -

**OTHER JOBS WITHIN 60 MILES**

- Technical Service Intern - Margaret Herrick Library in Beverly Hills, CA
  - Posted on: 2/9/2017
  - [Apply Now]

- Core Collection Reference Files/Archival Processor Intern in Beverly Hills, CA
  - Posted on: 4/12/2017
  - [Apply Now]

- Human Resources Intern in Beverly Hills, CA
science preferred

- Minimum 2+ years hands-on experience with archive/library/museum collections and digital asset management solutions (previous experience with Adlib collections management software and Open Text Media Management is a plus)
- In-depth understanding of digital formats and concepts related to digital use, migration and reformatting with particular emphasis on media formats for still images, documents, audio and moving image file formats
- Demonstrated knowledge of principles of archival collection management and preservation required; knowledge of motion picture history and technology preferred
- Extremely detail-oriented and experienced with standard computer word processing and spreadsheet software
- Excellent verbal and written communication skills; ability to articulate complex technical concepts to non-technical staff; patience for training and support
- Demonstrated ability to work in a team environment where consultation, flexibility, collaboration and cooperation are essential

FULL-TIME/PART-TIME Full-Time

EDUCATION Please see job description.

POSITION Digital Archivist

EXEMPT/NON-EXEMPT Non-Exempt

OPEN DATE 2/14/2017
LOCATION  Los Angeles

ABOUT THE ORGANIZATION  The Academy of Motion Picture Arts and Sciences is a global community of more than 7,000 of the most accomplished artists, filmmakers and executives working in film. In addition to celebrating and recognizing excellence in filmmaking through the Oscars, the Academy supports a wide range of initiatives to promote the art and science of the movies, including public programming, educational outreach and the upcoming Academy Museum of Motion Pictures, which is under construction in Los Angeles.

EOE STATEMENT  The Academy is committed to equal opportunity in employment and to creating, managing and valuing diversity in its workforce. Maintaining a diverse workforce is vital to the Academy. Accordingly, the Academy enforces a strict policy that prohibits discrimination in hiring, training, compensation, promotion, transfer, or termination, whether on the basis of race, color, national origin, religion, sex, disability, age, veteran status, sexual orientation or genetic information. This includes a workplace that is free of all forms of harassment. And, to help foster diversity, the Academy utilizes programs that ensure fairness of opportunity, pay, and growth to all applicants and employees. Every employee of the Academy is required to follow this policy and to preserve the Academy's commitment to diversity.

THIS POSITION IS CURRENTLY NOT ACCEPTING APPLICATIONS.

To search for an open position, please go to http://oscars.appone.com
The Digital Humanities Developer will provide technology support for digital humanities-focused projects by evaluating, implementing and managing relevant platforms and applications; the Developer will also analyze, transform and/or convert existing humanities-related data sets for staff, engage in creative prototyping of innovative applications, and provide technology consulting and instructional support for Libraries staff.

This new position, based in the Libraries’ Digital Program Division, will work on a variety of projects, collaborating closely with the Digital Humanities Librarian, the Digital Scholarship Coordinator, other Libraries technology groups, librarians in the Humanities & History division and project stakeholders. The position will contribute to building out flexible and sustainable technology platforms for the Libraries DH programs and will also explore new and innovative DH applications and tools.

The successful candidate will have great collaboration and communication skills and a strong interest in developing expertise in the evolving field of digital humanities

**Minimum Qualification**

Requires a Bachelor’s degree in, computer science or a related field, with demonstrable experience in the humanities, a minimum of three years of related work experience, or an equivalent combination of education and experience.

Significant experience with UNIX, relational databases (e.g., MySQL, PostgreSQL), and one or more relevant software / scripting languages (e.g., JavaScript, PHP, Python, Ruby/Rails, Perl); experience with modern web standards (HTML5 / CSS / JavaScript); ability to manage software development using revision control software such as SVN and GIT/GITHUB; strong interpersonal skills and demonstrated ability to work
as part of collaborative teams; ability to communicate effectively with faculty, students, and staff, including both technical and non-technical collaborators.

Preferred Qualification

Advanced degree in computer science or a related field, or an advanced degree in the humanities or related field; experience in one or more of the following areas: natural language processing, text analysis, data mining, machine learning, spatial information / mapping, data modeling, information visualization, integrating digital media into web applications; experience with XML/XSLT, GIS, SOLR, linked data technologies; experience with platforms used for digital exhibits or archives.

Responsibilities include:

- Evaluate, implement and manage web and related software applications and platforms relevant to the digital humanities program
- Analyze, transform and/or convert existing humanities-related data sets for staff, students and faculty as needed
- Engage in creative prototyping and model innovative technology solutions in support of the goals of the Digital Humanities Center
- Provide technology consulting, guidance and instruction to CUL staff as well as students and faculty as required
- Conduct independent exploration of technology issues and opportunities in the Digital Humanities domain

For more information and application:
http://jobs.columbia.edu/applicants/Central?quickFind=151504
Columbia University is An Equal Opportunity/Affirmative Action employer and strongly encourage individuals of all backgrounds and cultures to consider this position.

Share this:

Leave a Reply

Name *
what’s the DLF?

networked member institutions and a robust community of practice—advancing research, learning, social justice, & the public good through digital library technologies

Recent News

- Your Participation is Requested in the NDSA Digital Preservation Staffing Survey
- AIC Cross-Pollinator: Dorothy Berry
- Statement on US Administration Budget Proposal by DLF Leadership
- Digital Preservation, Ethical Care, and the Tribal Stewardship Cohort Program: An NDSA interview with Kimberly Christen
- 2016 NDSA Web Archiving Survey Report is now available

Recent Tweets

DLF Tweets

Stay in touch!

Digital Library Federation
1707 L Street NW, Suite 650
Washington, DC 20036
+1-202-939-4758
info@diglib.org

Connect

Topics
Digital Humanities Specialist I

Gale, a part of Cengage Learning, seeks a creative, collaborative, and experienced individual to join our team as a Digital Humanities Specialist. Responsible for supporting and assisting the evolution of Gale’s Digital Scholarship Program, the successful candidate will serve as a key support and development liaison to key customers that are engaging in advanced humanities research as well as Gale’s technology development. The Digital Humanities Specialist will identify trends and activities in digital humanities taking place on campuses throughout the academic market, provide digital scholarship support services, and support libraries’ role as the central research hub on campus.

Reporting to the Director of Humanities Publishing, the Digital Humanities Specialist will provide on-site support and guidance for digital humanities scholars and students that are using Gale and OER content and tools to drive active research. Responsibilities will focus on working collaboratively with colleagues at Gale and throughout our academic customer base to advance research activities and the use of primary source content in the scholarly workflow. The Digital Humanities Specialist will develop and conduct workshops on Gale’s digital scholarship resources and work collaboratively with other Gale team members in pursuit of new tools and features/best practices. The Digital Humanities Specialist will participate in Hackathons and other extra-curricular development activities to build and evolve new technologies that support our librarian and student users.

The position is ideally suited for (but not limited to) someone with an interest in scholarly research and publishing, native language processing, data visualizing, and text analysis. Working on a team of dedicated digital scholarship and publishing professionals, this position will offer the successful candidate the opportunity to engage in continuing research execution and support using a broad array of computational techniques including network analysis, concept extraction, and natural language processing.

The Digital Humanities Specialist will provide subject-specific leadership for collection building and management, as well as promote library collections, programs, and services. As an integral member of Gale’s Digital Scholarship program, the Digital Humanities Specialist will assist with the development of DH-related tools and materials that will be used by key accounts in the academic space. This role will also conduct in-depth research to inform future technology and content needs both at Gale and at point of use in academia. With a solid understanding of current research resources and technologies, the Digital Humanities Specialist will assist in the
development of instructional materials and new features in Gale’s Digital Scholarship research platform. Active engagement with faculty and students throughout our customer base is required.

This role is specifically responsible for the promotion, support, and ongoing development of Gale’s Digital Humanities Sandbox, a research environment designed to enable and assist digital scholarship in the academic community.

Overview of responsibilities

- Conduct on-site DH Symposiums designed to facilitate the establishment and growth of DH-related activities in the library and across campus.

- Work with members of Gale’s Digital Scholarship Team to establish training schedules, scope of development work, and organize interaction with customers and students.

- Collaborate with other Product Managers across Gale and Cengage Learning to determine, define and utilize synergies and economies within product development.

- Understand, support and communicate company strategy internally and externally.

- Track the competitive landscape and market position for all responsible projects and initiatives, identify new market-specific opportunities, and conceptualize and test product ideas.

- Collaborate on market research, product positioning and customer communications.

- Help define and support customer training strategies and prescribe related tactics.

- Represent Gale and Cengage Learning at relevant industry and customer events

- Build relationships with customers that support the product lines and company objectives.

- Understand and translate the market requirements for the evolution of scholarly research in the humanities and social sciences.

- Ensure that product development and support strategies are communicated to, and understood by technology project teams and 3rd party vendors.

- Work with Technology Management to ensure projects are appropriately resourced.

- Develop and maintain high-level relationships with partner firms and organizations necessary for the success of Gale’s Digital Scholarship Program.

- Develop and maintain high-level management of consultants and advisory editors necessary for the success of the ongoing product development.

- Develop, maintain and publicize a product family strategy designed to increase revenue, drive student usage, and manage costs.

- Report regularly on project/role status to senior management and internal stakeholders

- Analyze, interpret and then report out to team and senior management on performance against results.
Qualified candidates should have:

- Strong programming skills in either Python (Pandas) or R
- Ability to manipulate, explore, and visualize data using the latest analytical tools
- Knowledge and use of at least one of the following: social network analysis, natural language processing, machine learning, concept extraction, etc.
- A demonstrated interest in scholarly communication
- Understanding and experience working with third party APIs
- Published in peer-reviewed journals or other scholarly publications
- Experience with Tableau or other data visualization tools
- Research design expertise
- Academic background in the humanities, arts, or related fields
- Excellent communication skills (verbal, written, interpersonal) and the ability to establish strong rapport with cross-functional teams and customer in order to effectively collaborate and build partnerships.
- Demonstrated understanding of the current research, information resources, and scholarly trends in humanities disciplines, including knowledge of emerging issues and technologies.
- Demonstrated experience with or knowledge of metadata creation and maintenance.
- Demonstrated experience with technologies, metadata schemas, scripting languages, or computational methods used in digital humanities projects.
- Proven ability to acquire new skills and adapt to changes in the profession
- Strong public service orientation.
- Ability to travel within and outside North America. Expected travel: 30%

Preferred Education/Experience

- Advanced degree in a humanities or arts discipline.
- Experience with or a degree in the field of Data Science is a plus.
- Minimum of two years of experience in an academic or research library, or in an academic or research environment.
- Experience participating in the development and use of DH-related tools.
- Experience with providing information literacy instruction and research consultations in an academic/research library.
Digital Infrastructure Developer

All times are in Eastern Daylight Time.

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Job Details

Overview
The Princeton University Library is one of the world’s leading research libraries, serving a diverse community of 5,200 undergraduates, 2,700 graduate students, 1,200 faculty members, and many visiting scholars. Its holdings include more than 7 million printed volumes, 5 million manuscripts, 2 million non-print items, and extensive collections of digital text, data, and images.

The Library employs a dedicated and knowledgeable staff of more than 300 professional and support staff working in a large central library, 9 specialized branches, and 3 storage facilities.

Responsibilities
Responsibilities

This posting is for two open positions.

As a member of the growing Library Systems development team, reporting to the Library Application Development Manager, the developers in this position will implement, test, and document applications using the Hydra repository framework as well as other open source applications related to digital preservation, access, and associated workflows.

These are full-time, permanent positions, and remote working (telecommuting) arrangements may be considered based on experience.

Qualifications

Position Requires:

- Bachelor’s degree in computer science or related field. Applicants with significant experience working in a similar environment may also be considered.
- Demonstrated experience with Ruby and Ruby on Rails plus one other programming language, preferably Java.
- Minimum three years experience, with similar responsibilities, working in a similar environment that includes complex software systems, object-oriented programming, web-based applications and services, and distributed architecture.
- Demonstrated experience with test-driven development, preferably using RSpec
- Ability to work in a Linux-based environment
- Willingness to learn new technologies and data/metadata formats
- Willingness to maintain familiarity with and contribute to Hydra, Fedora, and other relevant open-source projects

Preferred

Preference will be given to candidates who have significant experience with digital preservation best practices best or with any of the following:

Software and Frameworks

- Hydra
- Fedora, especially Fedora 4
- Solr
- GeoBlacklight
- Blacklight
- Spotlight

Programming Languages in addition to Ruby

- Java
- Javascript, CSS, HTML5 and common frameworks for each (e.g. JQuery, Angular, Sass, Bootstrap)

Code Management and Deployment Tools

- Git
- Github
- Capistrano
- Ansible

Protocols and Data/Metadata Standards

Examples:

- Dublin Core, METS, PREMIS, MODS, VRA Core, EAD, SKOS
- IIIF, ResourceSync
- RDF/Linked Data
- REST
Princeton University is an Equal Opportunity/Affirmative Action Employer and all qualified applicants will receive consideration for employment without regard to age, race, color, religion, sex, sexual orientation, gender identity or expression, national origin, disability status, protected veteran status, or any other characteristic protected by law. EEO IS THE LAW

Salary Grade
AIT, 030

Standard Weekly Hours
36.25

Eligible for Overtime
No

Benefits Eligible
Yes

Essential Services Personnel (see policy for detail)
No

Physical Capacity Exam Required
No

Options

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Need More Information?
Job Opportunity: Engagement & Use Coordinator

Posted by DPLA on November 2, 2015 in DPLA Updates, News & Blog and tagged jobs.
The Digital Public Library of America seeks an Engagement & Use Coordinator to help DPLA reach multiple audiences, and to make better and wider use of its large and growing open collection. This is a full-time position at DPLA’s headquarters in Boston, Massachusetts.

The Engagement & Use Coordinator will work collaboratively with DPLA staff and our growing community across the country on initiatives to bring DPLA content into classrooms (including K-12, college, and lifelong learning settings); into greater public use and sharing in areas such as family history, genealogy, and topical enthusiast groups; and widespread personal uses for research, study, and enjoyment. In addition to day-to-day management of various DPLA media channels, the Engagement & Use Coordinator will work to expand the awareness of, and impact of, new projects such as our curated sets of primary sources.

We are seeking a curious and enthusiastic individual who can help us work effectively to further DPLA’s mission to bring together the riches of America’s libraries, archives, and museums, and make them freely available to all. A belief in this mission, and the drive to accomplish it over time in a collaborative spirit within and beyond the organization, is essential.

Responsibilities

The Engagement & Use Coordinator:

- Is responsible for multiple forms of outreach and communication, including online and offline, for DPLA initiatives and DPLA in general.
- Handles our social media accounts (Twitter, Facebook, Tumblr, Pinterest), including posts and frequent interactions with the public.
- Coordinates with the staff for the creation and posting of regular announcements, posts, and featured content stories.
- Assists with the distribution of outreach materials and other aspects of DPLA office operations.
- Coordinates curatorial activities of DPLA; helping select and contextualize content for use in exhibits and other DPLA services.

Requirements

- Experience with libraries, archives, museums, or other cultural heritage institutions.
- Facility with digital media and technology, including social media, CMSes (such as WordPress), and basic HTML.
- Strong social and communication skills, including creative writing and proficient editing abilities, with expertise in crafting compelling blog posts, effective press releases, and other promotional genres.
- Able to work successfully in a team environment and have a strong collaborative spirit.

Preferred Qualification

- At least two years prior experience in a similar position.
- A master’s degree in library and information science, history or public history, or a related field.
- Experience with marketing, including connections with media outlets.

Like its collection, DPLA is strongly committed to diversity in all of its forms. We provide a full set of benefits, including health care, life and disability insurance, and a retirement plan. Starting salary is commensurate with experience.
Please send a letter of interest, a resume/CV, a writing sample, and contact information for three references to jobs@dp.la. Please put “Engagement & Use Coordinator” in the subject line. Questions about the position may be directed to Dan Cohen, Executive Director, at dan@dp.la. We will begin reviewing applications on November 16, 2015, and will continue to accept applications until the position is filled.

About DPLA

The Digital Public Library of America strives to contain the full breadth of human expression, from the written word, to works of art and culture, to records of America’s heritage, to the efforts and data of science. Since launching in April 2013, it has aggregated 11 million items from 1,600 institutions. The DPLA is a registered 501(c)(3) non-profit.
Courtright Memorial Library
Digital Initiatives Librarian & Instructor / Assistant Professor
(Non-tenure track)

QUALIFICATIONS: MLS/MLIS from ALA-accredited program required for the rank of Assistant Professor; candidates seeking terminal degree (MLS/MLIS) will be considered at the rank of Instructor. The successful candidate will possess the following preferred experience: project management, data analysis, academic library experience, online education, and a strong awareness of scholarly communication and digital scholarship. Preferred candidates will also have experience with each of the “Responsibilities” outlined below including; collection development, policy making and implementation, campus and department liaising, digital innovations, supervisory experience, classroom teaching experience, and reference.

WHEN: Beginning Fall 2015.

RESPONSIBILITIES: This librarian will provide leadership, management and policy and planning activities for the campus-wide digitization projects and digital initiatives, such as the Digital Commons@Otterbein (http://digitalcommons.otterbein.edu/), as well as;

- working collaboratively to plan and implement best practices for the collection development of scholarly works and for their preservation, accessibility, usability and usage analysis within the determined system architecture,
- partnering in campus-wide efforts related to data management,
- sharing metadata responsibilities,
- assisting in the development and implementation of efficient, effective workflows for metadata production and use throughout the library,
- leading the development and implementation of education programs for faculty and Library staff on issues of scholarly communication and works as a library liaison to ensure and increase ongoing awareness of said issues,
- serving as a catalyst for digital innovations in reference, instruction, and outreach and assists in the development and delivery of content and services,
- the hiring, training, evaluation, and supervision of a staff member and/or student assistants as needed and funded,
- maintaining appropriate statistical records,
- providing both general and specialized reference, including participating in evening and weekend rotation, and
- assisting students, faculty, staff, and other library visitors in making effective use of library resources.
DEPARTMENT: The Courtright Memorial Library consists of a library director with Administrative/Faculty status, six librarians with Non-Tenure Track Faculty status, two administrators, and five support staff. Each librarian is a liaison to a number of departments and programs within the university, including student organizations. The Mission of the Courtright Memorial Library is to actively engage in and contribute to the teaching, learning and research needs of the entire Otterbein community. As intellectual partners in the quest for knowledge, the library staff provides access to information, develops a diverse collection, and nurtures critical thinking skills to develop self-sufficient, life-long learners.

THE UNIVERSITY: Otterbein University is a private, co-educational, comprehensive liberal arts institution founded in 1847 and affiliated with the United Methodist Church. Otterbein enrolls approximately 3,000 students, including full and part-time undergraduates, adult learners, and students enrolled in The Graduate School. Otterbein offers more than 70 majors, as well as individualized fields of study. Master’s degree programs are offered in allied health, business administration, educational mathematics and nursing, including courses in its newly-accredited nurse anesthesia program in conjunction with Grant Medical Center. Otterbein’s first doctorate program, doctor of nursing practice (DNP), began classes in spring 2011. Accredited since 1913 by the North Central Association of Colleges and Schools, Otterbein has consistently placed high among peer institutions in U.S. News & World Report’s “Guide to America’s Best Colleges” for over a decade. Otterbein is ranked 17th among 147 schools in its category in the 2014 guide. Otterbein has also been recognized by Washington Monthly as a top school for contributions to the public good and by the President’s Higher Education Community Service Honor Roll for its commitment to community service and service-learning.

WHERE: It is located in Westerville, Ohio, a suburb of Columbus that has been ranked the fifth friendliest town in America by Forbes and Nextdoor.com in 2012 and 15th on Money Magazine’s 2009 list of Best Places to Live. Westerville has a population of approximately 36,000 people and combines the beauty and convenience of a medium-sized community with the cultural, educational, and economic benefits of Columbus, the state capital; a thriving and diverse metropolitan area of 1.4 million people. Central Ohio is the fastest growing area in the state with stability provided by a diversified economy.

APPLICATION: Send letter of application, curriculum vitae, statement of teaching philosophy, and three (3) current letters of recommendation to: Dr. Barbara Schaffner, Dean of the School of Professional Studies, Otterbein University, 1 South Grove Street, Westerville, OH USA 43081. Email submissions: academicjobs@otterbein.edu. For full consideration, applications should be received by October 2, 2015. To learn more about the Courtright Memorial Library, please visit us at http://www.otterbein.edu/public/Library. Otterbein University is an EEO Employer.
Bryn Mawr College, Library and Information Technology Services

Digital Scholarship Specialist

Institution Type: College / University
Location: Pennsylvania, United States
Position: Other Professional

The Library & Information Technology Services (LITS) department of Bryn Mawr College seeks a creative and innovative individual to serve in the new position of Digital Scholarship Specialist. The Digital Scholarship Specialist will work with faculty, students, and staff in the exploration, implementation, and assessment of multimodal digital scholarship. Key to the position will be exploration into existing and new technologies to support scholarly inquiry across academic disciplines and at all levels from undergraduates to graduate students to faculty. Based in the Library Research and Instructional Services Department, the Digital Scholarship Specialist will provide vision and leadership toward the creation of a suite of consultation services by coordinating the expertise of LITS staff members, in particular in Research & Instructional Services, Special Collections, Educational Technology Services, and Web Services. The successful candidate will also work closely with colleagues at Haverford and Swarthmore Colleges (the Tri-College community). In addition to the virtual digital scholarship center created through this coordination, the position also offers the opportunity to shape a physical service center in support of digital scholarship from the new Digital Media and Collaboration Lab in Carpenter Library.

Requirements: Master's degree with experience in digital humanities/digital scholarship in an academic environment. Desired: Ph.D. in a humanities or social science discipline with experience in digital humanities, digital scholarship, and/or new media.

For a full description of the position and to apply, please submit as pdf documents a cover letter, curriculum vitae, and contact information for three professional references to the search committee via Interfolio at: http://apply.interfolio.com/34100.

Review of applications will begin March 14, 2016 and continue until the position has been filled.

Contact: Bryn Mawr College Human Resources, 101 N Merion Ave, Bryn Mawr, PA 19010
Website: http://apply.interfolio.com/34100
Primary Category: Digital Humanities
African History / Studies
Ancient History
Anthropology
Archaeology
Architecture and Architectural History
Art and Art History
Classical Studies

Secondary

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The QDA & Survey Research Specialist will be working in a vibrant and collaborative environment on a team that supports all phases of the data lifecycle for quantitative, qualitative, and geospatial research. Data Services offers access to specialty software packages, software training and support, and consulting expertise for many aspects of numeric, qualitative, and spatial data for research, including data access, analysis, collection, data management, and preservation. The successful candidate will work closely with Division of Libraries professionals and faculty as well as with colleagues in NYU Information Technology Services (ITS) with respect to referrals, service development, technology, standards, resources and projects.

Please note that this is a two year fixed term position with potential to renew.

Required Education:

Bachelor's degree or equivalent experience in a social science or other related field

Preferred Education:

Graduate degree in a social science or related discipline requiring interaction with statistical software and data sets

Required experience, skills, knowledge & ability:

- Minimum 3 years' experience conducting or assisting with qualitative academic research with Atlas.ti and/or NVivo QDA software. 1-3 years' experience conducting or assisting with research utilizing web survey tools such as Qualtrics, Survey Monkey, or others.
- Excellent public service, communication, organizational, and interpersonal skills.
- Ability to work courteously and effectively with patrons and colleagues in a collaborative team environment.
- Proficiency with commonly used qualitative and survey research methods.

Preferred experience, skills, knowledge & ability:

- Experience teaching QDA or survey software packages and/or research methods. Experience in an academic environment, preferably in IT and/or Libraries.
Basic understanding of geographic information systems (GIS) and/or quantitative data analysis.

**New York University Libraries**: Libraries at New York University serve the school's 40,000 students and faculty and contain more than 5 million volumes. The Libraries supports NYU's vision to become the first true Global Network University by collaborating and providing services to our global academic centers and portal campuses in Abu Dhabi and Shanghai. New York University Libraries is a member of the Association of Research Libraries, the OCLC Research Library Partnership, and the HathiTrust. The Libraries participates in a variety of consortia and collaborates closely with Columbia University Libraries and the New York Public Library through the Manhattan Research Library Consortium. For the NYU Libraries Mission and Strategic Plan go to [http://library.nyu.edu/about/Strategic_Plan.pdf](http://library.nyu.edu/about/Strategic_Plan.pdf)
JOB TITLE: DATA VISUALIZER
LOCATION: NEW YORK, NY

OUR STORY:
Saavn is the world’s largest South Asian focused music streaming service with millions of monthly active users. We are 150 entrepreneurs, across New York, California, Mumbai, Gurgaon, and Bangalore, who help music lovers access, discover, and listen to their favorite music across all languages and genres. We blend digital technology, data analysis (which we have affectionately coined Music Science), and a strong, fearless business acumen to reach all corners of the globe. Through partnerships with Apple, Google, Facebook, Twitter, and Shazam - to name a few - Saavn reaches more music fans than any other South Asian service. Our award-winning mobile products, partnerships, and thought leadership have been featured in some of the world’s leading publications, such as The New York Times, Forbes, The Wall Street Journal, The Economic Times, The Times of India, CNBC, and many more. We are well-funded by some of the world’s most successful institutional investors and global media companies, including Tiger Global Management, Bertelsmann, Steadview Capital, Liberty Media, Mousse Partners, Quilvest, and a number of strategic individuals. Beyond investing, these are advisors and supporters of our vision, our passion, and our collective ability to deliver a revolutionary music experience as the leader in India.

OUR CULTURE:
At Saavn, we ignite passion and performance to work towards a
collective goal: building a mobile entertainment ecosystem and the best possible music experience for hundreds of millions of people. From in-office performances by some of the world’s most beloved musicians to opportunities for international travel, Saavn offers a dynamic and unconventional work environment. We believe creativity and technology blend together like sweet melodies. When you choose Saavn, you join a diverse world of high-caliber techies, artists, and inventors, hailing from companies like Yahoo!, Twitter, LinkedIn, Google, Qualcomm, HBO, Microsoft, Flipkart, Amazon, Paytm, Quikr, MSN, and NDTV. We are amongst the few digital companies that provide tremendous opportunities for high-tech work in Mumbai, that one would have to otherwise seek in Silicon Valley. Our value-based, people-first work culture is about empowering every individual on our global team to be a catalyst for change in this dynamic digital world. Every day is an opportunity to bring your thinking to life, and to expand, learn, and grow. No idea is left unconsidered. No voice is left unheard.

ROLE:
The Data Visualizer will be responsible for the design and creation of visualizations of new high-impact visual applications to make data actionable and facilitate decision making for Saavn and our investors. Seeking a designer capable of converting text and data into rich visual representations. This role requires translating data into a format that can be presented using a compact and creative approach that is engaging, easily interpretable, specific, relevant and accurate.

RESPONSIBILITIES:
• Design, develop, and provide implementation of compelling data visualizations, dashboards, tools, and utilities using Open Source technologies (Java/J2EE, JavaScript, HTML, CSS, Spring, MyBatis, JQuery, D3, React.js etc.)
• Responsible for supporting the development and delivery of high
visibility, high performing, and scalable solutions

• Work on a wide portfolio of visualization projects, supporting multiple departments
• Support the Data Science team with the understanding of business and data requirements, and iteratively design visualizations for initial concepts and prototypes that can be presented for feedback
• Collaboratively identify the best means to visually depict the intermediate as well as final data analytics results in ways to provide effective process for mining new insights and assisting in decision making for solving complex problems
• Apply design and data analysis techniques to organize the presentation of data in visually innovative ways in order to make it easier to understand, insightful, and actionable by end users
• Lead the complete lifecycle of visual analytical applications; from development of mock-ups and storyboards to complete production ready application
• Manage a repository of re-usable data visualization templates and views
• Maintain awareness of industry trends in technology, data news, design and media. This includes programming, content, community, user interfaces and information architecture

REQUIREMENTS:
• Master’s Degree in Computer Science or Related Technical Field or Equivalent Experience
• 4+ years relevant work experience, including demonstrated experience in designing usable web-based interfaces (web, tablet, mobile)
• Expert knowledge of data visualization tools is preferable and excellent at using Data visualization libraries such as D3.js (Have a portfolio/samples of past work)
• Expert CSS & HTML skills. Solid knowledge of Sketch or Adobe Photoshop (or Illustrator).
• Demonstrated proficiency with data modeling and visualization
• Curious about translating raw data to insights and good understanding of Industry best practices
• Ability to work fluidly across internal and external cross-functional teams such as Product, Brand Solutions, Marketing, etc.
• Experience translating graphic designs to PowerPoint presentations
• Translate requirements into highly engaging and compelling design concepts
• Effectively conceptualize, design and create high-quality visuals in a variety of digital formats including PPT and infographics
• Comprehend numerically driven or abstract concepts and convert them into appropriate, visually compelling representations under deadline and without factual error
• Strong analytical, decision-making and problem solving skills and abilities
• Proven ability to act as a leader in communicating conceptual ideas and design rationale
• Understand the importance of user research and usability studies, and can drive guerrilla style research
• Ability to swiftly tweak and troubleshoot design and interaction issues in a browser or on a mobile device

**BENEFITS AND PERKS:**
At Saavn, we blur work and play, and you get all the perks of a global company. You will get to work with a dynamic group of entrepreneurs, who are delivering results and working zealously across time zones to make a difference in the way the world experiences music. We love what we do, and we think you will too.
• Premium health coverage (medical, dental, and vision)
• Discounted gym membership
• 401K Matching Contributions
• Flexible vacation policies
• Free healthy (and unhealthy) lunches, snacks, and drinks
• Saavn-sponsored team outings

WE ARE PROUD TO BE AN EEO EMPLOYER M/F/D/V
Are You Our New Senior Developer?

We're very excited that Managing Director Amanda Visconti and Head of Graduate Programs Brandon Walsh will be on board by April 24. And we are rebuilding our research team at a time when DH@UVA and a new Certificate in DH will be coming into clearer focus! Please spread the word of this newest job posting for a Senior Developer at the Scholars’ Lab. (In case that link doesn’t work, you can visit hr.virginia.edu, click “Jobs”, and search for staff posting 0620730). A description of the role follows:

The University of Virginia Library is the hub of a lively and growing community of practice in technology and the humanities, arts, and social sciences. As part of that community, the Scholars’ Lab has risen to international pre-eminence as a library-based center for digital humanities.

The Scholars’ Lab collaborates with faculty, librarians, and students on a range of projects and tools, including spatial humanities, data visualization, text analysis, digital archiving, 3D modeling, and experimental humanities. Our Praxis Program and Digital Humanities Fellowships are both models for graduate education in Digital Humanities. Further, the Library and the Scholars’ Lab are committed to diversity and safe spaces, and we particularly focus our speaker series and practice on accessibility and social justice in all senses.

We welcome curious, critical, and compassionate professionals with integrity and a strong work ethic, and who possess a keen and deep understanding of what it takes to continuously improve and maintain research projects within a major academic research library. We particularly welcome applications from women, people of color, LGBTQ, and others who are traditionally underrepresented among software developers.

**Responsibilities:** The Senior Developer will consult with faculty and students to advance research projects and training; evaluate scholarly needs and define project goals for research projects; provide input on appropriate deliverables and reasonable schedules for completion; write, test, and debug original software code for applications that enable scholars and library users to collect, manage, produce, manipulate, or analyze digital information resources. The Senior Developer will modify existing applications to improve their functioning or achieve broader and more effective use and engage with new technologies to help researchers find their use and interest for research.

**Qualifications:**

*Required:*

- Graduate degree or equivalent experience
- Up to 4 years of experience with software development, application development, or systems administration
- Experience with relational database systems, including Postgresql and MySQL
- Experience with a number of programming languages, including PHP, Ruby, Python, Java, SQL, JavaScript, shell
- Experience with version control, including Git and Subversion Systems: *nix
- Ability to scope and implement software in diverse environments
• Ability to communicate effectively with researchers and fellow developers
• Ability to encourage and develop a community of users and developers.

Preferred:

• Graduate degree or equivalent experience in the humanities or social sciences
• Experience with data collections, analysis, visualization, and interpretation
• Experience with a variety of text analysis or image analysis methods and tools
• Familiarity with a variety of application frameworks, including Rails, Django, and Zend
• Experience with TEI, XML, Solr, Cocoon, Tomcat

Applications will be accepted until the position is filled. A CV/resume, cover letter, and contact information for three references are required pieces of your application.

Email a Friend: jobs.virginia.edu/applicants/Central?quickFind=81600
The Detroit Community Technology Project is hiring a Data Justice Community Researcher

Words by Detroit Community Technology Project (/authors/detroit-community-technology-project)

OCTOBER 15, 2015
The Detroit Community Technology Project is hiring a Data Justice Community Researcher for a two year research project made possible through a grant from the Digital Trust Foundation (https://www.newamerica.org/oti/new-america-collaborates-with-community-orgs-to-examine-privacy-and-poverty-in-the-united-states/). The project will explore issues of data rights, digital privacy and racial and economic inequality in the United States. Partners include the Detroit Digital Justice Coalition (https://www.alliedmedia.org/ddjc), Detroit Community Technology Project and the New America Foundation.

The Detroit Community Technology Project (https://www.alliedmedia.org/dctp) facilitates and advocates for the use and development of technology rooted in community needs that strengthens our human connections to one another and the planet.

ABOUT THE DATA JUSTICE COMMUNITY RESEARCHER
The Data Justice Community Researcher will lead a participatory research process which will include:

- organizing community technology fairs in Detroit
- conducting one-on-one interviews
- facilitating focus groups
- co-creating educational tools and materials, and
- synthesizing and analyzing data.

The Data Justice Community Researcher will work in collaboration with Detroit Community Technology Project staff, leaders from the Detroit Digital Justice Coalition, and a national team of researchers at the New America Foundation who are investigating similar questions in Los Angeles and Charlotte, North Carolina.

The Data Justice Community Researcher position is based at the offices of Allied Media Projects in Detroit and will report to the Director of the Detroit Community Technology Project.

This is a contract position with the expectation of 16 hours of work per week at a rate of $22 per hour beginning January 2016 and ending March 2018.

The deadline to apply for this position is November 15, 2015. The ideal start date for this position is in early January, 2016.

SPECIFIC RESPONSIBILITIES

- Work with community organizations in each of Detroit's seven districts to organize “DiscoTechs” or community technology fairs around the theme of data (one in each district).
- Work with local data technologists to develop workshops and educational materials for DiscoTech events that demystify data and empower residents to use data for community organizing efforts.
- Facilitate focus groups about people’s interactions with state and private data systems, the results of which will inform a popular education guide and local policy recommendations.
- Organize and conduct one-on-one interviews and focus group interviews.
- Synthesize and analyze collected data using the qualitative data analysis software Dedoose.
- Contribute to a popular education guide and workbook of community education activities based on research results.
- Work with the Detroit Digital Justice Coalition and national researchers to create bottom-up policy analysis and recommendations for data justice.
- Travel to annual research convenings (travel funding will be provided).
- Share knowledge and build connections with researchers and organizers in Los Angeles, CA and Charlotte, NC.
- Contribute to reporting requirements required by the grant.

QUALIFICATIONS

Training will be provided in participatory research methods. We will look for the following qualifications in consideration of candidates for this position:

- Familiarity with Detroit’s neighborhoods and the community organizing landscape in the city.
- Ability to work collaboratively, as well as ability to self-direct.
- Experience in organizing community events.
- Experience in creating community-driven policy.
- Strong interpersonal and time-management skills.
- Desire and ability to work in diverse communities.
- Basic computer skills.
- Spanish or Arabic fluency is a plus.
- Social science research background welcomed, but not required.

HOW TO APPLY

Email applications preferred. Send a resume, cover letter, and the names of three professional references to Diana Nucera at communitytech@alliedmedia.org (mailto:communitytech@alliedmedia.org) on or before November 15, 2015. The email headline should read: “Data Justice Community Researcher position”

Please combine resume, cover letter, and names of three professional references into one PDF document and attach it to the email. Alternatively, send applications by postal mail to Detroit Community Technology Project, 4126 3rd Street, Detroit, MI 48201.

We strongly encourage people of color, women, LGBTQ, and disabled candidates to apply.
Position Information

<table>
<thead>
<tr>
<th>Title</th>
<th>Digital Scholarship Coordinator</th>
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<tbody>
<tr>
<td>Department</td>
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<td>Regular or Temporary</td>
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Trinity College, located in Hartford CT, seeks to hire a Digital Scholarship Coordinator with expertise in digital methods, concepts, web-based tools, and project development across the divisions. The Coordinator will work with faculty and students to amplify excellent recent work in digital scholarship, and to develop new research projects. The ideal candidate will have completed advanced graduate work, and be well-versed in a liberal arts curriculum. Some teaching of undergraduates will be required to help faculty develop projects with our students, and expand student research opportunities and access to critical thinking about the digital sphere. This position will play a key role in helping shape a new program for digital scholarship including designing new physical space. The candidate will work within the newly-merged Information Services in both the library and IT.

Duties

- Serve as outreach consultant for faculty and student digital research projects in the humanities and social sciences. This will include initial consultation with faculty and students, identifying key support staff for such projects, and collaborating with instructional technologists and research education librarians toward completion and publication.
- May teach one or two courses a year that support the development of digital research projects.
- Model best practices in digital research and publication for faculty through a variety of outreach strategies, and in digital, multimedia, and traditional formats.
- As part of a newly-merged IT and library organization, work across teams to improve service to and expand the vision of faculty and students working on digital projects.
- Work in collaboration with other Information Services staff to foster the innovative use of technology and digital collections in teaching and research.
- Identify and help secure external funding for various digital scholarship initiatives at Trinity.
- Continue to hone and develop digital skills in regards to methods, concepts, and tools.
### Qualifications

- Graduate study (Ph.D. preferred) in the humanities, social sciences, communications studies, science and technology studies (STS), library science, or a related field.
- Research and teaching experience required.
- Technical knowledge of a computational methodology and platforms preferred.
- Experience working with undergraduates. (Supervision preferred, but informal leadership is also welcome.)
- Demonstrated project management skills.

### Requirements

- Salary is commensurate with the candidate's qualifications and work experience.

### Special Instructions to Applicants

Please submit a cover letter, CV or resume, summary of research project experience, and evidence of teaching excellence. Application review will begin by April 24, 2017.

| Posting Number | S00471 |
Program Coordinator - Data Management Coordinator

Hiring department: UT Libraries
Monthly salary: $4,583+ depending on qualifications
Hours per week: 40.00 Flexible from 700AM to 600PM
Posting number: 15-08-08-01-0442
Job Status: Exempt
FLSA status: Exempt
Earliest Start Date: Immediately
Position open to: all applicants
Location: Austin (main campus)
Number of vacancies: 1

Required Application Materials
- A Resume is required in order to apply
- A Letter of Interest is required in order to apply.
- A List of 3 References is required in order to apply.

Note: The following additional materials are also required for consideration: statement of salary requirement
Instructions for submission of these materials will be provided at the time the online application has been completed.

Additional Information

Purpose
Responsible for coordinating data management program at UT Libraries. Collaborates with staff, Texas Advanced Computing Center, Information Technology Services and other campus partners to ensure the UT community is making the best use of the services available to them. Reports to Scholarly Communications Librarian.

Essential Functions
Develop and deliver data management training; including workshops, drop-in classes, one-on-one sessions, and the creation and management of online resources. Coordinate with others in the library to effectively communicate services within the library and across campus. Keep the university community informed about policies and activities related to data management. Provide consultative services to UT Austin researchers including evaluating data management plans, assessing and advising on data sharing platforms, and providing information about specific funder/publisher requirements. Maintain knowledge on a range of data repositories including their submission, IP, and use policies, and provide guidance on repository selection. Work with UT Austin staff and administrators to support continued development and visibility of data management services available to researchers. Monitor and help improve university compliance with funder policies, procedures, and guidelines. Stay informed of data standards, metadata standards, best practices for data management, funder requirements, etc. to continuously build expertise and improve services. Contribute to informational materials and programming about open data and open access. Engage in ongoing professional development and scholarship through attending and/or presenting at conferences and workshops. Maintain awareness and engagement with national and international trends in data management and scholarly communication.

Marginal/Incidental functions
Other related functions as assigned.

Required qualifications
Masters degree. A minimum of two years of experience in informatics, scientific research, and/or managing research data in libraries. Experience developing and delivering training or workshop presentations. Experience with assigning metadata, transforming data, and/or batch metadata editing. Have or be able to develop a deep working knowledge of the data management practices and requirements of researchers and external funding bodies (NSF, NIH, etc.). Experience with one or more components of the research data life cycle: creation, processing, analyzing, preserving, providing access to, and re-using. Familiarity with research methodology, tools, and data sources. Ability to communicate with faculty, librarians, and students in a range of disciplines. Excellent analytical, organizational, oral and written communication, and interpersonal skills. Ability to be proactive and work independently with varied user groups within a complex organization. Equivalent combination of relevant education and experience may be substituted as appropriate.

Preferred Qualifications
Masters degree in a data intensive research field and/or library and information science. Experience working with researchers on data management planning. Experience with a programming language such as Python, Perl, or PHP. Experience with GIS software and geospatial data. Familiarity with multiple metadata standards. Familiarity with technologies used in high performance computing. Experience with Dataverse, Dspace, and/or Drupal. Experience with the manipulation of datasets and data visualization tools. Knowledge of quantitative data analysis applications such as Stata, R, SPSS, etc., and qualitative research tools such as Nvivo, Atlas.ti, etc. Demonstrated familiarity with issues and trends in scholarly communication.

Working conditions
May work around standard office conditions Repetitive use of a keyboard at a workstation Use of manual dexterity
Work efficiently in a fast-paced, evolving technological, team oriented and change-ready environment.

A criminal history background check will be required for finalist(s) under consideration for this position.

The retirement plan for this position is Teacher Retirement System of Texas (TRS), subject to the position being at least 20 hours per week and at least 135 days in length.

The University of Texas at Austin, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action. The University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, or veteran status in employment, educational programs and activities, and admissions.
Job details

Job 1 of 1

Apply to job  Save to cart  View similar jobs

Original Posting Date  20-Feb-2017
Supervisory Organization  Library - Digital Scholarship
STARS Requisition number  41927BR
University Job Title  Project Manager, Digital Scholarship
Posting Position Title  Digital Scholarship Project Manager
Bargaining Unit  None - Not included in the union (Yale Union Group)
Time Type  Full time
Duration Type  Fixed
If Fixed Duration, Period  1 year from date of hire
If Fixed Duration, is continuation possible?  No
Other Fixed Duration Date  30-Apr-2018
Compensation Grade  Administration & Operations
Compensation Grade Profile  Manager; Program Leader (24)
Work Location  University Library System
Worksite Address  120 High Street New Haven, CT 06511
Work Week  Standard (M-F equal number of hours per day)
Total # of hours to be worked:  37.5
Position Focus:

Responsible for the coordination and completion of projects for Digital Scholarship Services (DSS) in the Yale University Library. Oversees all aspects of digital scholarship project management. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of projects. Prepares reports for upper management regarding status of projects. Familiar with a variety of digital scholarship concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks across a spectrum of technologies and digital services. A wide degree of creativity and latitude is expected. Reports to the Director of Digital Scholarship Services. Helps define, assess, execute and complete Digital Scholarship Services projects. Serving as project team lead, coordinates activities among team of librarians, data specialists,
developers, and other experts. Plans, tracks and communicates resources, tasks, and processes for DSS projects. Participates in development, maintenance and day-to-day oversight of projects in support of digital scholarship services. Collaborates with the Library IT central ITS to ensure that appropriate hardware, software and licensing support are available for DSS projects. Works with Assessment Librarian and DSS staff to document and share project metrics and progress. Keeps up to date on trends related to digital scholarship, research data, web publishing, educational technology, digital humanities, scholarly communication, digital collections, workflow design, open access policy, repositories and metadata, assessment and digital preservation.

Essential Duties

1. Oversees the advancement and growth of the program. Gives direction and leadership supporting the philosophy, mission, strategy, and annual goals and objectives. Assumes primary accountability for disseminating and publishing all program information to create public awareness and support of the program.
2. Works closely with leadership, internal and external colleagues, and community residents to further develop and implement strategic plans.
3. Identifies, solicits, and cultivates community partnerships and collaborations to assist in the development and growth of the program. Develops the metrics to identify and measure the success of the program. Responsible for measurements of grant success and related evaluation.
4. Assists in identifying and evaluating potential future funding sources, and contributes to the submission of grants and contracts supporting the program, including the annual submission and writing of all content areas and budgetary sections of grant applications. Develops and manages the program’s operating budget.
5. Develops the administrative infrastructure of the program. Manages human resource and administrative functions of the program, including staffing and hiring, supervision, performance development, counseling and discipline, if warranted. Oversees and manages information systems, facilities, and space needs.
6. Investigates, identifies, implements, and oversees the maintenance of systems to gather, track, and report information to support the initiatives of the program. Tracks all program activities and regularly informs leadership of progress on each initiative. Recommends structural or programmatic adjustments, changes or additions based on full knowledge of missions, goals, and objectives.
7. Initiates, designs, and manages the compilation of program communications; identifying outreach potential, and promoting philanthropic and collaborative support of the program. Contributes to the development and assists in the management of content on the program’s website and monitors all changes and additions to the editorial content.
8. May perform other duties as assigned.

Required Education and Experience

Requires a Bachelor’s degree and 4 years of experience in the field or in a related area.

Required Skill/Ability 1:
Familiar with a variety of digital scholarship concepts, practices, and procedures.

Required Skill/Ability 2:
Demonstrated project management expertise and familiarity with Project Management software.

Required Skill/Ability 3:
Ability to operate within a complex work environment, working both independently and within a team setting.

Required Skill/Ability 4:
Excellent oral, written and interpersonal communication skills.

Required Skill/Ability 5:
Demonstrated ability to motivate and mobilize a team around shared goals.

Preferred Education, Experience and Skills:
Master’s degree in Library and Information Science.
Drug Screen: No
Health Screening: No

Background Check Requirements: All candidates for employment will be subject to pre-employment background screening for this position, which may include motor vehicle, DOT certification, drug testing and credit checks based on the position description and job requirements. All offers are contingent upon the successful completion of the background check. Click here for additional information on the background check requirements and process.

Posting Disclaimer: The intent of this job description is to provide a representative summary of the essential functions that will be required of the position and should not be construed as a declaration of specific duties and responsibilities of the particular position. Employees will be assigned specific job-related duties through their hiring departments.

Affirmative Action Statement: Yale University considers applicants for employment without regard to, and does not discriminate on the basis of, an individual’s sex, race, color, religion, age, disability, status as a veteran, or national or ethnic origin; nor does Yale discriminate on the basis of sexual orientation or gender identity or expression. Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Questions regarding Title IX may be referred to the University’s Title IX Coordinator, at TitleIX@yale.edu, or to the U.S. Department of Education, Office for Civil Rights, 8th Floor, Five Post Office Square, Boston MA 02109-3921. Telephone: 617.289.0111, Fax: 617.289.0150, TDD: 800.877.8339, or Email: ocr.boston@ed.gov.

Note: Yale University is a tobacco-free campus

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APPENDIX E: PROJECT REVENUE AND EXPENSES
# Table 5: New Resources

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1 2018-2019</th>
<th>Year 2 2019-2020</th>
<th>Year 3 2020-2021</th>
<th>Year 4 2021-2022</th>
<th>Year 5 2022-2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$15,000.00</td>
<td>$20,000.00</td>
<td>$25,000.00</td>
<td>$30,000.00</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$25,000.00</td>
<td>$25,000.00</td>
<td>$30,000.00</td>
<td>$30,000.00</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$32,000.00</td>
<td>$32,000.00</td>
<td>$32,000.00</td>
<td>$32,000.00</td>
<td>$32,000.00</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Equipment</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Other -- advertising</td>
<td>$17,000.00</td>
<td>$17,000.00</td>
<td>$17,000.00</td>
<td>$17,000.00</td>
<td>$17,000.00</td>
</tr>
<tr>
<td>Student support</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>Total all</td>
<td>$103,000.00</td>
<td>$108,000.00</td>
<td>$118,000.00</td>
<td>$123,000.00</td>
<td>$123,000.00</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year, new resources with adjustments for inflation, if a continuing cost.
[5] Specify what is included in "other" category, (e.g. student financial aid).
### Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th>Revenues[1]</th>
<th>1(^{st}) Year 2018-2019</th>
<th>2(^{nd}) Year 2019-2020</th>
<th>3(^{rd}) Year 2020-2021</th>
<th>4(^{th}) Year 2021-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Revenue[3] -- $425/credit estimated at 12 credits/semester for FT students and 6 credits/semester for PT students</td>
<td>$0</td>
<td>$127,500</td>
<td>$204,000</td>
<td>$234,600</td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02. From New Sources[5]</td>
<td>$132,600</td>
<td>$132,600</td>
<td>$147,900</td>
<td>$147,900</td>
</tr>
<tr>
<td>03. Total</td>
<td>$132,600</td>
<td>$132,600</td>
<td>$147,900</td>
<td>$147,900</td>
</tr>
<tr>
<td>Other Revenue[7]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources³</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>08. From New Sources **</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>09. Total</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Grand Total[8]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources³</td>
<td>$0</td>
<td>$127,500</td>
<td>$204,000</td>
<td>$234,600</td>
</tr>
<tr>
<td>11. From New Sources **</td>
<td>$132,600</td>
<td>$260,100</td>
<td>$351,900</td>
<td>$382,500</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$132,600</td>
<td>$260,100</td>
<td>$351,900</td>
<td>$382,500</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[3] Please explain how tuition revenue was calculated.
[5] New sources means revenue engendered by new students. The revenue from new sources from one year should be carried over to the next year as revenues from continuing sources with adjustments for inflation.
[6] Public institutions should include here regular State appropriations applied to the program.
[7] Specify what is included in "other" category.
[8] Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
<table>
<thead>
<tr>
<th></th>
<th>5th Year 2022-2023</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$255,000</td>
</tr>
<tr>
<td></td>
<td>$163,200</td>
</tr>
<tr>
<td></td>
<td>$163,200</td>
</tr>
<tr>
<td></td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$255,000</td>
</tr>
<tr>
<td></td>
<td>$418,200</td>
</tr>
<tr>
<td></td>
<td>$418,200</td>
</tr>
</tbody>
</table>
## DIRECT OPERATING EXPENSES

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (list separately)</td>
<td>22000</td>
<td>22000</td>
<td>22000</td>
<td>22000</td>
<td>22000</td>
</tr>
<tr>
<td>Faculty Replacement Costs (replacement of full-time faculty - e.g. on release time - with part-time faculty)</td>
<td>25000</td>
<td>30000</td>
<td>35000</td>
<td>40000</td>
<td>40000</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>11421</td>
<td>12636</td>
<td>13851</td>
<td>15066</td>
<td>15066</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>11421</td>
<td>12636</td>
<td>13851</td>
<td>15066</td>
<td>15066</td>
</tr>
<tr>
<td>Total (Links to Part-Time Staff on Program Exp Worksheet)</td>
<td>58,421</td>
<td>64,836</td>
<td>70,851</td>
<td>77,066</td>
<td>77,066</td>
</tr>
</tbody>
</table>

## LIBRARY

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Staff Full Time (List Separately)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Library Staff Part Time (List Separately)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total (Links to Library on Program Exp Worksheet)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## EQUIPMENT

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Hardware</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td>Total (Links to Equipment on Program Exp Worksheet)</td>
<td>5,000.00</td>
<td>5,000.00</td>
<td>5,000.00</td>
<td>5,000.00</td>
<td>5,000.00</td>
</tr>
</tbody>
</table>

## LABORATORIES

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (Links to Laboratories on Program Exp Worksheet)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## SUPPLIES AND EXPENSES (OTPS)

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultants and Honoraria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel and Conferences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership Fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising and Promotion</td>
<td>17000</td>
<td>17000</td>
<td>17000</td>
<td>17000</td>
<td>17000</td>
</tr>
<tr>
<td>Accreditation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer License Fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Repair and Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Repair and Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Total Supplies and OTPS Expenses (Links to Supplies on Program Exp Worksheet)</td>
<td>17,000.00</td>
<td>17,000.00</td>
<td>17,000.00</td>
<td>17,000.00</td>
<td>17,000.00</td>
</tr>
</tbody>
</table>

## CAPITAL EXPENDITURES

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Renovations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (Links to Capital Expenditures on Program Exp Worksheet)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## OTHERS

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student support</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>Total (Links to Other on Program Exp Worksheet)</td>
<td>4,000.00</td>
<td>4,000.00</td>
<td>4,000.00</td>
<td>4,000.00</td>
<td>4,000.00</td>
</tr>
</tbody>
</table>
## The Five-Year Revenue Projections for Program

### SENIOR COLLEGE (GRADUATE) WORKSHEET

**Year 1 = Fall 2018**

### EXISTING FULL-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total Enrolled Credits</strong></td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Tuition Income (calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$61,200</td>
<td>$104,040</td>
<td>$127,345</td>
<td>$151,541</td>
</tr>
<tr>
<td>Student Fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
<td>$0</td>
<td>$61,200</td>
<td>$104,040</td>
<td>$127,345</td>
<td>$151,541</td>
</tr>
</tbody>
</table>

### Tuition & Fees:

|                      |          |          |            |           |           |
| # of EXISTING FULL-TIME, Out-of-State Students | 0        | 0        | 0          | 0         | 0         |
| **Total Enrolled Credits** | 24       | 24       | 24         | 24        | 24        |
| Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015) | $425     | $425     | $434       | $442      | $451      |
| Total Tuition        | $0       | $0       | $0         | $0        | $0        |
| Student Fees         |          |          |            |           |           |
| Total Fees           | 0        | 0        | 0          | 0         | 0         |
| **Total Out-of-State Tuition & Fees** | $0       | $0       | $0         | $0        | $0        |

**TOTAL EXISTING FULL-TIME TUITION REVENUE** | $0       | $61,200  | $104,040   | $127,345  | $151,541  |

### EXISTING PART-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING PART-TIME, In-State Students</td>
<td>0</td>
<td>13</td>
<td>20</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total Enrolled Credits</strong></td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$66,300</td>
<td>$104,040</td>
<td>$116,733</td>
<td>$119,068</td>
</tr>
<tr>
<td>Student Fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
<td>$0</td>
<td>$66,300</td>
<td>$104,040</td>
<td>$116,733</td>
<td>$119,068</td>
</tr>
</tbody>
</table>

**TOTAL EXISTING PART TIME REVENUE** | $0       | $66,300  | $104,040   | $116,733  | $119,068  |

**TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)** | $0       | $127,500 | $208,080   | $244,078  | $270,608   |
### NEW FULL-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Tuition Income (Calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$2,550</td>
<td>$2,550</td>
<td>$3,035</td>
<td>$3,095</td>
<td>$3,608</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$2,550</td>
<td>$2,550</td>
<td>$3,035</td>
<td>$3,095</td>
<td>$3,608</td>
</tr>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW FULL-TIME, Out-of-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Annual Avg # of Credits per FT student (24-30)</td>
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<td>24</td>
<td>24</td>
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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<td></td>
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<tr>
<td>Total Fees</td>
<td>0</td>
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<td>0</td>
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</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>TOTAL NEW FULL-TIME TUITION REVENUE</strong></td>
<td>$2,550</td>
<td>$2,550</td>
<td>$3,035</td>
<td>$3,095</td>
<td>$3,608</td>
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</table>

### NEW PART-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW PART-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$71,400</td>
<td>$71,400</td>
<td>$78,030</td>
<td>$79,591</td>
<td>$86,595</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$71,400</td>
<td>$71,400</td>
<td>$78,030</td>
<td>$79,591</td>
<td>$86,595</td>
</tr>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW PART-TIME, Out-of-State Students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
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<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
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<td>$0</td>
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<td>Total Tuition</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total Fees</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL NEW PART-TIME REVENUE</strong></td>
<td>$71,400</td>
<td>$71,400</td>
<td>$78,030</td>
<td>$79,591</td>
<td>$86,595</td>
</tr>
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</table>

### TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)

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<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
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<tr>
<td></td>
<td>$73,950</td>
<td>$73,950</td>
<td>$81,065</td>
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### OTHER REVENUE

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<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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</thead>
<tbody>
<tr>
<td>Other Revenue From Existing Sources (specify and explain)-LINKS TO REVENUE SPREADSHEET ROW 13</td>
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### Enroll and Seat Projections (Graduate)

#### Projected Enrollment

<table>
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<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>4</td>
<td>7</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Out-State</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td><strong>Existing Full-time Total</strong></td>
<td>-</td>
<td>6</td>
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<td><strong>Existing Part-time Students</strong></td>
<td>13</td>
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<td>22</td>
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<td></td>
</tr>
<tr>
<td>In-State</td>
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<td>15</td>
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<td>16</td>
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</tr>
<tr>
<td>Out-State</td>
<td>4</td>
<td>5</td>
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<td>6</td>
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</tr>
<tr>
<td><strong>Existing Part-time Total</strong></td>
<td>-</td>
<td>13</td>
<td>20</td>
<td>22</td>
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<tr>
<td><strong>New Full-time Students</strong></td>
<td>6</td>
<td>6</td>
<td>7</td>
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<tr>
<td>In-State</td>
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</tr>
<tr>
<td>Out-State</td>
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<tr>
<td><strong>NEW Full-time Total</strong></td>
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<td>8</td>
</tr>
<tr>
<td><strong>New Part-time Students</strong></td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>In-State</td>
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<td>10</td>
<td>10</td>
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<td>11</td>
</tr>
<tr>
<td>Out-State</td>
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<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>New Part-time Total</strong></td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>15</td>
<td>16</td>
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</table>

#### Section Seats per Student

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
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<td>-</td>
</tr>
<tr>
<td>New Courses</td>
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<td>-</td>
<td>-</td>
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</tr>
<tr>
<td><strong>Total (normally equals 10)</strong></td>
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</tr>
<tr>
<td><strong>Part-Time Students</strong></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Existing Courses</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New Courses</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td><strong>Total (normally equals 4-6)</strong></td>
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</table>

#### Seat & Section Needs

<table>
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<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Change in Seat Need for Existing Students</strong></td>
<td></td>
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</tr>
<tr>
<td>Existing Courses</td>
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<td>New Courses</td>
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<tr>
<td><strong>Seat Need for New Students</strong></td>
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</tr>
<tr>
<td>Existing Courses</td>
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<tr>
<td>Avail. Seats in Existing Courses</td>
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<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Net Seat Need in Existing</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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</tr>
<tr>
<td><strong>All Courses</strong></td>
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</tr>
<tr>
<td><strong>Average Seats per Section</strong></td>
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</tr>
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<tr>
<td>New Courses</td>
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<tr>
<td><strong>Net New Section Need</strong></td>
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<tr>
<td>New Courses</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

NOTES: New students are students who would not otherwise have been enrolled in your college if this program were not offered. The proposal text should explain the basis for this enrollment estimate.

Existing Students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.
### Enroll and Seat Projections (Graduate)

<table>
<thead>
<tr>
<th>Total</th>
</tr>
</thead>
</table>

---

B7-Senior-College-Financial-Tables-Graduate-dh-data-vis.xlsx
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS
(Graduate and Undergraduate)

B. Application for Undergraduate and Graduate programs other than Teacher Education
Application for the Registration of New Graduate and Undergraduate Curricula/Programs — Including Programs to be Offered in Distance Education Format

Important Information

1. This application is for use by institutions of higher education that hold an absolute charter or permanent authority to award degrees seeking to register general academic curricula.

2. Do not use this application for the following program proposals:
   - Programs preparing teachers, educational leaders, or other school personnel
   - Programs preparing licensed professionals
   - Programs leading to doctoral level degrees
   - Programs leading to a credit-bearing Certificates or Advanced Certificates
   - Proposals for revisions to existing registered programs (including title changes, curricular changes, etc.)

3. Program registration is based upon standards in the Regulations of the Commissioner of Education (8 NYCRR Chapter II, Subchapter A). The Department registers individual curricula/programs rather than the institution as a whole, but the registration process includes, in some instances, an assessment of institutional-level compliance with some of the standards.

4. This application includes attestations/assurances, by the Chief Administrative or Academic Officer/Provost of the institution, on behalf of the institution, concerning the institution’s compliance with statutory and regulatory requirements related to the standards for curricula/program registration and operation of higher education programs in New York State.

5. The Department will audit compliance and, if an institution is found to be out of compliance with one or more standard to which it attested compliance, that finding may lead to denial of: (1) re-registration of the program, pursuant to §52.1(l) of the Regulations of the Commissioner of Education and (2) the ability of the institution to utilize attestations in future applications for program registration; and in certain circumstances may warrant deregistration of the program.

6. Program proposals from SUNY and CUNY System institutions must be submitted to the Department by the System Administration. Contact the System Administration for information concerning relevant proposal submission requirements.

7. The Department reserves the right to request additional information and/or clarification of any information provided by the institution that may be necessary for the Department to make a registration decision concerning the proposed program.
Submission Instructions

Applications for program registration will be accepted in electronic format only via the instructions below. Hard copy applications will not be accepted or reviewed by the Department and will not be retained.

1. Create a single PDF document that includes the following documents:
   - The completed Application for the Registration of New Graduate and Undergraduate Curricula/Programs, with all required signatures included;
   - Any request for a Master Plan Amendment and associated information and materials that may be required concerning this program proposal (see below); and
   - Any external review of the proposed program that is required (see below).

2. Attach the PDF document to an e-mail.

3. Send the e-mail (with attachment) to OCUERevAdmin@nysed.gov.

4. The subject line of the email should include the name of the institution, the degree award and the program title. For example:
   Subject: ABC College, Master of Science, English Literature.

Master Plan Amendments

If this program proposal necessitates a Master Plan Amendment, additional information and materials related to that request will be required. Please refer to information on the Department’s web site at: http://www.highered.nysed.gov/ocue/aipr/guidance/gpr2.html for information on Master Plan Amendments to determine if such an amendment is required for this program proposal and to access the Master Plan Amendment Supplement.

External Review

Please refer to http://www.highered.nysed.gov/ocue/aipr/guidance/gpr9.html for information about when an external review of a proposed program is required. If such a review is required, that material must be submitted with the program registration application.
### General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>City University of New York, Graduate School and University Center</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>Degree Award</th>
</tr>
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<tbody>
<tr>
<td>Digital Humanities</td>
<td>M.A.</td>
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<table>
<thead>
<tr>
<th>Address of Any Campus Where the Proposed Program Will Be Offered (main and/or branch campuses)</th>
<th>Full-time or Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>365 Fifth Avenue, New York, NY 10016</td>
<td>Full-time</td>
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<table>
<thead>
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<th>All Program Format(s) (standard, distance education, evening, weekend and/or other)</th>
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<td>Standard</td>
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<table>
<thead>
<tr>
<th>Joint Registration IHE (if applicable)</th>
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<tr>
<td>Not applicable</td>
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<table>
<thead>
<tr>
<th>Lead Contact [First Name, Last Name, Title]</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew K. Gold, Associate Professor of English and Digital Humanities</td>
<td>(212) 817-7256</td>
</tr>
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<table>
<thead>
<tr>
<th>Email Address</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><a href="mailto:mgold@gc.cuny.edu">mgold@gc.cuny.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

---

1 Please refer to §52.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

2 If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.
Attestation and Assurances
On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institutions’ goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(o).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.³

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with 52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

<table>
<thead>
<tr>
<th>CHIEF ADMINISTRATIVE OFFICER/PROVOST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
</tr>
<tr>
<td>[Signature]</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>5/16/17</td>
</tr>
<tr>
<td>Type or print the name and title of signatory</td>
</tr>
<tr>
<td>[Name]</td>
</tr>
<tr>
<td>[Phone Number] 212 8/17 7280</td>
</tr>
</tbody>
</table>

³ The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
Program Purpose, Objectives and Targets

Program Purpose

*Department Expectation:* Clearly define a program purpose that is aligned to the degree award and program title.

The M.A. Program in Digital Humanities will train students in digital humanities methods, including text analysis, mapping, public scholarly communication, project management, and web design, along with theoretical frameworks to employ those methods with sophistication.

Program Objectives

*Department Expectation:* Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1.

Students will develop confidence working with quantitative and qualitative data to identify salient digital humanities research questions.

2.

Students will gain hands-on experience with digital tools, acquiring the technical know-how needed to build digital humanities projects.

3.

Students will explore major areas of digital humanities work, including Digital Textuality, Data Visualization and Mapping, and Digital Pedagogy.

Program Targets - *Department Expectation:* Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. Note: There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

Enrollment Projections

The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

**Annual Retention Rate Target (%)** | **Target graduation rate (%)** | **Target Job Placement Rate (%)**
--- | --- | ---
90% | 85% | 90%


## Curriculum and Course Information

Please provide the following:

1. The applicable sample student program schedule table:
   - Table A: Undergraduate Program Schedule; or
   - Table B: Graduate Program Schedule

   When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master's degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Digital Humanities</td>
<td>attached</td>
</tr>
<tr>
<td>Software Design Lab</td>
<td>attached</td>
</tr>
<tr>
<td>Capstone Project</td>
<td>attached</td>
</tr>
<tr>
<td>Textual Studies in the Digital Age</td>
<td>attached</td>
</tr>
<tr>
<td>Methods of Text Analysis</td>
<td>attached</td>
</tr>
<tr>
<td>The Future of the Book</td>
<td>attached</td>
</tr>
<tr>
<td>Visualization and Design: Fundamentals</td>
<td></td>
</tr>
<tr>
<td>Working With Data: Fundamentals</td>
<td>attached</td>
</tr>
<tr>
<td>Spatial Data &amp; Cartographic Theory</td>
<td>attached</td>
</tr>
<tr>
<td>Teaching Practicum</td>
<td>attached</td>
</tr>
<tr>
<td>Internship</td>
<td>attached</td>
</tr>
</tbody>
</table>
Table A: Undergraduate Program Schedule

- Indicate academic calendar type: ☐ Semester ☐ Quarter ☐ Trimester ☐ Other (describe):
- Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term:</th>
<th>Credits per classification</th>
<th>Credits per classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term:</td>
<td>Credits per classification</td>
<td>Credits per classification</td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term:</td>
<td>Credits per classification</td>
<td>Credits per classification</td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Totals:</td>
<td>Credits:</td>
<td>Liberal Arts &amp; Sciences:</td>
</tr>
</tbody>
</table>

Cr = credits  
LAS = Liberal Arts and Sciences  
Maj = major requirement  
New = new course  
Prerequisite(s) = list prerequisite(s) for the noted courses
Table B: Graduate Program Schedule

- Indicate academic calendar type: [ ] Semester  [ ] Quarter  [ ] Trimester  [ ] Other (describe):
- Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introduction to Digital Humanities</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Area-specific course 1</td>
<td>3</td>
<td>X</td>
<td>See syllabi</td>
</tr>
<tr>
<td></td>
<td>Area-specific course 2</td>
<td>3</td>
<td>X</td>
<td>See syllabi</td>
</tr>
<tr>
<td></td>
<td>Elective 1</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Spring 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Software Design Lab</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Area-specific course 3</td>
<td>3</td>
<td>X</td>
<td>See syllabi</td>
</tr>
<tr>
<td></td>
<td>Area-specific course 4</td>
<td>3</td>
<td>X</td>
<td>See syllabi</td>
</tr>
<tr>
<td></td>
<td>Elective 2</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Fall 2</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Internship or Elective 3</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Capstone Project</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td>Term credit total:</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Program Totals: (Credits: 30) Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable: Capstone Project

New = indicate if new course  Prerequisite(s) = list prerequisite(s) for the noted course
## Faculty Information

**Department Expectations:** Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Member Name, Title, and Rank</th>
<th>Courses to be taught</th>
<th>Full-time or Part-time; if Full-time identify % of time to the program</th>
<th>Highest Earned Degree, Discipline, IHE</th>
<th>Additional qualifications which demonstrate professional competence relative to the specific program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Brier, Professor</td>
<td>Intro, Lab, Digital Pedagogy</td>
<td>25%</td>
<td>Ph.D., History, UCLA</td>
<td>Expert in digital humanities and digital pedagogy</td>
</tr>
<tr>
<td>Joshua Brown, Adjunct Professor</td>
<td>Intro</td>
<td>25%</td>
<td>Ph.D., History, Columbia</td>
<td>Expert in visual culture, U.S. history, and new media</td>
</tr>
<tr>
<td>Cathy Davidson, Distinguished Prof</td>
<td>Intro, Lab, Teaching Practicum</td>
<td>25%</td>
<td>Ph.D., English, SUNY Binghamton</td>
<td>Expert in digital pedagogy and higher education reform</td>
</tr>
<tr>
<td>Scott Dexter, Professor</td>
<td>Intro, Lab</td>
<td>25%</td>
<td>Ph.D., Computer Science, Michigan</td>
<td>Expert in computer science and open-source software</td>
</tr>
<tr>
<td>Duncan Faherty, Associate Prof</td>
<td>Intro, Teaching Practicum</td>
<td>25%</td>
<td>Ph.D., English, CUNY Graduate Center</td>
<td>Expert in American Studies and digital publishing</td>
</tr>
<tr>
<td>Matthew K. Gold (DIRECTOR), Associate Prof</td>
<td>Intro, Lab, Digital Pedagogy</td>
<td>50%</td>
<td>Ph.D., English, CUNY Graduate Center</td>
<td>Expert in digital humanities, digital pedagogy, and scholarly communication</td>
</tr>
<tr>
<td>Michael Mandiberg, Associate Prof</td>
<td>Lab, Teaching Practicum</td>
<td>25%</td>
<td>MFA, California Institute of the Arts</td>
<td>Expert in digital arts and networking media</td>
</tr>
<tr>
<td>Lev Manovich, Professor</td>
<td>Data Visualization courses</td>
<td>25%</td>
<td>Ph.D., Visual and Cultural Studies, Rochester</td>
<td>Expert in data visualization and digital humanities</td>
</tr>
<tr>
<td>George Otte, Professor</td>
<td>Digital Textuality courses</td>
<td>25%</td>
<td>Ph.D., Modern Thought and Culture, Stanford</td>
<td>Expert in digital rhetoric, online teaching</td>
</tr>
<tr>
<td>Anthony Picciano, Professor</td>
<td>Digital Pedagogy, Teaching Practicum</td>
<td>25%</td>
<td>Ph.D., Education Administration, Fordham</td>
<td>Expert in online/blended learning</td>
</tr>
<tr>
<td>Lisa Rhody, Adjunct Assistant Professor</td>
<td>Intro, Lab, Digital Textuality</td>
<td>25%</td>
<td>Ph.D., English, University of Maryland</td>
<td>Expert in digital humanities and digital textuality</td>
</tr>
<tr>
<td>Katina Rogers, Adjunct Assistant Professor</td>
<td>Intro, Lab, Teaching Practicum</td>
<td>25%</td>
<td>Ph.D., Comparative Literacy, Colorado</td>
<td>Expert in higher education</td>
</tr>
<tr>
<td>Maura Smale, Chief Librarian/Professor</td>
<td>Intro, Lab, Digital Pedagogy</td>
<td>25%</td>
<td>Ph.D., Anthropology, NYU</td>
<td>Expert in digital pedagogy and libraries</td>
</tr>
<tr>
<td>Joseph Ugoretz, Professor</td>
<td>Intro, Lab, Teaching Practicum, Digital Pedagogy</td>
<td>25%</td>
<td>Ph.D., English, CUNY Graduate Center</td>
<td>Expert in digital pedagogy</td>
</tr>
<tr>
<td>Luke Waller, Adjunct Assistant Professor</td>
<td>Intro, Lab, Teaching Practicum, Digital Pedagogy</td>
<td>25%</td>
<td>Ph.D., History, CUNY Graduate Center</td>
<td>Expert in digital pedagogy</td>
</tr>
</tbody>
</table>
Faculty to be Hired

**Department Expectations:** Identify the specific job title, courses to be taught, and qualifications for each position and the specific timeline by which the faculty member(s) will be hired. The job descriptions and minimum qualifications of faculty to be hired meet the minimum academic qualifications as identified in Part 52.2(b) of Commissioner’s regulation. The date provided by which faculty to be hired will be in place must be clear and directly connected to when they are needed to discharge their responsibilities during program implementation. The Department reserves the right to request more information concerning recruitment and hiring of faculty if it is needed to make a determination concerning compliance with program registration standards.

<table>
<thead>
<tr>
<th>Position Title, and Rank</th>
<th>Highest Earned Degree, Discipline, and additional qualifications</th>
<th>Courses to be taught</th>
<th>Date by which they will begin job duties</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS (GRADUATE AND UNDERGRADUATE)

B. Application for Undergraduate and Graduate programs other than Teacher Education

OFFICE OF ACADEMIC AFFAIRS
OFFICE OF PROGRAM REVIEW, ARTICULATION AND TRANSFER

FACULTY HANDBOOK FOR THE PREPARATION OF NEW ACADEMIC PROGRAMS
REVISED OCTOBER 2016
Application for the Registration of
New Graduate and Undergraduate Curricula/Programs
– Including Programs to be Offered in Distance Education Format

Important Information

1. This application is for use by institutions of higher education that hold an absolute
charter or permanent authority to award degrees seeking to register general
academic curricula.

2. Do not use this application for the following program proposals:
   - Programs preparing teachers, educational leaders, or other school personnel
   - Programs preparing licensed professionals
   - Programs leading to doctoral level degrees
   - Programs leading to a credit-bearing Certificates or Advanced Certificates
   - Proposals for revisions to existing registered programs (including title changes,
curricular changes, etc.)

3. Program registration is based upon standards in the Regulations of the
Commissioner of Education (8 NYCRR Chapter II, Subchapter A). The Department
registers individual curricula/programs rather than the institution as a whole, but the
registration process includes, in some instances, an assessment of institutional-level
compliance with some of the standards.

4. This application includes attestations/assurances, by the Chief Administrative or
Academic Officer/Provost of the institution, on behalf of the institution, concerning
the institution's compliance with statutory and regulatory requirements related to the
standards for curricula/program registration and operation of higher education
programs in New York State.

5. The Department will audit compliance and, if an institution is found to be out of
compliance with one or more standard to which it attested compliance, that finding
may lead to denial of: (1) re-registration of the program, pursuant to §52.1(l) of the
Regulations of the Commissioner of Education and (2) the ability of the institution to
utilize attestations in future applications for program registration; and in certain
circumstances may warrant deregistration of the program.

6. Program proposals from SUNY and CUNY System institutions must be submitted to
the Department by the System Administration. Contact the System Administration for
information concerning relevant proposal submission requirements.

7. The Department reserves the right to request additional information and/or
clarification of any information provided by the institution that may be necessary for
the Department to make a registration decision concerning the proposed program.
Submission Instructions

Applications for program registration will be accepted in electronic format only via the instructions below. Hard copy applications will not be accepted or reviewed by the Department and will not be retained.

1. Create a single PDF document that includes the following documents:
   - The completed Application for the Registration of New Graduate and Undergraduate Curricula/Programs, with all required signatures included;
   - Any request for a Master Plan Amendment and associated information and materials that may be required concerning this program proposal (see below); and
   - Any external review of the proposed program that is required (see below).

2. Attach the PDF document to an e-mail.

3. Send the e-mail (with attachment) to OCUERevAdmin@nysed.gov.

4. The subject line of the email should include the name of the institution, the degree award and the program title. For example:
   
   Subject: ABC College, Master of Science, English Literature.

Master Plan Amendments

If this program proposal necessitates a Master Plan Amendment, additional information and materials related to that request will be required. Please refer to information on the Department's web site at: http://www.highered.nysed.gov/ocue/aiapr/guidance/gpr2.html for information on Master Plan Amendments to determine if such an amendment is required for this program proposal and to access the Master Plan Amendment Supplement.

External Review

Please refer to http://www.highered.nysed.gov/ocue/aiapr/guidance/gpr9.html for information about when an external review of a proposed program is required. If such a review is required, that material must be submitted with the program registration application.
# General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>City University of New York, Graduate School and University Center</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Program Title</th>
<th>Degree Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Analysis and Visualization</td>
<td>M.S.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address of Any Campus Where the Proposed Program Will Be Offered (main and/or branch campuses)</th>
<th>Full-time or Part-time ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>365 Fifth Avenue New York, NY 10016</td>
<td>Full-time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Program Format(s) (standard, distance education², evening, weekend and/or other)</th>
<th>HEGIS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>4903</td>
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</table>

<table>
<thead>
<tr>
<th>Joint Registration IHE (if applicable)</th>
<th>Total Number of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead Contact [First Name, Last Name, Title]</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew K. Gold, Associate Professor of English and Digital Humanities</td>
<td>(212) 817-7256</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:mgold@gc.cuny.edu">mgold@gc.cuny.edu</a></td>
</tr>
</tbody>
</table>

¹ Please refer to §522.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

² If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.
Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institutions’ goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(o).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.5

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with 52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

<table>
<thead>
<tr>
<th>CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
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<tr>
<td>Date</td>
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<tr>
<td>Joy Connolly</td>
</tr>
</tbody>
</table>

5 The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
Program Purpose, Objectives and Targets

Program Purpose

*Department Expectation:* Clearly define a program purpose that is aligned to the degree award and program title.

Prepare students with both practical and theoretical skills in data analysis and visualization: practical skills in the foundations and techniques of data analysis and visualization, and theoretical skills in discerning the possibilities, implications, and limitations of these increasingly pervasive practices.

Program Objectives

*Department Expectation:* Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1. Students will learn fundamental concepts and methods of statistical analysis, with an emphasis on application to real-world datasets.

2. Students will learn basic and advanced visualization methods as well as principles of design and visual communication, ultimately acquiring the skills to create effective and engaging visualizations.

3. Students will learn to think critically and historically about contemporary methods of data analysis through the lenses of media theory, software studies, and cultural theory.

Program Targets - *Department Expectation:* Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. **Note:** There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

Enrollment Projections

The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Retention Rate Target (%)</th>
<th>Target graduation rate (%)</th>
<th>Target Job Placement Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>85%</td>
<td>90%</td>
</tr>
</tbody>
</table>
Curriculum and Course Information

Please provide the following:

1. The applicable sample student program schedule table:
   - Table A: Undergraduate Program Schedule; or
   - Table B: Graduate Program Schedule

   When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master's degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Digital Humanities</td>
<td>attached</td>
</tr>
<tr>
<td>Software Design Lab</td>
<td>attached</td>
</tr>
<tr>
<td>Capstone Project</td>
<td>attached</td>
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<tr>
<td>Textual Studies in the Digital Age</td>
<td>attached</td>
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<tr>
<td>Methods of Text Analysis</td>
<td>attached</td>
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<tr>
<td>The Future of the Book</td>
<td>attached</td>
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<tr>
<td>Visualization and Design: Fundamentals</td>
<td>attached</td>
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<tr>
<td>Working With Data: Fundamentals</td>
<td>attached</td>
</tr>
<tr>
<td>Spatial Data &amp; Cartographic Theory</td>
<td>attached</td>
</tr>
<tr>
<td>Teaching Practicum</td>
<td>attached</td>
</tr>
<tr>
<td>Internship</td>
<td>attached</td>
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</tbody>
</table>
Table A: Undergraduate Program Schedule

- Indicate academic calendar type: ☐ Semester ☐ Quarter ☐ Trimester ☐ Other (describe):
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term:</th>
<th>Credits per classification</th>
<th>Term:</th>
<th>Credits per classification</th>
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</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
<td>Maj</td>
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Term credit total:

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<th>Credits per classification</th>
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<td>Course Number &amp; Title</td>
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<th>Term:</th>
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<th>Credits per classification</th>
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<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>LAS</td>
<td>Maj</td>
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</tbody>
</table>

Term credit total:

Program Totals: Credits: Liberal Arts & Sciences: Major: Elective & Other:

Cr = credits LAS = Liberal Arts and Sciences Maj = major requirement New = new course Prerequisite(s) = list prerequisite(s) for the noted courses
Table B: Graduate Program Schedule

- Indicate academic calendar type: ☐ Semester  ☐ Quarter  ☐ Trimester  ☐ Other (describe):
- Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Working With Data: Fundamentals</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Data, Culture, and Society</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Visualization and Design: Fundamentals</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective 1</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

Term credit total: 12

<table>
<thead>
<tr>
<th>Term: Spring 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data Analysis Methods</td>
<td>3</td>
<td>X</td>
<td>Working with Data: Fundamentals</td>
</tr>
<tr>
<td></td>
<td>Interactive Visualization</td>
<td>3</td>
<td>X</td>
<td>Visualization and Design: Fundamentals/Working with Data: Fundamentals</td>
</tr>
<tr>
<td></td>
<td>Media Theory and History</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective 2</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

Term credit total: 12

<table>
<thead>
<tr>
<th>Term: Fall 2</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advanced Data Analysis</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Capstone Project</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

Term credit total: 6

| Term: | Course Number & Title | Credits | New | Prerequisite(s) |

Program Totals: Credits: 30

Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable:

Capstone Project

New = indicate if new course  Prerequisite(s) = list prerequisite(s) for the noted course
## Faculty Information

**Department Expectations:** Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Member Name, Title, and Rank</th>
<th>Courses to be taught</th>
<th>Full-time or Part-time; if Full-time identify % of time to the program</th>
<th>Highest Earned Degree, Discipline, IHE</th>
<th>Additional qualifications which demonstrate professional competence relative to the specific program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Brier, Professor</td>
<td>Data, Culture, and Society</td>
<td>25%</td>
<td>Ph.D., History, UCLA</td>
<td>Expert in digital humanities and digital pedagogy</td>
</tr>
<tr>
<td>Joshua Brown, Adjunct Professor</td>
<td>Visualization and Design: Fundamentals</td>
<td>25%</td>
<td>Ph.D., History, Columbia</td>
<td>Expert in visual culture, U.S. history, and new media</td>
</tr>
<tr>
<td>Cathy Davidson, Distinguished Professor</td>
<td>Data, Culture, and Society</td>
<td>25%</td>
<td>Ph.D., English, SUNY Binghamton</td>
<td>Expert in digital pedagogy and higher education reform</td>
</tr>
<tr>
<td>Scott Dexter, Professor</td>
<td>All data analysis &amp; data studies courses</td>
<td>25%</td>
<td>Ph.D., Computer Science, Michigan</td>
<td>Expert in computer science and open-source software</td>
</tr>
<tr>
<td>Duncan Faherty, Associate Prof</td>
<td>Capstone Project</td>
<td>25%</td>
<td>Ph.D., English, CUNY Graduate Center</td>
<td>Expert in American Studies and digital publishing</td>
</tr>
<tr>
<td>Matthew K. Gold (DIRECTOR), Associate Prof</td>
<td>Data, Culture, and Society; Media Theory and History</td>
<td>50%</td>
<td>Ph.D., English, CUNY Graduate Center</td>
<td>Expert in digital humanities, digital pedagogy, and scholarly communication</td>
</tr>
<tr>
<td>Delaram Khorobaei, Professor</td>
<td>All data analysis courses</td>
<td>25%</td>
<td>Ph.D., Computer Science, CUNY Graduate Center</td>
<td>Expert in data science and algorithmic theory</td>
</tr>
<tr>
<td>Michael Mandiberg, Associate Prof.</td>
<td>Visualization and Design; Fundamentals; Data, Culture, and Society</td>
<td>25%</td>
<td>MFA, California Institute of the Arts</td>
<td>Expert in digital arts and networked media</td>
</tr>
<tr>
<td>Lev Manovich, Professor</td>
<td>All data visualization and data studies courses</td>
<td>50%</td>
<td>Ph.D., Visual and Cultural Studies, Rochester</td>
<td>Expert in data visualization and digital humanities</td>
</tr>
<tr>
<td>Lisa Rhody, Adjunct Assistant Professor</td>
<td>Data analysis and data studies courses</td>
<td>25%</td>
<td>Ph.D., English, University of Maryland</td>
<td>Expert in digital humanities and digital textuality</td>
</tr>
<tr>
<td>Maura Smale, Chief Librarian/Professor</td>
<td>Data studies courses</td>
<td>25%</td>
<td>Ph.D., Anthropology, NYU</td>
<td>Expert in digital pedagogy, libraries</td>
</tr>
<tr>
<td>Luke Waltzer, Adjunct Assistant Professor</td>
<td>Data studies courses</td>
<td>25%</td>
<td>Ph.D., History, CUNY Graduate Center</td>
<td>Expert in digital pedagogy</td>
</tr>
</tbody>
</table>
Faculty to be Hired

*Department Expectations:* Identify the specific job title, courses to be taught, and qualifications for each position and the specific timeline by which the faculty member(s) will be hired. The job descriptions and minimum qualifications of faculty to be hired meet the minimum academic qualifications as identified in Part 52.2(b) of Commissioner's regulation. The date provided by which faculty to be hired will be in place must be clear and directly connected to when they are needed to discharge their responsibilities during program implementation. The Department reserves the right to request more information concerning recruitment and hiring of faculty if it is needed to make a determination concerning compliance with program registration standards.

<table>
<thead>
<tr>
<th>Position Title, and Rank</th>
<th>Highest Earned Degree, Discipline, and additional qualifications</th>
<th>Courses to be taught</th>
<th>Date by which they will begin job duties</th>
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</table>
I.B.2 – THE GRADUATE SCHOOL AND UNIVERSITY CENTER – MA in INTERNATIONAL MIGRATION

RESOLVED, that the program in International Migration Studies offered at the Graduate School and University Center and leading to the Master of Arts be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: Capitalizing on the Graduate School’s research strength in immigration research, this program will provide graduates with an in depth knowledge of the political, economic, social and cultural impacts of immigration. Organizations working in the areas of advocacy, human rights, and public agencies dealing with increasingly diverse immigrant populations will be interested in offering employment opportunities to graduates of the program.
THE GRADUATE CENTER
OF
THE CITY UNIVERSITY OF NEW YORK

PROPOSAL TO ESTABLISH A PROGRAM IN INTERNATIONAL MIGRATION
LEADING TO THE
MASTER’S OF ARTS (M.A.) DEGREE

APPROVED BY

THE GRADUATE COUNCIL ON MARCH 15

College Representative: Dr. Philip Kasinitz, Executive Officer and Presidential Professor of Sociology

Contact: Ph.D. Program in Sociology, 6th Floor
365 Fifth Avenue
New York, NY 10016

Telephone: 212-817-8783
Email: pkasinitz@gc.cuny.edu

Provost’s Signature: ________________________________

Provost’s Name: Joy Connolly, Ph.D.
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Proposal to Establish a Master of Arts Degree in
International Migration Studies

EXECUTIVE SUMMARY

We live in the era of global migration. As of 2015, 244 million people—over 43 million in the United States alone—lived outside the countries of their birth. These migrants and their children are reshaping the economic, social, and cultural life of their host societies, while creating unprecedented levels of ethnic, racial, and religious diversity in immigrant-receiving nations around the world. Nowhere is this more apparent than in super diverse “global cities” with New York being a leading example. In these immigrant cities, migration and the rich diversity that ensues are often seen as a source of vibrancy and growth, but also as creating a host of new integration challenges to overcome.

Understanding migration and its root causes and effects is now perhaps more important than ever, given the rising tide of anti-immigrant and refugee sentiments in the West. Just as immigrants cross international borders and live increasingly transnational lives, students and scholars who wish to understand these processes need to cross traditional disciplinary boundaries and draw insights from a variety of different traditions. Yet while interdisciplinary master’s programs and/or concentrations in International Migration Studies have become commonplace in leading European and Canadian universities, there are now only a handful of such programs in the U.S., and surprisingly none in the New York metropolitan area.

The proposed M.A. Program in International Migration Studies is envisioned as an opportunity to enhance the Graduate Center’s exceptionally strong presence in immigration research. It will signal to the outside world, both academic and non-academic, the Graduate Center’s leading role as a source of cutting-edge knowledge about international migration and the socially, politically, and culturally diverse societies it creates. The program’s mandate will be to promote the study of social, economic, and political changes set in motion by the arrival and settlement of migrants—changes that affect these migrants and their descendants, as well as the increasingly diverse societies that host them.

The Graduate Center is uniquely positioned to offer this program for several reasons:

1. Existing resources can support a valuable program with no competition in the NYC area.

International Migration is a rapidly growing interdisciplinary field of study, yet, while there are a number of master’s level programs in this area in leading European universities, there is currently only one M.A. program in the field in the United States, and it is located in California.
The CUNY system boasts at least 38 outstanding faculty members who regularly offer courses relating to this topic (see Appendix E), most of whom are affiliated with the CUNY Graduate Center. The prominence of international migration studies at the Graduate Center and its excellence in graduate-level education makes the Graduate Center the ideal home for a dedicated M.A. program in International Migration Studies.

2. An M.A. in IMS will enhance student employment opportunities and preparation for Ph.D. Programs.

Employers of professional workers are increasingly demanding advanced degrees, including degrees in liberal arts and interdisciplinary programs. According to “Employment outlook: 2010–2020,” published in Monthly Labor Review (January 2012), the Bureau of Labor Statistics projects the fastest job growth (21%) in occupations requiring a Master’s degree.

Training in international migration studies offers knowledge and skills that are applicable to a range of jobs in the 21st century, including positions with advocacy organizations, human rights organizations, ethnic studies centers in schools and universities, and organizations focused on migration, ethnicity and citizenship research, as well as public sector; agencies serving an increasingly immigrant clientele. In addition, knowledge of migration matters is increasingly important for personnel and labor force management in the private sector. Currently, immigrants make up almost half of New York City’s labor force. Thus, an M.A. in International Migration Studies would enhance employment prospects for graduates offered by a range of employers in New York City.

In addition, dedicated graduate training in this M.A. program will prepare the students to enter a range of doctoral programs in the social sciences and the humanities at the CUNY Graduate Center or elsewhere.

3. Minimal additional resources are required.

No additional faculty hires are needed for this program, since there is already an extensive list of faculty members at CUNY with research and teaching experience in the area (see Appendix A). However, as a new program, it will require office space for the Director and a small lounge for students. This lounge would be used as study and conference space for the graduate students, and would also serve as a venue for lectures, talks, and occasional receptions. Other expenses will include reimbursement for two courses of reassigned time annually for the Director, compensation for faculty teaching from consortia colleges, and modest additional program expenses. However, it is expected that the program will pay for itself and eventually generate revenues.

A. Purpose and Goals

International migration has become one of the most dominant features of the modern world. The total number of international migrants almost reached a record 244 million in 2015, including about 20 million refugees. This global exodus has resulted in backlash, xenophobia, and anti-migrant sentiments in the U.S. and several countries in the European Union, making immigrants and refugees a hot-button political issue in our times. In recognition of the importance of the issue, for the first time in its history, the United Nations held a “Summit for
Refugees and Migrants” in its New York headquarters on September 19, 2016 to address the needs of these groups in the hope of creating a humanitarian response.

International migration is also the human face of globalization, and it has remade the demographic, social, economic, political, and cultural landscapes of many societies around the world. The question of when, how, and on what terms new migrants and their descendants are being integrated is a pressing issue in most of the nations of the developed world and is a topic of continuing controversy. Nowhere is this more apparent than in the world’s ever more diverse global immigrant cities, whose social, political, and cultural landscapes have been reshaped by newcomers. Just as immigrants cross international borders and live increasingly transnational lives, students and scholars who wish to understand these processes need to cross traditional disciplinary boundaries and draw insights from a variety of different traditions.

The proposed M.A. Program in International Migration Studies is envisioned as a way of enhancing the Graduate Center’s exceptionally strong presence in immigration research. It will be a way of signaling to the outside world, both academic and non-academic, the Graduate Center’s intent to serve as a source of cutting-edge knowledge about international migration and the socially, politically, and culturally diverse societies that it creates. The mandate of the program will be to promote the study of the processes set in motion by the arrival and settlement of migrants—processes that affect the migrants and their descendants, as well as the diverse societies that host them.

We will encourage the study of the integration of migrants and their descendants into various settler societies, the long term cultural impact of migration, the economic incorporation of migrant populations, the ways in which societies are coping with increasing religious diversity, the linguistic impacts of migration, and how various immigration policies affect these outcomes. The role of global cities, cosmopolitanism, and the changing nature of citizenship are key in an era of global migration. The focus will be comparative, with an eye toward the ways that different societies are addressing these issues.

The proposed M.A. program would build on the broad and deeply rooted strengths of the Graduate Center faculty in international migration and urban studies. These strengths are distributed among a number of programs. Sociology hosts the most prominent concentration of migration faculty, but other programs, including Political Science, Economics, History, Anthropology, Psychology, and Linguistics, also house outstanding scholars working on migration, urban studies, and other closely related areas. In comparison with other universities that stand out for immigration scholarship, such as Princeton, UCLA, and the University of California at Irvine, the Graduate Center has become particularly strong in comparative research on the United States and the migrant receiving societies of Western Europe. Members of the Graduate Center faculty are already part of international networks of migration scholars. They have built formal and informal collaborations with faculty at the University of Amsterdam, Sciences Po in Paris, Humboldt and the Technical University in Berlin, and are developing ties
with scholars in the United Kingdom that could lead to more formal collaborations there as well. Graduate Center faculty have also been involved in comparative efforts to study migration in various US cities, most notably with scholars based in Los Angeles. CUNY’s Academic Research Collaborative (ARC), which has made migration a priority area, has brought numerous leading migration scholars from Europe and Latin America to the Graduate Center, and many of these scholars are interested in ongoing collaboration and scholarly exchange with CUNY.

Our location will greatly facilitate the success of this program. As the quintessential immigrant mecca, New York City has long been a central focus of interest for those who study international migration and diversity. Indeed, one out of every three New Yorkers is foreign-born, and the majority of the City’s population is of first- and second-generation immigrant heritage. The Graduate Center, and CUNY more generally, have played a unique role in the study of the City and its people. At the same time, migration, by its nature, links the City with the world beyond it. This program will provide an opportunity to capitalize on our locational advantages and institutional mission while also enhancing our international ties. It is also noteworthy that no other local institution currently houses a program comparable to what we will develop.

B. Needs and Justification

This is a fortuitous moment to found such a program. Nations throughout the world are confronting the question of how immigrants and refugees are to be incorporated into their social, economic and cultural life. The new second generation, the children of late 20th century immigrants to North America and Western Europe, are coming of age, and they are graduating from college and entering the labor market in increasing numbers. Indeed, this group constitutes an important component of the CUNY student body.

This M.A. program would bring many benefits to the CUNY Graduate Center. First and foremost, we see it as a unique draw for students from across the country, and beyond, who are interested in studying migration and global cities from an interdisciplinary perspective. The field ranges from history, anthropology, demography, and economics, through political science, geography, and sociology. Methodologically, it is also very eclectic, from the use of quantitative data to ethnography and oral history of migrants. Furthermore, it would serve as a hub for showcasing the research of our faculty in these fields, by bringing together a sizable body of GC-affiliated professors from across CUNY (see Appendix A for list of faculty). Even the executive committee of the program will be interdisciplinary in composition.

Additionally, there are already many lectures and seminars on immigration offered at the CUNY Graduate Center, which regularly attract a broad range of faculty and students with immigration and urban interests. Indeed, CUNY already houses two ongoing and successful migration-oriented speaker series. The Advanced Research Collaborative (ARC) regularly
sponsors lectures on immigration, one of the three central themes of its institutional mission. Secondly, The Immigration Seminar Series, housed in the Sociology program and convened by Nancy Foner and Philip Kasinitz has, for the last six years, attracted leading national and international scholars on the issue. Professor Els de Graauw from Baruch College manages a listserv to facilitate the exchange of information among members of the CUNY Workshop on Immigrant Integration. This is a great resource for informing students about lectures, book talks, and other events in New York City. In addition to centers and institutes at the Graduate Center, such as the European Union Studies Center and the Ralph Bunche Institute for International Studies, less formalized entities such as the Committee on Globalization and Social Change and the Committee for the Study of Religion occasionally host talks on immigration-related events. The rich array of events related to migration will invariably enrich the intellectual experience of the students in the proposed program, while also facilitating networking opportunities for research and future employment. As it develops, the IMS program would seek external funding to host events of its own, which would be specifically tailored to its master’s students.

Moreover, we hope that the program will come to serve as a clearinghouse for immigration-related information. This would not only include the substantial amounts of data already generated by Graduate Center faculty and students, but the incorporation of other important data sets as well, both US and international. This would have obvious benefits in facilitating student research, and would further contribute to the visibility of the Graduate Center as a leader in the creation of cutting-edge knowledge in these important fields.

The proposed M.A. program in International Migration Studies is an attempt to create just such knowledge. It is our hope that by drawing on the work of social scientists and humanists from different disciplines and different methodological traditions we can provide students with the tools to understand a force that is changing our world today. We are particularly interested in fostering a comparative, historical, and international perspective, and in asking how diverse world cities can learn from each other. How, for example, do approaches to immigration, citizenship, and societal membership differ between cities with long experience of immigration (e.g., New York) and those for whom ethnic diversity is relatively new (such as Toronto)? How do notions of the “rights to the city” differ between cities of the global north and rapidly growing metropolises of the global south? How is religious and cultural diversity experienced and understood in different societies? How does life in diverse world cities affect the homelands of transnational populations? What do recent debates over “multi-culturalism” and “pluralism” in the US and Western Europe have to teach us, and how might these debates inform each other? The answers to these questions are inherently interdisciplinary. Indeed, while most of the coursework in this concentration would be within the social sciences (broadly defined) it would also open opportunities to work within the humanities. Indeed, it is hoped that the concentration could be a site for dialogue between social scientific and humanistic approaches to these issues.
The CUNY Graduate Center is uniquely positioned to house such a degree program. The Graduate Center faculty includes one of the largest concentrations of migration-oriented scholars anywhere, as well as many of the leading figures in contemporary urban studies. The Graduate Center is already home to the New York Immigration Seminar, one of the City’s premier venues for the presentation and discussion of cutting-edge social scientific research on migration, and has also the home for several of the most important migration-oriented research projects of the past decade. Drawing on faculty talent and activities already in place, the proposed concentration would link CUNY’s focus on migration and global cities more clearly with the University’s teaching mission. Further, New York City, America’s premier immigrant metropolis with its long history of immigrant incorporation, would be an ideal setting for such a program. Finally, it should also be noted that while a number of graduate-level migration studies programs have been created in both US and European Universities in recent years, there are currently none in the New York metropolitan area.

STUDENT INTEREST AND ENROLLMENT

A. Interest/Demand

The demand for an M.A. program in International Migration Studies can be determined from information on: i) broad demand for advanced degrees, driven by the increasing importance of masters degrees in general for employment and occupational advancement, and the increasing marketability of degrees in fields in the social sciences; ii) interest in the field of international migration, including the growth of undergraduate ethnic and racial studies courses and programs locally and nationally, and the national growth of doctoral-level programs; and iii) local need, suggested by the gap between tremendous interest in immigration and the dearth of IMS programs in the New York metropolitan area.

In part to test the market for a master’s program in International Migration studies, we created a track in the Graduate Center’s master’s program in Liberal Studies (MALS) in International Migration and Global Cities four years ago. Since that time this track has grown into one of the most popular in the MALS program. With relatively little publicity, it enrolled 18 students in the 2015-2016 academic year. Based on this, we are confident that a significant demand exists for a free-standing program. Such a program will represent a significant improvement over the existing MALs track in that it will be more visible and will have a clearer intellectual identity as well as better control over its own admission policies and standards. The MALs track will be phased out once the free-standing Master’s degree in IMS is up and running.

In general, graduate degrees, including those at the master’s level, are increasingly required in order to get a good job and move up the occupational ladder. Liberal arts degrees (which are usually considered degrees in the social sciences, humanities, and interdisciplinary
programs) are increasingly marketable because they are widely recognized as offering broad training in communication and critical thinking skills. The proposed IMS program will offer such training, in addition to meeting the need for graduates with knowledge of migration patterns. Appendix B gives examples of such job listings. Because of the United Nation’s long-standing commitment to migrants and refugees, many jobs for the U.N., including those at the United Nations High Commission on Refugees (UNHCR), now require a graduate-level degree in migration studies or a related field.

International Migration is a rapidly growing interdisciplinary field of study, yet there is only one standalone M.A. program in the field in the United States; it is on the other coast in California and is offered by a private university not known for its research expertise in the field (see Appendix C). There are also four certificate programs in the United States that address migration studies, two of which are at Georgetown University. The Georgetown University programs are called the Professional Certificate Program in International Migration Studies and the Refugees and Humanitarian Emergencies Certificate. Clark University also offers a Certificate in Refugee, Displacement and Forced Migration Studies. Lastly, the University of North Carolina, Chapel Hill has a Certificate in Global Transmigration. Of the above three universities, only Georgetown boasts an Institute for the Study of International Migration program with a list of affiliated experts in the field.

<table>
<thead>
<tr>
<th>B. Enrollment Projections</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Students</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Attrition</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>9</td>
<td>18</td>
<td>22</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Graduating students at the end of the respective year</td>
<td>0</td>
<td>9</td>
<td>9</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

C. Admission Requirements

Applicants to the **M.A. program in International Migration Studies** will be required to submit the following required materials:

- A transcript showing a Bachelor’s degree (or equivalent) from an accredited college or university in the United States, or equivalent abroad, as of date of matriculation in the program
- A demonstrated aptitude for graduate study as shown by at least a B average (3.0) in undergraduate or graduate coursework
- Two letters of recommendation, preferably from academics
- A statement of purpose explaining why the student wants to obtain this degree, and how the student’s interests and academic/professional background are relevant to the degree program
- Curriculum Vitae
- Graduate Record Examination (GRE) scores
- Test of English as a Foreign Language (TOEFL) scores are required for students who have not earned a degree in an English-speaking country

PROGRAM CURRICULA

A. Program Curriculum

1. Overview and Objectives of Curriculum

The M.A. program in International Migration Studies will require 30 credits, including 12 credits in the core curriculum, 15 elective credits, and 3 credits of thesis writing or an alternative capstone project.

The instructors will use an interdisciplinary approach in addressing the themes, questions, methodologies, and findings of IMS scholarship in order to prepare students to choose an area of concentration (track) for their elective course work. The elective courses can be selected from among any IMS-related courses offered at the Graduate Center.

2. Areas of Concentration

There are four optional areas of concentration: Comparative Immigration, Global Immigrant Cities, Assimilation and Integration, and Immigration Policies. Each of these concentrations represents an important aspect of IMS, and by focusing coursework within a topic area students will be better prepared for Ph.D. programs and careers in the field.

3. Proposed Required and Elective Courses

The core curriculum consists of four 3-credit courses: International Migration, Global Immigrant Cities, Research Methods, and Immigration Policies. Two of these courses are already offered every year in the existing MALS track on IMS, though one is called “Global Cities,” but could easily be renamed Global Immigrant Cities (see Appendix E for descriptions). The third core course (Research Methods) will be a new course tailored to an interdisciplinary student body. The fourth course, Immigration Policies, will serve to introduce the students to the policy world addressing the pressing needs of immigrants and refugees. The instructors will use an interdisciplinary approach to consider some of the themes, questions, methodologies, and findings of IMS scholarship. The elective courses can be taken in any IMS-related course
currently offered at the Graduate Center, though many will be offered through the doctoral program in Sociology.

The last element of the M.A. program will be a thesis or a capstone project. Students will choose between undertaking a traditional academic research project, or a more practice-oriented capstone, improving their prospects for post-graduate employment. Students will be supervised by a faculty member in the program who will serve as their thesis adviser, and by the director of the M.A. program.

Students will enroll in IMS 79000: Thesis/Capstone Project only when they have completed the coursework for the degree, or at least 24 credits of coursework. The thesis or capstone project should be completed in a single semester, if possible. Some students will register for one course and Thesis Research in the final semester, and some will register for Thesis Research only.

Thesis: Students should start planning their thesis halfway through the program (once they have close to 18 credits). Ideally, the thesis should focus on a topic that the student has explored in some depth in their coursework. It is sometimes useful to think of the thesis as a long research paper. It is advisable to develop a paper written for a course, or several related papers, into a thesis.

Capstone: Students should start planning their capstone project halfway through a Master’s in International Migration Studies (when they have close to 18 credits).

The capstone project will enable students to integrate and synthesize the knowledge that they have acquired during their M.A. coursework into a culminating project. Such works might include, but would not be limited to, a documentary video, journalistic report, or digital project, accompanied by a 20- to 25-page written paper explaining the project, its methodology, technologies used, key findings, or other relevant information.

4. Proposed Student Schedule

The following schedule offers an example of a plan of coursework leading to the degree in two years. This coursework offers broad training in theory, methods and research practice, and policy. Although 12 credits is a full time load for Master’s students it is expected that many will undertake coursework on a part-time basis, as indicated in the sample schedule below.

First Semester - 9 credits

Core course: International Migration, 3 credits
Core Course: Research Methodology, 3 credits
Elective: 1 course, 3 credits

Second Semester – 9 credits

Core course: Global Immigrant Cities, 3 credits
Elective: 2 course, 6 credits

Third Semester - 9 credits
Core course: Immigration Policies, 3 credits
Elective: 2 course, 6 credits

Final Semester – 3 credits

Thesis/Capstone: traditional research thesis or capstone project, 3 credits

Students taking only six credits of coursework per semester will require an additional year to finish the program, while those attending on a full-time basis entailing 12 credits or more a semester will be able to finish in a year and a half.

5. Residency Requirements and Transfer Credits

Graduate students enrolled in the M.A. in International Migration Studies must complete their coursework as matriculated students at the Graduate Center. With appropriate permission, matriculated graduate students may apply their transfer credits toward their Master’s program, with a total of 12 credits of graduate courses completed prior to matriculation in the M.A. in International Migration Studies eligible for transfer. Among the total, 12 credits may include the following: courses that have not been applied toward a previously awarded graduate degree at the Graduate Center or elsewhere; courses taken at the Graduate Center in a non-matriculated status; and courses taken at other colleges where no degree has been awarded. See the Graduate Center Bulletin for additional limitations regarding transfer credits.

COST ASSESSMENT

It is expected that this program will pay for itself in the first year and will generate revenue. It will be cost-effective because it will share some resources with the Ph.D. Program in Sociology.

A. Faculty and Staff

To compensate CUNY colleges whose faculty members teach in the program, $5,000 will be transferred to the faculty member’s home campus for each course through the allocation system. Other costs include one course release a semester for the Director of the program, advertising and student recruiting costs, office supplies costs, as well as modest reception costs for program-sponsored events.

B. Administration

The Director of the M.A. Program will receive the equivalent of one course of reassigned time per semester to administer the program. The Program will have its own budget.
C. Projected Budget

1. Anticipated Revenues

Funding for the M.A. program will come primarily from tuition. Anticipated revenue is based on the following:

- Using the ratio of students in the MALS program, which housed the International Migration and Global Cities track, as a model, it is estimated that the majority of students will enroll part-time and will take three years to complete their degree.
- According to the most recent aggregate numbers from the registrar for all M.A. students at the GC, approximately 75% of students are in-state residents and 25% of students are out of state, including international students.
- International Migration Studies will explore external grants from government and non-governmental sources to help fund students in the Program.
- Based on the experience of other M.A. programs at the GC, attrition is estimated at two students per year per cohort.
- Projected tuition revenue for year one is $60,000 (10 students at $6,000 each). For year five, it is $156,000 (26 students at $6,000 each).

2. Anticipated Expenses

Expenses for the program include:

- Reimbursement for 4 courses (at a cost of $5,000 per course) for faculty members to teach the core courses
- Reimbursement for 4 units for thesis or capstone advising beginning in Year 3 of the program. Faculty members advising 5 student thesis or capstones would receive one course work load credit, with the home colleges of consortial faculty members reimbursed for one course.
- Released time for the Director at 1 course per semester
- College Assistant: Funding for a part-time College Assistant: (20 hrs/wk) at $22,000 per year. In the third year, depending on enrollment, a second college assistant position would be added at $22,000 per year.
- Equipment and Other than Personnel Services (OTPS) includes cost of paper, letterhead, publicity, website construction, as well as modest reception costs for program-sponsored events.

3. Budget Calculations

- These calculations rest on a model with an entering cohort of 15 students and a steady-state enrollment of 26 students, with students paying an average tuition of $6,000 (which conforms to tuition paid by the mix of full- and part-time students currently enrolled in the Graduate Center’s MALS program).
- The costs include $12,000 for a doctoral student to receive a Graduate Assistant B award to assist with preparing curricular materials, organizing program events, and doing publicity, outreach, and recruitment.
- The model does not take account of increased costs for library services or wellness center services resulting from increased numbers of students, which would have to be calculated across the Graduate Center.
- As seen in the table below, at a steady state, program revenue exceeds program costs by $63,000 per year.

### Revenue and Costs at a Steady State

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Costs</th>
</tr>
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<tbody>
<tr>
<td>Total Tuition (26 students at $6,000 each annually)</td>
<td>College assistant $22,000</td>
</tr>
<tr>
<td></td>
<td>Advertising + Promotion $5,000</td>
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<tr>
<td></td>
<td>OTPS $4,000</td>
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<tr>
<td></td>
<td>Director and advisor $10,000</td>
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<tr>
<td></td>
<td>Instructors for core courses $20,000</td>
</tr>
<tr>
<td></td>
<td>Thesis instructors $20,000</td>
</tr>
<tr>
<td></td>
<td>Grad B for a student $12,000</td>
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<tr>
<td></td>
<td>Total Outlay $93,000</td>
</tr>
<tr>
<td>Net $63,000</td>
<td></td>
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</tbody>
</table>

### GOVERNANCE

The M.A. Program will establish program bylaws according to the Graduate Center’s governance, including an Executive Committee and other standing committees. In addition, the Program will convene an Advisory Board composed of GC faculty, external faculty members, and representatives from industry and non-profit organizations doing work related to international migration studies.
APPENDIX A: Participating Faculty Members

1. Richard Alba, Sociology, CUNY Graduate Center
2. Meena Alexander, English, CUNY Graduate Center
3. Marcella Bencivenni, History, Hostos Community College
4. Mucahit Bilici, Sociology, John Jay College and CUNY Graduate Center
5. Mehdi Bozorgmehr, Sociology, City College and CUNY Graduate Center
6. David Brotherton, Sociology, John Jay College and CUNY Graduate Center
7. Heath Brown, Public Policy, John Jay College
8. Margaret Chin, Sociology, Hunter College and CUNY Graduate Center
9. Silvia Cho, Librarian, CUNY Graduate Center
10. Héctor Cordero-Guzmán, School of Public Affairs, Baruch College, and Sociology, CUNY Graduate Center
11. Kay Deaux, Psychology, CUNY Graduate Center (Emerita)
12. Nancy Foner, Sociology, Hunter College and CUNY Graduate Center
13. Robert Garot, Sociology, John Jay College
14. Ken Guest, Anthropology, Baruch College
15. Els de Graauw, School of Public and International Affairs, Baruch College
16. David Halle, Sociology, CUNY Graduate Center
17. William Helmreich, Sociology, City College and CUNY Graduate Center
18. Donald Hernandez, Sociology/Demography, Hunter College and CUNY Graduate Center
19. Ramona Hernandez, Sociology, City College and CUNY Graduate Center
20. Tarry Hum, Urban Studies, Queens College, Environmental Psychology, CUNY Graduate Center
21. David Jaeger, Economics, CUNY Graduate Center
22. Philip Kasinitz, Sociology, CUNY Graduate Center
23. Madhulika Khandelwal, Urban Studies, Queens College
24. Peter Kwong, Urban Affairs and Planning, Hunter College and CUNY Graduate Center
25. Edwin Melendez, Urban Affairs and Planning, Hunter College
26. Pyong Gap Min, Sociology Queens College and CUNY Graduate Center
27. Ruth Milkman, Sociology, CUNY Graduate Center
28. John Mollenkopf, Political Science and Sociology, CUNY Graduate Center
29. Lina Newton, Political Science, Hunter College
30. Francesc Ortega, Economics, Queens College
31. Francois Pierre-Louis, Political Science, Queens College
32. Maritsa Poros, Sociology, City College and CUNY Graduate Center
33. Holly Reed, Sociology-Demography, Queens College and CUNY Graduate Center
34. Robert C. Smith, School of Public Affairs, Baruch College, and Sociology, CUNY Graduate Center
35. John Torpey, Sociology, CUNY Graduate Center
36. Monica Varsanyi, Political Science, John Jay College
37. Anahi Viladrich, Sociology, Queens College
38. Sharon Zukin, Sociology, Brooklyn College and CUNY Graduate Center
APPENDIX B: Sample List of Potential Employers and Current Job Listings

- Sample List of Potential Employers

  Amnesty International
  Catholic Charities
  Catholic Migration Services
  Citizenship and Immigration Services
  City University of New York (CUNY), as well as other local universities
  General Board of Global Ministries
  Human Rights Watch
  International Organization for Migration (IOM)
  International Red Cross
  International Refugee Rights Initiative
  Lutheran Immigration and Refugee Services
  New York Legal Assistance Group
  NY Immigration Service LLC.
  NYC Department of Health and Mental Hygiene
  NYC Department of Education
  NYC Foundations (e.g., Open Society Institute, Ford Foundation)
  Peace Corps
  Save the Children
  United Nations (UN)
  United Nations Development Program (UNDP)
  United Nations High Commission on Refugees (UNHCR)
  United States Fund for UNICEF

- Sample Current Job Listings in New York Region (within 100 miles of NYC)
  Source: Indeed.com

1) **Associate Migration Officer (UN Policy and Coordination), International Organization for Migration (IOM) (New York)**

   Position Title: Associate Migration Officer (UN Policy and Coordination)
   Classification: Professional Staff
   Type of Appointment: Fixed term, one year with possibility of extension

   **Required Qualifications and Experience:**
   **Education**
   Master’s degree in in Political or Social Sciences, Business Administration, Migration Studies, International Relations, Law or a related field from an accredited academic institution with two years of relevant professional experience; or University degree in the above fields with four years of relevant professional experience.
Experience
Experience in the field of migration and migration policy issues, and management; In-depth knowledge of the broad range of migration related subject areas dealt with by the Organization and of IOM’s history, mandate and institutional culture; Experience in liaising with governmental authorities, other national/ international institutions and NGOs; Creative thinking, efficiency, objectivity; Knowledge and experience of regional issues.

Languages
Fluency in English is required. Working knowledge of other IOM/UN official language(s) is an advantage.

2) Office Manager, Immigration Equality (40 Exchange Place, Suite 1300, New York, NY, US 10005)

Start date: March 20, 2017
Employment type: Full Time
Salary: 40,000

Position Description: Immigration Equality is seeking an Office Manager to provide administrative support to the Operations Department (Ops). The Manager must be able to respond quickly and with good judgment in a fast-paced environment and be able to handle highly confidential and sensitive information. They must be able to interact in a professional and respectful manner with all those who engage with the organization and have a strong work ethic. This position is an excellent opportunity for someone who wants to take on more responsibility and gain experience in a broad range of operations areas. The job is comprised of three main parts, day-to-day logistics, technology, and finance.

Required Qualifications and Experience:

At least two years prior experience in a similar position within the public, private, or non-profit sector; Interest and/or experience with human/civil rights/LGBTQ issues/HIV issues and/or immigrant rights a plus; Strong written and oral communication skills; Advanced word processing skills and proficiency in the full suite of Microsoft Office programs; Committed and able to uphold high levels of accountability for self and for others; Ability to multi-task and manage the completion of multiple projects, often with shifting priorities, while working under direct supervision or independently; Demonstrated ability to be creative, flexible, well-organized; Ability to handle confidential information with sensitivity and integrity; A willingness to perform administrative tasks with enthusiasm and attention to detail; Active and quick learner; Tech-savvy and comfortable with data; Patient, resourceful, meticulous, and creative;
Strong ability to prioritize work and multi-task in a fast-paced environment; Fluency in Spanish, Russian, or French a plus but not required.

Immigrants and people of color are strongly encouraged to apply. Immigration Equality fosters a progressive and LGBTQ-friendly work space, and applicants must demonstrate the ability to collaborate within a diverse and inclusive environment.

3) NYIC VISTA (VISTA Leader) @ New York Immigration Coalition, AmeriCorps

**Program Type:** AmeriCorps VISTA Leaders

**Program Start/End Date:** 04/11/2017 - 04/10/2018

**Position Description:** This position is part of the NYIC VISTA program, which is run by the New York Immigration Coalition (NYIC) and places AmeriCorps VISTAs – referred to as NYIC VISTAs – at nonprofit organizations where they build organizational capacity through communications, fundraising, program development and/or volunteer management projects – that will support the organizations in providing low-income immigrants with access to immigrant-focused anti-poverty services (e.g., legal services, healthcare, ESOL classes, business development services, job search/career development mentoring services). NYIC VISTAs are supported by the NYIC with a 3-day training at the beginning of their year of service, monthly webinars, monthly check-ins with NYIC staff, and ongoing networking opportunities with other AmeriCorps VISTAs. The NYIC, www.nyic.org, aims to achieve a more fair and just society that values the contributions of immigrants and extends opportunity to all. The NYIC promotes immigrants’ full civic participation, and provides a unified voice and a vehicle for collective action for New York’s diverse immigrant communities.

4) Fellow, Community Outreach & Organizing, The New York Immigration Coalition (131 W. 33rd Street, Suite 610, 6th Floor, New York, NY, US 10001)

**Overview of the Organization**
The New York Immigration Coalition (NYIC) is an umbrella policy and advocacy organization for nearly 200 groups in New York State. We envision a New York state that is stronger because all people are welcome, treated fairly, and given the chance to pursue their dreams. Our mission is to unite immigrants, members, & allies so all New Yorkers can thrive. We represent the collective interests of New York’s diverse immigrant communities and organizations and devise solutions to advance them; advocate for laws, policies, and programs that lead to justice and opportunity for all immigrant groups; and build the power of immigrants and the organizations that serve them to ensure their sustainability, to improve people's lives, and to strengthen our state. Our organizational values: Inclusive & Representative; Fair & Just; Accountable & Trusted.
Summary of the Position

The Community Outreach & Organizing Fellow will work closely with NYIC program staff to help lead community outreach and organizing efforts in the wake of government policies that create fear and could be harmful for immigrant communities. The Fellow will be working with diverse communities across New York, including Muslim and Arab communities. The position will involve some evening and weekend work.

Key Responsibilities

Attend community engagement events, forums, town halls on behalf on NYIC and conduct know your rights presentations, in conjunction with community-based partners. Help organize rallies, actions, and other events. Develop and maintain relationships with key community-based partners and explore opportunities for coalition work and joint efforts. Assist in the creation of community engagement and public education materials such as flyers, Know Your Rights cards, and backgrounders. Support communications and media outreach as necessary within affected communities and liaising with local community based organizations and the NYIC. Support advocacy campaigns, communications team, or other aspects as required.

Qualifications

At least two years of experience in community engagement or organizing, ideally with immigrant communities. Knowledge of issues facing New York's immigrant communities, particularly Muslim immigrants. Experience with fast paced environments and juggling multiple tasks. Ability to communicate and deliver community presentations in Arabic is required, knowledge of other languages is also an asset. Strong written and oral communication skills and comfort with public speaking.

5) Project Coordinator, South Asian Council for Social Services (143-06 45th Avenue, Flushing, NY, US 11355)

Position Description: SACSS currently has a job opening for a full-time Project Coordinator. Candidate must have a Master's degree in Social Work with at least 1 year experience preferred.
Employment type: Full Time
Professional level: Professional
Salary: Salary is commensurate with experience.
Education: Master’s Degree
Language proficiency: Fluency in Hindi or Urdu required - Knowledge of other South Asian languages, especially Bengali/Punjabi a plus

Knowledge & Skills:

Excellent written, oral and interpersonal skills; Fluent in Hindi or Urdu and knowledge of another South Asian language (Bengali/Punjabi) a plus. Ability to multitask. Cultural sensitivity and interest in working with immigrants. Knowledge and experience working with MS Office.

6) Community Organizer, The Arab-American Family Support Center (150 Court Street, 3rd Floor, Brooklyn, NY 11201)

FT/PT: Fulltime

LOCATION: AAFSC Brooklyn Office

REPORTS TO: Deputy Executive Director

JOB OBJECTIVE: To organize and grow an informed, active base of community members who are fully engaged in advocacy on issues relevant to the AMEMSA immigrant communities across NYC. AAFSC places a special emphasis on elevating the voices of vulnerable community members, including youth, women, recent immigrants, refugees, low-income residents, and limited-English-proficient residents.

QUALIFICATIONS/REQUIREMENTS:

Bachelor’s Degree or an equivalent of two years of organizing and training experience is required; Community organizing experience, preferably on racial, social and economic justice issues with AMEMSA immigrants; Demonstrated ability to work in multi-racial, multi-lingual settings; Arabic language fluency (written and spoken) strongly preferred; Experience in and commitment to bottom-up organizing, grassroots leadership, and collective decision-making; Self-starter. Ability to work independently and effectively as a member of a team; Excellent oral and written communication skills; Event planning experience preferred; Must be able to maintain a flexible schedule, including evenings and weekends

SALARY: $35,000 - $40,000 per annum commensurate with experience; Benefits after standard probation period
7) Analyst, Center on Extremism, Anti-Defamation League

**PRIMARY FUNCTION:**

The Analyst, Center on Extremism will be responsible for tracking, researching and analyzing developments and incidents related to anti-Semitism, racism, anti-Muslim bigotry, anti-immigrant sentiment and other manifestations of hate. The Analyst will develop and report findings to relevant agency staff and outsiders and participate in planning and carrying out responses to research findings.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

Monitor and help respond to incidents and other developments related to anti-Semitism, anti-Muslim bigotry, racism, anti-immigrant sentiment and other forms of hate. Gather information through from a wide variety of sources, including media, social media and others. Evaluate trends and activity and develop qualitative and quantitative analysis. Develop background and briefing materials for agency staff and relevant outside constituents via written reports and verbal presentations. Assist in planning and executing ADL responses to research findings. Produce reports, articles, letters, blogs and other materials. Respond to requests for information and research from regional and CSC staff.

**QUALIFICATIONS:**

A strong understanding of key domestic issues impacting various minority communities. Ability to liaise with diverse communities as needed. Fluency in Arabic a plus. Ability to thrive in a demanding, fast-paced multi-tasking environment. Strong interpersonal skills and ability to work in teams. Excellent research skills, on traditional and online platforms. Excellent analytical and writing skills. Ability to demonstrate good judgment under pressure.

**Education:** Master’s degree or equivalent experience required.

8) Anti-Human Trafficking Case Manager, Victims Information Bureau of Suffolk (VIBS), (Islandia, NY)

**Position:**

The Anti-Human Trafficking Case Manager will be part of the organization’s Advocacy Unit and will report to the Director of Advocacy. The successful candidate will possess knowledge of and interest in the dynamics of human trafficking and have the ability to
work well with other staff within the Advocacy Unit as well as ability to work independently.

The Case Manager will provide crisis intervention and advocacy services to survivors of human trafficking. They will accompany clients through the criminal justice system and advocate on their behalf. The Advocate must have excellent communication skills, the ability to be non-judgmental, empathic, and assertive.

**Responsibilities:**

Manage a caseload of up survivors of human trafficking primarily domestic but also immigrant clients; Create documentation on procedures for working with human trafficking survivors; Meet with clients to work on long and short term mental health goals using Trauma Informed Care and Harm Reduction; Implement therapeutic models including: TF-CBT; Manage group therapy with such topics as: art, drama and writing therapy, coping skills/life skills, reducing gang involvement; Make referrals to others agencies that assist with: medical and substance abuse treatment; Provide training on care of human trafficking victims to local non-profits, local law enforcement and Homeland Security; Work with other agencies to advocate on ending human trafficking; Meet with law enforcement on how to best support survivors of Human Trafficking; Participate in weekly staff meetings and professional development training; Manage statistics as needed for the department; Maintain client files, monthly statistics, and related paperwork as required. Attend advocacy and staff meetings, trainings, and other meetings as required. Answer telephones in reception and hotline as needed. Perform related work as required.

**Skills and Abilities:**

Two years of advocacy experience in the area of human trafficking. Excellent communication skills; Ability to be non-judgmental, empathic, and assertive. Sensitivity towards and understanding of victimization. Must be proficient in Microsoft Office, especially in Word, Excel and Power Point.

**Qualifications:**

Bachelor’s on Master’s Degree in human service field. Two years related experience preferred. Job Type: Full-time

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9) **Migrant Health and Outreach Programs Manager, Southern Jersey Family Medical Centers (Hammonton, NJ 08037)**

**Job Descriptions:**

Southern Jersey Family Medical Centers, Inc. has a great opportunity for a motivated Migrant Health and Outreach Programs Manager looking to make a difference at the community level, work with a team in an outpatient setting serving a multicultural population, and help patients and the community as a whole achieve their best level of wellness.
**Summary:** The basic function of the Migrant Health and Outreach Program Manager is developing, planning and implementing the coordination of basic health, health education and social service needs to migrant and seasonal farm workers in the South Jersey area. This role is also responsible for promoting programs for SJFMC along with the Migrant Health program.

**Hours:** This is a full-time position that requires the ability to work a flexible schedule.

**Position Responsibilities/Duties:** Develop and monitor implementation of Migrant Health and Outreach Program activities according to the SJFMC Health Care Plan. Ensure the provision of the outreach services to migrant/seasonal farm workers by coordinating such services as nursing, health screenings, health education, transportation, case management and mobile van services; Develop, implement and evaluate policies, procedures, business plans and special projects that support the provision of migrant/seasonal health services; Perform continual assessment on policies and procedures to ensure compliance with local, state and federal regulations, laws & contracts; Determine the qualifications and competence of department personnel; continually assess the competency of all staff and complete written performance reviews in a timely manner; Provide opportunities for staff development by establishing and implementing educational plans for department in-services and orientation, unit specific requirements and mandatory organizational education; provide for the appropriate education for staff members; Recommend required resources as needed to enhance outreach services; Establish and maintain satisfactory relationships with personnel in all operating departments of the company, patients, doctors and the business/medical community at large

**Required Experience:**
Master’s in health education, public health, nutrition or a related field
Minimum of 3 - 5 years’ management experience.
Minimum of 3 years experience in health education and community health
Bilingual in Spanish or Creole required
Excellent written and verbal communications skills
Strong interpersonal skills and the ability to work in a team environment.
Valid driver’s license and reliable transportation

10) **Truancy Case Management Supervisor, SEAMAAC, Inc.** (Philadelphia, PA 19148)

**JOB TITLE:** Truancy Case Management Supervisor

**DEPARTMENT:** Education Department - Truancy Case Management Program

**JOB SCHEDULE:** Full-Time

**QUALIFICATIONS:** Master’s degree required
**POSITION SUMMARY:** SEAMAAC’s Truancy Case Management (TCM) program works in partnership with Philadelphia’s Department of Human Services (DHS) and the School District of Philadelphia (SDP) to improve school attendance, academic achievement, and caregiver engagement in their child’s education through three tiers of services for at-risk children, youth and their families. The Supervisor will work with the TCM team to offer support and advocacy services focused on students that receive early interventions and are involved with truancy court proceedings. Achievement of our program goals are to resolve truancy issues and facilitate families’ ability to develop positive relationships that promote well-being and permanency of children in the home. The Supervisor will oversee all clinical aspects of Truancy Case Management (TCM). S/he will meet with each School and Family Resource Specialist and Truancy Case Manager on a biweekly basis (every 2 weeks) for individual supervision sessions and twice per month with the entire TCM Team for group supervision and peer reviews. S/he will facilitate all in-house clinical trainings, such as case note writing and home visit assessment skills. The Supervisor will participate in quality assurance efforts to call clients and accompany Truancy Case managers to home visits. The Supervisor will work with the Education Department Director to ensure the TCM program delivers a holistic and strengths-based approach for family-focused case management services.

**QUALIFICATION REQUIREMENTS:**

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

**REQUIRED EDUCATION and/or EXPERIENCE:**

**Master’s degree** required in Social Work.

Minimum two years supervisory experience. At least two years’ experience facilitating community-based family support activities. Experience in identifying and facilitating referrals and linkages that match a community’s culture, assets, challenges and barriers. Outstanding communication skills (oral and written) and excellent computer skills in data entry and database management. Demonstrated ability to effectively work and communicate with diverse staff with a strong commitment to supporting a team environment.

**ESSENTIAL FUNCTIONS:**

Facilitate peer review and supervision meetings with the School and Family Resource; Specialists and Truancy Case Managers to address the underlying causes of truancy, promote the safety and well-being of families, and highlight social work best practices. Ensure that mandated reporting responsibilities are met and minimum requirements of case management services are completed with families. Call each client at least monthly, to verify that Truancy Case Managers are making their required home visits and delivering what the client needs. Accompany Truancy Case Managers to one home visit.
weekly to conduct assessments of the household and services. Support the children and families in a manner that fosters independence, growth and development and will facilitate the child and families achieving their stated goals. Accurately assess the strengths, supports, and requirements of the identified children, families and communities in which they live. Ensure that referrals are completed promptly and confirm that a linkage between the family and provider is secured. Notify the Education Department Director of any troublesome patterns of missed visits or unresolved issues. Keep accurate written records of all biweekly supervisory meetings and peer reviews with the School and Family Resource Specialists and Truancy Case Managers. Monitor and enter data into the DHS Database, Social Solutions ETO Software, and TCM program Excel databases. Submit supervision notes and accompanying documents of all biweekly supervisory meetings and peer review sessions to Education Department Director on a monthly basis. Maintain consistent communication with School and Family Resource Specialists, Truancy Case Managers and Education Department Director. Exercise discretion and maintain staff and client confidentiality. Attend regular supervision and department meetings. An ability to travel around local neighborhoods extensively.

COMPETENCIES:

Fluency in an African, Caribbean, or Southeast Asian language/dialect or Spanish is preferred. Knowledgeable about the issues facing refugee and immigrant communities in urban settings. Experience working with Limited English Proficiency population preferred.

11) Supervisory Immigrant Social Worker - Bilingual Spanish, General Dynamics Information Technology (USA-NY-New York)

Job Function: Program Management

Job Description:
General Dynamics IT has an opening for a Supervisory Immigrant Social Worker - Bilingual Spanish in the New York City; NY area. Provides technical; administrative; and operational leadership to assigned project or task(s). At this level, the position is typically responsible for supervising up to 15 employees both exempt and non-exempt working on a single project or task. Technical difficulty/complexity of assigned task/project may also affect level selection. Will supervise a team of case coordinators located in NYC; NY area. Review placement recommendations completed by the team. Monitor team performance. Provide supervisory reports to program management. Ensure team compliance with documentation requirements; rules and regulations. Visit supervised team at least on a quarterly basis. Mentor staff. Identify training and technical assistance needs and coordinate with project manager and training consultant to meet those needs. Participate in meetings with the customer; team meetings; and trainings. Act as backup to case coordinators when they are on leave. Support case coordinators with complex cases. Subject matter experience with Unaccompanied Alien Children and Immigrant populations are strongly preferred.
Education:
Requires BS/BA degree in Social Work or related field; or Masters in Social Work or related field.

Qualifications:
Requires 2-5 years experience based on degree.

APPENDIX C: Other M.A. and Certificate Programs

National M.A. Programs:

- University of San Francisco, Migration Studies Program

National Certificate Programs:
• Georgetown University, Professional Certificate Program in International Migration Studies
• Georgetown University, Refugees and Humanitarian Emergencies Certificate
• Clark University, Certificate in Refugee, Displacement and Forced Migration Studies
• University of North Carolina, Chapel Hill, Certificate in Global Transmigration

International M.A. Programs:

• University of Oxford, MSc in Refugee and Forced Migration Studies
• University of Amsterdam, the Netherlands, Master in International Migration and Social Cohesion (IMISCOE)
• London School of Economics and Political Science (LSE), MSc International Migration and Public Policy
• York University, Canada, Graduate Diploma in Refugee & Migration Studies
• Ryerson University, Canada, Immigration and Settlement Studies
• Universitat Pompeu Fabra, Barcelona, Catalonia, M.A. in Immigration Management
• University of Kent, Brussels, Belgium, M.A. in International Migration

APPENDIX D: Description of Core/Required Courses

Course Number: IMS XXX
Title: International Migration
Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description:
This course offers an overview of the key current topics and issues in the burgeoning field of international migration. The course will aspire to incorporate the experiences of major immigrant receiving countries around the world, but the main comparative focus will be on Europe and North America, where the major theories and key concepts are most fully developed. The course emphasis is on exploring both the theoretical debates in the field and the empirical data and case studies on which these debates hinge. Attention will be paid to detailed discussions of “classic” issues of immigration, such as assimilation, incorporation/integration, the labor market, race and ethnic relations, gender and the family, transnationalism, the second generation, and nativism/host hostility. Throughout, the course will take into account the way in which migrant-receiving cities, as contexts of reception, affect the immigrant experience, and in turn, are transformed by immigrants.

**Rationale:**

The course provides a necessary orientation to the field of international migration. It will equip students from various disciplinary backgrounds with an overview of the key concepts and theories of migration, integration/assimilation, as well as offering an introduction to how these issues are studied by different disciplines.

**Learning Goals:**

The primary goal of the course is to adopt an international approach, comparing and contrasting the experiences of various immigrant groups in major urban centers, while introducing students to key contemporary topic in the field of migration. The aim is to provide students with sufficient background to take migration courses in various disciplines, and to equip them with the tools necessary to undertake their own scholarship in this area.

**Outcomes:**

Students will gain a solid understanding of the major theories and concepts in the field of international migration. They will advance their knowledge of the field through a series of written assignments based on the readings, and further develop their writing and research skills through a final paper.

**Assessment:**

Grading will be based on a series of written papers, including a final research paper, and class presentations evaluated over the course of the semester. Participation in class discussion will also be taken into account.

Course Number: IMS YYY
Title: Global Immigrant Cities
Hours: 3.0/ Credits: 3.0; Prerequisites or Co-requisite: None

Course Description:
This course asks the question of how various migrant-receiving global cities experience, respond to, and are transformed by the changing composition of their ethnic populations. Looking at several European, North American, Latin American and Asian cities, it will explore their histories of ethnic and racial difference; the ways in which their ideologies about diversity, pluralism and multiculturalism have evolved and changed over time; the extent to which they incorporate (or do not incorporate) their migrants; and the different economic, cultural and political impacts that migration has had on these global immigrant cities. The main focus will be on international comparison, and students will be trained in the use of comparative perspectives to illustrate similarities and differences between cities. Global immigrant cities are crucial research sites for exploring the possibility of going “beyond” the nation-state-society focus of most mainstream American research. Also, while opening the door to a crucial dimension of globalization, the comparative study of migration opens up a fresh comparative and international perspective on the urban experience.

Rationale:
This course will complement IMS XXX by taking a more in-depth look at the effects of urban contexts of reception in various societies and specifically in their major cities. Taking advantage of our location and extensive local knowledge, the course will use New York as the basis of comparison with other major global cities, such as Los Angeles, Paris, London, Berlin, Amsterdam, Toronto, Shanghai, Buenos Aires, etc.

Learning Goals:
Students will gain both a concrete knowledge of the ways in which migration and its resulting cultural diversity “work” in various metropolitan areas. They will also develop a clear sense of how these issues are studied from a variety of disciplinary perspectives.

Outcomes:
Students will gain a clear understanding of the changing nature of global cities in an increasingly diverse world. The course will prepare students to undertake their own original thesis research.

Assessment:
There will be several written papers and class presentations to be evaluated over the course of the semester. In addition, each student will be required to complete either a final paper based on their own research or a research proposal that will outline work to be done as their Master’s thesis.
APPENDIX E: Relevant Courses Previously Offered

Select examples of courses offered in past two academic years at the Graduate Center that might be chosen by students in the new International Migration Studies program to fulfill their 18 elective credits:

ANTHROPOLOGY
<table>
<thead>
<tr>
<th><strong>Course Code</strong></th>
<th><strong>Course Title</strong></th>
<th><strong>Credits</strong></th>
<th><strong>Instructor(s)</strong></th>
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<tr>
<td>ANTH 70900</td>
<td>Nationalism and Ethnicity</td>
<td>3</td>
<td>Prof. Mathews-Salazar</td>
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<tr>
<td>ANTH 72000</td>
<td>Local/Global Imaginaries: Migration, Movement and Identity</td>
<td>3</td>
<td>Prof. Brown</td>
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<tr>
<td>EES 79903</td>
<td>FIS App: GIS in New York City</td>
<td>3</td>
<td>Prof. Albrecht</td>
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<tr>
<td>EES 79903</td>
<td>Urban Orientalism: Global/Local Environment and Planning</td>
<td>3</td>
<td>Prof. Angotti</td>
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<td>Globalization</td>
<td>3</td>
<td>Prof. Oza</td>
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<td>ENGL 76200</td>
<td>Partition, Migration, Memory</td>
<td>4</td>
<td>Prof. Alexander</td>
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<td>HIST 75800</td>
<td>New York City in the 20th Century</td>
<td>3</td>
<td>Prof. Wallace</td>
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<td>HIST 78000</td>
<td>Comparative Diasporas</td>
<td>3</td>
<td>Prof. Bennett</td>
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<td>HIST 71300</td>
<td>Citizenship, Religion and Religious Minorities in Modern Europe</td>
<td>3</td>
<td>Prof. Sorkin</td>
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<td>Musics of Cuba, Puerto Rico, and Latin New York</td>
<td>3</td>
<td>Prof. Manuel</td>
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<td>The European City and the American</td>
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</tr>
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<td>PSC 83501</td>
<td>Ethnic Groups, Generations and Locales</td>
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<td>Prof. Mollenkopf</td>
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<td>PSC 84608</td>
<td>Immigration and American National Identity</td>
<td>4</td>
<td>Prof. Renshon</td>
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<td>PSC 87800</td>
<td>Borders, Boundaries and the Ethics of Immigration</td>
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<td>Prof. Gould</td>
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<td>PSC 76300</td>
<td>International Political Economy</td>
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<td>Prof. Xia</td>
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<td>PSYC 80103</td>
<td>Group Relations: A Racial and Cultural Focus</td>
<td>3</td>
<td>Prof. Buckley</td>
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<td>SOC 82800</td>
<td>Immigration in an Era of Globalization</td>
<td>3</td>
<td>Prof. Alba and Foner</td>
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<td>Computer Mapping for LA &amp; NY</td>
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<td>SOC 85800</td>
<td>Second Plus Generations and American Immigrant Integration</td>
<td>3</td>
<td>Prof. Smith</td>
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**EARTH AND ENVIRONMENTAL SCIENCES**

**ENGLISH**

**HISTORY**

**MUSIC**

**POLITICAL SCIENCE**

**PSYCHOLOGY (Social and Personality Psychology)**

**SOCIOLOGY**

32
SOC 72500 Urban Sociology (3 credits, Prof. Kasinitz; Prof. Zukin)
SOC 82800 Ghettos, Enclaves and Urban Villages: Community in the Modern City (3 credits, Prof. Kasinitz)
SOC 85800 Race and Ethnicity (3 credits, Prof. Philip Kasinitz)
SOC 85800 Neighborhoods, Ghettos and Enclaves (3 credits, Prof. Kasinitz and Prof. Smithsimon)
SOC 82800 International Migration (3 credits, Prof. Bozorgmehr; Prof. Min)
SOC 81900 Quantitative reasoning in the study of immigration (3 credits, Prof. Richard Alba)
SOC 85800 Migration and Crime (3 credits, Prof. Robert Garot)
SOC 84700 Community-Based Organization & Public Policy (3 credits, Prof. Cordero-Guzman)
SOC 85800 Muslim Integration in Europe and North America (3 credits, Prof. Bozorgmehr)

URBAN EDUCATION

U ED 70200 Historical Contexts in Urban Education (3 credits, various faculty)

DEMOGRAPHY (Certificate Program)

DEM 701 Introduction to Demography (3 credits, various faculty)
VI. SED and CUNY forms for academic programs (graduate and undergraduate)

B. Application for Undergraduate and Graduate programs other than Teacher Education
Application for the Registration of New Graduate and Undergraduate Curricula/Programs – Including Programs to be Offered in Distance Education Format

Important Information

1. This application is for use by institutions of higher education that hold an absolute charter or permanent authority to award degrees seeking to register general academic curricula.

2. Do not use this application for the following program proposals:
   - Programs preparing teachers, educational leaders, or other school personnel
   - Programs preparing licensed professionals
   - Programs leading to doctoral level degrees
   - Programs leading to a credit-bearing Certificates or Advanced Certificates
   - Proposals for revisions to existing registered programs (including title changes, curricular changes, etc.)

3. Program registration is based upon standards in the Regulations of the Commissioner of Education (8 NYCRR Chapter II, Subchapter A). The Department registers individual curricula/programs rather than the institution as a whole, but the registration process includes, in some instances, an assessment of institutional-level compliance with some of the standards.

4. This application includes attestations/assurances, by the Chief Administrative or Academic Officer/Provost of the institution, on behalf of the institution, concerning the institution's compliance with statutory and regulatory requirements related to the standards for curricula/program registration and operation of higher education programs in New York State.

5. The Department will audit compliance and, if an institution is found to be out of compliance with one or more standard to which it attested compliance, that finding may lead to denial of: (1) re-registration of the program, pursuant to §52.1(l) of the Regulations of the Commissioner of Education and (2) the ability of the institution to utilize attestations in future applications for program registration; and in certain circumstances may warrant deregistration of the program.

6. Program proposals from SUNY and CUNY System institutions must be submitted to the Department by the System Administration. Contact the System Administration for information concerning relevant proposal submission requirements.

7. The Department reserves the right to request additional information and/or clarification of any information provided by the institution that may be necessary for the Department to make a registration decision concerning the proposed program.
Submission Instructions

Applications for program registration will be accepted in **electronic format only** via the instructions below. Hard copy applications will not be accepted or reviewed by the Department and will not be retained.

1. Create a **single** PDF document that includes the following documents:
   - The completed Application for the Registration of New Graduate and Undergraduate Curricula/Programs, with all required signatures included;
   - Any request for a Master Plan Amendment and associated information and materials that may be required concerning this program proposal (see below); and
   - Any external review of the proposed program that is required (see below).

2. Attach the PDF document to an e-mail.

3. Send the e-mail (with attachment) to OCUERevAdmin@nysed.gov.

4. The subject line of the email should include the name of the institution, the degree award and the program title. For example:
   - Subject: ABC College, Master of Science, English Literature.

Master Plan Amendments

If this program proposal necessitates a Master Plan Amendment, additional information and materials related to that request will be required. Please refer to information on the Department’s web site at: [http://www.highered.nysed.gov/ocue/aipr/guidance/gpr2.html](http://www.highered.nysed.gov/ocue/aipr/guidance/gpr2.html) for information on Master Plan Amendments to determine if such an amendment is required for this program proposal and to access the Master Plan Amendment Supplement.

External Review

Please refer to [http://www.highered.nysed.gov/ocue/aipr/guidance/gpr9.html](http://www.highered.nysed.gov/ocue/aipr/guidance/gpr9.html) for information about when an external review of a proposed program is required. If such a review is required, that material must be submitted with the program registration application.
### General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>City University of New York, Graduate School and University Center</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Program Title</th>
<th>Degree Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Migration Studies</td>
<td>M.A.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address of Any Campus Where the Proposed Program Will Be Offered (main and/or branch campuses)</th>
<th>Full-time or Part-time</th>
<th>HEGIS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>365 Fifth Ave, New York, NY, 10016</td>
<td>Full-time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Program Format(s) (standard, distance education(^1), evening, weekend and/or other)</th>
<th>Total Number of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Joint Registration IHE (if applicable)</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>212-817-8783</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead Contact [First Name, Last Name, Title]</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philip Kasinitz, Executive Officer and Presidential Professor of Sociology</td>
<td><a href="mailto:pkasinitz@gc.cuny.edu">pkasinitz@gc.cuny.edu</a></td>
</tr>
</tbody>
</table>

\(^1\) Please refer to §52.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

\(^2\) If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.
Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institutions’ goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(o).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.¹

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with 52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

<table>
<thead>
<tr>
<th>CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
</tr>
<tr>
<td>Joy Connolly</td>
</tr>
<tr>
<td>Type or print the name and title of signatory</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

¹ The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
Program Purpose, Objectives and Targets

Program Purpose

*Department Expectation:* Clearly define a program purpose that is aligned to the degree award and program title.

Understanding migration and its root causes and effects is now perhaps more important than ever, given the rising tide of anti-immigrant/refugee sentiments in the West. Just as immigrants cross international borders and live increasingly transnational lives, students and scholars who wish to understand these processes need to cross traditional disciplinary boundaries and draw insights from a variety of different traditions. The proposed M.A. Program in International Migration Studies is envisioned as an opportunity to enhance the Graduate Center’s exceptionally strong presence in immigration research as a resource for cutting-edge knowledge about international migration and the socially, politically, and culturally diverse societies it creates.

Program Objectives

*Department Expectation:* Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1. An M.A. in International Migration Studies (IMS) will enhance student employment opportunities and preparation for Ph.D. Programs. Training in international migration studies offers knowledge and skills that are applicable to a range of jobs in the 21st century.

2. IMS serve as a hub for showcasing the research of our faculty in these fields, by bringing together a sizable body of Graduate Center appointed professors from across CUNY.

3. As one of the only programs of its kind in the United States, the M.A. in IMS provides a unique opportunity for students from across the country who are interested in studying migration and global cities to come to the Graduate Center to study.

Program Targets - *Department Expectation:* Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. Note: There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

Enrollment Projections

*The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.*

<table>
<thead>
<tr>
<th>Year</th>
<th>1 Full-Time student</th>
<th>2 Full-Time students</th>
<th>3 Full-Time students</th>
<th>4 Full-Time students</th>
<th>4 Full-Time students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9 Part-Time students</td>
<td>16 Part-Time students</td>
<td>19 Part-Time students</td>
<td>22 Part-Time students</td>
<td>22 Part-Time students</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Retention Rate Target (%)</th>
<th>Target graduation rate (%)</th>
<th>Target Job Placement Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>85%</td>
<td>90%</td>
</tr>
</tbody>
</table>

65
Curriculum and Course Information

Please provide the following:

1. The applicable sample student program schedule table:
   • Table A: Undergraduate Program Schedule; or
   • Table B: Graduate Program Schedule

   When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master’s degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Methodology</td>
<td>This course will focus on qualitative and quantitative methods and techniques in the study of international migration, preparing the students to conduct independent research.</td>
</tr>
<tr>
<td>Immigration Policies</td>
<td>This course examines the national and local aspects of immigration policies affecting the procedures to gain entry, as well as the rights of immigrants and their integration.</td>
</tr>
</tbody>
</table>
**Table B: Graduate Program Schedule**

- Indicate academic calendar type: [ ] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SOC 82800, International Migration</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>IMS XXX, Research Methodology</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Term credit total: 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term: Spring 1</td>
<td>Course Number &amp; Title</td>
<td>Credits</td>
<td>New</td>
<td>Prerequisite(s)</td>
</tr>
<tr>
<td></td>
<td>SOC 82800, Global Immigrant Cities</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Term credit total: 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term: Fall 2</td>
<td>Course Number &amp; Title</td>
<td>Credits</td>
<td>New</td>
<td>Prerequisite(s)</td>
</tr>
<tr>
<td></td>
<td>IMS XXX, Immigration Policies</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Term credit total: 9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term: Spring 2</td>
<td>Course Number &amp; Title</td>
<td>Credits</td>
<td>New</td>
<td>Prerequisite(s)</td>
</tr>
<tr>
<td></td>
<td>Thesis or Capstone Project</td>
<td>3</td>
<td></td>
<td>All of the above</td>
</tr>
<tr>
<td></td>
<td>Term credit total: 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Program Totals:** 10 Credits: 30

Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable:

Thesis or Capstone Project

New = indicate if new course  Prerequisite(s) = list prerequisite(s) for the noted course
## Faculty Information

**Existing Core Faculty**

*Department Expectations:* Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Member Name, Title, and Rank</th>
<th>Courses to be taught</th>
<th>Full-time or Part-time; if Full-time identify % of time to the program</th>
<th>Highest Earned Degree, Discipline, IHE</th>
<th>Additional qualifications which demonstrate professional competence relative to the specific program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Alba, DP</td>
<td>Research Methods</td>
<td>25%</td>
<td>PhD Soc, Columbia</td>
<td>Pioneer in the field of international migration/ethnicity</td>
</tr>
<tr>
<td>Mehdi Bozorgmehr, Prof</td>
<td>International Migration</td>
<td>50%</td>
<td>PhD Soc, UCLA</td>
<td>Expert on Middle Eastern/Muslim Americans</td>
</tr>
<tr>
<td>Margaret Chin, Assoc Prof</td>
<td>International Migration</td>
<td>25%</td>
<td>PhD Soc, Columbia</td>
<td>Expert on Chinese Americans</td>
</tr>
<tr>
<td>Hector Cordero-Guzman, Prof</td>
<td>Immigration Policies</td>
<td>25%</td>
<td>PhD Soc, Chicago</td>
<td>Expert on community-based organizations</td>
</tr>
<tr>
<td>Nancy Foner, DP</td>
<td>Global Immigrant Cities</td>
<td>25%</td>
<td>PhD Anthro, Chicago</td>
<td>Leading scholar of immigration to NYC</td>
</tr>
<tr>
<td>David Halle, Prof Emeritus</td>
<td>Global Immigrant Cities</td>
<td>25%</td>
<td>PhD Soc, Columbia</td>
<td>Expert on global cities (LA and NY)</td>
</tr>
<tr>
<td>Philip Kasinitz, Pres Prof</td>
<td>Global Immigrant Cities</td>
<td>25%</td>
<td>PhD Soc, NYU</td>
<td>Expert on the second-generation immigrants</td>
</tr>
<tr>
<td>Pyong Gap Min, DP</td>
<td>International Migration</td>
<td>25%</td>
<td>PhD Soc, Georgia State</td>
<td>Leading scholar on Korean/Asian Americans</td>
</tr>
<tr>
<td>Maritsa Poros, Assoc Prof</td>
<td>Global Immigrant Cities</td>
<td>25%</td>
<td>PhD Soc, Columbia</td>
<td>Expert on comparative immigration/social networks</td>
</tr>
<tr>
<td>Robert Smith, Prof</td>
<td>Research Methods</td>
<td>25%</td>
<td>PhD Poli Sci, Columbia</td>
<td>Expert on Mexicans in NYC</td>
</tr>
<tr>
<td>John Mollenkopf, DP</td>
<td>Immigration Policies</td>
<td>25%</td>
<td>PhD Poli Sci, Columbia</td>
<td>Leading scholar in the field of international migration</td>
</tr>
<tr>
<td>Holly Reed, Assist Prof</td>
<td>Quantitative Methods</td>
<td>25%</td>
<td>PhD Soc, Brown</td>
<td>Skilled social demographer</td>
</tr>
</tbody>
</table>
VI. SED AND CUNY FORMS
FOR ACADEMIC PROGRAMS
(Graduate and Undergraduate)

C. Evaluation Form
C.1. External Reviewer Conflict of Interest Statement
Evaluation Report Form for Program Proposals

Institution: City University of New York, Graduate School and University Center

Evaluator(s): Steven Gold

Program title: International Migration Studies

Degree title: Master's of Art Degree

Date of evaluation: March 28, 2017

Please see evaluation letter

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

3. Comment on the plans and expectations for continuing program development and self-assessment.

4. Assess available support from related programs.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?
II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

8. Evaluate credentials and involvement of adjunct and support faculty.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

10. (Only for programs requiring master plan amendment.) What is the institution's commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.
I am providing an external review of the application submitted to the NYS Education Department by:

Steven Gold

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

Master's of Art Degree, International Migration Studies

(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Steven Gold

Signature:

Date: 3-28-17
March 28, 2017

To whom it may concern,

I am writing to evaluate the proposal to establish a Master of Arts Degree in International Migration Studies at the Graduate School and University Center of the City University of New York.

The current era is marked not just by unprecedented numbers of migrants, but also by an especially varied range of origins and characteristics. Globally, a wide variety of social, political, economic and environmental events have prompted human beings to cross international borders in search of survival, physical security, economic opportunity, and broader horizons. These numerous and diverse migrants travel under a host of legal statuses, including without papers, as temporary laborers and refugees, on student and tourist visas, as family unification migrants, in the role of skilled workers, and as investors. In terms of both numbers and complexity, international migration will continue to grow. At the same time, a growing number of anti immigrant movements, parties, and institutions seek to limit, discipline and exclude border crossers. Given the fact that migrants’ long-term fate will impact their communities of origin, settlement and other locations, the creation and application of knowledge on these topics is of paramount importance.

Because of these conditions, training and expertise in the field of international migration will be in demand in a wide variety of fields ranging from public health and K-12 education, to urban planning, social service, philanthropy, marketing, management, human resources, religion, local, state and federal government, higher education, criminal justice, and policy making.

I am well acquainted with the work of nearly the entire faculty who would teach in this program and I am highly impressed with it. In terms of reputation, substantive knowledge, theoretical and methodological expertise and highly regarded publications, the assembled group of scholars constitutes perhaps the strongest collection of migration faculty to be found anywhere. What is more, the proposed program’s affiliation with a large, prestigious, well-established, and multi-level institution of higher education means that it has direct access to administrative leadership, support and infrastructure.

New York City provides an ideal location for a masters program in international migration studies. During its entire history, the setting has been characterized by a large and diverse population of migrants. In addition, New York City features outstanding resources for the study of international migration including leading
universities and academic institutions, outstanding libraries, museums, performance venues, ethnic institutions and organizations of all types, and the United Nations.

New York is a global leader in media, finance, health care, fashion, music, dance, fine arts, sport and health care, and major philanthropic foundations. All of these employ, interact with, and are shaped by the city’s international population.

In addition, the greater New York City area offers the program’s students myriad resources, including public transport that will facilitate their access to the city’s neighborhoods, populations, and centers of learning, culture, enterprise and scholarship. Other US cities noted for their significant populations of migrants, such as Miami, Chicago, Houston and Los Angeles, are much more dependent on automobiles.

The goal of developing a masters degree program in international migration through CUNY is appropriate in the context of current trends in higher education. In recent years, many academic institutions (including my own) have eliminated or de-emphasized masters degree granting programs. Accordingly, providing an MA program in international migration in New York (where no such program currently exists) would fulfill demand in both its field of specialization and degree level. Some fraction of students may start their graduate career via this program and would go on to acquire additional training in areas such as medicine, law, public administration, business, social science or humanities.

In sum, the proposed Master of Arts Degree in International Migration Studies at the Graduate School and University Center of the City University of New York is characterized by an array of positive attributes. These include its location, the skill and reputation of its faculty, access to proven administrative and support services, the growing need for knowledge and expertise about the topic, and the absence of such a program in the nation’s pre-eminent migrant metropolis. This list of advantages convinces me of the value and attractiveness of this program. Accordingly, I am confident that the program will be successful and give it my most enthusiastic endorsement.

Yours Sincerely,

Steven J. Gold
Professor
Department of Sociology
Berkey Hall
509 East Circle Drive, Room 316
Michigan State University
East Lansing, MI 48824-1111
USA
517-353-6352 (office)
517-432-2856 (fax)
gold@msu.edu
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

CUNY Graduate Center
(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

Master of Arts Degree in Int'l Migration Studies
(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):
Mary C. Waters

Signature:
Mary Waters

Date: May 3, 2017
May 4, 2017

Dear Colleagues,

I have reviewed the proposal to establish a Master’s program in International Migration Studies at the City University of New York Graduate Center. I think it is an extremely promising proposal which can serve as the basis of a highly successful program, and I endorse it wholeheartedly.

International Migration is one of the most important topics now facing the US as well as many other nations throughout the world. The integration of migrants into the American labor force, educational system and into society more broadly is an issue facing many institutions. Social service organizations, health care systems, school systems as well as a host of public and private sector organizations now require personnel with a knowledge of the demographic, social and cultural impacts of migration and the resulting racial and ethnic diversity is having on our population as well as of the best practices when it comes to facilitating migrant integration.

Nowhere is the need for such a program more obvious than New York City. This proposed program will play an important role in training New York based professionals to meet these challenges. Indeed it is striking that no such program now exists in the City, although similar programs have become fairly common in Europe and several have opened recently in other parts of the US. Balancing academic and policy concerns, the CUNY program will prepare its Master’s level graduates for many opportunities in the labor market as well as giving those who wish to go on to graduate school for a doctorate an excellent background.

I cannot imagine a better setting to house such a program than the City University of New York Graduate Center. CUNY is widely recognized as one of the premier universities in the nation for the study of migration and its economic, social and cultural consequences. Indeed CUNY, and in particular the Graduate Center, boasts what is arguably one of the greatest concentration of first rank migration scholars in American academia. The deep roster from which this program draws includes faculty with a wide variety of talents and expertise and features some of the leading figures in the field. Clearly the faculty resources are more than adequate. I suspect student interest will be high.
The proposed program makes sense in terms of its structure and requirements. It allows for a variety of possible areas of concentration while making sure that all students will come away with a solid grounding in the field.

I strongly support the establishment of this innovative program. It will be a great boon to its students, to CUNY and to the City as a whole.

Sincerely,

Mary C. Waters  
John L. Loeb Professor  
Chair, Department of Sociology
### Enroll and Seat Projections (Graduate)

#### Projected Enrollment

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Full-time Students</strong></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Out-of-State</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Full-time Total</strong></td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
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</tr>
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<td>8</td>
<td>8</td>
<td>11</td>
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<tr>
<td>In-State</td>
<td></td>
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<tr>
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<tr>
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<td>In-State</td>
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<tr>
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</tr>
<tr>
<td><strong>NEW Full-time Total</strong></td>
<td>1</td>
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<tr>
<td><strong>New Part-time Students</strong></td>
<td>9</td>
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<tr>
<td>In-State</td>
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<tr>
<td><strong>New Part-time Total</strong></td>
<td>9</td>
<td>9</td>
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</table>

#### Seat & Section Needs

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Seat Need for Existing Students</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>New Courses</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Seat Need for New Students</td>
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<td>New Courses</td>
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<td>Total Seat Need Change</td>
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<td>Existing Courses</td>
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<td>Avail. Seats in Existing Courses</td>
<td>-</td>
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<tr>
<td>Net Seat Need in Existing Courses</td>
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<td>-</td>
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<td>-</td>
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<tr>
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<tr>
<td>All Courses</td>
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<tr>
<td>Average Seats per Section</td>
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<td>Existing Courses</td>
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<tr>
<td>New Courses</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Net New Section Need</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Existing Courses</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>New Courses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:** New students are students who would not otherwise have been enrolled in your college if this program were not offered. The proposal text should explain the basis for this enrollment estimate.

Existing Students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.
<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1 Academic Year²</th>
<th>Year 2 Academic Year‡</th>
<th>Year 3 Academic Year‡</th>
<th>Year 4 Academic Year‡</th>
<th>Year 5 Academic Year‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$ 37,290.00</td>
<td>$ 62,150.00</td>
<td>$ 62,150.00</td>
<td>$ 62,150.00</td>
<td>$ 62,150.00</td>
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<tr>
<td>Full Time Staff</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$ 42,262.00</td>
<td>$ 42,262.00</td>
<td>$ 42,262.00</td>
<td>$ 42,262.00</td>
<td>$ 27,346.00</td>
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<tr>
<td>Library (Includes Staffing)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>$ 4,000.00</td>
<td>$ 4,000.00</td>
<td>$ 4,000.00</td>
<td>$ 4,000.00</td>
<td>$ 4,000.00</td>
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<tr>
<td>Capital Expenditures</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Other</td>
<td>$ 5,000.00</td>
<td>$ 5,000.00</td>
<td>$ 5,000.00</td>
<td>$ 5,000.00</td>
<td>$ 5,000.00</td>
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<tr>
<td>Total all</td>
<td>$ 88,552.00</td>
<td>$ 113,412.00</td>
<td>$ 113,412.00</td>
<td>$ 113,412.00</td>
<td>$ 98,496.00</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.

[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year. New resources with adjustments for inflation, if a continuing cost.
[5] Specify what is included in “other” category, e.g., student financial aid.
### Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue[3]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td>$0</td>
<td>$51,000</td>
<td>$52,020</td>
<td>$100,798</td>
<td>$102,830</td>
</tr>
<tr>
<td>02. From New Sources[5]</td>
<td>$56,100</td>
<td>$56,100</td>
<td>$98,022</td>
<td>$99,982</td>
<td>$101,982</td>
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<tr>
<td>03. Total</td>
<td>$56,100</td>
<td>$56,100</td>
<td>$98,022</td>
<td>$99,982</td>
<td>$101,982</td>
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<td><strong>Other Revenue[7]</strong></td>
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<td></td>
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<tr>
<td>07. From Existing Sources$</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
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<td>08. From New Sources**</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<td>09. Total</td>
<td>$0</td>
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<td><strong>Grand Total[8]</strong></td>
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<tr>
<td>10. From Existing Sources$</td>
<td>$0</td>
<td>$51,000</td>
<td>$52,020</td>
<td>$100,798</td>
<td>$102,830</td>
</tr>
<tr>
<td>11. From New Sources**</td>
<td>$56,100</td>
<td>$107,100</td>
<td>$150,042</td>
<td>$200,781</td>
<td>$204,812</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$56,100</td>
<td>$107,100</td>
<td>$150,042</td>
<td>$200,781</td>
<td>$204,812</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[3] Please explain how tuition revenue was calculated.
[5] New sources means revenue engendered by new students. The revenue from new sources from one year should be carried over to the next year as revenues from continuing sources with adjustments for inflation.
[6] Public institutions should include here regular State appropriations applied to the program.
[7] Specify what is included in "other" category.
[8] Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
## DIRECT OPERATING EXPENSES

Include additional expenses incurred by other programs when satisfying needs of new program. Faculty need should be commensurate with “net section needs” based on enrollment (see "Enroll & Seat Need Projections" tab)

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Year 2</td>
<td>$</td>
<td>$ -</td>
<td>-</td>
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</tr>
<tr>
<td>Year 3</td>
<td>$</td>
<td>$ -</td>
<td>$ -</td>
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<tr>
<td>Year 4</td>
<td>$</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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</tr>
<tr>
<td>Year 5</td>
<td>$</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

- **Current Full Time Faculty Overload (include Summer)**
- **New Full Time Faculty Base Salary (list separately)**
- **New Full Time Faculty Overload (include Summer)**
- **New Faculty Re-assigned Time (list separately)**
- **Full Time Employee Fringe Benefits (41.6%)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Year 2</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Year 3</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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<tr>
<td>Year 4</td>
<td>$ -</td>
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<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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<tr>
<td>Year 5</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

**Total (Links to Full-Time Faculty on Program Exp Worksheet)**: $37,290.00 $62,150.00 $62,150.00 $62,150.00 $62,150.00

- **Part Time Faculty Actual Salaries**: $30,000 $50,000 $50,000 $50,000 $50,000
- **Part Time Faculty Actual Fringe Benefits (24.3%)**: $7,290 $12,150 $12,150 $12,150 $12,150

**Total (Links to Part-Time Faculty Program Exp Worksheet)**: $37,290.00 $62,150.00 $62,150.00 $62,150.00 $62,150.00

- **Full Time Staff Base Salary (list separately)**
- **Full Time Staff Fringe Benefits (41.6%)**: $0 $0 $0 $0 $0

**Total (Links to Full-Time Staff on Program Exp Worksheet)**: $0 $0 $0 $0 $0

- **Part Time Staff Base Salary (list separately)**
- **Part Time Staff Fringe Benefits (24.3%)**: $0 $0 $0 $0 $0

**Total (Links to Part-Time Staff on Program Exp Worksheet)**: $0 $0 $0 $0 $0

**LIBRARY**

- **Library Resources**
- **Library Staff Full Time (List Separately)**
- **Full Time Staff Fringe Benefits (41.6%)**: $0 $0 $0 $0 $0
- **Library Staff Part Time (List Separately)**
- **Part Time Employee Fringe Benefits (24.3%)**: $0 $0 $0 $0 $0

**Total (Links to Library on Program Exp Worksheet)**: $0 $0 $0 $0 $0

**EQUIPMENT**

- **Computer Hardware**
- **Office Furniture**

**Total (Links to Equipment on Program Exp Worksheet)**: $0 $0 $0 $0 $0

**LABORATORIES**

- **Laboratory Equipment**
- **Other (list separately)**

**Total (Links to Laboratories on Program Exp Worksheet)**: $0 $0 $0 $0 $0

## SUPPLIES AND EXPENSES (OTPS)

- **Consultants and Honoraria**
- **Office Supplies**
- **Instructional Supplies**
- **Faculty Development**
- **Travel and Conferences**
- **Membership Fees**
- **Advertising and Promotion**
- **Accreditation**
- **Computer Software**
- **Computer License Fees**
- **Computer Repair and Maintenance**
- **Equipment Repair and Maintenance**

**New Total Supplies and OTPS Expenses (Links to Supplies on Program Exp Worksheet)**: $0 $0 $0 $0 $0

## CAPITAL EXPENDITURES

- **Facility Renovations**
- **Classroom Equipment**
- **Other (list separately)**

**Total (Links to Capital Expenditures on Program Exp Worksheet)**: $0 $0 $0 $0 $0

**Other (list separately)**

**Total (Links to Other on Program Exp Worksheet)**: $0 $0 $0 $0 $0
<table>
<thead>
<tr>
<th>EXISTING FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tuition Income (calculates 2% increase per year after Fall 2015)</td>
<td>$0</td>
<td>$10,200</td>
<td>$10,404</td>
<td>$21,216</td>
<td>$21,648</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$10,200</td>
<td>$10,404</td>
<td>$42,432</td>
<td>$43,296</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$10,200</td>
<td>$10,404</td>
<td>$42,432</td>
<td>$43,296</td>
</tr>
</tbody>
</table>

| Tuition & Fees:             |          |          |            |           |           |
| # of EXISTING FULL-TIME, Out-of-State Students (linked from "Enroll & Seat Need Projections") | 0 | 0 | 0 | 0 | 0 |
| Annual Avg # of Credits per FT student (24-30) | | | | | |
| Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015) | $0 | $0 | $0 | $0 | $0 |
| Total Tuition | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | | | | | |
| Total Fees | 0 | 0 | 0 | 0 | 0 |
| Total Out-of-State Tuition & Fees | $0 | $0 | $0 | $0 | $0 |

**TOTAL EXISTING FULL-TIME TUITION REVENUE** $0 $10,200 $10,404 $42,432 $43,296

<table>
<thead>
<tr>
<th>EXISTING PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING PART-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
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<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$40,800</td>
<td>$41,616</td>
<td>$58,366</td>
<td>$59,534</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$40,800</td>
<td>$41,616</td>
<td>$58,366</td>
<td>$59,534</td>
</tr>
</tbody>
</table>

| Tuition & Fees:             |          |          |            |           |           |
| # of EXISTING PART-TIME Out of State Students (linked from "Enrollment and Seat Need Projections") | 0 | 0 | 0 | 0 | 0 |
| Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15) | 0 | 0 | 0 | 0 | 0 |
| Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015) | $0 | $0 | $0 | $0 | $0 |
| Total Tuition | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | | | | | |
| Total Fees | 0 | 0 | 0 | 0 | 0 |
| Total Out-of-State Tuition & Fees | $0 | $0 | $0 | $0 | $0 |

**TOTAL EXISTING PART TIME REVENUE** $0 $40,800 $41,616 $58,366 $59,534

**TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)** $0 $51,000 $52,020 $100,798 $102,830
<table>
<thead>
<tr>
<th>NEW FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW FULL-TIME, In-State Students</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tuition Income (Calculates 2% increase per year after Fall 2015)</td>
<td>$10,200</td>
<td>$10,200</td>
<td>$20,400</td>
<td>$20,808</td>
<td>$21,224</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$10,200</td>
<td>$10,200</td>
<td>$40,800</td>
<td>$41,616</td>
<td>$42,448</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$10,200</td>
<td>$10,200</td>
<td>$40,800</td>
<td>$41,616</td>
<td>$42,448</td>
</tr>
</tbody>
</table>

| Tuition & Fees:        |          |          |            |           |           |
| # of NEW FULL-TIME, Out-of-State Students | 0 | 0 | 0 | 0 | 0 |
| Annual Avg # of Credits per FT student (24-30) | 12 | 12 | 12 | 12 | 12 |
| Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015) | $0 | $0 | $0 | $0 | $0 |
| Total Tuition          | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | 0 | 0 | 0 | 0 | 0 |
| Total Fees             | 0 | 0 | 0 | 0 | 0 |
| Total Out-of-State Tuition & Fees | $0 | $0 | $0 | $0 | $0 |

| TOTAL NEW FULL-TIME TUITION REVENUE | $10,200 | $10,200 | $40,800 | $41,616 | $42,448 |

<table>
<thead>
<tr>
<th>NEW PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW PART-TIME, In-State Students</td>
<td>9</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
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<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
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<tr>
<td>Total Tuition</td>
<td>$45,900</td>
<td>$45,900</td>
<td>$57,222</td>
<td>$58,366</td>
<td>$59,534</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$45,900</td>
<td>$45,900</td>
<td>$57,222</td>
<td>$58,366</td>
<td>$59,534</td>
</tr>
</tbody>
</table>

| Tuition & Fees:        |          |          |            |           |           |
| # of NEW PART-TIME, Out-of-State Students | 0 | 0 | 0 | 0 | 0 |
| Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15) | 0 | 0 | 0 | 0 | 0 |
| Tuition Income (Specify Rate per credit) calculates 2% increase per year | $0 | $0 | $0 | $0 | $0 |
| Total Tuition          | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | 0 | 0 | 0 | 0 | 0 |
| Total Fees             | 0 | 0 | 0 | 0 | 0 |
| Total Out-of-State Tuition & Fees | $0 | $0 | $0 | $0 | $0 |

| TOTAL NEW PART-TIME REVENUE | $45,900 | $45,900 | $57,222 | $58,366 | $59,534 |

| TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7) | $56,100 | $56,100 | $98,022 | $99,982 | $101,982 |

<table>
<thead>
<tr>
<th>OTHER REVENUE</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Revenue From Existing Sources (specify and explain)- LINKS TO REVENUE SPREADSHEET ROW 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Revenue New (specify and explain) (LINKS TO REVENUE SPREADSHEET ROW 15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RESOLVED, that the program in Data Science offered at the Graduate School and University Center and leading to the Master of Science, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: Designed predominantly for graduates of undergraduate Computer Science programs, this degree in Data Science will provide graduates with a mastery of technical topics such as data management, complex algorithms, and parallel programming. Because the program focuses on the computational and technical aspects of data science, it deliberately does not focus on specific applications and graduates will be of interest to employers in the widest variety of industries.
THE GRADUATE CENTER OF
CITY UNIVERSITY OF NEW YORK

A PROPOSAL TO ESTABLISH A PROGRAM IN DATA SCIENCE
LEADING TO THE MASTER OF SCIENCE DEGREE
Draft 2/26/2017
EFFECTIVE FALL 2018

OFFERED BY THE COMPUTER SCIENCE PROGRAM

APPROVED BY
Computer Science PhD Program Curriculum Committee: 09/02/2016,
The Executive Committee of Computer Science: 09/09/2016
The Graduate Center Curriculum Committee: 2/22/2017
The Graduate Center Graduate Council 3/15/2017

Representative: Dr. Robert M. Haralick, Executive Officer of Computer Science
Program Contact: Ms. Dilvania Rodriguez, Assistant Program Officer
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Fax: (212) 817-1510
Email: RHaralick@gc.cuny.edu

Provost Signature: ________________________________ Provost
Name: ________________________________
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EXECUTIVE SUMMARY

The Graduate Center’s Computer Science Department proposes a Master of Science degree program in Data Science (MS-DS). In the age of abundant data coming in from diverse sources in a rapid fashion, businesses, government and non-profit organizations have a great demand for data-proficient professionals to overcome the information overload challenge and to leverage the available rich data sets for mission-critical decision making. However, the number of professionals who can effectively manage and process data at a scale to deliver data products is limited and does not meet the market demands. The Master of Science in Data Science is aimed at helping to train the next generation workforce of data scientists, with fundamental deep analytical and technical skills, the domain knowledge to pose the appropriate questions, and the effective communication and collaboration skills to work with data consumers to gain insights and increase business values.

The curriculum of the proposed MS program in Data Science is designed for students with a computer science background and exceptional students from the other STEM disciplines. It consists of the following requirements: 4 core courses (12 credits), 4 elective courses (12 credits) and one year-long capstone research project (6 credits) with an option of a faculty-driven research project or a combination of an applied research project with professional experience in an internship. Thus a total of 30 credits is required to complete the degree. The four elective courses are selected from two focus areas: The “Elective I” group includes courses covering the fundamental knowledge of data management, data analysis, algorithms, data structures, graph models and parallel programming, while the “Elective II” group consists of application courses that emphasize how to utilize the computational and analytical fundamentals in a particular domain, such as numerical, textual, image, and other complex data. Students are required to select two courses from each elective area, giving them a chance to acquire balanced knowledge and skill sets and to dig deeper into one specialization area.

There are many reasons for establishing the MS-DS program at the CUNY Graduate Center. It will serve the general goals of higher education institutions, i.e. educating students to learn discipline-specific knowledge and skill sets with rigor and depth, and it will also fulfill the strategic goals of the CUNY Graduate Center to expand the specialized Master’s programs. It also addresses the immediate needs of workforce development for satisfying the market demands in data analytics, opening opportunities to create academic partnerships with private, and government partners and with NGOs.

1. The Master of Science in Data Science is in alignment with GC’s Strategic Plan (2016-2020) for expanding higher educational opportunities and access.

One of the important strategic plans of CUNY is developing additional professional programs, including Professional Science Master’s programs, aligned with current workforce needs, and strengthening support for doctoral education, including support for students interested in careers beyond academia. The proposed MS-DS program will provide an opportunity for the Graduate Center to be one of the leading institutions in generating much needed Data Science professionals, stimulating the greater New York City area’s economic vitality. We anticipate the profile of students for this new Master’s program to be a mixture of new graduate students who embark on academic knowledge discovery and seasoned professionals who need retraining to advance their skill sets to meet the current market demands. The new program will provide continuous learning opportunities for adult learners who need to shift their
career paths. In the starting years, we estimate an average of 15 full-time students (equivalent to 30 part-time students) enrolled in any given year. Although it is possible for an exceptional full time student to complete the program within one year and for a part time student to complete it in two years, we think most full time students will take two years and most part time students three years or four years.

2. The program relies on shared resources, utilizing the existing Computer Science Program’s PhD Faculty members and existing courses.

The Computer Science PhD Program currently offers 27 graduate-level courses that are regularly scheduled for PhD students and that are directly related to the Data Science curriculum. These courses can be taken by CS PhD students who are admitted with a Bachelor’s degree or a Master’s degree in Computer Science. The admissions requirements for the proposed Master’s in Data Science are similar to the admissions requirements of the CS PhD program. Data Science master’s students will not be admitted who would not be able to handle the PhD level CS courses in Data Science. This will ensure the Master’s in Data Science students does not dilute the academic level at which the CS PhD classes are taught.

A strong GC Master’s of Data Science is possible because the GC can call upon faculty with Data Science expertise from all the senior colleges to teach Data Science courses at the GC. We can put together a depth and breadth in Data Science that is unsurpassed by any of the senior colleges alone and do so in a way that does not ask for any additional professors from the senior colleges to teach in the program than the number of such professors who have been asked to teach in previous years in the CS PhD program.

MS-DS students can select the required and elective courses to complete the requirements of the MS degree program from our existing courses. The faculty who are offering these graduate courses are doctoral faculty members affiliated with the Computer Science PhD Program. They are renowned experts in their topic areas with specializations in data mining, machine learning, data base management, statistical analysis and reasoning, artificial intelligence, cultural computing, graph and text mining, parallel and distributed computing, and more. We also plan to allow students to use cross-listed courses such as those offered by CCNY Computer Science in their MS program, and doctoral courses from other Graduate Center Programs, such as the Finance for Scientists course and the Big Data Analysis: Principles and Methods course offered by the GC Physics program, the General Linear Models I and II projects course offered by the Hunter College Statistics program, and the courses Methods of Text Analysis, Visual and Design Fundamentals, and Spatial Data and Cartographic Theory offered by the Digital Humanities Master’s program in Data Analysis and Visualization. There is ample space for synergy. These programs will be able to draw students from our Master’s program in Data Science, and we will be able to attract qualified students from their programs.

CUNY’s unique consortium structure provides a larger pool of resources, if needed, to be leveraged maximally to utilize the existing faculty expertise and the existing courses. This implies that the costs for hiring new faculty members and course development efforts (e.g., release times) can be minimized. Such resources as the HPCC (High Performance Computing Center) will be shared to accommodate the MS-DS program’s computing needs. This is in strategic alignment with CUNY’s new 21st century vision to provide affordable, high-quality higher education.
3. The MS Program in Data Science will fill the gap in workforce in diverse industries to solve their societal and organizational challenges.

The graduates with an MS degree in Data Science will have mastered the latest tools and analytical methods to derive insights from data, effectively communicate findings, and solve complex yet real challenges. In every category of industry, such as Biotech, Energy, Finance, Commerce, Gaming and Hospitality, Health care, Insurance, Internet, Manufacturing, Pharmaceutical, Retail, Telecom, Travel and transportation, Utilities as well as in Government and NGOs, big data needs to be processed in near-time to gain insights and knowledge from it. Each industry faces the same sort of challenges, namely, data sets that are too large for conventional data applications to handle and data that is too complex and too rapidly accumulating.

However, one common desire of all companies is to draw value, discover patterns, and accurately predict future trends from the flood of data. Industries need staff members trained to apply mathematical and statistical models and automated computational methods and tools, to collect, store, clean, transform, organize, integrate and analyze data. In addition, employers will demand that students be able to interpret the results, develop better models, fine-tune methods, and extract meaning from big data sets. In other words, there is a huge demand for data scientists in the job market, so much so that the situation is now often described with the phrase “The data scientist is the sexiest job in the 21st century.” The MS-DS program is designed to meet this industry need.

4. The curriculum of the proposed Master’s Program will require the academic rigor that can prepare students to continue in PhD programs, as well as the practical development of data analytics systems that can lead students to become innovation leaders.

The curriculum is intended to prepare students with different career choices for work in Data Science. The curriculum includes the current, popular methodologies and techniques in data analysis, but the field requires new and novel method development and better tools, due to the complex nature of data sets that have not been encountered in the past. Thus, DS Master’s students will be engaged in enhancing existing methods, and researching novel technologies and analytical methodologies, far beyond acquiring mere “big data literacy.” This may encourage some students to continue their studies and pursue a PhD Program in a relevant area, including Computer Science, Statistics, Mathematics, or in some applied areas, such as healthcare or government data analytics. In addition, the curriculum includes the practical implementation of analysis methods with real data sets, through individual course projects and in the required internship. This may lead each student to become a novel solution provider for the global market, i.e., a global entrepreneur with a working prototype stemming from his internship or capstone project.

5. The MS in the Data Science program can position the CUNY Graduate Center to become a leading institution in Data Science.

The MS in Data Science program will position the CUNY Graduate Center to become a leading institution in Data Science, increasing the agility of CUNY to adjust its curricula rapidly to compete with other institutions in training students in NYC for the technology-driven changed work environment. This will be done in combination with related degree programs, such as the MA in Digital Humanities, MS in Data Analysis and Data Visualization, the CUNY-wide Data Science related MS in
Management with concentration of Business Analytics in Large Scale Data, offered at the College of Staten Island, the MS degree in Data Analytics at the School of Professional Studies, and the MA in Data Analytics and Applied Social Research with a concentration in Data Science at CUNY Queens College. These different CUNY-wide programs provide complementary foci and perspectives in Data Science. Our students’ typical profile includes strong STEM background knowledge, such as BS degree level proficiency in quantitative methods, programming, mathematics, information science, information systems, or engineering, among others.

6. Revenues from the MS-DS program
The revenue from the Program is estimated to exceed expenses, providing self-sustainability of the program and stability for the Graduate Center. The total income over the initial five year period is estimated as $345,962.

PURPOSE AND GOALS

Big Data Challenges: With the rapid Information and Communication Technology advances and online data availability, almost all sectors of the economy are experiencing the symptoms of the current “data avalanche,” the so-called 4V’s of Big Data, namely, Volume, Velocity, Variety and Veracity. All organizations want to leverage the data at hand to discover new insights, gain a competitive edge, and bring value to their customers and constituents. However, the complex and voluminous data exceeds their capacity to extract value from it. The data challenges also pose radical changes in how the data supply chain pipeline works, demanding rapid, near-real time data management and analytics, and how decisions are made in many fields, from marketing to medicine to scientific discovery. The data challenges lead to novel computational, analytical, discovery and decision making problems. Companies and other organizations are challenged by the shortage of skilled data scientists who can effectively manage, process and analyze data, discovering the hidden patterns and knowledge from the data.

The complexity of processing Big Data is beyond the capacity of conventional computational approaches and tools. It is not unusual for the data sets to be too massive for a single computer to process, for traditional database systems to manage or manipulate, and for statistical or graphical software to analyze or display. The heterogeneous data includes not only the well-structured data of the past, but abundant text data, audio and video media data, and human-generated social data that are all unstructured, complex, incomplete and uncertain, with diverse quality levels. These large data sets also require special parallel computing hardware, machine learning techniques, natural language processing, and data visualization skills to “tame” the data flood.

The CUNY Graduate Center’s MS program in Data Science is designed to train students to understand effective ways of using vast amounts of data by developing scalable techniques for data analysis and decision making, with the courses that cover many interdisciplinary research areas, such as data mining, machine learning, algorithms, statistics, operations research, databases, computational analysis, and visualization. Upon completion of the Master’s degree in Data Science, students should be proficient in multiple different methodologies of dynamic, complex large-scale data collection, organization, management, and be able to extract insights. Students will also develop hands-on
experience with industry tools and statistical/mathematical techniques through in-class projects and real world internships.

The program intends to leverage the existing resources such as cutting edge research courses offered to the Computer Science PhD students by CUNY faculty members and to meet the industry demand by equipping the students with the knowledge and skill sets to become the next generation leaders in this rapidly growing Data Science field. The program will equip students with the knowledge to select and apply diverse, most appropriate techniques and tools of data science to diverse applications, drawing on relevant concepts and models from the computational sciences, mathematics and statistics, engineering, and natural and social sciences.

Upon graduation from the MS in DS program, students are expected to demonstrate the following core learning outcomes:

1. Students are to be proficient in gathering, manipulating and preparing data for analysis, using programming and database skills, such as object-oriented computer programming and relational and non-relational database languages, such as SQL, NoSQL languages, Python, R, Java, Hadoop, Pig, and Hive.
2. Students are to be able to understand the concepts and principles of statistical and mathematical analysis, including linear algebra, discrete mathematics and statistics, and to develop predictive, prescriptive and machine learning models.
3. Students will be able to show mastery in how to organize, manage, and integrate distributed and heterogeneous data sets, using database and graph-based data tools.
4. Students will be able to apply statistical and computing-based data analysis methods and skills to produce meaningful data products.
5. Students will be able to explore complex data using knowledge of visualization theory and visualization tools, and to effectively communicate the visualization results to the end users.

The MS in DS program strives to produce students who have strong fundamental technical capabilities to address the data analytical needs of the domain-specific end users with a deep understanding of analytical methodologies and computing tools.

The MS in DS Program is building on the current trends in CUNY-wide expansion of Master’s programs through CUNY’s new 21st Century Master Plan1. There, several Professional Science Master’s programs have been developed: Geographic Information Systems (Lehman College), Photonics (Queens College), Earth Systems and Environmental Science and Technology (City College), Biomedical Lab Management (Hunter College), Biotechnology and Public Health (Hunter College), Data Analytics and Applied Social Research (Queens College), and MS in Data Science (City College). The following Professional Science Master’s programs are currently in various stages of development: Bioinformatics (Hunter College), Material Science and Nanotechnology (City College), Digital Humanities (Lehman College), Forensic Science (John Jay College), Environmental Assessment Management (Brooklyn College), Digital Humanities (Graduate Center) and Data Analysis and Data Visualization (Graduate Center).

NEEDS AND JUSTIFICATION

Data Scientists are in high demand. The McKinsey report states that the United States alone faces a shortage of 140,000 to 190,000 graduates with analytical expertise and 1.5 million new data professionals, managers and analysts, with the skills to understand and make decisions based on the analysis of big data.

The Data Science research community, along with the technology giants in industry, is leading research and development efforts to manage the data demanded by real time analysis, building on a new parallel computing paradigm. Existing methodologies and techniques are now revisited, and new, more efficient, parallel techniques for managing and analyzing data are part of the core efforts in Data Science. This is a great inflection point, providing opportunities for rapid innovation in computation and data analytics, generating intellectual endeavors to create new knowledge, methodologies and techniques, as well as major opportunities for students/graduates with strong knowledge to contribute significantly to solving the mounting data problems in many domains.

A. Needs of Students

The MS program in Data Science at the Graduate Center will serve to fulfill the needs of students who face an initial career choice to meet the highly demanded data science skill sets in the job market, the needs of students who have extensive professional experience but want to change their career paths by developing foundational data science skills, and those of students who want the opportunity to conduct original research in Data Science through interaction with faculty and industry partners, to prepare for the pursuit of a PhD degree.

B. Broad Market Demand for the Master’s Program

In general, graduates with a Master’s degree over a wide range of disciplines, are better positioned for employment-related advances and higher earning potential at both entry-level and advanced positions. The U.S. Bureau of Labor Statistics reports that when comparing median annual wages, workers with a master’s degree in a STEM field experienced wage premiums between 18% and 33% over those workers in the same occupation who had only a bachelor’s degree. The wage premiums for a Master’s degree holder range between $10,000 and $20,000. In addition, according to the report on earnings and unemployment by educational attainment in 2015, the average unemployment rate for a Master’s degree holder is 2.4%, compared to 2.8% for Bachelor’s degree graduates, while the average weekly earnings of a Master’s degree graduate is $1,341, compared to $1,137 for a Bachelor’s degree holder.

http://www.bls.gov/careeroutlook/2015/article/should-i-get-a-masters-degree.htm
http://www.bls.gov/emp/ep_chart_001.htm
C. Needs of CUNY

After the 2011 McKinsey report on the estimated workforce shortage in data analytics experts in the US, many universities have responded by improving their existing degree programs and creating entirely new offerings, mostly in Master’s programs and graduate certificate programs. Within a short period of time, twenty universities started to offer Master’s degrees or certificate programs in New York State, and a one-year or two-year Master’s degree with solid work experience is quickly becoming the norm for data scientists\textsuperscript{4}. Nationwide, there are over two hundred Master’s/Certificate programs in Data Science and Business Analytics, including online programs.

In this kind of environment, CUNY has an obligation to provide educational opportunities for students who want to pursue Data Science as their intellectual and career choice. Within the New York City area, there are universities, including Columbia University, New York University, Cornell University and other smaller universities, that offer Data Science Master’s programs, but their tuition levels may be prohibitive for many interested students, or at least not as affordable as the tuition of the CUNY Graduate Center.

D. Needs of Industry

Faced with mounting data challenges, companies have a strong motivation to invest in big data technologies, and to hire data scientists proficient in advanced analytics, machine learning and programming to remain competitive and maximize efficiency and value derived from their already available data. A 2013 report from McKinsey Global Institute (MGI) estimates that big data analytics could increase annual GDP in retail and manufacturing by up to $325 billion by 2020. The MGI research also projects that by 2018 the United States will experience a shortage of 190,000 skilled data scientists, and 1.5 million managers and analysts with deep analytical and technical skills who are capable of gaining actionable insights from big data.

According to the indeed.com job posting site, the available data scientist jobs have been increasing over recent years, with total job postings under “data scientist”, constituting between 12 and 20 percent of total job postings between 2012 and 2016 (see Appendix C Figure 1). The job’s percentage growth has reached 56% in May 2016 (see Appendix C Figure 2). LinkedIn job postings referring to data science show the demand, with 3,500 postings as of January 2016. Titles range from Senior Data Scientist to Analytical Data Scientist to Big Data Engineer.

The national salary under the “data scientist” job title is growing steadily (see Appendix C Figure 3), and the average salary for a data scientist job in NY City is $154K, much more than what most professors earn at CUNY. The related job titles such as big data scientist, data scientist machine learning, etc. also show salary ranging from $140K to $174K (see Appendix C Figure 4). New York City is the top location for IT-related jobs (689K jobs) and “data analyst” was the second highest job title that was clicked on (314K times), and this job was used in a keyword search 122,000 times (See Appendix C Figure 5).

\textsuperscript{4} \url{http://www.mastersindatascience.org/blog/data-scientist-foundations-the-hard-and-human-skills-you-need/}
Employers range widely, from IT giants to financial companies, including Amazon, Facebook, Google, Bloomberg, Microsoft, Oracle, Commerce Bank, and Capital One. The industry types that hires data scientists include, but are not limited to, Business and Professional Services, Finance and Banking, Travel and Hospitality, Consulting, Healthcare and Medical, Transportation, IT and Media.

Refer to Appendix D for a sample collection of recent Data Scientist job postings in the New York City area, which shows the Data Scientist job descriptions, roles and responsibilities, skill sets and the Master’s degree as either required or preferred credential. Due to the fact that the Master’s degree in Data Science is relatively new, most of the job openings require a Master’s degree in a related field covered in our curriculum, such as data mining, machine learning, programming and big data related skills, as well as modeling and statistics. As seen in these samples, strong technical, programming and analytical skills are required. Our proposed MS in Data Science will provide them. Table 1 in Appendix E shows a sample of companies in NYC that have openings for different levels of data scientists. Appendix F lists the links to data scientist job openings at locations other than New York City.

E. Needs of the Community

With increased capacities and widespread diffusion of computing power, data storage, and high-bandwidth Internet access, companies around the globe have recognized the power of harnessing data as a source of competitive advantage. As recently developed social web applications and massively parallel processing have become more widely available, the value of the collected data has increased significantly, creating the nascent field of data science, propounding that data is the new oil that could provide companies with differentiation power in the 21st century. The main products of technology giants like Facebook, LinkedIn, Yahoo, and Google are data generation and data analysis products. Many revolutionary discoveries in pharmaceutical and biomedical companies were enabled by analyzing big data to find new cures and analyze genetic information to practice precision medicine. Businesses increasingly utilize data and data analytics to gain new insights into customer behaviors and characteristics to operate more proactively. In order to tap into the newly discovered potential for creating an information economy, organizations of all sizes need professionals in the new field of data science, who are capable of translating massive data into predictive insights, and actionable knowledge.

Data science is an emerging field that is rapidly becoming an academic area of study. With the shortage of skilled practitioners, universities have established over 227 Master’s and Graduate Certificate programs around the nation since 2012, with more universities each year adding a data science program and/or similar business analytics programs. Around New York State alone there are about 20 programs with on campus and online Master’s and Certificate programs. This development is likely to continue.

There are also growing interest and new initiatives in the government sector. When the $200 million Big Data Research and Development Initiative was announced in March 2012, it generated the need for each agency to develop a big data strategy and improve its analytic tools and techniques. All types of government agencies, at the federal, state and local level, are faced with the demands for government data scientists who need to help prevent waste, fraud and abuse; to combat cyber-attacks and safeguard sensitive information; to use business intelligence to make better financial and
resource allocation decisions; to provide better citizen-centric services; to improve defense systems and protect soldiers on the ground; and many other similar tasks. Some of the examples where government agencies need more data scientists include:

- The Department of Defense is interested in autonomous systems that could learn from experience, maneuver and make decisions on their own.
- DARPA: The XDATA program was started to develop computational techniques and software tools for processing and visualizing imperfect and incomplete data in order to achieve greater battlefield awareness for many types of personnel, whether in planning or on missions.
- The Department of Energy: The Scalable Data Management, Analysis, and Visualization (SDAV) Institute was established as an effort to unite the expertise of six national laboratories and seven universities using the department’s supercomputers.
- The U.S. Geological Survey (USGS): Big Data for the Earth System Science initiative was created to support scientists researching issues including climate change, earthquake recurrence and ecological indicators.

The government interests in value-driven data analytics also was spurred on by the 2009 Open Government Initiative of President Obama and by the data.gov portal launch. These, in turn, have increased public and corporate access to thousands of data sets generated by the federal government. The Open Data movement is also another indicator that there is a great demand for knowledgeable and skilled data scientists.

Besides the academic and government interests, there is also a number of newly formed associations and institutes with specialized experts and students in Data Science. Some examples include: Data Science Association, Digital Analytics Association, Data Science Foundations, Data Science Central, Galvanize, KDnuggets, Quora – Data Science, Cross Validated, etc.

There have been various government-driven, corporate-driven and university-driven data contests and competitions in the professional and academic communities. The best-known competitions include but are not limited to:

- Kaggle, the leading platform for data prediction competitions
- CrowdANALYTIX, converts business challenges into analytics competitions
- DrivenData, Data Science Competitions for Social Good
- Innocentive, mainly focusing on life sciences, but has other interesting competitions
- TunedIT, education, research and industrial contests
- 2010-2013 Monthly Analytics and Data Mining Competitions
- Second Pascal Challenge on Large Scale Hierarchical Text classification, 2011
- ISMIS 2011 Contest, for Music Information Retrieval
- Seventh Annual UCSD Data Mining Contest, with two classification tasks based on data from an e-commerce website

5  http://www.mastersindatascience.org/industry/government/

6  http://www.ngdata.com/top-data-science-resources/#Communities
• INFORMS 2010 Data Mining Contest, develop a model that predicts stock price movements at five minute intervals.
• IEEE ICDM 2010 Contest, to predict city traffic based on measurements from Automatic Traffic Recorders or real-time notifications from in-car GPS navigators. Best solutions are awarded with prizes worth 5,000 USD in total.
• KDD Cup 2010, Educational Data Mining to predict student performance on mathematical problems from logs of student interaction with Intelligent Tutoring Systems.
• IEEE VAST 2010 Challenge, (Visual Analytics Science and Technology), consists of three mini challenges on 1) text documents; 2) medical record data and death records; 3) genetic sequences.
• ECML PKDD 2010 Discovery Challenge, on Web Content Quality.
• Active Learning Challenge 2010, addresses machine learning problems in which labeling data is expensive, but large amounts of unlabeled data are available at low cost. Prizes: 3200 USD and travel awards

Some example of recent competitions include:

• GE NFL $10 Million Head Health Challenge, for more accurate diagnoses of mild brain injury and prognosis for recovery following acute and/or repetitive injuries
• GE Hospital Quest on Kaggle, to contribute to the design of the ultimate patient experience; Prize Pool: $100,000
• GE Flight Quest on Kaggle, to develop a usable and scalable algorithm that delivers a real-time flight profile to a pilot, helping to make flights more efficient and reliably on time. Prize Pool: $250,000
• Heritage Health Data Analysis Prize ($3M), raising the question whether administrative health care data can be used to accurately predict which patients will be (re)admitted to the hospital?

In addition, the community interest is so great that there are many offers for boot camps and online courses, data science blogs, learning videos, as well as online regular meetings with a myriad of topics. This can be construed as strong evidence for a community-wide interest in learning and pursuing professional opportunities in big data. An MS program in Data Science is filling a natural need for these constituencies and also provides a training vehicle with academic rigor and practical orientation.

F. Issues of Overlap and Duplication with Existing CUNY Programs

Below are programs that may be considered comparable to the proposed MS in Data Science program.
• The CUNY School of Professional Studies offers a Master of Science degree in Data Analytics: This program focuses on data analytics from the information systems perspective and is offered only online. The program is geared toward professionals in alignment with the mission of the School of Professional Studies. The online Master's Degree in Data Analytics requires 36 credits, nine core courses (27 credits) and three elective courses (9 credits). It has an urban sustainability track.
• CUNY Queens College – MA degree in Data Analytics and Applied Social Research with a concentration in Data Science. This offering is geared toward social science students, especially existing Sociology Master’s students, requiring 35 credits that include three courses in Computer Science topical areas.

• CUNY College of Staten Island – Advanced Certificate Program in Business Analytics of Large-Scale Data is established within the School of Business, requiring 15 credits with five courses. It focuses on targeting a broad spectrum of students with undergraduate degrees in business and related fields. This is not a degree-awarding program, and its primary aim is to provide mostly business students an opportunity to learn a set of data analytics tools and skills and to acquire a basic understanding of data management.

• CUNY Baruch College – Baruch College created three new majors in data analytics: BS degrees in Computer Information Systems with Data Analytics Track, Information Risk Management and Cyber Security Track, as well as MS in Marketing and Marketing Analytics concentration. The Data Analytics and Information Risk Management and Cybersecurity Tracks of the Computer Information Systems major awards a Bachelor’s degree. The Marketing Analytics concentration in the MS in Marketing program provides students with the tools to handle specific marketing and business data from traditional and digital sources and then use them to make sound strategic decisions. Our MS-DS program is oriented toward data science fundamentals, methodology, and technical implementation using software tools, not a tool-focused curriculum, and it does not limit applications to a specific topical area data sets.

• CUNY City College – The Computer Science Department in the Grove School of Engineering at City College is in the process of creating a Data Science and Engineering (DSE) Master’s degree program. The DSE program aims to give students the core data science and engineering skills that will allow them to analyze, process, visualize and apply machine learning and computational statistics to problems in engineering and to scientific disciplines, such as civil engineering, environmental science or medicine. The focus of the program will be a broad overview of tools in data science, including Big Data, and their applications to specific domains rather than the understanding of the algorithmic fundamentals as in our proposed Masters’. The DSE program requires electives in specialization courses in an application domain, including biomedical, chemical, civil, and electric engineering fields as well as in computer science. The focus of that program is for students to understand how to apply and adapt current Data Science tools to those technical domains. Even though the focus of the proposed graduate center CS program and the CCNY-DSE are quite different, the overlap in the topics covered by the core provides synergy through cross-listing the courses. CCNY-DSE students will be able to take courses that go into greater depth on Machine Learning or Big Data algorithms, while Graduate Center students will have access to courses in various application domains, such as Engineering and Medicine, taught with a data science approach. The overlapping courses at CCNY, e.g., Machine Learning, Data Visualization and Big Data

__7__ http://zicklin.baruch.cuny.edu/programs/undergrad/degrees/computer-information-systems
courses, can be cross-listed and coordinated so that our offerings and their offerings are scheduled in alternating semesters.

All these existing programs are different from our proposed Data Science Master’s program, which focuses on computational and algorithmic methodologies, especially targeting students with mathematics, statistics, engineering and computer science backgrounds for deep analytics with understanding of data structures, data integration, data modeling and data manipulation techniques.

STUDENT INTEREST AND ENROLLMENT

A. Interest/Demand

Existing students in each particular discipline such as computer science, statistics, engineering, science, or business, expressed their interest in proficiency in applying and combining their discipline-specific knowledge, techniques and skills to solve their real-world challenges. In the information age real-world problems are often translated into data problems, so unlocking the complex data management and analytics issues is a key to success. Students are keenly aware of the rapid increase in demand in industry, in academic research, in government, and so on, for graduates with cross-disciplinary skills and systematic training in data science.

According to informal discussions and feedback from individual courses in Big Data Analytics and other data analytics courses, the students from different majors such as Computer Science, Physics, Finance, Economics, and Humanities, expressed their desires for a scientific study program in Data Science that is on the same level of rigor as programs offered by other institutions around the Nation, emphasizing cross-disciplinary computing techniques, combined with a deep understanding of data management, data processing and analysis, and data interpretation, instead of taking one or two data analytics courses targeting specific techniques at the Graduate Center.

Some students, who have full time jobs and are faced with practical issues in complex data management, data integration, and data analytics at those jobs, also expressed their interests in deeper understanding of data science as an academic discipline.

B. Enrollment Projections

The enrollment projections are estimated conservatively as follows. The MS in Data Science program will have an initial cohort of 12 students, growing to 14, 15 and up to 16 students in entering cohorts over the five year period (see Table 1). The estimated attrition rates are in line with other Master’s programs at the Graduate Center, averaging two students per year. It is assumed that the MS program will take two years on average to complete, for a full-time student when students take a course load ranging from 6 to 9 credits per semester (see sample course schedules one and two). Part-time students are estimated to take 6 to 9 credits a year and take four years to graduate.
Table 1 Projected enrollment in MS in Data Science at the GC (full time students)

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Students</td>
<td>12</td>
<td>15</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Attrition</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Projected Total Enrollment</td>
<td>12</td>
<td>25</td>
<td>33</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>Number of Graduating Students</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

C. Admission Requirements

The admission requirements to the MS program in Data Science include the following:

- A Computer Science bachelor’s degree (or its equivalent) from an accredited college or university, as of the date of matriculation in the program;
- At least one course in each of the three areas: Linear Algebra, Probability and Statistics, and Algorithms;
- Fluency in programming at least one of Python, Java, or C++
- Graduate Record Examination Quantitative (GRE) test score of at least 80th percentile;
- A demonstrated aptitude for graduate study, as shown by a minimum grade point average of B in undergraduate or graduate coursework,
- Two letters of recommendations;
- A statement of purpose explaining the student’s career objectives, interests, and academic and professional background that are relevant to the degree program;
- TOEFL scores sufficient to demonstrate competency in English, if the student’s academic records are from a non-English speaking country;
- Sample works (e.g., projects, programming code repositories, websites, videos, creative works) that demonstrate professional experience related to the program (optional)

Students in STEM fields, including Mathematics, Statistics, Information Science, Information Systems, and Engineering may be considered if they are exceptional, meet the required course and programming pre-requisites, have at least a B grade point average, and meet the GRE requirement of at least 80 percentile Quantitative score.

D. Student Support Services

The students admitted to the MS-Data Science program will have the resources and services for Graduate Center students available to them, including academic advisement, career advisement, and personal and professional development. The CS Department faculty will be actively engaged in advisement and close mentoring of each graduate student in the new program, through regular course activities as well as in-depth capstone projects. The involvement of industry mentors and outside faculty in the advisement process and the internship projects will be arranged whenever possible and appropriate for the learning. The CS faculty and the MS-DS program director will seek to facilitate involvement of the students in funded project activities and will help students with securing research assistantships and internships.
PROGRAM CURRICULUM

A. Overview and Objectives of Curriculum

The CUNY Data Science Master's program prepares the student to understand, manage, analyze and visualize large data sets. The data sets can be numerical, textual, visual, etc. The program consists of four required 3-credit courses, four (4) elective 3-credit courses and a 6-credit capstone project, adding up to a total of 30-credits. The MS program in Data Science is designed to be completed in 12 or 15 months to 24 months, depending on the student's course load.

The objective of the four required core courses is to provide students with a solid foundation in the fundamentals of Data Science. Each core course introduces data science basics, including data collection, data preparation for efficient storage and extraction, etc., and advanced computing and statistical techniques to solve domain-specific decision making problems. A large amount of data in different varieties of formats poses challenges to the discovery of new knowledge. Students will learn basic and advanced techniques from Machine learning, Data Mining, Big Data Analytics, and Data Visualization, to uncover the patterns, structure, trends, or relationships inherent in the data. Each course will emphasize the data challenges and decision challenges every organization faces.

The elective courses are based on the existing Computer Science Graduate Center courses and provide students with a chance to deepen their knowledge and skills in different aspects of Data Science. The elective areas are divided into two focus areas: one area focuses on theories and techniques of data management, computation and analytics, while the other area focuses on the applications of data science theories and techniques to domain specific problems. Students are required to take two courses (6 credits) from each focus area to be proficient in not only the advanced analytical and computational methodologies and techniques but also the domain-related data science problem solving skills with the awareness of the audience, where students can apply methodologies and techniques to concrete data sets according to their requirements. The four selected elective courses with balanced foci on techniques and on the applied topics will give students a chance to gain a deeper understanding of data science methodologies and theories, and enhance their ability to apply them to address specific domain data challenges. With approval of the Master's Program Coordinator, students can take any other course in our PhD programs as electives.

The 6-credit capstone requirement allows a student to conduct a substantive research project and develop professional experience through an industry internship or an extensive development effort. Option 1 for a capstone project requires students to take two 3-credit research design and project courses teaching fundamental theory and substantial projects followed by another 3-credit course to develop and implement the research design. The second option for a capstone project is to place the student in an internship position in a specific information technology division of one of the many companies in the New York City area. Option 1 requires students to select a primary faculty advisor to guide the research and development of their project. Option 2 requires an industry mentor and a faculty advisor. The capstone project requires a student to produce a publishable conference or journal paper, or an extensive report on industry experience as a publishable case study.
B. Proposed Requirements for M.S. Program in Data Science

The CUNY Data Science Master's program requires students to complete 30 credits of the following course works:

- Four (4) required courses (12 credits)
- Two elective courses from Elective I (6 credits)
- Two elective courses from Elective II (6 credits)
- One of two capstone options (6 credits)

The MS program in Data Science is designed to be completed in two years.

<table>
<thead>
<tr>
<th>Required Core Courses (12 Credits): Credits/Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSc 74020 Machine Learning (^)3/3</td>
</tr>
<tr>
<td>CSc 83060 Data Visualization (^)3/3</td>
</tr>
<tr>
<td>CSc 84030 Big Data Analytics (^)3/3</td>
</tr>
<tr>
<td>CSc 84040 Data Mining (^)3/3</td>
</tr>
<tr>
<td>Total Required Courses = 12 credits</td>
</tr>
</tbody>
</table>

Capstone Project (6 credits)
A 6-credit capstone project, either the Master’s research project option (Option1), the internship option for professional experience (Option 2), guided research and implementation of project oriented courses.

Option 1:
CSc 86180 Capstone Project I in Data Science (^) 3/3
CSc 86190 Capstone Project II in Data Science (^) 3/3

Option 2:
CSc 86210 Capstone Internship in Data Science (~) 6/6

Total Required Capstone Project = 6 credits

Elective Courses (12 credits): Credits/Hours
Choose two courses in each elective area

Elective I: Analytics Courses (6 credits)
CSc 72030 Database Management Systems (^) 3/3
CSc 74040 Natural Language Processing (^)3/3
CSc 74010 Artificial Intelligence (^)3/3
CSc 86120 Modeling and Simulation (#)3/3
CSc 85040 Algorithms for Big Data (#)3/3
CSc 80060 Advanced Data Structures (!)3/3
CSc 80040 Combinatorial Algorithms (!)3/3
CSc 84050 Graphical Models (!)3/3
CSc 86130 Stochastic Optimization (!)3/3
CSc 86110 Pattern Matching (!)3/3
The four required core courses will provide students with comprehensive basic knowledge of data science and commonly used statistical and computational methods in data analysis, as well as techniques for big data management and analytics. These four courses emphasize hidden relationships and pattern mining, predictive modeling, explorative data analyses, with material coming from databases, data mining, machine learning and visualization techniques that can be applied to diverse complex data types, such as text data, graph data, multi-media data.

The two elective courses from the analytics area will enhance the background and advanced knowledge required in data analytical skills, by deepening knowledge in any two of the following areas: Artificial Intelligence, Probability, Statistics, Algorithms, Data structures, Parallel algorithms, Graph models, Social Network, Modeling and Simulation, Pattern Matching, Database Management, and Natural Language Processing.

The other two elective courses will provide students with the ability to apply their basic data analytical skills to a particular domain or specific data types, including text data, finance data, scientific data, visual and image data, and social and cultural data. The applied data analytics will deepen students understanding of the nature and complexity involved in a particular data type and the
specific methods and techniques amenable for the available data set. This will provide the students with an opportunity to develop a specialization area in their domain of interest.

To facilitate the flexibility of student schedules in the MS in Data Science, we will consider cross-listing some of the similar courses, such as “Methods of Text Analysis” in the MS program in the Digital Humanities Digital Textuality Track to be cross-listed with the MS in DS program’s course, “CSc 83040 Text Mining,” or the course on “Spatial Data and Cartographic Theory” in the MS Program in Digital Humanities to be cross-listed with the MS in DS program’s course, “CSc XXXXX Big Spatial Data.” Also, our Big Spatial Data course can be cross-listed with CCNY’s Data Science course, namely, Web-based Geographical Information Systems. The Physics PhD program has a course in Complex Networks that can be cross-listed in Computer Science.

For cross-listing there is already in place a routine protocol. Nothing new needs to be set up.

Our Data Visualization course can be cross-listed with CCNY’s Data Science course, i.e., “Visualization and Design Fundamentals,” and with the GC Digital Humanities Master of Science in Data Analysis and Data Visualization course, i.e., “Visual Analytics.” Some of the advanced electives are offered once in two or three years. By cross-listing these courses and sharing the courses, we provide courses more frequently, giving students more flexibility in selecting their elective courses and speeding up the fulfillment of their course requirements.

The Capstone Projects consists of two alternatives. Option 1 consists of the faculty guided project that spans two consecutive semesters. Option 2 utilizes the existing research project oriented courses at the GC or senior college campuses by cross-listing with them. The expected outcome of the capstone project of option 1 includes the research paper that can be submitted to a Data Science related conference that reports the experimental study results and/or theoretical contributions.

Option 2 of the Capstone project is an internship experience that focuses on the industry specific project that provides students an opportunity to apply the classroom knowledge and skills to a targeted real world situation. We expect the industry mentor will work closely with the students. The students will submit interim project progress reports, and the final report that describes overall project problems, methods, results, and its contributions to the organization, as well as his/her experience or lessons learned.

C. Sample Student Schedule

It is expected that a full-time student will be able to complete all the requirements for the degree within four semesters with an average load of three courses per semester. Sample schedules one and two (shown in the tables 2 and 3) are based on 6 to 9 credits per semester and two different options of the final capstone project. The capstone project Options can be taken in one semester as in sample two (Table 2), while it can be completed in two semesters as in sample one (Table 3). Sample three (Table 4) shows an accelerated schedule for students who can finish their requirements in one year. The accelerated schedule is based on the 15 credit course load in the first semester, and 9-credit course and the 6-credit capstone project option in the second semester.
Table 2 Sample one (Student schedule with Capstone Option in one semester)

<table>
<thead>
<tr>
<th>Fall 2017</th>
<th>Spring 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Mining</td>
<td>Data Visualization</td>
</tr>
<tr>
<td>Machine Learning</td>
<td>Big Data Analytics</td>
</tr>
<tr>
<td>Elective I: One course</td>
<td>Elective II: One course</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>Spring 2019</td>
</tr>
<tr>
<td>Elective I: One course</td>
<td>Elective II: Once course</td>
</tr>
<tr>
<td>Capstone Project Option 2 (Internship)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Sample two (Student with Capstone Option in two semesters)

<table>
<thead>
<tr>
<th>Fall 2017</th>
<th>Spring 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Mining</td>
<td>Data Visualization</td>
</tr>
<tr>
<td>Machine Learning</td>
<td>Big Data Analytics</td>
</tr>
<tr>
<td>Elective I: One course</td>
<td>Elective II: One course</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>Spring 2019</td>
</tr>
<tr>
<td>Elective I: One course</td>
<td>Elective II: One course</td>
</tr>
<tr>
<td>Capstone Project Option 1</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 Sample Three (One Year Accelerated program)

<table>
<thead>
<tr>
<th>Fall 2017</th>
<th>Spring 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Mining</td>
<td>Data Visualization</td>
</tr>
<tr>
<td>Machine Learning</td>
<td>Big Data Analytics</td>
</tr>
<tr>
<td>Elective I: Two courses</td>
<td>Elective II: One course</td>
</tr>
<tr>
<td>Elective II: One course</td>
<td></td>
</tr>
<tr>
<td>Capstone Project Option 2: Internship</td>
<td></td>
</tr>
</tbody>
</table>

D. Residency Requirements and Transfer Credits

Graduate students in the MS in Data Science program must complete at least eighteen of the total graduate credits required to complete their program as matriculated students at the Graduate Center. Graduate students in the MS in Data Science program must complete their course work as matriculated students at the Graduate Center. A total of twelve credits of graduate courses taken at other institutions prior to matriculation in the MS in Data Science can be applied towards their fulfillment of the Master’s program requirements, after the program’s advisory committee evaluates the equivalence of the course contents and adequate grade levels. The transfer courses may include courses that have not been applied toward a previously awarded graduate degree at the Graduate Center or elsewhere; courses taken at the Graduate Center in a non-matriculated status; and courses taken at other colleges where no degree has been awarded. See the Graduate Bulletin for additional limitations regarding transfer credits.
E. Assessment

The assessment of the program will be done by a committee led by the Deputy Executive Officer of the CS PhD Program. It will be based on three areas: preparation, grading, and outcomes. Preparation will determine whether the class work taken is adequate for doing the project. Grading will determine whether the students going through the program are able to make reasonable grades. Outcome will determine whether the students demonstrate a working knowledge of the professional vocabulary and concepts in Data Science to do good projects. The committee will solicit input from faculty and students.

It will be the responsibility of the Director of the Data Science Master’s program and its Executive Committee to formalize the assessment procedure in its first year of operation.

COST ASSESSMENT

The program is designed mostly based on existing courses currently being offered in the Graduate Center. Thus, it is expected to have a limited impact on current departmental resources. The additional students enrolled in the MS in Data Science will not necessitate the addition of extra sections of these courses, and will not impact the ability of full-time faculty to teach in the established Computer Science program. It is expected that this program will just about pay for itself in the first year and will be generating substantial revenue by year 2. It is cost-effective because the program utilizes all the courses that the Computer Science PhD program is currently offering.

In this section, we detail the organizational structure of the program.

A. Academic Administration

The academic curriculum, admissions, and managing of faculty will be handled by a committee within the program. Members of this committee will include the Executive Officer as well as the Program Director, who will also be a regular member of the faculty and the Deputy Executive Officer. Admissions Requirements are detailed in the Student Enrollment Section (see pg. 13).

B. Faculty

There are currently 90 doctoral faculty members in the Computer Science Doctoral PhD program. More than twenty five of these faculty members have been and are currently teaching courses that are listed in the proposed curriculum. (See Appendix B for the partial list of participating faculty for proposed courses.)

C. Administration

The position of Director of the MS program in Data Science will be filled by the Deputy Executive Officer of the Computer Science PhD Program. One more course release needs to be granted to the Deputy Executive Officer over that already provided by the Computer Science program. The Deputy
Executive Officer can use the office space currently assigned in the Computer Science Program office space.

It will be the responsibility of the Director of the Data Science Master’s program to work with the Executive Committee to develop and execute a plan to engage potential industry mentors for the success of the program as well as determining the metrics by which the program will be evaluated and assessed. The metrics should include enrollments, job placements, number of students who choose to go on to a PhD program, etc. Special attention will be paid to making sure that the applicant pool includes women and underrepresented groups.

There will be a need for a half-time college assistant. As the Computer Science PhD program already has a half-time college assistant, the two half-time college assistants will split the work week in half so that only one is working at any one time. There is no need for any additional workspace.

**D. Revenue Assumptions**

Our assumptions are conservative. We estimate that 50% of the students will be part-time and will take four years to complete their degree. We estimate that 50% of the students will be in-state and 50% will be out of state. However in calculating the revenue from the Master’s program, we calculate conservatively and only use the in-state tuition.

Students will undertake flexible course schedules. Completion in one year is possible, but two years is more likely. Students can take 5 courses in the first semester and 3 courses and the capstone together in the second semester (See Sample Schedule 3). Others will take 9 credits per semester for the first two semesters, followed by 6 credits for the third and fourth semesters. Three of these credits for semesters three and four will be for the capstone project. The time limit for the degree will be eight semesters and we assume that most all part-time students will take eight semesters, although some will sure take three semesters.

**E. Projected Revenues**

Funding for the MS program in Data Science will be primarily based on tuition. The projected revenues are based on the rate of $425 per graduate credit, assuming a full-time student on the average takes 15 credits per year and part-time students take either 6 credits a year or 9 credits a year, therefore averaging at 7.5 credits per year. Students in the MS in DS program, like other Master’s-level students at the GC, are not eligible for Graduate Center financial aid. The attrition rate is estimated as two students per year per cohort. We estimate the total revenue over the five year period to be $677,150. This is shown in Table 5 and is an under-estimate since tuition revenue is only counted at the in-state rate and some of the part-time students are likely to finish in three years rather than four years.

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8 Tuition Rate 2015-2016 https://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Registrar/Tuition_2015-2016.pdf
The cost to run the program over five years is estimated to be $328,000. The net five year revenue is, therefore, estimated to be $349,150.

Table 5 Projected Revenues for the MS in DS

<table>
<thead>
<tr>
<th>Num. Students</th>
<th>Avg. Cr./Student</th>
<th>Total Credits</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 full-time</td>
<td>15</td>
<td>90</td>
<td>$38,250.00</td>
</tr>
<tr>
<td>6 part-time</td>
<td>7.5</td>
<td>45</td>
<td>$19,125.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$57,375.00</td>
</tr>
<tr>
<td><strong>Year 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 full-time Y1</td>
<td>15</td>
<td>90</td>
<td>$38,250.00</td>
</tr>
<tr>
<td>6 part-time Y1</td>
<td>7.5</td>
<td>45</td>
<td>$19,125.00</td>
</tr>
<tr>
<td>6 full-time Y2</td>
<td>15</td>
<td>90</td>
<td>$38,250.00</td>
</tr>
<tr>
<td>7 part-time Y2</td>
<td>7.5</td>
<td>45</td>
<td>$22,312.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$117,937.50</td>
</tr>
<tr>
<td><strong>Year 3</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6 full-time Y2</td>
<td>15</td>
<td>90</td>
<td>$38,250.00</td>
</tr>
<tr>
<td>7 full-time Y3</td>
<td>15</td>
<td>105</td>
<td>$44,625.00</td>
</tr>
<tr>
<td>6 part-time Y1</td>
<td>7.5</td>
<td>45</td>
<td>$19,125.00</td>
</tr>
<tr>
<td>7 part-time Y2</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y3</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$146,625.00</td>
</tr>
<tr>
<td><strong>Year 4</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 full-time Y3</td>
<td>15</td>
<td>105</td>
<td>$44,625.00</td>
</tr>
<tr>
<td>7 full-time Y4</td>
<td>15</td>
<td>105</td>
<td>$44,625.00</td>
</tr>
<tr>
<td>6 part-time Y1</td>
<td>7.5</td>
<td>45</td>
<td>$19,125.00</td>
</tr>
<tr>
<td>7 part-time Y2</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y3</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y4</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$175,912.50</td>
</tr>
<tr>
<td><strong>Year 5</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 full-time Y4</td>
<td>15</td>
<td>105</td>
<td>$44,625.00</td>
</tr>
<tr>
<td>7 full-time Y5</td>
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<td>$44,625.00</td>
</tr>
<tr>
<td>7 part-time Y2</td>
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<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y3</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y4</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td>7 part-time Y5</td>
<td>7.5</td>
<td>52.5</td>
<td>$22,512.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$179,300.00</td>
</tr>
</tbody>
</table>

| *Grand Total* |                   |               | **$677,150.00** |
F. Projected Expenditures

- No cost for reimbursement for 8 units for faculty members to teach the core courses, because we utilize the existing faculty members who teach the existing PhD courses. However, in order to ensure the timely completion of MS-DS students, we plan to offer the core courses at least once a year. We allocate the amount of $32,800 for the additional teaching of two courses per year.
- Release time for the Deputy Director of MS-DS program at 1 course unit per semester. Half of the release time (i.e., 1 course unit) will be shared as the Deputy Director in the Computer Science Department, thus we expect an expenditure of 1 course unit.
- Part time college assistant will be funded at the rate of $15 per hour for 10 hours per week, totaling $7,800 per year.
- Reimbursement for 3 units for capstone advisement beginning in Year 2 of the program. Faculty members advising 5 student capstone projects would receive one course credit, which amounts to $16,400 for CS Doctoral faculty, and $5,000 for CS non-Doctoral Faculty. We estimate the equivalent of two faculty members annually who can serve as advisors for the capstone projects, and the remainder of the enrolled students in the second year (other than the 10 students advised by a faculty member) will be placed in an industry internship and advised by industry mentors, which would not incur any expenditure.
- The program will support one GAB ($12,000) annually for one of our PhD students in the Data Science area to support the Masters Data Science Program. This may include some teaching assistant duties and giving tutorials and/or organizing boot camps on topics like probability and statistics and as the need arises, on Python packages, such as NumPy, and the Python Machine Learning package SciKit-learn; and on how to use the R package for machine learning, and data analysis.
- Equipment and Other than Personnel Services (OTPS) will be shared with the Computer Science department at the Graduate Center, thus, no extra cost is estimated.

Table 6 Projected Expenditures for the MS in DS

<table>
<thead>
<tr>
<th>Year</th>
<th>Faculty (2 units)</th>
<th>Deputy Director (1 Unit)</th>
<th>College Assistant</th>
<th>Capstone (2 units)</th>
<th>GAB (Graduate Assistant)</th>
<th>Total Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$32,800.00</td>
<td>$5,000.00</td>
<td>$7,800.00</td>
<td>$</td>
<td>$12,000.00</td>
<td>$57,600.00</td>
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<tr>
<td>2</td>
<td>$32,800.00</td>
<td>$5,000.00</td>
<td>$7,800.00</td>
<td>$10,000.00</td>
<td>$12,000.00</td>
<td>$67,600.00</td>
</tr>
<tr>
<td>3</td>
<td>$32,800.00</td>
<td>$5,000.00</td>
<td>$7,800.00</td>
<td>$10,000.00</td>
<td>$12,000.00</td>
<td>$67,600.00</td>
</tr>
<tr>
<td>4</td>
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<td>$5,000.00</td>
<td>$7,800.00</td>
<td>$10,000.00</td>
<td>$12,000.00</td>
<td>$67,600.00</td>
</tr>
<tr>
<td>5</td>
<td>$32,800.00</td>
<td>$5,000.00</td>
<td>$7,800.00</td>
<td>$10,000.00</td>
<td>$12,000.00</td>
<td>$67,600.00</td>
</tr>
</tbody>
</table>
Five Year Financial Projection

In the first year, the projected net balance is -$225, and from the second year on, the projected net income will be $47,150, $79,025, $108,312 and $111,700 steady state annually (see Table 7 for the five-year financial projection). The total net income over five years after all the costs of operating the MS Program in Data Science is estimated as $349,149.50.

Table 7 The Five Year estimated financial projection

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Revenue</th>
<th>Projected Cost</th>
<th>Projected Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$57,375.00</td>
<td>$57,600.00</td>
<td>-$225.00</td>
</tr>
<tr>
<td>2</td>
<td>$117,937.50</td>
<td>$67,600.00</td>
<td>$50,337.50</td>
</tr>
<tr>
<td>3</td>
<td>$146,625.00</td>
<td>$67,600.00</td>
<td>$79,025.00</td>
</tr>
<tr>
<td>4</td>
<td>$175,912.00</td>
<td>$67,600.00</td>
<td>$108,312.00</td>
</tr>
<tr>
<td>5</td>
<td>$179,300.00</td>
<td>$67,600.00</td>
<td>$111,700.00</td>
</tr>
</tbody>
</table>

GOVERNANCE

The MS in DS program will establish program governance, consisting of the EO of the Computer Science Program, the Deputy EO, the curriculum committee, and any other relevant Departmental standing committees. The program will establish an Advisory Board composed of the faculty members who teach the Data Science courses, non-CUNY external faculty members who are renowned experts in Data Science research, and representatives from industry and non-profit organizations to keep abreast of relevant industry standards and perform academic quality control. The Advisory Board can recommend curriculum updates, student admission criteria, and help with the intern placements.

The governance team of the MS Program in Data Science will continuously monitor and evaluate the students’ progress and the curriculum as well as their feedback after completion, to identify the needs and requirements for successful completion of their degree and appropriately adjust the curriculum and admission requirements accordingly.
APPENDIX A: Course Descriptions

Course numbers in bold are those that already have permanent numbers. Course numbers in gray are those that have been taught, but have not yet gone through the GC Curriculum Committee and the GC Graduate Council.

CSc 74020 Machine Learning

Rationale
The rapid growth of computer power and the needs for information technology have made Machine Learning an essential part of systems that must interpret data by classifying or clustering. This course gives a thorough grounding in the methodologies, technologies, mathematics and algorithms currently needed by people who do research in machine learning.

Machine Learning Description
Machine learning is a branch of artificial intelligence, concerned with the construction and study of systems that can learn from data. Data may be numeric or symbolic and typically has the form of an N-tuple. The anthropomorphic term learning in the machine learning context means being able to predict some unobserved components of an N-tuple given some observed components of the N-tuple. This course provides a detailed explanation of many of the techniques used in machine learning and statistical pattern recognition.

Topic List
Topics may include but are not limited to:

- Bayesian Classification
  - Class conditional probabilities
  - Prior Probabilities
  - Gain Matrix
  - Maximizing Expected Gain
    - Minimax Classification
- Parametric Probability Models
- Non-Parametric Probability Models
- Making Decisions in Context
  - Conditional Independence
  - Hidden Markov Models
  - Forward Backward Algorithm
- Graphical Models
  - Semi-graphoids
  - Graphoids
  - Bayesian Nets
- Decision Trees
- Nearest Neighbor
• Linear Regression
• Logistic Regression
• Principal Component Analysis
• Neural Networks
  o The Perceptron Algorithm
  o The Back Propagation Algorithm
  o Deep Learning
• Linear Decision Rules
  o Fisher Linear Decision Rule
  o Support Vector Machines
  o Kernel Methods
• Ensemble Learning
• Evolutionary Learning
• Clustering
  o K-Means Clustering
  o Expectation Maximization
  o Linear Manifold Clustering
  o Gaussian Mixture Models
  o Clustering Evaluation Measures
• Experimental Protocols
  o Training Sets
  o Test Sets
  o Cross-Validation
  o Performance Characterization

Learning Goals
The student must be able to demonstrate a working knowledge of the theoretical foundations and software of machine learning represented by the topics of
• Bayesian Classification
• Non-parametric Probability Models
• Clustering
• Dimensionality Reduction
• Performance Characterization

Assessment
Written exams and course projects will be assigned to make sure students are capable of identifying suitable algorithms for making certain types of predictions, designing experimental protocols to evaluate the performance of those proposed algorithms, and implement experiments on the algorithms and evaluations. 40% Important machine learning knowledge to be assessed by a final project includes but not limited to: Classification, Regression, Clustering, Dimensionality Reduction, and Performance Characterization. 60%
CSc 86030 Big Data Analytics

Rationale
In addition to constantly growing volumes of proprietary transaction, product, inventory, customer, competitor, and industry data collected from enterprise systems, organizations are also faced with overwhelming amounts data from the Web, social media, mobile sources, and sensor networks that do not fit into traditional databases in terms of volume, velocity and variety (the three Vs of Big Data). This Big Data flood poses challenges as well as opportunities, if managed and analyzed properly, to derive new actionable knowledge and intelligence in a timely manner. This course will explore existing and emerging methods to manage, integrate, analyze and visualize domain-specific Big Data, to identify and provide domain specific solutions.

Description
This course covers the research issues and practical methods of managing and analyzing Big Data to gain and discover insights, patterns, and knowledge nuggets that can support decision makers.

Topic List
Topics may include but are not limited to:

- Introduction
  - Environment, Challenges, and Opportunities
  - Analytics Platform: architecture, process, and analytic tools
  - Multiple data source management and data integration
- Structured Data Analytics
  - Structured Big Data: Issues and Approaches
  - Transportation Data Analytics
    - Financial, Banking, Web-based Transaction Data Analytics
- Semi/Unstructured Data Analytics
  - Textual Data Analytics
  - Social Media Data Analytics
  - Short Text Classification/Clustering
  - Real-time Big Data Processing
- Media Data Analytics
  - Fundamentals of Image/Video Data Analytics
  - Cultural Analytics and Visualization
  - Statistical Inference and Real-time Classification
- Network and Graph Data Analytics
  - Social Network/Graph Data Analytics
  - Semantic Web and Linked Data Analytics
- Societal Impacts on Big Data Analytics
  - Security and Privance Issues
  - Accountability Issues: Open Government Data
Learning Goals
To expose students to Big Data as a scientific or engineering problem. Students will be guided to focus on a particular domain specific area, identify research challenges or application utilities, and present existing and/or innovative methods and algorithms to design a solution. Students are expected to submit a conference paper and/or a demonstration paper to a conference related to Big Data Analytics by the end of this seminar, in collaboration with the faculty member(s). A series of student presentations are expected at the end of the semester. To foster faculty research collaborations throughout the CUNY campuses on topics of interest in Big Data Analytics. Through the invited speaker series, the computer science faculty and domain area experts will exchange ideas to identify and address real world challenges, resulting in a set of new research plans.

Assessment
Each student will present a critical review, summarizing the problems and solutions given in a selected research paper. Students will select one application domain area and collect a repository of data sets. Collectively, the data sets will serve a wider community for Big Data Analytics experiments and tests.

Students will identify a Big Data Analytics research problem related to their domain application and dataset, and write a research paper discussing the existing solutions and design/propose a potential new applied solution that can be used by the domain area decision makers.

With the given dataset, each student can analyze and design a specific use-case related to her/his research problem, and design (and possibly implement) his/her proposed solution as a tool.

The final presentation of the research paper and a demo will be given in the form of a workshop/poster presentation at the end of the semester with an audience of invited faculty, students and industry leaders. Top paper awards will be given and students will have the chance to work with a faculty or industry mentor on a conference paper and/or journal publication.

Textbooks
The recommended books include:


- Big Data Analytics by David Loshin.
CSc 83060 Data Visualization

Course Rationale
Today quantitative and symbolic data are easily collected in computer format, from databases, websites, smart devices, and anything that has interconnect capabilities. When such large amounts of data are put in spreadsheets or tabular reports, it becomes difficult to see the patterns, structure, trends, or relationships inherent in the data. Effective data visualization exposes these inherent relationships, consolidating and illustrating them in graphics.

Course Description
A visualization organizes data in a way that the structure and relationships in the data that may not be so easily understood becomes easily understood and interpreted with the visualization. Visualizations of a data set give the reader a narrative that tells the story of the data. The purpose of data visualization is to convey information contained in data to clearly and efficiently communicate an accurate picture of what the data says through understandable and context appropriate visualizations. To do a visualization can be just exploratory or entails using Machine Learning techniques that determine the structure of the data. The visualizations are then matched to the data structure.

The course will explore how principles of information graphics and design and how principles of visual perception, can be used with machine learning techniques to make effective data visualizations. Each student will make a presentation of some principles of data visualizations or do a visualization project.

The course is open to PhD students in all programs. Non-computer science students will be paired with computer science students for the visualization project.

Topic List
- Visualization Techniques
- Pie and Donut Charts
- Histograms
- Scatter Plots
- Heat Maps
- Matrix Diagrams
- Candlestick Charts
- Bubble Charts
- Graphs and Networks
- Alluvial Diagrams
- Dendrograms
- Ring Charts
- Tree Diagrams
• Treemaps
• Polar Area Diagram
• Parallel Coordinate Displays
• Time Series
• Line Charts
• Cartograms and Choropleths
• Dot Distribution Maps
• Visualization Issues
• Visualization Tools
• Profuse
• Protoviz
• R

Learning Goals
• Be able to describe the key design guidelines and techniques used for the visual display of information
• Understand how to best use the capabilities of visual perception in a graphic display
• Understand the principles of interactive visualizations
• Understand how Machine Learning techniques can determine data structure and pattern
• Explore and critically evaluate a wide range of visualization techniques and applications

Assessment
Every student will do a project involving a presentation of the project at the end of the course.

Text Resources
• Scholarly archival papers.
CSc 86040 Data Mining

Rationale
Datasets consist of observations sampled from a population. They can be as large as terabytes with many variables and many records. The population may consist of subpopulations with each subpopulation having different sets of dependencies among the variables. Data Mining has tools and techniques to identify the structure that enable making valid predictions.

Course Description:
Data mining is the name given to a variety of new analytical and statistical techniques that are already widely used in business, and are starting to spread into social science research. Other closely-related terms are machine learning 'pattern recognition' and predictive analytics. Data mining methods can be applied to visual and to textual data, but the focus of this class is on the application of data mining to symbolic or numerical data. In this area, data mining offers interesting alternatives to conventional statistical modeling methods such as regression and its offshoots. Each student will undertake a data mining analysis project as a final paper, typically analyzing a dataset chosen by the student.

Topic List
The topic list may include but is not limited to:

- Exploratory Data Analysis
- Association Rules
- Distance and Similarity Measures
- Clustering
  - K-means
  - Hierarchical Clustering: Agglomerative and Divisive
  - Subspace Clustering
    - Linear Manifold Clustering
    - Graph Theoretic Clustering
    - Spectral Clustering
    - Mixture Models
    - Biclustering
    - Density-based Clustering
- Prediction and Classification with K-Nearest Neighbors
- Discriminant Analysis
- Classification and Regression Trees
- Random Forests
- Logistic Regression
- Validation Techniques
  - Training and Test Sets
  - Permutation Tests
  - Bootstrap Resampling
Learning Goals

- Understand the mathematical and statistics foundations of the methodology and algorithms of data mining techniques
- Become proficient with data mining software such as WEKA and R
- Given a dataset, be able to discover patterns and relationships in the data that may be used for descriptive modeling or to make valid predictions

Assessment
Assessment of understanding the mathematical and statistic foundations will be done through a midterm (40%) and homework (20%). Assessment of proficiency in using data mining software and discovery of patterns and relationships in a data set will be done by a project (40%).
CSc 72030 Database Systems

Rationale
Database Systems are vital components of modern information systems. Database applications are pervasive and range in size from small in-memory databases to terabytes or even larger in various applications domains. The course focuses on the fundamentals of knowledgebase and relational database management systems, and the current developments in database theory and their practice.

Course Description
The course reviews topics such as conceptual data modelling, relational data model, relational query languages, relational database design and transaction processing and current technologies such as semantic web, parallel and noSQL databases. It exposes the student to the fundamental concepts and techniques in database use and development as well provides a foundation for research in databases.

The course assumes prior exposure to databases, specifically to the relational data model and it builds new technologies on this foundation. In the first half of the course the relational data model, relational query languages, relational database design and conceptual data modeling are reviewed. It then focuses on XML, RD, OWL, parallel, and noSQL databases. It also bridges databases and knowledgebases which is the current trend.

The course requires a term project in which the student implements a database application or explores a database issue.

We will use PostgreSQL as the database platform for doing the assignments.

Topic List
Topics can include but are not limited to:

- Database concepts
- Relational model
- Relational query languages
- Relational Algebra and Calculus
- Datalog
- SQL
- QBE
- Triggers
- Embedded SQL
- Recursion
- Web Database programming
- Conceptual data modeling
- E/R data model
- OO data model
- Relational database design
• Normal Forms (NF)
• 1-4NF
• Lossless join decomposition
• XML, XPath and XQuery
• Ontology and Data Model
• Semantic Web
• RDF, RDF Schema, and OWL
• Storage and indexing
• Query processing and optimization
• Parallel and distributed databases
• NoSQL databases
• Transaction processing and database recovery
• Database security
• Current developments in knowledgebase
• Big data and Hadoop.

Learning Goals
The course content is balanced on theory and practice; the course aims at achieving the following learning outcomes:

• An appreciation of pervasive use of Knowledgebase and DBMS in different application domains
• Skill for developing database applications
• Skills for devising data models and query languages
• Skills for developing web database applications
• Learning storage and indexing of data
• Learning transaction processing and database recovery
• Learning knowledge representation and semantic web technologies
• Skills to integrate knowledge to databases

Assessment
Class participations, discussions and attendance are a critical component of the course and accounts 10

• Written assignments will provide the students the opportunity to appreciate the theoretical underpinnings of the databases systems and comprise 20% of the term grade. These are on data modeling (Entity/Relationship data model), query languages (Relational Algebra and Relational Calculus), database design, and Resource Definition Framework or Ontology Web Language for knowledge representation.
• Two programming assignments and a term project will provide the opportunity for the students to develop technical skills and comprise 20% of the term grade. The first project is on Structured Query Language and the second one is on the web
database programming. The database project involves a complete database application development from design to implementation or a deeper investigation of a topic in databases and knowledgebases.

- A mid-term and a final exam, each is 25%. Individual Assignments or Quizzes 20%
  Term Projects 15% Midterm Exams 30% Final Exam 35%

**Course Prerequisite**
An introductory database course

**Textbook**
CSc 74040 Natural Language Processing

Rationale
Natural Language Processing (NLP) is one of the most important areas within Artificial Intelligence. It is deeply connected with Algorithms, Machine Learning, Programming Languages and Compiler Theory, and Automata and Formal Language Theory.

Course Description
Computers process massive quantities of information every day in the form of human language, yet machine understanding of human language remains one of the great challenges of computer science. How can advances in computing technology enable more intelligent processing of all this language data? Will computers ever be able to use this data to learn language like humans do? This course provides a systematic introduction to statistical models of human language, with particular attention to the structures of human language that inform them and the structured learning and inference algorithms that drive them. This is a lecture course, not a seminar course, but aims to cover both fundamental and cutting-edge research issues.

Topic List
Topics can include but are not limited to:

- Natural Language Understanding
- Hidden Markov Models
- Structured learning
- Inference Algorithms
- Coreference Resolution
- Keyphrase Extraction
- Extraction Based Summarization
- Text Mining

Learning Goals
- be able to write simple programs that understand natural language text by implementing classical NLP algorithms such as Viterbi and CKY
- be able to understand the mathematical theory of noisy-channel model
- be able to understand the formal machineries of describing natural language, such as finite automata and context-free grammars
- be able to understand current NLP research

Assessment
- Python Programming Exercises (50%)
• Quizes (25%)
• Final Project (25%)

Prerequisites
Students are expected to be proficient in programming, basic algorithms and data structures (e.g., dynamic programming, graph traversal and shortest paths, hashtables and priority queues), discrete math, and basic probability theory.

Textbook
Recommended but optional: Jurafsky and Martin, Speech and Language Processing (2nd ed.), Prentice Hall, 2008.
CSc 74011 Artificial Intelligence

Course Rationale
Artificial intelligence (AI) develops programmed agents (systems) that match or outperform people’s abilities to make decisions, to learn, and to plan. To do so, AI develops algorithms and methodologies that sense a systems environment, decide what to do given that data, and effect its chosen actions in its environment.

Course Description
This is graduate-level course on artificial intelligence. It emphasizes fast and clever search heuristics, thoughtful ways to represent knowledge, and incisive techniques that support rational decision making. Application areas will include game playing, natural language processing, and robotics. Prerequisites Students are expected to have a solid background in the analysis of algorithms, proofs in propositional and first-order logic, discrete mathematics, and elementary probability.

Topic List
- Introduction: foundation definitions, classic AI problems, and their solutions, knowledge representation
- State-space search: uninformed search, heuristic (informed) search, local search
- Constraint satisfaction: principles and practices
- Machine learning: foundation definitions, computational learning theory, major paradigms
- Planning: as search and as a reactive process
- Inference: probabilistic and logical reasoning, empirical concerns and complexity
- Introduction to more advanced topics (e.g., embodied cognition, cognitive architectures, autonomy)

Learning Objectives
Students who successfully complete this course will be able to:
- Discuss the agent paradigm as the goal of an intelligent machine
- Describe state space search as a mechanism for problem solving, including optimal solutions and their complexity
- Explain the role of caching, reactivity, heuristics, and planning in state space search.
- Define machine learning and describe the specifics of several prominent machine-learning methods (e.g., SVMs, decision trees, Bayes nets, artificial neural networks, genetic algorithms)
• Evaluate the complexity of an approach to a specific problem and its realistic impact.
• Describe and illustrate the role of constraint satisfaction in AI, with appropriate examples.
• Discuss the role of probabilistic reasoning and mechanisms that employ it
• Discuss the role of logical reasoning and mechanisms that support it

The course has a general goal providing a capability for Empirical AI research that addresses a real-world problem with appropriate knowledge representations and a reasoning methodology for it, identifies or constructs algorithms to address it, and implements, tests, and evaluates alternative solution(s) to it.

Assessment
Grades will be based on:
  • Class participation 10%
  • Assignments 60%
  • Term project (presentation and report) 30%

Text Resources
Russell and Norvig, Artificial Intelligence: A Modern Approach, the third edition. Students will also be required to read a wide variety of assigned papers, and summarize and react to their content.
CSc 86120 Modeling and Simulation

Rationale
Systems have become so complex that it is often the case that understanding them cannot be done analytically. Therefore, their behavior can be observed by modeling them and simulating them. This course will introduce the theories and applications of computer modeling and simulation, focusing on discrete event system modeling and simulation.

Course Description
Basic concepts of systems modeling, in-depth discussions of modeling elements, simulation protocols, and their relationships are covered. The modeling and simulation techniques will be illustrated by examples in DEVSJAVA, which is a Java implementation of the systematic and generic DEVS (Discrete Event System Specification) approach to modeling and simulation. Related application domains of this course include communication, manufacturing, social/biological systems, and business. Some advanced concepts and practices will be presented to attract students’ interests in a seminar format. Objectives Students are expected to learn concepts of computer modeling and simulation applicable to a wide variety of technological, natural, and social systems, provide hands-on experience with modeling and simulation and specifically object-oriented simulation of discrete event models. After the class, students will establish a sound foundation of computer modeling and simulation and learn a set of computer-based tools for constructing, simulating and analyzing dynamic models of complex systems.

Learning Goals
Students are expected to learn concepts of computer modeling and simulation applicable to a wide variety of technological, natural, and social systems, provide hands-on experience with modeling and simulation and specifically object-oriented simulation of discrete event models. After the class, students will establish a sound foundation of computer modeling and simulation and learn a set of computer-based tools for constructing, simulating and analyzing dynamic models of complex systems.

Assessment
The course includes three homework assignments and a term project (report and demonstration). The total grade is broken down as follows (subject to change): homework 1 20%, homework 2 20%, homework 3 25%, term project 35%.
CSc 86070 Algorithms For Big Data

Rationale

Traditional analysis of algorithms generally assumes full storage of data and considers running times polynomial in input size to be efficient. Operating on massive-scale data sets such as those of tech companies such as Google, Facebook, etc., or on indefinitely large data streams, such as those generated by sensor networks and security applications, leads to fundamentally different algorithmic models. MapReduce/Hadoop in particular has seen widespread adoption in industry.

Course Description

This course addresses algorithmic problems in a world of big data, i.e., problems in settings where the algorithm's input [the data] is too large to fit within a single computer's memory. Traditional analysis of algorithms generally assumes full storage of data and considers running times polynomial in input size to be efficient. Operating on massive-scale data sets such as those of tech companies such as Google, Facebook, etc., or on indefinitely large data streams, such as those generated by sensor networks and security applications, leads to fundamentally different algorithmic models. In previous decades, DBMS settings where the data sets on a machine's disk but not in memory motivated the external memory or I/O model (e.g. external mergesort and B-trees). More recently, models such as MapReduce/Hadoop have appeared for computing on data distributed across many machines (e.g. PageRank computation or matrix multiplication). Finally, streaming and sketching algorithms solve problems in linear or sublinear time, on sequences (e.g. finding missing, random, or frequent elements) and on graphs (e.g. finding matchings and counting triangles, deciding bipartiteness and connectivity). Other topics will include approximate matrix multiplication, the secretary problem, and compressed sensing.

Learning goals

The student will learn what the modern models for massive-scale data algorithms are, how to analyze algorithms in these models, and when to use them. In particular, the student will gain experience with MapReduce/Hadoop and with a number of streaming/sketching algorithms.

Assessment

Several bi-weekly problem sets and a course project. The project can take the form of either an expository paper, a nontrivial implementation project, or performing original research on a problem.
**Prerequisites**
Algorithms, and mathematical maturity; also, basic knowledge of discrete math, and linear algebra.

**Texts**
Data Stream Algorithms Lecture Notes (Chakrabarti) and Data Streams: Algorithms and Applications (Muthukrishnan)
CSc 80060 Advanced Data Structures

Rationale
Efficient computing involves the use and maintenance of advanced data structures in a wide variety of algorithms used in Data Sciences. This course covers the theory and algorithms for these advanced data structures.

Course Description
Data structures are a building block for algorithms. A data structure models some abstract structure with a specified set of operations. These include

- maintaining a set under insertions, deletions, and find operations, or
- maintaining a linear order under insertions, deletions, and comparisons, or
- maintaining a graph under insertion of edges and queries whether two points are in the same connected component, or
- answering orthogonal range queries for a point set, or
- answering substring queries for a string

In each of these situations, we have a well-specified behavior of what the structure should do, but it is not immediately clear how we should achieve that behavior. This is an algorithmic question: to design and analyze algorithms that realize the required operations, and answer questions like How fast can we perform the operations? Can we do better if we allow amortized complexity instead of worst-case complexity? How much space does the structure need? Does the structure support changes, or only queries? How can we access past versions of the structure? Once we know good methods to realize these structures, they are available as components to higher-level algorithms, like the heap in Dijkstra's shortest-path algorithm, or the set-union structure in Kruskal's minimum spanning tree algorithm; whenever an algorithm performs such operations often, one should look for the most efficient realization of that operation.

In this course we will study many data structures, their analysis and implementation.

Topic List
- Search and update sets of numbers, intervals, or strings by various data structures such as
  - Search trees
  - Structures for sets of intervals
    - Structures for piece-wise constant functions
    - Structures for orthogonal range searches
  - Heaps
  - Union-find structures
- Dynamization and persistence of structures
• Structures for strings
• Structures for hash tables.

Learning Goals, Outcomes
Be able to determine computational complexity of and program algorithms for
• set maintenance: insertions, deletions, and find operations
• maintaining linear under insertions, deletions and comparisons
• inserting or deleting edges in a graph
• determining whether two graph nodes are in the same connected component
• determining whether one string is a substring of another string

Assessment
There will be four implementation homeworks of structures; test code will be provided, and homework submissions are not accepted until they pass this test. Programs are to be written in C or C++. and will be tested in a linux environment using gcc/g++.

Text Book
CSc 84060  3D Photography

Rationale
This covers a topic of great research and commercial interest: the acquisition and processing of 3D models of real environments. There is a large volume of research work and industrial need in this field.

Course Description
Recent advances in computer hardware have made possible the efficient rendering of realistic 3D models in inexpensive PCs, something that was possible with high end visualization workstations only a few years ago. This class will cover the field of 3D Photography, the process of automatically creating 3D texture mapped models of objects, in detail. We will concentrate on the topics at the intersection of Computer Vision and Computer Graphics that are relevant to acquiring, creating, and representing 3D models of small objects or large urban areas. Many very interesting research questions need to be answered. For example: how do we acquire real shapes? how do we represent geometry? can we detect similarities between shapes? can we detect symmetries within shapes? how do we register 3D geometry with color images? etc.
Applications that benefit by this technology include: historical preservation, urban planning, google-type maps, architecture, navigation, virtual reality, e-commerce, digital cinematography, computer games, just to name a few.

Topic List
Topics may include but are not limited to:
- 3D laser sensing and 2D image sensing.
- Alignment between 3D point sets (registration).
- Alignment between 3D point clouds and 2D images.
- 3D Segmentation.
- 3D Modeling (3D meshes and volumes).
- Mesh simplification and compression.
- Classification in 3D point clouds.
- Repeated patterns and symmetry detection.
- Texture Mapping.
- Online Classification for Large-Scale Datasets.

Learning Goals
- A general understanding of the importance of 3D Photography applications in various fields.
- Understanding of 3D geometry, rigid transformations, projective geometry, classification and segmentation algorithms.
- Ability to formulate research questions and to write research reports.
- Ability to present technical talks.
- Understanding of selected Computer Vision & Graphics algorithms.
- Skills to apply programming tools for solving 3D photography problems.
- Understanding the various sensor and acquisition technologies
- Ability to provide solutions in problems involving large-scale 3D and 2D datasets.

**Assessment**

The grade will be based upon the following: 50% for group or individual projects, 30% for presentation(s) and 20% for class participation. The course does not require any exams. Each student will complete two introductory homeworks (one theoretical and one programming). Each student will prepare a research report that surveys a specific area of 3D Photography and solve a final project. The report will also be supported by a student presentation in class. Grading will be based on the attendance, student presentation, homework completion and the final research report and project. Students can work in groups if they desire so for the final project, upon the consent of the instructor. A list of possible topics that would be appropriate for the final project and report can be provided. Students can pick a topic from this list or can also work on any 3D Photography related topic approved by the instructor.
CSc 86080 Big Spatial Data

Rationale
Recent advances in computer hardware have made possible the efficient rendering of realistic 3D models in inexpensive PCs, something that was possible with high end visualization workstations only a few years ago. This class will cover the field of 3D Photography, the process of automatically creating 3D texture mapped models of objects, in detail. We will concentrate on the topics at the intersection of Computer Vision and Computer Graphics that are relevant to acquiring, creating, and representing 3D models of small objects or large urban areas. Many very interesting research questions need to be answered. For example: how do we acquire real shapes? how do we represent geometry? can we detect similarities between shapes? can we detect symmetries within shapes? how do we register 3D geometry with color images? etc. Applications that benefit by this technology include: historical preservation, urban planning, google-type maps, architecture, navigation, virtual reality, e-commerce, digital cinematography, computer games, just to name a few. All of the above issues must be solved in a parallel processing environment. For example, the Nvidia GTX Titan GPUs with 2,688 cores that support 15*2048 concurrent threads, 6 GB memory and 1.3 and 4.5 Teraflops computing power (double and single precision, respectively) currently available from the market for around $1,000.

Course Description
The increasingly larger data volumes and more complex semantics of spatial information never cease to request more computing power to turn such data and information into knowledge to facilitate decision making in many applications, ranging from location based services to intelligent transportation systems.

Current generation of spatial databases and moving object database technologies based on aged hardware architectures is incapable of processing data with reasonable effort and there are Spatial Big-Data (SBD) challenges. In particular, although locating and navigation devices (e.g. GPS, cellular/wifi network-based and their combinations) embedded in smartphones (nearly 500 million sold in 2011) have already generated large volumes of location and trajectory data, the next generation of consumer electronics, such as Google Glasses, are likely to generate even larger volumes of location-dependent multimedia data where spatial and trajectory data management techniques will play critical roles in understanding the data. Graphics Processing Units (GPUs) are massively data parallel devices featuring a much larger number of processing cores and concurrent threads which make them significantly different from CPUs that currently support much fewer processing cores and concurrent threads. In addition, the current GPU memory bandwidth is more than an order of magnitude higher than that of CPUs and three orders higher than that of disks. Different from high-performance computing resources in the past that are typically only available to highly selective research groups, GPUs nowadays are quite affordable to virtually all research groups and individuals.
On the other hand, the Intel Xeon Phi accelerators based on its Many-Integrated-Core (MIC) architecture represent a hybridization of classic multi-core CPUs and GPUs and are suitable for speeding up a variety of applications.

**Topic List**
- Commodity Parallel Hardware
- Research Practices of Large-Scale Data Management
- Relational and Non-Relational Data
- OpenMP
- Nvidia CUDA
- Intel TBB based parallel programming techniques
- Parallel Indexing and Query Processing on Multidimensional Spatial and Trajectory Data
- Grid- and tree-based indexing
- Selectivity estimation
- Various types of spatial joins and their optimization
- Identifying inherent parallelisms in processing large-scale multi-dimensional data
- High-level parallel primitives
- Multi-core CPUs, GPUs, and Intel MICs

**Learning Goals**
- Be able to understand the variety of kinds of parallel processing
- Be able to understand the different kinds of programming for parallel processing
- Be able to understand the different kinds of programming for parallel processing
- Understand how to identify parallelisms in a large multi-dimensional data set
- Be able to solve spatial data problems in a parallel processing environment

**Assessment**
Grading will be based on the attendance, student presentation, homework completion and the final research report and project. Students can work in groups if they desire so for the final project, upon the consent of the instructor. A list of possible topics that would be appropriate for the final project and report can be provided. Students can pick a topic from this list or can also work on any 3D Photography related topic approved by the instructor.
- 50% for group or individual projects
- 30% for presentation(s)
- 20% for class participation
CSc 80120 Combinatorial Algorithms

Rationale
Combinatorial algorithms is a core part of algorithms, which is a core part of computer science. Many of the optimization problems that are most fundamental to computer science and have had the greatest “broader impact” outside of computer science and indeed within the wider world include shortest paths for travel, network flow for business and transportation, maximum matching for resource allocation, linear programming for myriad operations research problems. These are among the topics covered in this course.

Course Description
This is a course on combinatorial algorithms covering topics (far) beyond the scope of the first-year algorithms class. More precisely, this is an advanced course in algorithms for optimization problems concerning discrete objects, principally graphs. In such problems, we search a finite but typically exponentially large set of valid solutions—e.g., all matchings in a graph for maximizing or minimizing some objective function. Nonetheless, most of the problems we study in this course are optimally solvable in polynomial time. The fundamental topics here are matchings, flows and cuts, shortest paths and spanning trees, and matroids. An overarching theme is that many such problems have traditionally been studied both a) by computer scientists, using discrete, combinatorial algorithms (greedy, dynamic programming, etc.), and b) in the operations research optimization community, where they are treated as continuous optimization problems (solved by linear programming, etc.). We will often compare the two approaches, and we will find that it can be fruitful to combine them. In particular, we will repeatedly use linear programming throughout the course.

Topic List
Topics can include but are not limited to:

- shortest paths and spanning trees
  - single-source (Dijkstra, Bellman-Ford)
  - all-pairs (Floyd-Warshall)
- spanning trees (Prim, Kruskal)
- arborescences (Edmonds)
- NP-Complete extensions (CDS, Steiner, etc.)
- linear programming
  - convex hulls and polyhedra
  - simplex,
  - LP-rounding for approximation
  - duality
  - packing and covering LPs
  - primal-dual method
  - totally unimodular matrices
• convex optimization
• convex programming
• Lagrangian duality
• semi-definite programming
• matchings
  • unweighted bipartite (augmenting paths)
  • weighted bipartite (Hungarian)
  • unweighted non-bipartite (Edmonds)
  • weighted non-bipartite (more Edmonds)
• NP-Complete extensions (GAP, 3DM, etc.)
• network flows
  • disjoint paths (Menger)
  • max flow / min cut
  • augmenting path algorithms
  • push-relabel algorithms
  • min-cost max flow
  • multi-commodity flow and multicut

Learning goals
Learn some of the canonical algorithms (and algorithm schemata) for solving fundamental
matching, flow, and path problems; become able to apply and extend these techniques to
new problem variations; come to see how many of these problems are mutually reducible to
one another; gain an appreciation of the conceptual foundations of duality and matroid theory,
and of polyhedral combinatorics as mathematical technology.

Assessment
The theoretical concepts and proofs will be assessed by bi-weekly homeworks. The algorithms
will be assessed by a final project.
CSc 84050 Graphical Models

Rationale
Probabilistic graphical models have been applied to various domains for modeling and reasoning uncertain information. This course will provide students with essential backgrounds on these methods.

Course Description
Probabilistic graphical models, especially Bayesian networks, offer a compact intuitive and efficient graphical representation of uncertain relationships among the variables in a domain and have proven their value in many disciplines, including machine or medical diagnosis, prognosis, bioinformatics, planning, user modeling, natural language processing, vision, robotics, data mining, fraud detection, and many others. This course will familiarize you with the basics of graphical models and provide a foundation for applying graphical models to complex problems. Topics include basic representations, exact inference, approximate inference, parameter learning, structure learning, and applications.

Learning Goals/Outcomes
The Learning Goals are to acquaint students with the major topics of probabilistic graphical models in order for them to gain an appreciation of the techniques that are available and the problems that are yet to be solved. Students will be able to

- read and understand technical articles describing work in the field of uncertainty artificial intelligence.
- apply knowledge of probability theory to understand the principles behind graphical models and uncertainty reasoning.
- Evaluate the applicability of different probabilistic inference methods and determine which is most likely to be most applicable and effective to a specific problem
- understand different Bayesian methods for learning graphical models from data and conduct experiments to assess their performance.
- identify, formulate, and solve a real-world problem using uncertainty artificial intelligence techniques by collaborating in an interdisciplinary team.

Assessment
There will be a midterm exam (40 to assess understanding of the probability theory underlying graphical models and Bayesian Networks. There will be a term project to assess ability to identify, formulate and solve real-world problems using graphical models.
CSc 82030 Graph and Social Network Analysis

Rationale
A graph has nodes and edges which connect some pairs of nodes. The edges can be directed or undirected. Graph theory has broad application to areas of physics, chemistry, communication science, biology, electrical engineering, operations research, psychology, linguistics, and social networks.

Course Description
The course first studies fundamental concepts in graph theory including data structures that can represent graphs. Concepts include flows and connectivity (e.g., Mengers theorem), planarity (coloring), Eulerian and Hamiltonian graphs. Then the course studies fundamental concepts, metrics, and algorithms associated with Social Networks.

Topic Lists
- Fundamentals
  - Graphs and subgraphs
  - Connected graphs
  - Trees
- Flows and Connectivity
  - Non-separable graphs
  - Flows in networks
  - Edge and Vertex Connectivity
- Graph Representation and Algorithms
  - Adjacency matrix and adjacency-linked lists
  - Dijkstra’s Shortest Path Algorithm
- Planarity and the Four-Colour
- Independent Sets
- Cliques and Quasi Cliques
- Matching
- Eulerian and Hamiltonian Cycles
- Vertex and Edge Covers
- Dominating Sets
- Random Network Models
- Social Network Analysis
  - Types of Social Networks
  - Homophily
  - Multiplexity
  - Mutuality/Reciprocity
  - Propinquity
  - Bridges
  - Degree Centrality
  - Betweenness Centrality
Closeness Centrality  
Network Reach  
Network Integration  
Boundary Spanners  
  Peripheral Players  
  Density  
  Structural Holes  
  Tie Strength  
  Communities

**Learning Objectives**

Students will be able to

- Formally apply graph-theoretic terminology and notation
- Apply theoretical knowledge acquired to solve practical graph problems
- Understand and apply social network analysis techniques

**Assessment**

There will be two exams to assess understanding of the theoretical concepts of Graph Theory: a Midterm (30%) and a Final (30%). There will be Homework and Programming Projects (30%) to assess knowledge of algorithms.

**Texts**

CSc 74030 Computer Vision and Image Processing

Rationale
Computer vision and image processing are important and fast evolving areas of computer science, and have been applied in many disciplines. This course will introduce students to the fascinating fields. Student will gain familiarity with both established and emergent methods, algorithms and architectures. This course will enable students to apply computer vision and image processing techniques to solve various real-world problems, and develop skills for research in the fields.

Course Description
This course introduces fundamental concepts and techniques for image processing and computer vision. Topics to be covered include image formation, image filtering, edge detection and segmentation, morphological processing, registration, object recognition, object detection and tracking, 3D vision, and etc.

Topic List
The topics may include but are not limited to:

- Image formation and perception, image representation
- Image filtering: space- and frequency- domain filtering, linear and non-linear filters
- Morphological image processing.
- Image geometric transformations, image registration.
- Edge detection, image segmentation, active contours, level set methods
- Object recognition, template matching, classification
- Object detection and tracking: background modeling, kernel-based tracking, particle filters
- Camera models, stereo vision

Learning Goals
The learning goals include:

- Understand the major concepts and techniques in computer vision and image processing
- Demonstrate computer vision and image processing knowledge by designing and implementing algorithms to solve practical problems
- Understand current research in the fields
- Prepare for research in computer vision and image processing

Assessment
The course assessments include homework and programming assignments (30%), one middle term exam (30%), and a final project (40%). The programming projects require students to implement algorithms to solve real computer vision problems to demonstrate their understanding on concepts of computer vision and image processing. A final project on a
research topic requires a proposal, a final project report, and a presentation to prepare students for research experience.
CSc 86050 Social and Cultural Computing

Course description

The next big idea in language, history and the arts? Data. 1

The joint availability of massive social and cultural data sets (including social media and digitized cultural artifacts) make possible fundamentally new paradigms for the study of social and cultural activities and histories. While the recently emerged field of social computing started to explore some of these possibilities, we are only at the very beginning.

9 New York Times, November 16, 2010

Image analysis will be used to illustrate basic concepts of exploratory data analysis. We will also examine both papers from computational social science science and data analysis/visualization projects by designers and artists

Topic List

Topics include but are not limited to:

- Basic concepts and methods of data analysis (using R)
- visualization techniques (using R / Mondrian / Tableu / other software)
- use of visualization for explorative data analysis
- elements of graphic design as they relate to visualization and project web site design
- strategies for presenting projects online
- how to write effective project descriptions for the web presentation;
- promoting projects through social media and getting media coverage

Learning Goals

- Understand current research directions in social and cultural computing
- Identify not yet explored possibilities in working with social media data
- Learn how to prepare data for analysis
- Learn basic techniques for data exploration
- Becom proficient with data visualization techniques
- Understand the structure and organization of web projects that present results of social and computing projects, or visualizations of cultural data
- Learn how to clearly and effectively write project summaries for general audiences
- Learn how to contact members of the press / getting project publicity and promote projects using social media;

Assessment

Students will complete 3 practical assignments which involve organizing data set, analysing them and creating effective visualizations. The goals of these assignments is to meet learning
goals 3-5. Students will work in groups on final projects which address goals 6-8. They will be also responsible to completing and discussing readings and sample projects (goals 1-2).
CSc 86060 Text Mining

Description
Text mining can be defined as the process of finding or learning patterns from textual data to aid in decision making. This course will include the study of different representations of textual data and the algorithms used to glean new information from the data. It encompasses ideas from many other areas in computer science including artificial intelligence, machine learning, databases, information retrieval, and natural language processing. This class will primarily focus on the statistical methods for text mining, including machine learning techniques that are used to facilitate decision making.

Topic List
The topic lists may include but is not limited to:

- **Text Data Representation**
  - Bag of Words
  - Named Entities
  - Relationships

- **Text Categorization**
  - Rule-based classifiers
  - Decision trees
  - Nearest neighbor
  - Maximum margin classifiers
  - Probabilistic classifiers
  - Semi-supervised Learning using EM

- **Text Clustering**
  - Hierarchical clustering
  - K-means clustering
  - Dimensionality Reduction
  - Latent semantic indexing

- **Topic Modeling**
  - pLSI
  - LDA

- **Information Retrieval and Text Mining**
  - Key Word Search
  - Indices
  - Link Analysis
  - Text Mining from Social Media

- **Sentiment Analysis**

Learning Goals
Students should be able to:

- Demonstrate an understanding of the algorithms that were taught in class.
- Use current text mining software with practical, real-world data sets in a way that aids decision making.
Assessment
Homework sets and a final exam with questions that target the learning goals will be used to assess student knowledge. In addition, a semester project will be used to assess student ability to use text mining packages, and to choose appropriate representations, algorithms, and testing methodology.
CSc 76010 Parallel Scientific Computing

Rationale
Computationally complex problems cannot be solved on a single computer. They need to be run in an environment of 100 to 1000 processors or more. Designing algorithms to efficiently execute in such a parallel computation environment requires thinking and mindset than designing algorithms for single processor computers. This course is designed to give the students the parallel computation perspective using the MPI framework.

Description
Computationally complex problems cannot be solved in a single computer either because they are combinatorially complex (NP-Hard) or because they are large involving much data such as very large matrices or much computation. The framework we use to solve these kinds of problems in parallel is called MPI, short for Message Passing Interface. We examine combinatorial problems such as Boolean Satisfiability, Set Partitioning, Traveling Salesman and large problems such as might be in matrix multiplication or simulated annealing.

Topic List
- MPI Tutorial
- Amdahl’s and Gustafson’s Laws
- Matrix Multiplication
- Boolean Satisfiability
- Set Partitioning
- Simulated Annealing
- Graph Coloring
- Graph Betweenness
- Large Optimization Problems
- Student Presentations of Papers and their Programming Results

Learning Goals
- Learn how to design algorithms in parallel environments
- Learn how to use MPI in a parallel program
- Learn how to use MPI in solving
- Clustering Problems
  - The Traveling Salesman Problem
  - The Set Partitioning Problem
  - Matrix Multiplication
  - Simulated Annealing
  - Optimization Problems
  - Graph Coloring
  - Graph Betweenness

Assessment
Every student will work on two different MPI programs to solve computationally complex problems of their own choosing. In the second half of the course they will report on their algorithms and the results of their programs. Grades will be based entirely on their programs and presentations.
CSc 86110  Pattern Matching

Rationale
The advent of the worldwide web, next generation sequencing, and increased use of satellite imaging have all contributed to the current information explosion. One of the most basic tasks common to many applications is the discovery of patterns in the available data. To render the searching of big-data feasible, it is imperative that the underlying algorithms be efficient, both in terms of time and space. Pattern Matching is a branch of theoretical computer science whose ideas are used in practice daily in many different data-driven areas, including (but not limited to) word processors, web search engines, biological sequence alignments, intrusion detection systems, data compression, database retrieval, and music analysis. This course gives a student training in the process of developing and analyzing efficient algorithms through the study of pattern matching algorithms that are used for searching and indexing large textual data.

Course Description
Pattern Matching is one of the fundamental problems in Computer Science. In its classical form, the problem consists of 1-dimensional string matching. Given a string (or text) $T$ and a shorter string (or pattern) $P$, find all occurrences of $P$ in $T$.

Over the last four decades, research in Pattern Matching has developed the field into a rich area of algorithmics. This course covers several variants of the pattern matching problem. Emphasis is placed on the algorithmic techniques used to speed up naive solutions, and on the time complexity analysis of the algorithms.

Topic List
Topics may include but are not limited to:

- Exact String Matching
  - Knuth-Morris-Pratt
  - Boyer-Moore
- Suffix Trees and Applications
  - Wiener
  - Ukkonen
  - Practical Implementation Issues
- Multiple Pattern Matching
  - Aho-Corasick
• Generalized Suffix Tree
• Approximate Pattern Matching
  o Hamming Distance
  o Edit Distance (dynamic programming)
  o Don't Cares (convolutions)
• Lowest Common Ancestor
  o Range Minimum Query
  o Complete binary trees
• Periodicity
  o Squares
    o Repetitions
    o Approximate tandem repeats
• Palindromes
  o Manacher
  o Suffix trees
  o Palindromes with errors
• Naming
  o Karp-Miller-Rosenberg
  o Lyndon Word Naming
• 2-Dimensional Matching
  o Bird-Baker
    o Dueling for Alphabet Independent Matching (Amir-Benson-Farach)
  o Small Space 2d Matching
  o 2d Dictionary Matching
• Suffix Arrays
  o Definition and Construction
  o String Matching with suffix array
  o Burrows-Wheeler Transform

**Learning Goals**
The student must be able to demonstrate knowledge of how to apply and analyze the following algorithmic tools:

• Finite Automata
• Dynamic Programming
• Suffix Trees
• Naming
• Convolutions
• Dueling

**Assessment**
Two written exams, one midterm and one final will be used to assess students' knowledge of the subject. The questions on the exams will address problems related to those that were discussed in class, and the student will have to demonstrate the ability to apply techniques learned to new problems. For example, after learning dynamic programming for edit distance with unit cost, a student will have to answer a question related to weighted edit distance.
CSc 86090 Big Data Management & Analysis

Rationale
Big data is sometimes defined as data that are too big to fit onto the analyst’s computer. With storage and networking getting significantly cheaper and faster, big data sets could easily reach the hands of data enthusiasts with just a few mouse clicks. These enthusiasts could be policy makers, government employees or managers, who would like to draw insights and (business) value from big data. Thus, it is crucial for big data to be made available to the non-expert users in such a way that they can process the data without the need of a supercomputing expert. The course aims to provide a broad understanding of big data and current technologies in managing and processing them with a focus on urban data sets.

Course description
An approach to make big data available to a wide audience target is to build big data programming frameworks that can deal with big data in as close a paradigm as the way it deals with “small data.” Such a framework should be as simple as possible, even if not as efficient as custom-designed parallel solutions. Users should expect that if their code works within these frameworks for small data, it will also work for big data. The course will provide an overview of big data analytic lifecycle and how to use current techniques and frameworks to build big data analysis pipelines. This course will use Python as the main programming language; however, other languages may also be accepted where applicable, e.g. using Java for Hadoop.

List of topics
Topics may include but are not limited to:

- Big Data Analytics Lifecycle
- Roles for a successful analytics project
- Case study to apply the data analytics lifecycle
- Big Data challenges and how to deal with them
- Volume/Velocity: streaming computation
- Volume: massive parallel computing
- Variety: NoSQL databases
- Big Data computing model
- MapReduce paradigm
- Bring compute to the data
- Data transformation with higher order functions
- Big Data technologies and frameworks
- Apache Hadoop and Hadoop Streaming
- Apache Hue, Pig, Hive, Oozie
- Apache Spark
- Virtualization and cloud computing with Amazon and Azure
- Big Data analytics with Spark
- Processing spatial-temporal data sets efficiently
- Building and running machine learning pipelines at scale
• Debugging big data pipelines

Learning objectives
The student must be able to demonstrate a working knowledge of big data technologies and how to use them in real-world applications. In particular, after the course, the students are expected to:

• Understand the big data ecosystem including its data life cycle
• Gain experience in identifying big urban data challenges and develop analytical solutions for them
• Understand the big data programming paradigm: streaming, parallel computing and MapReduce
• Gain knowledge in implementing analytical tools to analyze big data with Apache Spark & Hadoop

Assessment
Hands-on labs will be offered throughout the course to bolster the knowledge learned in each topic. Each class session will be divided into a 60 minute lecture and a 60-minute lab, where a lab submission is mandatory to assess the knowledge learned. The students will also be given weekly programming assignments to assess their ability in implementing analytic algorithms using big data frameworks. 60%
Important big data knowledge to be assessed by a final project, which uses real city data, includes but not limited to: big data management and analysis with Hadoop Streaming, Pig, Hive, Apache Spark, Spark ML, and spatial analysis at scale. 40%
CSc 86010 Massively Parallel Programming

Rationale
Computationally complex problems such as graphical representations of movement cannot be processed in a reasonable amount of time on a single CPU. Currently, most graphical computations and many scientific calculations involving large datasets and complex systems are run in a massively parallel environment. Designing algorithms to efficiently execute in both time and memory usage in such environments requires an understanding of concurrency and the hardware requirements of massively parallel systems, for example, Graphical Processing Units (GPUs). This course is designed to give the students an introduction to the concepts and usage of GPUs and the CUDA extensions to the C/C++ languages.

Course Description
A survey of the approaches to massively parallel computer applications with emphasis on using graphical programming units (GPUs) and the CUDA extensions to the C/C++ programming languages. Comparisons between multicore CPUs and multi-processor GPUs will be given. Issues such as organization of large data sets, memory usage, and communication concerns will be addressed. Different levels of concurrency will also be discussed with most the focus on thread level-concurrency. Also multiple data streams on a single GPU and multiple GPUs will be covered with quick reviews of OpenMP and OpenMPI usage. Standard problems will be discussed.

Topic List
Topics may include but are not limited to:

- The Graphical Processing (GPU) Capabilities
- CUDA
- Threading Concurrency
- OpenMP
- OpenMPI

Learning Goals
- The student will understand the concept of concurrency in an environment involving many parallel processors
- The student will understand the relationship between programming using a traditional multicore-CPU versus using massively parallel GPUs
- The student will acquire an understanding of the importance of the memory model needed for massively parallel programming
- The student will gain experience programming with CUDA on a GPU
- The student will be introduced to how to use multiple GPUs connected to a single CPU and using multiple GPUs over a network

Assessment
- At least five weekly or biweekly assignments 25%
- Each student will be expected to carry out a project transforming an existing serial code or writing a new parallel code to use CUDA on a GPU. The student will write a paper in a research format describing their project 25%
• One midterm exam 25%
• A final presentation of the project in class 25%
CSc 84090 Vision, Brain and Assistive Technologies

Rationale
Based on the World Health Organization 2012 Report, there are more than 285 million visually impaired people, of which 39 million are blind. About 65% of all people who are visually impaired are aged 50 and older, while this age group comprises about 20% of the world's population. With an increasing elderly population in many countries, more people will be at risk of age-related visual impairment. Research on multimodal and alternative perception will have a long term impact on the health and wellness of society, not only for the visually challenged, but for people who often work in dangerous environments, such as firefighters, drivers and soldiers.

Course Description
This course will discuss modern vision science and explore how the brain sees the world, thus including introductory on computational neuroscience, motion, color and several other topics. Then the basics of computer vision will be introduced, for both preprocessing and 3D computer vision. Finally, we will discuss the needs and state-of-art in sensing, processing and stimulation for assisting visually challenged people (blind and visually impaired people) using advanced technologies in machine vision, robotics, displays, materials, portable devices and Infrastructure. The course will be offered as an interdisciplinary seminar course, in which a few lectures will be provided from the recommended textbook on human vision as well as the lecture notes of the instructor on computer vision, and then students from mathematics, physics, electrical engineering, computer science and psychology and other social sciences will be assigned to read, present and discuss materials in vision, brain, computing and devices for assisting the visually impaired. The major reading materials will include the papers and talks from the references below. Finally students will team up to do course projects.

Topic List
Topics may include but are not limited to:
- Introduction to Human and Computer Vision
- Human Eyes and Visual Brain
- Depth and Color
- Image Formation: Digital Image Basics
- Image Enhancement
- Camera Models
- Stereo Vision and Visual Motion
- Assistive Technologies for the Blind and Visually Impaired
- Visual Prosthetics
- Vision Algorithms for the Blind and Visually Impaired

Learning Objectives
Through the course, the students should be able to:
- Demonstrate basic knowledge of human brain and vision, visual impairment, and computer vision
- Identify need of visually impaired people and related assistive technologies
- Apply computer vision algorithms/techniques and assistive technologies to assisting visually impaired

**Assessment**

**Grading policy:**
- an in-class exam of the basics theory (30%)
- student reading reports and presentations (30%)
- project reports and presentations for applications (40%).
CSc 86150  Quickest Detection of Abrupt Changes

Rationale
This is a comprehensive course on the topic of quickest detection that has been offered at the Graduate Center since the Fall of 2008. It covers the fundamental theory of quickest detection, the algorithms associated with it and the applications of quickest detection in a variety of fields, namely finance, signal processing and 3D Computer Vision. The basic financial notions of asset pricing and risk are also discussed. There is a great commitment in research and a huge commercial interest in all of the application areas on this field. A number of graduate students in the PhD program are currently using such algorithms in their research.

Course Description
The problem of detecting abrupt changes in the statistical behavior of observation arises in a variety of fields including signal processing, computer vision and finance. Using the mathematical methods of statistical sequential techniques and stochastic optimization, this course describes the fundamentals underpinning the field providing the background necessary to design analyze and understand quickest detection algorithms and stopping times. In this course we will provide a unified treatment of several different approaches to the quickest detection problem and draw examples from the field of signal processing, finance and computer vision. The course also covers models used in finance and signal processing, brownian motion, Ito calculus, markov processes and the fundamental theory of asset pricing. The notion of stopping time and its association with detection algorithms is further examined. Moreover, connections between detection algorithms and drawdown measures are drawn. The course finally examines the use of detection algorithms in online trading and the detection and classification of objects in point clouds of urban scenes.

Topic List
- Statistical and sequential hypothesis testing
- The sequential probability ratio test and the cumulative sum algorithms as stopping times
- Applications to computer vision, algorithmic trading and signal processing
- Modeling in finance and signal processing, brownian motion
- Ito calculus, martingales, markov processes and the fundamental theory of asset pricing
- Drawdowns measures of risk and connections to detection

Learning Goals
A general understanding of the importance of quickest detection in various fields.

- Understanding of the notion of stopping time and online detection
- Ability to formulate research questions and to write research reports
- Ability to present technical talks
- Understanding of selected detection algorithms and how they can be applied in various fields
• Knowledge of basic models and stochastic processes used in signal processing and finance
• Knowledge of the fundamental theory of asset pricing, the notion of risk and how it relates to drawdowns and detection

Assessment
The course requires a midterm exam, a project and a final. Each student will prepare a research report either related to the theoretical study of detection algorithms or to adjusting and applying detection algorithms in a topic of their choice. The report will also be supported by a student presentation in class. Grading will be based on the attendance, student presentation, midterm, final and the final research report and project. Students can work in groups if they desire so for the final project, upon the consent of the instructor. I will provide a list of possible topics that would be appropriate for the final project and report. Student can pick a topic from this list or can also work on any other related topic of their choice subject to instructor approval.
CSc 86130 Stochastic Optimization by Computer Simulation

Rationale
Optimization is the “science of the best”. Today, there is a sound body of models and methods to find the best decision or choices. These methods are widely used in airlines, hospitals, banks, computer engineering, manufacturing and scheduling, among other sectors. We will specialize our study to stochastic optimization, which incorporates randomness (uncertainty). Among the problems that we will discuss are the following.
Aerospace engineers need to control fuel and routes of vehicles to make a rendez-vous in space, under various risks. The value of an American option in finance can be obtained in terms of an optimal exercise time. An urban transportation subway needs to revise and automatically adapt frequencies to operate optimally under changing demands. Telecommunication and manufacturing networks need algorithms for optimal routing and scheduling, under demand uncertainty. These seemingly different problems can be solved using computer methods for optimization under randomness. Algorithms can be compared in terms of speed of execution and accuracy in the approximation. Central to our course is the analysis of convergence (in a probabilistic sense) of these computer methods. We will study a mathematical approach for algorithmic efficiency using risk-theoretical concepts that allows to rank methods via the ubiquitous trade-off between precision and speed. We will illustrate difficult concepts with actual problems for students to code and see the methods at work.

Course Description
We will study continuous optimization, dealing with continuous decision variables (how much to invest, how much hydroelectric energy to produce, etc), for which we will provide a summary of known convergence results. In a final stage, we will discuss some methods for discrete optimization (how many buses should a transportation company buy, DNA sequencing, etc.) and include reading current research papers. The subject of stochastic optimization integrates sophisticated knowledge in probability theory, functional analysis, dynamical systems and computer simulation. Our pedagogical formula focuses on individual needs and goals, and we will emphasize understanding through hands-on experience with examples and computer exercises. We will provide a full set of lecture notes with the mathematical detail.

Learning Goals
1. Acquire fundamental knowledge in the area of stochastic processes and optimization.
2. Formulate mathematical models for stochastic optimization.
3. Formulate the required characteristics for the computer code.
4. Understand the convergence properties of various methods.
5. Understand how different methods apply to different models in machine learning, intelligent agents and self-optimized complex systems.
6. Acquire the capability to carry out consulting projects in the public and private sector.
In addition, students who succeed the course will be better placed to conduct fundamental research in stochastic optimization and provide advise concerning current optimization practices and methodologies for continuous optimization and "big data" search methods such as evolutionary algorithms.

**Assessment**
Learning goals 2, 3, and 6 will be assessed through the team projects via a class presentation (15%) and a final report (20%). Learning goals 1, 4 and 5 will be assessed through the homework assignments (30%) and the final exam (35%). Threshold: in order to pass the subject, a minimum of 55 in the exam is required.
CSc 84100 Speech and Audio Understanding

Rationale

In October, 2014, the number of mobile devices surpassed the number of humans in the world. In addition to data communications, almost all of these devices are equipped with at least one microphone and speaker. This course gives a thorough foundation in analyzing, understanding, and manipulating audio signals recorded by these devices. It will cover traditional algorithms that provide human-human and human-machine communication along with promising solutions to some of their limitations. It will also cover recent applications to musical audio and environmental signals.

Course description

“Machine listening” is a multidisciplinary field at the intersection of signal processing, machine learning, and psychoacoustics. This course will begin by introducing necessary material from those fields to provide a foundation for the rest of the course. Machine listening is primarily concerned with analyzing and understanding three types of signals: speech, music, and environmental sounds and these will be the focus of the course. We will also consider additional applications that require the creation or manipulation of these sounds in speech and music.

List of topics

The topics may include but are not limited to:

- Fundamentals of
  1. Digital signal processing
  2. Acoustics
  3. Auditory perception
  4. Machine learning
- Core machine listening topics
  1. Speech models and speech synthesis
  2. Speech recognition features and acoustic modeling, including noise robustness issues
  3. Speech recognition language modeling, search, and weighted finite state transducers
  4. Music analysis and modeling
  5. Source separation and spatial sound
  6. Environmental sound analysis

Learning objectives

Students will be able to demonstrate working knowledge of the theory, algorithms, and software involved in

- Speech recognition
- Speech synthesis
- Music information retrieval
Environmental audio analysis

Assessment

Assessment will be based on two main components: weekly paper discussions and a final project. Each week, the class will read an important paper in the field relevant to the current topic. Everyone will write one paragraph summarizing the paper and one paragraph response to the paper. And one or two students will lead the class discussion on that paper. In order to encourage final projects that are novel, well thought out, and well executed, activities related to them will be spread through the semester. Weekly writing assignments will also include a paragraph discussing progress on the project. There will be a midterm project proposal presentation, where each student will present their current plan and receive feedback on it. There will be final project presentations at the end of the semester, with additional feedback, and final paper submissions slightly after that should incorporate this feedback. The above components will be weighted as follows:

- Weekly writing: 20%
- Paper presentation: 10%
- Participation/attendance: 10%
- Project proposal presentation: 20%
- Final project presentation: 10%
- Final project paper: 30%
## APPENDIX B  Faculty List for Data Science Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Faculty Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Data Structures</td>
<td>Peter Brass, Mayank Goswami, Katherine St. John, Noson Yanofsky</td>
</tr>
<tr>
<td>Algorithms For Big Data</td>
<td>Matt Johnson, Amotz BarNoy, Delaram Kahrobaei, Mayank Goswami, Katherine St. John</td>
</tr>
<tr>
<td>Artificial Intelligence</td>
<td>Susan Epstein, Changhe Yuan, Chao Chen, Robert Haralick</td>
</tr>
<tr>
<td>Big Data Analytics</td>
<td>Soon Ae Chun, Bon Sy, Huy Vo, Chao Chen, Robert Haralick</td>
</tr>
<tr>
<td>Big Spatial Data</td>
<td>Jianting Zhang</td>
</tr>
<tr>
<td>Combinatorial Algorithms</td>
<td>Matt Johnson, Delaram Kahrobaei, Louis Petingi, Katherine St. John, Mayank Goswami, Devorah Kletenik</td>
</tr>
<tr>
<td>Computer Vision and Image Processing</td>
<td>Ioannis Stamos, Shuqun Zhang, Yingli Tian, Michael Grossberg, George Wolberg, Jie Wie, Zhigang Zhu</td>
</tr>
<tr>
<td>Database Systems</td>
<td>Abdullah Tansel, Akira Kawaguchi, Soon Ae Chun</td>
</tr>
<tr>
<td>Data Mining</td>
<td>Lev Manovich, Soon Ae Chun, Bon Sy, Robert Haralick</td>
</tr>
<tr>
<td>Data Visualization</td>
<td>Michael Grossberg, Lev Manovich, Robert Haralick, Katherine St. John</td>
</tr>
</tbody>
</table>
| 11 | Graphical Models | Changhe Yuan  
    |               | Chao Chen  
    |               | Katherine St. John |
| 12 | Graph and Social Network Analysis | Matt Johnson  
    |               | Scott Dexter  
    |               | Katherine St. John  
    |               | Louis Petingi |
| 13 | Machine Learning | Robert Haralick  
    |               | Chao Chen  
    |               | Michael Mandel  
    |               | Alla Rozovskaya  
    |               | Devorah Kletenik  
    |               | Theodore Raphan  
    |               | Jie Wie |
| 14 | Modeling and Simulation | Feng Gu  
    |               | Paula Whitlock  
    |               | Felisa Vazquez-Abad  
    |               | Kaliappa Ravindran |
| 15 | Natural Language Processing | Rivka Levitan  
    |               | Alla Rozovskaya  
    |               | Jia Xu |
| 16 | Pattern Matching | Theodore Raphan  
    |               | Dina Sokol  
    |               | Katherine St. John |
| 17 | Parallel Scientific Computing | Robert Haralick  
    |               | Feng Gu |
| 18 | Programming With Massively Parallel Systems | Paula Whitlock  
    |               | Jianting Zhang  
    |               | Bo Yuan |
| 19 | Quickest Detection of Abrupt Changes | Olympia Hadjiliadis |
| 20 | Social and Cultural Computing | Lev Manovich |
| 21 | Text Mining | Sarah Zelikovitz  
    |               | Scott Dexter |
| 22 | Vision Brain and Assistive Technologies | Zhigang Zhu |
| 23 | 3D Photography | Ioannis Stamos |
| 24 | Big Data Management and Analysis | Huy Vo |
| 25 | Information Retrieval | Robert Haralick  
<pre><code>|               | Ashwin Satyanarayana |
</code></pre>
<table>
<thead>
<tr>
<th></th>
<th>Speech and Audio Understanding</th>
<th>Michael Mandel</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Stochastic Optimization</td>
<td>Felisa Vazquez-Abad</td>
</tr>
</tbody>
</table>
APPENDIX C Data Scientist Job Outlook

Source from indeed.com: Data Scientists Jobs and Salaries in NY City: Data Scientists job postings are high and the average salary is about $154K, and the related job titles such as big data scientist, data scientist machine learning, etc. also show salary ranging from $140K to 174K (Figure 4).

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**Figure 1** Total job postings under "data scientist"

**Figure 2** Data Scientist job’s percentage growth

**Figure 3** The national salary under the “data scientist” job title
### Average Salary of Jobs with Related Titles

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Scientist in New York, NY</td>
<td>$184,000</td>
</tr>
<tr>
<td>Big Data Scientist in New York, NY</td>
<td>$188,000</td>
</tr>
<tr>
<td>Lead Data Scientist in New York, NY</td>
<td>$148,000</td>
</tr>
<tr>
<td>Senior Data Scientist in New York, NY</td>
<td>$154,000</td>
</tr>
<tr>
<td>Principal Data Scientist in New York, NY</td>
<td>$145,000</td>
</tr>
<tr>
<td>Data Scientist Machine Learning in New York, NY</td>
<td>$145,000</td>
</tr>
<tr>
<td>Big Data in New York, NY</td>
<td>$174,000</td>
</tr>
</tbody>
</table>

In USD as of Jul 23, 2018

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**Figure 4** the average salary for the data scientist job and its related titles

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**Figure 5** Data analyst job title clicked, searched, and NYC is top IT related Jobs available.
APPENDIX D: Samples of Recent Job Announcement in Data Science in the NYC (August 2016)

Sources: http://www.indeed.com/
http://www.glassdoor.com

With job portals, one can search for job openings with the “data Scientist” title. The search at the indeed.com job portal, for instance, yields over 16,000 jobs ranging from entry level to mid-level to senior level positions, and around 17,000 job openings in NY City area. The following include the sample job postings where a Master’s Degree is required or preferred qualifications with focus on data science. Due to the fact that there is no degree yet formally awarded in Data Science, the degree requirements are mostly in the related fields with combined skill sets, from Computer Science, Statistics, Mathematics, Operations Research, Engineering, Physics, etc. However, the job descriptions are all in alignment with the courses included in the proposed Data Science program. With the advent of the degrees in Data Science, we expect the job postings will target to require a degree in Data Science in the near future.

1. Data Scientist, Analytic Partners, Research & Development New York, New York

Description
Analytic Partners is a fast growing global consultancy that leverages innovative analytics and leading edge technology. As part of our dynamic team you will be responsible for helping the world’s most sophisticated marketers improve performance through more optimal spend allocation and enhanced marketing execution. We are looking for smart, talented and hardworking team members to support our growth.

Description
Analytic Partners is looking for Data Scientist candidates with strong analytic and problem solving skills. As an employee at Analytic Partners, you will have the opportunity to lead or assist in the methodology research that will directly impact the business planning processes and strategic vision for our clients.

Data Scientists at AP are integral to both the Project and R&D teams, aligning research methodology tools and techniques with practical application to address the evolving needs of our clients.

Responsibilities:

- Work with ‘big data’ via hands on data processing and leading edge statistical modeling
- Lead/assist in methodology research and solution deployment across marketing analytics, scientific attribution, predictive modeling, segmentation, simulation, forecasting and optimization
- Employ sophisticated analytic methodologies to help clients work through challenging marketing planning issues and business questions
- Identify innovative ways to drive efficiency in our data and modeling processes
- Collaborate as part of a team to recommend methodology solutions that will lead to more informed decisions and improved business performance

Applicants should possess:
• Master’s degree in Data Science, Statistics, Economics, Econometrics, Operations Research, Engineering, Marketing Analytics and or relevant analytic fields
• Experience with statistical software R, Python, SPSS, SAS, etc.
• Experience in large scale databases and data management – SQL and NoSQL
• Highly analytical with strong problem solving skills
• Strong attention to detail
• Strong verbal and written communication skills
• Desire and ability to work well with others in a team environment
• Strong working knowledge of Microsoft PowerPoint and Excel
• Quick learner, willing to learn and apply new knowledge

Analytic Partners is a fast-growing marketing analytics consulting firm with global operations in the Americas, Europe and Asia Pacific. We provide highly-customized, results-oriented analytics and consulting services including marketing mix modeling, digital attribution, cross media attribution, pricing strategy, promotional effectiveness, forecasting and marketing optimization. AP is a client-focused, team-oriented organization where innovation and results are rewarded, and individuals can chart the course of their own careers.

With a wide breadth of business experience and analytic techniques, we guide our clients (many of whom are Fortune 500 companies) toward more cost-effective and profitable marketing strategies. We help our clients make wiser choices for their marketing budget, build market share, increase revenue and profit – and achieve their best Return on Investment (ROI). The growth of Analytic Partners is made possible through the growth of our people. We focus on strong development of our employees through ongoing training, a wide variety of client opportunities across industries and analytic approaches, and a corporate culture centered on meritocracy. At Analytic Partners, your career is yours for the making – this is a company where innovation and results are rewarded, and you can chart the course of your own career. We offer a competitive salary and benefits package. Analytic Partners is an Equal Opportunity Employer. Please visit our website at www.analyticpartners.com.


Job Description

Primary Job Responsibilities: eBay is changing the way people connect and shop around the world. Our team members are revolutionizing commerce by building apps, launching new platforms, and solving complex problems at a massive scale. What you work on here impacts the lives of millions of people every single day. The Marketing Science team is looking to hire an A-player who wants to take his/her career to the next level. The candidate will collaborate with an extraordinary team of scientists to build innovative models that create personalized experiences for eBay’s customers. • The candidate will work closely with Marketing Business Unit, Marketing, Measurement and Product teams to develop and deploy data science solutions. • An ideal candidate is someone who has expertise in developing machine learning algorithms and an expert on big data engineering.

Job Requirements:
Job Responsibilities

• Utilize state-of-the-art machine learning, statistical and optimization algorithms to answer various business questions:
  • Optimize marketing communication (who to send, when to send, frequency of send, etc.)
    • Optimization models to select the best marketing channel/content mix
    • Customer lifecycle modeling (lapsing, upsell, activation, etc.)
    • Incentive (coupons, etc.) optimization models
    • Content recommendation systems
• Capable of writing production level code for deploying data science solutions
• Collaborate with other data scientists and data engineers in the team to develop/deploy models
• Take initiatives to expand the current production infrastructure of the team
• Documentation of the processes to enable future analysts

Knowledge, Skills and Experience

• Master’s/PhD degree in Statistics/Computer Science
• 2+ years working experience in machine learning/statistical modeling (1+ yrs in Big Data)
• Expert level: Machine learning and Statistical analysis (classification, regression, recommendation systems)
• Expert level: Big data platform development on Hadoop ecosystem including Spark, SparkSQL (HiveQL), SparkML
• Expert level: Scala and/or Python, R, SQL, Java proficiency also a plus

3. Data Scientist, StreetEasy - New York, NY

The StreetEasy Economic Research team is looking for an outstanding Data Scientist to join us. You will be responsible for deriving fascinating insights on the New York housing market from terabytes of StreetEasy market and usage data.

This role will require a candidate who can apply a breadth of tools, data sources and analytical techniques to answer a wide range of high level questions and present the insights in a concise and effective manner. You’ll work in an informal, collaborative atmosphere with a team of smart self-starters like yourself.

Responsibilities

• Apply quantitative techniques to uncover NYC housing market insights from StreetEasy, New York City and partner data sets.
• Tell stories with economic and market data for use by NYC home buyers, sellers, renters and agents as well as major media outlets and policy makers.
• Partner with PR and Marketing teams to craft and publish narratives around your findings.
• Recommend and implement improvements to internal data management, analysis and automation processes.

Qualifications
- Demonstrated ability in both R (2+ experience) and SQL.
- 3+ years professional experience required
  - A MA/MS in statistics, mathematics, computer science, economics, or another quantitative field is preferred. BA/SA required.
- Innate curiosity to find and explore new problems and questions.
  - Knowledge of NYC neighborhoods and NYC housing policy a plus (ie. affordability, rent control, rezoning, minimum wage, overcrowding, tax breaks etc.)
- Able to develop data visualizations through Tableau or similar software preferred.
- Detail-oriented, analytical, and accurate.
- Strong verbal and written communications skills.
- Excellent project management skills.

4. **Data Scientist at Magnetic, New York - HQ**

Magnetic collects billions of events per day from our integrations with data partners, marketing systems, advertisers, and the rapidly growing real-time online advertising exchanges. This provides Magnetic with unique large scale visibility of connected customer histories, from ad-exposure through to customer relationship interactions over extended periods. We are a data-driven company, 100% committed to data science and a belief in its power as a major differentiator. Our charter is to deliver monetary performance improvements from intelligent automated decisions across the full range of marketing activities for our clients. We do this at rates which can exceed 1 million requests per second.

As a Data Scientist, you will be a member of a Magnetic’s first class Data Science team. You will use the latest machine-learning techniques and build high performance algorithms to optimize ad-serving and marketing outcomes. The optimization activities include predictive modeling, exploration/exploitation management, recommendations, fraud detection, NLP, efficient throttling and typically operate with constraints. Today we use a mix of open source and in-house developed tools such as Samza, Spark, Hadoop Map-Reduce, Impala, libFM, Vowpal Wabbit, and MLLib.

**You will need to convince us of your ability to:**

- Extract understanding from large data sets of interaction events
- Build high quality models that efficiently capture and represent important features of those large data sets
- Use your intimate knowledge of the data to conceive and develop improvements in model predictive performance or system optimization performance
- Consistently generate high quality outcomes
- Develop algorithms using Python, Java, and/or Scala
- Contribute to team conversations, bring new ideas, quickly learn new technologies, and help guide team approaches towards the most powerful and valuable solutions
- Work in a commercial environment with delivery timelines
- Potentially work with academic partners where useful

**What experience and qualities we might expect in candidates for this role:**
You will have at least two years of experience working with multi-terabyte, noisy, semi-structured, real-world data

You will have at least one year of experience with modern large scale, possibly parallelized, machine learning implementations using the likes of Spark, Hadoop Map-Reduce, libFM, Vowpal Wabbit, and MLLib

You will live and breathe Data Science, and be excited by the transformational opportunities that the discipline is opening up across a huge range of applications today

In the past you are likely to have benchmarked your work against the best out there in at least one or two competitions and know where your solutions rank

Previous experience with high-throughput online advertising, marketing technology, social or e-commerce domains would be a significant advantage

You may have previous experience with speed vs. greatest-accuracy types of tradeoffs in high performance machine learning implementations

You will have minimum of a Master’s or PhD or equivalent in a highly quantitative field

What we offer in return:
We are Magnetic. We’re full of independent thinkers who inspire our brand, products and culture every day, and we have fun while we’re at it. Here’s what you should expect when you join Magnetic:

• Competitive salaries and commission structure
• Employee stock options
• Unlimited vacation days -- breathe easy and balance your life the way you want it!
• Company and team volunteer days
• Full benefits (medical/dental/vision) with Sherpaa and Health Advocate access
• 401k plan, commuter benefits, and thousands of discounts and perks
• A results-oriented startup mindset, with sane working hours and a stable business model
• We love Mac + PC users, you choose how you want to work and with what operating system

About Magnetic
Magnetic is a technology company with a marketing platform for enterprises, brands and agencies. Our prospecting, remarketing, and merchandising solutions help marketers find, keep and bring back customers across channels and devices. These solutions are powered by our unique data including purchase intent and behavioral insights.

Our corporate headquarters, located in Silicon Alley, includes a fully stocked kitchen, our very own pool hall for an afternoon billiards match, and a beautiful office space designed to showcase our culture of transparency and collaboration. And if you’re an urban outdoors enthusiast, Madison Square Park and all it has to offer is just one block away!

5. Data Scientist, Natural Language Processing, KPMG, New York, NY
The fastest growing Big Four professional services firm in the U.S., KPMG is known for being a great place to work and build a career. We provide audit, tax and advisory services for organizations in today’s most important industries. Our growth is driven by delivering real results for our clients. It’s also enabled by our culture, which encourages individual development, embraces an inclusive environment, rewards innovative excellence and supports our communities. With qualities like those, it’s no wonder we’re consistently ranked among the best companies to work for by Fortune Magazine, Consulting Magazine, Working Mother Magazine, Diversity Inc. and others. If you’re as passionate about your future as we are, join our team.

KPMG is currently seeking a Data Scientist, to join us in any major US city with a KPMG office. Responsibilities:

- Utilize statistical natural language processing to mine unstructured data, and create insights; analyze and model structured data using advanced statistical methods and implement algorithms and software needed to perform analyses
- Build document clustering, topic analysis, text classification, named entity recognition, sentiment analysis, and part-of-speech tagging methods for unstructured and semi-structured data
- Cluster and analyze large amounts of user generated content and process data in large-scale environments using Amazon EC2, Storm, Hadoop and Spark
- Develop and perform text classification using methods such as logistic regression, decision trees, support vector machines and maximum entropy classifiers
- Develop methods to support and drive client engagements focused on Big Data and Advanced Business Analytics, in diverse domains such as product development, marketing research, public policy, optimization, and risk management; Communicate results and educate others through reports and presentations
- Perform text mining, generate and test working hypotheses, prepare and analyze historical data and identify patterns

Qualifications:

- Six years of professional experience working in Natural Language Processing or related field
- Experience with command-line scripting, data structures and algorithms and ability to work in a Linux environment, processing large amounts of data in a cloud environment
- Masters degree or PhD from an accredited college/university in Computer Science, Computational Linguistics, Statistics, Mathematics, Engineering, Bioinformatics, Physics, Operations Research, or related fields (strong mathematical/statistics
background with ability to understand algorithms and methods from a mathematical viewpoint and an intuitive viewpoint)

- Strong data extraction and processing, using MapReduce, Pig, and/or Hive preferred

KPMG offers a comprehensive compensation and benefits package. KPMG, an equal opportunity employer/disability/veteran. KPMG maintains a drug-free workplace. KPMG will consider for employment qualified applicants with criminal histories in a manner consistent with the requirements of applicable local, state or federal law (including San Francisco Ordinance number 131192). No phone calls or agencies please.

6. **Data Scientist - Text Analytics - SQL, R, SAS**, Geode Executive Search - New York, NY

$200,000 a year

Data Scientist - Text Analytics - SQL, R, SAS

A world-leading professional services firm that provides economic and litigation consulting is looking to bolster their New York City's Data Analytics department.

The ~600 person company has a relatively new Data Analytics department, which has the responsibility of analyzing large amounts of data to assist in highly complex litigation issues.

In the position as a Senior Consultant, you will be working with world-renowned economists in building highly complex analytics software. Some of the technologies you will be using include R, SQL, SAS, Python, MATLAB, and more.

Job Type: Full-time

Salary:

$200,000.00

/year Required education:

- Master's

Required experience:

- Text Analytics: 2 years

7. **Data Scientist, Capital One**

NYC 299 Park Avenue (22957), United States of America, New York, New York

At Capital One, we’re building a leading information-based technology company. Still founder-led by Chairman and Chief Executive Officer Richard Fairbank, Capital One is on a mission to help our customers succeed by bringing ingenuity, simplicity, and humanity to banking. We measure our efforts by the success our customers enjoy and the advocacy they exhibit. We are succeeding because they are succeeding.

Guided by our shared values, we thrive in an environment where collaboration and openness are valued. We believe that innovation is powered by perspective and that teamwork and respect for each other lead to superior results. We elevate each other and obsess about
doing the right thing. Our associates serve with humility and a deep respect for their responsibility in helping our customers achieve their goals and realize their dreams. Together, we are on a quest to change banking for good.

Data Scientist

Capital One is a diversified bank that offers a broad array of financial products and services to consumers, small business and commercial clients. Ranked #127 on the Fortune 500, Capital One has one of the most widely recognized brands in America. As one of the nation’s top 10 banks, we offer a broad spectrum of financial products and services to consumers, small businesses and commercial clients. We nurture a work environment where people with a variety of thoughts, ideas and backgrounds, guided by our shared Values, come together to make Capital One a great company and a great place to work.

At Capital One, data is at the center of everything we do. When we launched as a startup we disrupted the credit card industry by individually personalizing every credit card offer using statistical modeling and the relational database, cutting edge technology in 1988! Fast-forward a few years, and this little innovation and our passion for data has skyrocketed us to a Fortune 200 company and a leader in the world of data-driven decision-making.

As a Data Scientist at Capital One, you’ll be part of a team that’s leading the next wave of disruption at a whole new scale, using the latest in distributed computing technologies and operating across billions and billions of customer transactions to unlock the big opportunities that help everyday people save money, time and agony in their financial lives.

On any given day you’ll be:
- Building machine learning models from development through testing and validation to our 30+ million customers and ~250 million prospects.
- Use big data tools such as Hadoop, Spark, Pig, Hive, Impala etc. to manage the analysis of billions of customer transaction records
- Writing software to clean, investigate and analyze large, messy structured and unstructured data
- Integrating internal data sources with external data sources and APIs to discover interesting trends (NOAA Weather Data + Credit Card Transactions = Fascinating!)
- Designing rich data visualizations to communicate complex ideas to customers or company leaders
- Investigating the impact of new technologies on the future of mobile banking and the financial world of tomorrow

The Ideal Candidate will be...
- Curious. You ask why, you explore, you’re not afraid to blurt out your crazy idea. You probably have a diploma and an impressive GPA, or you dropped out of college, taught yourself and routinely win Kaggle competitions.
-Wrangler. You know how to move data around, from a database or an API, through a transformation or two, a model and into human-readable form (ROC curve, d3 visualization, Tableau, etc.). You probably know Python, Java, R, etc or think everything can be done in a Perl one-liner. And you have a solid grip on theories behind machine learning/Data science, whether they are a form of Statistics, Mathematics or Econometrics.

-Do-er. You have a bias toward action, you try things, and sometimes you fail. Expect to tell us what you’ve shipped and what’s flopped.

-Fearless. Big, undefined problems and petabytes don’t frighten you. You can work at a tiny crack until you’ve broken open the whole nut.

Twenty-five years after Capital One was started it’s still led by its founder. Be ready to join a community of the smartest folks you’ve ever met, who see the customer first, and want to use their data skills to make a difference.

Basic Qualifications:

-At least a Master’s Degree and a minimum of 2 years’ experience OR a Bachelor’s Degree and a minimum of 6 years of experience

-At least 2 years’ experience in open source programming languages for large scale data analysis

-At least 2 years’ experience with machine learning

-At least 2 years’ experience with SQL

8. Data Scientist, Amazon, New York, NY

Job Description

- Excited by Big Data, Machine Learning and Predictive Software? Interested in creating new state-of-the-art solutions using Machine Learning and Data Mining techniques on Terabytes of Data?

At AWS, we are developing state-of-the-art large-scale Machine Learning Services and Applications on the Cloud involving large amounts of data. We work on applying predictive technology to a wide spectrum of problems. We are looking for talented and experienced Machine Learning Scientists who can apply innovative Machine Learning techniques to real-world problems. You will get to work in a team dedicated to advancing Machine Learning solutions at AWS and converting it to business-impacting solutions.

Major responsibilities

* Use machine learning, data mining and statistical techniques to create new, scalable solutions for business problems

* Analyze and extract relevant information from business data to help automate and optimize key processes

* Design, develop and evaluate highly innovative models for predictivelearning
* Establish scalable, efficient, automated processes for large scale data analyses, model development, model validation and model implementation
* Research and implement novel machine learning and statistical approaches

**Basic Qualifications**

* An MS/PhD in CS, Machine Learning, Operational research, Statistics or in a highly quantitative field. PhD strongly preferred.
* 4+ years of industrial experience in predictive modeling and analysis, predictive software development
* Strong Problem solving ability
* Good skills with Java or C++, Perl/Python (or similar scripting language)
* Experience in using R, Matlab, or any other statistical software
* Experience in mentoring junior team members, and guiding them on machine learning and data modeling applications
* Strong communication and data presentation skills
* Ability to travel to client locations when needed. Up to 50% regionally.

**Preferred Qualifications**

* 4+ years of industrial experience in predictive modeling and analysis, predictive software development
* Experience handling terabyte size datasets
* Experience working with distributed systems and grid computing
* Publications or presentation in recognized Machine Learning and Data Mining journals/conferences

9. **Data Scientist, Time Inc., New York, NY**

We’re looking for a Data Scientist to make key contributions in our data science/analytics practice: We understand Data Scientists come in many geometric forms:

1. Deep Rectangles: people who may know a couple of the areas outlined below – but they know them deeply, with rigor
2. Compact Squares: people who may know more than a couple of the areas outlined below – they may know one of two areas with rigor and the rest at an applied level but have the mathematical and other wherewithal to, over time, dig deeper or wider
3. Wide Rectangles: people who know a good minority of the items listed below but may not know them with theoretical rigor but have an effective applied technique; have superior people skills; have superior business domain acumen.
4. Large Rectangle: they know everything on the list below in depth and breath. However, they only exist in mythology.
For this position we’re interested in the Deep Rectangle or Compact Square variety of Data Scientists and someone who is towards the start of their data scientist career.

List of areas:

A knack for solving hard problems in statistics, machine learning, optimization is hands on with SAS and/or R and/or Python or Equivalent
Classically trained in a quantitative field such as econometrics, statistics, operations research or equivalent a huge plus
Classically trained in a field that requires superior mental aptitude such as Actuarial Sciences, Financial Fields, etc
Classically trained in Computer Science a huge plus
Classically trained in Mathematics or Applied Mathematics a huge plus Classically trained in Hard Sciences or Engineering
Classically trained in Social Sciences with a Quantitative Bent (Anthropology, Political Science, Sociology, Psychology)
Has a breadth of experience with various forms of classical statistical learning including, but not limited to:

- Linear Methods for Regression,
- Lasso, Ensemble Learning,
- Boosting,
- Resampling,
- Bootstrap,
- Classification,
- Kernel Methods, etc.

Has a breadth of experience with analytic practice Has a breadth of experience with experimental design
Has a breadth of experience with Classical Statistics including:

- Non-Parametrics Methods,
- Multivariate Analysis,
- Time Series Analysis,
- Bayebean Methods

Has a breadth of experience in Mathematical Programming methods such as

- Linear programming
- Quadratic programming
- Nonlinear programming
- Mixed-integer programming
- Mixed-integer nonlinear programming
- Second-order cone programming
- Global optimization
- Constraint programming

Has a breadth of experience in Modern Machine Learning methods such as

- Neural Networks,
• Genetic Algorithms,
• Random Forests,
• Swarm Methods
Has a breadth of experience with High Dimensionality

Methods Holistic combination of talent and experience

10. Data Scientist—TTS Media, New York, NY
A cutting-edge advertising agency in NYC is seeking an experienced Data Scientist to bring the power of data and analytics to their ground-breaking campaigns for a roster of industry-leading clients! This award-winning, full-service agency is known for producing innovative creative content and is seeking a strong/dynamic Data Scientist to carry out their success. In this role you will be responsible for gathering data, analyzing it, and using the results to predict campaign performance and seek ways to optimize them. If you have significant data mining, machine learning, SQL and statistical analysis experience paired with the mastered ability to visualize data and extract powerful insights to positively impact campaign activity, we want to hear from you!

Responsibilities
• Partner with external vendors to obtain data
• Create data models
• Apply analytical data to forecast and enhance campaign performance
• Collaborate with internal teams to define benchmarks for measuring campaign success

Qualifications
• Minimum of 4+ years of experience working in data and analytics in the advertising industry or related
• Experience programming in Python
• Master of statistical methods: Bayesian analysis and other data mining techniques
• Comprehensive knowledge of statistical software, R, Mathlab, or related
• In-depth experience with both structured and unstructured data: SQL, SAS, Omniture, etc...
• Prior use of reporting tools: Microstrategy, Tableau or similar
• Excellent communications skills, both oral and written

• Extremely detail-oriented
• Bachelor’s Degree required: computer science, statistics, mathematics, or related

11. Nielsen, Data Scientist-1607305, Nielsen
DESCRIPTION
eXelate, a Nielsen® company, is the leading provider of data technology powering the digital marketing ecosystem. Our customer data cloud™ provides the industry’s only unified customer profiles, which connect identities across all channels and devices - including display, video, audio, offline, mobile and smart TVs - enabling marketers to engage individuals and
households with personalized messages to drive performance at scale. eXelate’s data marketplace is the largest 3rd-party cross-device data set in the world with over 5B unique users and devices.

eXelate was acquired by Nielsen in March of 2015. Nielsen brings to bear the market’s most powerful proprietary data assets, and together we are helping the world’s biggest brands make better and faster marketing and media decisions, we are permanently disrupting the landscape of audience measurement.

This hands-on position reports to our Manager, Data Mining & Predictive Modeling and will take a leading role in the creation of data mining strategies designed to maximize the value of our data, all while playing an instrumental role in the development of eXelate’s data & DMP related products and services. The Data Scientist will be responsible for ensuring that our data products are of the highest quality.

Responsibilities

- Build and execute the company’s data mining and modeling activities in support of our clients’ online targeting and digital media marketing goals
- Develop and maintain ongoing data exploratory analyses against internal and client-provided data
- Help the business teams solve complex analytical challenges
- Work with our R&D team to embed analytical technology into our DMP platform
- Conduct studies, tests and use advanced data mining and modeling techniques to build solutions that optimize the quality and performance of the company’s data

QUALIFICATIONS

Requirements

- Advanced degree in statistics, computer science, machine-learning or related fields (such as econometrics or sociology) required
- Minimum of 3+ years relevant analytics and data mining & modeling work experience, with a particular stress on supervised learning
- Proven ability to develop and execute sophisticated data mining & modeling solutions
- In depth knowledge of the advanced techniques and tools common to the data science world such as sparkML, Scikit-learn, or Mahout; intense knowledge of R and/or Python and machine learning techniques is required (SAS and/or SPSS alone is insufficient)
- Strong attention to detail and excellent quantitative and qualitative analytical ability
- Working experience with relational database management system (RDBMS) and/or the Hadoop ecosystem, with a strong knowledge of SQL, Hive, and/or Pig
- High energy and enthusiasm to develop the next big thing in internet advertising; someone that can think out of the box, solving new and unique analytical challenges
Knowledge of an object oriented and functional language such as Python, Java, C++, and/or Scala

Strong experience in marketing analytics, including marketing response modeling and customer segmentation

Experience with online media and targeting a big plus

ABOUT NIELSEN

 Nielsen is a global performance management company that provides a comprehensive understanding of what consumers Watch and Buy. Nielsen’s Watch segment provides media and advertising clients with Total Audience measurement services across all devices where content — video, audio and text — is consumed. The Buy segment offers consumer packaged goods manufacturers and retailers the industry’s only global view of retail performance measurement. By integrating information from its Watch and Buy segments and other data sources, Nielsen provides its clients with both world-class measurement as well as analytics that help improve performance.

Nielsen, an S&P 500 company (NYSE: NLSN), has operations in over 100 countries that cover more than 90% of the world’s population. Nielsen prides itself on being a place where employees can be themselves, make a difference, and grow their careers with the company. It has been named one of the “Top 50 Companies for Diversity” by DiversityInc for three years running and was selected as one of the “Top 35 Companies for Leaders who want Flexibility” by FlexJobs. For more information visit www.nielsen.com.

12 Data Scientist, Nasdaq Position Overview:

Nasdaq is seeking highly motivated Data Scientists to join a small, highly collaborative team and help create the next generation of data products for trading and investing. Successful candidates will be curious, independent thinkers who are excited by challenges and driven by building great products. They will play a key role in developing new product ideas that will help grow Nasdaq’s GIS business.

Responsibilities

- Plan, develop, and apply leading-edge analytic and quantitative tools and modeling techniques to help Nasdaq clients gain insights and improve decision-making
- Review internal and external analytical techniques, processes, and tools - to improve efficiency and better serve Nasdaq clients worldwide
- Work closely with product sponsors to understand business needs and propose solutions
- Collaborate with Data Engineers and Software Developers to develop experiments and deploy solutions to production
- Use domain knowledge and analytical expertise to suggest new product ideas
- Rapidly conduct experiments to validate new product ideas
- Write research reports describing the experiment conducted, results, and findings.
Based on these results, recommend actions to technology, product, and senior management
  - Contribute ideas and constructive feedback to the tech and business teams
  - Take ownership of new projects and initiatives
- Stay current on technological and analytical trends
- Be passionate about experimentation and testing new ideas
- Maintain positive attitude
- Motivate and coach other members of the team

Example Projects

- Explore social media and market data to detect correlations that could lead to a trading advantage
- Build a predictive model to forecast financial product adoption over a discrete time window

Education, Professional accomplishments, and Certifications: Background

We will consider candidates from a wide range of backgrounds, however, the many of the problems the candidate would be tasked with solving will require writing programs and analyzing data. Therefore, candidates with a scientific or engineering background are preferred.

Successful candidates will have:

- 5-8 Years professional experience in technology or quantitative role.
- Implemented machine learning models in production or mission critical scenarios
- Used data and analytics to develop novel solutions to business problems
- Experience in financial services is a plus.

Education

- Bachelor’s Degree from top tier university in Computer Science, Statistics, Physics, Mathematics, or similar quantitative discipline.
- Master’s Degree a plus.

Skills Required

- Excellent problem solving ability
- Fluency in current analytical techniques and machine learning algorithms
- Familiarity with Big Data technologies and concepts: Hadoop, Spark, Pandas, data frames, etc.
- Good Programming Skills: Python, Java, R, SQL
- Excellent verbal and written communication
- Business Acumen and Understanding
- Some familiarity with Data Visualization techniques and technologies: matplotlib, ggplot, etc.

Preferred
• Familiarity with financial data sets and use cases
• Excellent programming skills
• Time series analysis and complex event processing
• Experience writing quantitative research for peer review
• Proficiency communicating complex concepts to technical and non-technical audiences

Skills, Requirements and Competencies:

• Requires conceptual and practical expertise in own discipline and basic knowledge of related disciplines.
• Is fully self-sufficient and competent in regards to output quality and quantity.
• Requires little or no supervision on a day to day basis.
• Has basic or good knowledge of best practices and how own area of expertise integrates with others.
• Understands key business drivers and is aware of the competition and the factors that differentiate them in the market.
• Provides informal guidance for colleagues with less experience.
• Is accountable for contributing with a competent standard and deliver every time.
• Plans and prioritizes work using resources in the best possible way to complete tasks on time and with high quality.
• Solves problems using existing solutions; exercises judgment based on the analysis of multiple sources of information.
• Is starting to look at ‘best practice’.
• Provides creative insights and / or solutions to address client / organizational challenges.
• Impacts a range of activities within own team and other related teams; works within broad guidelines and policies.
• Works quickly and is able to assist other team members where appropriate. Works independently.
• Is able to explain difficult information; works to build consensus.
• Generates healthy debate within team, influencing team to look for a ‘better approach’.
• Shares knowledge and expertise across organizational boundaries and endorses “best practices”.
• Synthesizes information from various sources by breaking it down into relevant components and generating new data when needed; considers a broad range of issues when determining relevance of data.
• Integrates complex information and concepts and organizes analysis efforts into a systematic framework; verifies logic of others and challenges ideas, assumptions and conclusions.
• Evaluates current situation based on previous experience; identifies advanced implications/ conclusions from the logical analysis of a complex situation or issue; weighs options critically.
• Utilizes knowledge of the organization’s business model and operations to drive projects and analyses that support the organization’s mission.
• Applies extensive understanding of the policies, practices, trends and information that impact the organization and its customers to anticipate and plan for each step of a complex project.
• Demonstrates understanding of the financial impact of decisions/solutions to drive projects and analyses that support the organization’s mission.
• Conducts a deep review of data and issues to quickly reveal the root cause of complex problems; anticipates and prepares for potential problems.
• Researches, recommends and reviews solutions to complex problems; guides the analysis of a problem all the way to a successful resolution.
• Develops interim and long-term solutions to complex problems to ensure successful project completion.
• Tests and maintains software applications and related programs and procedures creatively using a variety of software development tools following design requirements of customer.
• Ensures that system applications and tests are successfully completed and documented and all problems are resolved.

_Nasdaq is an equal opportunity employer. We positively encourage applications from suitably qualified and eligible candidates regardless of age, color, disability, national origin, ancestry, race, religion, gender, sexual orientation, gender identity and/or expression, veteran status, genetic information or any other status protected by applicable law._

13. **Data Scientist, Correlation One - New York, NY**

Our group analyzes large amounts of data from various public sources to identify patterns and glean insight into market trends. We are looking for undergrads and advanced degree holders (MS or PhD) in finance, computer science, mathematics, or other related fields to join our team.

**Job Responsibilities**

• Sourcing, processing, analyzing and distributing large data inputs
• Utilizing query languages like SQL and NoSQL
• Ensuring quantitative models produce quality insights into data
• Using machine learning and other statistical methods on unstructured data in order to draw insights and understand trends

**Preferred Candidates:**

We are seeking individuals with strong statistical backgrounds and machine learning experience. The position requires extensive exposure to large data sets in order extract meaningful and useful insights.

• **MS or PhD degree** in a quantitative/technical field from a top university
• Programming languages (C++, Java, Python)
• Statistical modeling (R, SPSS, SAS)
• Strong SQL and NoSQL experience
• Creative Thinking Job Type: Full time
14. Data Scientist, IBM, Armonk, NY

Job Description
IBM’s Chief Data Office (CDO) is creating a data lake to become the central data source for IBM and is building deep data and analytics partnerships. Since cognitive computing requires attention to data, e.g., data governance, data licenses, data access and data curation, the CDO organization is performing an essential role in our transformation to a cognitive business. IBM is seeking Data Scientists to solve business problems across the enterprise by analyzing big data, preparing data for cognitive solutions, and applying cognitive technologies.

Ideal candidates will have experience with much of the following or equivalent:

- Modeling and mining large data sets using open source technologies such as R, Hadoop, Apache Spark
- Software development experience with Hive, Java, C++, JSON, Python, XML
- Cloud-based experience with PaaS and IaaS
- Machine learning techniques
- Cloud-based, agile, devops environments
- Statistics, predictive modeling, operations research, informatics and tools, e.g., SPSS, SAS, R, Python
- Marshalling big data to automatically find and interpret data rich sources, merge data together, ensure data consistency, and provide insights as a service
- Creating and analyzing reports to determine trends and emerging requirements, anticipates future needs and requirements in order to take proactive actions
- Preparing reports, in the form of visualizations such as graphs, charts and dashboards, detailing the significant results they deduced. Experience creating dashboards with tools such as Cognos
- Performing Data Cleansing

Primary job category
Research

Role (Job Role)
Data Scientist

Employment Type
Full-Time

Contract type
Regular

Required Technical and Professional Expertise
*At least 5 years of experience in one or more of the following:
Modeling and mining large data sets using open source technologies such as Programming language (R), Hadoop, Apache Spark.
Software development experience with Jaql, Hive, Java, Go, C++, JSON, Python, XML
Different data mining techniques - associations, correlations, evidence, inferences, clustering, support vector, ensemble methods, GBM
Creation/deployment of models and algorithm to analyze social, machine, text, sensor, streaming, large-volume unstructured data
Data science, data engineering, statistics, modeling, operations research, computer engineering, computer science and applications, or mathematics
Deep learning methods and techniques

**Preferred Technical and Professional Experience**
*At least 5 years experience in one or more of the following: Cloud-based, agile, devops environment. Innovating modeling, machine learning, entity linkage, knowledge graph and similar approaches Automatically find and interpret data rich sources, merge data together, ensure data consistency, and provide insights as a service Optimized management of big data within set hardware, software and bandwidth constraints Innovating experimental design and measurement methodologies Designing and deploying user interfaces that interact naturally with people

**Eligibility Requirements**
*None

**Required Education**
Bachelor's Degree

**Preferred Education Master's Degree**

**Travel Required**
Up to 10% or 1 day a week

**IBM Business Group**
CHQ/OTH

**Is this role a commissionable/sales incentive based position?**
No

**Country**
United States

**State / Province**
NEW YORK

**City / Township / Village**
ARMONK

**EO Statement**
IBM is committed to creating a diverse environment and is proud to be an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, gender, gender identity or expression, sexual orientation, national origin, genetics, disability, age, or veteran status. IBM is also committed to compliance with all fair employment practices regarding citizenship and immigration status.
15. Data Scientist, MakerBot Inc. - Brooklyn, NY

As a Data Scientist, you will work on the richest data sets in the 3D printing industry, work closely with DWH engineer and Data-warehousing/Big-data infrastructure that is consists of AWS Redshift, Matillion, Tableau and AWS DynamoDB, and the business stakeholders to utilize the data from our platforms to design and build systems to generate insights, automate processes, and allow business units to make data-driven decisions. The Data Scientist will develop cutting-edge optimization technology/strategies and turn ideas into real products, features and business value on a regular basis. The Data Scientist will also be heavily involved in business decisions that are driven by the data provided. The perfect candidate should have a background in mathematical or a related technical field, as well as experience working with large data sets.

Requirements: Duties and Responsibilities:

Interact with stakeholders to identify critical questions that need to be answered in order for the Analytics function to provide effective KPI’s -- actionable insights, rather than just reports

Conduct analysis and data modeling to draw insights that drive critical decision making and to uncover subscriber patterns, user consumption, and behavior, from our operational systems as CRM/ERP/User Printer Usage and Online community.

Analyze data to identify outliers, missing, incomplete, and/or invalid data

Assist in the development of analytic tools, KPIs, dashboards, and systems to help build out the analytics platform

Work with data warehousing team to design optimal data architecture for BI tools Education and/or Experience

Previous experience as a data scientist

MS degree or above with stellar academic background from a top school in statistics, operations research or a related quantitative field

Experience of data-processing/ analytics/statistics using Python, SQL, Tableau / Google Analytics Demonstrated analytical and quantitative skills
Extensive experience working with large data set

Ability to communicate effectively both verbally and in writing Inquisitive and proactive with an aptitude for problem-solving
Comfort with identifying, defining and solving problems in a constantly changing and challenging start-up environment

Benefits:

About MakerBot:
People: We have some the most talented, diverse, and collaborative teams in the world who love to push the boundaries of innovation.

Products: We put 3D Printing on the map and gave the first 3D Printing keynote address at CES! We just released a new product on January 4, 2016 - the Smart Extruder+. Read about it here: http://3dprint.com/113536/makerbot-smart-extruderplus/

Office Space: From the moment you step onto the 21st floor of our office in Downtown Brooklyn - the high energy and view of multiple bridges and the Statue of Liberty - will take your breath away!

Perks: We have great benefits, fun social events, and of course the free snacks and ping-pong tournaments are a must at any cool tech company.

**MakerBot, a subsidiary of Stratasys Ltd. (Nasdaq: SSYS),** is leading the Next Industrial Revolution by setting the standards in reliable and affordable desktop 3D printing. Founded in 2009, MakerBot sells desktop 3D printers to innovative and industry-leading customers worldwide, including engineers, architects, designers, educators and consumers. MakerBot has one of the largest installed bases and market shares in the desktop 3D printing industry, with more than 90,000 MakerBot Replicator 3D Printers in the world. The robust MakerBot 3D Ecosystem makes 3D printing easy and accessible for everyone. To learn more about MakerBot, visitmakerbot.com. MakerBot is an equal opportunity employer. We consider all applicants for all positions without regard to race, creed, color, religion, gender, national origin, age, disability, sexual orientation, marital status, status with regard public assistance, veteran status, or membership in any other legally protected class.
APPENDIX E: Sample Companies in NYC that Hire Data Scientists

Table 8 Sample Companies in NYC that has openings in the Data Scientist positions (August 2016)

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<thead>
<tr>
<th>ENTRY LEVEL</th>
<th>NYU Langone Medical Center (96)</th>
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<tbody>
<tr>
<td></td>
<td>Mount Sinai Health System (72)</td>
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<td></td>
<td>Weill Cornell Medical College (34)</td>
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<td>Selby Jennings (26)</td>
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<td>Columbia University (15)</td>
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<td>Averity (9)</td>
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<td>DEPT OF HEALTH/MENTAL HYGIENE (8)</td>
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<td>Two Sigma Investments, LLC. (7)</td>
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<td>Analytic Recruiting (7)</td>
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<td>Memorial Sloan Kettering (5)</td>
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<td>Xaxis (5)</td>
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<td>Goldman Sachs (4)</td>
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<td>Howard Hughes Medical Institute (4)</td>
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<td>Next Step Systems (4)</td>
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<td>Weill Cornell Medical College (30)</td>
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<td>Mount Sinai Health System (25)</td>
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<td>Morgan Stanley (13)</td>
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<td></td>
<td>JPMorgan Chase (7)</td>
</tr>
<tr>
<td></td>
<td>Harnham (7)</td>
</tr>
<tr>
<td></td>
<td>Elevate Recruiting Group (6)</td>
</tr>
<tr>
<td></td>
<td>Michael Page US (6)</td>
</tr>
<tr>
<td></td>
<td>Bloomberg (6)</td>
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<table>
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<tr>
<th>SENIOR LEVEL</th>
<th>Selby Jennings (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accenture (9)</td>
</tr>
<tr>
<td></td>
<td>NYU Langone Medical Center (6)</td>
</tr>
<tr>
<td></td>
<td>Bank of America (5)</td>
</tr>
<tr>
<td></td>
<td>Analytic Recruiting (5)</td>
</tr>
<tr>
<td></td>
<td>AIG (4)</td>
</tr>
<tr>
<td></td>
<td>PlaceIQ (3)</td>
</tr>
<tr>
<td></td>
<td>MLB Advanced Media (3)</td>
</tr>
</tbody>
</table>
APPENDIX F: Sample Job Listings Outside of New York City

In addition to the Data Science job opportunities, there are abundant jobs for the data scientist across the country. This section list a few samples of data scientist job postings around the nation, including government, academic as well as many prominent industries, that require or prefers Master’s Degree in Data Science as educational qualifications.

Data Scientist at Central Intelligence Agency (CIA)

Data Scientist at Immersion Corporation, San Jose, CA
http://chj.tbe.taleo.net/chj05/ats/careers/requisition.jsp?org=TRA&cws=1&rid=754&source=Glassdoor

Principal Data Scientist, Fraud, LendUp, San Francisco, CA
https://boards.greenhouse.io/lendup/jobs/257230?t=apxey0#.V7h_y5grK00

Senior Marketing Data Scientist, NCSOFT, San Mateo, CA

Data Scientist, Fashion Industry Opportunity, Kohls Milpitas, CA
https://www.velvetjobs.com/gd/featuredjob/fashion/guest/457524

DATA SCIENTISTS, Dataline Inc., Princeton, NJ

Big Data Hadoop Engineer, zulily, Seattle, WA

Big Data (Clearance Required), Sila SG, Arlington, VA
http://www.silasg.com/opportunities/join-us/?nl=1&jvi=oDex3fwb&Job&jvs=glassdoor&jkv=Job

Data Scientist, Boose Allen Hamilton, DC

Data Scientist Analyst, Lockheed Martin, Washington, DC
http://search.lockheedmartinjobs.com/ShowJob/Id/60799/Data%20Scientist%20Analyst

Data Scientist, Upside, Washington, DC
https://jobs.lever.co/upside/9ff582b8-c5b3-455a-8c35-a5175d096bac?lever-source=indeed

Machine Learning - R&D, Barone Consulting - Arlington, VA
http://www.indeed.com/viewjob?jk=ab9c8fb18c0e8cdb&q=Data+Scientist&l=Washington%20DC&tk=1aqke0m0mafpa8v4&from=web
Data Scientist, Econometrica, Inc. - Bethesda, MD
http://www.indeed.com/cmp/Econometrica,-Inc./jobs/Data-Scientist-e9712ff1a6ec19e4?q=Data+Scientist

Data Scientist/Data Engineer, Novetta, National Harbor Area, MD
https://career4.successfactors.com/career?company=novetta&career_ns=job_listing&navBarLevel=JO_B_SEARCH&career_job_req_id=13201&jobPipeline=Indeed

Data Scientist, General Dynamics, Springfield, VA

Data Scientist, Elsevier, Philadelphia, PA

Data Scientist (Early/Mid Career), Sandia National Laboratories, Albuquerque, NM

Data Scientist, Qualcomm Research, San Diego, CA
https://jobs.qualcomm.com/public/jobDetails.xhtml?requisitionId=1943019&src=indeed

Data Scientist, University of Michigan, Ann Arbor, MI
http://umjobs.org/job_detail/130180/data_scientist

Data Scientist, HP, Palo Alto, CA

Data Scientist, Main Street Hub, Austin, TX
http://www.indeed.com/viewjob?jk=5850b3421d75964a&q=Data+Scientist&tk=1aqkhl10kafpac7I&fro m=web&advn=4329506790478416&sjdu=FVYza23O3s0wsrE7wIR9ngzDu2ImHIKNRV8aNBAf5X4&pub=4a1b367933fd867b19b072952f68dceb

Data Scientist, Microsoft, Redmond, WA

Data Scientist - Applied Machine Learning, Pacific Northwest National Laboratory, SEATTLE, WA
APPENDIX G: Response to External Reviews

Based on the reviewer’s comments, the proposal has been revised in the appropriate places. The comment from one reviewer that we should consider students who complete the Master’s of Data Science program a feeders to the Computer Science PhD program is of course natural. Indeed, the very existence of the Master’s of Data Science program will bring additional applicants to the PhD program. There is really nothing in the proposal that needs to change.

There was also one suggestion to take advantage of the multi-disciplinary nature of Data Science within the GC. This is one of the plans for the Computer Science PhD program and therefore nothing needs to be added in the Data Science Master’s proposal.
VI. SED and CUNY Forms for Academic Programs (Graduate and Undergraduate)

B. Application for Undergraduate and Graduate programs other than Teacher Education
General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>City University of New York Graduate School and University Center</td>
<td>GC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Program Title</th>
<th>Degree Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s of Data Science</td>
<td>Master’s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address of Any Campus Where the Proposed Program Will Be Offered (main and/or branch campuses)</th>
<th>Full-time or Part-time ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>365 Fifth Avenue</td>
<td>Full-time</td>
</tr>
<tr>
<td>New York, NY 10016</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Program Format(s) (standard, distance education², evening, weekend and/or other)</th>
<th>HEGIS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Joint Registration IHE (if applicable)</th>
<th>Total Number of Credits</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Lead Contact [First Name, Last Name, Title]</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert M. Haralick</td>
<td>212-817-8192</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email Address</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:Rharalick@gc.cuny.edu">Rharalick@gc.cuny.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

¹ Please refer to §52.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

² If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.
Program Purpose, Objectives and Targets

Program Purpose

*Department Expectation:* Clearly define a program purpose that is aligned to the degree award and program title.

To train students to understand the fundamentals of Data Science so that they have the skills to fill Data Science jobs in the industrial and corporate high Tech world.

Program Objectives

*Department Expectation:* Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1. To be able to understand the theory and principles of Machine Learning, Data Visualization, Big Data Analytics and Data Mining

2. To be able to use any of the standard application packages in R or Python to perform data analysis and modeling.

3. To understand how to translate a real world problem to a formal Data Science problem.

Program Targets - *Department Expectation:* Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. *Note:* There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

Enrollment Projections

*The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.*

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 Full</td>
<td>12 Full</td>
<td>13 Full</td>
<td>14 Full</td>
<td>14 Full</td>
</tr>
<tr>
<td></td>
<td>6 Part-Time</td>
<td>13 Part-Time</td>
<td>20 Part-Time</td>
<td>27 Part-Time</td>
<td>28 Part-Time</td>
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<table>
<thead>
<tr>
<th></th>
<th>Annual Retention Rate Target (%)</th>
<th>Target graduation rate (%)</th>
<th>Target Job Placement Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>87%</td>
<td></td>
<td>97%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Curriculum and Course Information

Please provide the following:

1. The applicable sample student program schedule table:
   • Table A: Undergraduate Program Schedule; or
   • Table B: Graduate Program Schedule

   When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master’s degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Courses but one have already been offered under permanent course numbers or special topics course numbers b Graph Social Network Analysis will be offered in the fall 2017 – 18 school year and will have been taught by Fall 2018. The Capstone project will be done by Independent Study which is an already existing course.</td>
</tr>
</tbody>
</table>
Table B: Graduate Program Schedule

- Indicate academic calendar type: [X] Semester  [ ] Quarter  [ ] Trimester  [ ] Other (describe): 
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

**Sample 2 Year Schedule**

<table>
<thead>
<tr>
<th>Term: Fall Year 1</th>
<th>Term: Spring Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>CSc 83060 Data Visualization</td>
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</tr>
<tr>
<td>CSc 84040 Data Mining</td>
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<table>
<thead>
<tr>
<th>Term credit total:</th>
<th>Term credit total:</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Term: Fall Year 2</th>
<th>Term: Spring Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>Elective 2</td>
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</tr>
<tr>
<td>Elective 3</td>
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<tr>
<td>Capstone 1</td>
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<tr>
<th>Term credit total:</th>
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</table>

**Sample 4 Year Schedule**

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<tr>
<th>Term: Fall Year 1</th>
<th>Term: Spring Year 1</th>
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</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>CSc 84040 Data Mining</td>
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<tr>
<td>CSc 83060 Data Visualization</td>
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</table>

<table>
<thead>
<tr>
<th>Term credit total:</th>
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</table>

<table>
<thead>
<tr>
<th>Term: Fall Year 2</th>
<th>Term: Spring Year 2</th>
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</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
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<tr>
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<tr>
<th>Term: Fall Year 3</th>
<th>Term: Spring Year 3</th>
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<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
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<tr>
<td>Elective 2</td>
<td></td>
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<tr>
<td>Elective 3</td>
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<tbody>
<tr>
<td>Term: Fall Year 4</td>
<td>Term: Spring Year 4</td>
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<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>Elective 4</td>
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</tbody>
</table>

Term credit total: | Term credit total:

Program Totals: | Credits: Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable:
## Faculty Information

### Existing Core Faculty

**Department Expectations:** Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Member Name, Title, and Rank</th>
<th>Courses that could be taught</th>
<th>Full-time or Part-time; if Full-time identify % of time to the program</th>
<th>Highest Earned Degree, Discipline, IHE</th>
<th>Additional qualifications which demonstrate professional competence relative to the specific program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sos Agaian, Distinguished Professor</td>
<td>Computer Vision and Image Processing</td>
<td>10%</td>
<td>Ph.D. Mathematics</td>
<td>Steklov Institute of Mathematics, Russian Academy of Sciences</td>
</tr>
<tr>
<td>Amotz BarNoy, Professor</td>
<td>Algorithms for Big Data</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Hebrew University, Israel</td>
</tr>
<tr>
<td>Chao Chen, Assistant Professor</td>
<td>Artificial Intelligence, Big Data Analytics, Graphical Models, Machine Learning</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Rensselaer Polytechnic Institute</td>
</tr>
<tr>
<td>Soon Ae Chun, Professor</td>
<td>Big Data Analytics, Database Systems, Data Mining</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Rutgers University</td>
</tr>
<tr>
<td>Scott Dexter, Professor</td>
<td>Social Network Analysis, Database Systems, Data Mining</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>Susan Epstein, Professor</td>
<td>Artificial Intelligence</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Rutgers University</td>
</tr>
<tr>
<td>Elena Filatova, Assistant Professor</td>
<td>Text Mining</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Linda Friedman, Professor</td>
<td>Modeling and Simulation</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Polytechnic Institute of New York</td>
</tr>
<tr>
<td>Irina Gladkova, Associate Professor</td>
<td>Data Mining</td>
<td>5%</td>
<td>Ph.D. Mathematics</td>
<td>The Graduate Center, CUNY</td>
</tr>
<tr>
<td>Mayank Goswami, Assistant Professor</td>
<td>Advanced Data Structures, Algorithms for Big Data, Combinatorial Algorithms</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>State University of New York at Stony Brook</td>
</tr>
<tr>
<td>Name</td>
<td>Research Areas</td>
<td>Percentage</td>
<td>Degree</td>
<td>Institution</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------</td>
<td>------------</td>
<td>-------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Michael Grossberg, Associate Professor</td>
<td>Compute Vision and Image Processing, Data Visualization</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Massachusetts Institute of Technology</td>
</tr>
<tr>
<td>Peng Gu, Assistant Professor</td>
<td>Modeling and Simulation, Parallel Scientific Computing</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Olympia Hadjiliadis, Professor</td>
<td>Quickest Detection of Abrupt Changes, Big Data Analytics</td>
<td>15%</td>
<td>Ph.D. Mathematics</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Robert M. Haralick, Distinguished Professor</td>
<td>Algorithms for Big Data, Big Data Analytics, Data Mining, Data Visualization, Machine Learning, Parallel Scientific Computing, Information Retrieval</td>
<td>50%</td>
<td>Ph.D. Computer Science</td>
<td>University of Kansas</td>
</tr>
<tr>
<td>Matt Johnson, Assistant Professor</td>
<td>Algorithms for Big Data, Combinatorial Algorithms, Social Network Analysis</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>The Graduate Center, CUNY</td>
</tr>
<tr>
<td>Delaram Kahrobaei, Associate Professor</td>
<td>Algorithms for Big Data, Combinatorial Algorithms</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>The Graduate Center, CUNY</td>
</tr>
<tr>
<td>Devorah Kletenik, Assistant Professor</td>
<td>Combinatorial Algorithms, Machine Learning</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>New York University</td>
</tr>
<tr>
<td>Rivka Levitan, Assistant Professor</td>
<td>Natural Language Processing</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Michael Mandel, Assistant Professor</td>
<td>Machine Learning, Speech and Audio Understanding</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Lev Manovich, Professor</td>
<td>Data Mining, Data Visualization, Social and Cultural Computing</td>
<td>50%</td>
<td>Ph.D. Computer Science</td>
<td>University of Rochester</td>
</tr>
<tr>
<td>Saad Mneimneh, Assistant Professor</td>
<td>Algorithms for Big Data</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Massachusetts Institute of Technology</td>
</tr>
<tr>
<td>Louis Petingi, Professor</td>
<td>Combinatorial Algorithms, Social Network and Analysis</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Stevens Institute of Technology</td>
</tr>
<tr>
<td>Theodore Kaphan, Distinguished Professor</td>
<td>Machine Learning, Pattern Matching</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>The Graduate Center, CUNY</td>
</tr>
<tr>
<td>Kaliappa Ravindran, Professor</td>
<td>Modeling and Simulation</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>University of British Columbia</td>
</tr>
<tr>
<td>Alia Rozovskaya, Adjunct Assistant Professor</td>
<td>Machine Learning, Natural Language Processing</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>University of Chicago</td>
</tr>
<tr>
<td>Ashwin Satyanarayana, Assistant Professor</td>
<td>Information Retrieval</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>State University of New York at Stony Brook</td>
</tr>
<tr>
<td>Dina Sokot, Professor</td>
<td>Pattern Matching</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Bar-Ilan University, Israel</td>
</tr>
<tr>
<td>Ioannis Stamos, Professor</td>
<td>Computer Vision and Image Processing, 3D Photography</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Bon Sy, Professor</td>
<td>Big Data Analytics, Data Mining</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Northeastern University</td>
</tr>
<tr>
<td>Name</td>
<td>Field</td>
<td>Percentage</td>
<td>Degree</td>
<td>University</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------</td>
<td>------------</td>
<td>---------------------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>Abdullah Tansel, Professor</td>
<td>Database Systems</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Middle East Technical University, Turkey</td>
</tr>
<tr>
<td>Yingli Tian, Professor</td>
<td>Computer Vision and Image</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Chinese University of Hong Kong</td>
</tr>
<tr>
<td>Felisa Vazquez-Abad, Professor</td>
<td>Modeling and Simulation</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>Brown University</td>
</tr>
<tr>
<td>Huy Vo, Assistant Professor</td>
<td>Big Data Analytics</td>
<td>15%</td>
<td>Ph.D. Computer Science</td>
<td>University of Utah</td>
</tr>
<tr>
<td>Paula Whitlock, Professor</td>
<td>Modeling and Simulation</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Wayne State University</td>
</tr>
<tr>
<td>Jie Wie, Associate Professor</td>
<td>Computer Vision and Image</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Simon Fraser University</td>
</tr>
<tr>
<td>George Wolberg, Professor</td>
<td>Computer Vision and Image</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Columbia University</td>
</tr>
<tr>
<td>Jia Xu, Assistant Professor</td>
<td>Natural Language Processing</td>
<td>10%</td>
<td>Ph.D. Computer Science</td>
<td>Rheinisch-Westfälische Technische Hochschule Aachen</td>
</tr>
<tr>
<td>Noson Yanofsky, Professor</td>
<td>Advanced Data Structures</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>The Graduate Center, CUNY</td>
</tr>
<tr>
<td>Bo Yuan, Assistant Professor</td>
<td>Massively Parallel Systems</td>
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<tr>
<td>Changhe Yuan, Associate</td>
<td>Artificial Intelligence</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>University of Pittsburgh</td>
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<tr>
<td>Sarah Zelikovitz, Associate</td>
<td>Graphical Models</td>
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<td>Ph.D. Computer Science</td>
<td>Rutgers University</td>
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<tr>
<td>Jianjing Zhang, Associate</td>
<td>Big Spatial Data</td>
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<tr>
<td>Schuqun Zhang, Professor</td>
<td>Computer Vision and Image</td>
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<td>Ph.D. Computer Science</td>
<td>University of Dayton</td>
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<tr>
<td>Zhigang Zhu, Professor</td>
<td>Computer Vision and Image</td>
<td>5%</td>
<td>Ph.D. Computer Science</td>
<td>Tsinghua University</td>
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</table>
**Faculty to be Hired**

**Department Expectations:** Identify the specific job title, courses to be taught, and qualifications for each position and the specific timeline by which the faculty member(s) will be hired. The job descriptions and minimum qualifications of faculty to be hired meet the minimum academic qualifications as identified in Part 52.2(b) of Commissioner’s regulation. The date provided by which faculty to be hired will be in place must be clear and directly connected to when they are needed to discharge their responsibilities during program implementation. The Department reserves the right to request more information concerning recruitment and hiring of faculty if it is needed to make a determination concerning compliance with program registration standards.

<table>
<thead>
<tr>
<th>Position Title, and Rank</th>
<th>Highest Earned Degree, Discipline, and additional qualifications</th>
<th>Courses to be taught</th>
<th>Date by which they will begin job duties</th>
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</table>
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS
(Graduate and Undergraduate)

B.1 Attestation and Assurances
Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institutions’ goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(c).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.¹

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with 52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

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<tr>
<th>CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST</th>
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<tr>
<td>Signature:</td>
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<tr>
<td>Date: 5/2/17</td>
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<tr>
<td>Type or print the name and title of signatory</td>
</tr>
<tr>
<td>Jay Connolly</td>
</tr>
<tr>
<td>Phone Number: 212-817-7200</td>
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</table>

¹ The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS (GRADUATE AND UNDERGRADUATE)

C. Evaluation Form
C.1. External Reviewer Conflict of Interest Statement
Evaluation Report Form for Program Proposals

Institution: Tufts University School of Engineering

Evaluator(s): Dr. Karen Panetta, Associate Dean for Graduate Engineering Education

Program title: City University of New York, Data Science

Degree title: Master of Science Degree in Data Science

Date of evaluation: 4/17/2017

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

   The program is structured for those individuals already skilled in computer science and/or statistics. The goals and objectives are very focused, namely to manage, analyze and visualize large data sets. The construction of the program is straightforward, namely, it appears that most courses already exist and the program is assembling a prescribed package of topics along with a major capstone experience.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

   The courses provide all the tools and programming skills to secure a position in industry for data science. Not sure from the proposal if these students will be prepared/recruited for a phd in the field, since this doesn't appear to be a goal, but it most certainly could be if (see additional)

3. Comment on the plans and expectations for continuing program development and self-assessment.

   The program has an advisory board of internal and external experts and industry professionals. The proposal will utilize existing curriculum committees and standing committees for the program. Metrics for assessment need to be included in the proposal (see comments under section 11)

4. Assess available support from related programs.

   The proposal does a fine job of comparing to existing CUNY programs, but what it doesn't address, other than cross-listing of courses, is the missed opportunity to make this program the premier CUNY program by capitalizing on the interdisciplinary nature of true data science, where these cross-cutting topics apply to fields that CUNY also has expertise with such as, cybersecurity, human health, medical imaging, computational biology, (see additional)

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

   see attached document
II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

   (see the attached document)

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?
   The faculty size is appropriate for the proposed program with regards to teaching. What needs to be addressed is the advising load for the faculty for the MS in Data Science projects. These projects could take quite a bit of time and take away from faculty research if the projects, if the projects do not contain novel research aspects that can lead to grants or publications, or patents. A suggestion is to utilize Professors of the practice.

8. Evaluate credentials and involvement of adjunct and support faculty.
   This was difficult to establish and required the reviewer to visit each faculty listed in appendix B to review the individuals’ qualifications. A suggestion is to list each title of each professor so it is clear what their position is.
   The involvement of the faculty is teaching the specific courses.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.
   Since the courses are already being taught, the only resources affected will be increases to existing class enrollments. Career services will need to be trained on what exactly data science is and new initiatives to reach out to hiring institutions and organizations, including NGOs. For the small number of students expected in the first few year, new graduate assistants really are not required as they will be distributed over many courses.

10. (Only for programs requiring master plan amendment.) What is the institution’s commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:
   Master of Science in Data Science
   (Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):
Karen A. Panetta

Signature:

Date: 4/17/2017

Karen A. Panetta
Answers to evaluation: (please rerun the table of contents, the pages were not correct) Appendix B is page 73 not 83 as listed, assessment is not where it says it is (page 21) etc..

2) The program could certainly be a feeder program to PHD programs, even if this is not a primary goal.

4) The proposal does a fine job of comparing to existing CUNY programs, but what it doesn't address, other than cross-listing of courses, is the missed opportunity to make this program the premier CUNY program by capitalizing on the interdisciplinary nature of true data science, where these cross-cutting topics apply to fields that CUNY also has expertise with such as, cybersecurity, health and diagnosis, medical imaging, computational biology, bioinformatics, sensor networks, signal and image processing, mobile computing, internet of things and online learning.

5) NASA is hiring data science fellows to bridge the gap for the massive amounts of data they bring in from missions and earth observing systems. The proposal should have at least 1 or 2 courses outside of traditional computer science count towards the degree. This would be one way to get students exposure to applying data science to other fields. There is much more to data science than just analysis tools. One has to understand how and when to apply the tools and this comes through interactions with real world issues, climate change and environmental monitoring, security, space exploration. Data Science will be the most crucial skill in the future as data is being collected through public cameras, sensor networks, healthcare, travel, internet and social media. Every discipline will be affected, including the arts and humanities, not just the STEM fields. Having these topics covered in the big data course is not enough exposure. There could be some sort of open ended research based question for the capstone that requires the students go beyond the CS department. In the future, knowing data science will be a necessary skill for any job using a computer and technology.

6) The faculty are well-qualified to teach the courses outlined in the proposal. There are absolutely no concerns here. It would be helpful to know the specific individuals to assume roles such as deputy director of the program and why there is a need for a course release for such a small number of students in the first few years. Does CUNY have an associate dean for graduate programs? This program should follow the existing administration structure CUNY has for all its MS programs, ie., if every other MS program has a deputy director, then this one should too and the benefits allocated to the others in this position.

7) (continued from evaluation sheet) Professors of the practice could help alleviate the advising load and keep a crucial connection with industry to help identify real-world projects and foster better relations with area industries. Even if students get industry internships, advising and meetings should still occur, which means that the faculty member has to be assertive about making sure the academic rigor is maintained. The CS faculty should not be the focal point for securing internships for the students. They are an obvious connection, but career services centers need to be absorbing these tasks. CS faculty relationships could help foster foundation/industry relations, but finding jobs for students should not be an expectation. It’s too much more to ask of a research active faculty.

IV) 11

The proposal as it is written can be easily implemented as a low-cost path to Data Science. The capstone experience scenarios and flexible options are the highlight of the program. This program can be very enticing to entrepreneurial students. The proposal should capitalize on this.
How does the program vary for part-time? It can be envisioned that someone from industry may want to do the project related to their own company interests, is there a committee that will vet the robustness of all the students’ proposed projects or will that be entirely up to the advisor? The faculty are already teaching these courses and are known for their respective expertise. This is a strength. The proposal distinguishes itself well from other existing programs, but very little cross-cutting collaboration is discussed, even with departments like psychology, economics or the medical and health professional schools. To begin this MS program, the proposal as written is sufficient, but to gain significant numbers and become a pillar program at CUNY, interdisciplinary courses should be added. Please state in the governance, how often the respective boards will meet, who will create the annual report and to whom will that report go to at CUNY? What are the metrics by which this program will be evaluated and assessed by these governance committees? Is it enrollments? Job placement, the number of students who go on to PHD programs? Are there any diversity goals to be achieved, for instance, women and underrepresented groups of individuals are attracted to areas that have social impact. What marketing initiatives will there be and are these costs included in the budget? If there The CUNY Baruch College has an MS in Marketing and Marketing analytics, here is an excellent opportunity to leverage on their skills to help advance this degree program.

Admissions requirements. It appears that requiring programming as admission into the program could eliminate many outstanding candidates, such as people in physics, biology etc. One suggestion is to make passing a programming course at CUNY as a conditional acceptance with the understanding that this course cost is or is not included in their tuition and does not count towards the degree requirements.

Overall, there are no serious deficiencies with the proposal as written and the program is timely and on the leading edge of filling an educational gap that exists in our academic institutions today.
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS (GRADUATE AND UNDERGRADUATE)

C. Evaluation Form
C.1. External Reviewer Conflict of Interest Statement
Evaluation Report Form for Program Proposals

Institution: CITY UNIVERSITY OF NEW YORK

Evaluator(s): Jianhua Ruan, PhD, University of Texas at San Antonio

Program title: Data Science

Degree title: Master of Science

Date of evaluation: 04/30/2017

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.
   
   Program purpose is very clear - to train students who master effective ways of scalable data analysis techniques. Program requirement is reasonable, and mechanism for program administration is excellent.

2. Comment on the special focus of this program, if any, as it relates to the discipline.
   
   The focus of the program is rightly on the fundamentals of data science, including programming, databases, statistics and machine learning.

3. Comment on the plans and expectations for continuing program development and self-assessment.
   
   Assessment plan is present, but more details are needed.

4. Assess available support from related programs.
   
   The program will leverage the existing faculty expertise and courses in the computer science PhD program and therefore the available support is excellent.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?
   
   Data science is already in the CUNY-wide master plan. Nevertheless the need and demand for the program is evident at all levels, and the demand will only continue.
II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

Many of the faculty who will be offering courses in the data science program are well recognized experts in areas such as data mining, machine learning, data base management, statistical analysis and reasoning, artificial intelligence, etc and have strong publication record.

7. Assess the faculty in terms of **size** and **qualifications**. What are plans for future staffing?

About twenty five faculty members in the computer science PhD program have been and are currently teaching courses that are listed in the proposed curriculum. As stated above, these faculty are well recognized experts in areas related to data science. Future staffing plan is not a concern given the size and qualification of the current faculty.

8. Evaluate credentials and involvement of **adjunct** and **support faculty**.

Most faculty are either faculty members of the computer science department or are affiliated with the computer science phd program. No other adjunct/support faculty are mentioned in the proposal but is not a concern given the size and qualification of the current faculty.

III. Resources

9. Comment on the adequacy of physical **resources** and **facilities**, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

Resources and facilities are adequate.

10. (Only for programs requiring master plan amendment.) What is the **institution's commitment** to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

Data science is already in the master plan. Plus, the program is self sustainable.

IV. Summary Comments and Additional Observations

11. Summarize the **major strengths and weaknesses** of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

Strengths: strong demand, excellent faculty, leverage of existing resources, self sustainability

Weakness: lack of details in program assessment plan
**External Reviewer Conflict of Interest Statement**

I am providing an external review of the application submitted to the NYS Education Department by:

**CITY UNIVERSITY OF NEW YORK,**

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

Master of Science in Data Science

(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Jianhua Ruan

Signature:

Date: 4/30/2017
VI. SED AND CUNY FORMS FOR ACADEMIC PROGRAMS (GRADUATE AND UNDERGRADUATE)

C. Evaluation Form
C.1. External Reviewer Conflict of Interest Statement
I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

The proposed program addresses the need of educating a rising profession of data scientists. It has a clearly defined targeted student population, a sound program structure. Coursework and requirements outlined are appropriate for the intended learning goals of this new program. The proposal also laid out thoughtful plans for the administration of this program, without requiring too much new resources.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

Compared with other programs in the CUNY system with similar program titles, this program intends to give a more fundamental treatment of the subject, by focusing on principles, foundations and algorithms, as opposed to implementation and software platforms. It is geared towards students who strive to carry out data science innovation and research.

3. Comment on the plans and expectations for continuing program development and self-assessment.

The director of the proposed program will be filled by the deputy executive officers of the PhD in CS program, who will bring experiences and academic rigor in the administration and monitoring of the MSDS program. An advisory board that consists of faculty members and industry experts will provide a broad intellectual support for future development. Regular program assessments will focus on student progress and success.

4. Assess available support from related programs.

It is mentioned that some courses will be cross-listed with related programs, which allows the program to offer a diversified curriculum without incurring too much new course development.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

Data Science is a striving industry in NYC. There is a lot demand locally. The growth of jobs in data science has been increasing and shows no sign of slowing down in the near future. In New York, there has been an increase in data-driven large-scale projects such as Vision Zero from NYC DOT, data science research labs such as that of Microsoft, Facebook, and etc, data science services such as SAP Next-Gen Consulting. The demand for data science professionals will continue to grow.
II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

The CS faculty members at CUNY have demonstrated an excellent record of research productivity, training and mentoring graduate students, and education in CS. They have also been widely recognized. The proposed MSDS has a detailed plan for leveraging their expertise.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

Nearly all courses in the proposed program are existing courses that will be taught by highly qualified CUNY CS faculty members. Some of them will be faculty mentors, extending their years' experience in mentoring graduate students in CS. Future staffing only involves identifying a few supporting administrative staff.

8. Evaluate credentials and involvement of adjunct and support faculty.

No mentioning of adjunct faculty was found in the proposal.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

The proposed program will be mostly using existing resources available to graduate students in CS. The director of the program will actively involve CS faculty and industry mentors, with the support from the advisory board, especially for providing research/interning opportunities to MSDS students.

10. (Only for programs requiring master plan amendment.) What is the institution's commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

Strengths: CUNY's excellent CS faculty; A rich collection of existing courses in DS; Program's designed focus on fundations of DS (making it unique among peer programs); Location in NYC, which is experiencing a fast growth in data science jobs.

Weaknesses: No major weakness for the proposed program. Operationally, a more detailed plan to engage potential industry mentors would be important for the success of the proposed program.
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

The Graduate Center of City University of New York

(Name of Institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

Master of Science in Data Science

(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;

4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Tian Zheng

Signature:

Date: April 30th, 2017
### Enroll and Seat Projections
(Graduate)

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### Section Seats per Student

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<tr>
<td>New Courses</td>
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<td><strong>Total (normally equals 10)</strong></td>
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<tr>
<td>Existing Courses</td>
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<tr>
<td>New Courses</td>
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<td><strong>Total (normally equals 4-6)</strong></td>
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### Seat & Section Needs

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<tr>
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<tr>
<td><strong>Seat Need for New Students</strong></td>
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</tr>
<tr>
<td>New Courses</td>
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<td>Avail. Seats in Existing Courses</td>
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<tr>
<td>Net Seat Need in Existing</td>
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<tr>
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<tr>
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<tr>
<td><strong>Net New Section Need</strong></td>
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<td>Existing Courses</td>
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<td>New Courses</td>
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<tr>
<td>Full Time Faculty</td>
<td>$ -</td>
<td>$ 37,800.87</td>
<td>$ 47,800.81</td>
<td>$ 47,800.81</td>
<td>$ 47,800.81</td>
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<tr>
<td>Part Time Faculty</td>
<td>$ 37,800.87</td>
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<td>$ 47,800.81</td>
<td>$ 47,800.81</td>
<td>$ 47,800.81</td>
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<td>$ 24,611.40</td>
<td>$ 24,611.40</td>
<td>$ 24,611.40</td>
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<td>Library (Includes Staffing)</td>
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<td>Equipment</td>
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<td>Laboratories</td>
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<td>Supplies &amp; Expenses (Other than Personal Services)</td>
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<tr>
<td>Capital Expenditures</td>
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<tr>
<td>Other</td>
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<tr>
<td>Total all</td>
<td>$ 62,412.27</td>
<td>$ 72,412.21</td>
<td>$ 72,412.21</td>
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<td>$ 72,412.21</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year, new resources with adjustments for inflation, if a continuing cost.
[5] Specify what is included in "other" category, (e.g., student financial aid).
### Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue[3]</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td>$0</td>
<td>$57,375</td>
<td>$81,330</td>
<td>$112,830</td>
<td>$118,473</td>
</tr>
<tr>
<td>02. From New Sources[5]</td>
<td>$57,375</td>
<td>$60,563</td>
<td>$68,276</td>
<td>$69,642</td>
<td>$71,035</td>
</tr>
<tr>
<td>03. Total</td>
<td>$57,375</td>
<td>$60,563</td>
<td>$68,276</td>
<td>$69,642</td>
<td>$71,035</td>
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<tr>
<td><strong>Other Revenue[7]</strong></td>
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<tr>
<td>07. From Existing Sources§</td>
<td>$0</td>
<td>$0</td>
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<td>08. From New Sources**</td>
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<td>09. Total</td>
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<td>$0</td>
<td>$0</td>
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<td><strong>Grand Total[8]</strong></td>
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<tr>
<td>10. From Existing Sources§</td>
<td>$0</td>
<td>$57,375</td>
<td>$81,330</td>
<td>$112,830</td>
<td>$118,473</td>
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<tr>
<td>11. From New Sources**</td>
<td>$57,375</td>
<td>$117,938</td>
<td>$149,606</td>
<td>$182,472</td>
<td>$189,508</td>
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<tr>
<td>TOTAL</td>
<td>$57,375</td>
<td>$117,938</td>
<td>$149,606</td>
<td>$182,472</td>
<td>$189,508</td>
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</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[3] Please explain how tuition revenue was calculated.
[5] New sources means revenue engendered by new students. The revenue from new sources from one year should be carried over to the next year as revenues from continuing sources with adjustments for inflation.
[6] Public institutions should include here regular State appropriations applied to the program.
[7] Specify what is included in “other” category.
[8] Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
# Supporting Material Expenditures

## Graduate

### DIRECT OPERATING EXPENSES

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (list separately)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
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<td>$0</td>
<td>$0</td>
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<td>Full Time Employee Fringe Benefits (41.6%)</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>Total (Links to Full-Time Faculty on Program Exp Worksheet)</strong></td>
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<td>$0</td>
<td>$0</td>
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<tr>
<td>Part Time Faculty Actual Salaries</td>
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<tr>
<td>Part Time Faculty Actual Fringe Benefits (24.3%)</td>
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<tr>
<td><strong>Total (Links to Part-Time Faculty Program Exp Worksheet)</strong></td>
<td>$37,800.87</td>
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<td>$47,800.81</td>
<td>$47,800.81</td>
<td>$47,800.81</td>
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<tr>
<td>Full Time Staff Base Salary (list separately)</td>
<td>$0</td>
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<td>$0</td>
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<tr>
<td>Full Time Staff Fringe Benefits (41.6%)</td>
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<td><strong>Total (Links to Full-Time Staff on Program Exp Worksheet)</strong></td>
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<td>Part Time Staff Base Salary (list separately)</td>
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<td><strong>Total (Links to Part-Time Staff on Program Exp Worksheet)</strong></td>
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<td>$24,611</td>
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<td>$24,611</td>
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<td>Library Resources</td>
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<td>Library Staff Full Time (List Separately)</td>
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<td>Part Time Employee Fringe Benefits (24.3%)</td>
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<td>Equipment Repair and Maintenance</td>
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<td>Facility Renovations</td>
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<td>Classroom Equipment</td>
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<td>Other (list separately)</td>
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The Five-Year Revenue Projections for Program

SENIOR COLLEGE (GRADUATE) WORKSHEET

Year 1 = Fall 2018

### EXISTING FULL-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students</td>
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<td>6</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Annual Avg # of Credits per FT student (24-30)</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Tuition Income (rate per credit)</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
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<tr>
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<td>$39,015</td>
<td>$46,427.85</td>
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<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$38,250</td>
<td>$39,015</td>
<td>$46,428</td>
<td>$47,356</td>
</tr>
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### Tuition & Fees:

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td># of EXISTING FULL-TIME, Out-of-State Students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Annual Avg # of Credits per FT student (24-30)</td>
<td></td>
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</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<td>Total Tuition</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<tr>
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<tr>
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</table>

**TOTAL EXISTING FULL-TIME TUITION REVENUE** | $0       | $38,250  | $39,015    | $46,428    | $47,356   |

### EXISTING PART-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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<tr>
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<td>$0</td>
<td>$425</td>
<td>$434</td>
<td>$443</td>
<td>$452</td>
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<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$19,125</td>
<td>$42,315</td>
<td>$66,402</td>
<td>$71,117</td>
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<td>$42,315</td>
<td>$66,402</td>
<td>$71,117</td>
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### Tuition & Fees:

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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
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<td>$0</td>
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**TOTAL EXISTING PART-TIME REVENUE** | $0       | $19,125  | $42,315    | $66,402    | $71,117   |

**TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)** | $0       | $57,375  | $81,330    | $112,830   | $118,473  |
### NEW FULL-TIME STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
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<tr>
<td># of NEW FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
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<td>Annual Avg # of Credits per FT student (24-30)</td>
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<tr>
<td>Tuition Income (Calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
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<tr>
<td>Total Tuition</td>
<td>$38,250</td>
<td>$38,250</td>
<td>$45,517.50</td>
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<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$38,250</td>
<td>$38,250</td>
<td>$45,518</td>
<td>$46,428</td>
<td>$47,356</td>
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### NEW PART-TIME STUDENTS

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<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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<td>7.5</td>
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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$425</td>
<td>$425</td>
<td>$434</td>
<td>$442</td>
<td>$451</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$19,125</td>
<td>$22,313</td>
<td>$22,758.75</td>
<td>$23,214</td>
<td>$23,678</td>
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<tr>
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<td>Total In-State Tuition &amp; Fees</td>
<td>$19,125</td>
<td>$22,313</td>
<td>$22,759</td>
<td>$23,214</td>
<td>$23,678</td>
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### TOTAL NEW FULL-TIME TUITION REVENUE

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<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$38,250</td>
<td>$38,250</td>
<td>$45,518</td>
<td>$46,428</td>
<td>$47,356</td>
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</table>

### TOTAL NEW PART-TIME REVENUE

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$19,125</td>
<td>$22,313</td>
<td>$22,759</td>
<td>$23,214</td>
<td>$23,678</td>
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### TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)

<table>
<thead>
<tr>
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<th>Year Five</th>
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<td>$57,375</td>
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### OTHER REVENUE

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<th>Year Five</th>
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<tbody>
<tr>
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</table>
### Sample Four Year Teaching Schedule

- **Indicate academic calendar type:** ☑️ Semester ☐ Quarter ☐ Trimester ☐ Other (describe): 
- **Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)**
- **Use the table to show how a typical student may progress through the program; copy/expand the table as needed.**

<table>
<thead>
<tr>
<th>Term: Fall 2017</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Algorithms for Big Data</td>
<td>3</td>
<td></td>
<td>Algorithms</td>
</tr>
<tr>
<td></td>
<td>Data Visualization</td>
<td>3</td>
<td></td>
<td>Algorithms</td>
</tr>
<tr>
<td></td>
<td>Information Retrieval</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Natural Language Processing</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social and Cultural Computing</td>
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<td></td>
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<tr>
<td></td>
<td>Social Network Analysis</td>
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<td></td>
<td>Stochastic Optimization</td>
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<table>
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<th>Course Number &amp; Title</th>
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<th>New</th>
<th>Prerequisite(s)</th>
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<tbody>
<tr>
<td></td>
<td>Artificial Intelligence</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Big Data Management and Analysis</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Computer Vision and Image Processing</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>Database Systems</td>
<td>3</td>
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<tr>
<td></td>
<td>Machine Learning</td>
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<td>Massively Parallel Systems</td>
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<tr>
<td></td>
<td>Speech and Audio Understanding</td>
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<tr>
<td></td>
<td>Text Mining</td>
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<td></td>
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<tr>
<td>Algorithms for Big Data</td>
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<td>Big Data Analytics</td>
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<tr>
<td>Computer Vision and Image Processing</td>
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<tr>
<td>Data Visualization</td>
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<tr>
<td>Database Systems</td>
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<td>Data Mining</td>
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<td>Graphical Models</td>
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<td>Machine Learning</td>
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<tr>
<td>Modeling and Simulation</td>
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<table>
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<tbody>
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<td>Data Visualization</td>
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<td>Information Retrieval</td>
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<tr>
<td>Natural Language Processing</td>
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<tbody>
<tr>
<td>Big Data Management and Analysis</td>
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<tr>
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<td>Massively Parallel Systems</td>
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<tr>
<td>Text Mining</td>
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<td>Vision Brain and Assistive Technologies</td>
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<td>3D Photography</td>
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<th>Prerequisite(s)</th>
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<td>Computer Vision and Image Processing</td>
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<td>Modeling and Simulation</td>
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<tr>
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<td>Algorithms for Big Data</td>
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<td>Big Spatial Data</td>
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<td>Information Retrieval</td>
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RESOLVED, that the program in Human Services and Community Justice offered at the Graduate School and University Center and leading to the Master of Science, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: This interdisciplinary proposal is grounded in the social sciences and enhanced by professionally oriented courses in counseling, program development and assessment and research methods. Graduates of the program will be sought after by government, non-profit and for profit social service organizations.
Proposal for a Major in
Human Services and Community Justice
Leading to the
Bachelor of Science Degree

Department of Counseling
Department of Africana Studies
Department of SEEK

Anticipated Implementation of Program: Fall 2017

Approved By:
College Council: December 16, 2016
Undergraduate Curriculum and Academic Standards Committee: November 18, 2016

College Representative: Dr. Jane P. Bowers, Provost & Senior Vice President for Academic Affairs
Signature: Dr. Jane P. Bowers
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A. Executive Summary

John Jay College of Criminal Justice proposes a Bachelor of Science Degree in Human Services and Community Justice (HSCJ). The field of Human Services "uniquely approaches the objective of meeting human needs through the use of an interdisciplinary knowledge base, focus on prevention as well as remediation of problems, and commitment to improving the overall quality of life of service populations" (NOHS, 2016). In contemporary life, and in New York City, where social, racial and economic justice is diminishing for communities most underserved and at-risk, there continues to be an emerging need for competent and compassionate human services. Individuals involved in the criminal justice and legal systems are among some of the most vulnerable citizens, often struggling with poverty, unemployment, abuse, social injustice, addiction, and physical and mental health issues. As the need for services among diverse populations continues to increase, the demand for trained and certified human services professionals competent in promoting fairness and equity will dramatically rise. In response, we propose a HSCJ degree with the purpose of training students in the theory and practice of human services to be self-reflective, ethical, competent, and compassionate practitioners; culturally and critically conscious researchers and evaluators; and fierce advocates, policy makers, and administrators of community justice, who serve others with integrity, accountability, and for the common good.

John Jay is in a unique position to offer this major given its focus on educating for justice, which is the core feature of the College’s mission. There are currently seven CUNY community colleges offering associates degrees in Human Services and New York City Tech offering the bachelors. The creation of this major would make John Jay College one of two CUNY institutions with a bachelor in human services and the only program with a multidisciplinary focus on justice.

With the strong workforce demand we see today for helping professionals and advocates, this major will prepare our students for growing employment prospects. Human Services careers are expected to be "very favorable" as the number of human service workers are projected to grow “faster than average” for all occupations through 2024 (Bureau of Labor Statistics, 2015). Examples of occupational titles include case managers, juvenile and domestic violence counselors, probation officers, community organizers, family and child advocates, probation officers, and correctional treatment specialists. Within these clusters of occupations, the New York State Department of Labor forecasts an average growth rate of 15% in the decade between 2010 and 2024. Students who graduate the program will find that they are well prepared to enter advanced degree programs specializing in direct human services such as counseling, community psychology, social work, and public health; in advocacy work, such as community labor, human and political rights and in policy analysis, urban affairs and public administration. According to the Bureau of Labor Statistics, median pay of entry-level social and community managers is $63,500; social workers, $45,900; mental health counselors, $43,190; corrections treatment specialists and probation officers, $49,300; and social and human service assistants, $30,830. The anticipated accreditation of our HSCJ major will enhance the program’s reputation and desirability, and provide students the opportunity to sit for the Human Services Board Certified Professional exam (HS-BCP, 2016) in their senior year, distinguishing themselves in today's competitive job market.

The HSCJ major will attract large numbers of students interested in professional service careers. Nationwide, from 2000-01 to 2010-11, public administration and social service degrees conferred increased by 13 percent. At John Jay College, the number of
students electing the current human services minor has nearly tripled since its 2010 launch, growing from 64 to 183 students. The College estimates that the proposed major will appeal to many students transferring into John Jay from other CUNY community colleges, and the popularity of our institutional mission will result in strong high school pipelines. Only one Bachelor’s degree in Human Services exists within CUNY (NYC Tech), although seven Human Service Associate degree programs within CUNY are potential feeder opportunities for the program. The paucity of Bachelor HS degrees, the growing demand for formal education in this newly professionalizing field, the unique community justice focus, and our Manhattan location will drive student interest and attendance. We modestly project an enrollment of 300 students by year five of the program.

The curriculum of the HSCJ degree is rooted in the expanding need for qualified helping professionals and the growing expectation that graduates will be better prepared and credentialed. Using the Council for Standards in Human Services (CSHSE) National Standards (CSHSE, 2013) as a guideline, and building on the past success of our existing Human Services minor, the program’s 21-24 credit required core of courses provide a coherent framework for an in-depth study of the Human Services discipline, while providing perspectives and expertise from the growing field of community justice – studies in citizen access to and involvement in justice decision-making and practices, restorative justice and victim services, and socio-economic development that enhance community-level outcomes for the common good. Students then will progress through 6-credits of research and evaluation. The program’s curriculum also draws from the liberal arts and other disciplines to provide electives in diverse human systems and interventions, justice in human services, and advocacy, policy and administration. Human Services education has an extensive history of using field-based learning to connect theoretical concepts with praxis. The program’s expansive 6-credit, two-semester field experience will culminate in a 3-credit capstone course linking theoretical underpinnings with field work.

Because the major builds upon the existing Human Service minor in the Department, the degree can be launched with a relatively small investment of resources. In 2015, the workload of faculty in the Department changed from faculty counselor status (providing a portion of workload as service hours in the Counseling Center) to full instructional staff with a 21-hour teaching load, freeing up additional instructional capacity. In addition to five full-time faculty in the Department of Counseling who will offer courses in the major, four full-time faculty in the Department of Africana Studies will teach major courses focusing on community justice. These faculty will be supplemented by SEEK full-time faculty and counseling staff members who will teach in the program in an adjunct capacity, bringing a wealth of experience and expertise in the fields of social work, counseling and social service. Assuming the projected growth of the program (300 students by year five), we estimate that one additional faculty member will be needed (estimated salary $75,000) to support upper-level offerings. Additional resources required include a modest investment of library resources ($3000 initial plus $1000 per subsequent year), two course releases per year for the coordinator, and after year three, a fieldwork coordinator (salary of $45,000).

Review and assessment in the major will follow John Jay College’s five-year cycle of curricular review of programs and majors. The Human Services and Community Justice Major coordinator and the faculty will assure the vitality of the curriculum of the major and gauge the performance of students in the major in relation to the learning outcomes of each course, and the major overall. Moreover, to keep abreast of the changes in the field and need to modify the program and learning outcomes, the Curriculum Subcommittee and major coordinator will be informed by both the NOHS and the CSHSE. The Department of
Counseling aims to apply for HSCJ major’s membership and accreditation from CSHSE after two years from launch.

CUNY students often express a genuine desire to make a difference in the lives of others and in their communities upon graduation. The HSCJ program will prepare students for a life’s work as caring professionals, advocates, and change agents-in service to others. Given the high degree of student interest to become helping professionals, an engaging standards based curriculum, and a robust job market upon graduation, we are confident that the Human Services and Community Justice degree program will become one of the most popular majors at the college and the University, and one of the most significant for the city and state of New York.
B. Abstract

In these current times, there exists an urgent and compelling need to ameliorate rising issues of social, racial, and economic injustice. The proposed HSCJ major provides a rigorous, coherent and focused program to help students develop a better understanding of the challenges facing diverse and underserved populations. Students will progress through a required core courses designed to prepare them to become self-reflective, competent and compassionate practitioners, change agents, advocates and community leaders. Subsequently, through multidisciplinary, methods and elective courses, students will continue to develop a rich appreciation for diverse human systems and interventions, justice, and advocacy, policy and administration promoting a “just” society. The program then offers a comprehensive year-long field experience and culminates in a senior seminar where students present a summative capstone portfolio documenting the integration of theory and praxis. Human Services is a newly emerging and rapidly professionalizing discipline, which is supported by the proliferation of degree programs, professional organizations, and a national accrediting body recently recognized by the Council for Higher Education Accreditation (CHEA). Within CUNY, currently one HS Bachelor’s degree is offered (NYC Tech, Brooklyn); however, seven HS associate degree programs serve as promising feeder opportunities. Given these facts the projected enrollment in our program totals 300 students by the fifth year. Students enrolling in the proposed HSCJ program will find it is congruous with our college’s flagship mission, and responds to student expressed desires to seek meaningful careers “in the service of others” within their communities. John Jay’s ideal geographical location, existing popular and expanding HS minor, and the program’s unique focus on community justice will further enhance its marketability and success. Graduates can expect to locate employment in private and nonprofit service organizations and are ideally suited for graduate school in social work, counseling, and related public service fields.

C. Purpose and Goals

1. Purpose

As John Jay College of Criminal Justice commences a second half-century of educating service-inclined students for work in fields that improve the lives of individuals, families, communities and organizations, we are very pleased to propose a Bachelor of Science in Human Services and Community Justice (HSCJ). This academic program, consonant with our mission-based commitment to “educating for justice,” will be a first at the College, leading to careers in human services, social work, counseling, social policy and advocacy related areas. This program would respond to a specific form of service-orientation that differs from those met by John Jay’s best-known professional degree options and would consequently expand our already robust appeal to a core group of our undergraduate applicants: students who wish to spend a lifetime contributing to the common good. Therefore, the philosophy and overall purpose of the program in Human Services and Community Justice is to train students in the theory and practice of human services to be self-reflective, ethical, competent, and compassionate practitioners; culturally and critically conscious researchers and evaluators; and, fierce advocates, policy makers, and administrators of community justice, who serve others with integrity, accountability, and for the common good.

With this purpose the program disseminates advanced specialized training needed for “respecting the dignity and welfare of all people; promoting self-determination; honoring cultural
diversity; advocating for justice; and acting with integrity, honesty, genuineness and objectivity” (NOHS, 2015). For example, individuals involved in the criminal justice system are among some of our most vulnerable citizens, imprisoned unjustly, often struggling with poverty, addiction, mental illness, discrimination, and service systems that create barriers to psycho-social-educational-medical and legal resources. Beyond core practice skills training requisite for Human Services education, the program will incorporate a multidisciplinary approach to understanding the transactional and power relationships among criminal justice, oppressive systems and problems such as poverty, crime, chemical dependency, delinquency, developmental disabilities, social injustice, employment, institutional racism, and the stigma and treatment of psychiatric disorders. Incorporating a knowledge and appreciation for diversity, the program draws upon relevant scholarship from social science disciplines to help develop the capacity for transformation and to promote a “just” society by analyzing, challenging, and eliminating “injustice” and “inequities” in the context of their communities and environments.

Society often leaves the criminal justice system to deal with the impact of its structural inequities that impact individuals being trapped in poverty, having unmet behavioral health needs, feeling isolation, despair, and hopelessness, and making decisions that impact personal and public wellbeing. These outcomes translate into tremendous costs for individuals and extraordinary socio-economic impacts for communities. Communities unequipped to support the needs of the most vulnerable will likely experience higher crime rates, unemployment, traumatization, social unrest, social injustice, higher rates of recidivism of offenders, and fail to recognize and build on community strengths.

In these current times, there exists an urgent and compelling need to ameliorate rising issues of social, racial, and economic injustice. HSCJ graduates will be uniquely positioned and effectively trained to partner and build coalitions with an array of agencies including: law enforcement, courts, and correctional, criminal justice and social service providers. Providing direct and indirect services, graduates will exercise their commitment to justice by promoting fairness, equity and accountability to citizens encountering the criminal justice system; they will develop and provide restorative services for offenders who have been incarcerated or those in lieu of jail time mandated to social service programs; they will work with undocumented immigrants seeking paths to citizenship to insure access to basic rights and with immigration and customs enforcement authorities to insure that refugees/immigrants housed in detention centers are treated humanely; they will work to assist victims of crime or violence in new, expanded and innovative ways; address racial and ethnic disproportionality in the child welfare and other social systems; advocate for youth justice with juvenile offenders remanded by the courts; work with law enforcement professionals advocating for the rights of those unjustly arrested and/or mistreated; help to repair the harm of abusive parents, heal multigenerational trauma, and protect the elderly at risk for neglect and abuse. These are just some of the opportunities students will have to eliminate structural inequities, promote community restoration and perform functions related to the equitable and accountable care and treatment of individuals, families, and communities.

To ensure a healthy, stable, safe, and just society, it is imperative that criminal justice, legislative, government, and social service systems ground themselves in the values of prevention, community justice intervention, non-violence, restorative justice, fairness, equity, and alternative practices to support the rehabilitation of offenders. Punishment in itself, will not

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1 http://www.nationalhumanservices.org/ethical-standards-for-hs-professionals
remediate the complexity and urgency of the problems, deficits, and impairments that characterize individuals who find themselves situated in the criminal justice system. Working in collaboration with criminal justice professionals, Human Services professionals will provide vital services to justice-involved individuals and to the community at large. The objectives of the new major will educate students toward enacting accountability in practice, policy and advocacy. Competent inquiry in this major will include analyzing theories, strategies, and practices that place individuals and communities at the center, and strengthens the capacity of informal systems of social support (e.g., families, friends, neighborhood groups, religious/spiritual leaders, civic and community organizations, and local institutions) to resolve conflict and find solutions. Studies in community-based approaches to justice explore citizen access to and involvement in justice decision-making and practices that enhance community-level outcomes for the common good. Community justice studies include the development of legal, economic, social, education and health alternatives, and advocacy strategies at the local level that in some instances complement and in others transform traditional public safety strategies. Community justice practices utilize community engagement at the grassroots, systems and problem solving analyses, community asset building, and human ecology and prevention studies, to develop individual, family and community-wide wellbeing across social, psychological, and economic indicators.

This multidisciplinary approach draws upon complimentary perspectives from social sciences disciplines to facilitate students bringing a multiplicity of theoretical and analytical methodologies to bear on substantive social and cultural issues, toward raising student consciousness, critical thinking and capacity for bringing transformational leadership to the field. It allows students to work with diverse faculty and social and advocacy groups, to examine the dynamics of power, the values and equity of public policy, civic activism and transformational organizational change. Through the use of field education experiences, and portfolio development that focus on community-based approaches to justice in action, students in the major will be trained and better equipped to research, evaluate and respond in thoughtful and creative ways to the complexity of community-based demands for service, advocacy and policy development and analysis. As competent, self-reflective, ethical, and compassionate practitioners, such workers will be called upon to champion, empower, and ensure the rights of society’s most vulnerable members, as they intersect within criminal justice, government, and social service systems, and in doing so, appeal to the common good in each of us and to the common good for all of us. With this training, graduates of the HSCJ program will possess the strong requisite skills needed for entry level employment in the field, and be prepared to continue their formal education in social work, counseling, and related public service fields.

2. Goals

John Jay’s commitment to justice and public service undergirds and provides the appropriate and much needed academic setting for a major in Human Services and Community Justice. The major, through its multidisciplinary perspectives, prepares students to become self-reflective, competent practitioners and community leaders essential for human services practice. Through the interplay of multidisciplinary course work and practical experience students acquire the interpersonal skills, ethical and cultural competencies and professional helping skills congruent with the CSHSE National Standards and essential for Human Services practice in both the public and private sectors. Essentially, the overarching goal or mission of the program is to assist bachelor students in learning the knowledge, theory, skills, values and practice of human services in the interest of educating for justice. The specific goals of the program mission are expressed through its core learning outcomes derived from the CSHSE
National Standards. Graduates of the Human Services and Community Justice program will be able to demonstrate the following:

A. Knowledge of the historical development and policies of human services. Skills to critically analyze and interpret historical data for application in advocacy, policy, and social change.

B. Knowledge of the theories of human systems, community-based approaches to justice and how to effect social change on all levels of society including individual, interpersonal, family, group, community and organizational.

C. Ability to analyze and apply knowledge of the scope of conditions that promote or inhibit human functioning. Skills to effect and influence social policy.

D. Knowledge and skills in the appropriate integration and use of information including organizing, analyzing, evaluating and disseminating client data, program evaluation and community assessments.

E. Knowledge and skills in systematic analysis of service needs; ability to research and select equitable strategies, services, or interventions; and evaluate outcomes.

F. Knowledge and skill in direct service delivery and evidence-based practices in human services and community justice interventions, policy and advocacy.

G. Development of interpersonal skills congruent with values and ethics of critically conscious human service professionals such as client rapport, conflict resolution, social justice, social action, anti-oppression and embracing diversity.

H. Administrative and leadership skills for service delivery systems including analysis of power, managing, supervision, planning and evaluation, grant and contract negotiation, legal and regulatory management, community development and organizing.

I. Understanding of human services values, attitudes and ethics and their appropriate application in practice to culture, ethnicity, race, class, gender, religion/spirituality, ability, sexual orientation, and other expressions of diversity. Belief that individuals, service systems and society can change.

J. Awareness of how societal conditions such as access, involvement, and equity as well as their own biases, values and interpersonal styles limit justice and affect people in diverse communities. Skills to reflect on professional self.

K. Integration of knowledge, theory, skills and professional behaviors in field experiences.

A Program Advisory Committee will ensure adherence to standards and support continual response to changing policies and trends in the human services field and greater public service community. The effectiveness of the programs response to student and community needs will show in measurement of student learning outcomes and assessment plans described in the proposal. Further, the program relies on faculty who have expertise in Mental Health Counseling, Social Work and Psychology and from departments such as Africana Studies, Anthropology, Counseling, Latin American and Latino/a Studies, Psychology, SEEK, and Sociology to provide excellence in multidisciplinary training. A major with such components is ideally suited for students planning to attend graduate school in the fields of social work, counseling and applied psychology where job opportunities are increasing due to the changing demographics of society.
D. Need and Justification

1. Relationship to the Mission of the College

John Jay is in a unique position to offer this major given its focus on educating for justice, which is the core feature of the College’s mission. This proposed major continues the college’s definition of justice beyond the criminal justice sphere by drawing on the expanded offerings in the liberal arts and creating new cutting edge curriculum toward restoring justice. Since we have a student body who is interested in public service careers, the current emphasis on delivering Human Services not only in large institutions, but increasingly in decentralized community settings, makes the program appropriate to student interests and the John Jay mission.

Moreover, with the very healthy workforce demand we see today for helping professionals and advocates, this major will prepare our students for growing employment prospects (Data are supplied below). In fact, the program will be one that aligns student motivation with faculty strength to impart educational value that meets “market” needs. The major will draw on new and existing courses from a variety of departments, taught by faculty who are both researchers and practitioners. Hence, the overall purpose of the program is to foster in students the skills, dispositions, and habits of mind they will need to excel immediately in entry-level roles or in graduate school. In either case, students are better equipped to pursue their own goals related to becoming effective and respected agents for good in their communities.

Many students who attend John Jay reside in areas of the city where it is likely they have witnessed and/or experienced the inequities of the human condition and the suffering of the most disadvantaged in their communities. As a consequence, the decision to attend John Jay is commonly based on the understanding of the College’s deep rooted mission of public service and educating for justice, coupled with the strong desire to work compassionately in the service of others upon graduation. Students frequently articulate the interest to develop the competencies required to return to their communities as professional helpers and are eager to develop effective intervention strategies that facilitate opportunity and support populations at–risk, underserved, and in need.

The proposed major, with its focus on human and public services, positions students as transformational change agents who are capable of acting in service, administrative (e.g., grant writing, program development) and management roles (e.g., social and community service manager, development director) in expanding fields such as healthcare, education, social services, labor, political and government offices, advocacy, international organizations and NGO’s, criminal justice, community justice and public safety related fields. In addition, the proposed major also prepares students interested in continuing their education in graduate and professional schools, specializing in direct human services such as counseling, community psychology, social work, and public health; in advocacy work such as community labor, human and political rights and in policy analysis, urban affairs and public administration.

2. Relationship to Existing CUNY Programs

John’s Jay’s Human Services and Community Justice program is unique in being the only program in the CUNY system to offer an emphasis on community justice. There are currently seven CUNY community colleges offering Associates Degrees in Human Services
and New York City Tech offering the bachelors. The creation of this major would make John Jay College one of two CUNY institutions with a bachelor in human services and the only program with a multidisciplinary focus on justice.

New York City Tech offers a Bachelor of Science in Human Services program that consists of coursework in counseling skills, case management, group work practice, volunteerism, grants, research and services for specific populations. Students then select courses from one of three sequences: General, Administration, and Substance Abuse. Although these areas of study are integrated in the proposed major, the multidisciplinary perspectives and its focus on community justice throughout the curriculum are exclusively part of the major proposed. We are not only preparing human service providers, but community justice professionals as well.

3. Community of Practice Feedback

As a manifestation of best practices in conceptualizing new degree proposals the John Jay community solicits the perspectives of practitioners in the field. It is with these “communities of practice” that most graduates would be seeking employment and therefore our proposal is enriched by giving serious thought to their perspectives.

The “Human Services and Community Justice – Communities of Practice” event was held on March 7th, 2013. Although inclement weather affected turnout, the ten visitors who braved the snow arrived amply prepared to share their insights. Among the organizations represented at the meeting was The Center for Court Innovation, the Correctional Association of New York, the Institute for Contemporary Psychotherapy, and Palladia.

What We Learned

Break-out groups were asked to discuss the skills, knowledge, and personal/professional dispositions they would like to see in John Jay students graduating with the proposed degree. Some of the desired qualities in graduates identified were as follows: They should be knowledgeable about the theory and the practice of human services including a mastery of data with an understanding of demographic and budgetary data analysis. They should also have a good working knowledge of the structure of the health care system and some understanding of the various components of the health care system.

Complementing this substantive knowledge basis would be the ability to think critically and to communicate effectively in both written and oral forms. Graduates should have the requisite personal skills such as self-awareness, empathy, both passionate and dispassionate thinking and strong ethical values. Given the culturally diverse nature of American society there is the expectation that these graduates would have culturally informed interpersonal and analytic skills.

It was strongly stated that the ideal graduate should experience working in human services as a calling rather than simply a career choice. As such, he or she should demonstrate basic dispositional states of empathy and persistence.

In response to what we learned the curriculum design incorporates the feedback in a number of ways. First, the foundation core integrating human services and community justice courses provides extensive theory and practice knowledge not only in human systems, but
also ample opportunities for the development of critical thinking skills. Second, quantitative
math prerequisites along with research and evaluation classes provide education in the use
and application of data. Third, students will gain culturally informed interpersonal skills with
classes in advanced interpersonal skills and culture, direct service and community practice
training in the foundation core. Lastly, field learning experiences are available to students in
five of the six core courses along with the two-semester field experience upon reaching
academic standing as a junior.

4. Employment and Educational Trends

Human Services careers, which include clusters of occupations found within the
described category of "community and social service employment", is expected to be "very
favorable" as the number of human services workers are projected to grow "faster than

The rationale for this anticipated job growth is attributed to the mounting and intensifying
need for services to help address problems related to: mental illness, poverty, developmental
disabilities, substance abuse, domestic violence, child abuse, and a host of other psycho-
social-economic issues impacting contemporary society. The escalating need for childcare,
elder home care and senior citizen services will further bolster the overall projected job growth
in the Human Services field. There also is a documented trend of deinstitutionalization leaving
many who are chronically ill, especially those adjudicated in the criminal justice system, left to
their own devices and in desperate need of community support services. Given prison
overcrowding, budgetary considerations, and doubts about the effectiveness of programs for
those incarcerated, sentencing guidelines have become increasingly flexible, favoring
alternative to prison sentencing programs rather than prison time. This shift has increased the
need of community-based social service treatment programs and human service professionals
trained to provide assistance and support for these targeted populations.

When considering the employment prospects of program graduates we must bear in
mind the distinction between Human Services professionals who, at the bachelor’s level,
usually find employment in general helping careers that involve more administrative support
functions, verses clinical career paths that involve direct client care and the requisite of
advanced educational training (these paths are, of course, not strictly parallel, for senior
clinicians often move into managerial and even executive roles at some point in their careers).
For both paths, one’s level of educational attainment makes significant difference and our
program is but one rung in a ladder that leads to opportunities beyond those for which our
degree directly prepares our students. That said, the HSCJ major prepares students for a
variety of entry level employment possibilities and also provides students with an informed
sense of the career tracks in mental health counseling and social work which require advanced
education. Graduates of the HSCJ program will be ideally prepared to transition to these
advanced degrees upon graduation.

The U.S. Department Labor, Bureau of Labor Statistics³ “Occupational Outlook
Handbook” (BLS OOH)⁴ is an indispensable resource for predicting segments of the labor

² Ibid. p3

³ Ibid. p3

market conditions that our graduates will encounter in the job market. Nationally, for administrative and support positions, the news is promising as the OOH forecasts that for Social and Human Service Assistants, growth from 2014 to 2024 will be “faster than the average for all occupations” at 11%. Growth in this sector is expected given the growing elderly population and rising demand for human services professionals needed to work within alternative to sentencing programs where individuals can reside and receive psycho-social-educational treatment. It should be noted, however, that by BLS categorization, although it may be preferred, this job area may not require a bachelor’s degree at the entry level. Our graduates might also note the forecast for Social and Community Service Managers for which a bachelor’s degree is required. For these jobs, the prospects are encouraging with a projected growth of 10% between 2014 and 2024. Employment in community and social service agencies targeting services for the elderly will be most favorable. In addition, strong employment growth is projected for those who seek treatment for their addictions and the trend to place offenders in alternative to sentencing treatment programs will continue its growing pattern. Case managers who direct, supervise and seek employment within this career sector will be in high demand. Some HSCJ graduates may also begin their careers in criminal justice related positions that qualify as management-level, such as Correction Treatment Counselors, Probation officers, Pre-trial Service Officers, Parole Officers while others will be prepared for entry-level roles in the vast number of social service agencies that track to management positions, making forecast for this second category very relevant to student career planning.

Nationally, for clinical career paths, the forecast across a number of relevant job categories are very positive. It is our experience and continued expectation that many of our graduates aspire to be social workers (with the understanding that pursuit of an MSW degree will be a precondition of advancement at many organizations). According to the BLS OOH\(^5\), employment of social workers is projected to grow 12% between 2014 and 2024. This 12% rate of increase is “faster than average for all occupations.” Employment growth will be driven by increased demand for health care and social services, particularly as they relate to child, family and school services. Another relevant clinical specialization is Substance Abuse and Behavioral Disorder Counselors. The projected growth in this category is “much faster than the average for all occupations at a remarkable 22% as addiction and mental health counseling services are increasingly provided by local treatment centers as an alternative to incarceration. A similar trend is noted in the need for “mental health and family therapists,” which anticipates a growth of 20% through a similar time period. Growth in both occupations is expected as more people will have access to mental health services covered by insurance as a result of federal health insurance reform. It is important to note, that the Bureau of Labor Statistics\(^6\) projected the national average of employment growth for “all” professions during this period as only 7%; giving rise to human service careers as a viable and attractive employment option.

In terms of location, New York, home to the nation’s largest work force, as well as, the nation’s largest employer base, remains an excellent venue for employment in the field of Human Services. According to the New York State Department of Labor (NYSDOL),\(^7\) Division of Research and Statistics, New York ranks fifth among all states in terms of projected employment growth (2010-2024) with the NYC metropolitan area described as its strongest

\(^{5}\) Ibid. p13

\(^{6}\) Ibid. p3

\(^{7}\) http://www.labor.ny.gov/stats/index.shtm
growth sector. Within the above-mentioned clusters of occupations the New York State Department of Labor forecasts an average growth rate of 15% in the decade between 2010 and 2024, with the most robust growth located in the areas of delivering services for individuals participating in treatment for substance abuse and behavioral mental health programs.

As the need to provide an array of services to the most racially, socially and economically underserved continues to rise, the demand for trained and certified human services professionals is expected to significantly increase. In efforts to ensure that individuals and communities receive professional and competent care, the field of Human Services has been rapidly professionalizing. This trend is supported by the increasing number of higher education programs in Human Services that are being offered nationwide and further validated by the existence of professional organizations, accrediting bodies and refereed journals devoted to this emerging field of study.

With the evolution of this trend in professionalization come increasing practice regulations. There are now national standards for Human Services Education and a discipline accrediting body for degree programs in this field of study (CSHSE, Council for Standards in Human Services Education.) The CSHSE, first formed in 1976, has received notification, effective January 2014, granting recognition from the Council for Higher Education Accreditation (CHEA) for their efforts to ensure the quality, consistency and relevance of Human Services education through a research-based standards and peer-reviewed accreditation process.

One particular education trend worth noting is the professional certification now available (HS-BCP Human Service Board Certified Practitioner) for students and professionals who desire to elevate their competency and reputation in the Human Services field. It would be a logical extension to presume the likelihood that in the near future many social service and community agencies will mandate having the Human Services Board Certified Practitioners Certification (HS-BCP) as a requisite for those they employ as human service workers. To these ends, becoming an accredited Human Services program as planned for this major, creates credentialing advantages as current CSHSE board regulations permit students attending accredited programs to sit for the HS-BCP exam in their senior year, making them job placement ready upon graduation and poised for competitive graduate school admission. Additionally, there exist scholarships, honorary societies and other professional affiliations for students to participate in while enrolled in an accredited program. Naturally, students will seek to attend only those academic programs credentialed to certify them as human services practitioners (HS-BCP). Having our Human Services degree program accredited as planned will situate our college in the forefront of this educational shift.

The College is currently establishing an articulation agreement with Guttman Community College and pursuing another with Bronx Community College, to connect their A.S. in Human Services to the proposed B.S. in Human Services and Community Justice. Additional articulation agreements with CUNY, SUNY, and nearby institutions in New Jersey will also be pursued. Please refer to Appendix J for our first Articulation Agreement.

E. Student Interest and Enrollment

1. Interest/Demand

Educational programs such as the proposed major in Human Services and Community
Justice are consistent with the U.S. Department of Education (USDOE, 2015) instructional program classifications of Human Services and Community Organization and Advocacy. These titles fit under the broader category of Public Administration and Social Service Professions, which are defined as “instructional programs that prepare individuals to analyze, manage, and deliver public programs and services.” On a national level enrollment in degree-granting institutions for these professions is steadily increasing. In fact, from 2000-01 to 2010-11, public administration and social service degrees conferred increased 13 percent. Among the 32 USDOE fields of study Public Administration and Social Service Professions are the 15th highest number of bachelor’s degrees conferred by postsecondary institutions. Moreover, according to the Digest of Education Statistics 2013, tables 321.10 and 322.10, between the academic year 2001–02 to 2011–12, the number of associate’s degrees awarded in administration and social services more than doubled (175 percent, from 3,300 to 9,100), while the number of bachelor’s degrees awarded increased more than four and a half times (from 5,400 to 26,700).

According to the College Factual list of fastest growing majors over the past five years, Behavioral Science majors broadly defined to train individuals to work in or prepare for graduate education in the counseling, human service or social work fields have shown an 89% growth rate from 2008-2013. This surpasses the growth of health and medical care majors (31%) and Homeland Security and Emergency preparedness degrees (26%) (Stockwell, 2015).

2. Enrollment in John Jay’s Minor in Human Services and Projected Enrollment

The number of students electing the College’s current human services minor launched in 2010 by the Department of Counseling with 64 students nearly tripled over the last six years. During the fall of 2016, 183 students were enrolled in the human services minor. The College estimates that our major will appeal to a broad audience of students transferring into John Jay from other CUNY community colleges and the appropriate fit to and popularity of our institutional mission will result in strong high school pipelines. We have modestly projected an enrollment of 300 students by year five of offering the program.

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8 https://nces.ed.gov/ipeds/cipcode/searchresults.aspx?y=55&aw=human%2cservices&sw=1%2c2%2c3&ct=1%2c2%2c3&ca=1%2c2%2c5%2c3%2c4

9 Ibid. p16

10 http://college.usatoday.com/2015/01/26/behavioral-science-tops-list-of-fastest-growing-majors-of-the-past-5-years/
Table 1: Projected Enrollment, *Human Services and Community Justice, Years 1-5*

<table>
<thead>
<tr>
<th>Student Enrollment</th>
<th>YEAR I</th>
<th>YEAR II</th>
<th>YEAR III</th>
<th>YEAR IV</th>
<th>YEAR V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Students</td>
<td>30</td>
<td>25</td>
<td>50</td>
<td>43</td>
<td>75</td>
</tr>
<tr>
<td>Part Time Students</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Sub-totals</td>
<td>40</td>
<td>30</td>
<td>65</td>
<td>55</td>
<td>100</td>
</tr>
<tr>
<td>Totals</td>
<td>70</td>
<td>120</td>
<td>193</td>
<td>250</td>
<td>301</td>
</tr>
</tbody>
</table>

*Please note: These projections consider John Jay's 77.6% one-year retention rate (based on most recent data available from the fall 2014 entering class). Additionally, in the first three years of the major, additional existing students are expected to transfer from an existing major into the new Human Service and Community Justice major. In the fifth year, graduates from the program are considered in the projections at a 20.8% rate, which is our average graduation rate over the five most recent years (fall 2010 cohort).*

**Student Survey**

Our students will find this major especially attractive as it develops professionals with a desire to specialize in creating equitable and accountable, community oriented human service practice, research, policy, advocacy and administrative work.

To get a sense of student interest in this major, an online survey was administered in Spring 2014 to students across disciplines and departments. Below are the results of the survey we conducted among 229 current John Jay students.

(N=229)

1. Nearly ninety-four percent (N=212) believe that JJC should offer a major that equips students to become advocates for community justice.
2. Ninety percent of students (N=206) are interested in being a helping professional.
3. Eighty-four percent (N=191) are interested in studying justice issues in their community.
4. Nearly eighty percent (N=182) indicated that doing research and applying classroom knowledge to address community issues in their community was of interest.
5. Seventy-one percent (N=162) are interested in studying policy and how it affects their community.
6. Slightly more than half (54.6%, N=125) are interested in majoring in Human Services and Community Justice.
Students' Stated Interests

- Interested in majoring in Human Services and Community Justice (N=125)
- Interested in studying policy and how it affects their community (N=162)
- Interested in studying justice issues in their community (N=191)
- Interested in being in a helping professional (N=206)
- Believe that JJC should offer a major that equips students to become advocates for community justice (N=212)
- Interested in applying classroom knowledge to address community issues in their community (N=182)
**Students Interested in HSCJ Major By Academic Status**

- Sophomores (N=82): 36.30%
- Seniors (N=62): 27.40%
- Juniors (N=57): 25.30%
- Freshmen (N=25): 11.10%

**Those Interested in Majoring in Human Services and Community Justice by Current Major**

- B.A. Forensic Psychology (N=71)
- B.A. Criminal Justice (Research & Policy Analysis) (N=28)
- B.S. Criminal Justice (Int'l Theory & Practice) (N=26)
- B.A. Political Science (N=19)

**Other Category**

<table>
<thead>
<tr>
<th>Major</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminology</td>
<td>5.3%</td>
</tr>
<tr>
<td>International Criminal Justice</td>
<td>4.4%</td>
</tr>
<tr>
<td>Forensic Science</td>
<td>3.5%</td>
</tr>
<tr>
<td>Humanities and Justice</td>
<td>3.5%</td>
</tr>
<tr>
<td>English</td>
<td>3.1%</td>
</tr>
<tr>
<td>Law and Society</td>
<td>3.1%</td>
</tr>
<tr>
<td>Culture and Deviance Studies</td>
<td>1.3%</td>
</tr>
<tr>
<td>Economics</td>
<td>1.3%</td>
</tr>
<tr>
<td>Police Studies</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
Respondents’ Minors

a. 29.1% indicted they minored in human services.
b. about 7% minored in English and law, respectively.
c. about 5% minored in counseling.
d. slightly more than 4% minored in political science and psychology, respectively.
e. less than 4% minored in dispute resolution, history, or philosophy, respectively.
f. less than 3% minored in gender studies and health and physical education minor, respectively.
g. less than 2% minored in addiction studies, Africana studies, theatre, police studies, or writing, respectively.
h. less than 1% minored in anthropology, art, computer science, corrections, film studies, economics, humanities and justice, math, music, sociology, Spanish, or human rights studies, respectively.

3. Admissions Requirements

All entering freshmen applicants at John Jay College of Criminal Justice are considered for admission based on their high school academic average, academic units, SAT or ACT scores, and/or GED scores. A diploma from an accredited high school, an equivalency diploma, or a diploma from a United States Armed Forces Institute is required for entrance to the College. A high school certificate or an Individualized Education Program (IEP) diploma is not acceptable. Transfer students must meet the transfer admissions requirements of the college. No special admissions requirements are required of this program.

F. Curriculum

1. Human Services & Community Justice Overview

The HSCJ major is a 45-48-credit course of study with the purpose of training students in the theory and practice of human services to be: self-reflective, ethical, competent, and compassionate practitioners; culturally and critically conscious researchers and evaluators; and, fierce advocates, policy makers, and administrators of community justice, who serve others with integrity, accountability, and for the common good. As such, the mission is to assist bachelor students in learning the knowledge, theory, skills, values and practice of human services in the interest of educating for justice. To that end, the goals of the program based on NOHS Ethics and CSHSE National Standards emphasize human services and community justice foundations, research and evaluation methods, diverse human systems, justice, advocacy, policy, and, administration electives, field experiences, and a capstone. Specifically, the major provides students with pre-requisites and a foundation core (21-24 credits) of human services skills, values and practices and introduces students to community studies, community development practices, and alternative justice practices at the community level. In five or the six core courses, students will participate in field experiences (e.g. field observation, class-based projects) that provide 50 hours of the 350 hours of field experience required. Students then take research and evaluation methods requirements (6 credits) and are given the chance to pursue
their own interests through a variety of electives in the areas of diverse human systems and interventions, justice in human services, and advocacy, policy and administration (9 credits). To meet the remaining 300 hours of field experience required (6 credits), students will select from field experiences where they are assigned to an approved organization. The major culminates with a senior capstone course including a cumulative portfolio (3 credits). We locate the signature quality of this human services program in attention to the themes of justice in general and community justice in particular, highlighted by courses throughout the curriculum.

All students must first complete the Required Foundation Core courses. Five of the Core courses have a 10-hour direct service component, totaling 50 hours upon the completion of the foundational level courses. At the 100 level, students must take CHS 150 “Foundations of Human Services Counseling,” which explores the basic knowledge, and skills needed in providing direct service and interventions; and examines values and attitudes that promote understanding of human services ethics and their application to practice. In addition, they take AFR 1XX “Introduction to Community Justice in Human Systems,” which provides an overview of the historical development of the human services profession, community practices, and the ways to meet human needs through the promotion of justice. At the 200 level, students are required to take “AFR 227 Community-Based Approaches to Justice”. This course introduces students to community studies and establishes a common understanding of critical concepts such as community, social capital, neighborhood effects, asset mapping, political economy, community economics, mediation, community courts, and restorative justice. The next course, CHS 230 “Culture, Direct Services and Community Practice,” will provide the knowledge and skills needed to deliver appropriate interventions and direct services from a cultural competence, social justice based framework. The course will provide students the opportunity to recognize how societal conditions such as access, involvement and equity; as well as personal biases, values, and interpersonal styles; limit justice and affect people in diverse communities. CHS 235 “Theories of Assessment and Intervention”, provides knowledge and skill development in systematic analysis of services needed; planning, strategies, and implementing appropriate services to address issues within communities. Lastly, CHS 310 “Advanced Interpersonal Counseling Skills” will build upon the introduction to basic counseling skills development presented in the Foundations of Human Services Counseling course (CHS 150). Major emphasis is placed on examining assumptions about helping, building advanced observational and communication skills, and facilitating various helping techniques, for both individual and group work. Students will have the opportunity to learn and practice these skills in a variety of role-plays, experiential exercises and group discussion.

The proposed HSCJ major emphasizes the acquisition of research, planning and evaluation skills. Thus, students will take two 300-level courses in Part II. AFR 3XX “Research Methods in Community Justice and Human Systems” will examine major concepts of empirical research, including the formulation of research questions, literature review, research design, sampling, definition and measurement of variables, quantitative and qualitative research and instrument construction. Emphasis is placed on developing strong research and writing skills; and on the use of research to inform practice. CHS 3XX “Program Planning, Development, and Evaluation” will provide students the opportunity to design a plan to implement and evaluate a human services project that would address a community-level need.

The program provides nine credits of elective choices in Part III. Offerings include three categories organized around themes: diverse human systems and interventions, justice in human services, and policy, advocacy and administration. The electives include liberal arts courses and relevant disciplines from Anthropology, Africana Studies, Counseling, Gender Studies, Latino/a Studies, Public Administration, Psychology, and Sociology to provide broader perspectives.
Students will complete a minimum of 350 hours of field experience as required by the Council for Standards in Human Services Education (CSHSE). They will complete 50 hours of field work learning in the Foundation Core. To complete the other required 300 hours of fieldwork; students can select two courses from the ones suggested, an approved internship, a study abroad course, an approved field experience project or a combination of these in order to meet the field experience requirement.

To conclude the major, students will present a summative capstone portfolio documenting the integration of theory and practical experience in CHS 4XX “Senior Seminar in Human Services & Community Justice.” A section of the portfolio will include a reflective piece on their field experiences and a community project proposal. By their senior year, students will be able to integrate and synthesize in their portfolio the skills and knowledge acquired throughout the human services and community justice major.
B.S. in Human Services and Community Justice  
Total credits: 45-48

**FOUNDATIONAL COURSES:**  
(Subtotal: 3-6)
- MAT 108 Social Science Math (or higher depending on placement)  
  *Choose one:*  
  - ANT 101 Introduction to Anthropology  
  - PSY 101 Introduction to Psychology  
  - SOC 101 Introduction to Sociology

**PART I. Required Core**  
(Subtotal: 18)  
(Note: 50 hours of field experience included, 10 hrs./course except AFR 227)
- CHS 150 Foundations of Human Services Counseling  
- AFR 1XX Introduction to Community Justice in Human Systems  
- AFR 227 Community Based Approaches to Justice  
- CHS 230 Culture, Direct Services & Community Practice  
- CHS 235 Theories of Assessment and Intervention  
- CHS 310 Advanced Interpersonal Counseling Skills

**PART II. Research Methods and Evaluation**  
(Subtotal: 6)
- AFR 3XX Research Methods in Community Justice and Human Systems  
- CHS 3XX Program Planning, Development, and Evaluation

**PART III. Electives**  
(Subtotal: 9)  
*Students choose three, one from each category.*

**Category A. Human Systems and Interventions (select one)**
- AFR 204 Religion, Terrorism and Violence in the Africana World  
- AFR 215 Police and Urban Communities  
- AFR 248 Men: Masculinities in the United States  
- AFR 250 The Political Economy of Racism  
- AFR/PSY 347 The Psychology of Oppression  
- ANT 332 Class, Race, Ethnicity and Gender in Anthropological Perspective  
- CSL 130 Effective Parenting  
- CSL 227 Families: Stress, Resiliency and Support Systems  
- CSL 233 Multicultural Issues in Human Services  
- CSL 280 Selected Topics in Counseling & Human Services  
- CSL/PSY 342 Introduction to Counseling Psychology  
- LLS 241 Latina/os in the City  
- PSY 231 Developmental Psychology  
- SOC/PSY 202 The Family: Change, Challenges, and Crisis Intervention  
- SOC/PSY 213 Race and Ethnic Relations  
- SOC 227 Sociology of Mental Illness

**Category B. Justice in Human Services (select one)**
- AFR 229 Restorative Justice: Making Peace and Resolving Conflict  
- AFR 317 Environmental Racism  
- AFR 319 Self, Identity and Justice: Global Perspectives  
- AFR 320 Perspectives on Justice in the Africana World  
- ANT 330 American Cultural Pluralism and the Law  
- CSL 363 Vocational Development and Social Justice
LLS 322 Latina/o Struggles for Civil Rights and Social Justice  
LLS 325 Latina/o Experiences of Criminal Justice  
SOC 216 Probation and Parole: Theoretical and Practical Approaches  
SOC 314 Theories of Social Order

**Category C. Advocacy and Policy (select one)**  
AFR 237 Institutional Racism  
AFR 315 Practicing Community-Based Justice in the Africana World  
AFR 322 Inequity and Wealth  
ANT 208 Urban Anthropology  
ANT 324 Anthropology of Work  
CSL 220 Leadership Skills  
CSL 260 Gender and Work Life  
GEN 205 Gender and Justice  
SOC 201 Urban Sociology  
SOC 209 Sociology of Work and Jobs  
SOC 302 Social Problems

**PART IV. Field Experience (300 Hours Required) (Subtotal: 6)**

1. **Field Experience I (3 credits) – 150 Hours**  
   *(select one)*  
   AFR 3XX Field Education in Community Organizing and Community Practice I  
   CHS 311 Field Education in College Community Outreach  
   CHS 381 Field Education in Human Services I  
   UGR 390 Practicum in Youth Justice (Pinkerton Fellowship)*

1. **Field Experience II (3 credits) – 150 Hours**  
   *(select one)*  
   AFR 3YY Field Education in Community Organizing and Community Practice II  
   CHS 382 Field Education in Human Services II

Students who take the Pinkerton Fellowship (6 cr.) can satisfy their field experience in one semester. For other types of field experience courses please consult with the Major Coordinator.

**PART V. Senior Seminar/Capstone (Subtotal 3)**  
CHS 4XX Senior Seminar in Human Services and Community Justice

Total Credits for Major: 45-48  
General Education: 42  
Electives: 30-33  
TOTAL CREDITS FOR BS: 120
2. National Standards for Baccalaureate Degree in Human Services Education

This proposed major shares many of the core elements of traditional human services majors, building upon ethics from the National Organization for Human Services (NOHS) and standards adapted from the Council for Standards in Human Service Education (CSHSE).

The Council for Standards in Human Service Education is the accrediting body for human services degree programs. The purpose of the national standards is to assure that graduates of human services programs have the essential knowledge and skills of the profession. There are 21 standards in total. The Curriculum Standards are Standards 11-21. See Appendix G. for the National Standards for a Baccalaureate Degree in Human Service Education, 2013.

These standards were used to guide the planning, design, and development of the proposed degree program.

3. Other CUNY Programs Enrollment

Table 2: Enrollments in CUNY Human Services Programs, Fall 2015

<table>
<thead>
<tr>
<th>CUNY Community Colleges</th>
<th>Human Service Majors</th>
<th>Degree</th>
<th>Fall 2015 Total Enrollment</th>
<th>2014-2015 Total Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMCC</td>
<td>Human Services</td>
<td>AS</td>
<td>898</td>
<td>157</td>
</tr>
<tr>
<td>Bronx CC</td>
<td>Human Services</td>
<td>AAS</td>
<td>298</td>
<td>60</td>
</tr>
<tr>
<td>Hostos CC</td>
<td>Community Health</td>
<td>AS</td>
<td>91</td>
<td>33</td>
</tr>
<tr>
<td>Kingsborough CC</td>
<td>Mental Health and Human Services</td>
<td>AS</td>
<td>453</td>
<td>149</td>
</tr>
<tr>
<td>LaGuardia CC</td>
<td>Human Services: Gerontology</td>
<td>AA</td>
<td>68</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Human Services: Mental Health</td>
<td>AA</td>
<td>346</td>
<td>73</td>
</tr>
<tr>
<td>Guttman CC</td>
<td>Human Services</td>
<td>AA</td>
<td>123</td>
<td>32</td>
</tr>
<tr>
<td>NYC College of Technology</td>
<td>Human Services</td>
<td>AAS</td>
<td>222</td>
<td>46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>2,499</strong></td>
<td><strong>557</strong></td>
</tr>
</tbody>
</table>

| CUNY Senior Colleges          |                      |        |                           |                            |
|-------------------------------|                      |        |                           |                            |
| NYC College of Technology     | Human Services       | BS     | 518                       | 117                        |
| **Total**                     |                      |        | **518**                   | **117**                    |

As indicated in Table 2, only one Bachelor’s degree in Human Services exists within CUNY (New York City, College of Technology, which also houses an A.A.S. degree. Six other CUNY colleges have Human Services Associate degree program. These programs represent potential feeder opportunities for our program with BMCC hosting the largest number and Guttman Community College having the least number of A.S. degree students. The other schools have considerable enrollment numbers to support a robust transfer stream to John Jay College.

G. Faculty

As indicated by the Council for Standards in Human Services Education, historically “human services programs have relied primarily on professionals from fields such as human services, psychology, sociology, social work, counseling, political science, adult education, and nursing to provide teaching faculty. Since both field and classroom orientations are important characteristics of teaching staff, consideration should be given to faculty trained in human services and/or interdisciplinary methods and approaches” (CSHSE, 2013).

Currently, there are six full-time faculty in the Department of Counseling. All these faculty members will offer courses that count toward the major in Human Services and Community Justice. In 2015, the workload model for these faculty changed from faculty counselor status (providing a portion of workload as service hours in the Counseling Center) to full instructional staff with a 21 hour teaching load. Because the major builds upon the existing Human Service minor offered by the Department, minor readjustment in current teaching schedules will be needed to accommodate a normal rotation of required and elective courses for the major.

To support the community justice course offerings four full-time faculty in the Department of Africana Studies will teach in the major. These faculty will be supplemented by SEEK full-time faculty who will teach in the program in an adjunct capacity. The SEEK faculty bring a wealth of experience and expertise in the fields of social work, counseling and social service. There is also a veteran cadre of counseling staff members who teach regularly as adjunct faculty in counseling courses at the college. They will nimbly be able to serve in the Human Service and Community Justice program. Elective courses have been selected widely from other academic departments from their regular course offerings and are quite numerous. Not too many additional sections will be needed in these courses until enrollment numbers get over the 300 mark.

Some of these faculty members are steeped in theorizing about justice from multiple perspectives. Others have research interests and extensive experience in service and advocacy especially among communities that are inadequately served by human service and justice-related institutions. All fulltime faculty have published in their respective areas of expertise and bring considerable field experience in the relevant areas. Some areas of expertise among the faculty are as follows: Advocacy, Case Management, Clinical Psychology, Cultural Competence, Community and Police Relations, Community Justice, Criminal Justice, Crisis Intervention, Counseling Psychology, Environmental Justice, Gender Studies, Program Assessment, Program Management, Race and Ethnic Studies, Social Work, Sustainability Studies and Trauma Studies. Please refer to Appendix C. for a list of John Jay faculty who will teach courses in this proposed major and their areas of expertise and competencies.
The proposed Human Services and Community Justice Major will be housed in and administered by the Department of Counseling. The Major Coordinator will be a full-time faculty member of the department who also chairs the Subcommittee for the Major (see paragraph below). The Major Coordinator will be responsible for organizing year round advisement, academic planning for students in both the major and the minor, course scheduling, faculty staffing in conjunction with other departments, registration administration (i.e. course substitutions, over-tallies, etc.—for courses in the program), overseeing assessment processes, developing outreach strategies for student recruitment into the major, coordinating representation at college-wide events such as Major and Minor Day, Open House, and New and Transfer Student Orientation. In addition to these duties, the coordinator also develops and manages information about the major on the department’s website, serves on the Council of Major Coordinators, and coordinates curriculum changes and strategic planning.

The five member curriculum committee for the Human Services and Community Justice Major is a subcommittee of the Department of Counseling's Curriculum Committee. The subcommittee will be responsible for strategic oversight of the curriculum for the HSCJ major, program assessment, field placement, and student academic planning and advisors. Members will also assume responsibility for assessment of courses offered through their departments and designating faculty for advisement from among all faculty participating in teaching courses for the major. The HSCJ curriculum subcommittee also provides strategic advisement to the major and supports the work of the Major Coordinator. The coordinator serves as chair and will convene regular meetings of no less than once each semester. Aside from the chair, the subcommittee will be comprised of 3 faculty members from the Department of Counseling, and 2 faculty members from Africana Studies. Selection of the committee members will be determined by their respective Departmental P & B committees.

H. Cost Assessment

1. Library and Instructional Materials

We consulted Maria Kiriakova, the Collection Development Librarian, and Maureen Richards, the Digital Resources Librarian - both in charge of library acquisitions. They informed us that they have adequate resources to support the proposed major and are especially strong in the electronic-based materials. The Library subscribes to over 100 databases with students having unlimited remote access to these databases and all electronic journals. In addition, the Library's electronic serial holdings currently include over 40,000 serial titles, from major publishers including Elsevier, Sage, Wiley, Springer, and more. SFX/link resolving software connects full text to most database indexes, and federated searching software enables cross-database searching. Finally, the library’s reference collections include encyclopedias and dictionaries of social sciences in both electronic and print formats, including works from Oxford University Press and Gale. The existing courses in the proposed major already access the appropriate literature in the social sciences and major databases for courses drawing from Counseling, Psychology, Africana Studies, Latino Studies, Sociology, Public Administration, and Restorative Justice. In addition, the library has new video streaming capabilities relevant to the major, especially the acquisition of the series: "Counseling and Therapy," "Psychological Experiments," and "Kanopy." There may be a need for various acquisitions, especially new relevant journals on human services or community justice not in the CUNY library system. We estimate this to be an initial investment of $3000 and then $1000 for the next few years.
2. The Faculty

Because the Human Service and Community Justice Major is multidisciplinary, it builds on current courses and will not require a shift in most faculty commitments or take faculty away from their current teaching. However, within a few years of offering the new major we anticipate an increased demand for its courses given the number of students in associate degree programs at other CUNY schools able to transfer to John Jay College. As such, we will encounter envisioned increases in Human Service and Community Justice enrollment in upper-level courses and realize the need for additional faculty for this program. The additional cost to mount this major in Human Services and Community Justice is for one new full-time faculty member (Assistant-Associate Professor; estimated annual salary $75,000) who is either a human services or community justice scholar to expand and strengthen the capacity for the new experiential learning courses and the field work emphasis of the major. Please refer to Appendix C for more information.

Given the multi-disciplinary nature of the major, field experience requirements and the potential for substantial transfer student enrollment, academic advising and fieldwork coordination will be important to student success. Having an academic advisor/major coordinator will be essential to the success of the program. This will involve two course releases for a full-time faculty major coordinator and will cost approximately $8,000 per year. Given the requirement of fieldwork coordination by the CSHSE National Standards, when a substantial threshold of enrollment is reached in approximately 3 years, there will be a need to hire a full-time staff member (HEO assistant-level) to coordinate the fieldwork portion of the program at a salary of approximately $45,000.

Students in the major will be advised by full-time faculty in the departments serving on the curriculum Subcommittee. The college provides one course release for this function for majors with upper sophomore cohorts over 200. It is not anticipated that this expense will be necessary until after the first five years of the program.

I. Program Assessment

John Jay College has traditionally implemented a five-year cycle of curricular review of programs and majors. The Human Services and Community Justice Major coordinator and the faculty will take the necessary steps to assure the vitality of the curriculum of the major and gauge the performance of students in the major in relation to the learning outcomes of each course, and the major overall.

A. Program Learning Outcomes

A student graduating from John Jay who has majored in Human Services and Community Justice will have developed the knowledge base and competencies that are listed within the CSHSE National Standards. Please refer to Appendix G. for more information.

B. Assessment Plan

At the beginning of every academic year, the Curriculum Subcommittee will develop and implement a plan for reviewing some aspect of the program’s overall performance in preparing students to meet or exceed the program learning outcomes of the major. This
review plan will be communicated to the entire faculty, and adopted by the faculty as a whole, by the middle of the fall semester.

The Curriculum Subcommittee, working with the major coordinator, will oversee the carrying out of the review plan by year’s end. Each year’s review plan will focus on assessing the contribution of at least one of the core required courses in the major to the achievement of the program’s learning objectives. Measures as well as ‘target’ courses would be varied from year to year, so that, by the end of the fourth year, an assessment of the overall success of the major is generated.

The results of each year’s review process will be discussed by the faculty at a regularly scheduled faculty curriculum subcommittee meetings at the beginning of the next academic year, and decisions will be taken then about the need for and character of any adjustments in the curriculum and its implementation. The Curriculum Subcommittee will be charged with making any adjustments deemed necessary.

Moreover, to keep abreast of the changes in the field and need to modify the program and learning outcomes, the Curriculum Subcommittee and major coordinator will be informed by both the NOHS CSHSE. The Department of Counseling aims to apply for HSCJ major’s membership and accreditation from CSHSE soon after two years of the major’s launch. The accreditation application is extensive and involves a self-study of the program and site visit by CSHSE representatives to ensure the major’s compliance with national human service curriculum and program guidelines. One component of the self-study is “The Self-study Matrix”, which is a curriculum map of courses to CSHSE standards. Please refer to Appendix Q for a preliminary version of the Matrix. As CSHSE requires re-accreditation every five years, we will incorporate CSHSE’s self-study template in addition to John Jay College’s curriculum assessment protocol to ensure continual comprehensive internal program assessment.
Appendix A. Existing and New Course Descriptions

AFR 204: Religion, Terrorism and Violence in the Africana World
This course will expose its participants to questions and topics related to the emergence and expansion of terrorism as a military strategy in twentieth-century Africa, and how terrorist groups and other non-state actors have deployed Christianity and Islam to mobilize partisan sentiments and inspire violence. It follows colonial and post-colonial Christian and Muslim movements that have used violence against perceived enemies in the Africana world and investigates case studies of violence in such areas as Algeria, Nigeria, Sudan, and Uganda to better understand rebel movements, sectarian wars, and civil wars where religion has played a crucial role in dividing societies and nations.
Prerequisite: ENG 101

AFR 215: Police in Urban Communities
All members of the community should have an expectation that they will be safe and protected as they go about their daily lives. In this course students will examine the widespread assumption that in exchange for effective policing residents of low income communities should have to give up their rights such as freedom from unreasonable surveillance, search, privacy and racial/ethnic profiling. Also explored is the ideal role of the police in low income communities in comparison to the reality of how they are actually policed. We will discuss theories of policing, the constitutional constraints on police actions, and the history of policing in these communities. Using case studies and student input we will discuss the critique of current community policing and will also discuss best practices in this area.
Prerequisites: ENG 101

AFR 227: Introduction to Community-based Approaches to Justice
This course provides an introduction to community studies and the major components of community-based approaches to justice. The course first establishes a common understanding of critical concepts such as community, social capital, neighborhood effects, asset mapping, political economy, community economics, mediation, community courts, and restorative justice. In studying community institutions, organizations and practices, an interdisciplinary approach will be used that will draw on criminology, law, sociology, anthropology, political science, economics, family studies, international studies, Africana studies, and gender studies. Such an approach will provide students with the skills necessary to understand the interactions between and among factors such as race, ethnicity, and gender on the practice and the effectiveness of community development and community justice strategies.
Prerequisites: ENG 101, and AFR 123 or AFR 125

AFR 229: Restoring Justice: Making Peace and Resolving Conflict
This course will focus on examples of restorative justice from Africa and the Pacific Islands, a seldom-considered part of the African diaspora. To that end, this course will explore how an African philosophy of ubuntu (or humanity towards others) influences Africa’s notions of justice community and suffering. Comparisons will be drawn with traditional Western views of restorative justice. Unlike the traditional justice system found in the U.S. and in other parts of the world that focus on punishing criminal behavior restorative justice mirrors the way that disputes are settled in tribes - offenders make amends not only to victims but their communities.
Prerequisites: ENG 101 and sophomore standing or above

AFR 237: Institutional Racism
A critical examination of policies and informal practices of organizations and institutions and of
laws and regulations that have adversely affected social and economic opportunities and outcomes for African-Americans. Forms, impacts and responses to racism in such areas as the design and implementation of social programs, the criminal justice system, education, employment and business.

Prerequisites: ENG 101 and one of the following: AFR 123, AFR 110, AFR 121, or SOC 101

AFR 248: Men: Masculinities in the United States
There is more than one way to be a man. This course will introduce students to theoretical approaches to understanding masculinities. We will look at how biological, political, economic and psychological factors influence how masculinities are constructed. Students will increasingly reflect a sense of themselves as gendered beings and they will develop an appreciation of how social constructions of masculinities influence how they define themselves.

Prerequisite: ENG 201

AFR 250: The Political Economy of Racism
A study of the role of racism in the development of American capitalism. Examination of the impact of racism on the distribution of income, wealth and economic opportunity. Analysis of the role of racism in the economics of historical experiences such as slavery, Reconstruction, migration and urbanization, as well as in its role in the economics of contemporary business cycles and of on-going long term transformations of both the American and global economies.

Prerequisites: ENG 101 and ECO 101

AFR 315: Community-based Justice in Africana World
The purpose of the course is to engage students in the analysis of various community and alternative justice practices around the world, particularly among people of African heritage or of relevance to Africana peoples. This course examines the assumptions behind community justice and restorative justice theories and their applicability to the Africana world. The course focuses on relationships between struggles for justice and experimentation with alternative community-based justice strategies, particularly among people of color. Students will compare and analyze strategies and practices that have been used to establish meaningful justice and community wellbeing for groups who experience discrimination. Such practices include but are not limited to: mediation, youth courts, circle sentencing, truth and reconciliation panels, victim-offender reconciliation, and community conferences.

Prerequisites: ENG 201 and junior standing or above

AFR 317: Environmental Racism
This course reveals ways that environmental degradation and hazards disproportionately affect people of color in the United States. Its purpose is to analyze theories of environmental racism, and the impacts and implications of (intentionally and unintentionally) unjust environmental practices, particularly on low-income African American, Latino, and indigenous communities. Students will describe and analyze environmental problems, propose solutions, and examine data about the environment and such environmental crises as lead poisoning, air pollution, and the location of hazardous wastes in communities of color.

Prerequisites: ENG 201 and junior standing or above

AFR 319: Self, Identity and Justice: Global Perspectives
This course is an examination of some of the ways in which the development of the self is impacted by the quality of justice that is available to the individual. Students will develop an appreciation of the interaction between self, identity and justice. Using perspectives that have emerged from the enlightenment, modernity and globalization, we examine how these ways of
thinking assist and often limit the ability to develop a healthy self. We will focus on how the policies of justice-related institutions affect self-work and therefore one's access to justice. Case studies will illustrate these issues from the perspectives of gender, class, religion, ethnicity and race, in the United States and in other regions of the world.

Prerequisites: ENG 201 and junior standing or above

**AFR 320: Perspectives on Justice in the Africana World**
This course explores questions and topics related to justice in the Africana world, and how conceptions and applications of justice are shaped by these societies. Each course section may examine different case studies both contemporary and historical, investigating the customs and traditions, policies, legal reforms, and political or social responses of Africana populations to justice issues. Possible topics include the role of violence in law and justice in Africa, post-colonial legal history in the Caribbean, justice traditions both formal and informal in the Africana world, and the history of human rights as seen from Africana perspectives. Special attention will be paid to the interplay between western and Africana conceptions of justice.

Prerequisites: ENG 201 and junior standing or above

**AFR 322: Inequality and Wealth**
This course analyzes racial wealth gaps and wealth inequality in the African diaspora, with a focus on the United States. From an interdisciplinary approach, the course will explore the growing and persistent wealth gap between various racial and ethnic groups and genders to better understand inequality (historically and currently), and will assess the causes and consequences of racial, ethnic, and gender differences in wealth and asset building. Students will examine challenges with wealth data and recent trends, as well as the consequences of asset poverty, particularly for people of African descent. Solutions and potential policy responses to the persistent racial, ethnic and gender wealth disparities and asset poverty will be evaluated.

Prerequisites: ENG 201, and SSC 325 or STA 250, and any one of the following: SOC 101, ECO 101, AFR 123, AFR 125, or GEN 101

**AFR/PSY 347: The Psychology of Oppression**
This course analyzes the socio-cultural and psychological factors that contribute to a sense of being oppressed. It also examines strategies that facilitate progress on the road to healthy functioning and contribute to progressive system changes. Special attention is paid to the interaction between these two sets of factors.

Prerequisites: ENG 201, PSY 101 or AFR 129; and PSY 221 or a 200-level AFR course

**ANT 101: Introduction to Anthropology**
This course is an introduction to cultural anthropology, the study of human societies and cultures. Students will examine the concept of culture in historical and global perspective, and learn tools for cross-cultural comparative analysis with an emphasis on critical thinking in relation to cultural values and practices, variation in human behavior, the organization of social life, and the making of cultural identity. Cross-cultural topics include subsistence, power and law, gender, family and kinship, language and intercultural communication, and the impact of globalization on human societies. Students will also learn fundamental concepts in anthropology to better understand the causes and conditions of our contemporary world.

**ANT 208: Urban Anthropology**
Current topics and problems in urban studies will be addressed from an anthropological perspective. The course examines cities as places where members of different groups come
together in both cooperation and conflict. Students will examine the way global processes and local politics and culture have shaped and continue to transform the modern city. Students will engage with case studies from a variety of urban environments, including some in the United States, and will focus on various topics such as class, power, ritual, migration, lifestyle, ethnic tensions and alliances, social movements, and the meanings of space and place.
Prerequisite: ENG 101

ANT 330: American Cultural Pluralism and the Law
Culturally different groups use law in the United States to assert their rights and to maintain their cultural autonomy. They may also avoid courts and solve disputes within their communities. This course examines, through legal and ethnographic cases, the ways in which culturally different groups interact with law in the United States. The groups studied may include Native Americans and Native Hawaiians, African Americans, Asian Americans, Mormons, Amish, Rastafarians, Hasidic Jews, Latinos, Gypsies, gays, women and the homeless.
Prerequisite: ENG 201

ANT 332: Class, Race, Ethnicity and Gender in Anthropological Perspective
This course examines the cultural constructions of race, ethnicity, class and gender to better understand the emergence and reproduction of social inequality and its implications for individuals, communities and nations. Through ethnographic and theoretical readings, students gain a deeper understanding of how each social category intersects with each of the others. The curriculum will examine the ideologies, practices, performances, and relations between class, race, ethnicity, and gender and the complex of their socio-cultural dynamics.
Prerequisites: ENG 201, ANT 101

ANT 324: Anthropology of Work
In this course, students will explore the lived experience of labor from an anthropological perspective and problems entailed in understanding the dynamics of work and labor. Topics include: the increasing variety of labor processes; the impact of organizational change in the workplace on work experience; the changing nature of labor markets, cross-culturally; and the difficulties faced by organized labor in the light of the foregoing circumstances. The course explores classical theories of work and labor and case studies drawn from global and local, historical and contemporary, and advanced capitalist and newly industrialized/industrializing contexts. It begins and ends with the human factor: What are people’s lived experience of labor in different geographic and cultural settings? In what ways are people the agents of change who have actively transformed the work environments within which they are embedded?
Prerequisites: ENG 201, ANT 101

CHS 230: Culture, Direct Services and Community Practice
This course presents the knowledge and skills needed to practice from a cultural competence, social justice and community-based framework in the human services. Students will learn the theories and practice of culturally relevant engagement and interventions involved in serving individuals and communities. Students will also learn to analyze how social systems and the worldviews of individual human service providers serve as both resources and barriers in the development of equitable services and practice. In order to do this, the course provides students the opportunity to increase their own awareness of themselves as sociocultural beings in the context of oppression, racism, marginalization, discrimination, socialization and praxis.
Prerequisites: ENG 101; AFR 1XX Introduction to Community Justice in Human Systems, CHS 150
CHS 235: Theories of Assessment and Intervention
This course presents the theories of assessment, intervention and evaluation that guide the human services profession. Students will learn the knowledge and skill set needed to identify the complexity of problems affecting marginalized communities, approaches for addressing these problems and methods for evaluating their effectiveness. This course will help students develop an analysis of the impact of oppression on individuals, families, communities, neighborhoods and institutions. Additionally, this course will introduce some of the latest literature on the theories and application of mindful practice in the helping professions.
Prerequisites: ENG 101, AFR 1XX Introduction to Community Justice in Human Systems, CHS 150

CHS 310: Advanced Interpersonal Counseling Skills
This course is an advanced practical survey of counseling approaches and techniques designed to provide skills in facilitating individual and group human services work. Major emphasis is on examining assumptions about helping, developing observational and communication skills, and facilitating and examining effective counseling techniques. Participants will have an opportunity to learn and practice these skills in a variety of role-playing situations, lectures, experiential exercises, group discussion and contact with resource persons, including a 15-hour field experience requirement.
Pre-requisites: ENG 201, CHS 150 Foundations of Human Services Counseling or PSY 101

CHS 311: Field Education in College Community Outreach
This course provides a training experience in peer counseling and college community outreach for John Jay undergraduate students. Students are required to work as peer outreach counselors for a minimum of ten hours per week, totaling 150 hours, under the supervision of a faculty member from the Department of Counseling and Human Services. Attendance at weekly seminars involving lectures, discussions, films, and role-playing is also required. In addition, students must submit a self-assessment paper reflecting on their field education experience.
Prerequisites: ENG 201 and CHS 310

CHS 381-382: Field Education in Human Services I & II
This course is an applied field experience in community-based human service programs and agencies. Field education provides students an environment and context for the integration of knowledge, theory and skills learned in the classroom. Students develop a practical understanding of the human service delivery system and its relevance to local, state and national social service policy and practice. Under supervision, students provide direct client services in efforts to assist individuals and community programs that address populations in need. The practicum experience heightens student awareness of the professional skills and ethical values intrinsic to the human services profession and affords them the opportunity to determine their appropriateness for the profession. Students will provide 8-10 hours per week of service and attend assigned supervision meetings throughout the semester. Assigned readings, field experience logs and a culminating research paper/project will be required.
Prerequisites: ENG 201, CHS 310 and permission of the instructor

CSL 130: Effective Parenting
An examination of psychological approaches to parenting, organized by age periods covering the span of life from conception through the high school years. Topics studied include how caregivers help the child to develop major personality dimensions; adjusting to the demands of parenting; establishing healthy patterns; discipline; encouraging self-sufficiency; instilling moral values; play and education; single parenting; the effects of separation, divorce, death, and child
abuse; and the management of aggression in children.

**CSL 220: Leadership Skills**
This course will focus on developing leadership skills. Students will learn effective interpersonal techniques for conducting group meetings including conflict management skills and parliamentary procedure. The course will focus on the impact of ethnic, racial and gender issues in groups and organizations and their effect on leadership. Several class sessions will involve experiences, which will explore facilitative leadership styles, impediments to effective communication, self-awareness and listening for hidden agendas. Videotape equipment will be used to give students the opportunity to learn how their behavior affects others.

*Prerequisites: ENG 101 and sophomore standing or above*

**CSL 227: Families: Stress, Resiliency and Support Systems**
This course will examine internal (e.g. separation, intimate partner violence, illness etc.), and external (e.g. immigration, economic distress, military deployment etc.) stressors that impact western world families. Students will learn to apply family stress theory, explore how families process stressors and examine the array of strategies employed to enhance family resilience and stability in the face of adversity. Additionally, students will survey various community support systems designed to assist families in need.

*Prerequisite: ENG 101, CHS 150*

**CSL 233: Multicultural Issues in Human Services**
This course provides an interdisciplinary introduction to multicultural issues in human service helping professions. The central focus will be a critical evaluation of cultural competence on both individual and organizational levels in human service institutions. The impact of one's own level of cultural awareness and bias toward self and others will be examined within the context of how cultural, social, economic, political and historical factors influence these institutions. Additionally, the course will explore how various relevant terms, including multiculturalism, diversity, race, culture and ethnicity, have come to be defined and applied from diverse perspectives. Through the use of reflective writing, narrative analysis, discussion, and experiential teaching methods, the course will engage participants in development of cultural self-awareness, general knowledge about cultural groups and organizational cultural competence in the human service profession.

*Prerequisites: ENG 101; and CHS 150 or PSY 101 or permission of the instructor*

**CSL 260: Gender & Work Life (was Counseling in Gender & Work Life)**
In this interdisciplinary course, articles from a variety of disciplines including counseling, history, psychology, economics, sociology, gender studies, and organizational studies will be read to understand the changing roles and expectations of people at work in the U.S. Students will explore the meanings of gender, race, ethnicity, class, accessibility issues, and sexual orientation in human development. The course will address how formal and informal types of social control associated with these categories operate in career options and choice, and experiences in the workplace. Students will also explore what activities constitute work. For instance, can parenting or other forms of unpaid labor be considered a job?

*Prerequisite: ENG 201*

**CSL 280: Selected Topics in Counseling and Human Service**
This course will study a significant topic of interest in the field to be chosen by the instructor.
Prerequisites: ENG 101, CHS 150 or PSY 101 or permission of the instructor

**CSL/ PSY 342: Introduction to Counseling Psychology**
Provides a theoretical survey of the field of counseling. Major emphasis is on such topics as ethical considerations, the intake interview, counselor roles and client roles, goals of counseling, referrals and liaisons in community, vocational counseling, tests and instruments used in the counseling process, academic counseling and research on the counseling process. Differences between counseling and psychotherapy are discussed. Field trips to various counseling centers are arranged.
Prerequisites: ENG 201, PSY 242, PSY 353

**CSL 363: Vocational Development and Social Justice in Human Services**
The course introduces students to the field of career development within a human services context. Topics include the roles and functions of a career counselor; the role of work in society currently and historically; the impact of recession and unemployment on individuals, families and communities; current models of career choice and development; ethical and legal issues; professional development; and career assessment and program implementation. Students will create vocational genograms and take career assessments in order to explore their own career development, allowing for the integration of vocational theory with their own personal life experiences.
Prerequisite: ENG 201 and CHS 150

**GEN 205: Gender and Justice**
This course will examine assumptions about gender and sexuality and the ways that various institutions such as nation-states, transnational NGOs, religions, communities, and families reinforce and/or punish people who challenge these images. The course will also address the power held by governing institutions, particularly in the area of justice - social and criminal - and the ramifications this power holds for individuals and communities. Students taking this course will better understand the ways that gender, sexuality, class, and race interact with social institutions and norms throughout the world.
Prerequisite: ENG 201, and GEN 101 or ANT/ PSY/ SOC 210

**LLS 241: Latina/os & the City**
This course seeks to analyze the sociological, economic, and political experiences of Latina/os in U.S. cities. Its emphasis is the study of legislation, policies and practice with regard Latina/o immigration/migration, settlement and integration. Areas of research and examination are education, welfare, housing, employment, church, political parties, movements, and the legal system.
Prerequisite: ENG 101, and sophomore standing or above or permission of the instructor

**LLS 322: Latina/o Struggles for Civil Rights and Social Justice**
This course provides an interdisciplinary overview of the experiences of Mexican Americans, Puerto Ricans and other Latino/as during the Civil Rights period. It focuses on the Latino/a social movements during the 1960s and their consequences today for the struggles for civil rights and social justice of Latino/as and other racial minorities in the U.S. Topics include access to education and employment; immigrant rights; detention and deportation; race and crime; Latino/a and African American alliance building; Latino/a citizenship and the military, and gender
values and sexuality.
Prerequisites: ENG 201 and junior standing or above

**LLS 325: Latina/o Experience of Criminal Justice**
This course analyzes the criminal justice system and its impact on the lives and communities of Latino/as and other groups in the United States. Particular emphasis is placed on Latino/as human and civil rights and the role that race, ethnicity, gender and class play in the criminal justice system. Interdisciplinary readings and class discussions center on issues such as the over-representation of Latino/as and racial minorities in the criminal justice system; law and police-community relations; racial profiling; stop and frisk policies; immigration status; detentions and deportations; Latino/a youth; media representations; gangs; and access to education and employment and the school-to-prison-pipeline.
Prerequisite: ENG 201 and junior standing or above

**PSY 101: Introduction to Psychology**
This course is a survey of the scientific study of the mind and behavior. Topics to be covered include research methods and applications in Psychology's major areas of study: thought, memory, learning, personality, social processes, human development, psychological disorders, and the biological bases of behavior.

**PSY 231: Developmental Psychology**
This course provides an introduction to the scientific study of human development, with an emphasis on the social, cognitive, cultural and biological influences on development and on methods for studying development. Topics will include perceptual, motor, cognitive, social and emotional development from infancy to adolescence and emerging adulthood.
Prerequisite: ENG 101 and PSY 101

**SOC 101: Introduction to Sociology**
This course provides an overview of the theoretical frameworks and data-collection methods that sociologists use to analyze political trends, economic developments, and cultural changes in society. It investigates the many ways that a society may influence the attitudes and actions of individuals and entire groups. In particular, this course examines social institutions like families and school systems; social stratification in the form of racial and ethnic groups, privileged groups, and social classes; cultural norms such as gender roles; organizations like bureaucracies and corporations; and social processes such as discrimination, de-industrialization, globalization and militarization. Divisive issues and social problems (such as poverty and crime) that spark social conflicts, generate movements, and raise questions of social justice will be explored.

**SOC 201: Urban Sociology: The Study of City Life**
Explores what the earliest cities were like, and how urban life has changed over the centuries; what forces guided the evolution of cities into centers of industry, commerce, finance, recreation, entertainment, higher education and media communications; why cities face problems of inadequate mass transit, congestion, housing decay, pollution, crime and fiscal bankruptcy; how city life shapes personalities and attitudes and influences lifestyles and life chances; what solutions have been proposed for urban problems; and how different everyday life will be in the city of the future.
Prerequisite: ENG 101 and SOC 101

SOC/ PSY 202: The Family: Change, Challenges and Crisis Intervention
This course will examine the family as a changing institution. Topics to be dealt with will include families throughout western history, families in different societies and cultures, maleness and femaleness, the nature of love, sexuality, being single and alone, dating and courtship, cohabitation, marriage, women and work roles, parenting, family stress and conflict, divorce and remarriage.
Prerequisite: ENG 101, SOC 101 and PSY 101

SOC 209: Sociology of Work and Jobs
Explores the importance of work as a major source of individual and group identity, income, lifestyle and influence; how people find jobs; why they choose a particular line of work; why they stay or leave; the different occupations; the pay, prestige, privileges, power and satisfactions they bring; the rise and development of trade unions and professional organizations; how most work has become routinized, impersonal, narrowly limited, yet highly specialized; and on-the-job problems of absence, turnover, boredom, sabotage and stealing.
Prerequisite: ENG 101 and SOC 101

SOC/ PSY 213: Race and Ethnic Relations
An analysis of the problems and economic and social positions of minority groups in the United States. Power relationships among various public and private institutions, militant action organizations, service agency programs, etc., are explored in the light of their impact upon the administration of justice in slum communities, the role of minority group police officers, the community environment, and the people among whom law enforcement must operate. Interactions among historical and current social forces and institutions that influence group and individual behavior within urban ghetto communities are examined. New trends in inter-group relations, emergence of new minorities, and American groups competing for program funding and services in the urban environment.
Prerequisites: ENG 101 and one of the following: SOC 101, PSY 101 or ANT 101

SOC 216: Probation and Parole: Theoretical and Practical Approaches
This course explores the history, evolution, and functions of probation departments and parole agencies as components of the criminal justice system. It examines the practice of "risk assessment," which relies on social science as a basis for predicting the behavior of convicted persons while on probation (as an alternative to incarceration) as well as individuals released from imprisonment on parole. The course also focuses on the problems of high rates of revocations due to violations of the conditions imposed on probationers and parolees, and the high rates of recidivism. By studying intermediate sanctions and parole, the course will grapple with questions about the social reaction to crime as well as the challenges associated with reentry into mainstream society after years of confinement in penal institutions.
Prerequisite: ENG 101 and SOC 101

SOC 227: Sociology of Mental Illness
This course will explore how people create, respond to, define and conceptualize mental illness using the theoretical and methodological tools of sociology. Students will review the history of mental illness, explore cultural variability in defining the phenomenon, and analyze the many theories of mental illness, including social constructionism.
Prerequisite: ENG 201, SOC 101
SOC 302: Social Problems
This course surveys how undesirable social conditions like poverty, inequality, racism, sexism, corruption, pollution and overpopulation come to be defined or ignored as social problems. Reviews the wide variety of possible solutions to these social problems proposed by different interest groups and social movements.
Prerequisite: ENG 201, SOC 101, and junior standing or above

SOC 314: Theories of Social Order
This course explores the contributions of sociological theorists toward an understanding of the conditions under which social orders are established, sustained, and/or transformed. Topics include issues concerning the mechanisms and the roles of institutions of social control, and political and economic power.
Prerequisite: ENG 201, SOC 101, and junior standing or above

New Course Descriptions (all courses 3 hours & 3 credits)

AFR 1XX: Introduction to Community Justice in Human Systems
This course provides an overview of the human services profession, community practices, and the variety of ways to meet human needs through promoting justice. Students study the values, theories, skills, and techniques used in these fields to strengthen the capacity of formal and informal systems of social support in order to focus on both the prevention and remediation of problems, and the enhancement of quality of life among individuals and communities. Students will explore human services and community approaches to justice through the interplay of interdisciplinary course work, practical experience, and active learning methods. Through self-understanding and values reflection, the course helps to prepare students to become self-reflective, competent caregivers, community leaders, and change makers, with the ethical and cultural competencies essential for human service practice in both the public and private sectors.

AFR 3XX: Research Methods in Community Justice and Human Systems
The twin goals of this course are to take these ideas and your existing familiarity with your chosen subject and use them to build a feasible research project and research paper. This course will provide you with a working vocabulary and sets of analytical tools to understand a variety of research methods and to apply them to your research. Major concepts and the steps of empirical research are examined, including formulation of the research question, literature review, research design, sampling, definition and measurement of variables, quantitative and qualitative research, and instrument construction. Emphasis is placed on the use of empirical research to inform practice as well as on the development of knowledge from practice. The major goal is to enhance the student's capacity to identify problems, interventions and reach valid and reliable conclusions about their practice through research.
Prerequisites: ENG 201, AFR 227, CHS 235, and MAT 108 or higher or STA 250 or ECO 255 or CJBA 240

AFR 3XX-3YY Field Education in Community Organizing and Community Practice I & II
This experiential course is designed to give students the opportunity to create change through community practice and/or organizing. Through class discussion, guest lectures, in-class planning, and community service/advocacy, students will learn the strategies and tactics needed to identify issues, mobilize actors, take action, and evaluate their choices as they tackle community issues and/or a real-world group project. In addition, students will reflect on and write about their experiences in community service and/or advocacy. They are required to spend 150 hours (12 hours per week over 12.5 weeks) participating in an on-campus or
community internship. Whether individually or as a team, participants will supplement their skills building coalitions, developing campaigns, writing grants, fundraising, and/or engaging in innovative media advocacy as they assist on-campus or community partners in the project of their choice.
Prerequisites: ENG 201, AFR 227, CHS 235

CHS 3XX Program Planning, Development and Evaluation
This course will provide students with a conceptual framework and a set of practical skills for understanding the design and effectiveness of human services programs. Students will gain knowledge in critically planning, implementing and evaluating programs in a range of human services and community based settings. The course gives students an opportunity to design a plan to implement and evaluate a human services project that would address a community-level need.
Pre-requisites: ENG 201 and CHS 235

CHS 4XX Senior Seminar in Human Services & Community Justice
In this seminar, students will integrate and synthesize the skills and knowledge acquired throughout the human services major. They will present a summative capstone portfolio documenting the integration of theory and practical experience. A section of the portfolio will include a reflective piece on their field experiences and a community project proposal to address a need previously identified. Evidence of meeting program learning outcomes and Human Services National Standards will be included.
Prerequisites: ENG 201; AFR 3XX Research Methods in Human Services & Community Justice, CHS 3XX Program Planning, Development & Evaluation
Appendix B. New Course Syllabi
AFR 1XX: Introduction to Community Justice in Human Systems

Section X: Date and Class Meeting Time

Professor: Jessica Gordon Nembhard, Ph.D.  
Office: 9.63.06 NB

Telephone: 646-557-4658  
Email: jnembhard@jjay.cuny.edu

Office Hours: Tuesdays 2-5:30 PM

Course Description

This course provides an overview of the human services profession, community practices, and the variety of ways to meet human needs through promoting justice. Students study the values, theories, skills, and techniques used in the fields of human services, asset-based community development, and community justice - to strengthen the capacity of formal and informal systems of social support. Through course work, practical experience, and active learning methods, this course focuses on both the prevention and remediation of problems, and the enhancement of individual and community quality of life. AFR 1XX starts students on the journey to become self-reflective caregivers, community leaders, and/or change makers, with the ethical and cultural competencies essential for human services practice in both the public and private sectors. 10 hours of field experience required.

Learning Outcomes

1. Gather, interpret, and assess information from a variety of sources and points of view.
2. Evaluate evidence and arguments critically and analytically, and produce well-reasoned written and oral arguments using evidence to support conclusions.
3. Identify and apply fundamental concepts, methods, and theories of human systems, and community-based approaches to justice; and how they effect social change on all levels of society including individual, interpersonal, family, group, community and organizational.
4. Articulate and reflect on ethical views and their underlying premises, particularly to develop and demonstrate community justice and human services values and attitudes, especially those established by the National Organization for Human Services.
5. Examine how an individual’s place in society affects their experiences, values, or choices, and recognize how societal conditions such as access, involvement, and
equity as well as their own biases, values and interpersonal styles limit justice and effect people in diverse communities.

6. Identify human services skills and evidence-based practices in community justice interventions, policy and advocacy.

**Required Texts & Readings**


Website for National Organization for Human Services: [www.nationalhumanservices.org](http://www.nationalhumanservices.org)

Additional required readings and materials come from journal articles, chapters in books, media. Or a Reader including major chapters from those books and other chapters and articles.

**Blackboard** will be used. This course management website is free. All students are required to get to know the site immediately. Weekly assignments, supplemental articles, course updates, course documents and/or links, discussion boards, and other sources to help you and to keep the class in communication with each other are on this site. Many required assignments will be given on this site. A copy of this syllabus will also be on the site. Please take your time to learn and utilize the class website. DO NOT WAIT until the last minute to become familiar with this website. This site works best with your John Jay email account. Find the link from the John Jay website [www.jjay.cuny.edu](http://www.jjay.cuny.edu).

**Course Requirements**

This course requires both a personal and academic involvement on the part of the student, as it deals with understanding oneself as well as learning about human services and community practice processes, and acquiring basic skills vital to work in the human services and community justice fields. In addition to lectures, there will be class discussions, group activities, and community service.

*Students must complete assigned readings for each topic prior to each class session. Additional requirements are listed below:*

1. Active participation in class discussions and small group activities
2. Prompt attendance at ALL class sessions
3. Two reflection essays (1-2 pages each) submitted on the due dates; and at least 4 comments on other student’s reflections
4. A group presentation about one of the topics in the second half of the class
5. A midterm examination
6. A research paper (5-7 pages)
7. 10 hours of field experience and/or community service
8. A final oral presentation and written portfolio based on your field experience/community service project

**Grading Policy**

The final grade will be determined based on the following criteria (see end of syllabus for more details about each assignment:}
<table>
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<tr>
<th>Assignments</th>
<th>Percentage</th>
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<tr>
<td>Participation (including in-class small group activities and assignments)</td>
<td>15%</td>
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<tr>
<td>Two reflection essays &amp; 4 comments</td>
<td>10%</td>
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<tr>
<td>Group Oral presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm examination</td>
<td>15%</td>
</tr>
<tr>
<td>Research paper (4-5) pages</td>
<td>20%</td>
</tr>
<tr>
<td>Final community service project, portfolio, &amp; oral presentation, and 10 hours of service</td>
<td>30%</td>
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*Students will incur a reduction in grade for late or incomplete assignments.*

**Course Information**

*Class participation and attendance*

You will need to be an active learner who participates in class discussions, demonstrations, worksheets, and small group discussions, as well as unannounced quizzes. You are to bring questions for discussion to class sessions to demonstrate that you are keeping up to date with the reading assignments. **Participation is necessary in this course.** Additionally, this class will involve some degree of self-exploration and interpersonal learning.

Attendance is expected at each class meeting for the full duration of the class. Students are expected to arrive at class prepared to work, with the assigned readings done. Frequent absences and late arrival will negatively affect your ability to be aware of what we are doing and to respond appropriately to the various demands placed on you. Students who are often absent and late almost never do well in class.

*Reflection/Response Essays*

Below are some guidelines regarding writing a critical reflection essay (1-2 pages, double spaced, 12-point font). Two (2) will be written and posted on the Discussion Board of Blackboard, due weeks 4 and 8 (first class of week 8), respectively. **You must cite class discussions and one or both of the text books,** but do NOT just write a summary of the material. Your task is to demonstrate that you understand the central ideas discussed or read, to formulate your own thoughts about the material, and to provide critical analysis. Consider the following when doing these assignments:

1. Quality writing skills include writing directly and clearly, and using specific examples to support your points. Use complete sentences, check for spelling, and develop your paragraphs. These are formal papers so please proofread prior to submission. Be mindful of required length of the paper or presentation.
2. Development of a theme is essential. Make an outline and check to see that each point in your outline is relevant to your central message. Attend to the following when writing your response:
   a. Create a short title that conveys your basic idea
   b. Have solid introductory and concluding paragraphs
   c. The theme should be clear, concise, and specific. Do not write in a general or abstract manner
   d. Develop your thoughts fully and logically
   e. In terms of form and organization, your paper or presentation should flow well and your points should relate to one another
f. Be sure to make reference to your readings and give reasons for your opinions and perspectives rather than making unsupported statements

g. Cover a few issues/ideas well versus attempting to cover too much

h. Use clear examples to illustrate your point and tie in your examples to the point you are trying to make

(Use a similar outline for giving an oral presentation)

In addition, you must respond a total of 4 different times to your classmates’ reflections; at least 2 responses for each assignment. Write at least ½ a page in response to what your classmate has written and post it as a thread on the Discussion Board of Blackboard.

**Research Paper**

Specific instructions on content and format will be provided. Students will explore the connection between human services and community justice in specific contexts, such as mental health, justice systems, education, health services, etc. Students will be expected to incorporate assigned course readings, as well as an independent review of the literature pertaining to their specific contextual issue. **The professor must approve the topic you choose.** You are required to write a 4-5 page paper (not including heading or bibliography; double spaced, 12-point font), following the guidelines assigned and using references and citations in APA format.

**Group Oral Presentation**

Groups will be determined based on the topics students choose for the independent research papers. The project and oral presentation will be debate style where teams will critically examine the same human services and community justice issue via different frameworks. The debates will focus on advocating for either a community-level needs perspective versus an asset-based analysis of community. The project will require students to incorporate and critically analyze content from the course readings. Specific instructions on the content and format will be provided in class.

**Community Service Project, Portfolio and Oral Presentation**

The course requires field experience which can be a community service project (10 hours supervised and recorded). The course will culminate in a final portfolio about your community service project, and an oral presentation. You must complete at least 10 hours of field experience/community service during the semester, either with a human services agency or a community-based organization. You will put together a portfolio described below, including a final reflection paper and oral presentation.

Service-Learning is… **Service-learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. The distinctive element of service-learning is that it enhances the community through the service provided, but it also has powerful learning consequences for the students or others participating in providing a service.**

(National Service Learning Clearinghouse. [www.servicelearning.org](http://www.servicelearning.org)).
**Portfolio:**

**Part 1: Researching a Community Service Agency and report (3-4 pages)**

For part 1 of your community service portfolio you need to research 2 community-based human service agencies and/or community organizations. This will be due the 3rd week of class and will be put into your Portfolio.

Conduct a brief site visit to each organization/agency. During the visit be sure to gather relevant pamphlets/brochures that outline the services provided. Once you have familiarized yourself with the agency, find someone at the site who can provide some general information regarding the agency’s mission, services and history; and can discuss your community service options with that agency/organization. Keep notes and write a report on what you find.

Questions to help you gather information will include, but are not limited to the following:

- What is the history and mission of the agency?
- What specific services do they provide?
- What or who is the target population served?
- What types of career professionals are employed in the agency?
- What additional services could be added to enhance the mission’s goals?
- How have their services impacted the target community?
- How is the agency funded?
- What frustrations and/or challenges does the agency encounter in attempting to execute the delivery of services in meeting their mission?
- What options are there for community service?

Write a report/essay about the research you did on the 2 agencies/organizations. Write a description of each place based on your research and the answers to those and other questions. Include a section of self-reflection: describe your reactions and feelings to what you have learned by addressing the following questions:

- How did learning about the agency/organization and its stated goals to the target community make you feel? Were you hopeful and/or optimistic that human service workers and/or community advocates can make a difference in the lives of others? Did any of the challenges articulated help to make you feel less enthusiastic about being a helper in this field? Why would you want to volunteer at that agency/organization?

Include a brief bibliography or references section where you list any brochures you used and any other reports or information you used or found about the agencies/organizations, and list names of people you interviewed.

**Part 2: Choose an Agency/Organization to volunteer with for the semester, for at least 10 hours; Sign Agreement**

Choose 1 of the 2 agencies/organizations that you researched or another option through the John Jay’s Office of Community Outreach and Service-Learning (http://www.jjay.cuny.edu/community-outreach-and-service-learning-0) and/or CUNY Service Corps (www.cuny.edu/servicecorps). Meet the requirements of either office to finalize community service project. Meet with the supervisor in charge of community service and/or volunteering and agree to a schedule. Have the supervisor sign an **agreement or memorandum of understanding** between the 2 of you in terms of what you will do, how many hours total and how many per week and per semester; as well as procedures for missing your appointments because of illness or weather, etc. You need to have as detailed an agreement as possible about your responsibilities, hours, etc. Complete any other forms required by any of the organizations/agencies. Copies of these document must be included in your Portfolio.
Part 3: Validated Timesheet (or Log of Hours) and Weekly Reflection Journal

Students must keep a time sheet (or an hourly log) of time spent at community service. At least two times, in the middle of the semester and at the end of the service, each student must have the site supervisor sign their log of hours to verify their attendance at the agency/organization. In addition, students are required to keep a weekly journal providing entries that reflect on the experience, as well as summarize what the student accomplished and how it relates to what we are studying in this course. What challenges did the student face, what accomplishments made? Also reflect on issues about advocacy versus empowerment, and how to develop leadership rather than dependency in human services and community activism. At mid term (by Month Day Year) please show professor your journal reflections so far, and your validated time sheets so far.

Part 4: Reflection Essay and final Portfolio

Your reflection essay will include a heading (with your name, date, class and semester), and a 2-3 page essay about the experience, providing an overview of your community service, describing the organization/location and your activities, commenting on your weekly reflections, and connecting your experience to themes and objectives of this course. Reflect on the strengths and accomplishments of; as well as challenges the agency or organization you volunteered with face and the power relationships. Also, reflect on issues about advocacy versus empowerment, and how to develop leadership rather than dependency in human services and community activism. This essay should focus on your impressions, self-reflection, and critical analysis of what you observed during your field experience/community service, and the experience engaging in service learning, now that you have completed the project. What have you learned? What would you do differently? What are the strengths and weaknesses of service learning? Read at least 3 articles about community service and/or service learning. Refer to them in the paper and include them in your References section.

Order of items to turn in with Reflection Essay: The Full Portfolio

1. Cover page with your name, date, course name and section, professor’s name, title of community service project (give it a title), and name and place of community service. Provide a 1 paragraph abstract of the experience what you did and what you learned. This will also be what you hand out to your classmates when you give your oral presentation.

2. Overview: the reflection essay commenting on the experience in general, tying in your experience to objectives, themes, issues and information from the course; reviewing your reflection entries, and description of the place where community service took place. Strengths and weaknesses of community service, etc. Lessons learned (3-4 pages)

3. Reference page with at least 3 references used in your overview essay, and any references used in site research.

Appendices:

4. Validated Time Sheet (Log of Hours) and copy of signed community service agreement with the agency/organization, and any other paper work.

5. Research report on 2 Community Sites

6. Weekly reflections in chronological order and labeled by date.

Part 5: Oral Presentation and Handout

You will give a short (10 minute) oral presentation about your service learning to the class. Hand out a
copy the cover page to your Portfolio to each student. Use power point, video clips and/or other multimedia or creative presentation formats. Find a way to be creative but thoughtful about how you present your experience and lessons learned to your classmates.

**Schedule of Classes:**

<table>
<thead>
<tr>
<th>Schedule of Classes</th>
<th>Topics and Assignments (All assignments are due on the specified dates)</th>
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| **Week One:** Introduction and requirements | Assignments:  
- Getting to know each other; reviewing policies and procedures, including guidelines for response papers; Review syllabus and discuss  
Obtain required texts by first class  
Instructions for Field Experience/Community Service Site Research  
Readings:  
- Woodside and McClam Chapter 1. An Introduction to Human Services, pp.3-27.  
| **Weeks Two & Three:** What’s your story? Self-exploration | Readings:  
- Kretzmann and McKnight Chapter 1: Releasing Individual Capacities pp. 13-28; Youth pp. 29-50.  
Assignment: Capacities Checklist and Self-Advocacy Questionnaire and Indicator Instructions for Reflection Essay #1  
Week 3: Field Experience/Community Service Site Research due  
Small group in-class discussions |
| **Week Four:** Introduction to Community Practice | Readings:  
- Kretzmann and McKnight Introduction, pp. 1-11.  
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<th>Week Five: The Helping Process</th>
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<tr>
<td><strong>Readings:</strong></td>
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<tr>
<td>- Optional Reading: Kretzmann and McKnight: Seniors, People with Disabilities, Welfare Recipients pp. 51-94</td>
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<tr>
<td><strong>Assignment:</strong> Reflection Essay #1 due</td>
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<th>Week Six: Theoretical Perspectives: Human Services and Human Systems</th>
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<tr>
<td><strong>Readings:</strong></td>
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<tr>
<td>- Woodside and McClam Chapter 4: Models of Human Service Delivery pp. 97-126.</td>
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<tr>
<td>- Gitterman, A. (2003). The meaning, scope, and context of the concept of social justice in social work with groups. In M. Sullivan, Lang, Goodman, &amp; Mitchell (Eds.), <em>Social work with groups: Social justice through personal, community, and societal change</em> (pp 25-34). Binghamton, NY: Haworth Press.[Blackboard]</td>
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<th>Week Seven: Theoretical Perspectives: Community Justice</th>
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<td><strong>Readings:</strong></td>
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<th>Week Eight: Midterm review &amp; exam</th>
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<tr>
<td><strong>Assignment:</strong> Review readings from Weeks 1-7. Small group discussions Reflection Essay #2 due;</td>
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<td><strong>Midterm Review</strong></td>
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# MIDTERM EXAM

## Week Nine: Multi-cultural issues: Gender & Sexual Orientation

**Readings:**

**Assignment:**
- Midterm Exam returned for review in class
- Instructions for research paper
- Group Oral Presentations Assigned and Instructions Given

## Week Ten: Multi-cultural issues: Race & Ethnicity

**Readings:**

## Week Eleven: Group Approaches and Social Capital

**Readings:**
- Woodside and McClam Chapter 8: Working Within a System pp. 226-257.
- Kretzmann and McKnight Chapter 2: Releasing the Power of Local Associations and Organizations pp. 109-138.

**Assignment:**
- Discuss Community Service Experiences

## Week Twelve: Community Approaches

**Readings:**
- Kretzmann and McKnight Chapter 4: Rebuilding the Community Economy pp. 275-292.
- Gordon Nemhhard, Jessica. 2008. “Community-Based Economic Development.” In *Solidarity Economy: Building Alternatives for People and
**CUNY’s Non-Discrimination Policy:**

“The University must foster tolerance, sensitivity and mutual respect among all members of its community. Efforts to promote diversity and to combat bigotry are an inextricable part of the educational mission of the University.” The use of epithets or demeaning terms for anyone based on sexual orientation, race, gender expression or identity, ethnicity, national origin, disability, or religion is unacceptable and is disruptive of the educational process. This will not be tolerated in my class and is unacceptable behavior on our campus. This is a safe classroom where professor and students mutually engage in respectful discourse and supportive, constructive exchanges that create and maintain a classroom environment that is truly conducive to teaching and learning.
**Statement of College Policy on Plagiarism and Academic Integrity:**
Academic Integrity: It is the student’s responsibility to understand what plagiarism and cheating entail, and to refrain from engaging in unethical, dishonest scholarship.

**Plagiarism** (as defined by the John Jay College Undergraduate Bulletin) is the act of presenting another person’s ideas, research or writings as your own. The following are some examples of plagiarism, but by no means is it an exhaustive list:

- Copying another person’s actual words without the use of quotation marks and footnotes attributing the words to their source;
- Presenting another person’s ideas or theories in your own words without acknowledging the source;
- Using information that is not common knowledge without acknowledging the sources;
- Failing to acknowledge collaborators on homework and laboratory assignments.

**Internet Plagiarism** includes submitting downloaded term papers or parts of term papers, paraphrasing or copying information from the Internet without citing the source, and “cutting and pasting” from various sources without proper attribution.

**Cheating** is the unauthorized use or attempted use of material, information, notes, study aids, devices or communication during an academic exercise. The following are some examples of cheating, but by no means is it an exhaustive list:

- Copying from another student during an examination or allowing another to copy your work;
- Unauthorized collaboration on a take home assignment or examination;
- Using notes during a closed book examination;
- Taking an examination for another student, or asking or allowing another student to take an examination for you;
- Changing a graded exam and returning it for more credit;
- Submitting substantial portions of the same paper to more than one course without consulting with each instructor;
- Preparing answers or writing notes in a blue book (exam booklet) before an examination;
- Allowing others to research and write assigned papers or do assigned projects, including use of commercial term paper services;
- Giving assistance to acts of academic misconduct/dishonesty;
- Fabricating data (all or in part);
- Submitting someone else’s work as your own;
- Unauthorized use during an examination of any electronic devices such as cell phones, palm pilots, computers or other technologies to retrieve or send information.

For the complete text of the CUNY Policy on Academic Integrity and the John Jay College Policy on Academic Integrity and other college-wide policies see the John Jay Undergraduate Bulletin, Chapter IV Academic Standards.

Please note that Wikipedia is not an acceptable academic source for any information used, discussed or written about in this class.

**Statement Regarding Students with Disabilities:**
The Office of Services for Students with Disabilities (at 237-8122) provides support services and counseling for students who are physically challenged, have learning disabilities, and/or have medical
conditions which affect their performance in the classroom setting. If you are in need of special assistance, please contact that office (and then me) no later than the second week of class.

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<th>Total Point Conversion to Final Grade:</th>
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<td><strong>A</strong></td>
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Reminder:
A = Excellent
B = Good
C = Satisfactory
D = Passing
F=Failure/Unsuccessful
AFR 3XX (312): Research Methods in Human Services and Community Justice

Semester, Time Room

Professor: Jessica Gordon Nembhard, Ph.D.
Office Hours: Wednesdays 1:00 – 3 PM or by appointment or by appointment: Room 9.63.07 NB
Contact: Email: jnembhard@jjay.cuny.edu or professorgn@gmail.com
Phone: (646) 557- 4658

Course Description:

This research methods course articulates relationships between human service provision and community justice, and provides students with tools and skills to conduct community-based research, participatory action research, and to apply evidence-based research to practice. It provides students with a working vocabulary, sets of analytical tools, and a variety of qualitative research methods, write scholarly and professional essays and papers, and give oral presentations. Students enhance their capacity to identify problems and interventions, to analyze information, and contribute to the creation of new knowledge. Students proceed through the steps of conducting research, including formulating the research question, finding peer-reviewed sources, annotating their bibliography, producing a literature review, creating a research outline, conducting participatory action research, analyzing data; and completing a research paper.

Prerequisites: ENG 201, AFR 227, MAT 108 or higher, STAT 250 or ECO 255 or CJBA 240.

Learning Outcomes:

- Explain multiple methodological perspectives and tools used to study academic and social problems found in Human Services, including participatory action research.
- Use the fundamental elements of qualitative research to formulate a research question, find peer-reviewed sources, prepare an annotated bibliography, produce a literature review, create a research outline, conduct participatory action research, and analyze data.
- Practice critical analysis of knowledge and theory in human services interventions and community-based approaches to justice; as well as evaluate impacts on human services delivery systems and community justice practices.
- Develop well-reasoned written and oral arguments using evidence to support conclusions; and demonstrate high quality oral and written communication.
- Articulate and explain ethical dilemmas inherent in the process of conducting research (particularly in human services and community studies); including the
current practices and standards for protecting the rights of human subjects (the Institutional Review Board (IRB) process).

**Required Books:**


**Optional Recommended books/Reference books:**


**Additional Resources:**


**Assignments:**
**Buddy:**
Each student will choose or be assigned a buddy from among the members of the class. Buddies will review and edit each other’s assignments before they are handed in to the professor and/or presented to the class.

Each of you will design a **research project and write a research paper** based on your topic. You will be required to complete the following major assignments:
• **Paper 1 on Participatory Action Research**: Research is a craft, and all forms of research are exercises of inquiry. Write a short paper (3-5 pages) defining and describing participatory action research. Analyze its components, characteristics and best practices; compare this method with the traditional scientific method. Discuss the strengths and weaknesses of using participatory action research. What are considered its limitations? Are there ways to address or mitigate the limitations? Describe your community service project and how you plan to use participatory action research in order to help you design and finalize your research project and paper.

• **IRB training**: All students will take the 1 hour IRB introductory training module. This is so you understand the process and the need for it. See below for information about how to access and take the online training.

• **Annotated Bibliography, Literature Review, and Research Outline**: Convert an annotated bibliography about your research question into a literature review using at least 12 academic sources. A guide to writing a literature review will be handed out separately. Include an outline of the full research project.

• **Research Paper**: Incorporate the literature review with a methodology section and discussion of the research questions and hypotheses; report the research, results and analysis. Provide a conclusion. Include the bibliography. The full structure and rubric for the research paper will be provided separately. 12-15 pages.

• There will be a few **preparation papers/drafts and in-class work** during the semester that will address the various components of these larger assignments, for example a discussion of research methods and the methods you will use. These papers, as well as our readings and discussions, will help you complete them.

• In addition, students will be required to give an **oral summary** of a required reading and lead part of the class discussion about it. Students will also give a **final oral presentation** on their research paper and may be required to participate in John Jay’s Research Week with a poster or oral presentation.

• **“Participation”** includes being active in class discussions, showing that you have read the assignments, arriving to class on time, and paying attention during the class period (i.e. by not texting, talking, etc.). There may be in-class worksheets and/or small group assignments that also contribute to your participation grade; and students must prepare questions for guest speakers. An absence means you will not have participated and will lower your participation grade. Make sure to communicate with the professor as soon as possible if you have an excused absence.

All assignments must be: Double-spaced; 12-point font; 1-inch margins.

I accept drafts of any paper and will provide feedback (handing in a draft does not exempt you from point deductions for lateness, so be sure to get me a draft in advance of the due date).

I accept late assignments, but you will have points deducted at my discretion, especially if you have not contacted me before the due date.

**Grading:**

| Paper 1 | 15 points |
Annotated Bibliography  
Literature Review draft  
Preparation Papers (methodology, research outline, etc.)  
IRB training  
Final Research Paper  
Oral Summaries and class discussion leader  
Participation  

Total: 100 points

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<th>Total Point Conversion to Final Grade:</th>
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Reminder:
A = Excellent  
B = Good  
C = Satisfactory  
D = Passing  
F=Failure/Unsuccessful
**Blackboard:**
Many of your reading assignments (as well as this syllabus) are on our course’s Blackboard page. As a John Jay student, you already have a Blackboard account; you just have to set it up (if you have not done so already). Go to [www.jjay.cuny.edu](http://www.jjay.cuny.edu), click on “BlackBoard Online” at the top right. Click on Portal Log-in/Blackboard/eSIMS and from there click on Blackboard 8 Direct. If you have trouble accessing Blackboard, call the help desk at (212) 237-8200 or email the help desk at helpdesk@jjay.cuny.edu.

**Writing Resources:**
Since there are many writing assignments in this course I want to make you aware of the resources that are available to you if you are having any issues with your writing. You can make an appointment to meet with a tutor at the Writing Center. You can call them at (212) 237-8569 or visit them at [http://web.jjay.cuny.edu/~writing/homepage.htm](http://web.jjay.cuny.edu/~writing/homepage.htm). If English is not your first language, then you can go to the Center for English Language Support. You can call them at (212) 237-8231 or visit them at [http://web.jjay.cuny.edu/~esl/](http://web.jjay.cuny.edu/~esl/). Both centers also regularly have workshops that cover a wide range of topics, so be sure to check out their websites for updates if you need any help. And of course, I am always available during office hours, by appointment, and through email.

**IRB Training:**
**CITI Instructions:**
If you have not already done so, please complete the online training in Human Subjects Research (HSR) available at [www.citiprogram.org](http://www.citiprogram.org).

First time CITI users:
1. Go to [www.citiprogram.org](http://www.citiprogram.org)
2. Create an account / Register
3. Select your Organization Affiliation – search for City University of New York (CUNY); Continue to Step 2
4. Enter the requested Personal Information, then continue through the next few steps (for John Jay, a ‘banner’ number is not necessary)
5. When you get to Step 7, select Take the Human Subjects Basic Course
6. Then, select HSR for Undergraduate Students and proceed through the prompts to complete the course.

New affiliates:
1. Go to [www.citiprogram.org](http://www.citiprogram.org) and log in.
2. Go to “Click here to affiliate with another institution”
3. Select your Organization Affiliation – search for City University of New York (CUNY)
4. Follow the steps to select Human Subjects Basic Course for Undergraduate Students, and complete any additional modules required.

Additional information on training requirements is available here: [http://www.cuny.edu/research/compliance/training-education/citi-training.html](http://www.cuny.edu/research/compliance/training-education/citi-training.html)
Statement of College Policy on Plagiarism:
Plagiarism is the presentation of someone else’s ideas, words, or artistic, scientific, or technical work as one’s own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source.

Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. It is the student’s responsibility to recognize the difference between statements that are common knowledge (which do not require documentation) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The Library has free guides designed to help students with problems of documentation.

Statement Regarding Students with Disabilities:
The Office of Services for Students with Disabilities (at 237-8122) provides support services and counseling for students who are physically challenged, have learning disabilities, and/or have medical conditions which affect their performance in the classroom setting. If you are in need of special assistance, please contact that office (and then me) no later than the second week of class.

COURSE SCHEDULE
* next to a date indicates an assignment is due on that date.
You are responsible for all required readings listed below each date, on that date.

Week 1: Introductions, Review syllabus, Online Library Resources; Ethics in Research
Discuss the art of research; evaluation of sources; and ethics in research and writing
Readings:
- Optional: RMAS Chapter 3 “Ethics in Research” pp. 80-93.[Blackboard]

*In class compare Wikipedia and Encyclopedia information

Week 2: Writing and Identifying Research Questions
Readings:
- ASR Chapter 4 “Issues in Problem Formulation” pp. 76-100
- RMAS Chapter 5 “Topic and Questions” pp. 106-109. [Blackboard]
- “The Research Question” handout [Blackboard]
- AR Foreword pp. xi-xv.
*Research Question assignment & Homework

**Week 3: Paradigms of Inquiry**
Readings:
- CI “Introduction” pp. 1-4; Chapter 1 “The Craft of Inquiry” pp. 11-20; Chapter 8 “Dialectical Explanations” pp. 121-134. [Blackboard]
- AR Foreword pp. xi-xv; and Chapter 1 “Research in Professional and Public Life” pp. 1-15.
- RMAS Chapter 2 “Methodology in Africana Studies Research” pp. 30-79. [Blackboard]

*Students post research question on Blackboard and each student respond to 2 others.*

**Week 4: Participatory Action Research**
Readings:
- Participatory Action Research Definitions [Blackboard]
  https://nature.berkeley.edu/community_forestry/Fellowships/parinfo/PAR%20Definitions.pdf
- AR Preface pp. xvii-xxii; Chapter 2 “Principles of Community-Based Action Research” pp. 17-42; Chapter 9 “Understanding Action Research” pp. 187-215; Chapter 3 “Setting the Stage” pp. 43-63; Chapter 4 “Look: Building the Picture” pp. 65-88; Chapter 7 “Act: Resolving Complex Problems” pp. 135-164. [Students will divide up the chapters to present to the class.]
- ASR Chapter 9 “Field Research and Qualitative Methods” pp. 219-254.

**Week 5: Designing the Research Project and IRB Process**
Guest Speaker - John Jay Human Research Protection Program Coordinator
Readings:
- AR Chapter 5 “Think: Interpreting and Analyzing” pp. 89-114; Chapter 6 “Act: Resolving the Problems” pp. 115-134.
- RMHD Chapter 6, “Descriptive Methods,” 75-97; and pp. 153-169, 180-187. [Blackboard]

*Small group discussions*

**Week 6: Project Design, Summaries, Research Outline**
Readings:
- “Rubric for Critical Summaries” handout [blackboard]
- “How to Write a Research Outline” handout [Blackboard]
- ASR Chapter 5 “The Process of Measurement” pp. 102-129
• CR Chapter 10 “Acknowledgements and Responses” pp. 139-151; Chapter 12 “Planning” pp. 177-186; Chapter 13 “Drafting your Report” pp. 187-200.[Blackboard]
• Optional: RMHD pp. 171-178; Appendix A, pp. 287-311.[Blackboard]

*Participatory Action Research Paper due
*In-class, discuss your Participatory Action Research Paper and a field experience

Week 7: Writing and Editing – Introductions, Literature Review
Readings:
• “Editing Guidelines” handout [Blackboard]
• “The Role of Introductions” handout [Blackboard]
• “How to Write a Literature Review” materials [blackboard]
• Review “How to Write a Research Outline” handout [Blackboard]
• ASR Chapter 17 “Writing for Research: Grant Proposals and Report Writing” pp. 453-475.
• AR Chapter 8 “Formal Reports, Theses and Dissertations,” pp. 165-185.
• Optional: RMAS Chapter 5 topic and questions pp. 106-109. [Blackboard]
• Optional: RMHD Appendix A.

* In class discuss some of your sources, draft a critical summary of one

Week 8: Brief Overview of Dependent and Independent Variables, and Quantitative Analysis
Readings:
• ASR Chapter 8 “Analysis of Available Data” pp. 195-218.
• RMAS Chapter 1 “Africana Studies and the Science of Knowing” pp. 1 – 29; Chapter 6 “Measuring Social Reality” pp. 125-142.[Blackboard]
• RMHD Chapter 4 “Studying Relationships between Variables,” pp. 46-59.[Blackboard]

*Annotated Bibliography due: Write an annotated bibliography based on your library research. Find and discuss 12 sources that relate to your research question (approximately 200 words per source; 5 points)

*In class write an introduction to your annotated bibliography – peer evaluation

Week 9: Variety of Methods: Qualitative vs. Quantitative research
Readings:
• ASR Chapter 7 “Survey Research” pp. 160-194; Chapter 14 “Data Analysis 1: Data Preparation and Presentation” pp. 370-397; Chapter 16 “Analysis of Qualitative Data” pp. 426-452.
• RMAS Chapter 12, “Qualitative Field Research and Data Analysis,” pp. 256-278.
Week 10: Variety of Methods - Sampling, Interviews, etc.

Readings:
- ASR Chapter 6 “Sampling” pp.130-159; Chapter 9 “Field Research and Qualitative Methods” pp. 219-254.

*Literature Review due

Week 11: Analyzing and Presenting Data

Readings:
- RMHD Chapter 14 “Understanding Research Results,” pp. 228-248; and Chapter 16 “Generalizability,” pp. 272-285.[Blackboard]

*Draft description of your Research Methods due

Week 12: Humanities and Interdisciplinary Mixed Methods Research

Readings:

*In-class compare humanities research methods to social science research methods.

Week 13: Research Week; Begin Oral Presentations

*Mandatory attendance at 2 (two) Research Week events

Readings:
*Week 14: Oral Presentations continue and Research Paper due

Week 15 - **Final Exam Period: Date of our 2-hour final exam – Oral Presentations cont’d and Course Wrap-Up [NOTE THE CHANGE IN TIME for last class period, students must attend and stay the entire period.]

**Guest Speakers:**
I have asked several scholars from various disciplines within the social sciences to come to our class and discuss their careers and research interests. They will share their work and experiences with us and you will have the opportunity to ask them about their research, the issues they have faced, and the decisions they have made. I will distribute a short example of each speaker’s work the week prior to their visit. You will be required to read this and come prepared with specific questions to ask the presenters.
AFR 3XX-3YY Field Education in Community Organizing and Community Practice I & II

Dr. Teresa A. Booker
Office Location: Department of Africana Studies......
Contact Hours:
Phone:
E-mail: tbooker@jjay.cuny.edu

Course Description
This experiential course is designed to give students the opportunity to create change through community practice and/or organizing. Through class discussion, guest lectures, in-class planning, and community service/advocacy, students will learn the strategies and tactics needed to identify issues, mobilize actors, take action, and evaluate their choices as they tackle community issues and/or a real-world group project. In addition, students will reflect on and write about their experiences in community service and/or advocacy. They are required to spend 150 hours (12 hours per week over 12.5 weeks) participating in an on-campus or community internship. Whether individually or as a team, participants will supplement their skills building coalitions, developing campaigns, writing grants, fundraising, and/or engaging in innovative media advocacy as they assist pre-sanctioned, on-campus or community partners in the project of their choice.

Course Learning Objectives:
- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems, and manage the flow of information from a variety of sources and experiences.
- Make appropriate connections between the experiences of injustice among peoples of Africana descent, and extend that knowledge (facts, theories, etc.) to one’s participation in school, community, and/or politics.
- Formulate action strategies that incorporate psychological, sociological, and economic factors of race, class, and gender, which influence and/or benefit clients and/or community residents.
- Create an integrated action plan which includes, reflection, analysis, promotional strategies and measures of effectiveness.
- Utilize digital technologies, communication/networking tools and social networks for a range of purposes (e.g. to inform, instruct, motivate and persuade) and know how to judge their effectiveness/assess their impact.

Required Reading:

And other assigned articles. See suggested reading list below

Course Procedures and Participation:
This course requires both a personal and academic involvement on the part of the student, as it deals with understanding oneself as well as learning about human services and community practice processes, and honing skills vital to work in the human services and community justice fields. Both student participation in class and 150 hours of service learning are required. Classes will be held once a week for the first 2 weeks of class to get organized; and once every other week for the remaining weeks, in addition to the scheduled final exam class period at the end of the semester. This will give the students time to conduct their service learning/community service/campus or community project internship. When the class meets, class time will be used to both discuss the internship experience and the assigned readings. Class assignments will be reviewed, and some will be done in class.
Students will coordinate their on-campus or community internship on their own, or with a group or through a campus entity (the options and procedures will be explained on the first day of class). The placement must be approved by the professor. Students keep their own timesheet, that must be certified and approved by their onsite supervisor. An example of how the class might operate with a group internship that the whole or most of the class participates in is provided at the end of this syllabus.

**Course Policies:**
E-mail: Important messages and announcements will be sent to you via your John Jay College e-mail account. You must activate your account and check your e-mail regularly. Access to and use of the course Blackboard site will also be required.

Evaluation of the internship program requirement will be determined by the site supervisor. Students will receive either a satisfactory or an unsatisfactory score for that category, only. The grade for the course, however, will be assigned by the course instructor.

**How the Course Will Be Assessed**

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Percentage</th>
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<tr>
<td><strong>In-class Participation</strong></td>
<td>10%</td>
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<td>During class time, students will discuss assigned readings and their experiences in the internship; will formulate strategies and action plans in relation to the internship to be discussed and reviewed; will engage in small group activities, and will give individual and group presentations. You will need to be an active learner who participates in class discussions, demonstrations, and small group discussions. You are to bring questions for discussion to class sessions to demonstrate that you are keeping up to date with the reading and participation expectations. <strong>Participation is necessary in this course.</strong></td>
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<tr>
<td>Attendance is expected at each class meeting for the full duration of the class. Students are expected to arrive at class prepared to work, with the assigned readings done. Frequent absences and late arrival will negatively affect your ability to be aware of what we are doing and to respond appropriately to the various demands placed on you. Students who are often absent and late almost never do well in class.</td>
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<tr>
<td><strong>Executive Reports</strong> (four typed reports based on homework assignments about the readings and internships)</td>
<td>20%</td>
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<tr>
<td>(See course rubric on Blackboard (bd) for maximum points)</td>
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<tr>
<td><strong>Africana Studies Internship Requirement</strong></td>
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<td>Active site participation: Students spend 12 hours a week for 12.5 weeks (total of 150 hours required) working on a campus or community project. Students must document their own hours and keep a timesheet that is reviewed and signed (certified) by their onsite supervisor. The supervisor should certify that the hours are correct both by the 8th week of class and by the final exam presentations after all 150 hours are completed. (See group activity rubric on Bb for max. points)</td>
<td>15%</td>
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<tr>
<td><strong>Internship check-in – Report from Supervisor</strong></td>
<td>5%</td>
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<tr>
<td>There will be a check in with the on-site supervisor 2 times (Weeks 8 and 14 or 15). In addition to approving your timesheets, the Supervisor will be asked to provide a brief oral or written report on your participation. You will receive 100 for a satisfactory report, 70% for an unsatisfactory report, and 0 for failing to report.</td>
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<tr>
<td><strong>Observation Analysis</strong></td>
<td>10%</td>
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<tr>
<td>(Based on sanctioned assignment. See rubric on Bb for max. points)</td>
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<tr>
<td><strong>Vision Statement</strong></td>
<td>10%</td>
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<tr>
<td>(Based on sanctioned assignment. See rubric on Bb for max. points)</td>
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<tr>
<td><strong>Event Critique</strong></td>
<td>10%</td>
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</table>
(Based on sanctioned assignment. See rubric on Bb for max. points)

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<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tr>
<td>Strategic Plan with fundraising</td>
<td>10%</td>
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<tr>
<td>(Midterm Presentation)</td>
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<tr>
<td>Reflection Report</td>
<td>10%</td>
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<td>(as the final exam and oral</td>
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<td>presentation)</td>
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<td>Event Critique</td>
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<td>(1 total)</td>
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<td>Vision Statement</td>
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<td>Event Critique (1 total)</td>
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<td>Strategic Plan with fundraising</td>
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<tr>
<td>(Midterm)</td>
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<tr>
<td>Reflection Report (Final)</td>
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**Brief Description of Projects**

**Executive Reports (4 total, based on in-class group efforts)**
For each unit of instruction, each student is required to turn in an executive report to reflect both on assigned readings and on a culmination of goals, events, actions, and strategies for that time period as well as an element of reflection in regard to working with groups and personal development through project management. Each report is to be 2-3 pages in length typed.

**Facilitation Observation Analysis (1 total, based on OCI)**
You are to attend a meeting held by members of your assigned internship group, or the organization you are interning with. Afterwards, you will provide a thorough account of the observations that you made such as who attended, the quality of the meeting space, how the meeting was structured, the ability of people to share information, the ability of the group to address conflict, etc. You will need to write a 2-3 page paper discussing the meeting experience.

**Vision Statement (1 total)**
Each student will create a short-term and long-term vision statement based on the goals of either his/her position or his/her committee. This vision should complement the overall mission statement of the college. This report is to be 2-3 pages in length typed.

**Event Critique (1 total)**
Each student will attend a event (that most closely resembles his/her internship task) that he/she did not help to plan or execute, either at JJC or in the community. You are to analyze it and determine the factors that increased or limited the event’s success based on what we covered in class. This analysis should be in the form of a 3-4-page paper discussing what the successful aspects of the program are, what the problem(s) are, what the potential solutions are, and how you would go about implementing a solution with a discussion on the risks or disadvantages involved with your solution.

**Strategic Plan with fundraising point (Midterm)**
Each student will create a strategic plan for the tasks affiliated with their internship. The strategic plan should be typed and presented in a professional format on the due date. Each student will present his or her plan during midterms and each must extend an invitation to attend to at least one member of the committee or class. See Bb for the points that the plan must address including any type of fundraising activity, soliciting donations of either money or goods, or other creative means of generating revenue. For your project, you are to write a 3-5 page proposal that discusses the need you are trying to find sponsorship for as well as a thorough description of your idea. You should research and find out what steps you would need to take to actually perform this initiative. This includes any College policies specific to your proposal, understanding how your target organization allocates money and anything specific that is required of your plan. In addition to writing the proposal, you are to create a 5-7-minute individual presentation to the class.

**Reflection Report (Final)**
Your semester report should be a culmination of all projects and endeavors you (and your committee if applicable) have taken on and accomplished this semester. You should include a 3-5 page typed write-up not just summarizing the activities and products/accomplishments, but also your reflections on the experience, and about any challenges encountered especially around issues of power, racism, sexism, etc. See Bb for details. In addition to writing the proposal, you are to create a 10-15 minute presentation to the class.
STATEMENT OF THE COLLEGE POLICY ON PLAGIARISM

Plagiarism is the presentation of someone else’s ideas, words, or artistic, scientific, or technical work as one’s own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

It is the student’s responsibility to recognize the difference between statements that are common knowledge (which do not require documentation) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure on how and when to provide documentation are advised to consult with their instructors. The Library has free guides designed to help students with problems of documentation. You can also refer to the College’s Undergraduate Bulletin, Chapter II Academic Standards.

**Plagiarism detection software** – The College subscribes to Turnitin.com and Blackboard has a similar module called SafeAssign. We will be using plagiarism detection software in this course for all writing assignments.

The first instance of plagiarism will result in a failing grade for the assignment in question. A second infraction will result in course failure and potential expulsion from the university.

**AMERICANS WITH DISABILITIES ACT (ADA) POLICIES**

Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office of Accessibility Services (OAS). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student’s eligibility from the OAS which is located at L66 in the New Building (212-237-8031). It is the student’s responsibility to initiate contact with the office and to follow the established procedures for having he accommodation notice sent to the instructor.


**Field Education in Community Organizing and Community Practice I Schedule**

**Week 1**

**Introduction to Course and internship projects and expectations**

**Discussion:** What is community service, community organizing and advocacy?

**Dos and Don’ts**

**Homework:** Draft an on campus project or need; or research community service options off campus

**Week 2**

**Organization and planning meeting for internships/community service projects.**

**Discussion:** Difference between social service and social change.

If decide on a group project, outline the problem and needs, and committee structure.
**Readings:**


**Facilitation Observation Analysis due**

**Week 4**  
*Exerting Power in the U.S. Political Context – what do we know? Roles of Fundraising*

**Readings:**
Rockeymoore: Foreword, Prequel, Intro and Verse 1 and 2, pp. i-35.

**Vision Statement due**

**Week 6**  
*Engaging in Protest; Lobbying; Running for Office*

**Readings:**
Rockeymoore: Verses 3, 4 and 5, pp. 36-58

**Event Critique due**

**Week 8**  
*Campaign Volunteering; Political Staffers; Networking*

**Readings:**
Rockeymoore: Verses 6, 7 and 8; pp. 59-80

**Strategic Plan draft due**

**Week 10**  
*Advocacy Organizations; Artistic Expression; Inaction in Action*

**Readings:**
Rockeymoore: Verses 9, 10 and Sequel, pp. 81-110

**Funding Proposal due**

**Week 12**  
*Presentations of strategic plan and funding proposal*

**Readings:**
Student proposals

**Week 14**  
*Reflection and Renewal - Team Project Roll out and Final Presentations*

**Readings:**
Students assign readings for the class

**Week 15**  
*Final Presentations continued*
Group Project Example: On Campus Book Drive

Students will host an on-campus book drive geared towards the reading requests of BTB (Books to Bars), an organization based in Philadelphia, PA, which supplies a specified range of books to people in prison. The main goal will be to collect the "right" books (primarily from faculty), identify a secondary organization (in case donated books fall outside of BTB's needs), and identify a third entity that would be willing to accept as salvage (and particularly for a few cents a pound), books that cannot be moved. In order to accomplish our mission, students will have to: get permission to hold the drive, secure a location on campus, get the word out, acquire boxes and packing tape, catalog, sort and pack the books, and get the books to their destination. In addition (because BTB depends entirely upon donations), our challenge is not only to do the above but raise enough funds to cover the transportation costs needed to get the books to Philly (whether we borrow the school's bus, hire people to move the books, or ship them).

Students will volunteer for (or be assigned to) one of the following committees:

Fundraising---Students need to do something small and something a bit larger. The activity can be anything from hosting a contest asking people to guess the number of jelly beans in a jar to developing a Go Fund Me page and/or something similar. Money will be needed for any boxes we can't get from around campus, tape, gas (maybe), a driver (maybe), and the use of the JJC bus (maybe). Any leftover money will be donated to BTB. The team will have to find out if we need permission to raise funds and how it will be collected and protected.

Personnel & Training---Tasked with seeing if they can convince other JJC groups from club row to help participate in the drive. Whether it is counting books, entering titles, or boxing donations, the more bodies, the better. This team will also be responsible for developing a plan that will inform volunteers on where to go, what to do, etc.

Logistics--These people will be responsible for determining who to ask for space, where we can hold the event, where books can be stored for a few days until boxed, who's in charge of the JJC bus, how to get a driver, what it would cost, etc. They will also take the lead in making sure that the space looks good when we leave and what to do with leftover canvas and/or plastic bags. They will similarly be responsible for relaying info regarding what happens to the books once they leave the school.

Marketing and Communications ---The students will find creative ways to get the word out (i.e. regarding who the charities are, the challenges faced by those behind bars, find some statistics re: reading---make an argument to help). They will not only create a flyer for the kiosk but make sure that copy gets into every suitable newsletter on campus. Maybe design a basic t-shirt so that helpers can be easily identified on work day. Arrange for an official photograph, etc. An invitation to pop by would need to go to the movers and the shakers such as NY and PA state representatives know about the event.

Events--The events committee will scout space, determine tables, set up, etc. They are responsible for making sure that the day goes right. They will also have to determine what will be needed for the day of delivery (if we take the books down) and the celebration event for the class (what would be involved and how we could ethically fund it).

Standards/Oversight/Planning-- For this project, people on this committee will come up with a way to separate, count, and/or catalogue the books. In the end, we need useable data that shows what we did, what was collected, and who participated. These people will be on task to take the lead on cataloging the books, as per their coding system.

Social Media--Perhaps a blog regarding life in prison with/without the right type of books; real-time updates on how the fundraising is going or how many books have been collected. Maybe a connection to clubs in case we need more muscle or volunteers. Someone to tweet a thank you picture of the drive and/or delivery. It would be nice to get a link of the event placed on John Jay webpage and maybe something tied in with connecting class to community.

Suggested Readings/Resources:


CHS 3XX Program Planning, Development and Evaluation
Professor’s name: Nancy Velazquez-Torres, PhD
Office location: 432.01
Phone: 212-237-8135
E-mail address: ntorres@jay.cuny.edu

Course Description

This course will provide students with a conceptual framework and a set of practical skills for understanding the design and effectiveness of human services programs. Students will acquire knowledge they can apply to critically planning, implementing and evaluating programs in a range of human services and community based settings. The course gives students an opportunity to design a plan to implement and evaluate a human services project that would address a community-level need.

Learning Outcomes

By the end of this course, students will be able to:

- Describe and demonstrate the steps involved in effectiveness-based program planning.
- Analyze client and community needs for human services organizations.
- Compare and contrast different agencies’ approaches in addressing community problems.
- Assess the design, implementation, and evaluation of programs that address human services and community needs.
- Employ program planning and evaluation perspectives, principles, and procedures in the design of human services and community justice programs.
- Demonstrate how to use program planning and evaluation for grant proposal writing.

Course Requirements

REQUIRED TEXTS


REQUIRED READINGS


Additional Readings


**Online Resources**


http://www.eval.org/p/cm/ld/fid=51

National Organization for Human Services

http://www.nationalhumanservices.org/home-

NeighborWorks

http://www.nw.org/network/index.asp

Success Measures

http://www.successmeasures.org/articles_and_publications

**GRADING**

This course will have quizzes on content from the readings, lectures, and class discussions. Class participation and assignments will also be evaluated. Due to the hands on and collaborative nature of the course, absences and tardiness will negatively impact a student’s class participation grade. If absent, it is the student’s responsibility to secure from a classmate a copy of the notes and other materials discussed in class. In order to participate actively and fully in class, students must read all required readings.

Final Grade will be calculated as follows:

- In-class and Online Participation: 15%
- Written Assignments: 20%
- Quizzes: 20%
Planning & Evaluation Project 45%

Program Planning & Evaluation Project:

You will select an area of interest and base your project on that specific human services context (e.g., youth services, homeless shelter, health services, etc.). The assignment will be segmented into three (3) parts that build off of each other and culminate in a comprehensive program planning and evaluation report. You will place a copy of the final project in your portfolio and also present the results in class.

Components of the written project:

Part 1 (10% of grade): Human services problem definition, focus population and context description, and ethical considerations. (3-5 pages, double-spaced, plus references)

Part 2 (10% of grade): Program plan including detailed description of intervention, goals, objectives, and program design. (5-7 pages, double-spaced, plus references)

Part 3 (15% of grade): Evaluation plan, program timeline, and description of resources for the program. (5-7 pages, double-spaced, plus references)

Evaluation

You will design a plan to evaluate a human services program or intervention that addresses a community-level need. For this project, you will act in the role of a consultant to a human services organization.

Oral Presentation (10% of grade): You will have 10 minutes to present your project to your classmates. It is recommended that you use a presentation program like Prezi or PowerPoint to illustrate and present your information.

STATEMENT OF THE COLLEGE POLICY ON PLAGIARISM

Plagiarism is the presentation of someone else’s ideas, words, or artistic, scientific, or technical work as one’s own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. It is the student’s responsibility to recognize the difference between statements that are common knowledge (which do not require documentation) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure on how and when to provide documentation are advised to consult with their instructors. The Library has free guides designed to help students with problems of documentation. You can also refer to the College’s Undergraduate Bulletin, Chapter II Academic Standards.
Plagiarism detection software – The College subscribes to Turnitin.com and Blackboard has a similar module called SafeAssign. We will be using plagiarism detection software in this course for all writing assignments. The first instance of plagiarism will result in a failing grade for the assignment in question. A second infraction will result in course failure and potential expulsion from the university.

AMERICANS WITH DISABILITIES ACT (ADA) POLICIES
Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office of Accessibility Services (OAS). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student’s eligibility from the OAS which is located at L66 in the New Building (212-237-8031). It is the student’s responsibility to initiate contact with the office and to follow the established procedures for having he accommodation notice sent to the instructor.

Source: Reasonable Accommodations: A Faculty Guide to Teaching College Students with Disabilities, 4th Ed., City University of New York, p.3. (http://www.jjay.cuny.edu/studentlife/Reasonable_Accommodations.pdf)

Tentative Schedule

The instructor reserves the right to modify the syllabus. Students will be given ample notice of any modifications.

Week 1 – Introduction
- Introduction to the course and community building
- Accountability and effectiveness-based program planning; Community focus
  - Reading:
    - Assessing current practices
      - Kettner & Moroney, Chapter 1 pp. 4-14
  - Assignment:
    - Post answers to these questions on the Blackboard discussion board:
      - What are the critical differences between the old focus on process in social services and the more recent focus on outcomes?
      - Why is it important to identify target populations as part of the planning process?

Week 2 – Theoretical Considerations
- Theoretical underpinnings of programming planning
  - Readings:
    - The use of theory in program planning
      - Kettner & Moroney, Chapter 2 pp. 32-42
    - Parameters of program planning and evaluation
      - Maher, Chapters 1 & 2 pp. 1-6
  - Assignments:
- Identify a social service program for each level: Organizational, Group, Individual. Compare the types of planning they have: strategic, management, program.
- Find an example of each type of planning and explain the main differences.

Week 3 – Standards and Ethics in Program Planning & Evaluation
  - Guiding principles for evaluators and ethical considerations
    - Readings:
      - American Evaluation Association Guiding Principles for Evaluators
    - Assignments:
      - What principles do you consider are extremely necessary when evaluating a community based organization and why? Post your answers on the discussion board.
      - Submit a three page paper on the case study’s program effectiveness or ineffectiveness. How can the evaluation help the program? Why are program evaluations necessary?

Week 4 – Social Problems/Issues; Theoretical Considerations of Need
  - Identifying and defining social problems/issues
    - Readings:
      - Understanding social problems and needs assessment
        - Kettner & Moroney, Chapter 3 pp. 44-57 & Chapter 4 pp. 60-76
    - Assignments:
      - Describe the differences between problem analysis and needs assessment.
      - Identify a social problem you would like to address as part of your final project.

Week 5 – Needs Assessment and Community Development
  - Methodological and measurement issues in needs assessment
    - Readings:
      - Needs assessment; Approaches to measurement
        - Kettner & Moroney, Chapter 5 pp. 78-100
      - New Evaluative Methods: Measuring Your Impact on the Community, pp. 8-10.
    - Assignments:
      - List the pros and cons for the different methodologies used to measure need and contribute to the discussion on this topic in Blackboard.
      - Specify the target population you will be designing a program for.

Week 6 – Needs Assessment and Intervention Strategies
• Instrumentation, involvement, and context
  o Reading:
    ▪ Clarification Phase
      • Maher, Chapter 3 pp. 7-38
• Developing program hypotheses
  o Readings:
    ▪ Selecting the appropriate intervention strategy
      • Kettner & Moroney, Chapter 6 pp. 106-119
  o Assignments
    ▪ Use the Needs Assessment Protocol Worksheet on p.19 to begin drafting the first part of your program planning and evaluation project.

Week 7 - Designing Effective Programs
• Formulating goals and objectives
  o Readings:
    ▪ Setting goals and objectives
      • Kettner & Moroney, Chapter 7 pp. 130-149
      • Maher, Chapter 4 pp. 39-50
  o Assignments:
    ▪ Post in Blackboard a one paragraph reflection on the assigned journal article.
    ▪ Submit a draft of the program hypothesis for your project and your purpose and goals.

Week 8 – Effective Programs and their Social Impact
• Elements of Program Design; Diversity Issues and Cultural Competence
  o Readings:
    ▪ Designing effective programs
      • Kettner & Moroney, Chapter 8 pp. 154-176
    ▪ Design phase
      • Maher, Chapter 4 pp. 51-61
    ▪ Cultural Competence in Program Planning
      • Practical Strategies for Culturally Competent Evaluation Guides
        o https://www.cdc.gov/dhdsp/docs/cultural_competence_guide.pdf
        o https://www.omh.ny.gov/omhweb/cultural_competence/guidance/agency_plan.html
  o Assignments:
    ▪ Submit a draft of your program design.
    ▪ Provide feedback to three of your peers.
Week 9 - Effective Programs and Participatory Action Research
- Documentation and data collection for programs
  - Readings:
    - Using management information
      - Kettner & Moroney, Chapter 9 pp. 192-216
    - Participatory Action Research: Involving “All the Players” in Evaluation and Change
  - Assignment: Revise your program design based on feedback.

Week 10 – Program Implementation and Program Evaluation, Part 1
- Readings:
  - The “Implementation Phase and Evaluation Phases”
    - Maher, Chapters 5-6
  - Performance Measurement, Monitoring and Program Evaluation
    - Kettner & Moroney, Chapter 10
  - Assignment: Design an evaluation plan for an agency or program you are familiar with.

Week 11 – Program Evaluation, Part 2
- Readings:
  - Impact program evaluation and research designs
    - Kettner & Moroney, Chapter 11
- Assignments:
  - Provide feedback to three of your peers on their evaluation plan.
  - Revise your evaluation plan based on feedback.

Week 12 – Cost benefit analysis; measuring and monitoring programs
- Readings:
  - Budgeting for financial control, management and planning
    - Kettner & Moroney, Chapter 12
    - Maher, pp.62-63
- Assignment: Complete the budget worksheet on pp 62-63.

Week 13 – Grant Opportunities: Identifying grants for non-profits
- The Foundation Center
  - [http://search.foundationcenter.org/](http://search.foundationcenter.org/)
  - Finding grants
  - Writing a RFP
Assignment: Find 3 funders who fund projects like the one you are proposing in your class project. Compare and contrast their RFPs. Which one would you consider submitting an RFP to? Why?

Week 14 – Student Presentations
- Students will present their program planning project and provide each other with critical feedback.
- Assignment: Submit a draft of your Program Planning & Evaluation Project.

Week 15 – Student Presentations
- Students will present their program planning project and provide each other with critical feedback.

FINAL: Completed Program Planning and Evaluation Project
CHS 4XX Senior Seminar in Human Services & Community Justice

Professor: Nancy Velazquez-Torres, PhD
Office Location: 432.01
Office Phone: (212) 237-8135
E-mail: ntorres@jjay.cuny.edu
Class Meeting Times:
Room:

Course Description:
In this seminar, students will integrate and synthesize the skills and knowledge acquired throughout the human services and community justice major. They will present a summative capstone portfolio documenting the integration of theory and practical experience. A section of the portfolio will include a reflective piece on their field experiences and a community project proposal to address a need previously identified. Evidence of meeting program learning outcomes and Human Services National Standards will be included.

Learning outcomes

1. Design a capstone portfolio based on previously studied theory and coursework.
2. Synthesize research findings, theories, and practice into a comprehensive explanation and resolution of an issue or problem previously identified.
3. Use knowledge acquired on community based approaches to justice in the development of a community project proposal.
4. Analyze and develop human services and community justice programs in the light of cultural diversity.
5. Submit a final portfolio in an academic and professional format appropriate for a human service professional as defined by the National Organization for Human Services.

Course pre-requisites or co-requisites
Completion of all core requirements and senior class standing is required.

COURSE REQUIREMENTS
Course Materials and Resources

Council for Standards in Human Service Education
http://www.cshse.org/standards.html

National Organization for Human Services
http://www.nationalhumanservices.org/home-

NeighborWorks
http://www.nw.org/network/index.asp

Recommended Readings


Klenowski, V. (2002). Developing Portfolios for Learning and Assessment: Processes and Principles


GRADING
Grades will be based on class participation, timeliness and quality of written assignments and final portfolio. If a completed portfolio is not submitted on time, you will receive a failing grade for the course.

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<th>Component</th>
<th>Percentage</th>
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<td>Portfolio</td>
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<td>Written Assignments</td>
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<tr>
<td>Community Project Proposal</td>
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<td>Oral Presentations</td>
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</tr>
<tr>
<td>Appendices</td>
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Class participation is critical. Missed classes or lack of participation in online discussions will have an adverse effect on your participation grade. If you miss a class, it is your responsibility to contact another student for the assignment and have the
assignment completed on time for the appropriate class. If, after you have the assignment, you have questions, you may contact the professor for clarification.

**Oral Presentations** – students will give two oral presentations. Once they choose a community intervention for their project and complete the need statement, students will be required to give a short 5-10 minute oral presentation to the class about their topic and the need statement. At the end of the semester students will also have to give an oral presentation about their final community project proposal. The formal will be similar to a thesis oral defense: students will present their proposal, the professor, classmates, and perhaps other professors in the major will ask questions about the topic and the proposal.

**Portfolio**
The largest component of your grade will be the quality of your final portfolio. Course assignments are designed to scaffold your development of a portfolio that demonstrates your accomplishments.

Written Assignments:

1. Reflective essay (3-4 pages) about the courses you took to fulfill the major. Comment on what courses you took, what you learned, and strengths and weaknesses of the courses. (5%)
2. Paper (4 pages) about your professional philosophy; including your values, beliefs, and perspectives as related to human services and community justice. (5%)
3. Reflective essay (3-4 pages) on your field experiences. Include supporting documentation (journal entries, timesheet, description of the organization, etc.). (5%)
4. Need statement (2 pages) (2%)
5. Community Project outline (2 pages), and beginning bibliography. (3%)
6. Literature Review and Bibliography with a minimum of 12 sources. (15%)
7. Community Project Proposal (25%)

**Community Project Outline**
- What type of need will you be highlighting?
- How will you document the need?
- What will you be submitting as a proposal? (Brief description of project)
- What type of support or resources do you need to complete the proposal?

**COMPONENTS OF THE COMMUNITY PROJECT PROPOSAL**

**Statement of Need, Problem Statement**
This component explains and justifies the problem that you have identified. Think of yourself as a debater. Assemble your facts and arguments and present them persuasively.

**Checklist**
• What is the problem or need? Why is this problem important?
• Who does it affect?
• Who is the target audience?
• What evidence do you have to show that the problem is real and important? Do you have statistical data? Are the data specific to your region or community? Where and how did you get this evidence?
• Do you have testimonial data from potential beneficiaries of the project? Can you prove that they also think that the problem is important?
• Do you have a solution? Why do you think it will work? Did it work elsewhere? Can your solution to this problem serve as a model for other places and groups?
• Present data, facts and statistics to support your argument that the need is real, urgent, serious, widespread, important, etc.

Goals, Objectives and Outcomes

This is where you explain what you hope to accomplish.
• A goal is a broad, conceptual statement.
• Objectives are more specific and refer to measurable outcomes of a specific set of activities.
• Outcomes are the effects that your project will have on the real world – the problem you described.

Plan of Work, Narrative or Project Description

Explain exactly what you are going to do. Write the project description so that the reader can envision the project from beginning to end. Make the logical flow of activities clear.

Explain how you will put your solution to the problem into practice or meet the need you have described.

Adapted from Typical Parts of a Community Project Proposal M. E. Swisher, Associate Professor Family, Youth & Community Sciences University of Florida

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THE FIRST INSTANCE OF PLAGIARISM WILL RESULT IN A FAILING GRADE FOR THE ASSIGNMENT IN QUESTION. A SECOND INFRACTION WILL RESULT IN COURSE FAILURE AND POTENTIAL EXPULSION FROM THE UNIVERSITY.

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**SCHEDULE OF CLASSES**

**Week One:** Introduction to the Course, Community Building and Course Syllabus Discussion  
**Assignment:** Post in Blackboard questions or comments about the syllabus.

**Week Two:** Human Services Professional Standards and Portfolio Requirements  
**Assignment:** Reflective essay (3-4 pages) on the courses you have taken for this major.

**Week Three:** Experiential Learning: Human Services and Community Justice Field Experiences  
**Assignment:** Paper (4 pages) about your professional philosophy including your values, beliefs, and perspectives as related to human services and community justice.

**Week Four:** Community Justice in Action  
**Assignment:** Identify a community and an intervention you would like to focus on in your community project proposal. Reflective essay (3-4 pages) on your field experiences, including
supporting documentation.

**Week Five:** Developing or Enhancing a Community Project  
**Assignment:** Support the need for this project with evidence. Submit a need statement. Oral Presentations.

**Week Six:** Writing the theoretical framework for your project.  
**Assignment:** Submit a community project outline with a bibliography. Oral Presentations continued. Post comments on one of your classmate’s presentations on Blackboard.

**Week Seven:** Drafting the Literature Review  
**Assignment:** Peer Reviews of Outlines; start literature review

**Weeks Eight:** Individual Conferences to review proposal outline and timeline; continue working on literature review

**Weeks Nine and Ten:** Review Literature Review process; and Drafting the Proposal  
**Assignment:** Peer Reviews of Proposals

**Week Eleven:** Submit rough draft of proposals. Comment/reflect on your own proposals as a post on Blackboard.

**Weeks Twelve and Thirteen:** Revise Proposals and Prepare Oral Presentations

**Week Fourteen:** Oral Presentations and Organization of Portfolio.

**Week 15:** Final Portfolio Submission and Self-Assessment
Appendix C: NYSED Forms
# Task 1: Institution and Program Information

## Institution Information

<table>
<thead>
<tr>
<th><strong>Institution Name:</strong></th>
<th>John Jay College of Criminal Justice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institution Code (6 digits):</strong></td>
<td>333000</td>
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<table>
<thead>
<tr>
<th><strong>Institution Address:</strong></th>
<th>524 W. 59th Street</th>
</tr>
</thead>
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<tr>
<td><strong>City:</strong></td>
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<td><strong>State/Country:</strong></td>
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<tr>
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| **Regents Regions:** | New York City Region |

**Specify campus(s) of the institution where program is offered, if other than the main campus:**

<table>
<thead>
<tr>
<th><strong>Specify any other additional campus(s) where the program is offered besides the ones selected above:</strong></th>
<th>NA</th>
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<tr>
<td><strong>If any courses will be offered off campus, indicate the location and number of courses and credits:</strong></td>
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| **If the program will be registered jointly with another institution, please provide the partner institution's name:** | NA |

## Program Information for New Programs

<table>
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<tr>
<th><strong>Program Title:</strong></th>
<th>Human Services and Community Justice</th>
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<td><strong>Degree Award:</strong></td>
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(Please note: John Jay College also requests a separate NYSED program code for the CUNY Macaulay Honors College version of this program)

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<th><strong>HEGIS code:</strong></th>
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<tr>
<td><strong>Number of Credits</strong>:</td>
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1 CUNY and SUNY institutions: contact System Administration for proposal submission process.

June 2014
* If the program contains multiple options or concentrations that affect the number of program credits, list the total number of program credits required for each option:

| Option/Concentration Name: NA | Credits: NA |

If program is part of a dual degree program, provide the following information:

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<th>Program Title:</th>
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### Section III. Contact Information

<table>
<thead>
<tr>
<th>Name of contact person</th>
<th>Ms. Katherine Killoran</th>
</tr>
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<tbody>
<tr>
<td>Title of contact person:</td>
<td>Executive Academic Director, Office of Undergraduate Studies</td>
</tr>
<tr>
<td>Telephone</td>
<td>212-237-8263</td>
</tr>
<tr>
<td>Fax:</td>
<td>NA</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:kkiloran@jjay.cuny.edu">kkiloran@jjay.cuny.edu</a></td>
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Table 1a: Undergraduate Program Schedule

- Indicate academic calendar type: _X_Semester _Quarter _Trimester _Other (describe)
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

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Term credit total: 15 9 3

Program Totals: Credits: 120 Liberal Arts & Sciences: 93 Major: 48 Elective & Other: 30

Cr: credits  LAS: liberal arts & sciences  Maj: major requirement  New: new course  Prerequisite(s): list prerequisite(s) for the noted courses
Faculty teaching at the graduate level must have an earned doctorate/terminal degree or demonstrate special competence in the field. Provide information on faculty members who are **full-time at the institution** and who will be teaching each course in the major field or graduate program. The application addendum for professional licensure, teacher certification, or educational leadership certification programs may provide additional directions for those types of proposals.

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<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/ licenses; occupational experience; scholarly contributions, etc</th>
</tr>
</thead>
</table>
| Adams, Carlton Jama, Assoc. Prof. & Chair, Dept. of Africana Studies | AFR 1XX Introduction to Community Justice in Human Systems  
AFR 248 Men: Masculinities in the United States  
AFR 347 The Psychology of Oppression | 57% | BS, John Jay, CUNY; MA, City College, CUNY; PhD, The Graduate School & Univ. Center, CUNY | NYS Licensed Clinical Psychologist  
Cert. in Organizational Development, William Alanson White Institute, NYC  
Scholarly publications in the field |
| Booker, Teresa, Asst. Prof., Dept. of Africana Studies | AFR 229 Restorative Justice: Making Peace & Resolving Conflict  
AFR 3XX Field Education in Community Organizing and Community Practice I | 14% | BA UNC Charlotte; MA, MPhil, PhD, The Graduate School and University Center, CUNY | Scholarly publications in the field |
| Delucia, Robert, Prof., Dept. of Counseling | CHS 150 Foundations of Human Services Counseling  
CHS 3XX Field Education in Human Services I  
CHS 381 Field Experience in Human Services II | 100% | BS, MS, Lehman CUNY; EdD Fairleigh Dickinson | NYS Licensed Clinical Mental Health Counselor  
NYS Licensed Clinical Marriage & Family |
| Endsley, Crystal  
Department of Africana Studies | AFR 1XX Introduction to Community Justice in Human Systems | 14% | BFA, Old Dominion University; MEd, Pennsylvania State University; PhD, | Scholarly publications in the field |
<table>
<thead>
<tr>
<th>Garot, Robert, Asst. Prof., Dept. of Sociology</th>
<th>CHS 2XX Culture, Direct Service &amp; Community Practice</th>
<th>7%</th>
<th>BA, MA, PhD, UCLA</th>
<th>Scholarly publications in the field</th>
</tr>
</thead>
</table>
| Gordon-Nembhard, Jessica, Assoc. Prof., Dept. of Africana Studies | AFR 1XX Introduction to Community Justice in Human Systems  
AFR 227 Community-Based Approaches to Justice  
AFR 229 Restorative Justice: Making Peace & Resolving Conflict  
AFR 315 Community Best Practices in the Africana World  
AFR 317 Environmental Racism  
AFR 319 Self, Identity and Justice: Global Perspectives  
AFR 3XX Field Education in Community Organizing and Community Practice I  
AFR 3XX Field Education in Community Organizing and Community Practice II  
AFR 3XX Research Methods in Community Justice and Human Systems  
AFR 322 Inequality & Wealth | 14% | BA, Yale; MAT, Howard Univ. School of Edu.; MA, PhD, UMass | Author of *Collective Courage: A History of African American Cooperative Economic Thought and Practice*  
Past President, National Economic Association  
Fellow, The Centre for the Study of Co-operatives, University of Saskatchewan (Canada)  
Affiliate, The Center on Race and Wealth, Department of Economics, Howard University  
Scholarly publications in the field |
<table>
<thead>
<tr>
<th>Name</th>
<th>Courses</th>
<th>Hours</th>
<th>Institution/Qualifications</th>
<th>Experience/Other</th>
</tr>
</thead>
</table>
| Lewis, Maat Erica, Assoc. Prof., Dept. of Counseling | CHS 150 Foundations of Human Services Counseling  
CHS 2XX Culture, Direct Service & Community Practice  
CSL 130 Effective Parenting  
CSL 280 Selected Topics in Counseling and Human Services | 100%  | Morgan State, MA, Psych-Organizational; PhD, Teachers College, Columbia  
Former Dir. Of JJ Counseling Center  
NYS Licensed Counseling Psychologist  
Board Certification in African-Centered/Black Psychology; Certificate in Transpersonal Breathwork & Transpersonal Psychotherapy |                                                                                       |
| Melendez, Mickey Asst. Prof., Dept. of Counseling | CHS 150 Foundations of Human Services Counseling  
CHS 230 Culture, Direct Service & Community Practice  
CHS 235 Theories of Assessment and Intervention  
CSL 220 Leadership  
CSL 342 Introduction to Counseling Psychology  
CSL 363 Work, Vocational Development & Social Justice  
CHS 4XX Senior Seminar in Human Services & Community Justice | 100%  | BS, EdM, Boston Univ.; PhD, Michigan State  
Career Counseling Minor Coordinator, Human Services/Counseling |                                                                                       |
| Sanchez, Caridad, Assoc. Prof., Dept. of Counseling | CHS 150 Foundations of Human Services Counseling  
CHS 310 Advanced Interpersonal Counseling Skills (now CSL 210)  
CSL 211 Peer Counseling | 100%  | BA, New York University; MSE, PhD, Fordham University  
Chair, Department of Counseling  
NYS Licensed Mental Health Counselor  
Faculty Supervisor, Peer Counseling Training Program |                                                                                       |
<table>
<thead>
<tr>
<th>Practicum</th>
<th>CHS (CSL) 311 Peer Counseling Practicum (currently CSL 211, revision)</th>
</tr>
</thead>
</table>
| Stavrianopoulos, Katherine, Assoc. Prof., Dept. of Counseling | CHS 150 Foundations of Human Services  
CHS 299 Family Stress, Resiliency and Support Systems  
CSL 280 Selected Topics in Counseling and Human Services |
| 100% | BA Hunter CUNY; MS, PhD, Fordham  
NYS Licensed Mental Health Counselor  
NYS Licensed Psychologist  
Postdoctoral certificate in Couples and Family Therapy  
Certified Therapist & Supervisor in Emotionally Focused Therapy (EFT)  
Deputy Chair of Counseling Department |
| Velazquez-Torres, Nancy, Assoc. Prof. & Chair, SEEK Dept. | CHS 3XX Program Planning, Development, and Evaluation  
CHS 4XX Senior Seminar in Human Services and Community Justice |
| 7% | BA, Inter American Univ. of Puerto Rico; MS, Queens, CUNY; PhD, New Mexico State University  
New York State ESL Teacher Certification  
Certified Professional Grant Writer by The Grant Institute  
Scholarly contributions and experience in Educational and Non-profit Program Management, grant writing, Developmental Education, Curriculum Design, Culturally Responsive Pedagogy, TESOL, Prior Learning Assessment and Learning Technologies |
Faculty teaching at the graduate level must have an earned doctorate/terminal degree or demonstrate special competence in the field. Provide information on part-time faculty members who will be teaching each course in the major field or graduate program. The application addendum for professional licensure, teacher certification, or educational leadership certification programs may provide additional directions for those types of proposals.

<table>
<thead>
<tr>
<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Program Courses to be Taught</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; occupational experience; scholarly contributions, etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beatty, Karen, Adjunct Assistant Professor Department of Counseling</td>
<td>CHS 150 Foundations of Human Service Counseling</td>
<td>MA, Montclair State University Ph.D Union Graduate School</td>
<td>Licensed Mental Health Counselor Responder, New York City Medical Reserve Corps</td>
</tr>
<tr>
<td>Franks, Cheryl, HEO Depart. of SEEK</td>
<td>CHS 2XX Culture, Direct Service &amp; Community Practice CHS 3XX Field Education in Human Services CHS 381 Field Education in Human Services II</td>
<td>BS, Ohio State University; MSSW, PhD, Columbia University</td>
<td>Licensed Social Worker</td>
</tr>
<tr>
<td>King-Toler, Erica, Asst. Prof., SEEK Dept.</td>
<td>CHS 2XX Culture, Direct Service &amp; Community Practice</td>
<td>BS, Hampton; MA, Med, PhD, Teachers College, Columbia</td>
<td>New York State Licensed Clinical Psychologist Scholarly contributions in Women and work, Counseling the culturally different, Cultural competence in training educators, mental health providers and criminal justice professionals.</td>
</tr>
<tr>
<td>Maldonado, Joseph</td>
<td>CHS 230 Culture, Direct Service &amp; Community Practice CSL 220 Leadership CSL 233 Multicultural Issues in Human Services CSL 342 Introduction to Counseling Psychology</td>
<td></td>
<td>Licensed Clinical Social Worker</td>
</tr>
<tr>
<td>Name</td>
<td>Department</td>
<td>Courses Offered</td>
<td>Qualifications/Experiences</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Shoot, Felice</td>
<td>Dept. of Counseling</td>
<td>CHS 150 Foundations of Human Services Counseling</td>
<td>M.A.T, Binghamton, SUNY M.Ed Hunter College,CUNY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSL 233 Multicultural Issues in Human Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHS 235 Theories of Assessment and Intervention</td>
<td></td>
</tr>
<tr>
<td>Solis, Carmen</td>
<td>Assoc. Prof., SEEK Dept.</td>
<td>CHS 2XX Theories of Assessment and Intervention</td>
<td>BA, MSW, Rutgers; DSW, Hunter Graduate School of Social Work, The Graduate School &amp; Univ. Center, CUNY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHS 3XX Program Planning, Development, and Evaluation</td>
<td></td>
</tr>
<tr>
<td>Son, Monika,</td>
<td>Lecturer, Depart. of SEEK</td>
<td>CHS 3XX Field Education in Human Services I</td>
<td>BA, MSEd, Fordham PhD Developmental Psychology, CUNY Graduate Center</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor-Leacock, Betty, Adjunct Lecturer Dept. of Counseling</td>
<td>CSL 260 Gender and Work Life</td>
<td>BA, Temple University; MSEd, Professional Diploma, Fordham University</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 4: Faculty to be Hired

If faculty must be hired, specify the number and title of new positions to be established and minimum qualifications.

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th>No. of New Positions</th>
<th>Minimum Qualifications (including degree and discipline area)</th>
<th>F/T or P/T</th>
<th>Percent Time to Program</th>
<th>Expected Course Assignments</th>
<th>Expected Hiring Date</th>
</tr>
</thead>
</table>
| Assistant or Associate Professor | 1                    | Ph.D./DSW degree in Social Work, Human Services, Counseling or related field; MSW from a CSWE accredited program; certification/license HS-BCP considered a plus | FT         | 100%                    | • Foundations in Human Services  
  • Culture, Direct Services & Community Practice  
  • Theories of Assessment & Intervention  
  • Advanced Interpersonal Counseling Skills  
  • Field Education in Human Services  
  • Senior Seminar/Capstone in Human Services and Community Justice | Fall 2019            |
Appendix D. CUNY Financial Forms
<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1 2017-18</th>
<th>Year 2 2018-19</th>
<th>Year 3 2019-20</th>
<th>Year 4 2020-21</th>
<th>Year 5 2021-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$0</td>
<td>$0</td>
<td>$106,200.00</td>
<td>$109,386.00</td>
<td>$112,666.87</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$16,447.38</td>
<td>$25,409.41</td>
<td>$34,894.74</td>
<td>$44,922.02</td>
<td>$55,517.35</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$0</td>
<td>$0</td>
<td>$63,720.00</td>
<td>$65,631.60</td>
<td>$67,599.84</td>
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<tr>
<td>Part Time Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>$3,000.00</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>$5,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total all</td>
<td>$24,447.38</td>
<td>$29,409.41</td>
<td>$208,814.74</td>
<td>$223,939.62</td>
<td>$239,784.06</td>
</tr>
</tbody>
</table>

Rate of inflation used is 3%
## Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th>Revenues[1]</th>
<th>1st Year 2017-18</th>
<th>2nd Year 2018-19</th>
<th>3rd Year 2019-20</th>
<th>4th Year 2020-21</th>
<th>5th Year 2021-22</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue[3]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td>$173,449</td>
<td>$332,626</td>
<td>$562,613</td>
<td>$907,428</td>
<td>$1,037,720</td>
</tr>
<tr>
<td>02. From New Sources[5]</td>
<td>$206,524</td>
<td>$361,196</td>
<td>$560,822</td>
<td>$637,895</td>
<td>$772,660</td>
</tr>
<tr>
<td><strong>03. Total</strong></td>
<td>$206,524</td>
<td>$361,196</td>
<td>$560,822</td>
<td>$637,895</td>
<td>$772,660</td>
</tr>
<tr>
<td><strong>Other Revenue[7]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources §</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>08. From New Sources **</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>09. Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Grand Total[8]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources §</td>
<td>$173,449</td>
<td>$332,626</td>
<td>$562,613</td>
<td>$907,428</td>
<td>$1,037,720</td>
</tr>
<tr>
<td>11. From New Sources **</td>
<td>$379,973</td>
<td>$693,822</td>
<td>$1,123,434</td>
<td>$1,545,324</td>
<td>$1,810,380</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$379,973</td>
<td>$693,822</td>
<td>$1,123,434</td>
<td>$1,545,324</td>
<td>$1,810,380</td>
</tr>
</tbody>
</table>

[1] Inflation rate used for projections is 3%.
### DIRECT OPERATING EXPENSES

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include additional expenses incurred by other programs when satisfying needs of new program. Faculty need should be commensurate with &quot;net section needs&quot; based on enrollment (see &quot;Enroll &amp; Seat Need Projections&quot; tab)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (Asst. Prof. rank)</td>
<td></td>
<td></td>
<td>$75,000</td>
<td>$77,250</td>
<td>$79,567</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
<td></td>
<td></td>
<td>$0</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
<td></td>
<td></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (41.6%)</td>
<td>$0</td>
<td>$0</td>
<td>$31,200</td>
<td>$32,136</td>
<td>$33,100</td>
</tr>
<tr>
<td><strong>Total (Links to Full-Time Faculty on Program Exp Worksheet)</strong></td>
<td>$0</td>
<td>$0</td>
<td>$106,200</td>
<td>$109,386</td>
<td>$112,667</td>
</tr>
</tbody>
</table>

### Part Time Faculty Actual Salaries

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 course for adjunct faculty to replace FT Faculty to Coordinate Major - 1 course release per year (calculated at Asst Prof. Rank $73.53 x 45 hrs)</td>
<td>$3,308</td>
<td>$3,407</td>
<td>$3,509</td>
<td>$3,614</td>
<td>$3,722</td>
</tr>
<tr>
<td>1 course for adjunct faculty to replace FT faculty who provides advisement &amp; assessment in the major - 1 course release per year (calculated at Asst Prof. Rank $73.53 x 45 hrs)</td>
<td>$3,308</td>
<td>$3,407</td>
<td>$3,509</td>
<td>$3,614</td>
<td>$3,722</td>
</tr>
<tr>
<td>Adjunct faculty taught sections (Asst. Prof. Rank, $73.53 x 45 hrs), starting with 2 sections in yr 1, increasing by 2 each year</td>
<td>$6,616</td>
<td>$13,628</td>
<td>$21,055</td>
<td>$28,912</td>
<td>$37,220</td>
</tr>
<tr>
<td><strong>Part Time Faculty Actual Fringe Benefits (24.3%) (Links to Part-Time Faculty Program Exp Worksheet)</strong></td>
<td>$3,215</td>
<td>$4,967</td>
<td>$6,822</td>
<td>$8,782</td>
<td>$10,853</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$16,447</td>
<td>$25,409</td>
<td>$34,895</td>
<td>$44,922</td>
<td>$55,517</td>
</tr>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Full Time Staff</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Salary (list separately)</td>
<td>$45,000</td>
<td>$46,350</td>
<td>$47,740</td>
<td></td>
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</tr>
<tr>
<td>Fringe Benefits (41.6%)</td>
<td>$0</td>
<td>$0</td>
<td>$18,720</td>
<td>$19,282</td>
<td>$19,860</td>
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<tr>
<td><strong>Total</strong> (Links to Full-Time Staff on Program Exp Worksheet)</td>
<td>$0</td>
<td>$0</td>
<td>$63,720</td>
<td>$65,632</td>
<td>$67,600</td>
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<tr>
<td><strong>PART-TIME STAFF</strong></td>
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</tr>
<tr>
<td>Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Replacement Costs (replacement of full-time faculty - e.g. on release time - with part-time faculty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Assistants</td>
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<tr>
<td>Student Hourly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fringe Benefits (24.3%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Part-Time Staff on Program Exp Worksheet)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>LIBRARY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>$3,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Staff Full Time (List Separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fringe Benefits (41.6%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Staff Part Time (List Separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fringe Benefits (24.3%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL</strong> (Links to Library on Program Exp Worksheet)</td>
<td>$3,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>EQUIPMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardware</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other (Specify)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
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<td>$0</td>
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<td><strong>LABORATORIES</strong></td>
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<td>Laboratory Equipment</td>
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<td>----</td>
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<tr>
<td>Other (list separately)</td>
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<tr>
<td><strong>TOTAL</strong> (Links to Laboratories on Program Exp Worksheet)</td>
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<table>
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<tr>
<th>SUPPLIES AND EXPENSES (OTPS)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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</thead>
<tbody>
<tr>
<td>Consultants and Honoraria</td>
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<tr>
<td>Office Supplies</td>
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<tr>
<td>Instructional Supplies</td>
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<td>Faculty Development</td>
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<td>Travel and Conferences</td>
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<td>Membership Fees</td>
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<tr>
<td>Advertising and Promotion</td>
<td>$5,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
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<tr>
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<td>Computer Software</td>
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<td>Computer License Fees</td>
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<td>Computer Repair and Maintenance</td>
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<tr>
<td>Equipment Repair and Maintenance</td>
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<td><strong>New Total Supplies and OTPS Expenses</strong> (Links to Supplies on Program Exp Worksheet)</td>
<td>$5,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
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<table>
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<th>CAPITAL EXPENDITURES</th>
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<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>Facility Renovations</td>
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<td>Classroom Equipment</td>
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<td></td>
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<tr>
<td>Other (list separately)</td>
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<tr>
<td><strong>TOTAL</strong> (Links to Capital Expenditures on Program Exp Worksheet)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>Other</strong> (list separately)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL (Links to Other on Program Exp Worksheet)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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Rate of inflation used is 3%
<table>
<thead>
<tr>
<th>EXISTING FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;) - 95% of JJ students are NYS residents</td>
<td>24</td>
<td>41</td>
<td>68</td>
<td>108</td>
<td>116</td>
</tr>
<tr>
<td>Tuition Income (calculates 2% increase per year after Fall 2015)</td>
<td>$6,030</td>
<td>$6,330</td>
<td>$6,457</td>
<td>$6,586</td>
<td>$6,717</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$144,720</td>
<td>$259,530</td>
<td>$439,049</td>
<td>$711,259</td>
<td>$779,224</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$144,720</td>
<td>$259,530</td>
<td>$439,049</td>
<td>$711,259</td>
<td>$779,224</td>
</tr>
</tbody>
</table>

| Tuition & Fees:             |          |          |            |           |           |
| # of EXISTING FULL-TIME, Out-of-State Students (linked from "Enroll & Seat Need Projections") - 5% of JJ students are from out of state | 1        | 2        | 4          | 5         | 6         |
| Annual Avg # of Credits per FT student (24-30) | 17.25    | 17.25    | 17.25      | 17.25     | 17.25     |
| Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015) | $535     | $560     | $571       | $583      | $594      |
| Total Tuition               | $9,229   | $19,320  | $39,413    | $50,251   | $61,508   |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) |          |          |            |           |           |
| Total Fees                  | 0        | 0        | 0          | 0         | 0         |
| Total Out-of-State Tuition & Fees | $9,229   | $19,320  | $39,413    | $50,251   | $61,508   |

| TOTAL EXISTING FULL-TIME TUITION REVENUE | $153,949 | $278,850 | $478,462 | $761,510 | $840,731 |

<table>
<thead>
<tr>
<th>EXISTING PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td># of EXISTING PART-TIME, In-State Students</td>
<td>5</td>
<td>11</td>
<td>20</td>
<td>34</td>
<td>45</td>
</tr>
<tr>
<td>Total Enrolled Credits</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
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<tr>
<td>Tuition Income</td>
<td>$260</td>
<td>$275</td>
<td>$281</td>
<td>$286</td>
<td>$292</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$19,500</td>
<td>$45,375</td>
<td>$84,150</td>
<td>$145,916</td>
<td>$196,987</td>
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<tr>
<td>Student Fees</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$19,500</td>
<td>$45,376</td>
<td>$84,151</td>
<td>$145,918</td>
<td>$196,989</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tuition &amp; Fees:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># of EXISTING PART-TIME Out of State Students</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Enrolled Credits</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Tuition Income</td>
<td>$535</td>
<td>$560</td>
<td>$571</td>
<td>$583</td>
<td>$594</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$8,400</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Student Fees</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$8,400</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

**TOTAL EXISTING PART TIME REVENUE** | $19,500 | $53,776 | $84,151 | $145,918 | $196,989 |

**TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)** | $173,449 | $332,626 | $562,613 | $907,428 | $1,037,720 |

<table>
<thead>
<tr>
<th>NEW FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;) - 95% of JJ students are NYS residents</td>
<td>29</td>
<td>48</td>
<td>71</td>
<td>81</td>
<td>95</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Tuition Income (Calculates 2% increase per year after Fall 2015)</td>
<td>$6,030</td>
<td>$6,330</td>
<td>$6,457</td>
<td>$6,586</td>
<td>$6,717</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$174,870</td>
<td>$303,840</td>
<td>$458,419</td>
<td>$533,444</td>
<td>$638,157</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$174,870</td>
<td>$303,840</td>
<td>$458,419</td>
<td>$533,444</td>
<td>$638,157</td>
</tr>
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</table>

Tuition & Fees:

<table>
<thead>
<tr>
<th># of NEW FULL-TIME, Out-of-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;) - 5% of JJ students are from out of state</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Avg # of Credits per FT student (24-30)</td>
<td>17.25</td>
<td>17.25</td>
<td>17.25</td>
<td>17.25</td>
<td>17.25</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$535</td>
<td>$560</td>
<td>$571</td>
<td>$583</td>
<td>$594</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$9,229</td>
<td>$19,320</td>
<td>$39,413</td>
<td>$40,201</td>
<td>$51,256</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
<td>$9,229</td>
<td>$19,320</td>
<td>$39,413</td>
<td>$40,201</td>
<td>$51,256</td>
</tr>
</tbody>
</table>

**TOTAL NEW FULL-TIME TUITION REVENUE**

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW PART-TIME STUDENTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW PART-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>10</td>
<td>14</td>
<td>24</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year- Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>8.625</td>
<td>8.625</td>
<td>8.625</td>
<td>8.625</td>
<td>8.625</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$260</td>
<td>$275</td>
<td>$281</td>
<td>$286</td>
<td>$292</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$22,425</td>
<td>$33,206</td>
<td>$58,064</td>
<td>$59,225</td>
<td>$72,995</td>
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</table>
### Student Fees (enter ANNUAL program fees other than standard CUNY fees)

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$22,425</td>
<td>$33,206</td>
<td>$58,064</td>
<td>$59,225</td>
<td>$72,995</td>
</tr>
</tbody>
</table>

### Tuition & Fees:

- **# of NEW PART-TIME, Out-of-State Students**: 0 1 1 1 2
- **Total Enrolled Credits**: (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)
  - 8.625 8.625 8.625 8.625 8.625
- **Tuition Income (Specify Rate per credit) calculates 2% increase per year**
  - $535 $560 $571 $583 $594
- **Total Tuition**
  - $0 $4,830 $4,927 $5,025 $10,251

### Student Fees (enter ANNUAL program fees other than standard CUNY fees)

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$4,830</td>
<td>$4,927</td>
<td>$5,025</td>
<td>$10,251</td>
</tr>
</tbody>
</table>

**TOTAL NEW PART-TIME REVENUE**

|                  | $22,425  | $38,036  | $62,990    | $64,250   | $83,246   |

**TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)**

|                  | $206,524 | $361,196 | $560,822   | $637,895  | $772,660  |

**OTHER REVENUE**

<table>
<thead>
<tr>
<th>Other Revenue From Existing Sources (specify and explain)-</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINKS TO REVENUE SPREADSHEET ROW 13)</td>
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</table>

<table>
<thead>
<tr>
<th>Other Revenue New (specify and explain) (LINKS TO REVENUE SPREADSHEET ROW 15)</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
</table>

John Jay has a one-year retention rate of 77.6% based on the entering class F14

Enrollment projections assume a 4 year graduation rate of 20.8% which is our average graduation rate over the five most recent years.
<table>
<thead>
<tr>
<th>Projected Enrollment</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>24</td>
<td>41</td>
<td>68</td>
<td>108</td>
<td>116</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Existing Full-time Total</strong></td>
<td>25</td>
<td>43</td>
<td>72</td>
<td>114</td>
<td>122</td>
</tr>
<tr>
<td><strong>Existing Part-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>5</td>
<td>11</td>
<td>20</td>
<td>34</td>
<td>45</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Existing Part-time Total</strong></td>
<td>5</td>
<td>12</td>
<td>21</td>
<td>36</td>
<td>47</td>
</tr>
<tr>
<td><strong>New Full-time Students</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>29</td>
<td>48</td>
<td>71</td>
<td>81</td>
<td>95</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>NEW Full-time Total</strong></td>
<td>30</td>
<td>50</td>
<td>75</td>
<td>85</td>
<td>100</td>
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<tr>
<td><strong>New Part-time Students</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>10</td>
<td>14</td>
<td>24</td>
<td>24</td>
<td>29</td>
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<tr>
<td>Out-of-State</td>
<td>-</td>
<td>1</td>
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<tr>
<td><strong>New Part-time Total</strong></td>
<td>10</td>
<td>15</td>
<td>25</td>
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**NOTES:**

*New* students are students who would not otherwise have be enrolled in your college if this program were not offered. The proposal text should explain the basis for this enrollment estimate.

*Existing* Students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.

<table>
<thead>
<tr>
<th>Section Seats per Student</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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<td><strong>Full-time Students</strong></td>
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<td>Existing Courses</td>
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<td><strong>Total (normally equals 10)</strong></td>
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<td>10</td>
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## Part-Time Students

<table>
<thead>
<tr>
<th></th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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<tr>
<td><strong>Existing Courses</strong></td>
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## Seat & Section Needs

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<th></th>
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<th>Year Three</th>
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<td>(110)</td>
<td>(186)</td>
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<td>(327)</td>
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<tr>
<td>New Courses</td>
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<td><strong>Seat Need for New Students</strong></td>
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<td><strong>Average Seats per Section</strong></td>
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<tr>
<td><strong>Net New Section Need</strong></td>
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<td></td>
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<td>19.17</td>
<td>29.17</td>
<td>32.50</td>
<td>38.50</td>
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</table>
Appendix. E. Student Survey Questions

1. Would you be interested in being a helping professional?
2. Are you interested in studying justice issues in your community?
3. Would you be interested in doing research and applying your classroom knowledge to address justice issues in your community?
4. Are you interested in studying policy issues that affect your community?
5. Are you interested in being an advocate for community justice?
6. Would you consider majoring in Human Services and Community Justice?
7. How many earned credits do you have? Choose one box from the drop down menu.
8. What is your major?
9. Do you have a minor?
10. If yes, what is your minor? Choose one box from the drop down menu.
Appendix F. Other Human Services Programs

**New York City College of Technology**, AAS in Human Services & BS in Human Services
Accredited by the Council for Standards in Human Services Education.

Curriculum Distinctness:
- Completion of 20 hours of volunteer work and design a model of a volunteer program for human services.
- Professional internship requiring 200 hours a semester for two semesters.
- Utilization and delivery of advanced human services skills successfully in an approved community-based internship site, which includes an assessment of an agency, followed by an implementation of a change project.

Special Courses: Volunteerism, Women’s Health Issues

**Cortland, State University of NY**, BS in Human Service Studies

Curriculum Distinctness:
- Interdisciplinary program designed for transfer students with the A.S., A.A., or A.A.S. in human services or chemical dependency.
- Courses in the following categories:
  - Research and Statistical Tools
  - Public Policy
  - Management and Administration
  - Theories of Human Interaction
  - Issues in Prejudice and Discrimination

Special Courses: Health Problems of the Underserved

**Touro College**, BS in Human Services

Curriculum Distinctness:
- Human Services Base (42 credits).
- Concentration (six to seven courses, or at least 21 credits).
- Seniors with a GPA of 3.0 or above who are interested in mental health counseling can earn twelve (12) graduate credits toward the Master of Science degree in Mental Health Counseling while pursuing a Bachelor of Science degree in Human Services.
- Human Services Field Project
- Six areas of specialization: Addiction Services, Adult and Family Services, Child and Youth Services, Developmental Disabilities, Gerontological Services, Human Service Administration

Northeastern University, Boston: BA in Human Services, BS in Human Services, BS in Human Services and American Sign Language, BA Human Services and International Affairs, BS in Human Services & Criminal Justice.

Curriculum Distinctness:
- Extensive experiential learning opportunities and focus on social change.
- Through service-learning, co-op & internship program, students are prepared to work in various capacities including: direct service, counseling organizational development, political advocacy, community development, and nonprofit management.
- All Human Services majors are required to complete a one-semester internship in a human services organization combined with a concurrent weekly seminar and reading.

Special Courses: Strategic Philanthropy & Nonprofit Management; Social Policy, Advocacy, & Activism

Metropolitan College of New York, Bachelors of Professional Studies in Human Services

Curriculum Distinctness:
- Purpose-centered education, Constructive action, Experiential learning.
- The program focuses on 8 essential purposes: Self-Assessment & Preparation for Practice, Developing Empowering Professional Relationships in the Workplace, Developing Empowerment Through Work in Groups, Promoting Empowerment Through Teaching & Communication, Promoting Empowerment Through Counseling, Promoting Empowerment Through Community Liaison, Developing Empowerment Through Supervision, Promoting Empowering Change

Special Courses: Constructive Action Project, Counseling Systems: Prevention & Technology

George Washington University, BA in Human Services, Combined BA/MPA with Human Services and Public Administration

Curriculum Distinctness: Building upon empathy and commitment to social justice, students actively engage in mentoring, community-based research and service projects. Work in the community against injustice, discrimination, and poverty, while making a focused impact on the people living in Washington, DC.

Special Courses: Human Services & Community: Empowerment for Social Change, Ethics in Business & the Professions

California State University, Fullerton: Bachelor of Science Degree in the Human Services

Curriculum Distinctness
The Fieldwork Program is one of few undergraduate human services programs on the West Coast that is accredited by the National Council on Standards in Human Services
**Education.** The major is structured around four interrelated components: theoretical foundations and intervention.

**Special Courses**  
Intracultural Socialization Patterns  
Human Services Delivery to Communities

**Western Washington University**, Bachelor of Arts in Human Services

**Curriculum Distinctness**  
The curriculum includes 76 required credits that involve the development of knowledge, skills, theory, and experience with a "Capstone" that unifies all of these elements together. A distance learning program is available.

**Special Courses**  
Capstone Portfolio: A summative portfolio that integrates learning through discussion and writing related to CSHSE National Standards. Completes benchmark assessment in the Human Services major.
Appendix G. National Standards for Bachelor’s Degrees in Human Service

Link:
I. GENERAL PROGRAM CHARACTERISTICS

A. Institutional Requirements and Primary Program Objective

Context: There is strong national commitment to the view that human services programs should develop professionals who provide direct or indirect services. These programs prepare human services professionals for a variety of functions related to the care and treatment of individuals, families, groups, and communities.

Standard 1: The primary program objective shall be to prepare human services professionals to serve individuals, families, groups, communities and/or other supported human services organization functions.

Specifications for Standard 1

a. The program is part of a degree granting college or university that is regionally accredited.
b. Provide evidence that the development of competent human services professionals is the primary objective of the program and the basis for the degree program title, design, goals and curriculum, teaching methodology, and program administration (e.g. through documents such as catalog, brochures, course syllabi, website, and marketing materials).
c. Articulate how students are informed of the curricular and program expectations and requirements prior to admission.
d. Provide a brief history of the program.
e. Describe the student population including the number, gender, and diversity of students, as well as the numbers of full time, part time, and students graduating each year.
f. Provide a complete program description, courses required, time to completion, and other program details (refer to catalogs and other appendices).

B. Philosophical Base of Programs

Context: A benchmark of human services education and services delivery is the interdisciplinary approach to learning and professionalism. Curriculum development integrates specific theories, knowledge and skills that are tied to a conceptual framework and underlying philosophy. This must be congruent with the CSHSE National Standards and reflect the major theoretical emphasis and uniqueness of the program and curriculum.

Standard 2: The program shall have an explicit philosophical statement and clearly defined knowledge base.

Specifications for Standard 2

a. Provide a succinct philosophical statement that becomes the conceptual framework for the curriculum.
b. Include a mission statement for the program.
c. Demonstrate alignment with the mission of the units in which the program is housed (e.g., department, college, university, etc.).

d. Provide a brief description of the major knowledge base and theories from which the curriculum draws to support the conceptual framework (e.g. counseling theories, biopsychosocial, systems theory, change theory, etc.).

e. Describe the multidisciplinary, interdisciplinary, or transdisciplinary approach to knowledge, theories, and skills included in the curriculum.

f. Provide a matrix mapping the curriculum Standards (11-21) and Specifications to required courses. The information provided on the matrix must clearly reflect congruence with the information provided in the self-study narrative and the syllabi.

C. Community Assessment

Context: Human services programs continually interact with and affect human services delivery within the local community through field placements and alumnae/i. Programs should be designed to interface with the needs of major employers in terms of job needs and career ladders so there is an orderly and continuous supply of competent professionals.

Standard 3: The program shall include periodic mechanisms for assessment of and response to changing policies, needs, and trends of the profession and community.

Specifications for Standard 3

a. If the program is less than five years old, provide documentation that supported the initial development of the human services program (such as a community needs assessment).

b. An Advisory Committee shall be established to provide feedback regarding local, state, and national trends and needs, policy changes, and to act as an advocate for the program. The committee should include individuals representing the human services field, such as field experience agencies, employing agencies, citizen advocacy groups, alumnae/i, current students, adjunct faculty, and other persons related to the field of human services. Provide the following:
   1. A detailed description of the membership of the Advisory Committee (e.g. names, agencies, roles, relationship to program, etc.),
   2. Minutes of advisory committee meetings from the last two years, and
   3. A narrative or table of how the committee interfaces with the program in relationship to specific issues.

c. Describe other mechanisms, if any, used to respond to changing needs in the human services field.

D. Program Evaluation

Context: To ensure the program is effective in producing competent professionals, the program must be evaluated on a regular basis. In addition, the program must assess how well the needs of students and graduates are being met. These evaluations/assessments are the bases for modifying and improving the program.

Standard 4: The program shall conduct, and report to the public, consistent formal evaluations, which determine its effectiveness in meeting the needs of the students, community, and the human services field and result in modifications to the program as necessary.

Specifications for Standard 4

a. The program has clearly stated measureable student learning outcomes that are tied to the standards and an assessment plan that has been implemented. Provide the following:
   1. Measureable student learning outcomes,
   2. Assessment plan, and
3. Examples of assessment tools, e.g., rubrics, exams, portfolios, surveys, capstone evaluations, etc.

b. The program shall conduct a formal program evaluation every five years. The formal evaluation shall include: student surveys, agency surveys, graduate follow-up surveys (directed to both graduates and their employers), active participation of the advisory committee, involvement of agencies where students are in field placements, course and faculty evaluations, and evaluative data mandated or conducted by the institution. Provide the following:
   1. A history of program evaluations,
   2. A description of the methodology,
   3. A summative analysis of the most recent evaluation, and
   4. A description of how and in what way the evaluation resulted in any change.

c. The program must routinely provide reliable information to the public on its performance, including student achievement. [NOTE: This Specification relates to the need for transparency about a program’s performance outcomes and student achievement (Specifications a. and b.)] Provide the following:
   1. Mechanisms used to share evaluative data with internal and external stakeholders. [NOTE: Program performance data and student outcomes, must, at minimum, be posted on the program’s website, and the links must be included in the self-study narrative.]
   2. Content of information shared. NOTE: Public information provided by the program must include: 1) examples of student learning outcomes as defined by the program’s assessment plan as required in Specification a; 2) examples of program effectiveness obtained through formal program evaluation as required in Specification b; e.g., student satisfaction, agency feedback, enrollment trends, graduates placement data, program quality improvement information, grade point average, student performance on standardized examinations such as the HS-BCP (Human Services Board Certified Practitioner) credential, program completion data, etc.]

E. Standards and Procedures for Admitting, Retaining, and Dismissing Students

Context: Students have a right to know, prior to enrollment, the standards of the human services program and the procedures for admitting, retaining, and dismissing students. Both academic and behavioral issues need to be considered.

Standard 5: The program shall have written standards and procedures for admitting, retaining, and dismissing students.

Specifications for Standard 5

a. Provide documentation of policies regarding the selection and admission of students.
b. Provide documentation of policies and procedures for enrolling, advising, counseling, and assisting students with special needs (e.g., minorities, students with disabilities, or otherwise disadvantaged or underrepresented students) in order to assure entrance of qualified individuals of diverse background and conditions. These policies must be consistent with the institution’s policies.
c. Provide documentation of policies and procedures for referring students for personal help.
d. Provide documentation of written policies and procedures describing the due process for probation, dismissal, appeal, and grievance procedures affecting students.
e. Provide documentation of policies and procedures for managing students with behavior or legal problems that may interfere with their development as human services professionals.

F. Credentials of Human Services Faculty

Context: Human services programs have relied primarily on professionals from fields such as human services, psychology, sociology, social work, counseling, political science, adult education, and nursing to provide teaching faculty. Since both field and classroom orientations are important characteristics of teaching staff, consideration should be given to faculty trained in human services and/or interdisciplinary methods and approaches.

**Standard 6: The combined competencies and disciplines of the faculty for each program shall include both a strong and diverse knowledge base and clinical/practical experience in the delivery of human services to clients.**

**Specifications for Standard 6**

a. Include curriculum vitae of full-time and part-time faculty who teach human services courses. The vitae must demonstrate that:
   1. Faculty have education in various disciplines and experience in human services or related fields, and
   2. Teaching faculty have no less than one degree above the level of certificate or degree in which they teach. It is recommended that faculty have no less than a master’s degree.

G. Essential Program Roles

Context: To balance the academic and experiential characteristics of human services programs, adequate faculty and staff should be available to fill essential program roles.

**Standard 7: The program shall adequately manage the essential program roles and provide professional development opportunities for faculty and staff.**

**Specifications for Standard 7**

a. Document that faculty have the ultimate responsibility for setting policies and determining the content, implementation, and evaluation of the curriculum.

b. Essential program roles include administration, curriculum development and review, instruction, field supervision, program planning, program evaluation, student advising, and student evaluation.
   1. Provide a brief description of how the essential roles are fulfilled in the program, and
   2. Provide a table matching faculty and staff positions and names with these roles.

c. Describe how faculty and staff are provided opportunities for appropriate professional development.

H. Faculty and Staff Evaluations

Context: In order to assure that all essential roles are continually fulfilled in a way that is relevant to community and student needs, programs need to periodically evaluate the performance of each faculty or staff member in relationship to individual essential role responsibilities (see Standard 7).

**Standard 8: Evaluations for each faculty and staff member shall reflect the essential roles and be conducted at least every two years.**

**Specifications for Standard 8**

a. Describe the process for faculty and staff evaluation.

b. Summarize documentation for faculty or staff evaluations and how they relate to the role statements. Documentation shall come from a variety of sources and may
include, among others, student evaluations, administrative review, comments from field placement agencies, and peer review.

   c. Document how the evaluative process is used to identify strengths and limitations and how it is incorporated in specific procedures for improvement.

I. Program Support

   Context: To remain relevant to community and student needs, human services programs require adequate faculty, staff, and program resources.

   **Standard 9: The program shall have adequate faculty, staff, and program resources to provide a complete program.**

   **Specifications for Standard 9**

   a. Include budgetary information that demonstrates sufficient funding, faculty, and staff to provide an ongoing and stable program.

   b. Describe how program and field experience coordination is considered in calculating the teaching loads of faculty. It is recommended that consideration be given to distance between sites, expectations of observation, documentation requirements, number of students enrolled in the field experience, and the characteristics of the student population.

   c. Describe how the program has adequate professional support staff to meet the needs of students, faculty, and administration.

   d. Describe how there is adequate resource support (e.g., technology, library, computer labs, etc.) to meet the needs of students, faculty, and administration.

   e. Describe office, classroom, meeting, and informal gathering spaces and how they meet the needs of students, faculty, and administration.

J. Transfer Advising

   Context: In order to facilitate transfer of credits, link programs, and reduce confusion, each program should evaluate previous learning from lower level or parallel transfer programs and from life experiences. In addition, it should promote acceptance of credits from/by other institutions.

   **Standard 10: Each program shall make efforts to increase the transferability of credits to other academic programs.**

   **Specifications for Standard 10**

   a. Describe formal and informal efforts to collaborate with other human services programs on the transfer of credits.

   b. Briefly describe problems encountered by students in transferring credits.

   c. Summarize any formal and informal articulation agreements and describe how students receive the information.

   d. If the program grants credit for prior experiential learning, waives required credits, or allows substitution of required credits, document how the learning is substantiated and verified as equivalent to the field study hours or courses for which it is substituted.

II. CURRICULUM: BACCALAUREATE DEGREE

   The paragraph preceding each standard describes the context for the standard. The specifications following each curriculum standard define the content for the baccalaureate degree in human services. Each higher level of degree requires both additional content and a greater depth of knowledge, theory, and skills. The curriculum standards are divided into two parts: (A) Knowledge, Theory, Skills and Values, and (B) Field Practice. Note that critical thinking is included throughout the Specifications through words such as analyze, assess, appropriately respond, etc.
A. Knowledge, Theory, Skills, and Values

1. History

   Context: The history of human services provides the context in which the profession evolved, a foundation for assessment of present conditions in the field, and a framework for projecting and shaping trends and outcomes. Thus, human services professionals must have knowledge of how different human services emerged and the various forces that influenced their development.

   **Standard 11:** The curriculum shall include the historical development of human services.

   **Specifications for Standard 11**
   Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:
   a. The historical roots of human services.
   b. The creation of the human services profession.
   c. Historical and current legislation affecting services delivery.
   d. How public and private attitudes influence legislation and the interpretation of policies related to human services.
   e. Differences between systems of governance and economics.
   f. Exposure to a spectrum of political ideologies.
   g. Skills to analyze and interpret historical data for application in advocacy and social change.

2. Human Systems

   Context: The human services professional must have an understanding of the structure and dynamics of organizations, communities, and society as well as the nature of individuals and groups. This understanding is prerequisite to the determination of appropriate responses to human needs.

   **Standard 12:** The curriculum shall include knowledge and theory of the interaction of human systems including: individual, interpersonal, group, family, organizational, community, and societal.

   **Specifications for Standard 12**
   Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:
   a. Theories of human development.
   b. Small groups:
      1. Overview of how small groups are used in human services settings,
      2. Theories of group dynamics, and
      3. Group facilitation skills.
   c. Changing family structures and roles.
   d. An introduction to the organizational structures of communities.
   e. An understanding of the capacities, limitations, and resiliency of human systems.
   f. Emphasis on context and the role of diversity (including, but not limited to ethnicity, culture, gender, sexual orientation, learning styles, ability, and socio-economic status) in determining and meeting human needs.
   g. Processes to effect social change through advocacy work at all levels of society including community development, community and grassroots organizing, and local and global activism.
h. Processes to analyze, interpret, and effect policies and laws at local, state, and national levels that influence services delivery systems.

3. Human Services Delivery Systems

Context: The demand for services and the funding of educational programs has been closely related to identifiable human conditions including, among others: aging, delinquency, crime, poverty, mental illness, physical illness, chemical dependency, and developmental disabilities. The needs that arise in these conditions provide the focus for the human services profession.

**Standard 13:** The curriculum shall address the scope of conditions that promote or inhibit human functioning.

**Specifications for Standard 13**
Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:

a. The range and characteristics of human services delivery systems and organizations.
b. The range of populations served and needs addressed by human services professionals.
c. The major models used to conceptualize and integrate prevention, maintenance, intervention, rehabilitation, and healthy functioning.
d. Economic and social class systems including systemic causes of poverty.
e. Political and ideological aspects of human services.
f. International and global influences on services delivery.
g. Skills to effect and influence social policy.

4. Information Management

Context: The delivery of human services depends on the appropriate integration and use of information such as client data, statistical information, and record keeping. Information management skills include obtaining, organizing, analyzing, evaluating and disseminating information.

**Standard 14:** The curriculum shall provide knowledge and skills in information management.

**Specifications for Standard 14**
Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:

a. Obtaining information through interviewing, active listening, consultation with others, library or other research, and the observation of clients and systems.
b. Recording, organizing, and assessing the relevance, adequacy, accuracy, and validity of information provided by others.
c. Compiling, synthesizing, and categorizing information.
d. Disseminating routine and critical information to clients, colleagues, or other members of the related services system that is:
   1. Provided in written or oral form, and
   2. Provided in a timely manner.
e. Applying maintenance of client confidentiality and appropriate use of client data.
f. Using technology for word processing, sending email, and locating and evaluating information.
g. Performing an elementary community-needs assessment.
h. Conducting a basic program evaluation.
i. Utilizing research findings and other information for community education and public relations.
j. Using technology to create and manage spreadsheets and databases.
5. Planning and Evaluation
Context: A major component of the human services profession involves the assessment of the needs of clients and client groups and the planning of programs and interventions that will assist clients and client groups in promoting optimal functioning, growth, and goal attainment. At regular intervals, the outcomes must be evaluated and necessary adjustments made to the plan both at an individual client and program level.

**Standard 15: The curriculum shall provide knowledge and skill development in systematic analysis of services needs; planning appropriate strategies, services, and implementation; and evaluation of outcomes.**

**Specifications for Standard 15**
Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:
- a. Analysis and assessment of the needs of clients or client groups.
- b. Development of goals, design, and implementation of a plan of action.
- c. Evaluation of the outcomes of the plan and the impact on the client or client group.
- d. Program design.
- e. Program implementation.
- f. Program evaluation.

6. Interventions and Direct Services
Context: Human services professionals function as change agents and must therefore attain and develop a core of knowledge, theory, and skills to provide direct services and interventions to clients and client groups.

**Standard 16: The curriculum shall provide knowledge and skills in direct service delivery and appropriate interventions.**

**Specifications for Standard 16**
Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:
- a. Theory and knowledge bases of prevention, intervention, and maintenance strategies to achieve maximum autonomy and functioning.
- b. Skills to facilitate appropriate direct services and interventions related to specific client or client group goals.
- c. Knowledge and skill development in the following areas:
  1. Case management,
  2. Intake interviewing,
  3. Individual counseling,
  4. Group facilitation and counseling,
  5. Location and use of appropriate resources and referrals, and
  6. Use of consultation.

7. Interpersonal Communication
Context: The ability to create genuine and empathic relationships with others is central to the human services profession. These skills are applicable to all levels of education, and a greater proficiency is expected at each progressively higher level.

**Standard 17: Learning experiences shall be provided for the student to develop his or her interpersonal skills.**

**Specifications for Standard 17**
Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:
- a. Clarifying expectations.
- b. Dealing effectively with conflict.
- c. Establishing rapport with clients.
d. Developing and sustaining behaviors that are congruent with the values and ethics of the profession.

8. Administrative

Context: A holistic approach to human services recognizes direct and indirect services as components of the same system. Administrative support (indirect service) is essential to the effective delivery of direct services to clients or client groups.

**Standard 18: The curriculum shall provide knowledge, theory, and skills in the administrative aspects of the services delivery system.**

**Specifications for Standard 18**

Demonstrate how the knowledge, theory, and skills for each of the following areas are included, analyzed, and applied in the curriculum:

a. Managing organizations through leadership and strategic planning.
b. Supervision and human resource management.
c. Planning and evaluating programs, services, and operational functions.
d. Developing budgets and monitoring expenditures.
e. Grant and contract negotiation.
f. Legal and regulatory issues and risk management.
g. Managing professional development of staff.
h. Recruiting and managing volunteers.
i. Constituency building and other advocacy techniques such as lobbying, grassroots movements, and community development and organizing.

9. Client-Related Values and Attitudes

Context: There are values and ethics intrinsic to the human services profession that have been agreed to as governing principles of professional practice.

**Standard 19: The curriculum shall incorporate human services values and attitudes and promote understanding of human services ethics and their application in practice.**

**Specifications for Standard 19**

Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:

a. The least intrusive intervention in the least restrictive environment.
b. Client self-determination.
c. Confidentiality of information.
d. The worth and uniqueness of individuals including culture, ethnicity, race, class, gender, religion, ability, sexual orientation, and other expressions of diversity.
e. Belief that individuals, services systems, and society can change.
f. Interdisciplinary team approaches to problem solving.
g. Appropriate professional boundaries.
h. Integration of the ethical standards outlined by the National Organization for Human Services/Council for Standards in Human Service Education (available on NOHS website).

10. **Self-Development**

Context: Human services professionals use their experience and knowledge for understanding and helping clients. This requires awareness of one’s own values, cultural bias, philosophies, personality, and style in the effective use of the professional self. It also requires an understanding of how these personal characteristics affect clients.

**Standard 20: The program shall provide experiences and support to enable students to develop awareness of their own values, personalities, reaction patterns, interpersonal styles, and limitations.**

**Specifications for Standard 20**

Demonstrate how the knowledge, theory, and skills for each of the following specifications is included, analyzed, and applied in the curriculum:

- b. Clarification of personal and professional values.
- c. Awareness of diversity.
- d. Strategies for self-care.
- e. Reflection on professional self (e.g., journaling, development of a portfolio, or project demonstrating competency).

B. **Field Experience**

Context: Field experience such as a practicum or internship occurs in a human services setting. Fieldwork provides an environment and context to integrate the knowledge, theory, skills, and professional behaviors that are concurrently being taught in the classroom. It must be an integral part of the education process.

**Standard 21: The program shall provide field experience that is integrated with the curriculum.**

**Specifications for Standard 21**

As evidence of meeting this standard, programs must:

- a. Provide a brief description of the overall process and structure of the fieldwork learning experience.
- b. Provide evidence that one academic credit is awarded for no less than three hours of field experience per week.
- c. Demonstrate that students are exposed to human services agencies and clients (assigned visitation, observation, assisting staff, etc.) early in the program.
- d. Provide a copy of the current manual and guidelines that are given to students advising them of field placement requirements and policies.
- e. Provide documentation of written learning agreements with field agencies that specify the student’s role, activities, anticipated learning outcomes, supervision, and field instruction. The agreement must be signed by the appropriate agency director, fieldwork supervisor, program instructor, and student.
- f. Provide syllabi for required seminars. Seminars must meet no less than every two weeks. Seminar hours must not be included in field experience hours.
- g. Provide evidence that required field experience is no less than 350 (may include 250 from associate level) clock hours of field experience with at least 100 of these clock hours occurring in the junior and senior years.
h. Demonstrate how the field experience provides the student an opportunity to progress from:
   1. Observation to
   2. Directly supervised client contact to
   3. Indirectly supervised client contact to
   4. An independent caseload OR assignment of administrative responsibility.

i. Demonstrate that field supervisors have no less than the same degree the program awards. It is strongly recommended that field supervisors have no less than one level of degree above the level of degree awarded by the program.

j. Demonstrate that the program continually monitors the progress of each student and performs no less than one site visit to each field placement site per quarter or semester.
Appendix H. Curriculum Mapped to National Standards
Appendix H.

*Matrix Illustrating Relationship of Required Courses to Curriculum Standards*

**Baccalaureate Degree Level 2010**

**Instructions:**

a. Use as many versions of the Matrix as needed to deal with all of your required courses.
b. Place course numbers in the header columns at the top of each page; course numbers will appear vertically
c. The courses listed on this Matrix must include all courses required for all students in the program, which contribute compliance with the Curriculum Standards.
d. Each course identified in the Matrix as contributing to compliance with a Standard and its Specifications must be referenced in the self-study narrative.
e. For each specification, mark the following in the courses where covered: [You may mark more than one letter in any box].

<table>
<thead>
<tr>
<th>Type of Course Content</th>
<th>Depth or Emphasis of Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I=Introduction of topic</td>
<td>L=Low</td>
</tr>
<tr>
<td>T=Theory covered</td>
<td>M=Moderate</td>
</tr>
<tr>
<td>K=Knowledge base</td>
<td>H=Heavy</td>
</tr>
<tr>
<td>S=Skills practice or field experience</td>
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</tr>
</tbody>
</table>
### Course Prefixes and Numbers
#### Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS 150</td>
<td>Foundations of Human Service</td>
</tr>
<tr>
<td>AFR 1XX</td>
<td>Introduction to Community Justice</td>
</tr>
<tr>
<td>CHS 235</td>
<td>Theories of Assessment and Interventions</td>
</tr>
<tr>
<td>CHS 230</td>
<td>Culture, Direct Services and Community Practice</td>
</tr>
<tr>
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</tr>
<tr>
<td>AFR 227</td>
<td>Community Based Approaches to Justice</td>
</tr>
<tr>
<td>AFR 3XX</td>
<td>Research Methods in Community Justice &amp; Human Systems</td>
</tr>
<tr>
<td>CHS 3XX</td>
<td>Program Planning, Development and Evaluation</td>
</tr>
<tr>
<td>CHS 3ZZ</td>
<td>Field Education in Community Practice I</td>
</tr>
<tr>
<td>CHS 381</td>
<td>Field Education in Community Practice II</td>
</tr>
<tr>
<td>CHS 311</td>
<td>Peer Counseling Practicum</td>
</tr>
</tbody>
</table>

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### Standards and Specifications

#### Knowledge, Theory, Skills and Values

**11. History**

**Context:** The history of human services provides the context in which the profession evolved, a foundation for assessment of present conditions in the field, and a framework for projecting and shaping trends and outcomes. Thus, human services professionals must have knowledge of how different human services emerged and the various forces that influenced their development.

**Standard 11:** The curriculum shall include the historical development of human services.

**Specifications for Standard 11**

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

- **a.** The historical roots of human services.  
  - IK  
  - ITKS  
  - IKL  
  - IK
- **b.** The creation of the human services profession.  
  - IK  
  - ITKS  
  - IKL  
  - IK
- **c.** Historical and current legislation affecting services delivery.  
  - ITKS  
  - ITK
- **d.** How public and private attitudes influence legislation and the interpretation of policies related to human services.  
  - ITK  
  - ITKS  
  - IKL  
  - ITK
- **e.** Differences between systems of governance and economics.  
  - IK  
  - ITKS  
  - ITK
- **f.** Exposure to a spectrum of political ideologies.  
  - ITKS  
  - IK
- **g.** Skills to analyze and interpret historical data for application in advocacy and social change.  
  - ITKS  
  - ITKS
### Course Prefixes and Numbers

#### Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

<table>
<thead>
<tr>
<th>Course</th>
<th>Prefix</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS 150</td>
<td>Foundations of Human Service</td>
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<tr>
<td>AFR 1XX</td>
<td>Introduction to Community Justice</td>
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<tr>
<td>CHS 235</td>
<td>Theories of Assessment and Interventions</td>
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<td>CHS 230</td>
<td>Culture, Direct Services and Community Practice</td>
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<td>CHS 310</td>
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<td>CHS 3ZZ</td>
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<tr>
<td>CHS 381</td>
<td>Field Education in Community Practice II</td>
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</tr>
<tr>
<td>AFR 3XX</td>
<td>Research Methods in Community Justice &amp; Human Systems</td>
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<tr>
<td>AFR 3YY</td>
<td>Field Education in Community Organizing &amp; Community Practice</td>
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### 12. Human Systems

**Context:** The human services professional must have an understanding of the structure and dynamics of organizations, communities, and society as well as the nature of individuals and groups. This understanding is prerequisite to the determination of appropriate responses to human needs.

**Standard 12:** The curriculum shall include knowledge and theory of the interaction of human systems including: individual, interpersonal, group, family, organizational, community, and societal.

#### Specifications for Standard 12

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

<table>
<thead>
<tr>
<th>Specification</th>
<th>ITK</th>
<th>ITKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Theories of human development.</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>b. Small groups:</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>1. Overview of how small groups are used in human services settings,</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>2. Theories of group dynamics, and</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>3. Group facilitation skills.</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>c. Changing family structures and roles.</td>
<td>ITK</td>
<td>ITKS</td>
</tr>
<tr>
<td>d. An introduction to the organizational structures of communities.</td>
<td>ITK</td>
<td>K</td>
</tr>
<tr>
<td>e. An understanding of the capacities, limitations, and resiliency of human systems.</td>
<td>ITK</td>
<td>K</td>
</tr>
<tr>
<td>f. Emphasis on context and the role of diversity (including, but not limited to ethnicity, culture, gender, sexual orientation, learning styles, ability, and socio-economic status) in</td>
<td>ITK</td>
<td>K</td>
</tr>
</tbody>
</table>
determining and meeting human needs.

g. Processes to affect social change through advocacy work at all levels of society including community development, community and grassroots organizing, and local and global activism.  

h. Processes to analyze, interpret, and effect policies and laws at local, state, and national levels that influence services delivery systems.

13. Human Services Delivery Systems  

**Context:** The demand for services and the funding of educational programs has been closely related to identifiable human conditions including, among others: aging, delinquency, crime, poverty, mental illness, physical illness, chemical dependency, and developmental disabilities. The needs that arise in these conditions provide the focus for the human services profession.  

**Standard 13:** The curriculum shall address the scope of conditions that promote or inhibit human functioning.  

**Specifications for Standard 13**

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

a. The range and characteristics of human services delivery systems and organizations.

b. The range of populations served and needs addressed by human services.

c. The major models used to conceptualize and integrate prevention, maintenance, intervention, rehabilitation, and healthy functioning.
## Course Prefixes and Numbers

**Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar**

<table>
<thead>
<tr>
<th>Course Prefixes and Numbers</th>
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</thead>
<tbody>
<tr>
<td>CHS 150 Foundations of Human Service</td>
</tr>
<tr>
<td>AFR 1XX Introduction to Community Justice</td>
</tr>
<tr>
<td>ITKS Research Methods and Evaluation</td>
</tr>
<tr>
<td>Field Experience, Senior Seminar</td>
</tr>
<tr>
<td>CHS 235 Theories of Assessment and Interventions</td>
</tr>
<tr>
<td>CHS 230 Culture, Direct Services and Community Practice</td>
</tr>
<tr>
<td>CHS 310 Advanced Interpersonal Counseling Skills</td>
</tr>
<tr>
<td>AFR 227 Community Based Approaches to Human Services</td>
</tr>
<tr>
<td>CHS 3XX Research Methods in Community Justice &amp; Human Systems</td>
</tr>
<tr>
<td>CHS 3XX Program Planning, Development, and Evaluation</td>
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<tr>
<td>CHS 3XX Field Education in Community Practice I</td>
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<td>CHS 381 Community Practice II</td>
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<td>CHS 311 Peer Counseling Practicum</td>
</tr>
<tr>
<td>AFR 3XX Field Education in Community Organizing &amp; Comm. Practice</td>
</tr>
<tr>
<td>AFR 3YY Field Education in Community Organizing &amp; Comm. Practice</td>
</tr>
<tr>
<td>CHS 4XX Senior Seminar in Human Services &amp; Community Justice</td>
</tr>
</tbody>
</table>

### d. Economic and social class systems including systemic causes of poverty.
- ITKS
- ITK
- ITKS

### e. Political and ideological aspects of human services.
- ITKS
- ITKS

### f. International and global influences on services delivery.
- ITKS

### g. Skills to effect and influence social policy.
- ITKS
- ITKS
- KS
- K

### 14. Information Management

**Context:** The delivery of human services depends on the appropriate integration and use of information such as client data, statistical information, and record keeping. Information management skills include obtaining, organizing, analyzing, evaluating and disseminating information.

**Specifications for Standard 14**

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

<table>
<thead>
<tr>
<th>Specifications for Standard 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Obtaining information through interviewing, active listening, consultation with others, library or other research, and the observation of clients and systems.</td>
</tr>
<tr>
<td>b. Recording, organizing, and assessing the relevance, adequacy, accuracy, and validity of information provided by others.</td>
</tr>
<tr>
<td>c. Compiling, synthesizing, and categorizing information.</td>
</tr>
<tr>
<td>d. Disseminating routine and critical information to clients, colleagues, or other members of the related services system that is:</td>
</tr>
<tr>
<td>1. Provided in written or oral form, and</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specifications for Standard 14</th>
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</thead>
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<tr>
<td>a. Obtaining information through interviewing, active listening, consultation with others, library or other research, and the observation of clients and systems.</td>
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<td>b. Recording, organizing, and assessing the relevance, adequacy, accuracy, and validity of information provided by others.</td>
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</tr>
<tr>
<td>1. Provided in written or oral form, and</td>
</tr>
</tbody>
</table>
Course Prefixes and Numbers
Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

2. Provided in a timely manner
   
e. Maintaining client confidentiality and appropriately using client data. IKS ITK KS TKS IKS
   f. Using technology for word processing, sending email, and locating and evaluating information. ITK SH TKS
   g. Performing an elementary community-needs assessment. I ITKS TKS K IKS
   h. Conducting a basic program evaluation. ITKS TKS K ITKS
   i. Utilizing research findings and other information for community education and public relations. ITKS KM TKS ITKS
   j. Using technology to create and manage spreadsheets and databases.

15. Planning and Evaluation
   Context: A major component of the human services profession involves the assessment of the needs of clients and client groups and the planning of programs and interventions that will assist clients and client groups in promoting optimal functioning, growth, and goal attainment. At regular intervals, the outcomes must be evaluated and necessary adjustments made to the plan both at an individual client and program level.

   Standard 15: The curriculum shall provide knowledge and skill development in systematic analysis of services needs; planning appropriate strategies, services, and implementation; and evaluation of outcomes.

   Specifications for Standard 15
   Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:
   
a. Knowledge and skills to analyze and assess the needs of clients IKS ITK ITKS KS TKS KS ITKS
<table>
<thead>
<tr>
<th>Course Prefixes and Numbers</th>
<th>CHS 150</th>
<th>AFR 1XX</th>
<th>CHS 235</th>
<th>AFR 227</th>
<th>CHS 230</th>
<th>AFR 3XX</th>
<th>CHS 310</th>
<th>AFR 3XX</th>
<th>CHS 3XX</th>
<th>AFR 3XX</th>
<th>CHS 4XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar</td>
<td>Foundation of Human Service</td>
<td>Introduction to Community Justice</td>
<td>Theories of Assessment and Interventions</td>
<td>Community-Based Approaches to Human Service</td>
<td>Culture, Direct Services and Community Practice</td>
<td>Advanced Interpersonal Counseling Skills</td>
<td>Program Planning, Development, and Evaluation</td>
<td>Field Education in Community Practice</td>
<td>Field Education in Community Organizing &amp; Community Practice</td>
<td>Program Planning, Development, and Evaluation</td>
<td>Senior Seminar in Human Services &amp; Community Justice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Interventions and Direct Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Context:</strong> Human services professionals function as change agents and must therefore attain and develop a core of knowledge, theory, and skills to provide direct services and interventions to clients and client groups.</td>
</tr>
<tr>
<td><strong>Standard 16:</strong> The curriculum shall provide knowledge and skills in direct service delivery and appropriate interventions.</td>
</tr>
<tr>
<td><strong>Specifications for Standard 16</strong></td>
</tr>
<tr>
<td>Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:</td>
</tr>
</tbody>
</table>

| a. Theory and knowledge bases of prevention, intervention, and maintenance strategies to achieve maximum autonomy and functioning. |
| b. Skills to facilitate appropriate direct services and interventions related to specific client or client group goals. |

| b. Skills to develop goals, and design and implement a plan of action. |
| c. Skills to evaluate the outcomes of the plan and the impact on the client or client group. |
| d. Program design. |
| e. Program implementation. |
| f. Program evaluation. |
c. Knowledge and skill development in the following areas:
1. Case management,
2. Intake interviewing,
3. Individual counseling,
4. Group facilitation and counseling,
5. Location and use of appropriate resources and referrals, and
6. Use of consultation.

17. Interpersonal Communication

**Context:** The ability to create genuine and empathic relationships with others is central to the human services profession. These skills are applicable to all levels of education, and a greater proficiency is expected at each progressively higher level.

**Standard 17:** Learning experiences shall be provided for the student to develop his or her interpersonal skills.

**Specifications for Standard 17**

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

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<thead>
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<th>Specification</th>
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<th>ITKS</th>
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<th>ITKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Clarifying expectations.</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
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<tr>
<td>b. Dealing effectively with conflict.</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
</tr>
<tr>
<td>c. Establishing rapport with clients.</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
</tr>
<tr>
<td>d. Developing and sustaining behaviors that are congruent with the values and ethics of the profession.</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
<td>ITKS</td>
</tr>
</tbody>
</table>
Course Prefixes and Numbers
Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

<table>
<thead>
<tr>
<th>18. Administrative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Context:</strong> A holistic approach to human services recognizes direct and indirect services as components of the same system. Administrative support (indirect service) is essential to the effective delivery of direct services to clients or client groups.</td>
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<td><strong>Standard 18:</strong> The curriculum shall provide knowledge, theory, and skills in the administrative aspects of the services delivery system.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Specification</th>
<th>ITKS</th>
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</thead>
<tbody>
<tr>
<td>a. Managing organizations through leadership and strategic planning.</td>
<td></td>
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<tr>
<td>b. Supervision and human resource management.</td>
<td>ITKS</td>
</tr>
<tr>
<td>c. Planning and evaluating programs, services, and operational functions.</td>
<td>ITKS</td>
</tr>
<tr>
<td>d. Developing budgets and monitoring expenditures.</td>
<td>ITKS</td>
</tr>
<tr>
<td>e. Grant and contract negotiation.</td>
<td>ITKS</td>
</tr>
<tr>
<td>f. Legal and regulatory issues and risk management.</td>
<td>ITKS</td>
</tr>
<tr>
<td>g. Managing professional development of staff.</td>
<td>ITKS</td>
</tr>
<tr>
<td>h. Recruiting and managing volunteers.</td>
<td>ITKS</td>
</tr>
<tr>
<td>i. Constituency building and other advocacy techniques such as lobbying, grassroots movements, and community development and organizing.</td>
<td>ITKS</td>
</tr>
</tbody>
</table>
19. Client-Related Values and Attitudes

Context: There are values and ethics intrinsic to the human services profession that have been agreed to as governing principles of professional practice.

Standard 19: The curriculum shall incorporate human services values and attitudes and promote understanding of human services ethics and their application in practice.

Specifications for Standard 19

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

a. The least intrusive intervention in the least restrictive environment.

b. Client self-determination.

c. Confidentiality of information.

d. The worth and uniqueness of individuals including culture, ethnicity, race, class, gender, religion, ability, sexual orientation, and other expressions of diversity.

e. Belief that individuals, services systems, and society can change.

f. Interdisciplinary team approaches to problem solving.

g. Appropriate professional boundaries.
Course Prefixes and Numbers  
Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

<table>
<thead>
<tr>
<th>Course Prefixes and Numbers</th>
<th>IT</th>
<th>KS</th>
<th>ITKS</th>
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<td>Foundations of Human</td>
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20. Self-Development

**Context:** Human services professionals use their experience and knowledge for understanding and helping clients. This requires awareness of one's own values, cultural bias, philosophies, personality, and style in the effective use of the professional self. It also requires an understanding of how these personal characteristics affect clients.

**Standard 20:** The program shall provide experiences and support to enable students to develop awareness of their own values, personalities, reaction patterns, interpersonal styles, and limitations.

**Specifications for Standard 20**

Demonstrate how the knowledge, theory, and skills for each of the following specifications are included, analyzed, and applied in the curriculum:

- b. Clarification of personal and professional values.
- c. Awareness of diversity.
- d. Strategies for self-care.
- e. Reflection on professional self (e.g., journaling, development of a portfolio, or project demonstrating competency).
### Field Experience

#### 21. Field Experience

**Context:** Field experience such as a practicum or internship occurs in a human services setting. Fieldwork provides an environment and context to integrate the knowledge, theory, skills, and professional behaviors that are concurrently being taught in the classroom. It must be an integral part of the education process.

**Standard Number 21:** The program shall provide field experience that is integrated with the curriculum.

#### Specifications for Standard 21

As evidence of meeting this standard, programs must:

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<td><strong>a.</strong> Provide a brief description of the overall process and structure of the fieldwork learning experience.</td>
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<td><strong>b.</strong> Provide evidence that one academic credit is awarded for no less than three hours of field experience per week.</td>
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<td><strong>c.</strong> Demonstrate that students are exposed to human services agencies and clients (assigned visitation, observation, assisting staff, etc.) early in the program.</td>
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<td><strong>d.</strong> Provide a copy of the current manual and guidelines that are given to students advising them of field placement requirements and policies.</td>
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<td><strong>e.</strong> Provide documentation of written learning agreements with field agencies that specify the student’s role, activities, anticipated learning outcomes, supervision, and field instruction. The agreement must be signed by the appropriate agency director, fieldwork supervisor, program instructor, and student.</td>
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<td><strong>f.</strong> Provide syllabi for required seminars. Seminars must meet no less</td>
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### Course Prefixes and Numbers

#### Required Core, Research Methods and Evaluation, Field Experience, Senior Seminar

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<th>CHS 150</th>
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<td>Foundations of Human Service</td>
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<td>Culture, Direct Services and Community Practice</td>
<td>Advanced Interpersonal Counseling Skills</td>
<td>Community Based Approaches to Justice</td>
<td>Research Methods in Community Justice &amp; Human Systems</td>
<td>Program Planning, Development, and Evaluation</td>
<td>Field Education in Community Practice</td>
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**than every two weeks. Seminar hours must not be included in field experience hours.**

g. Provide evidence that required field experience is no less than 350 (may include 250 from associate level) clock hours of field experience with at least 100 of these clock hours occurring in the junior and senior years.

**h. Demonstrate how the field experience provides the student an opportunity to progress:**
1. From observation, to directly supervised client contact to...
2. Indirectly supervised client contact to...
3. An independent caseload OR assignment of administrative responsibility.

**i. Demonstrate that field supervisors have no less than the same degree the program awards. It is strongly recommended that field supervisors have no less than one level of degree above the level of degree awarded by the program.**

**j. Demonstrate that the program continually monitors the progress of each student and performs no less than one site visit to each field placement site per quarter or semester.**
Appendix I. Letters of Support
April 20, 2017

Dr. Ma’ at Lewis
Department of Counseling and Human Service
John Jay College of Criminal Justice CUNY
524 West 59th Street; 8th floor Room 8.65.18
New York, NY 10019

Dear Dr. Lewis:

I am very pleased to write a letter of support for your new undergraduate major in Human Service and Community Justice (HSCJ) at John Jay College of Criminal Justice, City University of New York. I am currently the Chair of the Department of Counseling and Clinical Psychology at Teachers College, Columbia University which offers an Ed.M preparing students for mental health counseling or school counseling (MPCAC-accredited), a Ph.D. preparing counseling psychologists (APA-accredited), and a New York State-approved Bilingual Latina/o Mental Health Concentration for both of these programs. As such, I believe I am in an excellent position to review and comment on the merits and potential benefits of the proposed major at John Jay College.

In reading the materials associated with the proposal, I was quite impressed with a number of critical components of the suggested major, primarily the focus on social justice training. Given the sociopolitical history surrounding community wellness in the United States, this major provides an important platform to understand the challenges and opportunities of developing and providing human services to marginalized and underserved communities, particularly within the framework of social justice. Today more than ever, students engaged in this major will be able to improve, even save, human lives with the knowledge and skills they will learn in this new major. The program builds on faculty expertise in this area, as well as provides a thoughtful and extensive array of both required and elective courses and experiences. Students will graduate with competence in this area that is unique relative to other offerings at John Jay as well as other major universities, both in the city and nationally. Ultimately, I believe that this major will prepare students for important paid community positions as well as the possibilities of seeking graduate education in a similar vein.

I am thrilled to see the development of this major as a path for students to understand the previous policy decisions and legislative actions affecting many communities, both positively and negatively. This major also will position students to walk confidently into the future armed with attitudes, knowledge, and skills that will improve the lives of many communities, here in New York City and beyond.

Respectfully submitted,

Marie L. Miville, Ph.D.
Professor and Chair
Licensed Health Service Psychologist (HSP #832)

525 West 120th Street, New York, NY 10027-6696
August 28, 2015

Dr. Cheryl Franks, PhD, LMSW
Percy Ellis Sutton SEEK Department
John Jay College of Criminal Justice
524 West 59th Street
New York, NY 10019

Dear Dr. Franks:

I am pleased to support your development of a Human Services and Community Justice Major at John Jay College of Criminal Justice. By adding this important major, John Jay will contribute to providing critical services to communities across the New York City area.

The Columbia School of Social Work (CSSW) provides an educational program which addresses various human service needs. We value the experiences and training of incoming students who have a clear vision of social work practice and the delivery of social services. The Field Education Department at CSSW often receives requests from internship sites seeking more experienced students who are prepared for practice in today’s world. A bachelor’s degree in human services and community justice will be a significant advantage for students applying to a graduate social work program.

Columbia School of Social Work and its students are proud to collaborate with John Jay College of Criminal Justice. Human services and community justice major students would be welcomed and encouraged to apply for admission for CSSW’s advanced degree in social work.

Sincerely,

[Signature]

Ovita F. Williams
Assistant Dean and Director of Field Education (Interim)
March 6, 2017

Dr. Ma’at Lewis
Department of Counseling and Human Service
John Jay College of Criminal Justice CUNY
524 West 59th Street; 8th floor Room 8.65.18
New York, NY 10019

Dear Dr. Lewis,

I am very pleased to write this letter of support for the proposal for a major in human services and community justice. The major will lead to a Bachelor of Science degree. I fully support the Departments of Counseling, Africana Studies, and SEEK in the development of this plan.

I can hardly think of a more appropriate degree offering at this critical time in our history. Issues of human services and criminal justice have been very much at the center of our national dialogue and debate. Other degrees (mental health counseling, criminal justice, sociology, social work) all touch on this area of study, but do not have it as a central focus. This new degree path should produce graduates with a strong knowledge and skill base for work on the intersection between Human Services and Community Justice, much like what has occurred between integrated health and social care. One can easily envision the emergence of new research growing from the next generation of scholars in this new area.

Graduates with this major should have many employment opportunities both in the community and within the criminal justice system. They will also be able to choose from a number of graduate degrees to extend and deepen their learning. It is, as the proposal argues, “a coherent, focused, and distinctive profile that will attract and train students for professional service careers and graduate school.”

Indeed, I can confirm the arguments made in this proposal about student interest. In the 1970’s many social work departments included a specialization in forensic social work, largely tied to the prison and criminal justice system. Many social work graduates worked within the prison system, including at the highest level. Those specializations largely disappeared more recently until it was somewhat unusual to have a faculty member with expertise in forensic social work, and few students expressed interest in that area of work. We began to see the pendulum shift in 2012 with a renewed focus on community-police relations and the systemic disparity, racism, and oppression of men of color in the criminal justice system. Today social work schools experience renewed student and faculty interest, and several job postings for faculty interested in re-entry and disengaged youth. John Jay has an excellent and perhaps unique opportunity to respond to this
trend. We would be very interested in attracting John Jay graduates into our masters and doctoral programs.

The new program proposal is very well conceived in both content and structure. The 48 credit program includes all appropriate required courses, including courses in counseling and intervention, programmatic responses to human services, culture, and research and program evaluation. There are an array of electives that will both deepen and extend a student’s experience in specific areas related to human services and community justice. Of particular note is the focus on cultural competency and advocacy, both critical areas for the development of professionals in these areas. I especially appreciate the senior seminar as a capstone to this very well developed and rigorous curriculum.

There are also appropriate internship experiences that will allow students to test their interest in real world settings. I would urge them to include court settings as appropriate placements. Students can learn a great deal from less than ideal experiences, and become much more resilient professionals because of it.

My reading of both the proposal and the environmental context suggest the need and relevance of this new major. I congratulate John Jay’s faculty on its forward thinking in this important area.

Sincerely,

Jacqueline B. Mondros, DSW
Dean and Assistant Vice President for Social Determinants
November 2, 2016

Dr. Ma’at Lewis  
Department of Counseling and Human Service  
John Jay College of Criminal Justice/City University of New York  
524 West 59th Street, 8th floor, Room 8.65.18  
New York, NY 10019

Dear Dr. Lewis,

It is with great pleasure that I write in enthusiastic support of you and your colleague’s proposal to develop a new Human Service and Community Justice Major at John Jay College. There is a growing need in the greater New York City area for trained professionals in the field of health and human services; particularly, as it relates to working to support the needs of our elderly, individuals with serious illness living alone. Here at DOROT we understand the importance providing competent and compassionate care for an increasing and intensifying number of elderly living in often difficult, isolating and challenging situations. As you may know, DOROT’s work has spanned over four decades, alleviates social isolation among the elderly and provides services to help them live independently as valued members of the community. We serve the Jewish and wider community, bringing the generations together in a mutually beneficial partnership of elders, volunteers and professionals.

For the past four years, DOROT has partnered with Dr. Robert Delucia, who has handpicked appropriate and engaged students who enhanced DOROT programming and were fully invested in the mission of DOROT. Each semester, we are amazed and pleased how much thought and care went into selecting the interns. These interns are mature, capable, truly invested in human services. Many of the interns have continued to volunteer for DOROT long after their internship has ended; one student was hired full time at DOROT as a Program Administrator following graduation.

The Human Service and Community Justice Major you are proposing will provide students the opportunity to acquire a broad understanding of the field of human services and the essential training and empathic fairness required to respond to the needs of disenfranchised and vulnerable members of our city and state. A review of the course curriculum reveals that students will learn both theoretically and experientially in an effort to enable them to acquire counseling skills, as well learn the prerequisite attitude vital to empathic social justice and its relationship to complicated issues impacting individuals, families and groups. We are especially impressed with the two year in-service learning component introducing students to developmental tasks and practical realities of work over time and in real-time.

Finally, we believe the Human Services and Community Justice Major will prepare
students for work as caring professionals, change agents and advocates in the service to others. We would be honored if your students would consider serving as interns at our agency while training as undergraduates in the program’s comprehensive internship program. As important, we envision that upon graduation your students would be qualified for positions at non-profit agencies across the city, including our agency, as well as being candidates for graduate schools.

Wishing you continued success in this endeavor.

Sincerely,

Mark Meridy
Executive Director, DOROT
Dr. Ma’at Lewis  
Department of Counseling and Human Service  
John Jay College of Criminal Justice/City University of New York  
524 West 59th Street, 8th floor, Room 8.65.18  
New York, NY 10019

Dear Dr. Lewis,

It is with great pleasure that I write to endorse your departmental proposal to develop an innovative Human Service and Community Justice Major at John Jay College. There is a growing need in the greater New York City area for trained professionals in the field of health and human services. Here, at the Institute for Contemporary Psychotherapy (ICP), we understand the importance and ethical responsibility of providing comprehensive and culturally sensitive mental health services to those in need.

We have had the good fortune to have supervised several John Jay student interns minoring in Human Services over the past several years. We have been so pleased with their competency, compassion and devotion to our mission. This remarkable new Bachelor’s Program has the potential to even further develop these students and create the potential for them to have an even greater impact in their internship roles at ICP. The rich and in depth curriculum of this new program is so necessary to ensure the growth of a new and diverse generation of dedicated mental health professionals.

The proposed Human Service and Community Justice Program will provide students the opportunity to acquire a broad understanding of the field of human services and the essential skills, ethical and cultural sensitivities vital to work in this field. A review of the course curriculum reveals both theoretical and experiential learning components that are so crucial in working with the many challenging issues that impact our communities. Through multidisciplinary courses it is obvious your students will also develop a rich appreciation for diverse human systems, advocacy and social justice. The two year in-service learning component introducing students to developmental tasks and practical realities of work is especially impressive.

Overall, the proposal for a major in Human Services and Justice demonstrates an awareness to the sensitivities of our most vulnerable populations and their need of an array of support services. Students who graduate from this program would seem to be ideally prepared for a number of entry level positions serving as counselors, advocates, support personnel and community leaders, including those that exist here at ICP. We would be pleased to consider these students for internship opportunities while they are enrolled as undergraduates in the program’s comprehensive psychoeducational program. Finally, it seems that students who complete this program would be exceptionally qualified to pursue graduate level education in the fields of counseling, social work or similar fields of study.

Wishing you much success in this endeavor. Please feel free to contact me if you require further information.

Sincerely,

Andrea S. Green-Lewis, LCSW-R  
Director of Operations
Appendix J. Articulation Agreement with Borough of Manhattan Community College
ARTICULATION AGREEMENT FORM

A. SENDING AND RECEIVING INSTITUTIONS
Sending College: Borough of Manhattan Community College
Department: Social Sciences, Human Services and Criminal Justice
Program: Human Services
Degree: A.S. in Human Services

Receiving College: John Jay College of Criminal Justice of the City University of New York
Department: Counseling and Human Services
Program: Human Services and Community Justice
Degree: B.S. in Human Services and Community Justice

B. ADMISSIONS REQUIREMENTS FOR SENIOR COLLEGE PROGRAM
- Completion of A.S. degree and a minimum GPA of 2.0
- Grade of C or better in freshman composition, its equivalent, or a higher-level English course

Total transfer credits granted toward the baccalaureate degree: 60
Total additional credits required at the senior college to complete baccalaureate degree: 60
Total credits required for the baccalaureate degree in English: 120
C. **TRANSFER CREDITS AWARDED**
Borough of Manhattan Community College (BMCC) graduates who complete the Associate in Science (A.S.) in Human Services will receive 60 credits toward the Bachelor of Science (B.S.) in Human Services and Community Justice at John Jay College of Criminal Justice (JJC).

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<td>HUM 212 Introduction to Disabilities and Behavior Change</td>
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<td>HUM 213 Child Welfare²</td>
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<td>HUM 301 Field Experience in Human Services I</td>
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<td>HUM 401 Field Experience in Human Services II</td>
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<td>HUM 411 Social Welfare Programs and Policies</td>
</tr>
<tr>
<td>SOC 100 Introduction to Sociology</td>
</tr>
<tr>
<td>POL 100 American Government</td>
</tr>
<tr>
<td>XXX xxx Modern Language Course</td>
</tr>
<tr>
<td>Social Science Elective: Select one of the following courses:</td>
</tr>
<tr>
<td>PSY 240 Developmental Psychology²</td>
</tr>
<tr>
<td>PSY 250 Child Psychology</td>
</tr>
<tr>
<td>PSY 260 Abnormal Psychology</td>
</tr>
<tr>
<td>SOC 250 The Family²</td>
</tr>
<tr>
<td><strong>Total Curriculum Credits</strong></td>
</tr>
<tr>
<td><strong>Total Program Credits</strong></td>
</tr>
</tbody>
</table>

¹ Students who intend to transfer to JJC must take MAT 150, MAT 206, MAT 209, or MAT 301 to fulfill a JJC major prerequisite.

² Students who intend to transfer to JJC must take HUM 213, PSY 240, or SOC 250 to fulfill JJC major elective area A.
**D. ADVISOR RECOMMENDATIONS**

BMCC students who intend to transfer to JJC under this agreement must take the following courses:

- MAT 150, MAT 206, MAT 209 or MAT 301 to satisfy the Mathematical and Quantitative Reasoning requirement.
- HUM 213 to satisfy the Program Elective requirement.
- PSY 240, PSY 250 or SOC 250 to satisfy the Social Science Elective requirement.

**E. COURSE EQUIVALENCIES**

<table>
<thead>
<tr>
<th>BMCC Course</th>
<th>JJC Course / Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 101 Introduction to Human Services and Social Work</td>
<td>CHS Blanket</td>
</tr>
<tr>
<td>HUM 201 Human Services Skills</td>
<td>CHS 150 Foundations in Human Services Counseling</td>
</tr>
<tr>
<td>HUM 213 Child Welfare</td>
<td>CSL 227 Families: Stress, Resiliency and Support Systems (fulfills elective Category A)</td>
</tr>
<tr>
<td>HUM 301 Field Experience in Human Services I</td>
<td>CHS Blanket</td>
</tr>
<tr>
<td>HUM 401 Field Experience in Human Services II</td>
<td>CHS 381 Field Education in Human Services I</td>
</tr>
<tr>
<td>HUM 411 Social Welfare Programs and Policies</td>
<td>CHS Blanket</td>
</tr>
<tr>
<td>XXX xxx Modern Language Course</td>
<td>XXX xxx Equivalent Language/Level</td>
</tr>
<tr>
<td>POL 100 American Government</td>
<td>POL 101 American Government and Politics</td>
</tr>
<tr>
<td>PSY 100 Intro to Psychology</td>
<td>PSY 101 Intro to Psychology</td>
</tr>
<tr>
<td>PSY 240 Developmental Psychology</td>
<td>PSY 231 Developmental Psychology (fulfills elective Category A)</td>
</tr>
<tr>
<td>PSY 250 Child Psychology</td>
<td>PSY Blanket</td>
</tr>
<tr>
<td>PSY 260 Abnormal Psychology</td>
<td>PSY 242 Abnormal Psychology</td>
</tr>
<tr>
<td>SOC 100 Introduction to Sociology</td>
<td>SOC 101 Intro to Sociology</td>
</tr>
<tr>
<td>SOC 200 Social Problems</td>
<td>SOC 302 Social Problems</td>
</tr>
<tr>
<td>SOC 240 Urban Sociology</td>
<td>SOC 201 Urban Sociology</td>
</tr>
<tr>
<td>SOC 250 The Family</td>
<td>SOC 202 The Family: Change, Challenges and Crisis Intervention (fulfills elective Category A)</td>
</tr>
</tbody>
</table>

*Note for Testing and Evaluation and Major Coordinators: No equivalent course; use course substitution.

**F. SUMMARY OF TRANSFER CREDITS FROM BMCC AND CREDITS TO BE COMPLETED AT JJC**

<table>
<thead>
<tr>
<th></th>
<th>Total Credits for the Baccalaureate</th>
<th>Transfer Credits from BMCC</th>
<th>Credits to be Completed at John Jay</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Requirements</td>
<td>36</td>
<td>30</td>
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</tr>
<tr>
<td>Major Requirements</td>
<td>48</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Electives</td>
<td>36</td>
<td>12</td>
<td>24</td>
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<tr>
<td>Total</td>
<td>120</td>
<td>60</td>
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</table>
### REMAINING SENIOR COLLEGE REQUIREMENTS FOR BACCALAUREATE DEGREE

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>General Education – College Option Requirements</td>
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</tr>
<tr>
<td>One course from 300-level Justice Core</td>
<td>3</td>
</tr>
<tr>
<td>One course from Learning from the Past or Communications</td>
<td>3</td>
</tr>
<tr>
<td><strong>General Education – College Option Requirements Subtotal</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>Major Requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Part I. Required Core</strong></td>
<td></td>
</tr>
<tr>
<td>AFR 1XX Introduction to Community Justice in Human Systems</td>
<td></td>
</tr>
<tr>
<td>AFR 227 Community Based Approaches to Justice</td>
<td></td>
</tr>
<tr>
<td>CHS 230 Culture, Direct Service &amp; Community Practice</td>
<td></td>
</tr>
<tr>
<td>CHS 235 Theories of Assessment and Intervention</td>
<td></td>
</tr>
<tr>
<td>CHS 310 Advanced Interpersonal Counseling Skills</td>
<td></td>
</tr>
<tr>
<td><strong>Part II. Research Methods and Evaluation</strong></td>
<td></td>
</tr>
<tr>
<td>AFR 3XX Research Methods in Community Justice and Human Systems</td>
<td>6</td>
</tr>
<tr>
<td>CHS 3XX Program Planning, Development, and Evaluation</td>
<td></td>
</tr>
<tr>
<td><strong>Part III. Electives</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Category B. Justice in Human Services - Select one course from:</strong></td>
<td></td>
</tr>
<tr>
<td>AFR 229 Restorative Justice: Making Peace and Resolving Conflict</td>
<td></td>
</tr>
<tr>
<td>AFR 317 Environmental Racism</td>
<td></td>
</tr>
<tr>
<td>AFR 319 Self, Identity and Justice: Global Perspectives</td>
<td></td>
</tr>
<tr>
<td>AFR 320 Perspectives on Justice in the Africana World</td>
<td></td>
</tr>
<tr>
<td>ANT 330 American Cultural Pluralism and the Law</td>
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<tr>
<td>CSL 363 Vocational Development and Social Justice</td>
<td></td>
</tr>
<tr>
<td>LLS 322 Latino/a Struggles for Civil Rights and Social Justice</td>
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</tr>
<tr>
<td>LLS 325 Latino/a Experiences of Criminal Justice</td>
<td></td>
</tr>
<tr>
<td>SOC 216 Probation and Parole: Theoretical and Practical Approaches</td>
<td></td>
</tr>
<tr>
<td>SOC 314 Theories of Social Order</td>
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</tr>
<tr>
<td><strong>PART IV. Field Experience</strong></td>
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</tr>
<tr>
<td><strong>Field Experience II (3 credits) – 150 Hours</strong> - Select one course from:**</td>
<td></td>
</tr>
<tr>
<td>AFR 3YY Field Education in Community Organizing and Community Practice II</td>
<td></td>
</tr>
<tr>
<td>CHS (CSL) 382 Field Education in Human Services II</td>
<td>3</td>
</tr>
<tr>
<td>UGR 390 Practicum in Youth Justice</td>
<td></td>
</tr>
<tr>
<td><strong>PART V. Senior Seminar/Capstone</strong></td>
<td></td>
</tr>
<tr>
<td>CHS 4XX Senior Seminar in Human Services and Community Justice</td>
<td>3</td>
</tr>
<tr>
<td><strong>Major Requirements Subtotal</strong></td>
<td><strong>30</strong></td>
</tr>
<tr>
<td><strong>Electives/Minor Credits</strong></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total credits required at JJC</strong></td>
<td><strong>60</strong></td>
</tr>
<tr>
<td><strong>Total credits transferred from BMCC</strong></td>
<td><strong>60</strong></td>
</tr>
<tr>
<td><strong>Total credits required for the baccalaureate degree</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

## H. ARTICULATION AGREEMENT FOLLOW-UP PROCEDURES

1. **Procedures for reviewing, updating, modifying or terminating agreement:**
   When either of the degree programs involved in this agreement undergoes a change, the agreement will be reviewed and revised accordingly by faculty from each institution's respective departments, selected by their chairpersons/program directors.

2. **Procedures for evaluating agreement, i.e., tracking the number of students who transfer under the articulation agreement and their success:**
   On request, JIC will provide BMCC with the following information: a) the number of BMCC students who applied to the program; b) the number of BMCC students who were accepted into the program; c) the number of BMCC students who enrolled; and d) the aggregate GPA of these enrolled students.
3. Sending and receiving college procedures for publicizing agreement, e.g., college catalogs, transfer advisers, websites, etc.: This articulation agreement will be publicized on the BMCC website, and the JJC website. Transfer advisors at BMCC will promote this agreement with eligible students.

APPENDIX A: SAMPLE DEGREE MAP

<table>
<thead>
<tr>
<th>SEMESTER #1</th>
<th>CRS</th>
<th>SEMESTER #2</th>
<th>CRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 150 – Intro to Statistics</td>
<td>16</td>
<td>ENG 201 – Introduction to Literature</td>
<td></td>
</tr>
<tr>
<td>ENG 101 – English Composition I</td>
<td></td>
<td>HUM 201 – Human Services Skills</td>
<td></td>
</tr>
<tr>
<td>HUM 101 – Intro to Human Services &amp; Soc. Work</td>
<td></td>
<td>SPN 105 – Introductory Spanish 1</td>
<td>15</td>
</tr>
<tr>
<td>SPE 100 – Fundamentals of Speech</td>
<td></td>
<td>PSY 100 – Introduction to Psychology</td>
<td></td>
</tr>
<tr>
<td>SOC 100 – Introduction to Sociology</td>
<td></td>
<td>HUM 213 – Child Welfare</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEMESTER #3</th>
<th>CRS</th>
<th>SEMESTER #4</th>
<th>CRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111 – Human Biology 2</td>
<td>16</td>
<td>HUM 401 – Field Experience in Human Svcs II</td>
<td></td>
</tr>
<tr>
<td>POL 100 – American Government</td>
<td></td>
<td>HUM 411 – Social Welfare Program &amp; Policies</td>
<td></td>
</tr>
<tr>
<td>HUM 301 – Field Experience in Human Services I</td>
<td></td>
<td>AFL 161 – Health Problems in Urban Commun. 4</td>
<td>15</td>
</tr>
<tr>
<td>SPN 106 – Introductory Spanish II 1</td>
<td></td>
<td>SOC 250 – The Family</td>
<td></td>
</tr>
<tr>
<td>CRT 100 – Critical Thinking 2</td>
<td></td>
<td>MUS 102 – Principles of Music 5</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SEMESTER #5</th>
<th>CRS</th>
<th>SEMESTER #6</th>
<th>CRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Col Option: Justice Core 300-level</td>
<td>15</td>
<td>AFR 227 Com Based Approach Justice</td>
<td></td>
</tr>
<tr>
<td>AFR 1XX Community Justice in Hum Syst</td>
<td></td>
<td>CHS 235 Theories of Assessment</td>
<td></td>
</tr>
<tr>
<td>Pt II-B AFR 229 Restorative Justice</td>
<td></td>
<td>Elective or Minor</td>
<td>15</td>
</tr>
<tr>
<td>Elective or Minor</td>
<td></td>
<td>Elective or Minor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEMESTER #7</th>
<th>CRS</th>
<th>SEMESTER #8</th>
<th>CRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHS 310 Adv Interpersonal Counslg Skills</td>
<td>15</td>
<td>CHS 4XX Sr Seminar Human Service &amp; CJ</td>
<td></td>
</tr>
<tr>
<td>CHS 3XX Program Planning, Dev &amp; Eval</td>
<td></td>
<td>Elective or Minor</td>
<td></td>
</tr>
<tr>
<td>AFR 3XX Research Methods in CJ &amp; HS</td>
<td></td>
<td>Elective or Minor</td>
<td></td>
</tr>
<tr>
<td>CHS 382 Field Education in Hum Serv II</td>
<td></td>
<td>Elective or Minor</td>
<td></td>
</tr>
<tr>
<td>Elective or Minor</td>
<td></td>
<td>Elective or Minor</td>
<td></td>
</tr>
</tbody>
</table>

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1 Students may select any modern foreign language course. Please note, two semesters of the same modern language are required.
2 Students can select any Life and Physical Sciences course as an alternative.
3 Students can select any Individual and Society course as an alternative.
4 Students can select any US Experiences in it Diversity course as an alternative.
5 Students can select any Creative Expression course as an alternative.
Effective Date: Fall 2017, pending NYSED approval.

**Borough of Manhattan Community College**

Dr. Karrin Wilks  
Provost and Senior Vice President for Academic Affairs  
Date: 2/22/17

Prof. Sarveeta Bishop  
Chairperson, Social Sciences, Human Services, & Criminal Justice  
Date: 2/23/17

**John Jay College of Criminal Justice**

Dr. Jane Bowers  
Provost and Senior Vice President for Academic Affairs  
Date: 2/22/17

Prof. Cary Sanchez Leguelinel  
Chairperson, Counseling and Human Services  
Date: 2/22/17
Appendix K. Job Ads
DEPT. OF HOMELESS SERVICES
Job Posting Notice

Job Details

Job ID: 278914
# of Positions: 1
Business Title: Child Wait Space Counselor
Title Code No: 56058
Level: 00
Civil Service Title: COMMUNITY COORDINATOR
Title Classification: Non-Competitive
Job Category: Constituent Services & Community Programs
Proposed Salary Range: $50,362.00 - $78,177.00 (Annual)
Career Level: Experienced (non-manager)
Work Location: 151 East 151st St, Bronx, NY
Division/Work Unit: Path/Intake

Job Description

***REPOST***
The NYC Department of Homeless Services seeks a Community Coordinator to serve as Child Wait Space Counselor in the Family Intake Child Wait Space within the Division of Family Services. Family Intake operates 24/7 as the City's intake center serving families with children seeking shelter and services. The Child Wait Space operates from 8A to Midnight daily. The Child Wait Space Counselor under supervision of the Child Wait Space Manager, the Child Wait Space Counselor will be responsible for the direct care of a small group of children within Family Intake’s Child Wait Space. She will guide and supervise the play activity of the children, organizing groups, distributing toys, and supervising orderly and wholesome activities. She will ensure that the children are fed, if necessary, while in care.

Minimum Qual Requirements

1. A baccalaureate degree from an accredited college and two years of experience in community work or community centered activities in an area related to the duties described above; or
2. High school graduation or equivalent and six years of experience in community work or community centered activities in an area related to the duties as described above; or
3. Education and/or experience which is equivalent to “1” or “2” above. However, all candidates must have at least one year of experience as described in “1” above.

Preferred Skills

Two years of satisfactory experience assisting in the care of children in one or a combination of the following: nursery school, primary school, child group work, camp counselor, house mother in a children’s institution, practical nursing for children; certification in first aid and CPR.

To Apply

For City Employees, please go to Employee Self Service (ESS), click on Recruiting Activities/Careers.
For all other applicants, please go to the NYC Careers website.

Most public libraries have computers available for use.

No phone calls, faxes, emails and personal inquiries permitted.

Hours/Shift

Tuesday – Saturday, 4 PM – 12 AM.

Work Location

151 East 151st St, Bronx, NY

Residency Requirement

New York City residency is generally required within 90 days of appointment. However, City Employees in certain titles who have worked for the City for 2 continuous years may also be eligible to reside in Nassau, Suffolk, Westchester, Rockland, or Orange County. To determine if the residency requirement applies to you, please discuss with the agency representative at the time of interview.

POSTING DATE: 01/18/2017
POST UNTIL: Until Filled

Return to Previous Page

The City of New York is an Equal Opportunity Employer
Job Description

The Bureau of Primary Care Access and Planning (PCAP) is tasked specifically with devising and implementing policy, program and research initiatives that maximize health insurance coverage and reduce barriers to health care access for vulnerable populations. This bureau also closely tracks health care reform in New York City with an eye towards policy developments that will impact the organization’s mission. PCAP’s Office of Health Insurance Services has a high priority grant initiative to roll out and has partnered with the New York City Human Resources Administration’s Office of Citizen Health Insurance Access and the City’s Department for the Aging (DFTA) in a five-year New York State-funded initiative to assist the aged (65 years or older), certified blind and certified disabled populations in New York City (five boroughs) through health insurance related education, outreach and enrollment assistance. In an effort to ensure full compliance of this partnership, we are seeking to hire a Training Project Coordinator who will report directly to the Director of Strategic Programming and Performance Management. Under direction, with wide latitude for independent judgment, initiative and unreviewed action and decision making, the incumbent will work collaboratively with the Director of Training and Outreach and interface with supervisors, agency programs and community-based organizations to promote integration of knowledge in health literacy and enrollment into health insurance and other government sponsored programs. The Training Project Coordinator will perform very responsible work in the coordination of enrollment activities at senior center sites and DOHMH health centers across the five boroughs.

DUTIES WILL INCLUDE BUT NOT BE LIMITED TO:

• Assist the Director of Training and Outreach in the planning, training and organizing of informational sessions on the subject of public health insurance programs and other benefits relevant to facilitated enrollment.

• Develop community-based health center site outreach events.

• Conduct presentations and engage community residents to achieve access to health insurance, medical services and other government sponsored programs by educating them about health insurance products; insurance affordability programs; and resources for government benefit programs including Medicaid Excess Income; Medicare Savings; Waiver Services and Food Stamps.

• Participate in evaluative and quality assurance activities designed to monitor the effectiveness of the program’s service delivery at outreach events.

• Work collaboratively with the Director of Training and Outreach to develop strategies to address problematic cases and increase the knowledge base of staff.

• Serve as back up to the Director of Training and Outreach and conduct periodic visits to the Department for the Aging community-based senior citizen sites to observe implementation of enrollment activities.

• Perform all duties in the absence of the Public Health Educator.

Minimum Qual Requirements

1. A baccalaureate degree from an accredited college and two years of experience in community work or community centered activities in an area related to the duties described above; or

2. High school graduation or equivalent and six years of experience in community work or community centered activities in an area related to the duties as described above; or

3. Education and/or experience which is equivalent to “1” or “2” above. However, all candidates must have at least one year of experience as described in “1” above.

Preferred Skills

Experience in training staff

Experience in supervising staff

Experience in conducting outreach and making presentations

Excellent computer skills

Facilitated enrollment or Certified Application Counselor experience a plus

NYS Driver’s License highly desirable

To Apply

Apply online with a cover letter to https://a127-jobs.nyc.gov/

In the Job ID search bar, enter: job ID # 269386.

We appreciate the interest and thank all applicants who apply, but only those candidates under consideration will be contacted.

Work Location

Citywide - Travel may be required

Residency Requirement

New York City residency is generally required within 90 days of appointment. However, City Employees in certain titles who have worked for the City for 2 continuous years may also be eligible to reside in Nassau, Suffolk, Putnam, Westchester, Rockland, or Orange County. To determine if the residency requirement applies to you, please discuss with the agency representative at the time of interview.

POSTING DATE: 10/26/2016

POST UNTIL: Until Filled
Human Rights Assistant
01.17.17 - Job Title: Human Rights Assistant

Department: U.S. Policy & Advocacy Program

Center Background: The Center for Reproductive Rights (the Center) is the premier global legal organization dedicated to advancing women's reproductive health, self-determination, and dignity. Its mission is straightforward and ambitious: to advance reproductive health and rights as fundamental human rights that all governments around the world are legally obligated to protect, respect, and fulfill. Headquartered in New York City, the Center has regional offices in Bogota, Geneva, Kathmandu, Nairobi, and Washington, DC and a staff of more than 130 diverse professionals. Its annual operating budget is approximately $23 million, the result of an extraordinary growth trajectory; the Center is now poised for a new phase of significant expansion through its next Strategic Plan.

The Center’s game-changing litigation and advocacy work, combined with its unparalleled expertise in constitutional, comparative, and international human rights law, have transformed how reproductive rights are understood by courts, governments, and human rights bodies worldwide. It has played a key role in securing landmark legal victories in the U.S., Latin America, Africa, Asia, and Eastern Europe on issues including access to life-saving obstetrics care, contraception, safe abortion services, and comprehensive sexuality education, as well as the prevention of forced sterilization and child marriage. It has brought groundbreaking access to life-saving obstetrics care, contraception, safe abortion services, and comprehensive sexuality education to communities in more than 55 countries.

To learn more about the Center for Reproductive Rights, go to www.reproductiverights.org

The Human Rights Assistant will report directly to the Senior Human Rights Counsel and will provide administrative and other support to the work of the U.S. Human Rights team.

Responsibilities:

The Human Rights Assistant’s primary job responsibilities include, but are not limited to:

- Support the work of the Senior Human Rights Counsel, Human Rights Counsel, and Manager of U.S. Maternal Health & Human Rights Campaigns in fulfilling their job responsibilities;
- Conduct factual research for human rights, maternal health, and other advocacy projects;
- Support impact research conducted by the Center and partners to help track outcomes and related developments;
- Coordinate an evaluation plan for human rights advocacy campaigns;
- Track policy and other developments related to maternal health in the U.S. and other human rights campaigns;
- Coordinate and provide logistical support for advocacy events, including serving as a liaison to Communications and Development on cross-departmental initiatives;
- Fulfill administrative duties for assigned staff including but not limited to scheduling, travel, budgeting, finance, and monitoring and evaluation; and
- Provide other assistance to support the department, as needed.

Qualifications:

- Strong commitment to the Center’s mission, purpose, and values;
- Bachelor’s degree required;
- Minimum of 1-2 years of relevant experience;
- Strong writing, proofreading, and editing skills;
- Proiciency with Microsoft Outlook, Word, Excel, and PowerPoint required; experience with SharePoint, webinar management, Salesforce, Convio, or other CRMs a plus;
- Strong research capability;
- Very detail-oriented with strong organizational skills;
- Ability to work collaboratively, multi-task, and to work under pressure;
- Office experience required; and
- Experience with reproductive rights issues or a familiarity with other issues relating to women’s equality, human rights, civil rights, or racial and social justice issues is highly desirable.

Compensation: The Center offers a competitive salary commensurate with experience and a comprehensive benefits program.

How to Apply: Please click on the link below to apply. A cover letter, resume, writing sample, and contact information for three references must be included in your application in order to be considered for this position. Please include these application materials as attachments.

Deadline for Applications: Applications will be reviewed on a rolling basis until the position is filled. Applicants are strongly encouraged to apply as soon as possible.

The Center for Reproductive Rights is an equal opportunity employer, committed to inclusive hiring and dedicated to diversity in our work and staff. We strongly encourage candidates from all groups and communities to apply.

www.reproductiverights.org
Job Description

$38,000–$53,000

The International Rescue Committee (IRC) responds to the world’s worst humanitarian crises and helps people to survive and rebuild their lives. Founded in 1933 at the request of Albert Einstein, the IRC offers lifesaving care and life-changing assistance to refugees forced to flee from war or disaster. At work today in over 40 countries and 22 U.S. cities, we restore safety, dignity and hope to millions who are uprooted and struggling to endure. The IRC leads the way from harm to home.

IRC’s International Programs focus on various relief, rehabilitation, and development programs for refugees, internally displaced persons and those affected by conflict in different regions worldwide. Each region is managed by a regional team that oversees the region’s country programs, headed by a Regional Program Officer (PO). These programs focus on different sectors, including health; water and sanitation; children and youth protection and development; protection; gender-based violence protection; economic development; civil society development; community-driven reconstruction; and refugee camp management.

Scope:
The HEAZ* Program Assistant will be responsible for providing a range of assistance services in support of the programs in the designated regions, working closely with and reporting to the regional Program Officer. The position also involves working in close collaboration with colleagues based in the field and in other HQ units and departments, including but not limited to Technical Units, Development, Human Resources and Finance staff, and some liaising with London and Washington offices, as needed.

Responsibilities:

For the HEAZ region, the Program Assistant will:

Grants Management

- Maintain detailed lists of the region’s active grants by country, including reporting deadlines, and alert colleagues as appropriate;
- Liaise with country programs and the Finance Department to process source code requests from the field and relay proper documentation back to the country programs;
- Assist in obtaining Delegations of Authority, Powers of Attorney, and other documents as needed to facilitate field office operations;
- Procure signatures on grant agreements, amendments, and other required documents;
- Assist in reviewing, providing substantive feedback, and submitting grant reports when needed;
- Ensure proper grant management filing systems at HQ, both electronic and hard files;
- Assist in providing coverage support when Program Officer and/or Program Manager is absent.

Internal and External Communications

- Assist the Program Officer and Program Manager to obtain and maintain updated summary information on the region’s country programs, and to help draft summaries as requested;
- Assist in maintaining up-to-date information for the region on the IRC’s intranet site.

Administrative

- Perform office administrative tasks, such as photocopying, scanning, mailing, and filing;
- Assist with the organization of regional conferences and regional meetings;
- Assist in organizing logistics and meetings for field staff visiting HQ;
- Manage country call calendar and provide call support notes for both regions
- Provide administrative support to consultants in the field and process payments;
- Work with IPD’s Department Manager and field offices to ensure the region’s entries in the International Address Book are kept up to date.

Other

- Research and be informed about programmatic issues, security and political developments in Horn & East Africa;
- Participate in special projects as needed.

Requirements

- Bachelor’s degree in a related field (Education, Int’l Affairs, Social Work, etc.) - or equivalent;
- Minimum 1-2 years related non-profit and/or administrative work experience. Some field experience a plus, regional experience in particular;
- Proven writing and editing skills: the ability to draft memos & letters and edit reports and proposals;
- Solid organizational and administrative skills, with a proven ability to prioritize projects with attention to detail;
- Excellent Computer skills: MS Word, Excel, and database software.
- The ability to work independently and productively in a fast-paced environment – pro-activity and initiative to problem solve within the job parameters is essential.

*Horn, East Africa & Zimbabwe: Burundi, Ethiopia, Kenya, Somalia, South Sudan, Tanzania, Uganda, Yemen, Zimbabwe

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</tbody>
</table>

The International Rescue Committee responds to the world’s worst humanitarian crises and helps people to survive and rebuild their lives. Founded in 1933 at the request of Albert Einstein, the IRC offers lifesaving care and life-changing assistance to refugees forced... Read more

International Rescue Committee Reviews

3.7

Rating Trends

- Recommend to a friend: 71%
- Approve of CEO: 87%

Feb 15, 2017

"Large INGO"

Former Employee - Program Officer in New York, NY

I worked at International Rescue Committee full-time (More than 3 years)

Pros
Smart people, great mission, highly strategic environment.

Cons
So big it can feel bureaucratic. Departments can feel a bit disconnected.

Feb 15, 2017

"Program Coordinator"

Former Employee - Anonymous Employee in Salt Lake City, UT

I worked at International Rescue Committee full-time (More than 3 years)

Feb 14, 2017

"Community Interpreter/Community Cultural Liaison"

Current Employee - Anonymous Employee in New York, NY

I have been working at International Rescue Committee part-time (More than a year)
References


(Bureau of Labor Statistics, 2015)\(^{11}\).

“Occupational Outlook Handbook” (BLS OOH)\(^{12}\)

\(^{11}\) Ibid. p3

\(^{12}\) Ibid. p13
RESOLVED, that the program in Data Science and Engineering offered at City College and leading to the Master of Science, be approved, effective June 26, 2017, subject to financial ability.

EXPLANATION: City College seeks to build upon its long standing reputation by adding to its professional graduate programs in the STEM disciplines. There is rapidly growing demand for professionals to fill positions titled “Data Scientist” and “Data Engineer.” Government agencies are increasingly listing the STEM data science and data engineering skills as national priorities. *Data Science* can be roughly summarized as a statistical data-driven approach to problem solving. *Data Engineering* is concerned with the building, configuring and maintaining digital infrastructure for data science particularly in light of the unprecedented growth of data, commonly called “Big Data.” The need to address this challenge is nationwide but is particularly acute in the New York metropolitan area, with so much of the local economy information-based.
PROPOSAL TO ESTABLISH A PROGRAM IN DATA SCIENCE AND ENGINEERING LEADING TO THE MASTER’S DEGREE

EFFECTIVE FALL 2017

SPONSORED BY THE DEPARTMENT(S) OF COMPUTER SCIENCE

APPROVED BY
Department of Computer Science Curriculum Committee, 04/18/2016
Department of Computer Science, 04/19/2016
Grove School of Engineering Graduate Curriculum Committee, 05/04/2016
Grove School of Engineering Faculty, 05/10/2016

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Provost’s Signature: ____________________________________________
Provost’s Name: _______________________________________________
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1 Executive Summary

Need: There is rapidly growing demand for professionals to fill positions titled “Data Scientist”, and “Data Engineer.” Government agencies are increasingly listing as national priorities, the STEM data science and data engineering skills. Data Science can be roughly summarized as a statistical data-driven rather than a domain model-driven approach to problem solving. Data Engineering is concerned with the building, configuring and maintaining digital infrastructure for data science particularly in light of the unprecedented growth of data, commonly called “Big Data.” Taking the vast amounts of newly available data and extracting actionable information and insight has become a challenge central to nearly every industry. The need to address this challenge is nationwide but is particularly acute in the New York metropolitan area, with so much of the local economy information based.

Students and professionals seeking training and credentials in these fields have resulted in a proliferation of certificate and degree programs both nationally and within the New York area. Currently Columbia and NYU offer MS Degree programs in Data Science, while Fordham, CUNY/Queens College, CUNY/Baruch College and Manhattan College have programs in Data Analytics as does the Graduate Center. Stevens Institute of Technology has a Data Engineering Masters program. Currently there are no public colleges offering a Data Science and Engineering program to provide affordable access to students in the New York metropolitan area. This program will address this, focusing on students with previous math, science or engineering backgrounds.

Curriculum: Both Data Science and Data Engineering are intrinsically interdisciplinary fields. These fields synthesize material from Computer Science and Applied Statistics which provide basic skills and tools, as well as an application domain which could be any in engineering or science. In the proposed 2-year, 30 credit Master of Science program, the core is made up of 6 three-credit Data Science/Data Engineering courses in tools and skills, with 3 three-credit domain electives and a 6 credit thesis option, or 4 three-credit domain electives and a 3 credit capstone option.

Besides introducing students to data science thinking the core will teach the relevant applied statistics, machine learning, data visualization, big data, and data engineering. The electives provide background in a problem domain to which students will apply. Data Science skills. The capstone is critical to provide evidence that the student has
mastered the ability to apply their Data Science and Engineering skills to one of the specific domains, including traditional engineering domains. Engineering departments at CCNY who have agreed to participate both in contributing elective courses and providing mentors for capstone and thesis problems are listed in the proposal. Thus the electives and the capstone project provide the context and mechanism for interdisciplinary work.

**Enrollment:** Based on information gathered from other programs at CCNY and CUNY, as well as from discussions with faculty involved with the Columbia and NYU program, it is clear that demand for such a program is quite strong and greatly exceeds the slots available. In particular, we have two increasing pools of undergraduate students, one in computer science, one in computer engineering jointly managed by Departments of Computer Science and Electrical Engineering. It will be possible to start the program by admitting 25 students for the first year and eventually reaching 35 students per year at proposed steady state. The capacity of the program essentially depends the size of the pool of capstone and thesis mentors and the logistics of match making. The applicant pool will be targeted at science and engineering students who are interested to switching to Data Science.

**Current Resources:** We currently have at least 6 tenured faculty members in the Computer Science department and 2 in the math department who are both capable and have expressed enthusiasm at teaching data science core courses. There is also an ongoing search for a faculty member in Data Science in the computer science department unrelated to this proposed program. In addition, there are faculty in other departments such as Electrical Engineering, which would be qualified to teach core courses. Critically this means that there are other courses these faculty members would not be able to teach that would need to be staffed. On a temporary and short term basis we would be able to start the program but increased staffing would be necessary for sustainability. Because the electives will rely on existing courses and the data science students will be distributed across fields, the impact of increased elective teaching load should be marginal. Similarly, since the capstone/thesis projects will rely on existing faculty, departmental, and center research programs the program is projected to act as a research multiplier, providing students trained with data science across the college.

**Resources Needed:** The principal expenses for the program will be the addition of two new research faculty members in Data Science. As with all CSe research faculty will be expected to seek grant funding and thus they should be able to contribute to the College through overhead. It is also likely given the applied nature of the subjects that lecturers from industry would make an important contribution to teaching of related courses including some core courses. In addition, two CSe faculty members, Michael Grossberg and Zhigang Zhu, will be co-directors both distributing the load of administrating the program. A part-time (½ staff) administrator for assisting daily student and faculty activities will also be hired. In addition, we will require multi-media classroom which will facilitate workshop-like hands on courses. The program will rent a virtual private cloud cluster for big-data computation and storage. Even with additional staff and costs the program is expected to generate over $200,000/year in profits in steady state.
Outcomes expected: We believe that the after completing the program students will not only have foundations in data science but their project will demonstrate to potential employers that they are capable of applying those skills to a domain.

2 Abstract

The confluence of an unprecedented increase in the availability of data and ever increasing computational power has stimulated the development of a new disciplines of Data Science and Data Engineering, which applies tools and methods drawn from computer science and statistics to knowledge domains in science and engineering. We propose to create a Data Science and Engineering (DSE) Master’s degree program to be administered by the Computer Science Department in the Grove School of Engineering at City College. This new program aims to address the growing demand for data science and data engineering skills in government and industry. The goal of the proposed DSE Master’s program is to give students a solid foundation in the core data science and engineering skills, which will allow them to analyze, process, visualize and apply machine learning and computational statistics to problems in engineering and scientific disciplines. The core data science methodology covered in the DSE program will provide students with fundamental computational and statistical skills.

Demand for trained personnel in data science and in data engineering is evident from the many vacant positions in this field currently being advertised by organizations in both the public and private sectors. The proposed degree program in data science and engineering, although administered by the Computer Science Department, is conceived as an interdisciplinary effort drawing on the expertise of several departments within City College. This program will provide a foundation in core data science and data engineering skills while leveraging the many unique strengths of City College allowing students to apply these tools to a wide range of problems in science and engineering fields. The program will admit students with traditional mathematics, science and engineering backgrounds and provide them with a solid foundation of data science skills and project experience.

3 Purposes, Goals and Objectives

3.1 Introduction

In 2010 Eric Shmidt, CEO of Google, stated “Every two days now we create as much information as we did from the dawn of civilization up until 2003.” A 2008 paper by Ganz estimated this at 1,200 exabytes in 2010 and predicted a 10-fold increase every 10 years. Nearly every field of human endeavor is awash in oceans of data. These include
sensory data collected for environmental monitoring and space exploration, multimodal sensor data collected by the Internet of Things, biomedical and healthcare data, and audio, video, text data collected for various applications in surveillance, security and transportation, as well multimedia data exchanged over the Internet. In the last decade many fields of science and engineering have experienced a 100-1000 fold increase in the volumes of generated data compared to the amount generated a mere decade ago. The consequences of this new environment are only beginning to be understood. Traditional model based approaches to problems characterized by formulation of an hypothesis followed by verification using small amounts of data painstakingly acquired must now compete with new approaches that search for models and relationships in enormous amounts of data. These new approaches require new skills. Statistical methods are critical to determine whether or not relationships found in data are significant or accidental. Machine learning methods are essential to search for patterns. New computational frameworks leveraging distributed and cloud computing must be harnessed to cope with the enormous scale of many problems.

The new fields of Data Science and Data Engineering have emerged to address these problems. Data scientists take a statistically data-driven rather than a domain model-driven approach to analysis. Data Engineers build, configure and maintain digital infrastructure for data science particularly in light of the unprecedented growth of data, commonly called “Big Data.” Data, both big and small along when paired with algorithms in Machine Learning and Statistics make it possible to identify patterns automatically. These patterns provide a starting point to generate discoveries and insights previously only possible with human experts exclusively. Data Science and Data Engineering also serve to support human experts by incorporating methods of Visual Analytics for purposes of exploration. Exploration and analysis both depend on access to both computational power and data storage such as provided by cloud computing. Yet leveraging the public and private clouds for data science is central focus for the Data Engineer. The data engineer gathers and collects the data, stores it, does batch processing or real-time processing on it, and serves it via an API to a data scientist or domain expert who can easily query it.

Business and government are now desperate to hire experts in data science and data engineering, which is leading to an explosion in salaries and dire warnings of shortages. Universities across the country are responding to the demand by creating programs at a rapid pace. Data science boot-camps are springing up, charging tens of thousands of dollars for short crash courses and job placement. In the past, Computer Science departments have been able to train students in statistical computation either by having the students take a specialized course in the mathematics department, or by offering such a course in computer science. The level of skills now required together with specialized domain knowledge is now too great for that approach to be feasible. Data Science and Data Engineering has come of age and calls for an interdisciplinary degree program involving the various knowledge domains together with the specialized offerings of computer science.
The interdisciplinary character of the new field means that existing degree programs such as Computer Science and Computer Engineering cannot provide the skills needed by data scientists and engineers. The curriculum in nearly all engineering and science fields are already dense and cannot support the additional courses to provide the necessary training in state of the art tools and methodology. While the current master’s program in computer science could and will support a concentration in data science methodology, the program emphasis on software development and algorithmic foundations serves a more limited segment of the broader need. In addition, the admission requirements for the computer science master’s program are poorly suited for potential master’s students looking to apply data science techniques within such fields as civil engineering, environmental science or medicine. As a result, it is necessary to create a new program which can accommodate students with a strong technical background from many fields in mathematics, science and engineering (and medicine) but may not have an undergraduate degree in computer engineering or computer science. The goal of this program is to provide a terminal Masters degree for professionals seeking employment in data science jobs seeking experience, particularly with science or engineering data.

Most of the core skills in data science, such as using large scale computational methods with large scale data sets, are most naturally taught in computer science although applied statistics is also crucial. The Office of the Provost at City College has indicated that the Program should be managed by the Computer Science department within the Grove School of Engineering (GSoE). Nevertheless, an integral part of the program, characteristic of data science, is the interaction with domain specialties. Through a series of electives in a focus domain, and a required capstone program students will work with faculty, and graduate students across CCNY.

### 3.2 Educational Goals

Data Science and Engineering is an interdisciplinary subject that integrates computational skills with applied statistics to create an approach to problems in a given domain using data centered methodology. The students in the proposed program will learn this methodology and be trained in a core set of skills that may be applied to many fields. This core set of skills includes recognizing the type of data science and engineering methodology appropriate, whether it is exploratory visual analytics or machine learning based classification. They will learn how to apply a representative set of these methods in machine learning, visual analytics, and big data computation to real world problems. They will also learn the statistical framework needed to ascertain whether patterns and relationships discovered through data driven algorithms are significant or artifacts of chance. They will also learn data engineering through hands on examples data including issues of data integrity and methods of data cleaning. This will also serve as an introduction to various classes of data such as real-time streaming data, high volume data, time series, geo-spatial data, and relational data.

The goal of the second year is to provide an opportunity to work in a specific application domain with a domain expert, applying general data science skills within that domain.
Target domains may include intelligent systems, environmental science, urban planning, sustainability, genomics, and internet of things. Whatever the domain, by mutual agreement among the domain expert faculty, the students and the program, students will be able to demonstrate an ability to apply data science and engineering to that domain.

3.3 **Rationale for the Proposed Program**

Data Science and Engineering is an emerging field. Yet the demand for it is already quite considerable. Within the greater New York City area, a natural marketplace for CUNY graduates, both “Data Scientists” and “Data Engineers” have become “hot” jobs titles as evidenced by job postings, articles in the popular and the business press, as well as the large number of programs that have come into being in academia and other settings to meet the demand. New York institutions such as Columbia University and New York University are currently overwhelmed with applicants, and courses in data science topics fill rapidly. In addition, funding organizations such as NSF, NIH, NOAA, NASA, NSA, DOD and DOE have data science and big data related solicitations on a regular basis providing further evidence of its growing importance. Thus a GSOE led CCNY interdisciplinary program will synergistically strengthen other programs. Some of the core courses will provide important electives in many domain areas, allowing advanced undergraduates, masters, and PhD students in those fields to acquire needed data science skills. The interdisciplinary capstones will provide opportunities for faculty teaching in the data science program to collaborate with faculty in a wide range of domains. The capstones will also give faculty and staff in domain fields the opportunity to explore research directions that may not be possible otherwise. The concentration of expertise in Data Science and collaborations on the program will strengthen proposals in this area and may form the basis for one or more centers.

We currently have faculty with the required skill sets to teach most of the core courses, and with the addition of a data science/data engineering faculty hire currently being sought, and two more as part of this proposal, we will be able to sustain the program over time. Of the six core courses: introduction to data science, machine learning, visual analytics, big data, applied statistics and data engineering, four have already been offered in some form. Finally, as the only public engineering school in New York City, it is critical that we fulfill our duty to provide access and training to a wide diversity of students in this critically important modern engineering and science subject. While other CUNY units have programs in Data Analytics this program will have a more technical focus drawing on students with previous math, science or engineering backgrounds.

3.4 **Need and Justification**

Demand in the private, academic and public sector for data science and engineering expertise, as well as student interest is abundantly clear. In industry, Forbes, The Wall Street Journal and many business magazines list “Data Scientists” as a top “hot” job. In government, many agencies list data science and big data in proposals and solicitations. In recognition of the subject’s importance to national strategic planning, the Obama Administration has appointed DJ Patel as the first U.S. Chief Data Scientist. Federal and
local governments are all seeking to use data science to provide better service, sparking a large number of proposal solicitations in these areas. Many universities and private companies are starting programs at the undergraduate, Masters and even PhD level to address the growing need. We have the resources to start such a program and the revenue generated will be able to sustain such a program.

More recently the role of “Data Engineer” has emerged and has even partly outstripped the demand for “Data Scientist.” There are data scientists who are primarily statisticians with some domain expert, they may not have the computational expertise to leverage distributed cloud computing. They may also not have the Data Engineering knowledge to build systems to support scalable data science.

3.4.1 Student Demand

Students have been responsive to the growing job demands for data scientists and data engineers. Moreover, high profile successes in data science, such as Google’s self-driving cars, Apple’s Siri, IBM’s Watson’s Jeopardy victory, and Google's alpha-Go victory have helped generate greater public awareness and excitement about data science topics. Technology Students likely to enter this program will typically come from science fields such as biology, physics, chemistry, mathematics, or from engineering fields outside of the field of computer science, looking to enhance their prior degree by supplementing their training with the data science toolkit.

3.4.2 Employment Opportunities

Job seekers with technology skills as well are expected to have an advantage in the labor market. According to a report from “rjmetrics.com”, since 2012 the number of data scientists starting their first job has increased at a rate that is consistently 50% higher than that for software engineers and data analysts (two fast growing fields). While the largest share of data scientist jobs are in Information Technology and Services, as well as Internet and Computer Software, many non-technology fields require data scientists, according to rjmetrics.com. The next largest industries employing data scientists, which are non-technology, are respectively Education, Banking and Financial Services, Marketing and Advertising, Research, Management Consulting, Hospital and Health Care, Telecommunications, Insurance, Media & Entertainment and Pharmaceuticals. For all of these industries, the leading corporations are headquartered in the New York City Metropolitan area, including northern New Jersey and Connecticut. The area is also a hub for bio-technology which uses advanced data science for genome and drug research.
Forbes magazine from January, 2016 quotes a Glassdoor report listing “Data Scientist” as the #1 job for 2016 with a median income of $110,000. According to the O’Reilly Media 2015 Data Science Salary Survey, the base salary for Data Scientists and Engineers is $70,577 nationwide, while overall the median income is $98,000. In particular, the median salary rises to $110,000 for jobs in the North East. Nation-wide, jobs with the title data Engineering, also have a somewhat higher median salary at $110,000. Availability of work is high with 58% of survey respondents saying that if they lost their job it would be “very easy” or “easy” to find a similar job. The program will maintain an active relationship with industrial partners to make sure that we remain responsive to the needs of industry, particularly in the New York area. These will include local technology companies such as Google and IBM, information companies such as Dow Jones and Bloomberg, and hospitals such as Mt. Sinai and Memorial Sloan Kettering Cancer Center.

The title “Data Engineer” and “Data Scientist” job positions are in great demand but currently “Data Engineer” is in shorter supply. In a report, https://www.stitchdata.com/resources/reports/the-state-of-data-engineering/ from StitchData.com, they document a shortage, specifically, of “Data Engineers.” Professionals with this job title build, configure and maintaining digital infrastructure for data science, particularly when the data scale is massive, i.e. “Big Data.” The table below show listings for both “Data Engineer” and “Data Scientist” on the leading job posting web sites, where the Job is restricted to the New York Area. It is important to note that while there are many public and private “Data Analytics” and “Data Science” programs, there currently is no public “Data Engineering” program in New York City.

<table>
<thead>
<tr>
<th>Job Site</th>
<th>Job hits “Data Engineer”</th>
<th>Job hits “Data Scientist”</th>
</tr>
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11
Listings from September, 2016 for full-time employment in the New York, NY area.

In the table below we list several specific listing of “Data Science” and “Data Engineer” job titles. Most of the listings shown are for the New York area, although some others are listed to highlight the breadth of industries, such as Automotive and Chemical Test Design, which need Data Science and Data Engineering.

<table>
<thead>
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<th>Job Title</th>
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<td>Associate IT Data Engineer</td>
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<tr>
<td>Data Scientist</td>
<td>StreetEasy</td>
<td>New York, NY</td>
<td>Real Estate</td>
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<tr>
<td>Digital Intelligence - Data Scientist</td>
<td>JPMorgan Chase</td>
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<tr>
<td>Data Scientist</td>
<td>Integrated Resources</td>
<td>Rochester, NY</td>
<td>Chemical Test Design</td>
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<tr>
<td>New Grad - Data Scientist</td>
<td>ViaSat</td>
<td>Quincy, MA</td>
<td>Technology</td>
</tr>
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</table>

Indeed.com sample listings from September, 2016 for full-time employment.

Not only is the demand strong now but the utilization of Data and statistical approaches to prediction and analysis is only just starting. Hence it is likely that these jobs will remain in high demand for the foreseeable future.

Data Science students will have multiple opportunities for job placement, many supported by the institution. CCNY has a yearly career fair where many NY employers including major banking, engineering, healthcare firms participate as well as city agencies. Many of these organizations are looking for data science expertise. CCNY has a startup incubator, the Zahn Center which provides opportunities for students to start Data Science based companies, and regularly sponsors hackathons, with potential employers, often with a data science theme. CCNY has a successful career placement office which will specifically support this program. In addition, the program will hold a yearly mini-symposium to showcase student projects and provide for professional
networking. Faculty mentors throughout the college are involved in collaborative sponsored projects with private and public institution and many of the proposed program capstones will provide contact with potential employers.

3.4.3 CUNY Faculty Involvement and Interest

Co-directors Michael Grossberg and Zhigang Zhu developed the proposal as a result of their interdisciplinary collaborations applying data science and engineering in various fields. Many faculty members in Biomedical Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Earth and Atmospheric Sciences and Mathematics are active in Data Science and related fields and could teach a broad variety of electives and host capstone projects. Section 6 details the qualifications of the faculty.

3.4.4 Existing Programs

Many of the major private universities in the Greater New York area either have or are starting Masters Degree programs in Data Science or Data Analytics. These include Columbia University, NYU, Polytechnic Institute of NYU, and Stevens Institute of Technology, PACE University, St. John’s University, and Fordham University. Baruch College is planning to offer a Master’s in Business Analytics, and Queens College is offering a degree in Data Analytics & Applied Social Research. The CUNY school of Professional Studies offers a Master of Science in Data Analytics.

The proposed Data Science and Engineering program will be unique in the New York City Metropolitan area. California State University at San Diego offers a related Master of Advanced Study in Data Science and Engineering.

4 Curriculum

4.1 Education Objectives

The objectives of the program are that holders of CCNY's Master's of Data Science Engineering (DSE) degree will, in their careers,

A. apply data driven methodology to a chosen domain specialization to meet the needs of society;

B. communicate clearly and assume leadership roles; and

C. contribute to the field of applied data science, participate in professional societies, maintain current knowledge in the field, and pursue advanced studies.
4.2 Degree Requirements

To satisfy the requirements of the Master of Data Science and Engineering, students will be required to successfully complete:

1. the 6 core data science courses
   In addition students with either be required to complete:
2. 2 approved electives in a domain specialization
3. 2-semesters: capstone and advanced capstone (thesis) applying data science methodology to a domain.

or

2. 3 approved electives in a domain specialization
3. 1-semester capstone project applying data science methodology to a domain.

Core courses:
There will be six core courses which will be offered at least once/year. These courses with current faculty able to teach as follows:
- Introduction to Data Science (Vo, Grossberg)
- Applied Statistics (Amarasingham, Chatterjee, Gladkova)
- Visual Analytics (Grossberg, Wolberg, Vo)
- Applied Machine Learning and Data Mining (Wei, Gladkova, Zhu)
- Big Data and Scalable Computation (Zhang, Vo)
- Data Engineering: Infrastructure and Applications

The applied statistics course is being designed collaboratively with the mathematics department as part of their applied statistics offerings. For both Introduction to Data Science and Applied Statistics, additional seats in the course will be open to Masters and advanced undergraduates outside the data science program.

Elective courses:
Initial elective courses will be in the following fields. Additional elective courses can be added with permission of the program directors. In the case of electives with pre-requisites beyond those of the program, students will need to either satisfy those requirements separately, or obtain instructor permission based on their background. Electives outside the GSOE will be added to the program contingent on approval from the provost, school dean, and department of the elective course.

Biomedical Engineering:
BME I5100 Biomedical Signal Processing and Modeling
BME I5000 Medical Imaging
BMEI4200 Organ Transport and Pharmacokinetics

Chemical Engineering:
ChE I5500 Interfacial Phenomena
ChE I5700 Advanced Materials
ChE I8900 Nanotechnology
ChE I9000 Bioprocess Eng.: Mammalian Cell Biotech
ChE I9200 Soft Materials Laboratory

Civil Engineering:
CE 56600, Engineering Hydrology
CE G7300 Surface Water Quality Modeling
CE G9700 Numerical Method and Modeling in Fluid

Computer Science:
CSc I0600 Advanced Algorithms
CSc I1000 Database Systems I/II
CSc I10500 Computer Graphics
CSc I4330 Data Science and Data Visualization
CSc I4633: Multimedia
CSc I6716 Computer Vision
CSc I6730 Data Reduction: Physical Sciences
CSc I1900 Machine Learning and Data Mining
CSc IA804 Massively Parallel Data Processing
CSc I10802 Web/Geographic Information Systems

Electrical Engineering:
EE I2200: Image Processing
EE I5501: Introduction to Robotics
EE G3300: Advanced Mobile Robotics
EE G6530: Bio-Inspired Computation
EE (in development). VLSI Architecture Design for Information Processing

Capstone Project/Thesis:

All students must complete a one-semester capstone project for 3 credits. Students completing the capstone, with approval, may also take a 3-credit advanced capstone which would result in a thesis combining the two semesters. There are three paths for students to satisfy their capstone project requirement: (1) the primary path, in which they will do a single independent study with any of domain mentors and a third domain elective in their third or fourth semester (2) as an extension to (1) they additionally complete a 3-credit advanced capstone thesis, or (3) they take a preparatory CS elective and take the capstone project and forum course where they will work with a CS mentor to complete their project as part of a class.
Before the typical capstone semester (the third semester), students must find a mentor in their chosen domain who will provide them with one or more data sets, and data science challenges in analyzing that data. Students will find a mentor in a specific domain typically outside computer science. In particular, applicants to the program will be asked to identify subjects and faculty with whom they may wish to work. Strong applicants with entering with a provisional faculty mentor will be given preference. Once in the program a program co-director will lead the student-mentor matching processes, starting in the middle of the second semester.

The student-mentor match may be initiated either by the students (for example from their industrial experience or connections), or by faculty mentors (for example from their research projects or collaborations with industry). Information sessions for student-mentor matching process will be included in data engineering course and a mini-symposium of 2nd year student projects. The mini-symposium will typically be part of the capstone project and forum course. In the case of the typical independent study projects, domain mentor faculty will be credited by their school/department as teaching an independent study for each student. This faculty workload credit is a standard across the college as 0.5 credit hour will be earned for the first student 4 enrolled and 0.25 credit hour for each additional student enrolled in the same semester. Data science program will also provide capstone opportunities and guarantee to accommodate a capstone project opportunity for every student through CSc department collaborations. This will either be through independent study (DSE 19800) with individual faculty, or capstone project and forum course (DSE 19805) which is described in Appendix A, Section 10.2 and Appendix B.

## 5 Students

### 5.1 Projected Enrollment

The goal of the program is to train students in data science who have previous experience in mathematics, science and engineering. We can estimate that if we can project an average of 650 CCNY STEM students (See Table 1) each year, as potential applicants to the DSE program, over the next 5 years. About 60% of those have a GPA of 3.00 or close to 400 eligible candidates. Assuming that 5% to 10% of them are interested in Data Science, after the new major has been promoted. This provides 20-40 applicants from within CCNY. With an acceptance rate of about 50% and from those accepted about 55% actually enrolling, we then have .50*.55*(20 to 40) = 5 to 11 from CCNY.

### Table 1: Enrollment Source Pool within CCNY

<table>
<thead>
<tr>
<th>Number of Bachelors Degrees by STEM Field at CCNY</th>
<th>Graduated Ac. Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>
From similar MIS and Masters of CSc programs we can estimate a similar number coming from the rest of CUNY, giving us 20-25 students within CUNY. In the other CS-MS and MIS program, 40% in the program come CUNY and the rest come from other USA colleges (30%, mainly NYC and NYS such as Pace, Columbia, Cooper Union, Monroe, and many others) and foreign institutions (30%). Thus a conservative estimate of between 30-60 students who would enroll each year given capacity, can be assumed. The NYU program is roughly double this size.

Requirements for admission to the master's program in Data Science and Engineering will be the same as for typical master's programs in the Grove School of Engineering. Students will be expected to have a strong technical background, typically with an undergraduate degree in Science or Engineering. They should have completed two semesters of Calculus and a probability and linear algebra. They should also have taken an introductory programming and statistics course. During the application processes, students who have identified CCNY data science mentors in a domain of their interest, and provided evidence of a potential match, will be given preference for admission. The rest of this section is a paraphrase of the 2013–2015 Graduate Bulletin.

For matriculation, the undergraduate record shall be in an accredited scholastic curriculum or in one acceptable to the Chair of the department concerned. The applicant’s scholastic record must show a minimum average of B in the undergraduate field of

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Mathematics</td>
<td>7</td>
<td>7</td>
<td>15</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Biology, General</td>
<td>86</td>
<td>97</td>
<td>122</td>
<td>124</td>
<td>106</td>
</tr>
<tr>
<td>Biomedical/Medical Engineering</td>
<td>23</td>
<td>16</td>
<td>32</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>35</td>
<td>24</td>
<td>33</td>
<td>33</td>
<td>35</td>
</tr>
<tr>
<td>Chemistry</td>
<td>28</td>
<td>22</td>
<td>33</td>
<td>27</td>
<td>39</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>24</td>
<td>28</td>
<td>32</td>
<td>37</td>
<td>32</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>17</td>
<td>22</td>
<td>26</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Computer Science</td>
<td>17</td>
<td>30</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Electrical, Electronics and Communications Engineering</td>
<td>75</td>
<td>71</td>
<td>81</td>
<td>69</td>
<td>61</td>
</tr>
<tr>
<td>Environmental/Environmental Health Engineering</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Geological and Earth Sciences/Geosciences</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Mathematics</td>
<td>16</td>
<td>22</td>
<td>22</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>61</td>
<td>50</td>
<td>53</td>
<td>67</td>
<td>80</td>
</tr>
<tr>
<td>Natural Resources Conservation and Research</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Physics</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Psychology, (BS degree)</td>
<td>59</td>
<td>58</td>
<td>64</td>
<td>79</td>
<td>98</td>
</tr>
</tbody>
</table>
specialization and an overall undergraduate minimum average of B minus. Applicants are required to complete the Graduate Admissions Application shall be accompanied by official transcripts from all colleges/universities attended, proof of degree, and two letters of recommendations from faculty. The application can be obtained by visiting the City College website at http://www.ccny.cuny.edu. Official transcripts of graduate work completed at other institutions, if any, are also required and will be evaluated. All international students with baccalaureate degrees from non-English speaking countries must submit a TOEFL score to be considered for admission. At present, a minimum score of 73 is required for admission.

5.2 Capacity

Using a faculty teaching a typical course, a core class size of 30 students is reasonable though large. If the courses proved popular outside the program larger course sizes could be accommodated using a TA model using graduate students. The ability to provide capstone projects with mentors is a limiting factor. We have at over 30 faculty members who have committed to provide capstone projects on a regular basis, based on their research. We have consulted with an additional 10-15 not listed in this proposal who have also agreed. Since students may work in teams on aspects of the same project we anticipate 15 projects/year in steady state, requiring only 15 mentors. Given the overhead of managing the project match-making 15 projects utilizing 35 students/year seems manageable for the first 5 years.

Table 2: Enrollments for the first 5 years

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Students</td>
<td>25</td>
<td>0</td>
<td>30</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>55</td>
<td>65</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

In the first year we will accept 25 students, and the second year 30 students, in order to formalize the capstone process and establish the program. This will also take into account time for the program to be publicized.

6 Faculty

The main strength of the proposed program lies in the outstanding participating faculty both with data science expertise as well as those with expertise in a wide range of domains which will benefit from data science approaches. In addition to their teaching responsibilities, the faculty are involved in research grants, university service, professional development, and in the mentoring of undergraduate and graduate students. As listed in Table 6.1, all faculty members have doctoral degrees. Faculty will participate in the program by teaching core courses, approved electives which will be open to Data
Science master’s students (though not necessarily exclusively), and mentoring students on capstone projects, as independent study courses for which they will receive academic load credit. In addition to the two co-directors with 55% (Grossberg) and 40% (Zhu) of their time to the program, a faculty member with 15% commitment will teach one new and/or core course, and a faculty member with 10% commitment will have a combination of mentoring students on capstone projects and opening their courses as electives to the students in the program.

The areas of expertise relevant to the Data Science graduate program are listed below, along with the names of the associated faculty members:

<table>
<thead>
<tr>
<th>Areas</th>
<th>Faculty Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistive Technologies</td>
<td>Tian, Xiao, Zhu</td>
</tr>
<tr>
<td>Computer Vision, Image Processing, Medical Imaging, Remote Sensing</td>
<td>Gladkova, Grossberg, Tian, Wei, Wolberg, Zhu</td>
</tr>
<tr>
<td>Bioinformatics, Health and Biomedical Engineering</td>
<td>Amarasingham, Bikson, Fu, Hickerson, Parra, Undieh, Uyar</td>
</tr>
<tr>
<td>Nanomaterials, Biosensors, Nanoparticle Synthesis</td>
<td>Couzis, Kretzschmar, Seo, Tu</td>
</tr>
<tr>
<td>Big Data and HPC</td>
<td>Vo, Yuan, Zhang</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Fekete, Krakauer, Tang</td>
</tr>
<tr>
<td>Databases and Business Analytics</td>
<td>Kawaguchi, Mowshowitz</td>
</tr>
<tr>
<td>Data Engineering, Cloud Computing</td>
<td>Grossberg, Kawaguchi, Mowshowitz, Zhang</td>
</tr>
<tr>
<td>Visual Analytics</td>
<td>Grossberg, Wolberg, Vo, Zhu</td>
</tr>
<tr>
<td>Environmental Data Science</td>
<td>Booth, Grossberg, Gladkova, Zhang</td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>Zhang</td>
</tr>
<tr>
<td>Network Analysis, Statistical Learning</td>
<td>Chatterjee, Brass</td>
</tr>
<tr>
<td>Robotics &amp; Intelligent Systems</td>
<td>Brass, Uyar, Xiao, Wei, Zhu</td>
</tr>
<tr>
<td>Security</td>
<td>Fazio, Rosario, Skeith</td>
</tr>
</tbody>
</table>

6.1 Participating Faculty and their Qualifications

Biomedical Engineering/Bioinformatics Faculty:

Dr. Marom Bikson is Professor of Biomedical Engineering, The City College of New York (CCNY) and member of the doctoral faculty at The Graduate Center at the City University of New York (CUNY). He co-directs the CCNY Neural Engineering Laboratory. His current research includes computational modeling and rendering of medical device. He is a senior member of AIMBE.
**Dr. Bingmei Fu** is a Professor of Biomedical Engineering, the City College of New York (CCNY) and a member of the doctoral faculty at the Graduate Center at the City University of New York (CUNY). She directs the CCNY Microcirculation Laboratory and co-directs the CCNY Nanoscopy Laboratory. Her current research includes multiscale modeling for the transport phenomena at the molecular, cellular and tissue levels and in vivo/in vitro multiscale optical imaging and analysis by intravital, confocal, multiphoton and stochastic optical reconstruction microscopy. She is an elected fellow of AIMBE, an elected councilor of WACBE and a member of BMES, ASME, APS, AAAS, NAVBO, and the microcirculation society.

**Dr. Lucas Parra** is Herbert Kayser Professor of Biomedical Engineering at CCNY and a member of the doctoral faculty at The Graduate Center of CUNY in the Behavioural and Cognitive Neuroscience Program. Prior to joining CCNY his research work was based in central research laboratories in industry, first in the Medical Imaging Department of Siemens Research, and then in the Adaptive Systems Group at Sarnoff Corporation. His area of expertise includes machine learning, signal processing, medical imaging and computational and cognitive neuroscience.

**Dr. Ashiwel Undieh**’s current research direction focuses on epigenetic regulation of dopamine neurotransmission, and dopaminergic modulation of epigenetic programs, in models of addiction, depression, or neurodevelopment. As Associate Provost for Research, he has overall responsibility for promoting, developing, and reviewing research and scholarship throughout the college. He actively contributes to the development of strategies and programs for the support and expansion of CCNY’s comprehensive research agenda. Dr. Undieh also has overall responsibility for research administration and for the STEM graduate programs at CCNY.

**Civil Engineering Faculty:**

**Dr. Nir Krakauer** is Associate Professor of Civil Engineering at the City College of New York. Dr. Krakauer heads several international projects related to water management in changing climate, sustainable agriculture, and improved weather and climate forecasts. Additional interests include grid integration of renewable energy, educating engineering students for ecological thinking, and statistical tools for epidemiology and personalized medicine. Dr. Krakauer earned a PhD degree in Geochemistry from the California Institute of Technology and conducted postdoctoral work at the University of California at Berkeley. Dr. Krakauer is on the American Society of Civil Engineers Committee for Adaptation to a Changing Climate and the National Oceanic and Atmospheric Administration Climate Prediction Task Force.

**Dr. Balazs Fekete** is assistant professor of Civil Engineering at The City College of New York. He has intensive experience in hydrological modeling at various scales and geospatial data management and analysis. He is member of AGU, AMS, ASCE, IEEE.

**Dr. Hansong Tang** is an associate professor in the Department of Civil Engineering at the City College of New York. He works on computer modeling and numerical methods for flow problems with various backgrounds such as coastal flooding, tidal energy, material processing, and wave propagation in multiphase systems. He seeks a
fundamental understanding of emerging problems that are beyond the reach of conventional approaches by developing unique computational methods and new computer modeling tools, together with intensive data processing.

**Chemical Engineering Faculty:**

**Dr. Alexander Couzis** is Herbert G. Kayser Professor of Chemical Engineering at the City College of New York. His research is in the areas of Nanoscience and Engineering, Surface Engineering, Interfacial Phenomena, Templated Crystallization, Biosensors, Surfactant Facilitated Wetting of Hydrophobic Surfaces.

**Dr. Ilona Kretzschmar** is Department Chair, Professor of Chemical Engineering at The City College of New York. Her research is in the areas of nano and microparticles in general and more specifically in their modification and assembly, which combine knowledge of Chemical Engineering, Chemistry, Material and Surface Science, and Molecular Electronics to discover new materials and applications for asymmetric particles.

**Dr. Raymond Tu** is an associate professor at The City College of The City University of New York (starting at CCNY in 2006). The focus of his research program is the synthesis of surface-active molecular building blocks, which are derived from the combination of elements that direct interfacial assembly with components responsible for selective binding. Prof Tu was named the Grove School of Engineering ‘Teacher of the Year’ in 2010.

**Computer Science Faculty:**

**Dr. Peter Brass** studied mathematics in Braunschweig, Germany, 1986-1990, got his PhD there in 1992, held an assistantship in Greifswald. He is a professor of computer science at the City College of New York and member of the doctoral faculty at the Graduate Center of the City University of New York. His research includes geometry and combinatorics, and problems in quantum logics, digital halftoning, sensor networks and robotics.

**Dr. Nelly Fazio** is an Associate Professor in the Computer Science Departments at the City College and the Graduate Center of CUNY. She is also affiliated with the Center for Algorithms and Interactive Scientific Software (CAISS), where she pursue research in Cryptography and Information Security, with a focus on foundations (public-key and non-commutative cryptography) and applications (anonymous communications, access control, and security in military settings). Her research is funded in part by the National Science Foundation, and by the U.S. Army Research Laboratory and the U.K. Ministry of Defense. Dr. Fazio is a recipient of a 2013 NSF CAREER award.

**Dr. Rosario Gennaro** is a Professor of Computer Science and the Director of the Center for Algorithms and Interactive Scientific Software (CAISS) at The City College of New
York. He has a 20-year career in Theoretical Computer Science, Cryptography and Network Security Research. His most recent work has been focused on the security for the cloud computing paradigm, deniability and anonymity in electronic transactions, Bitcoin security, and game-theoretic models of security. He is a member of the IACR the International Association for Cryptologic Research.

**Dr. Irina Gladkova** holds PhD's in mathematics from the Ukraine Institute of Applied Mathematics and Mechanics and from CUNY. She is Associate Professor of Computer Science at the City College of New York. Prof. Gladkova's research interests include statistical data analysis and applications of machine learning algorithms to remote sensing data.

**Dr. Michael Grossberg** is an assistant professor of computer science at City College of New York and member of the doctoral faculty at the Graduate Center of the City University of New York. He has held teaching and research positions at Columbia University, at the Max Plank Institute for Mathematics in Bonn, and at Hebrew University in Jerusalem. His current interests are in applied machine learning for remote sensing and environmental science as well as data visualization.

**Dr. Akira Kawaguchi** is professor of computer science and department chair at the City College of New York, and member of the doctoral faculty at the Graduate Center of the City University of New York. He has held positions at Mitsubishi Heavy Industries, Bell Laboratories and AT&T Research, having earned his doctorate at Columbia University. His expertise lies in the area of applied database systems and transaction processing systems.

**Dr. Abbe Mowshowitz** is professor of computer science at the City College of New York and member of the doctoral faculty at the Graduate Center of the City University of New York. He has also held academic appointments at the University of Amsterdam and Erasmus University Rotterdam. Since completing his PhD at the University of Michigan in 1967, he has been a major contributor to the analysis of complex networks and has participated in the International Technology Alliance research project since 2006.

**Dr. William Skeith** is Assistant Professor of Computer Science at CCNY, and member of the doctoral faculty for the Graduate Center at the City University of New York(CUNY). His research is centered mainly on theory of cryptography and cryptograhic protocols.

**Dr. Huy Vo** is an Assistant Professor of Computer Science, The City College of New York (CCNY) and a member of the doctoral faculty at The Graduate Center at the City University of New York (CUNY). He directs the Big Data Visualization and Analysis lab. His current research includes large-scale visualization systems, urban visualization, human mobility, and scalable displays. He is also a faculty member at the Center for Urban Science and Progress, New York University.
**Dr. Jie Wei** is an associate professor of computer science at the City College of New York. His research interests include multi-modal data processing, computer vision, machine learning and medical imaging. He has designed and developed algorithms and systems with both medical and military applications. Recent research has been supported by NIH, NSF, AFOSR, and AFRL. Wei received his Ph.D. from Simon Fraser University in 1999.

**Dr. George Wolberg** is a Professor of Computer Science at the City College of New York and member of the doctoral faculty at the Graduate Center of the City University of New York. He received his Ph.D. in Computer Science from Columbia University in 1990. He has published over 60 research papers in image processing, computer graphics, and computer vision, and holds seven U.S. patents.

**Dr. Jianting Zhang** is associate professor of Computer Science at the City College of New York and member of the doctoral faculty at the Graduate Center of the City University of New York. Zhang received his Ph.D. degree (2004) in Computer Science from the University of Oklahoma. Zhang's research lies in the intersection of large-scale data management and geospatial computing.

**Dr. Zhigang Zhu** is Herbert G. Kayser Chair Professor of Computer Science, The City College of New York (CCNY) and member of the doctoral faculty at The Graduate Center at the City University of New York (CUNY). He directs the CCNY Visual Computing Laboratory. His current research includes 3D modeling and rendering, multimodal sensing, and assistive technologies. He is a senior member of IEEE and ACM.

**Electrical Engineering Faculty:**

**Dr. Sang-Woo Seo**’s research is in Nano/Micro fabrication processing and novel integration strategies from device levels to layer-by-layer integration for fully integrated lab-on-a-chip systems. He is a rising researcher in the optoelectronic research community. Prof. Seo is the Director of the Electrical Engineering fabrication lab that provides support to materials oriented research across the Grove School of Engineering.

**Dr. Yingli Tian** is head of the Media lab at CCNY. Her research experience includes target detection and tracking, event and activity analysis, scene understanding, facial expression recognition, human computer interaction, multi-sensor fusion, and machine learning. She is a senior member of IEEE.

**Dr. M. Ümit Uyar** is the Director of the Computer Engineering program at CCNY. His research interests include Computational Biology, Mobile Ad Hoc Networks, and Artificial Intelligence – Prof. Uyar is a recipient of the CCNY Outstanding Teacher award and a Fellow of the IEEE.
Dr. Bo Yuan is an Assistant Professor of Electrical Engineering at the City College of the City University of New York (CUNY). His current research includes algorithm and hardware co-design for machine learning systems, signal processing system and error-resilient computing systems.

Dr. Jizhong Xiao started the robotics research program at CCNY and is the founding director of CCNY Robotics Lab (website: http://robotics.ccny.cuny.edu) and the Center for Perceptual Robotics, Intelligent Sensors and Machines (PRISM Center). With his leadership, the robotics research has become one of the most active and well-funded research directions in the EE department at CCNY.

Mathematics Faculty:

Dr. Asohan Amarasingham is an Assistant Professor in the Department of Mathematics at CCNY, and a member of the doctoral faculty in the Graduate Center, with joint appointments in Biology and Psychology. His research focuses on the statistical foundations of neurophysiology, including nonparametric statistics for neural data; statistical inference for nonstationary point processes; multiple and multi-scale hypothesis testing; and the inference of network relationships and of functional connectivity in neuronal circuits. He has been a member of the faculty since 2010.

Dr. Shirshendu Chatterjee is an Assistant Professor in the Department of Mathematics at CCNY. His research focuses on structure and behavior of networks arising in applications to biology, social science, economics, computer science and physics. In particular, he analyzes probabilistic models for evolution of and different dynamics on such networks. He also addresses relevant statistical inference, machine learning and game theoretic problems on such networks.

Table 3: Full Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Tenure Status (T, TT, or NTT), T=Tenured, TT=Tenure-Track, NTT=Non-TT</th>
<th>Length of Time at the Institution (Number of years)</th>
<th>Percent Time to Program</th>
<th>List All Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</th>
<th>Program Courses to be Taught (Course Number and Title Must be Listed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Science Faculty:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peter Brass</td>
<td>T</td>
<td>13</td>
<td>10%</td>
<td>Dr. Habil., Two books; Expertise in computational geometry.</td>
<td>CSc 10600 Advanced</td>
<td></td>
</tr>
<tr>
<td>Faculty Member Name and Title (identify Program Director)</td>
<td>Tenure Status (T, TT, or NTT), T=Tenured, TT=Tenure Track, N=Non-TT</td>
<td>Length of Time (Number of years) at the Institution</td>
<td>Percent Time to Program</td>
<td>List All Earned Degrees &amp; Disciplines (include College/University)</td>
<td>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</td>
<td>Program Courses to be Taught (Course Number and Title Must be Listed)</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Rosario Gennaro</td>
<td>T</td>
<td>4</td>
<td>10%</td>
<td>Ph.D. in Electrical Engineering and Computer Science, MIT, 1996; M.S. in Electrical Engineering and Computer Science, MIT, 1993; Laurea in Matematica, Universita' di Catania, Italy, 1989.</td>
<td>NSF CAREER Award; Expertise in Cryptography and Information Security – see description on page 21</td>
<td>Director of CAISS, Program Chair of CRYPTO 2014 and 2015; with 20 year career in Theoretical Computer Science, Cryptography and Network Security Research – see description on page 21</td>
</tr>
<tr>
<td>Irina Gladkova</td>
<td>T</td>
<td>17</td>
<td>15%</td>
<td>Ph. D. Math, CUNY Graduate Center; Ph. D. Math, Institute of Applied Mathematics and Mechanics, Ukraine; B.S. Donetsk State University, Ukraine</td>
<td>Expertise in statistical data analysis and machine learning – see description on page 22</td>
<td>DSE New Course: Applied Machine Learning and Data Mining, Applied Statistics CSC I6730 Data Reduction: Physical Sciences</td>
</tr>
<tr>
<td>Michael Grossberg</td>
<td>T</td>
<td>11</td>
<td>55%</td>
<td>Ph. D. Math, MIT; B.A. Math, Upen</td>
<td>Expertise in applied machine learning and data visualization – see description on page 22</td>
<td>DSE New Courses: Introduction to Data Science, Visual Analytics CSC I4330 Data Science and Data Visualization</td>
</tr>
<tr>
<td>Akira Kawaguchi</td>
<td>T</td>
<td>18</td>
<td>10%</td>
<td>Ph.D. &amp; M.S., Computer Science, Columbia Univ.; B.S. &amp; M.S. Administration</td>
<td>Expertise in applied database systems – see description on page 22</td>
<td>CSC I1000 Database Systems I/II</td>
</tr>
<tr>
<td>Faculty Name and Title</td>
<td>Tenure Status (T, TT, or NTT), T=Tenured, TT=Tenure-Track, NTT=Non-TT</td>
<td>Length of Time (Number of years) at the Institution</td>
<td>Percent Time to Program</td>
<td>List All Earned Degrees &amp; Disciplines (include College/University)</td>
<td>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</td>
<td>Program Courses to be Taught (Course Number and Title Must be Listed)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Abbe Mowshowitz</td>
<td>T</td>
<td>32</td>
<td>10%</td>
<td>PhD Computer Science, University of Michigan; MA, Computer Science, University of Michigan; MA, Mathematics, University of Michigan; BS, Mathematics, University of Chicago</td>
<td>Expertise in the analysis of complex networks – see description on page 22</td>
<td>CSc I4700: Topics in Computer Communications</td>
</tr>
<tr>
<td>William Skeith</td>
<td>T</td>
<td>8</td>
<td>10%</td>
<td>PhD Mathematics, UCLA</td>
<td>NSF CAREER Award; expertise in theory of cryptography and cryptographic protocols – see description on page 22</td>
<td></td>
</tr>
<tr>
<td>Huy Vo</td>
<td>TT</td>
<td>1</td>
<td>15%</td>
<td>PhD. Computing, University of Utah May 2011; BS. Computer Science, University of Utah May 2005</td>
<td>Expertise in Big Data Visualization and Analysis – see description on page 22</td>
<td>DSE New Course: Introduction to Data Science; Big Data and Scalable Computation</td>
</tr>
<tr>
<td>Jie Wei</td>
<td>T</td>
<td>17</td>
<td>15%</td>
<td>Ph.D. Computer Science, Simon Fraser University; M.S. Computer Science, Inst. Of Software, Chinese Academy of Sciences; B.S. Computer Science, University of Science and Technology of China</td>
<td>Air Force SFFP 2014; AFRL/RCP, summer faculty fellow 2016; Expertise in multimodal data processing and machine learning – see description on page 23</td>
<td>DSE New Course: Applied Machine Learning and Data Mining; CSC I1000 Database; CSC I4633 Multimedia</td>
</tr>
<tr>
<td>George Wolberg</td>
<td>T</td>
<td>26</td>
<td>15%</td>
<td>Ph.D. Computer Science, Columbia University; M.E Electrical Engineering, Cooper Union; B.E. Electrical Engineering, Cooper Union</td>
<td>Six US patents; Expertise in image, graphics and vision – see description on page 23</td>
<td>DSE New Course: Visual Analytics; CSC I10500 Computer Graphics</td>
</tr>
<tr>
<td>Jianting Zhang</td>
<td>TT</td>
<td>8</td>
<td>15%</td>
<td>Ph.D. Computer Science, U. of Oklahoma; MS. Computer Science, U. of Oklahoma; MS. Physical Geography,</td>
<td>Expertise in the intersection of large-scale data management and geospatial computing – see description on page</td>
<td>DSE New Course: Big Data and Scalable Computation; CSC I10802</td>
</tr>
</tbody>
</table>
## Faculty Member Name and Title (include and identify Program Director)

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Tenure Status (T, TT, or NTT), T=Tenured, TT=Tenure-Track, NTT=Non-TT</th>
<th>Length of Time (Number of years) at the Institution</th>
<th>Percent Time to Program</th>
<th>List All Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</th>
<th>Program Courses to be Taught (Course Number and Title Must be Listed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhigang Zhu</td>
<td>T</td>
<td>14</td>
<td>40%</td>
<td>Nanjing University, China; BS. Water Resources &amp; Environments, Nanjing University, China 23</td>
<td>Membership in the Chinese Academy of Engineering; PhD, Computer Science, Tsinghua University; M.E., B.E.</td>
<td>Web/Geographic Information Systems CSC IA804 Massive Parallel Data Processing DSE New Course: Applied Machine Learning and Data Mining CSC I6716 Computer Vision</td>
</tr>
<tr>
<td>YingLi Tian</td>
<td>T</td>
<td>8</td>
<td>10%</td>
<td>Tian Jin Univ. (China) B.S.; Univ. of Hong Kong (EE). M.S., Ph.D..</td>
<td>Expertise in computer vision and pattern recognition – see description on page 23</td>
<td>EE-G6530: Bio-Inspired Computation</td>
</tr>
<tr>
<td>M. Ümit Uyar</td>
<td>T</td>
<td>18</td>
<td>10%</td>
<td>Istanbul Teknik Univ. (Turkey) B.S.; Cornell Univ. (EE) M.S., Ph.D..</td>
<td>Fellow of IEEE; CCNY Outstanding Teacher Award; Expertise in mobile networks and AI – see description on page 23</td>
<td>EE-G6530: Bio-Inspired Computation</td>
</tr>
<tr>
<td>Bo Yuan</td>
<td>TT</td>
<td>1</td>
<td>10%</td>
<td>Ph. D University of Minnesota B.S, M.E. Nanjing University (China)</td>
<td>Expertise in algorithm hardware co-design – see description on page 24</td>
<td>VLSI Architecture Design for information processing (in development)</td>
</tr>
<tr>
<td>Jizhong Xiao</td>
<td>T</td>
<td>15</td>
<td>10%</td>
<td>East China Inst. of Tech. (China) B.S.; M.S. (EE), Nanyang Tech. Univ. (Singapore); Michigan State Univ., Ph.D. (ECE),</td>
<td>NSF CAREER Award; expertise in robotics – see description on page 24</td>
<td>I5501: Introduction to Robotics EE-G3300: Mobile Robotics</td>
</tr>
</tbody>
</table>

### Electrical Engineering Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name</th>
<th>Tenure Status</th>
<th>Length of Time</th>
<th>Percent Time</th>
<th>List All Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications</th>
<th>Program Courses to be Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>YingLi Tian</td>
<td>T</td>
<td>8</td>
<td>10%</td>
<td>Tian Jin Univ. (China) B.S.; Univ. of Hong Kong (EE). M.S., Ph.D..</td>
<td>Expertise in computer vision and pattern recognition – see description on page 23</td>
<td>EE-G6530: Bio-Inspired Computation</td>
</tr>
<tr>
<td>M. Ümit Uyar</td>
<td>T</td>
<td>18</td>
<td>10%</td>
<td>Istanbul Teknik Univ. (Turkey) B.S.; Cornell Univ. (EE) M.S., Ph.D..</td>
<td>Fellow of IEEE; CCNY Outstanding Teacher Award; Expertise in mobile networks and AI – see description on page 23</td>
<td>EE-G6530: Bio-Inspired Computation</td>
</tr>
<tr>
<td>Bo Yuan</td>
<td>TT</td>
<td>1</td>
<td>10%</td>
<td>Ph. D University of Minnesota B.S, M.E. Nanjing University (China)</td>
<td>Expertise in algorithm hardware co-design – see description on page 24</td>
<td>VLSI Architecture Design for information processing (in development)</td>
</tr>
<tr>
<td>Jizhong Xiao</td>
<td>T</td>
<td>15</td>
<td>10%</td>
<td>East China Inst. of Tech. (China) B.S.; M.S. (EE), Nanyang Tech. Univ. (Singapore); Michigan State Univ., Ph.D. (ECE),</td>
<td>NSF CAREER Award; expertise in robotics – see description on page 24</td>
<td>I5501: Introduction to Robotics EE-G3300: Mobile Robotics</td>
</tr>
</tbody>
</table>

### Mathematics Faculty
<table>
<thead>
<tr>
<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Tenure Status (T, TT, or NTT), T=Tenured, TT=Tenure-Track, N=Non-TT</th>
<th>Length of Time at the Institution (Number of years)</th>
<th>Percent Time to Program</th>
<th>List All Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</th>
<th>Program Courses to be Taught (Course Number and Title Must be Listed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asohan Amarasingham</td>
<td>T</td>
<td>5</td>
<td>15%</td>
<td>MS, PhD (Applied Mathematics) Brown University; BSc, (Mathematics, Cognitive Science) U. Virginia</td>
<td>Expertise in statistical foundations of neurophysiology – see description on page 24</td>
<td>DSE New Course: Applied Statistics</td>
</tr>
</tbody>
</table>

**Civil Engineering Faculty**

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Tenure Status</th>
<th>Length of Time</th>
<th>Percent Time</th>
<th>Degree(s)</th>
<th>Qualifications</th>
<th>Program Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nir Krakauer</td>
<td>T</td>
<td>10</td>
<td>10%</td>
<td>PhD. Geochemistry, California Institute of Technology</td>
<td>Expertise in water management, climate forecasts; – see description on page 20</td>
<td></td>
</tr>
<tr>
<td>Balazs Fekete</td>
<td>TT</td>
<td>8</td>
<td>10%</td>
<td>M.Sc., Civil Engr, Budapest Univ., Ph.D. Earth Sciences, Univ. New Hampshire</td>
<td>Member of AGU, AMS, ASCE, IEEE; expertise in hydrological modeling GIS analysis, software development, remote sensing – see description on page 20</td>
<td>E264 Data analysis EG9700 Numerical Methods and Simulation in Fluids</td>
</tr>
</tbody>
</table>

**Biomedical Engineering/Bioinformatics Faculty**

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Tenure Status</th>
<th>Length of Time</th>
<th>Percent Time</th>
<th>Degree(s)</th>
<th>Qualifications</th>
<th>Program Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marom Bikson</td>
<td>T</td>
<td>10</td>
<td>10%</td>
<td>PhD (BME) Case Western Reserve University. BS BME Johns Hopkins</td>
<td>Senior member of AIMBE; Expertise in computational modeling and rendering of medical</td>
<td></td>
</tr>
<tr>
<td>Faculty Name and Title</td>
<td>Tenure Status (T, TT, or NTT)</td>
<td>Length of Time (Number of years) at the Institution</td>
<td>Percent Time to Program</td>
<td>List All Earned Degrees &amp; Disciplines</td>
<td>Additional Qualifications</td>
<td>Program Courses to be Taught</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>--------------------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Bingmei Fu</td>
<td>T</td>
<td>12</td>
<td>10%</td>
<td>University. devices – see description on page 19</td>
<td>Elected Fellow of AIMBE; expertise in multi-scale modeling – see description on page 20</td>
<td>BMEI4200 Organ Transport and Pharmacokinetics</td>
</tr>
<tr>
<td>Lucas C. Parra</td>
<td>T</td>
<td>13</td>
<td>10%</td>
<td>B.S Physics and CS Ph.D. Physics Ludwig Maximilian University, Munich</td>
<td>Expertise in behavioral and cognitive neuroscience and machine learning – see description on page 20</td>
<td>BME I5100 Biomedical Signal Processing and Modeling BME I5000 Medical Imaging</td>
</tr>
<tr>
<td>Ilona Kretzschmar</td>
<td>T</td>
<td>12</td>
<td>10%</td>
<td>PhD TU Berlin, Gas Phase Chemistry, Diploma Chemistry TU Berlin (Germany)</td>
<td>Expertise in new materials and applications – see description on page 21</td>
<td>ChE I8900 Nanotechnology</td>
</tr>
<tr>
<td>Alexander Couzis</td>
<td>T</td>
<td>22</td>
<td>10%</td>
<td>PhD, MS U Michigan, BS ChemEng NTU Athens (Greece)</td>
<td>Expertise in nanoscience and engineering – see description on page 21</td>
<td>ChE I8900 Nanotechnology</td>
</tr>
<tr>
<td>Lane Gilchrist</td>
<td>T</td>
<td>17</td>
<td>10%</td>
<td>PhD UC Davis, BS Louisiana State Uni.</td>
<td>Expertise in spectroscopy and imaging</td>
<td>ChE I9000 Bioprocess Eng.: Mammalian Cell Biotech</td>
</tr>
<tr>
<td>Charles Maldarelli</td>
<td>T</td>
<td>35</td>
<td>10%</td>
<td>DSE, MS, BS Columbia University</td>
<td>Expertise in research centered phenomena on the micro and nanoscale.</td>
<td>ChE I5500 Interfacial Phenomena ChE I9200 Soft Materials Laboratory</td>
</tr>
<tr>
<td>Raymond Tu</td>
<td>T</td>
<td>11</td>
<td>10%</td>
<td>PhD UC Santa Barbara, BS, U Florida</td>
<td>Expertise in material synthesis – see description on page 21</td>
<td>ChE I5700 Advanced Materials</td>
</tr>
</tbody>
</table>

### Chemical Engineering Faculty

<table>
<thead>
<tr>
<th>Faculty Name and Title</th>
<th>Tenure Status (T, TT, or NTT)</th>
<th>Length of Time (Number of years) at the Institution</th>
<th>Percent Time to Program</th>
<th>List All Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications</th>
<th>Program Courses to be Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ilona Kretzschmar</td>
<td>T</td>
<td>12</td>
<td>10%</td>
<td>PhD TU Berlin, Gas Phase Chemistry, Diploma Chemistry TU Berlin (Germany)</td>
<td>Expertise in new materials and applications – see description on page 21</td>
<td>ChE I8900 Nanotechnology</td>
</tr>
<tr>
<td>Alexander Couzis</td>
<td>T</td>
<td>22</td>
<td>10%</td>
<td>PhD, MS U Michigan, BS ChemEng NTU Athens (Greece)</td>
<td>Expertise in nanoscience and engineering – see description on page 21</td>
<td>ChE I8900 Nanotechnology</td>
</tr>
<tr>
<td>Lane Gilchrist</td>
<td>T</td>
<td>17</td>
<td>10%</td>
<td>PhD UC Davis, BS Louisiana State Uni.</td>
<td>Expertise in spectroscopy and imaging</td>
<td>ChE I9000 Bioprocess Eng.: Mammalian Cell Biotech</td>
</tr>
<tr>
<td>Charles Maldarelli</td>
<td>T</td>
<td>35</td>
<td>10%</td>
<td>DSE, MS, BS Columbia University</td>
<td>Expertise in research centered phenomena on the micro and nanoscale.</td>
<td>ChE I5500 Interfacial Phenomena ChE I9200 Soft Materials Laboratory</td>
</tr>
<tr>
<td>Raymond Tu</td>
<td>T</td>
<td>11</td>
<td>10%</td>
<td>PhD UC Santa Barbara, BS, U Florida</td>
<td>Expertise in material synthesis – see description on page 21</td>
<td>ChE I5700 Advanced Materials</td>
</tr>
</tbody>
</table>

### Table 4: Part Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Tenure Status (T, TT, or NTT)</th>
<th>Length of Time (Number of years) at the Institution</th>
<th>Percent Time to Program</th>
<th>List All Earned Degrees &amp; Disciplines (include College/University).</th>
<th>Additional Qualifications: list related certifications/licenses; professional experience; scholarly contributions, etc.</th>
<th>Program Courses to be Taught (Course Number and Title Must be Listed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>
6.2 Courses and Faculty Teaching Assignments

Courses and faculty teaching assignments are presented in Table 3: Full Time Faculty and Table 5: Faculty to be Hired in Section 6.1. Note that co-director Michael Grossberg has committed to spend at least 25% of his time on administrating the program and teach at least 2 courses per year in the program; co-director Zhigang Zhu has agreed to spend at least 25% of his time administrating the program and teach at least 1 course per year in the program. Their total time commitments will be over 55% and 40% respectively. This level of director commitment is similar to other programs in the Grove School of Engineering.

6.3 Additional Faculty Needed

Two faculty members will be hired for the new program in CSc. At least one of these faculty will be chosen with consideration toward being able to teach the Applied Statistics course with the agreement of the math department. As is currently the case, adjunct resources are negotiated on a case by case bases with the school of engineering.

Table 5: Faculty to be Hired

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th>No. of New Positions</th>
<th>Minimum Qualifications</th>
<th>F/T or P/T</th>
<th>Percent Time to Program</th>
<th>Expected Course Assignments</th>
<th>Expected Hiring Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant professor</td>
<td>1</td>
<td>Ph.D. in CSc</td>
<td>F/T</td>
<td>75%</td>
<td>Introduction to Data Science, Machine Learning, Big Data, Data Engineering</td>
<td>9/2017</td>
</tr>
<tr>
<td>Assistant professor</td>
<td>1</td>
<td>Ph.D. in CSc</td>
<td>F/T</td>
<td>75%</td>
<td>Introduction to Data Science, Machine Learning, Big Data, Data Engineering</td>
<td>9/2018</td>
</tr>
</tbody>
</table>

6.4 Other Personnel

The proposed DSE program will be administered by co-directors: Michael Grossberg and Zhigang Zhu, under the overall guidance of the CSc Department Chair Kawaguchi. The budget will be administered through the CS department and the Grove School of Engineering. The CS chair will approve the DSE budget as is currently the case for CS administered programs such as the Masters in Information Systems.

The main tasks of the co-directors will be:
(I) Capstone matching
(II) Scheduling teaching the core courses and electives
(III) Advising/office hours
(IV) Admissions
(V) Marketing
(VI) Curriculum
(VII) Managing budget though CS

While co-directors may provide assistance with each of these tasks, primary responsibility for each task will rest with one or the other co-director. These tasks will be swapped on an annual basis to avoid overloading of their responsibilities. For the first year, for example, Grossberg will lead Admissions, Marketing and Curriculum and Zhu will lead the Capstone matching, Scheduling and Advising. The CS chair will lead the budget effort with assistance from both co-directors. Some tasks, such as admissions will be assisted by a committee of Data Science faculty with the leading co-director as chair.

The Computer Science department currently runs its own successful Masters in Computer Science program as well as a Masters in Information Systems. In addition, it will soon be running a Masters in Computer Engineering, jointly with the Electrical Engineering Department. Thus there are many shared resources and expertise for a successful program. The following staff will be available to the proposed program.

**CSc Department:** Two full time Lab Technicians (Dr. Di Yao and Nikita Jaikaran) are in charge of the management and maintenance of the hardware and software in the teaching labs. They are responsible for installing and maintaining the various software packages including Microsoft DreamSpark Academic Alliance program. They are also responsible for the maintenance of the CSc networks, web server, and e-mail server of the CSc Department. In addition, a Higher Education Officer and two administrative assistants, Mr. Luis Camilo and Ms. Crystal Saywer, provide administrative help to the Department.

The budget requests an additional ½ FTE staff for the new program. This is customary for other similar sized programs in the Grove School of Engineering.

### 7 Cost Assessment

**Table 6: New Resources**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$171,913</td>
<td>$177,069</td>
<td>$324,877</td>
<td>$334,623</td>
<td>$330,120</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$43,659</td>
<td>$44,969</td>
<td>$46,317</td>
<td>$47,708</td>
<td>$49,138</td>
</tr>
<tr>
<td>Equipment</td>
<td>$39,500</td>
<td>$9,000</td>
<td>$9,500</td>
<td>$10,000</td>
<td>$10,500</td>
</tr>
</tbody>
</table>
Supplies & Expenses (OTPS)  | $89,500 | $89,500 | $89,500 | $89,500 | $89,500
---|---|---|---|---|---
Capital Expenditures  | $40,000 | 0 | $40,000 | 0 | 0
---|---|---|---|---|---
TOTAL  | $384,572 | $320,538 | $510,194 | $481,831 | $479,258

For details, see Appendix H: Supporting Materials For Expenditures Table (CUNY).

### Table 7: Projected Revenues

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>02. From New Sources</td>
<td>$255,176</td>
<td>$564,450</td>
<td>$667,576</td>
<td>$716,400</td>
<td>$716,400</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$255,176</td>
<td>$564,450</td>
<td>$667,576</td>
<td>$716,400</td>
<td>$716,400</td>
</tr>
</tbody>
</table>

We assume the students require two academic years to complete the Program. Enrollments in the computer science masters degree program suggest that at least half the data science students would be non-residents. So, we use the conservative estimate of 50% non-residents to calculate revenues. If more than half of the students are non-residents, the revenues would be higher. All the students are part-time, and for simplicity we assume that each student registers for 7.5 credits per semester for a total of 15 per year. For residents, each year’s tuition revenue is calculated as: (2 semesters) \times ($505/credit) \times (7.5 credits). The revenue generated by non residents is calculated as: (2 semesters) \times (870/credit \times 7.5 credits). We assume 0% inflation. Per Section 5.1, we project 25, 30, 35, 35, 35 new students would be added each year. This means the enrollments over the five year period would be 25, 55, 65, 70, 70.

### Table 8: Five Year Financial Projection

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net budget: expense – revenue</strong></td>
<td>($129,396)</td>
<td>$243,912</td>
<td>$157,382</td>
<td>$234,569</td>
<td>$237,142</td>
</tr>
</tbody>
</table>

### 7.1 New Facilities, Equipment, Laboratories and Instructional Support

See Table 6, Table 7, and Table 8 in Section 7 above for a summary of new revenues and costs. In order to provide experience with cloud computation of big-data problems and experience in the big-data course, and in data engineering, the program will rent a virtual cluster from a cloud provider such as Amazon Web Services (AWS), Microsoft Azure, Rackspace or Google Cloud Platform. The current cost from AWS for a virtual cluster with 256 cores, 1TB RAM and 100 TB of cloud storage is roughly $73,000/year. While the capital expense of for equipment for cluster this in-house might be cheaper, when
considering the yearly equipment maintenance, power and cooling costs, and the
difficulty and cost of hiring staff to maintain it the total cost of ownership for building
and maintain such a cloud would exceed $170,000. Thus there is considerable savings to
rent the resources from a cloud provider. In addition, the support provided by a cloud
provider is 24/7 and comes with extensive documentation and educational resources. The
estimate comes from a standard educational discount but it is possible that through
negotiation with cloud providers the cost could be considerably less than $73,000 year.
Further this facility may also be used for research for students and faculty working with
the program.

It should be pointed out that for capstone and research projects, CCNY faculty working
with students are able to use the High Performance Computing facilities at the College of
Staten Island, CUNY which support big-data computation and storage. In addition,
several faculty members will also be able contribute their research infrastructure, such as
Prof. Zhu’s newly involvement of the NSF Virtual Data Collaboratory (VDC) led by
Rutgers University. Cost details are in Appendix H: Supporting Materials For
Expenditures Table (CUNY).

8 Evaluation

8.1 Internal

A data science executive committee will closely monitor the performance of the program,
and the achievement of the objectives in Section 4.1, using the following methods:
• Enrollment and graduation rates, retention, and graduation times;
• Placement of graduates; and
• Faculty performance.

8.2 External

Before being submitted to the NY State Education Department, the proposed program
was reviewed by the following approved external expert, and his concerns were
addressed.

• Prof. Patrick McDonald, Director of the Data Science Program at the New
  College of Florida

The computer engineering executive committee will consult with the following external
advisory board on a regular basis:

• Fred S. Roberts, Director of Command, Control and Interoperability Center for
  Advanced Data Analysis (CCICADA), the Department of Homeland Security
9 Governance

Prof. Akira Kawaguchi, who is currently the chair of the Computer Science Department, will chair the program. The director or co-directors of the program will be faculty members from Computer Science, currently Michael Grossberg and Zhigang Zhu.

The program, like the other programs at CCNY’s Grove School of Engineering, is administered in cooperation with the school’s Office of Academic Affairs, supervised by Associate Dean Ardie Walser.

Assessment is done, and curriculum changes are proposed and voted on, by the Data Science and Engineering (DSE) Committee, which will consist faculty members from theCSc department, including the directors of the MS DSE program. The committee is chaired by the co-directors and includes the chair. The committee will also have a faculty representative from School of Engineering, the School of Science and the CCNY Medical School. Currently the committee contains the following faculty:

- Michael Grossberg, CSc Dept.
- Zhigang Zhu, CSc Dept.
- Abbe Mowshowitz, CSc Dept.
- Akira Kawaguchi, CSc Dept.
- Irina Gladkova, CSc Dept.

10 Appendix A: Course Descriptions For Required Courses

10.1 Core Courses:

Core courses:

DSE I1020: Introduction To Data Science

This course will present a survey to Data Science and introduce some of the core data science tools. While some programming experience is required for the course, the course
will include a rapid introduction to Data Science programming and the stack of tools needed to process, visualize and analyze data stack with a language such as R or Python. Students will be given a high level survey of data engineering, visual analytics, applied statistics, machine learning, and big data. The course will illustrate this bringing them through real data sets and case studies.

**Prereq:** intro to programming CSc102/103 or equivalent, probability and statistics, calculus, linear algebra, discrete mathematics.

3 hr./wk.; 3 cr.

**DSE I1030: Applied Statistics**

This course emphasizes the application of statistical principles in real world settings. The class will explore real data sets, examine varieties of models for these data sets, assess the validity of modeling assumptions, and determine the strength of conclusions that can be drawn. A strong emphasis will be placed on the critical analysis of statistical assumptions in real world settings, making use of a basic set of modeling tools, as well as the development of oral and written communication skills with respect to statistical principles.

**Prereq:** intro to programming CSc102/103 or equivalent, probability and statistics, calculus, linear algebra, discrete mathematics.

3 hr./wk.; 3 cr.

**DSE I2100: Applied Machine Learning and Data Mining**

Introduction to machine learning, datamining, and statistical pattern recognition. Topics include: 1) Supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks, deep learning), 2) Unsupervised learning (clustering, non-parametric techniques, dimensionality reduction); 3) Best practices in machine learning (bias/variance theory, model selection and evaluation, resampling). In this class, you will learn about the most effective machine learning techniques, and gain practice implementing them and getting them to work for yourself. More importantly, you'll learn about not only the theoretical underpinnings of learning, but also gain the practical know-how needed to quickly and powerfully apply these techniques to new problems.

**Prereq.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, or equivalents.

3 hr./wk.; 3 cr.

**DSE I2400: Data Engineering: Infrastructure and Applications**

This course will train students in the handling of big data sources derived from various environments including traditional business activities, web-based transactions and social media. The course will also discuss the range of data formats and application types. As part of this it will introduce the range of research topics and mentors participating in the Data Science Program and offering capstone project opportunities. The course will begin
with a discussion of high-end traditional database systems focusing on query processing, crash recovery, and transaction and concurrency control. This will be followed by a detailed look at object-relational databases, distributed and federated databases, and cloud-based data-warehousing. NoSQL databases (e.g., Cassandra and Neo4) and parallel data analysis tools (e.g., Hadoop, Spark) will be introduced. The main emphasis of the course is hands-on training in state-of-the-art software development environments. Project based system development work will be an essential component of the course.

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, or equivalents.
3 hr./wk.; 3 cr.

**DSE I2700:  Visual Analytics**

This course will give an overview of visual analytics as well as the overlapping fields of information and scientific visualization. Students will learn to programmatically process and analyze data with Python libraries widely used in statistics, engineering, science and finance. We will cover the design of effective visualizations. Students will learn to build data visualizations directly using matplotlib (Python) and interactive web-based visual analytics using JavaScript and D3. Project groups of students will each propose, design and build a visualization of a data set. The course requires students have programming experience such as csc 102/103 or equivalent.

The goals of the course are for students to:

- Recognize the appropriate applications and value of visualizations
- Critically evaluate visualizations and suggest improvements and refinements
- Apply a structured design process to create effective visualizations
- Use programmatic tools to scrape, clean, and process data
- Use principles of human perception and cognition in visual analytics design
- Use visual analytics tools to explore data
- Create web-based interactive visualizations
- Use statistical tools to aid visualization of data

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, or equivalents.
3 hr./wk.; 3 cr.

**DSE I2450:  Big Data and Scalable Computation**

Big data is sometimes defined as data that are too big to fit onto the analyst’s computer. With storage and networking getting significant cheaper and faster, big data sets could easily reach the hands of data enthusiasts with just a few mouse clicks. These enthusiasts could be policy makers, government employees or managers, who would like to draw insights and (business) value from big data. Thus, it is crucial for big data to be made available to the non-expert users in such a way that they can process the data without the need of a supercomputing expert. One such approach is to build big data programming
frameworks that can deal with big data in as close a paradigm as the way it deals with “small data.” Also such a framework should be as simple as possible, even if not as efficient as custom-designed parallel solutions. Users should expect that if their code works within these frameworks for small data, it will also work for big data.

The course aims to provide a broad understanding of big data and current technologies in managing and processing them with a focus on the urban environment. General topics include big data ecosystems, parallel and streaming programming model, MapReduce, Hadoop, Spark, Pig, and NoSQL solutions. Hands-on labs and exercises will be offered throughout to bolster the knowledge learned in each module.

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, or equivalents.
3 hr./wk.; 3 cr.

### 10.2 Capstone Courses:

**DSE I9800: Capstone Project**

Experimental project under the direction of a faculty advisor. All students will register and submit a project report after one semester to receive a grade. Students may work together on the same data sets and challenges but must establish separate subprojects, and submit individual reports/thesis. These independent study projects should involve an analysis of a data set in an application field using statistical learning/data mining techniques such as non-linear regression, supervised/unsupervised learning, dimension reduction, reinforcement learning, collaborative filtering or big-data methodology such as map-reduce/spark.

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering
3 hr./wk.; 3 cr.

**DSE I9900: Advanced Capstone Thesis**

Students, with approval from their mentor, may register for a second semester to complete a second independent study (**advanced capstone thesis**) building on the first semester work.

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering, and DSE I9800, Capstone Project.
3 hr./wk.; 3 cr.
DSE I9805: Capstone Project and Forum Course

The *capstone project and forum course* is designed not only for those students who do not find individual student-mentor matches (especially from other departments than CS), but also as a platform to connect faculty, students, and applications. The course is mandatory for students who haven’t found mentors in the third semester. Students in this course are required to take elective courses with CS faculty and the lead instructor who are going to offer the CS capstone course to prepare for their capstone projects. In the beginning of the capstone course, mentors or potential mentors of independent study students will introduce their research to the class as well as the first year students. At the end of the class, all the capstone projects (including those doing independent study projects and theses) will be presented as posters in a mini-symposium with attendance of all DSE students, faculty mentors, and external guests from government, industry, and academia. The symposium will also include faculty and industrial panels. Graduating students may get connections to job opportunities and incoming students may find their mentors/projects.

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering

3 hr./wk.; 3 cr.

10.3 Initial Elective Courses:

**BME I5100: Biomedical Signal Processing and Signal Modeling**

This course introduces two fundamental concepts of signal processing: linear systems and stochastic processes. Various estimation, detection, and filtering methods are developed and demonstrated on biomedical signals. The methods include harmonic analysis, autoregressive model, Wiener and Matched filters, linear discriminants, and independent components. All methods will be developed to answer concrete questions on specific data sets in modalities such as ECG, EEG, MEG, Ultrasound. The lectures will be accompanied by data analysis assignments using MATLAB. Students are expected to be familiar with complex variables and linear algebra.

3 hr./wk.; 3 cr.

**BME I5000: Biomedical Imaging**

This course introduces basic medical imaging methods such as computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET). Students will gain understanding in the basic physics of image acquisition and the algorithms required for image generation. Basic image enhancement, and image analysis will be presented in the context of X-ray imaging and microscopy. The course will include linear systems, random variables, and estimation theory. Students will gain hands-on experience in image processing through MATLAB programming in class and in assignments. Students are expected to be familiar with complex variables and linear algebra.

3 hr./wk.; 3 cr.
BME I4200: Organ Transport and Pharmacokinetics
Application of basic transport principles to major human organ systems. Topics include mechanisms of regulation and homeostasis, anatomical, physiological, and pathological features of the cerebral, respiratory, renal, cutaneous and gastrointestinal systems. Basic concepts in pharmacokinetic analysis for drug administration are also discussed.

ChE I5500: Interfacial Phenomena
Interfacial thermodynamics. The theory of the electrical double layer. Interfacial statistics and the Young-Laplace equation. Interfacial fluid mechanics and stability. Applications such as surface waves and Marangoni flows are included.
3 Hr./wk; 3 Cr.

ChE I5700: Advanced Materials Engineering
Prereq.: ChE 31000 or permission of the instructor.
3 Hr./wk; 3 Cr.

ChE I8900: Nanotechnology
Introduction to nanotechnology and its applications in the development and synthesis of soft materials.
Prereq.: ChE I2800 and ENGR I9100.
3 Hr./wk; 3 Cr.

CE H1200/CE 56600, Engineering Hydrology
Hydrological processes, components of the hydrological cycle (precipitation, evapotranspiration, snowmelt, infiltration, soil moisture, surface and subsurface flow). Climate tele-connections. Uncertainties and variability in hydrology, modeling hydrological processes, atmospheric and geophysical constrains on potential and actual evapotranspiration, water exchange between surface and subsurface water storage pools, horizontal water transport via surface and subsurface processes. Characterization of river channels, monitoring hydrological variables.
3 Hr./wk; 3 Cr.

CSc I0600. Advanced Algorithms
This course covers basic data structures and advanced algorithm design techniques. Topics: Data structures, priority queues, binary search trees, balanced search trees. Btrees. Algorithm design and analysis techniques illustrated in searching and sorting: heapsort, quicksort, sorting in linear time, medians and order statistics. Design and analysis techniques: dynamic programming, greedy algorithms. Graph algorithms: elementary graph algorithms (breadth first search, depth first search, topological sort,
connected components, strongly connected components), minimum spanning tree, shortest path. String algorithms. Geometric algorithms. Linear programming. Brief introduction to NP completeness. 

**Prereq:** CSc 22000 or equivalent.

*3 hr./wk.; 3 cr.*

**CSc I0500: Computer Graphics**

An intensive introduction to computer graphics hardware, design of graphics packages, geometric transformations, 3D viewing and projections, raster scan conversion, visible surface determination, lighting and shading, 3D shape representation, and splines. Emphasis is on implementation of important graphics algorithms. 

**Prereq:** CSC 32200 and MATH 34600 or equivalent.

*3 hr./wk.; 3 cr.*

**CSc I1000: Database Systems I**

An introduction to database architecture. Levels of abstraction in a database system, physical data organization, abstract data models, relational database systems, and their query language.

**Prereq:** CSc 22000 and CSc 33200 or equivalent.

*3 hr./wk.; 3 cr.*

**CSc I1100 Database Systems II**

Logical models for database management systems, especially relational, hierarchical and network. Case studies illustrating their implications for applications system development. Physical implementation of advanced data and storage structures.

**Prereq:** CSc 11000 or equivalent.

*3 hr./wk.; 3 cr.*

**CSc1900. Machine Learning and Data Mining**

This course aims to provide a comprehensive overview of recent advance in machine learning and data mining to analyze big data. Selected topics include big data clustering and classification, anomaly and fraud detection, time-series analysis, big graph mining, and massive-scale data analytics; as well as case studies in social networks analysis, healthcare, business intelligence, etc.

**Prereq:** CSc 44800 or equivalent, and knowledge of Linear Algebra.

*3 hr./wk.; 3 cr.*

**CSc I4633: Multimedia**

Algorithms and software that handle and manipulate interactively digital sound, image, animation and video. Topics covered include digital sound formats and conversion factors affecting sound quality, digital image formats and conversion, image compression and factors affecting image quality, digital video formats and standards, video compression methods, videoconferencing and interactive media.

**Prereq:** CSc 32200 and good programming knowledge.

*3 hr./wk.; 3 cr.*
CSc I6730 Data Reduction in Physical Sciences

A course in the reduction of data sets gathered by government agencies (NOAA and NASA). Data comes from satellite remote sensing and other atmospheric and oceanographic measuring systems. 
**Prereq:** Permission of the instructor.
3 hr./wk.; 3 cr.

CSc I6716: Computer Vision

Computer vision has a rich history of fundamental work on color, stereo and visual motion, which has dealt with the problems of color image understanding, 3D reconstruction from multiple images, and structure from motion from video sequences. Recently, in addition to these traditional problems, the stereo and motion information presented in multiple images or a video sequence is also being used to solve several other interesting problems, for example, large-scale scene modeling and rendering, video mosaicing, video segmentation, video compression and transmission, video manipulation, mobile vision, and first person vision. The best successful vision systems that computer vision researchers can learn from are human vision systems. Therefore this course will also briefly discuss human vision science and explore how the brain sees the world, thus including introductory on computational neuroscience, motion, color and several other topics.  
**Prereqs:** CSc 22000 or equivalent.
3 hr./wk.; 3 cr.

CSc I0802 Web-based Geographical Information System (Web-GIS)

It has been estimated that more than 80% of the information has a geographical component. Web-based Geographical Information Systems (Web-GIS) integrate Spatial Databases, GIS and Web technologies to manage and process geographical information in a Web environment. This course will cover the following modules: spatial concepts and representation of spatial objects, spatial access methods (or spatial indexing) such as Quad-Trees and R-Trees, spatial query languages and query processing, overview of Web based presentation/visualization techniques, standards and practices of geospatial Web services, and Web-GIS architectures and realizations.
3 hr./wk.; 3 cr.

CSc IA804: Massively Data Parallel Programming on GPUs

General Computing on Graphics Processing Unit (GPGPU) technologies are playing increasingly important roles in large-scale data processing in the forthcoming parallel computing era. The course will cover the following modules: introduction to parallel computing, SIMD/SIMT based data parallel computing model and GPGPU computing, Compute Unified Device Architecture (CUDA) programming basics, high-level data parallel primitives on GPUs, GPGPU for numeric computation (e.g., vector/matrix multiplications), image/signal processing (e.g., convolution, transformation and coding) and discrete structures and algorithms (e.g., tree-based indexing and graph algorithms).
3 hr./wk.; 3 cr.
EE I2200: Image Processing
This course will introduce fundamental technologies for digital image and video representation, analysis, processing and compression (MPEG, JPEG etc.) for senior undergraduates and graduate students. Topics include digital image/video perception, sampling, optimal quantization, transform, filtering, multi-spectral processing, restoration, analysis, feature extraction, morphological transform, coding of image/video compression (lossy & lossless), and latest applications. We will also have hands on experience in applying analytical solutions in practical applications by using MATLAB. The course assumes knowledge about signals and systems, as well as a basic familiarity of linear algebra and probability.
**Prereq:** (Engr103 & EE30600) or CSC470.
3 hr./wk.; 3 cr.

EE I5501: Introduction to Robotics
The course exposes graduate students/senior undergraduate students with the fundamental issues related to the research and applications of robotic systems. The course covers both robot manipulators and mobile robots. Students will be able to learn the mathematic tools for modeling, analysis, and control of a robotic system. The students will be able to gain the knowledge of robot kinematics, dynamics, motion planning, trajectory generation, sensing, and robot controller design.
3 hr./wk.; 3 cr.

EE G3300: Advanced Mobile Robotics
This course is an in-depth study of state-of-the-art technologies and methods of mobile robotics. The course consists of two components: lectures on theory, and course projects. Lectures will draw from textbooks and current research literature with several reading discussion classes. In project component of this class, students will do computer simulation or implement algorithms on mobile robot platforms at the CCNY Robotics Lab. The primary topics include motion planning, localization and mapping, navigation, adaptation and learning, and multi-robot systems.
**Prereq:** G5501 (Introduction to Robotics), good C++ programming skill.
3 hr./wk.; 3 cr.

EE (in development): VLSI Architecture Design for Information Processing
The explosive increase in traffic data has imposed the unprecedented challenges to the underlying hardware infrastructure with respect to speed, energy and resource. Recent emerging data-intensive applications have shown that delicate hardware accelerator design is becoming the essential factor to guarantee the further development of big data applications. Starting from the fundamental introduction to digital accelerator design, this course focuses on the architecture-level optimization for various types of information processing systems. The students are expected to have a comprehensive understanding and skill set on accelerating the computation-intensive algorithms via hardware-level optimization.
3 hr./wk.; 3 cr.

EE G6530 Biologically Inspired Computation for Engineering Problems
This course introduces modern optimization techniques mimicking biological principles such as survival of the fittest, behavior of ants and flocks of birds. These techniques become especially relevant for optimization problems when there is no known analytical solution. This course illustrates application of bio-inspired techniques to solve realistic engineering problems in many fields including telecommunication, transportation, robotics, and others.

Pre-/Co-requisites: I0100 (knowledge of linear systems and basic programming skills)
3 hr./wk.; 3 cr.

11 Appendix B: Syllabi for New Courses

DSE I1020 Introduction To Data Science

Course Description: This course will present a survey to Data Science and introduce some of the core data science tools. While some programming experience is required for the course, the course will include a rapid introduction to Data Science programming and the stack of tools needed to process, visualize and analyze data stack with a language such as R or Python. Students will be given a high level survey of data engineering, data visualization, applied statistics, machine learning, and big data. The course will illustrate this bringing them through real data sets and case studies.

Prereq: Intro to programming CSc102/103 or equivalent, Probability and Statistics, calculus, linear algebra, discrete mathematics.
3 hr./wk.; 3 cr.

Required Text: Joel Grus, Data Science from Scratch, First Principles with Python, Publisher: O'Reilly Media, April 2015


Grading: HW 30%, Project 40%, Final Exam 30%

Course Outcomes: Students should be able to
1. Explain the elements of data science
2. Apply python tools for preprocessing and wrangling data
3. Explore and visualize a data set for patterns
4. Apply Machine Learning to a data set

Lectures/Topics:

Week 1: Intro and Toolkit
1. The why, what and (little of) the why of Data Science?
2. Critical Tools, Git, Jupyter notebooks, Python Crash Course
Week 2: Data with Python
3. Python Std. Library Data Stats, csv, stats, Library Preview, Numpy
4. Python Pandas, Data Frame Scipy, Matplotlib/Seaborn

Week 3: Stats and Data wrangling
5. Prob/Stat quick Review, Dice, Normal Dist., regression, p-values
6. Data Wrangling, Formats, Structured/Unstructured, Pandas, SQL, Web Scraping, APIs

Week 4: Visualization and Data Exploration
7. Principles of Data Visualization
8. Exploratory Data Analysis

Week 5: Storytelling and Time series
9. Confirmatory Data Analysis, Story Telling and Communication
10. Time Series Data

Week 6: Regression and Images
11. Correlation, Regression sklearn, and statsmodels
12. Features: Image Processing and working with Image Data

Week 7: Reducing Dimensions and Text Data
13. ML: Dimension Reduction, PCA, MDS
14. Features: Working with Text Data

Week 8: Bayes analysis and Geodata
15. ML: Bayesian Analysis (Naive Bayes/Logistic Regression)
16. Features: Working with Geographic Data (maps)

Week 9: Supervised and Unsupervised Learning
17. ML: Basic Supervised Learning: kNN, Cross Validation, LDA/Fischer
18. ML: Unsupervised Learning: Clustering

Week 10: Projects and Advanced ML
19. Project Design, Designing Experiments
20. Taste of Advanced ML: SVMs, Ensemble Methods (Random Forests), Neural Nets

Week 11: Big Data and the Cloud
21. Intro to Big Data, Virtual Machines, cloud
22. Intro to cloud, Running computations

Week 12: Deep Nets and Wrap-up
23. Deep Networks
24. Wrap-up and Beyond

DSE I1030: Applied Statistics

Course Description: This course emphasizes the application of statistical principles in real world settings. The class will explore real data sets, examine varieties of models for these data sets, assess the validity of modeling assumptions, and determine the strength of conclusions that can be drawn. A strong emphasis will be placed on the critical analysis of statistical assumptions in real world settings, making use of a basic set of modeling tools, as well as the development of oral and written communication skills with respect to statistical principles.
Prereq: Intro to programming CSc102/103 or equivalent, Probability and Statistics, calculus, linear algebra, discrete mathematics.
3 hr./wk.; 3 cr.


Topics/Lectures:

Weeks 1-2: Intro to Statistical Methods in Data Science
Statistics in the context of real data sets, statistical thinking, summary statistics, populations versus samples, associations and dependence, association and causation, frameworks. Recap of the basics of probability distributions, conditional probability and Bayes rule.

Week 3: Exploratory Data Analysis and Visualization
Statistical graphics and data visualization, graphs of data, graphs of fitted models, graphs to check performance of fitted models, what makes a good graph and

Week 4: Estimation (frequentist and Bayesian)

Week 5-6: Hypothesis testing (frequentist and Bayesian)

Week 7: Regression

Week 8-9: ANOVA

Week 10: t-tests and nonparametric alternatives

Week 11: Chi-squared Tests and nonparametric alternatives

Week 12: Model selection

Week 13-14: Cross validation, Determination of the strength of conclusions

Final Project: You will use the methods you have learned in this course to perform an analysis on a dataset and report your findings. You will describe the data, calculate summary statistics, perform statistical inference, and make conclusions. Strong emphasis will be placed on the critical analysis of statistical assumptions in the real world setting, making use of a basic set of modeling tools and development of oral and written communication skills with respect to statistical principles.

DSE I1100: Applied Machine Learning
Course Description: Introduction to machine learning, data mining, and statistical pattern recognition. Topics include: 1) Supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks, deep learning), 2) Unsupervised learning (clustering, non-parametric techniques, dimensionality reduction); 3) Best practices in machine learning (bias/variance theory, model selection and evaluation, resampling). In this class, you will learn about the most effective machine learning techniques, and gain practice implementing them and getting them to work for yourself. More importantly, you’ll learn about not only the theoretical underpinnings of learning, but also gain the practical know-how needed to quickly and powerfully apply these techniques to new problems.


Prereq: CSc21700 or equivalent (intro to probability and statistics), Math34600 or equivalent (Linear Algebra). DSE I1020 Intro to Data Science, DSE I1030 Applied Statistics

Grading: projects (60%), group presentations (10%), Final Exam (30%)

Course Outcomes:
1) knowledge of the most effective machine learning methods
2) ability to select and use available machine learning libraries implemented in python
3) ability to apply principles of machine learning to applied problems
4) acquire experience communicating scientific results effectively
5) acquire experience working effectively as part of the team

Topics:
1. Linear Regression with One Variable
   Linear Algebra Review
   Model and Cost Function
   Parameter Learning
   Python Tutorial

2. Linear Regression with Multiple Variables
   Multivariate Linear Regression
   Computing Parameters Analytically
   Maximum Likelihood

3. Dimensionality Reduction
   Clustering
Principal Component Analysis
Independent Component Analysis

4. Logistic Regression
   Classification and Representation
   Logistic Regression Model
   Multiclass Classification
   Regularization
   Solving the Problem of Overfitting

5. Support Vector Machines
   Large Margin Classification
   Kernels
   SVMs in Practice

6. Neural Networks
   Motivations
   Cost Function and Backpropagation
   Backpropagation in Practice
   Application of Neural Networks

7. Non-parametric Techniques
   Parzen Windows
   Nearest Neighbor Estimations
   Metrics

8. Machine Learning System Design
   Evaluating a Learning Algorithm
   Bias and Variance
   Resampling for Estimating Statistics (Jackknife, Bootstrap)
   Large Data Sets

10. Large Scale Machine Learning
    Gradient Descent
    Conjugate Gradient Descent
    Applications to Large Datasets

DSE I1400 Data Engineering: Infrastructure and Applications

Course Description
This course will train students in the handling of big data sources derived from various environments including traditional business activities, web-based transactions and social media. The course will also discuss the range of data formats and application types. As
part of this it will introduce the range of research topics and mentors participating in the
Data Science Program and offering capstone project opportunities. The course will begin
with a discussion of high-end traditional database systems focusing on query processing,
crash recovery, and transaction and concurrency control. This will be followed by a
detailed look at object-relational databases, distributed and federated databases, and
cloud-based data-warehousing. NoSql databases (e.g., Cassandra and Neo4) and parallel
data analysis tools (e.g., Hadoop, Spark) will be introduced. The main emphasis of the
course is hands-on training in state-of-the-art software development environments.
Project based system development work will be an essential component of the course.

Textbook: *Database Systems: The Complete Book* by Garcia-Molina, Ullman, and
Course in Database Systems* (the first half of the complete book) last semester, obtain
(used) *Database System Implementation* (the last half of the complete book). Note that
the textbook may not be found in the CCNY bookstore.

Lecture slide: I will adopt slide set produced by the textbook author(s) for my class
lectures. Other materials will be placed online.

Prerequisites:
Completion of CScI10 Database Systems I. Working experience in some database
handling is essential. Knowledge of the usage of programming tools such as text editors,
debugger, and common utilities is required.

Assignments and Grading
See syllabus below for the tentative timetable for a schedule. There will be three in-
class, closed-book exams (counted 40% of your final grade). Each will cover lecture and
reading material since the previous exam. At the end of the semester every student will be
required to present a survey (15-20 minutes) selected from the database research and
development topics (counted 10%). There will be a system development project to be
done in stepwise fashion throughout the semester (counted 50%). Four assignments for
the project development will be distributed roughly every three weeks. The project must
be demonstrated under CCNY’s Linux environment. There will be no final exam.

Policies:
- The course project work must be carried out independently. Sharing implementation
  as well as collaborative development work is strictly prohibited. Instructions to
  submit each assignment will be given. Warning: note that the programming work
  must be done individually. Sharing the source code (including logic) and/or
  modifying the code to fabricate and reproduce another version among students is very
  seriously treated, and is reported to both CSc department and Deans office. Do not
  underestimate my reaction resulted from breaking this rule.

  - Three exams will be given in class. You are expected to arrive at the beginning of the
    class period, and no extra time will be given for late arrivals. No make-up exam will
    be considered for absent students. You must not place your seat close to other
    students. Violation or any unfair activity will be treated as cheating.

  - Late project submission will incur score deduction of 25% per week, that is, your
score will be deducted 25% even your submission is one day late, and become at most 50% with seven days late.

- Any disagreement resulted from my grading must be reported in writing for the resolution. I would like the course to run smoothly and enjoyably. Feel free to let me know what you find good and interesting about the course. Let me know sooner about the reverse. I will constantly maintain office hours to resolve your problems. See me, leave me a note, or send me e-mail (see here).

### Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Assignment/Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and Review from Database I</td>
<td>Project #1</td>
</tr>
<tr>
<td>2</td>
<td>Query Processing, Part I</td>
<td></td>
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<tr>
<td>3</td>
<td>Query Processing, Part II</td>
<td>Project #2</td>
</tr>
<tr>
<td>4</td>
<td>Crash Recovery, Part I</td>
<td>Exam #1</td>
</tr>
<tr>
<td>5</td>
<td>Crash Recovery, Part II</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concurrency Control</td>
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</tr>
<tr>
<td>7</td>
<td>Transactions</td>
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</tr>
<tr>
<td>8</td>
<td>Object Relational Databases</td>
<td>Exam #2</td>
</tr>
<tr>
<td>9</td>
<td>Distributed, federated databases</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Data Warehousing and Decision Support on Cloud</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Introduction to NoSQLs</td>
<td>Project #4</td>
</tr>
<tr>
<td>12</td>
<td>Introduction to Parallel Data Analysis</td>
<td>Exam #3</td>
</tr>
<tr>
<td>13</td>
<td>Survey Presentation, Part I</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Survey Presentation, Part II</td>
<td>Project Demo</td>
</tr>
</tbody>
</table>

### Computing Facilities

The software systems used for this class are those as implemented to today's available computer systems. The information required to activate these systems is given, and systems and databases account will be created for your project work. Linux Labs (NAC7/105) are available for your work, from Monday to Friday 12:00 PM to 9:00 PM on site (Friday closes at 5:00 PM), and remote access from your home for 7×24. This course will not use Microsoft environment for your project demonstration; however, all the open-source products are freely downloaded and installed into your own environment for project development and test.

### DSE 11450 Big Data Management & Analysis

#### Course Description

Big data is sometimes defined as data that are too big to fit onto the analyst’s computer. With storage and networking getting significant cheaper and faster, big data sets could easily reach the hands of data enthusiasts with just a few mouse clicks. These enthusiasts could be policy makers, government employees or managers, who would like to draw insights and (business) value from big data. Thus, it is crucial for big data to be made available to the non-expert users in such a way that they can process the data without the need of a supercomputing expert. One such approach is to build big data programming
frameworks that can deal with big data in as close a paradigm as the way it deals with “small data.” Also such a framework should be as simple as possible, even if not as efficient as custom-designed parallel solutions. Users should expect that if their code works within these frameworks for small data, it will also work for big data.

The course aims to provide a broad understanding of big data and current technologies in managing and processing them with a focus on the urban environment. General topics include big data ecosystems, parallel and streaming programming model, MapReduce, Hadoop, Spark, Pig, and NoSQL solutions. Hands-on labs and exercises will be offered throughout to bolster the knowledge learned in each module.

**Prerequisites**
Intro to Programming CS102/103 or equivalent, CSc21700 or equivalent (intro to probability and statistics), Math34600 or equivalent (Linear Algebra). DSE I1020 Intro to Data Science, DSE I1030 Applied Statistics

**Course Objectives**
- Understand the big data ecosystem including its data life cycle
- Gain experience in identifying big urban data challenges and develop analytical solutions for them
- Understand the big data programming paradigm: streaming, parallel computing and MapReduce
- Gain knowledge in implementing analytical tools to analyze big data with Apache Spark & Hadoop

**Required Text**
None, but supplemental and copyrighted materials may be posted on Blackboard or distributed in class.

**Recommended/Suggested Readings**
- *Data Science and Big Data Analytics* (John Wiley & Sons, Indianapolis IN, 2015) by EMC Education Services

**Course Requirements**
Monday sessions are for lecture, while Wednesday sessions will focus on hands-on labs. Please bring your laptops to all Wednesday classes. Class participation is recorded through lab submissions.

This course will use Python as the main programming language; however, other languages may also be accepted where applicable, e.g. using Java for Hadoop. Please make sure to check with the instructor before planning to submit your homework with a non-Python language.

All assignments should be submitted via CUNY Blackboard (unless otherwise noted). Please refrain from posting your work (assignments and projects) onto public spaces such as github. If you must do so, please only do it after the assignment deadline or with appropriate access control.

**Grading**
All requirements must be completed by the date specified and handed in at the beginning of class or they will not be counted toward the final grade. No late assignments will be accepted.

- Assignments – 45%
- Project Proposal – 15%
- Final Project – 30%
- Class participation and attendance – 10%

**DSE I1700 Visual Analytics**

This course will give an overview of visual analytics as well as the overlapping fields of information and scientific visualization. Students will learn to programmatically process and analyze data with Python libraries widely used in statistics, engineering, science and finance. We will cover the design of effective visualizations. Students will learn to build data visualizations directly using matplotlib (Python) and interactive web-based visual analytics using JavaScript and D3. Project groups of students will each propose, design and build a visualization of a data set. The course requires students have programming experience such as CSc 102/103 or equivalent.

The goals of the course are for students to:

- Recognize the appropriate applications and value of visualizations
- Critically evaluate visualizations and suggest improvements and refinements
- Apply a structured design process to create effective visualizations
- Use programmatic tools to scrape, clean, and process data
- Use principles of human perception and cognition in visual analytics design
- Use visual analytics tools to explore data
- Create web-based interactive visualizations
- Use statistical tools to aid visualization of data
Prereq. DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, or equivalents. 3 hr./wk.; 3 cr.

Required Textbook: Visualization Analysis & Design by Tamara Munzner AK Peters Visualization, Series, 2014

Supplemental Textbooks: Interactive Data Visualization for the Web by Scott Murray O’Reilly

Grading: HW 30%, Project 40%, Final Exam 30%

Topics:
- Introduction
- Visualization Principles
- Basic Plots
- Python Tool Kit: Matplotlib and Seaborn
- Task Abstraction
- Data Variable Models
- Image Variable Models
- Design Process
- Storytelling
- The Role of Color
- Maps
- Visualizing Network
- Text Visualizations
- Interaction and Animation
- Perception and Visualization
- Cognition role Visualization

DSE I9800: Capstone Project

Experimental project under the direction of a faculty advisor. All students will register and submit a project report after one semester to receive a grade. Students may work together on the same data sets and challenges but must establish separate subprojects, and submit individual reports/thesis. These independent study projects should involve an analysis of a data set in an application field using statistical learning/data mining techniques such as non-linear regression, supervised/unsupervised learning, dimension reduction, reinforcement learning, collaborative filtering or big-data methodology such as map-reduce/spark. Topic will depend on the faculty mentor.

Student will write a proposal for the project to be approved by the mentor prior to the start of the course. Student will submit a written final report, and gives a comprehensive oral presentation.

Capstone Objective:
• Work with data owner/user (faculty mentor) to opportunities to use Apply Data Science approaches to solve domain problems
• Explore, visualize and present data to owner/users to define requirements
• Create and end-to-end solution to a data science problem to showcase skills mastered in the program.
• Present and explain student’s data science work to non-experts

Pre req.  DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering
3 hr./wk.; 3 cr.

DSE I9900: Advanced Capstone Thesis

Students, with approval from their mentor, may register for a second semester to complete a second independent study (advanced capstone) thesis building on the first semester work. This extends the Capstone Project to create larger and more significant thesis.

Pre req.  DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering, DSE I9800, Capstone Project
3 hr./wk.; 3 cr.

DSE I9805: Capstone Project and Forum Course

The capstone project and forum course is designed not only for those students who do not find individual student-mentor matches (especially from other departments than CS), but also as platform to connect faculty, students and applications. The course is mandatory for students who haven’t found mentors in the third semester. Students in this course are required to take elective courses with CS faculty and the lead instructor who are going to offer the CS capstone course to prepare for their capstone projects. In the beginning of the capstone course, mentors or potential mentors of independent study students will introduce their research to the class as well as the first year students. At the end of the class, all the capstone projects (including those doing independent study projects and theses) will be presented as posters in a mini-symposium with attendance of all DSE students, faculty mentors, and external guests from government, industry and academia. The symposium will also include faculty and industrial panels. Graduating students may get connections to job opportunities and incoming students may find their mentors/projects.

Capstone Objective:
• Work with data owner/user (faculty mentor) to opportunities to use Apply Data Science approaches to solve domain problems
• Explore, visualize and present data to owner/users to define requirements
• Create and end-to-end solution to a data science problem to showcase skills mastered in the program.
• Present and explain student’s data science work to non-experts

**Sample Syllabus:**
1. Introduction of the course (wk 1, by the instructor)
2. Research opportunities (wk 2, by capstone project mentors; open to all DSE students)
3. Literature review and presentations (wks 3-4, by the students in the class)
4. Team forming and project proposal presentations (wk 5, by teams)
5. Project weekly updates (wks 6-11, including a mid-term project presentation class, by teams)
7. Final project presentations in the DSE mini-symposium (wk 12, by all DSE students doing independent study projects and capstone course projects)

**Pre req.** DSE I1020, Intro to Data Science and DSE I1030, Applied Statistics, DSE I1100, Machine Learning, DSE I2400, Data Engineering. The course will mandatory for students in their fourth semester who should have taken an elective course in the third semester.

*3 hr./wk.; 3 cr.*
# 12 Appendix C: Program Scheduling (SED Form)

## Table 9: How a typical student may progress through the program

Indicate **academic calendar** type: √Semester  __Quarter  __Trimester  __Other (describe)

- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term: Fall 1 Year 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core DSE I1020: Intro to Data Science</td>
<td>3</td>
<td>yes</td>
<td>none (admission pre-requisites)</td>
<td></td>
</tr>
<tr>
<td>Core DSE I1030: Applied Statistics</td>
<td>3</td>
<td>yes</td>
<td>none (admission pre-requisites)</td>
<td></td>
</tr>
<tr>
<td>Elective 1 from Domain</td>
<td>3</td>
<td>no</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>Term credit total:</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Spring 1 Year 1</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core DSE I1100: Machine Learning</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Core DSE I1400: Data Engineering</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Elective 2 from Domain</td>
<td>3</td>
<td>no</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Term credit total:</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Fall 1 Year 2</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core DSE I1450: Big Data</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Capstone Project/Thesis I</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Spring 1 Year 2</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective 3 from domain</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Core DSE I1700: Visual Analytics</td>
<td>3</td>
<td>yes</td>
<td>DSE11020, DSE11030</td>
<td></td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Term: Fall 1 Year 2 | Term: Fall 1 | Term: Fall 1 | Term: Fall 1 |

---

**New**: indicate if new course  **Prerequisite(s)**: list prerequisite(s) for the noted courses

| Program Totals: | Credits: 30 | Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable: |
13 Appendix D: Faculty Teaching Assignments (SED Form)

See Table 3 and Table 5 in Section 6.1.

14 Appendix E: Faculty To Be Hired (SED Form)

See Table 5 Section 6.3.

15 Appendix F: New Resources Table (CUNY)

See Table 6 in Section 7.

16 Appendix G: Projected Revenue Table (CUNY)

See Table 7 in Section 7.
## Appendix H: Supporting Materials For Expenditures Table (CUNY)

### DIRECT OPERATING EXPENSES

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Release (program co-directors)</td>
<td>$16,562</td>
<td>$17,058</td>
<td>$17,571</td>
<td>$18,097</td>
<td>$18,641</td>
</tr>
<tr>
<td><strong>Two new hires, one in 2016 and 1 in 2018:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (1 in 2016 and 1 in 2018)</td>
<td>$90,144</td>
<td>$92,848</td>
<td>$191,268</td>
<td>$197,006</td>
<td>$202,916</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (incl. 2 mos Summer for 2 yrs) x 2</td>
<td>$10,016</td>
<td>$10,317</td>
<td>$10,626</td>
<td>$10,945</td>
<td>$0</td>
</tr>
<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (49% for release and 29% for summer)</td>
<td>$55,191</td>
<td>$56,846</td>
<td>$105,412</td>
<td>$108,575</td>
<td>$108,563</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$171,913</strong></td>
<td><strong>$177,069</strong></td>
<td><strong>$324,877</strong></td>
<td><strong>$334,623</strong></td>
<td><strong>$330,120</strong></td>
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### PART-TIME STAFF

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</thead>
<tbody>
<tr>
<td>Part Time Staff Base Salary (list separately)</td>
<td>$22,082</td>
<td>$22,744</td>
<td>$23,427</td>
<td>$24,130</td>
<td>$24,853</td>
</tr>
<tr>
<td>Faculty Replacement Costs (replacement of full-time faculty - e.g. on release time - with part-time faculty)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Graduate Assistants</td>
<td>$17,666</td>
<td>$18,196</td>
<td>$18,741</td>
<td>$19,304</td>
<td>$19,883</td>
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<tr>
<td>Student Hourly</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (9.84%)</td>
<td>$3,911</td>
<td>$4,029</td>
<td>$4,149</td>
<td>$4,274</td>
<td>$4,402</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$43,659</strong></td>
<td><strong>$44,969</strong></td>
<td><strong>$46,317</strong></td>
<td><strong>$47,708</strong></td>
<td><strong>$49,138</strong></td>
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</table>

### EQUIPMENT

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</thead>
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<tr>
<td>Computer Hardware</td>
<td>$25,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>$10,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>Other (Specify) (Supplies)</td>
<td>$4,500</td>
<td>$5,000</td>
<td>$5,500</td>
<td>$6,000</td>
<td>$6,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$39,500</strong></td>
<td><strong>$9,000</strong></td>
<td><strong>$9,500</strong></td>
<td><strong>$10,000</strong></td>
<td><strong>$10,500</strong></td>
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</table>

### SUPPLIES AND EXPENSES (OTPS)

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</thead>
<tbody>
<tr>
<td>Consultants and Honoraria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Supplies</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Instructional Supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Faculty Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel and Conferences</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>Membership Fees</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>Advertising and Promotion</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Accreditation</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>
Cloud-based Virtual Big-Data Cluster | $73,000 | $73,000 | $73,000 | $73,000 | $73,000
Computer Software | $2,000 | $2,000 | $2,000 | $2,000 | $2,000
Computer License Fees | $2,000 | $2,000 | $2,000 | $2,000 | $2,000
Computer Repair and Maintenance | $1,500 | $1,500 | $1,500 | $1,500 | $1,500
Equipment Repair and Maintenance | $1,500 | $1,500 | $1,500 | $1,500 | $1,500
New Total Supplies and OTPS Expenses | $89,500 | $89,500 | $89,500 | $89,500 | $89,500

CAPITAL EXPENDITURES

| Facility Renovations | $0 | $0 | $0 | $0 | $0 |
| Classroom Equipment | $0 | $0 | $0 | $0 | $0 |
| Other (list separately): | | | | | |
| · Startup, 1 CSc & 1 EE new faculty | $40,000 | $40,000 |

Total | $40,000 | $40,000 |

18 Appendix I: Five Year Financial Projection (CUNY Table)

See Table 8 in Section 7.

19 Appendix J: Evaluation Report Form (Non Teacher Education Graduate Program) (CUNY Form)

An external evaluation report by Prof. Patrick McDonald, Director of the Data Science Program of New College of Florida, (McDonald@ncf.edu) is included in appendix L. The proposal authors’ response in appendix M.

20 Appendix K: Articulation Agreement(s) (CUNY)

We will not immediately implement any articulation agreements for the proposed program.
City College of New York has proposed the creation of a new MS degree program in Data Science and Engineering. This document is a review of the proposed program.

Executive Summary

Data Science (DS) refers to the collection of methods and associated skills required to extract knowledge from (large, often unstructured,) data. It is, by nature, interdisciplinary, which unavoidably leads to its reference meaning different things to different audiences. In this report it is understood that CCNY’s proposed program is primarily intended to target students who have completed an undergraduate degree in engineering.

As described, the proposed 30-credit program builds largely on existing resources at CCNY. The proposal outlines six core courses intended to cover the fundamentals of Data Science that must be completed by all students participating in the program, with the remainder of the requirements comprised of electives and capstone/thesis options. The proposal calls for the hiring of two additional full-time tenure track faculty members and a part-time administrative assistant.

As described, CCNY’s proposed program is structured to provide students the skills they need to work in the data science sector, particularly those parts of the sector involving data engineering. Student interest, industry demand and competitive pricing suggest that CCNY will have no trouble finding students to fill the projected 35 openings.

Given the above, should CCNY choose to hire the two tenure track faculty requested in the proposal, they will have the resources to offer a high quality Data Science and Engineering Masters Program.

That said, there are a few reservations and concerns:
• As mentioned above and as reflected in the proposed program, DS is highly interdisciplinary. While it is clear that the proposed program is supported by the CSc department, the degree to which it is supported by disciplines outside of CSc is less clear. As an example, there does not appear to be funds budgeted to cover adjunct coverage for those outside CSc who will participate in teaching for the program, nor is there detail outlining how non-CSc faculty will be evaluated (this is of particular concern for those who are yet to be tenured).
  o **Suggestion:** Clarify the details of interdisciplinary interaction.
• As presented, the program will involve a yearly load of 35 capstone/thesis projects.
  o **Suggestion:** Clarify the details of how students will be matched to mentors.
• As presented, it is not clear how assessment is done; how student outcomes are to be measured and how the assessment is to inform the evolution of the program.
  o **Suggestion:** Develop an assessment plan that helps determine whether program goals are being met.

To develop and manage responses to the above suggestions will undoubtedly require more institutional support.
• **Suggestion:** Increase support staff to 1 FTE.
• **Suggestion:** Clarify the role of the program director(s).

Finally, while promising everything to everyone will surely result in disaster, the program is light on statistics.
• **Suggestion:** Consider dedicating at least one of the requested new lines to Statistics.

**Program Administration**

The program is to be located in the Department of Computer Science where ultimate responsibility for the program will lie with Professor Kawaguchi, the current Chair of CSc. The program will be co-directed by Associate Professor Michael Grossberg and Professor Zhigang Zhu. A governing committee, the Data Science and Engineering Committee, is charged with assessing program outcomes (assumed to be as in section 4.1).

There are a few reservations:
• It is not clear where ultimate budget control for the program is to reside (assume Chair).
• It is not clear who will be responsible for evaluating faculty performance in the program (this could be a matter of concern given that the program will rely on faculty resources outside of the Department of Computer Science).
• It is not clear how the educational outcomes (which are being identified with program outcomes) are to be assessed.
• It is not clear how the assessment is to inform the evolving structure of the program.
• How is the governing committee constituted? What are its powers and duties?

**Demand**

A compelling case for the creation of a DSE Masters Program is presented:
• Demand for individuals possessing DSE skill sets will continue to outpace supply for the foreseeable future.
• Enrollment targets (20-25 year one ramping up to 35 in subsequent years) are reasonable.
  o A cost effective alternative to other local options is compelling.
• Revenue generation estimates are modest.

There are a few reservations:
• A more explicit description of students being targeted for the program should be considered.
  o All six core DS courses require (explicitly or by implication) background in linear algebra, which should be considered as an explicit minimal requirement for enrollment. This narrows the field considerably.
• A more explicit description of the intended outcomes should be considered.
  o The program appears to be a terminal masters program targeting immediate employment in the data science sector.

**Curriculum**

The requirements for the 30-credit program include six core courses, at least two electives in a domain specialization, and a capstone project or thesis. Syllabi for the core courses are included, some of which provide intended course outcomes.

Data Science skills are roughly divided between applied statistics and applied computing. The proposed curriculum reflects this structure, thus addressing the main threads of what should be any masters degree program in Data Science. That said, there are some concerns:

• The curriculum is relatively light on Statistics.
  o Every DS program must decide on a relative weighting between Statistics and Computing. The primary concern involves the degree to which students will be exposed to resampling methods and Bayesian techniques.
• The proposal does not contain a syllabus describing the requirements defining a capstone project.
• It is not clear how the capstone is to inform education outcomes. There does not seem to be an assessment model for the capstone.
• It is not clear how students will be paired with capstone advisors, nor is it clear that there are enough advisors for the projected load.
• No rubrics or training for faculty are described.
  o Because the program is interdisciplinary with a plan to involve faculty from a number of departments, common standards should be laid out in advance.
• It does not appear to be the case that students will be required to have, or be provided with, an experience in which they consult with data owners to elicit desires or demands. While this is not required for a DS Masters degree, it is a valuable skill the inclusion of which is worthy of consideration.
• The extent to which students will be exposed to a “full stack” experience is not clear; again, this is worthy of consideration.
• It is not clear how often the core courses will be taught (once per year?).

Faculty

Section 6 of the proposal describes the rich collection of faculty, distributed across the institution, available to the program. These faculty members are more than qualified to offer the proposed curriculum. But there are a few concerns:
• Table 3 provides a summary of faculty resources, but the percent time to program field is a little mysterious.
  o Are faculty counted at 10% if they currently teach a course which will be folded into the program? Are faculty counted at 15% if they agree to teach a new course for the program?
  o Are there formal commitments at the level of faculty for allocating resources? At the level of departments?
  o Are there formal commitments in place for mentoring capstone projects? If so, how does the accounting work?

Administrative Support

The program is co-directed by two faculty members in the CSs department, both of who will teach in the program. There will be IT support. There is a plan to add a .5 FTE staff position. Moderate sums are allocated for marketing. There are references to IT support.

There are a few concerns:
• Coordinating the activities of numerous faculty and 70 enrolled students will take more than a .5FTE staff position. A full time support staff person will likely be required.
• It is not clear how the splitting of the director duties is to work (there are no position descriptions). This is a matter of serious concern, since the success of the program is contingent on a number of working parts functioning together.
• The release time budgeted for the Directors seem to suggest an underestimate of what will be involved in coordinating the program.
• It is not clear if there is a formal mechanism in place to provide redundancy and stability for the core courses for the program. Of particular concern is the
Applied Statistics course. Is there a mechanism in place to guarantee it will be offered? What happens when Applied Math faculty are on sabbatical or leave the institution?

- The budget should include funds to cover temporary teaching assignments in disciplines where new courses will be offered.
- There is no mention of dedicated hardware for the program (the working assumption is that there are no curricular plans that would demand such hardware. It is worth noting that plans to incorporate data from industry might very well necessitate such hardware).
- There is no budget for web services, leading to the conclusion that all computing, big or otherwise, will be hosted locally.
- There is no mention of support for student placement.
- There is no mention of associated costs of student mentoring and how it will be covered.
- Accreditation costs are budgeted at $0. There is no budget line for assessment suggesting that either assessment is covered by funds outside the program, or assessment costs are being underestimated.

### 22 Appendix M: Outside Reviewer Report Response

The proposal authors are extremely grateful to the reviewer, Director McDonald, for his thorough and extensive review and suggestions. We incorporated most of his suggestions into the proposal. We address the points the Director raised below and indicate whether they resulted in a change of the proposal. If we did not change the proposal it was often because the concern/suggestion is typically addressed at the unit level of department, school or college, or that current policy at the appropriate unit is incompatible with the suggestion. Reviewer points are repeated below, largely in order, but some were grouped when the response addressed multiple points.

... there does not appear to be funds budgeted to cover adjunct coverage for those outside CSc who will participate in teaching for the program, nor is there detail outlining how non-CSc faculty will be evaluated (this is of particular concern for those who are yet to be tenured).

Evaluation of faculty is a department not program level activity. Faculty outside CS/Math will participate for the same reason companies will hire DS master’s students, opportunity to have students with data science skills to work on their projects. They also will allow fuller enrollment in specialty (elective) courses allowing them to run, and will get workload credit for teaching independent study students.

... Clarify the details of interdisciplinary interaction.
We modified the proposal to clarify that interdisciplinary interaction will happen through electives and the capstone. As stated in the proposal, various other divisions in the College share the importance of a Data Science and are participating in the data science effort. For instance, Math Department has been taking an active role to augment its curricular structure so as to allow its Applied Math major to cross-register for data science courses. Deans of Engineering (CSs) and Science (Math) are exploring the possibility of joint-appointment of one tenure-track faculty (in addition to the proposed two CSc lines) specialized in the teaching of data science related courses.

... Clarify the details of how students will be matched to mentors.

We added a discussion of the student matching process and an inclusion of information sessions in the second semester/first year data engineering course, and the mini-symposium which will be coordinated with the second year students’ capstone project and forum course.

... Increase support staff to 1 FTE. [from 0.5]
... Coordinating the activities of numerous faculty and 70 enrolled students will take more than a .5FTE staff position. A full time support staff person will likely be required.

Other programs at CCNY similar size or even larger programs run on 0.5 FTE making it hard to justify more staff support. We will leverage shared staff resources in CS, since we currently run an MS and MIS, as well as the new Computer Engineering program.

... Clarify the role of the program director(s).
... It is not clear how the splitting of the director duties is to work (there are no position descriptions). This is a matter of serious concern, since the success of the program is contingent on a number of working parts functioning together.

We have spelled out, in greater detail, the role of the co-directors and how work would be split between them.

... Consider dedicating at least one of the requested new lines to Statistics.

We added explicit mention of statistical competency for one of the proposed lines. Some current computer science faculty have Mathematics PhDs so Data Science faculty candidates in Machine Learning will be considered from statistics. For simplicity, the current proposal was written as a Grove School of Engineering proposal. Mathematics at CCNY is part of the Division of Science. Once the program has been established, we will negotiate an expansion and integration of the program with other schools at CCNY.

... It is not clear where ultimate budget control for the program is to reside.

Added explicit wording that Chair of CS administers budget.
... DS courses require (explicitly or by implication) background in linear algebra, which should be considered as an explicit minimal requirement for enrollment. This narrows the field considerably.

We updated the proposal to explicitly include linear algebra in admissions requirement. Most graduating math/science/engineering students, which is our target demographic, will have courses in calculus, programming, probability/statistics and linear algebra. Data analytic programs, like that at other CUNY units such as Baruch or Queens College have been designed to accommodate students without these background courses. Our program will be more technical and computational than a data analytics program. We believe there is both a market need for graduates with these skills and a large pool of science and engineering undergraduates with the needed pre-requisites, who will be interested in our program.

... Every DS program must decide on a relative weighting between Statistics and Computing. The primary concern involves the degree to which students will be exposed to resampling methods and Bayesian techniques.

As just stated, other CUNY programs are more focused on Data Analytics. The math department is also working on a separate applied statistics program. Other data science programs we have reviewed had one or two applied stats courses. Given our desire to give more course hours to data engineering, the capstone and domain electives we have opted for one statistics course. We will keep in mind the suggestion to make sure resampling methods and Bayesian models are covered in applied statistics. Cross-validation, shuffling and bootstrap (resampling) and some Bayesian methods will also be introduced in Introduction to Data Science. In addition some graphical models and resampling, including Markov Chain Monte-Carlo, should be covered in the Core Machine Learning course. Given that the Math department is committed to expanding its applied statistics offerings, those students who wish to delve more deeply into statistics and Bayesian inference will be able to in the context of electives.

... The proposal does not contain a syllabus describing the requirements defining a capstone project.

We have added more complete a capstone syllabus. The typical capstones are independent study projects with mentors so they don’t have a course style syllabus.

... It is not clear how students will be paired with capstone advisors, nor is it clear that there are enough advisors for the projected load.

We estimate an average of 3 students (2-4 range) in a capstone project group per mentor, and roughly 30 faculty members currently volunteering, it should be easily sustainable to have 12 project mentors/year providing 3*12 = 36 capstone project slots per year.
... an experience in which they consult with data owners to elicit desires or demands. While this is not required for a DS Masters degree, it is a valuable skill the inclusion of which is worthy of consideration.

Capstone mentors will be data owners/users and students will need to elicit requirements as part of the capstone. This has now been added to the proposal.

... The extent to which students will be exposed to a “full stack” experience is not clear; again, this is worthy of consideration.

To the extent that full stack refers to big data infrastructure like spark or map-reduce, this will be covered in the Big Data and Data Engineering course. To the extent that it refers to the end-to-end cycle of working with a data set and providing a solution, this is addressed in the capstones. Some of the capstones will combine both those ‘senses’ of ‘full stack’ but not all.

... It is not clear how often the core courses will be taught (once per year?).

Now this has explicitly been stated in section 4.2 in the proposal.

... release time budgeted for the Directors seem to suggest an underestimate of what will be involved in coordinating the program.

There is a school wide policy on the release time allowable for program directors program. This proposal is in-line with that policy.

... It is not clear if there is a formal mechanism in place to provide redundancy and stability for the core courses for the program. Of particular concern is the Applied Statistics course. Is there a mechanism in place to guarantee it will be offered? What happens when Applied Math faculty are on sabbatical or leave the institution?

With the requested additional two faculty lines there will be sufficient resources to teach these courses. There are a pool of faculty who are qualified to teach the core courses so there is sufficient redundancy. Two members of the CS department have PhDs in math and the applied stats course could be taught by faculty in either Math or CS department. The CS department currently teaches its own prob/stats course for majors. Nevertheless, the math department has made a commitment that Applied Statistics and Data Science are areas of great interest for them. They would like to build a master’s program in applied statistics. It is possible that the CS department and Math department could formally work together on the Data Science program but that is not part of this proposal for structural reasons as mentioned above, but closer integration with the Math would be highly desirable after the program is established.

... The budget should include funds to cover temporary teaching assignments in disciplines where new courses will be offered.
Most electives will not be exclusive to the data science program but are courses that could be taken at the master’s level requiring only the science/math/programming prerequisite for the program. The electives will be part of the faculty’s home department. Workload credit for development of new course is determined on a case-by-case by the department chairs and the school dean.

... There is no mention of dedicated hardware for the program (the working assumption is that there are no curricular plans that would demand such hardware. It is worth noting that plans to incorporate data from industry might very well necessitate such hardware).
... There is no budget for web services, leading to the conclusion that all computing, big or otherwise, will be hosted locally.

We have now added in the budget line for a virtual private cluster using cloud services (Amazon Web Services). The specification for this cluster was set by the current instructor of our Big Data course. This is a significant resource and will be more than sufficient for use in the Core classes. The school is a member of https://aws.amazon.com/education/awseducate/ which provides students with some AWS credit. The school also has access to a High Performance Computing facility at CUNY/College of Staten Island, as well as to numerous faculty computing resources. These resources will be available for capstone and elective work.

There is no mention of support for student placement.

A discussion of student placement has now been added to section 3.4.2.

There is no mention of associated costs of student mentoring and how it will be covered.

Student mentoring earns faculty teaching workload at the rate of an independent study as currently college-wide policy. If a mentor takes on 10 or more students in a single semester, that becomes a course. This clarification has now been added to the proposal.

Accreditation costs are budgeted at $0. There is no budget line for assessment suggesting that either assessment is covered by funds outside the program, or assessment costs are being underestimated.

... Develop an assessment plan that helps determine whether program goals are being met.

All the master-level degree programs offered by the College were reaccredited in 2013 by the Middle States Commission. CSc has a defined set of PEOs and SOs for the MS in CSc and MS in IS programs, which will be applied to this new DS program as default. CSc has an established closed cycle for assessment, review and improvement. The
College will enter into the renewal process (right after the finished undergraduate programs). Any specialized adjustment required for DS will be applied in due course.

... Are faculty counted at 10% if they currently teach a course which will be folded into the program? Are faculty counted at 15% if they agree to teach a new course for the program?

These are the CUNY standard effort rates utilized to derive quantitative accumulation values.

... Are there formal commitments at the level of faculty for allocating resources? At the level of departments?

The costs of supporting the program comes from the Grove School’s OTPS (other-than-personnel) fund distribution, in which the stated strategy used in the disbursement of OTPS fund is to (a) address program need and (b) reward productivity. As part of this strategy, the OTPS fund distribution has been readjusted to reflect the various departments’ faculty size, enrollment, equipment cost, research productivity, and its capacity for overhead and salary recovery generation. The GSoE has steered substantial funds to the Departments for enhancing their instructional laboratories and programs.

... are there formal commitments in place for mentoring capstone projects? If so, how does the accounting work?

There is a College-wide rule of teaching load administration. The maximum teaching load for full-time professorial staff allowed by contract is 21 hours per academic year. Faculty members involved in non-funded research teach 18 hours per academic year. No full time CS faculty member has been assigned a 21-hour teaching load. Furthermore, faculty members who are involved in funded research teach no more than 12 hours per year. The Department maintains a cumulative record of the number of teaching equivalent hours worked the faculty. This record is called the “load bank.” Based on the rule, supervision of per-student capstone project is rewarded as an independent study, that is, 0.5 hour for the first student and additional 0.25 hour. This means that supervision of 11 students becomes equivalent to one course load.

... who will be responsible for evaluating faculty performance in the program (this could be a matter of concern given that the program will rely on faculty resources outside of the Department of Computer Science).

... how the educational outcomes (which are being identified with program outcomes) are to be assessed.

... how the assessment is to inform the evolving structure of the program.

... How is the governing committee constituted? What are its powers and duties?

... clear how the capstone is to inform education outcomes. There does not seem to be an assessment model for the capstone.
The faculty members assigned to the program have appropriate authority for the creation, delivery, evaluation and modification of the program, and the responsibility within the framework of the department governance structure for the consistency and quality of its courses. Specifically, the Department has various in-department and in-school governance committees whose members are selected from faculty. In regard of the work required for accreditation processes, the departmental Assessment Committee and Curriculum Committee play a central role:

- The Assessment Committee is tasked to systematically gather and analyze the assessment data so that they can make recommendations to the faculty. These recommendations are discussed in faculty meetings. Members of the Assessment Committee are appointed by the Chair as follows: Akira Kawaguchi (Chair), Dr. Abbe Mowshowitz, Dr. Jie Wei, Dr. Samuel Fenster, and Ms Crystal Sawyer.
- The Curriculum Committee is tasked to analyze the requests from faculty members regarding courses and to make recommendations. These recommendations are based on their experience, the Computer Science Curriculum made by Association of Computing Machinery (ACM), the job market, and more. These recommendations are discussed in periodic faculty meetings. Members of the Curriculum Committee serve three-year term and are elected at the same time the Chair is elected. Members in this term are: Dr. Peter Brass, Dr. Michael Grossberg, Dr. Stephen Lucci, Dr. William E. Skeith, and Dr. Douglas Troeger (Chair).
- Assessment Committee will announce which two courses will be selected for assessment for each SO, a) through k), at the first department meeting of the semester N.
- Prior to the above meeting, Assessment Committee will review assessment result of semester N-1 and work with Curriculum Committee if necessitated to inspect discrepancies; the result will be shared at the above meeting.
- Consideration of curricular upgrade will be proposed by Curriculum Committee at the second department meeting of the semester N.

Below are governance chart and sample rubrics for evaluation.
Sample Rubrics Utilized for Student Outcome
## Outcome f) An ability to communicate effectively with a range of audiences

<table>
<thead>
<tr>
<th>No</th>
<th>Criterion</th>
<th>Below Expectations</th>
<th>Meet Expectations</th>
<th>Exceed Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ability to concisely describe a problem and to use persuasive arguments to support a thesis or position.</td>
<td>Provides a reasonable description of the problem or issue. Presents arguments clearly and in reasonable form; Minor gaps in analysis do not significantly alter conclusion; Adequate material provided to support thesis or position taken.</td>
<td>Provides a concise description of the problem or issue. Presents arguments clearly and logically; Material presented supports the thesis or position proposed.</td>
</tr>
<tr>
<td></td>
<td>[fa1]</td>
<td>Arguments are confusing and many gaps exist in the analysis; Conclusion do not appear to follow from arguments; Material provided inadequate to support thesis /proposal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to maintain the interest of an audience in the material being presented by creating a visually stimulating and informative presentation.</td>
<td>Verbal communication is clear. Attitude demonstrates confidence but not enthusiasm. Graphs, charts etc are well designed and support verbal presentation. Audience attention is mostly maintained.</td>
<td>Verbal communication is clear. Attitude demonstrates confidence and enthusiasm. Graphs, charts etc are well designed and support verbal presentation. Audience attention is constantly maintained.</td>
</tr>
<tr>
<td></td>
<td>[fa2]</td>
<td>Presenter has problems clearly communicating. Attitude indicates lack of confidence or lack of preparation. Graphs, charts etc are poorly designed and do not support verbal presentation. Audience attention is not maintained.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to create a well-organized document that is visually appealing. The document is not visually appealing. The table of content is misleading or absent. The flow of ideas is not logical. Some equations are inaccurate and there is little attempt to justify their use. Illustrations are poorly made.</td>
<td>The document is organized and a table of content is provided. Most figures, equations and charts are accurate, consistent with text and of reasonable quality. With minor exceptions, references are provided in a standard manner. The format could be improved but for the most part ideas flow logically and are consistent with the organizational structure.</td>
<td>The document is visually appealing and easily navigated. Figures, equations and charts are accurate, consistent with text and of excellent quality. References are accurate.</td>
</tr>
<tr>
<td></td>
<td>[fb1]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to use appropriate words and grammatical structures.</td>
<td>Multiple errors in sentence structure/grammar/flow. Engineering terms and jargon often used incorrectly or without definition. Multiple errors in spelling, labeling and punctuation.</td>
<td>Grammar is mostly correct. Sentences flow smoothly. Minor errors exist but do not distract the reader. For the most part, engineering terms are used correctly. There are few errors in spelling, labeling and/or punctuation.</td>
<td>Sentences are complete and grammatical. They flow together smoothly; Words are chosen for precise meaning; Engineering terms are used appropriately. There are no spelling, labeling, or punctuation errors.</td>
<td></td>
</tr>
</tbody>
</table>
RESOLVED, that transferring the degree granting authority for the existing Ph.D. in Clinical Psychology currently held by the Graduate School and University Center to City College, be approved, effective June 26, 2017, subject to financial ability.

EXPLANATION: Established in 1980, the Ph.D. in Clinical Psychology has always been offered at, and primarily been operated by, City College. The program’s focus is to prepare its students to become practicing clinical psychologists. At the time of the program’s inception, degree granting authority for all doctoral programs in CUNY lied in the Graduate School and University Center. Over the past decade, the University has made the strategic decision to transfer the professional doctoral programs to the senior campuses that provide most of the teaching and administrative resources for the program. This is one more application of that decision.
REQUEST TO TRANSFER
DEGREE GRANTING AUTHORITY FOR
THE DOCTORAL DEGREE
IN CLINICAL PSYCHOLOGY
FROM THE GRADUATE SCHOOL AND UNIVERSITY CENTER
TO CITY COLLEGE

Submitted By

City College
Of
The City University of New York

The Graduate Center
Of
The City University of New York

Approved by CLAS Faculty Council
May 2, 2017

Approved by the Graduate Council
May 10, 2017
Executive Summary

We propose that the degree granting authority for both the Ph.D. (IRP Code 80250) and the corresponding M.Phil (IRP Code 92066) in Clinical Psychology currently awarded by the Graduate School and University Center (GC) of The City University of New York (CUNY) be transferred to City College of The City University of New York (City College). When the Ph.D. program was established in 1966, the GC was the only division of CUNY authorized to award doctoral degrees, hence doctorates, both academic and professional, were awarded by the GC, regardless of the level of that institution’s involvement in the program. Over the past several years, CUNY has strategically migrated the authority to award professional doctoral programs to the senior campuses that are delivering the programs and supporting the faculty engaged in the teaching and related research. The primary purpose of this program is to prepare graduates to become practicing licensed clinical psychologists. Degree granting authority for doctoral programs in Engineering were transferred to City College in 2008.

The Ph.D. in Clinical Psychology granted by the GC but delivered by City College was established in 1966, and initially accredited by the American Psychological Association (APA) in 1974. In 2015 the program received a full seven-year reaccreditation. It is routinely considered by applicants to be one of the most sought after clinical programs in the metropolitan region and has consistently ranked in the top two programs in New York State with respect to its internship match rate over the past 25 years. Since 2013 the program has matched 100% of students who applied to internships at APA accredited sites. Our qualified faculty educate a small and selective group of future clinicians and teachers.

The proposed transfer of degree authority enables City College to be officially recognized for the doctoral training that has conducted on its campus since the program’s inception. Putting the name of City College formally on the degree will mitigate the confusion that might exist in the marketplace. This change in title is not expected to be accompanied by any internal operational changes.

Implications of the Change in Degree Status

Governance

The Clinical Psychology Ph.D. program is governed by the rules, regulations and policies of the Graduate Center in consultation with the Clinical Psychology faculty of City College. The program is administered by an Executive Officer, appointed by the President of the Graduate Center and an Executive Committee elected by the doctoral faculty in Psychology. The governance of the program will be completely migrated to City College upon transfer of degree authority.
Faculty

The list of distinguished faculty is provided in Appendix 1. All Clinical Psychology dissertations have been chaired by the faculty teaching in the program at City College. The courses in the program are entirely taught by City College faculty. The faculty running the program will continue to do so.

Space

There is no space allocated to the Clinical Psychology Program at the Graduate Center. City College provides ample space for instruction, research, computer labs, a student lounge and the Psychological Center which is a clinic exclusively staffed by student therapists who provide over 10,000 hours annually of low cost psychotherapy to the West Harlem community for the past 50 years. No additional space will be required of City College.

Admissions

The admissions committee is made up of faculty in the Clinical Psychology program at City College and will continue to be so upon transfer.

Student Services

The non-academic services such as admissions, registration, financial aid, international students and human resources are supported by City College.

Academic Services (Library)

Students in the Ph.D. program in Clinical Psychology have access to library resources throughout CUNY and will continue to do so.

Curriculum

The curriculum is developed and revised by the faculty of City College in line with the accreditation requirements of the APA, and approved through its local governance process. submitted to the curriculum committee of the Graduate Center. The current curriculum will remain exactly the same upon transfer of degree granting authority.

Accreditation

The primary accreditation for the Ph.D. program in Clinical Psychology is from the American Psychological Association (APA). There is a long and well developed accreditation process that the Ph.D. program in has subjected itself to for over 40 years. The APA accredits the program and is aware of the degree authority transfer and has no objection. The Middle States Commission on Higher Education will be made aware of this impending action.
**Funding Level**

The proposed changes to the program will migrate any tuition dollars generated to City College. Tuition collected will be sufficient to cover the costs of faculty salaries and other expenses related to instruction.

**Students: Current Level of Activity**

There are about 70 doctoral students currently enrolled in the Clinical Psychology Program. 100% of them are resident at City College. City College will continue to admit a total of 14 students per academic year into the program.
Abstract for the Master Plan Amendment Permitting the Migration of the Doctoral Program in Clinical Psychology from the Graduate Center to City College

Overview

The Clinical Psychology Doctoral Program is formally requesting a transfer in the current doctoral degree granting status presently residing with the Graduate Center to City College, effective with the Class of 2018.

Description of the Program

The Ph.D. degree in Clinical Psychology is currently offered at The City College of New York and has been located at the College since its inception, although the administrative operation of the program had been at the Graduate School and University Center (hereafter, “GC”) of CUNY. The Ph.D. Program’s primary goal is to prepare students to be scholars and practitioners of professional psychology. The Ph.D. Program was founded in 1966, at the CUNY Graduate Center, the only doctoral institution in the CUNY system at that time. It was initially accredited by the American Psychological Association (APA) in 1974, and has maintained its accreditation since that time. It received full, seven-year, re-accreditation in 2015. It is routinely considered by applicants to be one of the most sought after Clinical Programs in the metropolitan area and has consistently ranked in the top two Programs in New York State in terms of Internship match rate over the past 25 years. Since 2013, the Program has matched 100% of students who applied to Internships at APA accredited sites.

One major part of the CUNY Strategic Plan is to increase the number of professional doctoral programs on the senior campuses of CUNY. The proposed migration is therefore merely a technical change in keeping with the Strategic Plan. The key administrative change is to transfer the nature of the financial underpinning of the Program to an already existing model within CUNY known as the Health Sciences Model. In this model, the tuition revenue generated by the Clinical Program would be used exclusively to finance the full costs of its coursework. That is, tuition revenue generated by the Program would be converted to directly pay for the courses its faculty taught.

The faculty in the program and the GC therefore agreed that the next logical step would be for the College to be granted the ability to award the Ph.D. degree directly and solely to future graduates of the Clinical Program. We are therefore formally proposing that the College be granted
the ability to award the doctoral degree to our graduates, beginning with the incoming Class of 2018.

City College has the facilities necessary to ensure meaningful peer interaction, support, and socialization. These facilities include classrooms, research and computer labs, a student lounge, and our Clinic. This clinic, called the Psychological Center, is exclusively manned by the student therapists and provides over 10,000 hours annually of low cost psychotherapy to the West Harlem community and has done so for over 50 years. No additional space or facilities of any kind are needed by the Program to enable this transfer of administrative identity to occur. The Ph.D. Program now matriculates 14 students per year, and has a current total student body of 80.

CCNY has provided low-cost public education of the highest caliber to a diverse student body for 170 years, and has throughout its history had as its central mission the education of an ethnically diverse, underserved, and underrepresented population. The Clinical Psychology Ph.D. Program’s mission of providing high quality clinical service to an underrepresented minority population and its academic mission of educating a multicultural and diverse student body in all aspects of identity is entirely consistent with the historic mission of CCNY. Indeed, in 1999, when the APA decided to review all 192 doctoral clinical psychology programs in the United States for their commitment to the recruitment, retention and graduation of students from underrepresented groups, it awarded City College’s clinical program with its inaugural prestigious Suinn Minority Achievement Award for excellence in this area. Routinely, the program accepts approximately one-third of its students from underrepresented minority groups.
Master Plan Amendment Supplement Regarding the Migration of the Doctoral Program in Clinical Psychology from the Graduate Center to City College

Question #2 Application for Master Plan Amendment Application

a) Program start: Both the Ph.D. in Clinical Psychology (IRP 80250) and the corresponding M.Phil in Clinical Psychology (IRP 92066) were established at the CUNY Graduate School and University Center
b) **Student body:**

40% in remainder of state

2a. 40%

2d. 20% out of state or international

2e. 20%

b) **Student body:**

40% in remainder of state

2a. 40%

2d. 20% out of state or international

2e. 20%

c) **Transfer students (N/A)**

**Enrollment assumptions:** For the academic year 2017-2018, the Program received close to 200 applications and it is anticipated that 14 students will be accepted, the same as in academic year 2016-17. This reflects about a 7% acceptance rate that is consistent with the acceptance rate of the Program historically. For the past 10 years, every student who accepted an offer to the Program, enrolled to start in the fall of the corresponding year. Given the relatively consistent numbers of applicants to our Program as well as the stable enrollment that the Program has experienced, we assume that our assumptions underlying the enrollment projections will hold true.

e) **Planning**

1. **Document with measureable data the need for the program in terms of population:**

There are currently 17 programs in the state of New York that are APA accredited and that offer a Clinical Psychology PhD degree. Of these, we are one of four programs that offer training in long-term psychotherapy. Of these four, we are the only program that focuses on serving the underrepresented minorities in our catchment area. Compared to the other clinical programs at private universities in the metropolitan area, moreover, our tuition is between one-fifth and one-third their cost. Our applicants thus tend to be more economically diverse and represent a significant number of working and middle class students. One of the most straightforward methods of measuring the success of a clinical psychology program is to assess their internship match rate for the one-year required Internship necessary for licensure. Our program has had the highest match rate of any metropolitan area over the past twenty years and
our rate of students getting their top choice in the internship match is also the highest of any program in the metropolitan area. We admit 14 students a year.

2. **Specify the number of students requesting establishment of the program.** We have surveyed our over 500 alumni and they are overwhelmingly (over 90%) in favor of this migration. We also surveyed the nearly 80 students currently enrolled and 100% were in favor of the migration.

3. N/A

4. **If program is intended to meet institutional purposes and goals, rather than external, explain.**

   CCNY has provided low-cost public education of the highest caliber to a socioeconomically and culturally diverse student body for 170 years, and throughout its history has maintained as its central mission the education of a socioeconomically and culturally diverse, underserved, and often underrepresented populations. The Ph.D. Program’s mission of training students to provide high quality clinical service to a diverse patient population facing a multitude of psychosocial stressors, and its academic mission of educating a multicultural and diverse student body are entirely consistent with the historic mission of CCNY to provide access to low-cost education for all qualified applicants.

   The Program would contribute to the viability of the CCNY institution much in the same way that it contributed to the Graduate Center. The faculty represents a diversity of research and clinical experiences and interests, thus providing a doctoral level of training to its students that is competitive and represents current standards of practice. The training clinic of the Program provides real time clinical services to the surrounding community as well to CCNY. These services fill a significant void in the provision of affordable long-term mental health
services in West Harlem and its surrounding communities.

f) **Related Programs:** The Psychology Department at City College has a long and rich history at both the Bachelor’s and Master’s Degree levels that have long been a “feeder” program into the doctoral program.

g) **Resources:** See Tables 1 and 2 below. h) NA

---

**A Resolution for the Migration of the Doctoral Program in Clinical Psychology from the Graduate Center to City College**

RESOLVED: Resolved, that the program in Clinical Psychology at City College and Graduate Center (State Program code 80250, HEGIS number 2003.00) be permitted to migrate completely over to City College, and that this program be deregistered from the Graduate Center when the New York State Board of Regents approves a parallel request from City College of New York.
EXPLANATION: Over the past five years, the Graduate Center’s umbrella program of 14 training areas in Psychology has experienced significant admissions cuts in incoming students. In particular, the Clinical Psychology Program based at City College had been accepting 12 students per year through 2012, but these cuts reduced admissions to only five students per year for the Classes of 2015 and 2016.

The City College Clinical Psychology Program has 11 core full-time faculty, and the traditional number of incoming students into the Clinical Psychology Program received efficient mentoring, and served the academic and social mission of City College well. The recent reductions appeared to compromise this mission. Therefore, City College has offered to manage and finance the program, and thereby restore the number of admissions.

Both the Graduate Center’s overall Psychology administration and the Clinical Program’s faculty and administration concluded that a shift to the funding model of the existing Health Sciences Model which would use the revenue generated by the City College Clinical Program to finance the full costs of its coursework, was appropriate.

Doctoral programs at the Graduate School are based on a consortial model that involves participation by faculty from CUNY campuses. The consortial model is no longer applicable to faculty in the Clinical Psychology program at City College since only that campus is involved. There are no Graduate Center-based central line appointments in the City College Clinical Psychology program. In addition, the physical facilities necessary to offer the program, including office space, classrooms and research laboratories are on the City College campus. The program is no longer a part of the Graduate Center allocation system, and thus no tuition revenue, other than basic administrative costs, is retained at the Graduate School beginning with the Class entering in the fall of 2016.

With the City College Clinical Psychology Program’s admissions no longer counted by the GC in its total number of accepted students; with the courses necessary to the Program’s functioning no longer paid for by the GC; and with the GC no longer providing financial aid to members of the cohort arriving fall of 2016 and all future classes, the GC has effectively separated from the CCNY Clinical Program. Therefore, the Clinical Psychology Program and the GC therefore agreed that the next logical step would be for City College to be granted the ability to award the Ph. D. degree directly to future graduates of its Clinical Program.

City College is therefore in the process of submitting a formal proposal to the New York State Board of Regents that City College be granted the ability to award the doctoral degree in Clinical Psychology to its graduates, beginning with the Class of 2017. At the time that City
College receives such formal approval of its proposal, the CUNY Graduate Center will then
deregister the program, ceding full authority to City College.

Passed May, 10, 2017
Also present: Deans Erec Koch, Tony Liss and Juan Carlos Mercado, Acting Dean Kevin Foster, Celia Lloyd, Chip Stewart, Leslie Galman

1) The minutes from the February 2 meeting were approved by voice vote.

2) Slight changes to the course descriptions for PHYS20300, 20400, 20700, 20800, 20900, and 47100 were approved by 30-0-0.

3) The resolution to move the Clinical Psychology program from the Graduate Center to the CCNY Psychology Department was approved 35-0-0.

4) An articulation agreement between BMCC and CCNY Department of Media and Communication Arts was approved with revisions (see attached) by 27-0-5.

Respectfully submitted, Chris Li
RESOLVED, that the Barry R. Feirstein Graduate School of Cinema be established as an academic department effective August 25, 2017, subject to financial ability.

EXPLANATION: Brooklyn College has a well established Department of Film that for many years offered only undergraduate degrees. In response to the ever increasing local employment opportunities, then Mayor Bloomberg encouraged CUNY to establish graduate programs in cinema to provide an affordable alternative to the private graduate programs in the region. With the assistance of monies from the city as well as the successful private fundraising done by then President Karen Gould, including a very generous $5.5 million gift from Barry R. Feirstein, Brooklyn College established several graduate programs in cinema, which as per the CUNY Board Resolution of June 24, 2013, came to be collectively known as The Barry R. Feirstein Graduate School of Cinema, within the Department of Film.

Pursuant to academic and institutional planning, and following consultation of the President and the Provost with the dean and the faculty involved as well as with the College's governance bodies, Brooklyn College proposes to divide the Department of Film into two departments, a reconstituted Department of Film and the new department, the Feirstein Graduate School of Cinema, to be effective August 25, 2017.

The new department will better reflect the diverse academic disciplines in which the current film faculty are credentialed. It is anticipated that the proposed reorganization will enhance scholarship, research, and faculty development and collaboration, as well as improving curricular development and increasing educational opportunities for students and that the Feirstein Graduate School of Cinema will house one of the highest enrolled major programs in Brooklyn College which can be managed more effectively as a separate department with a particularly defined mission.
**BROOKLYN COLLEGE: Transfer and Appointment of Faculty from the Department of Film to the Feirstein Graduate School of Cinema.**

RESOLVED, that effective August 25, 2017, the following faculty members of the Department of Film be transferred from the Department of Film and appointed to the Feirstein Graduate School of Cinema:

<table>
<thead>
<tr>
<th>NAME (Last, First)</th>
<th>PRESENT RANK</th>
<th>FORMER DEPT.</th>
<th>NEW DEPT.</th>
<th>SENIORITY DATE (New Dept.)</th>
<th>FULL-TIME APPT DATE (College)*</th>
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</thead>
<tbody>
<tr>
<td><strong>TENURED MEMBERS</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Wacks, Jonathan</td>
<td>Professor</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
<td>8/27/2013</td>
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<tr>
<td><strong>UNTENURED MEMBERS</strong></td>
<td></td>
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<tr>
<td>Haine, Charles</td>
<td>Assistant Professor</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
<td>8/25/2016</td>
</tr>
<tr>
<td>Hernandez Anzola, Ricardo</td>
<td>Assistant Professor</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
<td>8/26/2015</td>
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<tr>
<td><strong>CERTIFICATED LECTURERS</strong></td>
<td></td>
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<tr>
<td>None</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>NON-CERTIFICATED LECTURERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cawley Cabiya, Sarah</td>
<td>Distinguished Lecturer</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
<td>8/25/2016</td>
</tr>
<tr>
<td>Kliot, Jason</td>
<td>Distinguished Lecturer</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
<td>8/25/2016</td>
</tr>
</tbody>
</table>

**EXPLANATION:** Contingent upon approval of the establishment of the Feirstein Graduate School of Cinema as an independent academic department by the Board of Trustees, the above named faculty will be transferred from the Department of Film to the Feirstein Graduate School of Cinema.

* Pursuant to Section 6212 of the New York State Education Law, seniority of tenured persons is governed by the date of appointment to the department. Tenured persons transferred and appointed effective the same date to the Feirstein Graduate School of Cinema shall have the same date of seniority as a result of these transfers. The President, therefore, shall break these ties in seniority between and
among the tenured members by using each member’s original date of appointment to his or her first full-time instructional staff title at the College.

At such time as the untenured faculty member(s) may become tenured, his/her/their seniority would be governed by the date of appointment to the new department and the President will apply the same tie-breaking principle.

Certificated lecturers transferred effective the same day to the Feirstein Graduate School of Cinema have the same date of seniority in the department as a result of these transfers. The President, therefore, shall break these ties in seniority between and among the tenured members by using each member’s original date of award of the Certificate of Continuous Employment at the College.

At such time as the non-certificated faculty member(s) may achieve CCE, his/her/their seniority would be governed by the date of appointment to the new department and the President will apply the same tie-breaking principle.

Each impacted instructional staff member has been advised of his/her seniority date in the new department.

**BROOKLYN COLLEGE: Transfer and Appointment of Instructional Staff in the College Laboratory Technician Series from the Department of Film to the Feirstein Graduate School of Cinema.**

RESOLVED, that effective August 25, 2017, the following tenure-track instructional staff of the Department of Film be transferred from the Department of Film and appointed to the Feirstein Graduate School of Cinema:

<table>
<thead>
<tr>
<th>NAME (Last, First)</th>
<th>PRESENT RANK</th>
<th>FORMER DEPT.</th>
<th>NEW DEPT.</th>
<th>SENIORITY DATE (New Dept.)</th>
<th>FULL-TIME APPT DATE (College)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TENURED CLT-SERIES</td>
<td>none</td>
<td></td>
<td></td>
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<tr>
<td>UNTENURED CLT-SERIES</td>
<td>Guerrero, Geoffrey</td>
<td>College Lab Technician</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
</tr>
<tr>
<td></td>
<td>Morse, Paul</td>
<td>College Lab Technician</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
</tr>
<tr>
<td></td>
<td>Piva, Angela</td>
<td>College Lab Technician</td>
<td>Film</td>
<td>Feirstein Graduate School of Cinema</td>
<td>8/25/2017</td>
</tr>
</tbody>
</table>
EXPLANATION: Contingent upon approval of the establishment of the Feirstein Graduate School of Cinema as an independent academic department by the Board of Trustees, the above named college laboratory technicians will be transferred from the Department of Film to the Feirstein Graduate School of Cinema.

* Pursuant to Section 6212 of the New York State Education Law, seniority of tenured persons is governed by the date of appointment to the department. Tenured persons transferred and appointed effective the same date to the Feirstein Graduate School of Cinema shall have the same date of seniority as a result of these transfers. The President, therefore, shall break these ties in seniority between and among the tenured members by using each member’s original date of appointment to his or her first full-time instructional staff title at the College.

At such time as the untenured instruction staff in the college laboratory technician series may become tenured, his/her/their seniority would be governed by the date of appointment to the new department and the President will apply the same tie-breaking principle.

Each impacted instructional staff member has been advised of his/her seniority date in the new department.
RESOLVED, that the program in Clinical Trial Management offered at York College and leading to the Master of Science, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: Most individuals who oversee scientific and medical clinical trials learn the protocols, methods, regulations and best practices while working in support positions. Hence, it is very difficult to find a sufficient number of qualified professionals to fill the growing number of leadership positions in this field. York College will leverage its expertise in allied health, pharmaceuticals, and its long established relationship with the Food and Drug Administration to launch this innovative program successfully.
PROPOSAL TO ESTABLISH A PROGRAM IN LEADING TO THE MASTER OF CLINICAL TRIAL MANAGEMENT DEGREE EFFECTIVE FALL, 2018

SPONSORED BY THE DEPARTMENT OF BIOLOGY IN THE SCHOOL OF ARTS AND SCIENCES

APPROVED BY

YORK COLLEGE SENATE: (DATE OF APPROVAL)

College Representative: Dr. Marcia V. Keizs, President, York College/CUNY
Contact: Dr. Donna Chirico, Dean
School of Arts and Sciences
Telephone: 718-262-2687
Email: dchirico@york.cuny.edu

Dr. Margaret MacNeil, Chairperson
Department of Biology
York College/CUNY
Telephone: 718-262-2711
Email: mmacneil@york.cuny.edu

Provost’s Signature: __________________________
Provost’s Name: Panayiotis Meleties, Ph.D.
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Abstract

This proposal is to request a Master of Science (M.S.) degree program in Clinical Trial Management in the School of Arts and Sciences at York College of The City University of New York (CUNY).

York College has successfully launched B.S. programs in Biotechnology and Pharmaceutical Science and in 2016 began a Master’s program in Pharmaceutical Sciences and Business. Graduates of these programs have gone on to pursue graduate training or have found employment in the regional and national biotechnology and pharmaceutical industries. The proposed program seeks to capitalize on student interest in working in the biotechnology sector with the increased demand for workers in the clinical trial sector by training students in clinical trial management.

The curriculum for the program is guided by standards recommended by the Joint Task Force for Clinical Trial Competency. The proposed M.S. in Clinical Trial Management program will require 36 credits for graduation of which 30 credits will be required and will cover fundamental topics in clinical trial management (clinical trial design and operations, data analysis, ethical and safety considerations and Good Clinical Practices) and 6 credits of electives, that will give students flexibility to meet their specific educational and professional goals.

The program will be housed in the Department of Biology. Students will be recruited from York College, other local colleges and Universities, and employees from the industry seeking career advancement. Completion of the degree is expected to take 18 months for full-time registrants. A cost analysis of the program shows that is will be self-sustaining from year one.

Executive Summary

Overview
The Department of Biology at York College of The City University of New York (CUNY) is proposing a MS program in Clinical Trial Management to begin in Fall 2018. The proposed interdisciplinary M.S. program in Clinical Trial Management will be the first one in CUNY and one of only three programs in the tri-state area that would train students with specialization in clinical trial management. This M.S. program will provide opportunities for both CUNY and non-CUNY New York City students to enhance their professional careers in various aspects of clinical research. Students who complete the program will be qualified to hold jobs as clinical research professionals, opening the door to industry jobs as clinical investigators, researchers, administrators, consultants, data managers, quality assurance managers, regulatory affairs managers, and educators in clinical trial management that traditionally have required years of industry experience after completing a Bachelor’s Degree.

Need for the Graduate Degree and Employment Opportunities
The United States Bureau of Labor Statistics projects a 17% growth in the number of medical and health service managers during the decade of 2014-2024 ¹, which is in part, driven by the rapid growth in the number of clinical trials carried out in the US. This growth over the past decade has contributed to a shortage of qualified individuals to manage these trials. Vacancies for clinical trial professionals have increased by over 14% nationwide in the past decade and the number of new jobs is expected to top 5,590 by 2018². As a substitute for industry experience, contract research organizations and biotechnology companies have become open to hiring individuals who have successfully completed a clinical research education program³.

Students with the proposed M.S. degree in Clinical Trial Management at York College will have the knowledge and skills to seek and enhance their employment opportunities to be employed as project managers, quality assurance/quality control managers, biotechnologists, regulatory affairs, clinical
research associates, data managers, site IRB professionals, medical writers and statisticians. These jobs are well paid, with annual median salaries averaging $61,934.4.

**Key Curriculum and Admission Requirement**

In this proposed 18-month graduate program, students will complete a total of 36 credits toward the degree, of which 30 credits will be from the common Core Courses and 6 from the optional Elective Courses. Students are expected to choose elective courses based on their career goals, such as: Clinical Epidemiology, Global Regulatory Affairs, Medical Writing, and Advanced Pharmacology. Full time students are expected to take 12 credits per semester. Whenever possible, classes will be offered in the evening, weekend or on a single or two day(s) per week for the benefit of individuals working in the pharmaceutical and biotech industry in the New York metropolitan area.

Admission to the M.S. in Clinical Trial Management will be administered by a Graduate Admissions Faculty Committee. Applications for admission to the program will be consistent with the general CUNY graduate program application policy.

**Faculty and Resources Needed**

Appointment of two full time tenure track faculty members in the first two years will help meet increased instructional demands of the new program. Adjunct faculty will also be recruited as needed to meet the needs of the program and the academic departments. Instructional, laboratory and library resources are sufficient to support the introduction and development of the program.

**Financial Considerations**

The York College M.S. in Clinical Trial Management program is intended to be self-supporting from the revenue generated by the higher graduate tuition.

**Program Start Date**

The M.S. program in Clinical Trial Management will be offered in the 2018-2019 academic year, starting in the Fall of 2018.

**Student Outcomes**

The program Director will conduct an annual review that will report on enrollment, student and faculty activities, achievements, internships, placement of graduates, instructors’ teaching effectiveness, and student and faculty scholarly and other professional activities. Student performance will be monitored to promote success and retention. The placement of Clinical Trial Management graduates in appropriate jobs will be an important measure of the program’s success.
I. Purpose and Goals

York College of The City University of New York (CUNY) is proposing a program in Clinical Trial Management leading to a Master of Science (M.S.) degree to begin in Fall 2018. Students who complete the program can become clinical research professionals and may find jobs as clinical investigators, researchers, administrators, consultants, data managers, quality assurance managers, regulatory affairs managers, and educators in clinical trial management in various settings, including research groups, public and private academic institutions, pharmaceutical, and biotechnology companies, independent research and development organizations, and organizations otherwise involved in the management of clinical trials.

The proposed interdisciplinary M.S. program in Clinical Trial Management will be the first one in CUNY and one of only three programs in the tri-state area that would train students with specialization in clinical trial management. This M.S. program will provide opportunities for both CUNY and non-CUNY New York City metropolitan and regional students to enhance their professional careers in various aspects of clinical research. The students graduating from the proposed graduate degree program will have a wide variety of employment opportunities in the growing global healthcare industry involving clinical trials and related areas. The Bureau of Labor Statistics Occupational Handbook forecasts an annual increase in these positions of 17% over the next decade, above the current number of 107,900. The jobs students would be qualified to hold are well paid, with annual median salaries averaging $61,934. The Brookings Institute identified Clinical Research Associates (CRAs) among the job fields that are most in need of recruitment and CNNMoney survey rated CRAs among the top ten best jobs in the US in terms of growth, pay and worker satisfaction.

The proposed M.S. program in Clinical Trial Management will also increase the diversity of the current biotechnology workforce, in which minorities are severely underrepresented. This program will provide educational pathways and career opportunities to a highly competitive global industry for CUNY and non-CUNY students in the metropolitan region. Providing suitable graduate educational pathways, such as the proposed program, will not only increase the number of minority undergraduate students in the field of science and technology, but also prepare them for the highly competitive biotech and pharmaceutical industry and the global pharmaceutical workforce.

II. Need for the Program

The United States Bureau of Labor Statistics projects that approximately 55,000 new positions will be created for medical and health service managers during the decade of 2014-2024, a growth of 17%. The expected growth in the number of clinical trial management positions is partly due to the increase in the number of registered clinical trials. Since ClinicalTrials.gov began registering clinical trials in 2000, there has been a steady increase in the number of recorded clinical trials in the US and abroad. As of December 2016, a total of 233,365 clinical studies have been registered globally with 36% of the studies being carried out in the United States. Of studies in the US, 43% are conducted within the tri-state region (Connecticut, 6,412: 6.5%; New Jersey, 14706: 15.0%; New York, 21452: 21.8%). Approximately two thirds of New York State’s pharmaceutical industry is located within driving distance from the metropolitan New York City area and many global pharmaceutical companies have their headquarters in Manhattan and manufacturing facilities within the metropolitan area, which would provide a dynamic employment market for our graduates.

The process of moving drugs and medical devices from pre-clinical stages through Phase I, II, III, and IV trials toward final FDA approval, requires teams of highly trained clinical professionals made up of scientists and doctors with MD and PhDs, but also project managers, quality assurance/quality control
managers, biotechnologists, regulatory affairs, clinical research associates, data managers, site IRB professionals, medical writers and statisticians, who hold bachelor’s and master’s degrees, to assist the process. These individuals are experts in scientific concepts and research design, drug development and design and data management, and study management, clinical trial operations, regulatory compliance and ethical care and conduct. Job requirements for these clinical research associate (CRA) positions are often a bachelor’s degrees and three-six years of industry training. However, the rapid growth in clinical trials over the past decade has contributed to a shortage of qualified individuals to serve as CRAs. Vacancies for clinical trial professionals have increased by over 14% nationwide in the past decade and the number of new jobs is expected to top 5,590 by 2018. As a substitute for industry experience, contract research organizations and biotechnology companies have become open to hiring individuals who have successfully completed a clinical research education program.

Providing access to an advanced degree program for students in CUNY is of great benefit to our STEM graduates, since opportunities for graduates with science backgrounds can be greater when workers have specialized degrees. Nationwide, 81% of Biology majors find employment within a year of graduation with median earnings at $50,000. However, students who complete graduate training in a STEM field receive an earnings boost of 101% upon completion of their degree, making graduate education that much more important for continued success and advancement. Workers in the field of clinical trial management have access to a variety of job categories and opportunity for career advancement. The good job prospects for our graduates are supported by wage data collected from the Bureau of Labor Statistics showing that New York State is the third highest in employment level among US states for Medical Scientists with an annual mean wage of $93,500. The metropolitan area including New York-Jersey City-White Plains has the second highest employment level in this category with an annual mean wage of $89,490. The design and curriculum of the proposed M.S. program, with emphasis on current industry practices, would also make the program attractive to current industry employees who seek to enhance their careers.

Of additional concern are the significantly fewer numbers of under-represented minorities that obtain degrees in biology; of those who do, the difference in salaries earned compared to whites is significantly lower. African American students account for only 7% of those who earn bachelor’s degrees in Biology and once they enter the workforce, earn 12% less than white students. Hispanic graduates show an even greater difference in their wages, earning only 78% of the salaries earned by whites. The proposed MS program would provide CUNY students with competitive education and training qualifying them for high-paying jobs in the pharmaceutical, medical device, clinical diagnostics and biotechnology sectors.

There are currently only two accredited Master’s programs in Clinical Trial Management in the New York, New Jersey, Connecticut tri-state region; this would be the only program at CUNY.

III. Students

The proposed M.S. program in Clinical Trial Management will draw qualified students from the large pool of science students in the New York metropolitan region who are interested in working in the pharmaceutical, medical device, clinical diagnostics and biotechnology sectors, but may lack job experience that is frequently required by companies looking to hire clinical research professionals. This program will prepare students for these roles and help meet a growing shortage of individuals trained to work in the field of clinical trial management.
A. Interest/Demand

Recent enrollment data indicate that there are over 1000 students majoring in STEM fields at York (Biology (432), Biotechnology (43), Chemistry (34), Clinical Laboratory Science/ Medical Technology (257), Health Science or Pharmaceutical Science (156)) who potentially could consider the proposed graduate program (Table 1). An online survey of Biology, Biotechnology, Chemistry and Pharmaceutical Sciences majors at York College measured student interest in the proposed Master’s Program in Clinical Trial management (Appendix M). Altogether, 48 students responded to the online survey. Most of the respondents were biology majors (68%) and most expressed plans to pursue postgraduate education immediately following graduation (63%). A majority of the respondents said they would consider applying to a Master’s Program in Clinical Trial Management at York College (66%) in a full-time capacity. Factors most influencing their pick of a graduate program were program cost (77%), admission requirement GPA (63%), location (58%) and availability of financial aid (58%).

Table 1: Enrollment in Biology, Biotechnology, Chemistry and Pharmaceutical Science at York College from Fall 2001 through Fall 2016.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Biology</th>
<th>Biotechnology</th>
<th>Chemistry</th>
<th>Pharmaceutical Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2001</td>
<td>162</td>
<td>14</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td>Fall 2002</td>
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<td>15</td>
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<tr>
<td>Fall 2003</td>
<td>196</td>
<td>21</td>
<td>36</td>
<td>0</td>
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<tr>
<td>Fall 2004</td>
<td>245</td>
<td>0</td>
<td>45</td>
<td>0</td>
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<tr>
<td>Fall 2005</td>
<td>242</td>
<td>25</td>
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<tr>
<td>Fall 2006</td>
<td>267</td>
<td>13</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>258</td>
<td>12</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>Fall 2008</td>
<td>288</td>
<td>8</td>
<td>44</td>
<td>0</td>
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<tr>
<td>Fall 2009</td>
<td>373</td>
<td>10</td>
<td>52</td>
<td>11</td>
</tr>
<tr>
<td>Fall 2010</td>
<td>427</td>
<td>18</td>
<td>55</td>
<td>86</td>
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<tr>
<td>Fall 2011</td>
<td>426</td>
<td>48</td>
<td>45</td>
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<td>Fall 2012</td>
<td>430</td>
<td>61</td>
<td>32</td>
<td>174</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>446</td>
<td>72</td>
<td>36</td>
<td>161</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>430</td>
<td>58</td>
<td>34</td>
<td>182</td>
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<td>Fall 2015</td>
<td>420</td>
<td>51</td>
<td>40</td>
<td>161</td>
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<tr>
<td>Fall 2016</td>
<td>432</td>
<td>43</td>
<td>34</td>
<td>156</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5222</td>
<td>469</td>
<td>616</td>
<td>1056</td>
</tr>
</tbody>
</table>


The Office of Academic Affairs and the Departments of Biology and Chemistry, in collaboration with the Admissions Office at York, will develop outreach programs and recruitment events to promote the proposed program. Qualified graduates in Biology, Biotechnology, Chemistry and Pharmaceutical Science programs as well as from other related science programs will be actively recruited. York admission officers and faculty will visit CUNY colleges to make presentations to student science clubs, or during career and graduate school recruitment events to provide information about the program and professional and career opportunities in the field. Program presentations and information will be disseminated during professional conferences and through human resources offices to reach regional industry employees who wish to enhance their careers and employment opportunities. The number of science graduates at York has averaged about 60 students per year over the past five years (Table 2) and a large fraction of science students have expressed an interest in the program (Appendix M).
**Table 2:** Numbers of Biology, Biotechnology, Chemistry and Pharmaceutical Science graduates at York College from Fall 2001 through Fall 2016.

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Biology</th>
<th>Biotechnology</th>
<th>Chemistry</th>
<th>Pharmaceutical Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY00-01</td>
<td>29</td>
<td>5</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>AY01-02</td>
<td>15</td>
<td>7</td>
<td>7</td>
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</tr>
<tr>
<td>AY02-03</td>
<td>17</td>
<td>2</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>AY03-04</td>
<td>9</td>
<td>7</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>AY04-05</td>
<td>15</td>
<td>1</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>AY05-06</td>
<td>12</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>AY06-07</td>
<td>17</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>AY07-08</td>
<td>15</td>
<td>3</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>AY08-09</td>
<td>12</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>AY09-10</td>
<td>23</td>
<td>1</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>AY10-11</td>
<td>26</td>
<td>3</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>AY11-12</td>
<td>21</td>
<td>3</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>AY12-13</td>
<td>23</td>
<td>9</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>AY13-14</td>
<td>23</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>AY14-15</td>
<td>32</td>
<td>11</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>AY15-16</td>
<td>19</td>
<td>4</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>308</strong></td>
<td><strong>64</strong></td>
<td><strong>127</strong></td>
<td><strong>52</strong></td>
</tr>
</tbody>
</table>


Graduates of CUNY and non-CUNY colleges will be eligible for admission to the program. The design of the curriculum articulates effectively with the Biology and Chemistry majors as well as York’s degree programs in Biotechnology and Pharmaceutical Science. These programs are articulated with corresponding associate degree programs at Bronx Community College, Queensborough Community College and Kingsborough Community College. Therefore the proposed graduate program becomes an opportunity for all qualified CUNY students and may also enhance existing science programs at York College.

**B. Enrollment Projections**

The projected enrollment for this M.S. degree program in Clinical Trial Management is expected to be at least 5 full time and 20 part time graduate students who will be admitted to the program during the first academic year. During the following years, a comparable number of students will be admitted. A detailed enrollment projection for the M.S. program during the first five years is shown in Table 3. Full-time students in the program will have an average of 12 credit hours per semester and part-time students will have an average of 6 credit hours per semester. With this course load, full-time students should be able to complete the degree requirements in approximately three semesters. Enrollment in courses offered during winter and summer sessions can be used to accelerate graduation.
Table 3: Five-year enrollment projections for the M.S. in Clinical Trial Management.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Full Time</th>
<th>Part Time</th>
<th>Total Number</th>
<th>FTEs/Academic Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-2019</td>
<td>5</td>
<td>20</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>2019-2020</td>
<td>9</td>
<td>35</td>
<td>44</td>
<td>26</td>
</tr>
<tr>
<td>2020-2021</td>
<td>9</td>
<td>35</td>
<td>44</td>
<td>26</td>
</tr>
<tr>
<td>2021-2022</td>
<td>9</td>
<td>35</td>
<td>44</td>
<td>26</td>
</tr>
<tr>
<td>2022-2023</td>
<td>9</td>
<td>35</td>
<td>44</td>
<td>26</td>
</tr>
</tbody>
</table>

C. Admissions Requirements
Admission to the M.S. in Clinical Trial Management program will be the responsibility of the program Graduate Admissions Faculty Committee. Applications for admission to the program will be consistent with the general CUNY graduate program application policy. To be considered for admission, an applicant to the Masters in Clinical Trial Management program will meet the following requirements:

1. Hold a bachelor’s degree from a regionally accredited institution in Biology, Biotechnology Chemistry, Clinical Laboratory Science/Medical Technology, Health Science, Pharmaceutical Science or other closely related discipline.
2. Have a minimum overall GPA of 3.0.
3. Complete an application to the program, including a personal statement describing career objectives and preparation for the program.
4. Supply three letters of recommendation from instructors or employers that address the suitability of the applicant for work in clinical trial management and ability to enroll in a rigorous academic program.

To fulfill graduate course prerequisites, undergraduate science students (Chemistry, Biology, Physics or others) who apply to the M.S. program in Clinical Trial and Management may have to meet additional course requirements depending on their background, such as undergraduate level Biochemistry, Chemistry or Pharmaceutical Science courses.

Students not meeting the formal admissions criteria may appeal to the Graduate Admissions Faculty Committee to be conditionally admitted as non-matriculated. Nevertheless these students must have a B.A. or B.S. science degree from an accredited college or university and very strong support of their professors or employers (at least three letters of recommendation).

D. Selection process
The Admission Committee, consisting of the director of the program and faculty members, will review completed applications, which will be evaluated on:

1. Previous academic performance
2. The quality of the personal statement including conceptual and writing abilities, understanding of the clinical trial process, and relevance of past training.
3. References
4. May be required to participate in an interview with the Admissions Committee
E. Dismissal, probation and graduation

Cumulative Grade Point Average. In order to be awarded a master's degree, a graduate student must finish the program with a cumulative Grade Point Average of 3.0 (B) or better.

Academic Probation. Graduate students whose GPA falls between 2.7 and 3.0 will be placed on academic probation. Students on academic probation must raise their GPA to 3.0 within the next semester in order to continue in the Clinical Trial Management (CTM) program. Graduate students whose GPA remains below 3.0 at the end of the probationary semester will be allowed to continue in the CTM program only upon successful review by the Academic Review Committee. This policy is applicable no matter the number of credits earned by the student.

Continuation. Graduate students whose GPA falls below 2.7 will not be eligible for probation and will not be permitted to continue in the CTM program. These students may only continue in the CTM program upon successful review by the Academic Review Committee. Students who receive less than a B in any course, may only continue in the CTM program upon successful review by the Academic Review Committee. For a course in which the minimum grade is not achieved, students may retake the course once if their GPA meets the criteria for continuation.

Readmission after withdrawal or dismissal. A student who withdraws in good standing is eligible for readmission within two years but must notify the Program six weeks prior to the semester in which they intend to return. A student who withdraws or is dismissed due to not meeting minimum GPA expectations may reapply for admission during the regular admissions process. The student will have to participate in an interview with the Admissions Committee and it must be determined that the student is capable of academic success.

F. Student Advisement

Students interested and admitted in the CTM program will be advised by qualified faculty and graduate advisors to provide on-going year round advice to students about program requirements, careers and professional opportunities. Student seminars and other presentations will introduce students and faculty to current industry topics and highlight career opportunities. Student and faculty presentations at CUNY, local, regional, national and even international conferences will highlight the program activities and contributions. Feedback from students will help the faculty and the Department to adjust and improve course offerings, scheduling and expand student and faculty development activities.

IV. Proposed Curriculum

The goal of the proposed Master of Clinical Trial Management program will be to prepare students for positions related to clinical trial management carried out by pharmaceutical, medical device and biotechnology industries, contract research organizations and academia. The coursework is informed by recommendations from the Joint Task Force for Clinical Trial Competency that sought to standardize training of clinical research professionals as a means to reduce deficiencies in the clinical trial process.

Upon graduation, our students will:

- Understand scientific concepts related to the design and analysis of clinical trials
- Demonstrate technical laboratory skills to collect data and the ability to analyze data using appropriate statistical methods where required.
Communicate ideas and data in writing, including in standard scientific format.
Recognize the ethical and safety considerations regarding subjects in clinical trials
Understand how drugs, devices and biologicals are developed and regulated
Understand regulations applicable to clinical trials carried out domestically and globally
Understand clinical trial operations, including study management, FDA Good Clinical Practices (GCP) compliance and International Conference on Harmonisation (ICH GCP)
Understand site and personnel resources are managed to carry out clinical trials
Recognize how clinical data are acquired and managed in clinical trials
Develop teamwork skills necessary for conducting a clinical trial

The Master of Clinical Trial Management program at York College, CUNY will draw heavily on the expertise and experience of faculty in Biology, Chemistry and Pharmaceutical Science. York College is unique among CUNY colleges in offering B.S. degrees with majors in Biotechnology and in Pharmaceutical Science and in 2016 welcomed its first class of students enrolled in M.S. in Pharmaceutical Science and Business program.

Program Description
In this proposed 18-month graduate program, students will complete a total of 36 credits towards the degree, of which 30 credits will be from the common Core Courses and 6 credits from the Elective Courses (Table 4). Students will be able to choose elective courses based on their career goals, such as: Clinical Epidemiology, Global Regulatory Affairs and Medical Writing.

Table 4: Masters of Clinical Trial Management Program

Core Courses (30 credits):

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course title</th>
<th>Crs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTM 501</td>
<td>Introduction to Clinical Research and Clinical Trial Terminology</td>
<td>3</td>
</tr>
<tr>
<td>CTM 502</td>
<td>Foundations of Regulatory Affairs in a Global Environment</td>
<td>3</td>
</tr>
<tr>
<td>CTM 503</td>
<td>Clinical Trial Project Management</td>
<td>3</td>
</tr>
<tr>
<td>PHS 504</td>
<td>Advanced Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>CTM 505</td>
<td>Ethical Consideration for Clinical Research</td>
<td>3</td>
</tr>
<tr>
<td>CTM 506</td>
<td>Clinical Trial Implementation</td>
<td>3</td>
</tr>
<tr>
<td>CTM 507</td>
<td>Introduction to Medical Writing—Document preparation</td>
<td>3</td>
</tr>
<tr>
<td>CTM 508</td>
<td>Clinical Trial Data Management</td>
<td>3</td>
</tr>
<tr>
<td>CTM 509</td>
<td>Drug Safety and Pharmacovigilance</td>
<td>3</td>
</tr>
<tr>
<td>CTM 510</td>
<td>Clinical Trial Management Capstone Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses: (6 credits; Select any two courses)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTM 511</td>
<td>Clinical Epidemiology</td>
</tr>
<tr>
<td>CTM 512</td>
<td>Global Regulatory Affairs</td>
</tr>
<tr>
<td>CTM 513</td>
<td>Medical Writing: Document submission</td>
</tr>
<tr>
<td>CTM 514</td>
<td>Medical Writing: Investigational Applications for Drugs, Biologics and Medical devices</td>
</tr>
<tr>
<td>CTM 515</td>
<td>Medical Writing: Drugs, Biologics and Medical Devices License Applications</td>
</tr>
</tbody>
</table>
CTM 516  Clinical Trial Quality and Compliance  3  
PHS 503  Advanced Pharmacology  3  
PHS 514  Advanced Toxicology  3  
PHS 515  International Regulatory Affairs  3  

Full time students will be expected to take 12 credits per semester. Courses in regulatory science and marketing strategies related to clinical trials will be offered online during the regular academic terms and the summer and winter sessions as needed. Whenever possible, classes will be offered in the evening, weekend or on single days per week for the benefit of individuals working in the pharmaceutical and biotech industry in the New York metropolitan area.

**Table 5: Program courses mapped to competency areas**

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CTM 501</td>
<td>Introduction to Clinical Research and Clinical Trial Terminology</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>CTM 502</td>
<td>Foundations of Regulatory Affairs in a Global Environment</td>
<td></td>
<td>X</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>CTM 503</td>
<td>Clinical Trial Project Management</td>
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<td></td>
<td>X</td>
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<td>PHS 504</td>
<td>Advanced Biostatistics</td>
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</tr>
<tr>
<td>CTM 505</td>
<td>Ethical Consideration for Clinical Research</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>CTM 506</td>
<td>Clinical Trial Implementation</td>
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<td>X</td>
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<tr>
<td>CTM 507</td>
<td>Introduction to Medical Writing-- Document preparation</td>
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</tr>
<tr>
<td>CTM 508</td>
<td>Clinical Trial Data Management</td>
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<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>CTM 509</td>
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<td>X</td>
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<tr>
<td>CTM 510</td>
<td>Clinical Trial Management Capstone Project</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>CTM 511</td>
<td>Clinical Epidemiology</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTM 512</td>
<td>Global Regulatory Affairs</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTM 513</td>
<td>Introduction to Medical Writing-- Submission preparation</td>
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<td></td>
</tr>
<tr>
<td>CTM 514</td>
<td>Medical Writing: Investigational Applications for Drugs, Biologics and Medical devices</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>CTM 515</td>
<td>Medical Writing: Drugs, Biologics and Medical Devices License Applications</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CTM 516</td>
<td>Clinical Trial Quality and Compliance</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PHS 503</td>
<td>Advanced Pharmacology</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>PHS 514</td>
<td>Advanced Toxicology</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PHS 515</td>
<td>International Regulatory Affairs</td>
<td></td>
<td>X</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Required Courses: (30 credits)  
Elective Courses: (6 credits; Select any two courses)
The coursework making up this program is intended to provide students with the knowledge and skills needed to become effective clinical trial managers. The courses we have developed have been informed by recommendations from the Joint Task Force for Clinical Trial Competency\textsuperscript{10} that seek to standardize training of clinical research professionals as a means to reduce deficiencies in the clinical trial process. Course competency areas recommended by the Task Force and the courses fulfilling each competency area are included in Table 5.

The program was evaluated by Katherine Tygum Goldstein, Pharm D, CCRA, Sr. Director, Quality Operations (GCP), R&D Quality and Compliance for Alexion Pharmaceuticals, Inc. She is a senior level clinical research professional with over 20 years experience in clinical operations, project management and pharmacokinetics/drug metabolism research in pharmaceutical, biologics and medical devices. She stated that “Overall, the Core and Elective Courses would provide the required education to the students” and that “the course content is appropriate”. She offered a number of suggestions to improve the program; all of her recommendations were adopted and are reflected in the proposed program. Her evaluation is included in Appendix I.

V. Faculty

The proposed M.S. program will be housed in the Department of Biology at York College with faculty participation from the Department of Chemistry. Currently there are eleven full-time faculty members in Biology and nine participating members from the Department of Chemistry. The research interests and scholarship of the Biology and Chemistry faculty are mainly interdisciplinary with biomedical applications. In addition, the Department of Biology appoints approximately thirty adjunct faculty members every term to meet its instructional obligations.

Appointment of two full time tenure track faculty members in the first two years will help meet the increased instructional demands of the new program; one of these new faculty members will become the Director of the Clinical Trial Management program. Adjunct faculty will also be recruited as needed.

The expertise and educational background of faculty who will be involved in the program are described below.

Dr. Melvin Silberklang, a long-term adjunct in the Department of Biology will serve as the acting Director of the proposed MS program. Dr. Silberklang worked in the pharmaceutical and biotech industries for over 28 years, and has extensive practical experience leading successful research and development programs in FDA regulated environments through all required regulatory filings, clinical trials and final approvals. Dr. Silberklang received his PhD in Biochemistry from MIT in 1977 and did postdoctoral work in gene cloning and expression at the University of California at San Francisco (UCSF) from 1977 – 1980. After two years’ academic research experience on the research faculty at UCSF, he pursued a successful industrial research career working on FDA-regulated human therapeutics in the Pharmaceutical (Merck & Co., Inc., 1981-1993) and Biotechnology (Enzon, Inc. 1993-1995; Ortec International, Inc. 1995-2007, Forticell Bioscience, 2007-2010) industries, where he rose to the level of Chief Scientific Officer. Since 2010, he has been an adjunct professor of Biology at York College and has also taught a graduate course in Biotechnology at Adelphi University, while continuing to work as a consultant to the Biotechnology industry. Dr. Silberklang’s background in biopharmaceutical R&D is broad, spanning the gamut from genetic engineering to protein and antibody molecular engineering and expression, to cell therapy and tissue engineering, to manufacturing process development and GMP production. Throughout his industrial career, Dr. Silberklang has been intimately involved with developing and managing FDA-compliant Quality Systems, and has participated in the design and
management of GMP-compliant manufacturing processes, GLP-compliant preclinical studies and GCP-compliant human clinical trials, as well as writing U.S. Pharmacopoeia monographs and developing in-house product-specific training programs for CRAs and sales and marketing representatives. He has written and filed both FDA-approved IND (1) and IDE (3) applications to initiate new clinical trials, and FDA-approved PMA and orphan device exemptions to allow final product marketing.

Dr. Alexander Birk, Adjunct Assistant Professor of Biology, also has significant experience in clinical trial management. Dr. Birk received his Ph.D in Pharmacology from Cornell in 2000, where he was trained in basic pharmacology, clinical pharmacology with toxicology, and pharmacology aspects of clinical trials. Throughout his postdoctoral and instructor years, Dr. Birk was always involved in preclinical development of broad range of compounds, from antivirals to mitochondria-targeted antioxidants. In 2005, Dr. Birk and his collaborators founded N-MET nutraceutical company, with a whole purpose to promote synthesis of inhibitory neurotransmitters to minimize sensory overload in autistic children. In a period from 2006 to 2011, his group developed an FDA-approved program for N-MET development, which included toxicity Phase I clinical studies, Phase II and III studies in USA and Qatar, and marketing phase in USA. Importantly, Dr. Birk was involved in the development of both GMP- and CGP-compliant manufacturing processes for N-MET; presently, N-MET is in the global market. In the period from 2012 to 2015, Dr. Birk was responsible for preclinical R&D of the only presently known mitochondria-targeted compound Elaimipretide (also known as SS-31 and Bendavia). In addition, Dr. Birk was involved in writing IND for Elamipretide, covering Manufacturing Information, Animal Pharmacology and Toxicology, and proposed detailed Clinical Protocols.

Dr. Bulbul Chakravarti, has both academic and industry experience (Wyeth Vaccines, now Pfizer) and has completed a number of courses from the Regulatory Affairs Professional Society, in Regulation, Medical Writing and Clinical Trial Foundation. Currently, Dr. Chakravarti teaches in the undergraduate Pharmaceutical Science program at York College.

In the first two years of the program, Drs. Silberklang, Birk and Chakravarti will be assisted in teaching program courses by Drs. Adam Profit from Chemistry, Dr. Timothy Kirk from History and Dr. Laura Beaton from Biology. Additional faculty will be hired in years 1 and 2 of the program to help round out needed expertise in the areas of clinical epidemiology, and regulatory affairs. At the start, Dr Silberklang will teach FDA Regulation and Code of Federal Regulations Applicable to Clinical Trials, Introduction to Medical Writing, Medical Writing: Investigational Applications for Drugs, Biologics and Medical devices, and Medical Writing: Drugs, Biologics and Medical Devices License Applications. Dr. Birk will teach Introduction to Clinical Research and Clinical Trial Terminology, Clinical Pharmacology, Clinical Trial Operations, Marketing Strategies Related to Clinical Trials, Clinical Trial Data Management and Drug safety and Pharmacovigilance. Dr. Chakravarti will teach Structuring, Managing and Monitoring Clinical Trials and Global Regulatory Affairs. Dr. Profit will teach Advanced Pharmacology and Advanced Toxicology, courses that are offered in conjunction with the Masters in Pharmaceutical Sciences and Business program. Dr. Timothy Kirk, will offer Ethical Considerations for Clinical Research. Implementation of the Advanced Biostatistics course will be assigned to Dr. Laura Beaton of the Department of Biology, who has taught the undergraduate biostatistics course in recent years.

In addition to the course instructors stated above, the capstone project will be coordinated by Dr. Margaret MacNeil and will draw upon the expertise of faculty in Biology and Chemistry: Drs. Ivica Arsov, Louis Bradbury, Lesley Emtage, Louis Levinger, and Gerard McNeil of the Department of Biology and Drs. Deb Chakravarti, Ruel Desamero, Lawrence Johnson, Stephen Fearnley, Jong Lee, Daniele Musumeci, Yolanda Small and Catherine Foster of the Department of Chemistry. Potential research/internship sites will be in the laboratories of science faculty, collaborating FDA scientists, contract research organizations, and biotechnology companies. Dr. Margaret MacNeil, Chair of the
Department of Biology will handle the overall coordination of the MS program until a permanent director is hired.

VI. Cost Assessment

The MS program in Clinical Trial Management is intended to be self-supporting with student tuition. Beginning with the first academic year 2018-2019 and thereafter, tuition revenue from a Master of Clinical Trial Management program will exceed direct program costs. The moderate projected rate of enrollment growth from an initial 25 students should yield annual tuition revenue that grows from approximately $182,540 in academic year 2018-2019 to $343,004 in academic year 2022-2023 and forward (excluding tuition increases, fees and higher fees paid by part-time students and out of state residents), while cost for faculty and expenses are expected to be $132,500 in academic year 2018-2019 and grow to $226,358.47 in academic year 2022-2023. A detailed justification of the budget is in Appendicies E – H.

A. Faculty

The proposed M.S. program will be housed in the Department of Biology at York College. Currently there are eleven full-time faculty members in the department whose teaching responsibilities range from non-majors courses, introductory courses and advanced biology courses to support the Biology and Biotechnology majors, and service courses to support prerequisites for the allied health science programs at York. Full-time faculty carry out research, and their scholarship is mainly interdisciplinary, with biomedical applications. In addition, the Department appoints approximately thirty adjunct faculty members every term to meet its instructional obligations.

As the MS program in Clinical Trail Management is implemented, two additional full-time faculty lines will be needed to support the needs of the program; one of these individuals will become the Program Director. Appropriate faculty searches will be authorized with the needed expertise.

B. Support Staff

The Department of Biology employs four full-time college laboratory technicians and two full-time office administrative assistants. They will provide support for the implementation of the proposed program and courses, as needed.

C. Facilities and Equipment

The proposed program will be housed in the Department of Biology, which will have the administrative responsibility and make use of the current Department facilities (office space, laboratories). In addition to the faculty offices and reception area, the Department has four dedicated teaching laboratories and a computer lab with appropriate instructional programs. Additionally, each full time professor has his/her own research laboratory.

Faculty and trainees have access to the following major instrumentation facilities in the Biology Department: Cell and Molecular Biology Core Facility: developed with equipment grants from the Department of Defense and the City of New York, includes tissue culture hoods and CO2 incubators, electroporation and microinjection apparatus. It is used for courses and research in cell, molecular biology and biotechnology. A DNA Technology Laboratory: established in conjunction with the biotechnology major, is extensively used for sponsored research. Equipment includes an Applied BioSystems 9600 thermal cycler, a 310 Genetic Analyzer and Storm 840 and Typhoon 9410 PhosphorImagers. Microscopy facility: In addition to epifluorescent microscopes and digital imaging systems in individual research laboratories, the College has central microscopy facilities housing an Olympus FV300 Confocal laser scanning microscope, a SX40A scanning electron microscope and a LEO Libra 120 kV transmission...
electron microscope with in-column OMEGA energy filter, all with digital imaging capabilities. The LEO Libra 120 can image through 2 µm thick sections and includes a patented filter column that allows examination of unstained specimens. In addition, the in-column OMEGA energy filtering imaging spectrometer is capable of high contrast imaging, diffraction and elemental analysis. The College also has a state-of-the art Animal Quarters. Mammals (rabbits, rats and mice) are cared for by a full-time college laboratory technician in the 2000 square foot USDA-approved animal quarters, which include five animal rooms, a surgery, a cage cleaning room, food storage room and an office.

D. Library
Library services at York College provide materials, resources and support needed for research and study by York students. The Library is open about eighty hours a week for access by students and faculty, with added hours during finals week. Over 120 computers are available for use by students. These computers are loaded with presentation, word processing, statistical, and spreadsheet software as well as Mathematica, and personal research and bibliographic management tools. The library has over twenty science and medical related databases including those accessible for searching from anywhere with internet connectivity through VPN student accounts: American Chemical Society journals and publications, Annual Reviews, CINAHL with Headings (EBSCO), The Cochrane Library, General Science Collection (EBSCO), General Science Full Text (Wilson) and General Science Abstracts, Health Source Nursing/Academic Edition (EBSCO), Medline, Occupational Therapy Search, Ovid Nursing and Health Professions, SAGE Journals, Science Direct, Science Reference Center (EBSCO), SciFinder Scholar, and Scopus.

The Library will need to obtain greater access to clinical trial management subscriptions and to upgrade the number of journals that can be accessed on ScienceDirect so that CTM-level students can complete their assignments with academic rigor and excellence.

E. Budget
The cost and revenue projections for the proposed program based on the expected enrollment, is given in the following Appendices: E (New Resources), F (Projected Revenue Related to the Proposed Program), G (Supporting Materials: Expenditures) and H (Five-year financial projection of the program). Appointment of two dedicated faculty members will help meet increased instructional demands of the new program. Additionally, the Department of Biology will recruit adjunct faculty members on an as needed basis to meet new instructional needs.

Other program costs include library acquisitions and laboratory supplies. Library acquisitions will be books and subscriptions to journals and publications that are not part of the current collection. York College currently has adequate laboratory space and classroom space to accommodate the program’s instructional needs.

Revenues are calculated based on the breakdown of full and part time students described in Appendix F and Appendix J.

VII. Program Evaluation
All York College programs, including the proposed M.S. in Clinical Trials Management, must meet the standards of New York State’s Education Department registration and Middle States Association accreditation. In addition, the Department of Biology, the Office of Academic Affairs and the Office of Institutional Research and assessment will be monitoring the program during the first five years of its implementation to assess its impact and outcomes.
**Program Annual Report.** The program Director will conduct an annual review that will report on enrollment, student and faculty activities, achievements, internships, placement of graduates, instructors’ teaching effectiveness, and student and faculty scholarly and other professional activities. The program will also be evaluated and assessed during the cycle of the 5-year Academic Program Review that each academic department and its programs undergo.

**Student Grades and Retention.** The program director in collaboration with the Office of Academic Affairs, The Office of the Registrar and the Office of Institutional Research will monitor the student grades and performance (GPAs and portfolios). Students will have faculty advisors and must meet with his or her advisor each term to discuss program progress and plans for internships and jobs. Analysis of student performance and retention will provide insights for program improvement and to increase student support and to improve recruitment and retention.

**Student Activities.** Students enrolled in the proposed program will have the opportunity to participate in many enrichment and research activities. These include: a) campus presentations and seminars by students and faculty, b) CUNY-wide presentations and conferences, and c) regional and national conferences and seminars.

**Student Internships.** Faculty in Biology and other STEM departments at York carry out externally funded research that support student internships. Opportunities for research are also integrated in the proposed curriculum. These opportunities will provide them with hands-on experience in the field. Presentations from their work will also be encouraged.

**Job Placement of Graduates.** The placement of Clinical Trial Management graduates in appropriate jobs will be an important measure of the program’s success. Employment opportunities for graduates of this program exist within the tri-state biotechnology, pharmaceutical and related industries and we will develop relationships with companies to hire our graduate. Graduates of the program will be invited to the annual Open House event and to other Department presentations for graduates to share their experiences with students and faculty and provide networking opportunities for other students.

**Faculty Evaluation.** Following established college procedures, all instructors will be evaluated by means of formal classroom observations and student evaluations of teaching effectiveness. Full-time and adjunct faculty members will be evaluated annually by the Chair of Biology. Faculty members will be evaluated in terms of teaching effectiveness, instructional and grading practices, scholarly and professional activities, and other contributions to the program, the Department, the College and the University.
VIII. References

APPENDIX A:

Descriptions and Course Syllabi
Clinical Trial Management
INTRODUCTION TO CLINICAL RESEARCH AND CLINICAL TRIAL TERMINOLOGY

Course Number: CTM 501       Section:   Semester:
Professor:        Office:
Phone:         Email:
Office Hours:
Class in Section:

Course description: This course will provide a comprehensive introduction to the clinical trial process. Historical evolution of clinical research regulation will explain the implementation of laws associated with clinical research. Legislative and regulatory reforms to impose the safety, efficacy and ethical issues related to healthcare product development will be covered. Topics will include drug development and preclinical studies as well as different phases of clinical trials, protection of human subjects, brief introduction of the roles and responsibilities of clinical research teams and clinical research organizations. Students will also be introduced to basic medical and clinical research terminology including commonly used acronyms and abbreviations.

Prerequisites: Department permission.

Learning Objectives: Following completion of the course, the students will be able to understand:
   a. Drug development process, preclinical trial and different phases of clinical trials.
   b. Principles of Good Clinical Practice (GCP) and ethical issues in clinical trials.
   c. Key roles of principal players in clinical research and responsibilities of clinical research organizations.
   d. Application of standard medical and clinical research terminology in written and verbal communications.

Text:


Grading Policy: Final grade will be determined as follows:
Quizzes     15%
Exams     (2 one-hour exams)  50%
Final Exam (1 two-hour exam)  35%

Course Outline:

Week 1:  Introduction to Clinical Trials
Week 2:  Evolution of Modern Clinical Research
Week 3:  Introduction to Regulatory Laws Related to Clinical Research
Week 4:  Pre-clinical Trials and Drug Development Process
Week 5:  Pre-clinical Trials and Drug Development Process (Contd.)
Week 6:  Different Types and Phases of Clinical Trials
Week 7:  Good Clinical Practice: Exam
Week 8:  Ethical Issues in Clinical Trials
Week 9:  Role of Sponsor in Clinical Trials
Week 10: Role of Investigators in Clinical Trials
Week 11: Role of Clinical Trial Subjects
Week 12: Role of Regulatory Agency in Clinical Trials
Week 13: Medical and Clinical Research Terminology
Week 14: Medical and Clinical Research Terminology (Contd.): Exam
Week 15: Final Exam

College Policies:

INC Grades:
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http://york.cuny.edu/academics/policies/grading-policies
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The grade of INC is not considered in computing the academic index. However, if a grade change is not received by the Office of the Registrar within the above specified limits, the grade of INC is changed to FIN. This grade is considered an F grade when computing the academic index. When compiling the Dean's List INC grades are calculated as F.

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Policy on Accommodations for Disabled Students:
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Clinical Trial Management
FOUN DATION OF REGULATORY AFFAIRS IN A GLOBAL ENVIRONMENT

Course Number: CTM 502  Section:  Semester:
Professor:  Office:
Phone:  Email:
Office Hours:
Class in Section:

Course description:  This course will provide an overview of the responsibility of the US Food and Drug Administration (FDA) and the International Conference on Harmonization, Good Clinical Practice (ICH GCP) in protecting and promoting public health by regulating the drugs, biologics and medical devices in the US and globally. The course will also describe different Code of Federal Regulations applicable to the clinical trial process.

Prerequisites:  Department permission.

Learning Objectives:  Following completion of the course, the students will be able to understand:

a. Different Centers of the FDA with jurisdiction over manufacturing, licensing and marketing of various drugs, biologics and medical devices.

b. Current thinking of the FDA on specific topics of interest as evident from the corresponding guidance documents.

c. Similarities and differences between the US Food and Drug Administration (FDA) regulations and the International Conference on Harmonization (ICH) GCP guidelines.

d. Principles of Good Laboratory Practice (GLP), current Good Manufacturing Practice (cGMP) and Good Clinical Practice (GCP).

e. How to navigate through the electronic Code of Federal Regulations (eCFR) to find out and comprehend different regulations applicable to clinical trials, such as electronic records/electronic signatures, protection of human subjects, financial disclosure, institutional review boards (IRBs), etc.

Text:
Grading Policy: Final grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Exams (2 one-hour exams)</td>
<td>50%</td>
</tr>
<tr>
<td>Final Exam (1 two-hour exam)</td>
<td>35%</td>
</tr>
</tbody>
</table>

Week 1: Basic Principles and Definitions of Healthcare Products
Week 2: Role of FDA and IHC GCP in Protection and Promotion of Human Health
Week 3: Different Centers of the FDA - Manufacturing, Licensing and Marketing of Various Drugs, Biologics and Medical Devices
Week 4: Similarities and Differences between the US FDA Regulations and International Conference on Harmonization (ICH) GCP guidelines.
Week 8: Code of Federal Regulations: 21 CFR 56/Institutional Review Boards (IRBs)
Week 14: Code of Federal Regulations: 21 CFR 814/Premarket Approval of Medical Devices: Exam
Week 15: Final Exam

College Policies:

INC Grades:
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received after the deadline will not be processed unless the student has obtained approval from the Committee on Academic Standards.

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http://york.cuny.edu/student-development/ossd

Instructor’s Bibliography:
Clinical Trial Management
CLINICAL TRIAL PROJECT MANAGEMENT

Course Number: CTM 503   Section:   Semester:
Professor:        Office:        Phone:         Email:
Office Hours:
Class in Section:

Course description: Project management is the process and activity of planning, organizing and controlling resources and procedures to produce a specific output. This course examines knowledge, skills and techniques for project management in the biomedical industry and applies them to project management for medical devices, drug development, clinical trials and managing an international project. Not open to students with credit in PHS 521.

Prerequisites: Department permission.

Learning objectives: Following completion of the course, the students will be able to understand:
1. Demonstrate project management strategy design, development and deployment
2. Identify key performance metrics for project success
3. Create Project Management Office (PMO) architecture in an organization
4. Apply project management knowledge to drug development and medical devices

Text:

Grading Policy: Final grade will be determined as follows:
- Quizzes 15%
- Exams (2 one-hour exams) 50%
- Final Exam (1 two-hour exam) 35%

Course Outline:
- Week 1: Course Introduction
- Week 2: Foundations of Project Management
- Week 3: Initiating Projects
- Week 4: Planning Projects
- Week 5: Executing Projects
- Week 6: Controlling Projects
- Week 7: Closing the Project: Exam
Week 8:   Professional Communications  
Week 9:   Organizational Leadership and Decision Making  
Week 10:  Negotiating and Conflict Resolution  
Week 11:  Advanced Scheduling and Control  
Week 12:  Clinical Trial Project Management  
Week 13:  Risk Management in Projects and Programs  
Week 14:  Future Trends and Directions: Exam  
Week 15:  Final Exam  

College Policies:  

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http://york.cuny.edu/student-development/ossd  

Instructor’s Bibliography:  
Course Number: PHS 504                Section:                 Semester:
Professor:                      Office:
Phone:                          Email:
Office Hours:                   Class in Session:

Course Description: Biostatistical methods with emphasis on those generally used in the design of clinical trials for development of pharmaceuticals for human use.

Prerequisites: Department permission.

Learning Objectives: By the end of this course, students should be able to:
1. Demonstrate the fundamentals of biostatistics.
2. Illustrate the methodology necessary to summarize data and make informed decisions about observed outcomes.
3. Apply the most appropriate experimental design and methods for data evaluation to obtain reliable results.
4. Perform basic statistical analysis for clinical trial applications.


Grading Policy: Final grade will be determined as follows:
Quizzes                        15%
Exams (2 one-hour exams)       50%
Final Exam (1 two-hour exam)   35%

Course Outline:
Week 1: General Overview
Week 2: Descriptive Statistics
Week 3: Probability
Week 4: Discrete Probability Distributions
Week 5: Continuous Probability Distributions
Week 6: Estimation
Week 7: Hypothesis Testing: One-Sample Inference
Week 8: Hypothesis Testing: Two-Sample Inference; Exam
Week 9: Nonparametric Methods
Week 10: Hypothesis Testing: Categorical Data
Week 11: Regression and Correlation Methods
Week 12: Multisample Inference
Week 13: Design and Analysis Techniques for Epidemiologic Studies
Week 14: Hypothesis Testing: Person-Time Data; Exam
Week 15: Final Exam

College Policies:

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Instructor’s Bibliography:
Clinical Trial Management
ETHICAL CONSIDERATIONS FOR CLINICAL RESEARCH

Course Number: CTM 505  Section:   Semester:
Professor:        Office:
Phone:         Email:
Office Hours:
Class in Section:

Course description: This course will describe the history of misconduct in biomedical research, evolution of research ethics and current ethical and regulatory guidance for design, conduct, monitoring, auditing and reporting of clinical trials or studies involving human subjects. Ethical issues in international clinical research will also be discussed.

Prerequisites: Department permission.

Learning objectives: Following completion of the course, the students will be able to understand:
   a. Ethics of clinical trial design and justification for the recruitment of human participants in clinical research.
   b. Importance of informed consent in the clinical research process in protecting human subjects.
   c. Ethical issues related to participation of human subjects of special categories such as children, elderly, pregnant women, etc. in clinical research.
   d. Conflict of interest of clinical investigators.
   e. Scientific misconduct and its prevention.
   f. Ethical issues related to international clinical research.

Text:


Grading Policy: Final grade will be determined as follows:

Quizzes               15%
Exams (2 one-hour exams) 50%
Final Exam (1 two-hour exam) 35%
Course Outline:

**Week 1:** History of Involvement of Human Subjects in Research  
**Week 2:** Risk Benefit Ratio  
**Week 3:** Local Laws and Institutional Guidelines  
**Week 4:** Informed Consent Process  
**Week 5:** Privacy and Confidentiality  
**Week 6:** Participant Recruitment Procedure: Exam  
**Week 7:** Issues with Vulnerable Population  
**Week 8:** Qualification of Investigator and Research Personnel  
**Week 9:** Understanding of Financial Conflict of Interest  
**Week 10:** Clinical Trial Insurance and Indemnity  
**Week 11:** Safety Monitoring and Quality Assurance during a Clinical Trial  
**Week 12:** Dissemination of Clinical Trial Results  
**Week 13:** Suspension or Termination/Withdrawal of a Clinical Trial  
**Week 14:** Ethical Issues in International Clinical Research: Exam  
**Week 15:** Final Exam

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Instructor’s Bibliography:

Wendler D. When should riskier subjects be excluded from research? Kennedy Institute of Ethics Journal 1998; 8:307-327.


Krumholz HM et al. What have we learnt from Vioxx? BMJ 2007; 334:120-123.


Clinical Trial Management
CLINICAL TRIAL IMPLEMENTATION

Course Number: CTM 506  Section:  Semester:
Professor:  Office:
Phone:  Email:
Office Hours:
Class in Section:

Course description: The course will describe clinical trial as an interdisciplinary research project that involves cooperation of different entities and/or individuals. An overview of appropriate rules and regulations for the structuring, managing and monitoring of clinical trials as well as the responsibilities of key players of clinical trials will be provided. It will explain in details the responsibility of the sponsor following the initiation of the clinical trial process such as, preparation of budgets and contracts, implementation of monitoring visits, and effective management of research sites.

Prerequisites: Department permission.

Learning objectives: Following completion of the course, the students will be able to understand:

1. Research protocol development.
2. Different features of clinical trial design such as randomized controlled trial, open label trial, double blind trial, single blind trial, control, active comparator study, placebo-controlled study, etc.
3. Responsibilities of different players in a clinical trial such as sponsor, investigator, institutional review board (IRB)/independent ethics committee (IEC), contract research organizations (CROs), data monitoring committees, etc.
5. The responsibilities of sponsor in the oversight of the trial and CRO.
6. Importance of issue management during the course of a trial.
7. Importance of audits and corrective action plans.

Texts:


Grading Policy: Final grade will be determined as follows:
Quizzes 15%
Exams (2 one-hour exams) 50%
Final Exam (1 two-hour exam) 35%

Course Outline:

Week 1: Trial and Protocol Design
Week 2: Site Selection
Week 3: Clinical Trial Players – Sponsor, Investigator and Institutional Review Board
Week 4: Sponsor Activities and Oversight
Week 5: Implementation of GCP in the company
Week 6: Contract Research Organizations
Week 7: Independent Data Monitoring Committee: Exam
Week 8: Clinical Study Design Features
Week 9: On site Monitoring and Centralized Monitoring
Week 10: Issue Management and corrective and preventive action (CAPA)
Week 11: Safety Reporting
Week 12: Clinical Investigator Audits
Week 13: Inspection Preparation
Week 14: Case Studies on Data Monitoring: Exam
Week 15: Final Exam

College Policies:

INC Grades:
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Policy on Academic Integrity:
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Information about the services provided to students at York College can be found at the Office of Services for Students with Disabilities, located in room AC-1G02, and on-line at: http://york.cuny.edu/student-development/ossd

Instructor’s Bibliography:


Course Number: CTM 507  Section:  Semester:
Professor:  Office:
Phone:  Email:
Office Hours:
Class in Section:

Course Description: This course will provide an overview of the medical writing with an emphasis on protocol development and review, clinical study report process, investigator brochure preparation and updates, and submission information.

Prerequisites: Department permission.

Learning Objectives: Following completion of the course, the students will be able to:
1. Identify the critical role of medical writing for the regulatory professionals.
2. Recognize the types of regulatory documents required for clinical trial approval.
3. Prepare clinical trial documents, including study reports, clinical overviews, investigator brochures, Integrated summaries of safety and efficacy, and informed consent forms.
4. Identify potential differences when preparing submission documents for global regulatory agencies.
5. Set up a team to prepare detailed and accurate regulatory submission documents containing key strategic issues.

Text:

https://www.fda.gov/scienceresearch/specialtopics/runningclinicaltrials/guidancesinformationsheetsandnotices/ucm219433.htm

Grading Policy: Final grade will be determined as follows:

- Quizzes 15%
- Exams (2 one-hour exams) 50%
- Final Exam (1 two-hour exam) 35%

Course Outline:
Week 1: Introduction to Medical Writing
Week 2: Regulatory writing
Week 3: Types of regulatory documents
Week 4: Document review
Week 5: Clinical Trial Protocols
Week 6: Clinical Study report process; Exam
Week 7: Clinical Summaries
Week 8: Clinical Overviews
Week 9: Investigator brochures
Week 10: Investigational medicinal products dossier
Week 11: Integrated summaries of safety and efficacy; Exam
Week 12: Informed consent forms
Week 13: Region-specific submissions—United States
Week 14: Global submissions: The common technical document
Week 15: Final Exam

College Policies:

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Clinical Trial Management
CLINICAL TRIAL DATA MANAGEMENT

Course Number: CTM 508 Section: Semester:
Professor: Office:
Phone: Email:
Office Hours:
Class in Section:

Course Description: The course will discuss the requirement of data management in clinical trial system for integrity and quality of trial related data, different approaches to clinical trial data collection and various regulatory aspects of data management. Use of electronic health record data in clinical investigation will also be discussed.

Prerequisites: Department permission; CTM 502: Foundation of Regulatory Affairs In a Global Environment; CTM 506: Clinical Trial Implementation

Learning Objectives: Following completion of the course, the students will be able to understand:
1. Various factors that may affect the quality of data collection forms.
2. Paper based case report forms.
3. Electronic data collection.
4. Regulatory submission of study data in electronic format.
5. Data quality plan.
6. Use of electronic health record data in clinical investigations

Text:


Grading Policy: Final grade will be determined as follows:
- Quizzes 15%
- Exams (2 one-hour exams) 50%
- Final Exam (1 two-hour exam) 35%
Course Outline:

Week 1:   Introduction to Clinical Trial Data Management
Week 2:   Data Collection and Data Collection Format
Week 3:   Paper Based Case Report Form
Week 4:   Paper Based Case Report Form (Contd.)
Week 5:   Electronic Data Collection
Week 6:   Electronic Data Collection (Contd.)
Week 7:   Regulatory Considerations For Data Management: Exam
Week 8:   Planning and Design Steps For e-clinical Trials
Week 9:   Trial Reconstruction Capability
Week 10:  Data Quality and Integrity
Week 11:  Data Privacy and Safe Harbor
Week 12:  Sources of Errors
Week 13:  Data Quality Plan
Week 14:  Data Sharing - Use of Electronic Health Record Data in Clinical Investigations Exam
Final Exam

College Policies:

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http://york.cuny.edu/student-development/ossd
Instructor’s Bibliography:
Clinical Trial Management
DRUG SAFETY AND PHARMACOVIGILANCE

Course Number: CTM 509  Section:  Semester:
Professor:  Office:
Phone:  Email:
Office Hours:
Class in Section:

Course description: This course is designed to aid the understanding of the scope and purpose of drug safety and pharmacovigilance with the ultimate goal to minimize risk, avoid product recall, and meet US and EU safety reporting standards of healthcare products. The course will describe adverse drug reactions, identification of possible adverse events as evident from pre-clinical studies, clinical trials as well as post marketing surveillance. The course will also address the regulatory aspects of pharmacovigilance.

Prerequisites: Department permission; CTM 502 Foundations of Regulatory Affairs in a Global Environment.

Learning objectives: Following completion of the course, the students will be able to:

1. Understand regulatory requirements for product safety.
2. Recognize, analyze and communicate adverse events to the proper regulatory authorities.
3. Develop mitigation strategies to prevent future adverse events.

Text:

Grading Policy: Final grade will be determined as follows:

<table>
<thead>
<tr>
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<td>35%</td>
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</table>

Course Outline:

Week 1:   Introduction to Pharmacovigilance
Week 2:   Legal Basis: United States
Week 3:   Legal Basis: EU
Week 4: Pharmacovigilance Related Topics At the Level of International Conference on Harmonization
Week 5: Potential Signals of Serious Risks
Week 6: Periodic Safety Update Reports
Week 7: Non-clinical Safety Evaluation and Adverse Events in Phase I Clinical Trials: Exam
Week 8: Mechanism of Adverse Drug Events
Week 9: WHO Program: Global Monitoring
Week 10: Medical Dictionary for Regulatory Activities MedRA
Week 11: Spontaneous Reporting
Week 12: Pharmacovigilance in pediatric and elderly population
Week 13: Surveillance of Medical Devices - USA
Week 14: Overview of North American Databases: Exam
Week 15: Final Exam

College Policies:

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http://york.cuny.edu/student-development/ossd

Instructor’s Bibliography:
An Introduction to Pharmacovigilance by Patrick Waller, 2011; John Wiley & Sons.


Clinical Trial Management
CLINICAL TRIAL MANAGEMENT CAPSTONE PROJECT

Course Number: CTM 510        Section:              Semester:
Professor:        Office:
Phone:         Email:
Office Hours:
Class in Section:

Course Description: Research or Internship in Clinical Trial Management.

Prerequisites: Department permission.

Learning Objectives: By the end of this course, students should be able to:
   a. Gain educational and professional experience.
   b. Get career advice and guidance.
   c. Demonstrate key skills such as project management, collection, analysis and interpretat

Text: No text book required.

Grading Policy: Final grade will be determined as follows:
   - Final Report 50%
   - Oral Presentation 40%
   - Research/Internship performance 10%

Course Outline:
The Capstone Project can either be Thesis Based or Internship Based. In each case, at the beginning of the semester, students will be assigned an academic mentor for the project.

The C:

Thesis Based: In consultation with their mentor, the students will choose an appropriate advanced topic relevant to drug or biologic discovery, development, manufacturing, regulatory sciences, clinical research, or pharmaceutical/biotechnology business. The research can be carried out either as an individually guided independent study conducted in a non-laboratory setting (Non-Laboratory Research Projects) or independent laboratory research conducted in a laboratory setting (Laboratory Research Projects).

Internship Based: In consultation with their mentor, students will need to find an industry internship in a clinical research oriented company and intern there for approx. 120 hrs during the semester. The internship will provide students with in-depth training, an opportunity to obtain a mentored experience that is challenging and stimulating, the ability to acquire technical skills and work with professionals in their field, and an opportunity to gain invaluable experience helping students with their future career or educational paths.
The basic guidelines for any type of Capstone Project are:

- At the beginning of the project, students will submit a one page document (standard typed double-spaced page) containing the title and a summary of the proposed research or goals, its aims and scope, and the deliverables for approval of the Faculty Advisor.
- Students will submit a formal academic paper based on their research/internship between 25 and 35 double-spaced pages.
- Students will present their work, to an academic committee for evaluation as well as to other students.
- A schedule of meetings between the mentor and the students will be established to monitor the research progress. The mentoring process will involve both formal monitoring of the student research progress and an informal process of advisement and facilitation for the development of the students.

**Milestones:**

- **Week 1:** Academic Mentors are assigned
- **Week 3:** Abstract/Proposal Due
- **Week 13:** Written Report Due
- **Week 14:** Oral Presentation

**College Policies:**

**INC Grades:**
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Course description: The course will provide an overview of the application of principles of epidemiology to clinical medicine and the basic science of evidence-based Medicine. The students will be exposed to well-focused research questions about real-world clinical practice and healthcare for the cause, diagnosis, prevention and treatment of diseases.

Prerequisites: Department permission.

Learning Objectives: Following the completion of the course, the students will be able to understand:

1. How to screen for and diagnose as well as prevent and treat a disease.
3. How to systemically summarize evidence from research.
4. How to improve the quality of healthcare and its outcomes.

Text:


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</table>

Course Outline:

Week 1: Introduction to Epidemiology and Clinical Practice.
Week 2: Forming Research Questions
Week 3: Conducting Systematic Reviews
Week 4: Finding Information About the Burden of Disease
Week 5: An Introduction to Performing Therapeutic Trials
Week 6: Tactics of Performing Therapeutic Trials
Week 7: Testing Quality Improvement Intervention; Exam
Week 8: Evaluating Diagnostic Tests
Week 9: Determining Prognosis and Clinical Decision Rules
Week 10: Assessing Claims of Causation
Week 11: Generating Outcome Measurements, Specially Quality of Life
Week 12: Summarizing the Evidence
Week 13: How to Become a Successful Clinical Investigator
Week 14: Knowledge Management; Exam
Final Exam

College Policies:

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Instructor’s Bibliography:
Clinical Trial Management  
GLOBAL REGULATORY AFFAIRS

Course Number: CTM 512  
Section:                
Semester:               
Professor:              
Office:                 
Phone:                  
Email:                  
Office Hours:           
Class in Section:       

Course Description: This course will provide an overview of the relations between international regulatory authorities and analysis of the regulatory processes for drugs, biologics and medical devices in the European Union, Canada, Japan, China and India. 3hrs. 3crs. Not open to students with credit in PHS 515.

Prerequisites: Department permission; CTM 502 Foundations of Regulatory Affairs in a Global Environment.

Learning Objectives: Following completion of the course, the students will be able to:
   a. Recognize the significance of the International Conference on Harmonization (ICH) for the registration of healthcare products for human use.
   b. Compare the similarities and differences of the regulatory processes of different countries.
   c. Identify the future trends in regulatory affairs.

Text:


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Course Outline:
Week 1: Basic Principles and Definitions of Healthcare Products
Week 2: Overview of FDA and Regulatory Process in the US
Week 3: Overview of FDA and Regulatory Process in the US (Contd.)
Week 4: World Harmonization of Regulatory Requirement: International Conference on Harmonization
Week 5: Core Elements of Regulatory System
Week 6: Critical Issues in Developing Countries
Week 7: European Union: Exam
Week 8: European Medicines Agency
Week 9: Ministry of Health, Labor and Welfare - Japan
Week 10: Health Canada
Week 11: Medical devices: Design Control, Validation, Risk Management
Week 12: Regulatory Submissions: Forms and Requirements
Week 13: Quality Systems: GMP, ISO norms, Software Validation
Week 14: Post-marketing Issues: Surveillance, Corrective and Preventive Actions: Exam
Week 15: Final Exam

College Policies
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Instructor’s Bibliography:
Documents available in US FDA’s Electronic Reading Room:
(http://www.fda.gov/RegulatoryInformation/FOI/ElectronicReadingRoom/default.htm)
ICH website
http://www.ich.org/
European Medicines Agency
European Union
http://europa.eu/index_en.htm
Ministry of Health, Labor and Welfare
Health Canada
Clinical Trial Management
MEDICAL WRITING: DOCUMENT SUBMISSION

Course Number: CTM 513  Section:  Semester:
Professor:  Office:
Phone:  Email:
Office Hours:
Class in Section:

Course Description: This course will provide an overview of the basic regulatory and writing skills essential for a medical writer to prepare and submit documents to the appropriate regulatory agencies so that the drug, device or biologics can be approved for clinical studies in humans. It will also explain the importance of interpersonal skill to successfully work in a team with team members of different technical expertise whose contribution is essential to meet the requirement for the approval of the regulatory agency following the submission process.

Prerequisites: Department permission; CTM 507: Introduction to Medical Writing—Document preparation.

Learning Objectives: Following completion of the course, the students will be able to:

6. Identify the critical role of medical writing for the regulatory professionals.
7. Comprehend regulatory guidelines and laws for the preparation of a submission.
8. Identify potential differences when preparing submission documents for global regulatory agencies.
9. Set up a team to prepare detailed and accurate regulatory submission documents containing key strategic issues.

Text:
e-Book: The FDA Clinical Submission Survival Manual (RAPS Store)

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Course Outline:

Week 1: Introduction to Medical Writing
Week 2: Overview of Medical Writing from a Regulatory Perspective

Week 3: Medical Writing Resources and Organization

Week 4: Medical Writing Resources and Organization (Contd.)

Week 5: ICH and Common Technical Document

Week 6: Collaboration Within the Team

Week 7: Content Requirement For Submission

Week 8: Analysis and Targeting Audience: Exam

Week 9: Document Preparation and Writing

Week 10: How to Improve Quality of Submission

Week 11: Code of Federal Regulation Title 21 Related To Medical Writing

Week 12: Differences and Similarities: NDA, BLA, SNDAs and ANDAs

Week 13: Examples of Successful Submission

Week 14: Examples of Successful Submission (Contd.): Exam

Week 15: Final Exam

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Documents available in US FDA’s Electronic Reading Room:
(http://www.fda.gov/RegulatoryInformation/FOI/ElectronicReadingRoom/default.htm)

ICH E3, Structure and content of clinical study report (January 2013).

Clinical Trial Management
MEDICAL WRITING: INVESTIGATIONAL APPLICATIONS FOR DRUGS, BIOLOGICS AND MEDICAL DEVICES

Course Number: CTM 514    Section:    Semester:
Professor:    Office:
Phone:    Email:
Office Hours:
Class in Section:

Course Description: This course will provide an overview of a variety of investigational applications prepared by regulatory and medical writers for drugs/biologics and medical devices. Key investigational submissions covered include region-specific applications for drugs/biologics such as the Investigational New Drug Application (IND) in US, Clinical Trial Application (CTA) in Canada and Investigational Medicinal Product Dossier (IMPD) in Europe, as well as those required for investigational devices such as the Investigational Device Exemption (IDE) in US and Investigational Testing Authorization (ITA) in Canada. Components of each of these application types will be discussed. Instructions will be provided on how to write detailed and accurate submission documents.

Prerequisites: Department permission.; CTM 507: Introduction to Medical Writing—Document preparation.

Learning Objectives: Following the completion of the course, the students will be able to:

1. Determine the most appropriate type of IND for a clinical trial in US.
2. Determine when an IND application is required for a clinical trial in US.
3. Determine when an IDE application is required for a clinical trial in US.
4. Determine when a CTA is required for a clinical trial in Canada.
5. Determine when an ITA is required for a clinical trial in Canada.
6. Understand the data requirement for writing IMPD in Europe.
7. Understand the benefits of communication with appropriate regulatory agency prior to or during the submission process.

Text:
e-Book: The FDA Clinical Submission Survival Manual (RAPS Store)

Grading Policy: Final grade will be determined as follows:
Quizzes 15%
Exams (2 one-hour exams) 50%
Final Exam (1 two-hour exam) 35%

Course Outline:

Week 1:  Introduction to Regulatory and Medical Writing for Investigational Applications
Week 2:  Investigational New Drugs (IND)
Week 3:  Formatting for IND Applications
Week 4:  Contents of IND Applications
Week 5:  FDA Review Process of IND
Week 6:  Investigational Device Exemption (IDE)
Week 7:  Structure and Content of an IDE submission: Exam
Week 8:  Clinical Trial Application (CTA) in Canada
Week 9:  Regulatory Process for CTA and CTA-Amendments
Week 10: Investigational Testing Automation (ITA)
Week 11: Structure and Content of ITA submission
Week 12: Investigational Medical Product Dossier
Week 13: European Clinical Trial Application
Week 14: Core Documentation for Submission of Trial Application in Europe: Exam
Week 15: Final Exam

College Policies:

INC Grades:
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http://york.cuny.edu/academics/policies/grading-policies  
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Instructor’s Bibliography:
www.eCFR.gov

Investigational New Drug (IND) Application (CFR 21 Part 312)

http://www.ninds.nih.gov/research/clinical_research/policies/fda.htm

Investigational Medicinal Product Dossier
http://www.imp-dossier.eu/

European clinical trial application

Investigational Device Exemption (CFR21 Part 812)
http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/HowtoMarketYourDevice/InvestigationalDeviceExemptionIDE/ucm046706.htm

Investigational Testing Authorization

Clinical trial application in Canada
Clinical Trial Management
MEDICAL WRITING: DRUGS, BIOLOGICS AND MEDICAL DEVICES LICENSE APPLICATIONS

Course Number: CTM 515  Section:  
Semester:  
Professor:  
Office:  
Phone:  
Email:  
Office Hours:  
Class in Section:  

Course description: This course will provide an overview of various complex submission documents prepared by medical writers using common technical document/electronic common technical document (CTD/eCTD) used for the preparation and submission of premarketing applications of new products to the regulatory authorities of various countries such as US, EU, Japan, Canada, Australia and India. Crucial points, such as region-specific considerations for clinical sections in US New Drug Applications (NDA), US Biologics License Application (BLA) and EU Marketing Authorization Applications (MAA) will be discussed. The students will also learn about the two different types of primary premarketing submissions for medical devices, i.e. Premarket Notification application 510(K) and Premarket Approval (PMA). The students will be introduced to the different components of these submissions and different steps to follow in order to write regulatory applications to be submitted to FDA.

Prerequisites: Department permission; CTM 507: Introduction to Medical Writing—Document preparation.

Learning objectives: At the completion of the course, the students will be able to:
1. Understand the structure and content of CTD and eCTD for a regulatory submission.
2. Understand region-specific considerations for clinical sections in US NDA, US BLA, EU MAA.
3. Address each module of the CTD with particular emphasis on the clinical components.
4. Understand when a PMA is required for a new medical device and different types of PMA Applications.
5. Understand regulatory process for PMA submission and review.
6. Understand when a 510(K) is required for a new medical device and different types of 510(K).
7. Understand regulatory process for 510(K) submission and review.
8. Learn how to prepare detail oriented, accurate and reviewer-friendly regulatory documents.

Text:  
e-Book: The FDA Clinical Submission Survival Manual (RAPS Store)
Grading Policy: Final grade will be determined as follows:

- Quizzes: 15%
- Exams (2 one-hour exams): 50%
- Final Exam (1 two-hour exam): 35%

Course Outline:

Week 1: Introduction to Drugs, Biologics and Medical Devices License Applications
Week 2: Structure and Content of CTD and eCTD for Regulatory Submission
Week 3: Guidance Documents to Understand CTD
Week 4: Importance of Templates, Style Guide and Time Lines
Week 5: Consideration for Writing CTD/eCTD
Week 6: New Drug Application (NDA)
Week 7: Submission and Review Process for NDA: Exam
Week 8: Biological License Application (BLA)
Week 9: Submission and Review Process for BLA
Week 10: Marketing Authorization Application (MAA)
Week 11: Medical Device: Pre-Market Authorization (PMA) Application
Week 12: Regulatory Process for PMA Submission and Review
Week 13: Medical Device: 510(K) Premarket Notification
Week 14: Regulatory Process for 510(K) Submission and Review: Exam
Week 15: Final Exam

College Policies:

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http://york.cuny.edu/student-development/ossd

**Instructor’s Bibliography:**


CTD structure

Applications for FDA Approval to market a new drug (NDA) (CFR 21 Part 314)

Biologics License Application Process

Marketing Authorization Application:
Authorization procedure for medicinal products
http://ec.europa.eu/health/authorisation-procedures_en.htm


Premarket Approval for Medical Devices (CFR 21 Part 814)
http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/HowtoMarketYourDevice/PremarketSubmissions/PremarketApprovalPMA/default.htm

510(K) Premarket notification
http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/510kClearances/
Course description: This course will provide an overview of issues related to clinical trial quality and compliance. Contents includes: quality management systems, standard operating procedures, training, quality agreements, conducting and managing investigations, corrective and preventive actions (CAPAs), and inspection preparation, support and conduct.

Prerequisites: Department permission; CTM 506: Clinical Trial Implementation.

Learning objectives: At the completion of the course, the students will be able to:

1. Recognize the scientific and regulatory basis for the need of quality assurance, process validation and controls.
2. Gather the necessary documents to design and develop a rigorous validation program.
3. Demonstrate the fundamentals of current Good Clinical Practices.
4. Explain specific problems that have been identified in clinical trials by the FDA through enforcement actions, such as, inspectional observations and warning letters.


Grading Policy: Final grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Exams (2 one-hour exams)</td>
<td>50%</td>
</tr>
<tr>
<td>Final Exam (1 two-hour exam)</td>
<td>35%</td>
</tr>
</tbody>
</table>

Course Outline:

Week 1: Introduction: A systematic approach to running clinical trials
Week 2: Record keeping
Week 3: Quality management systems
Week 4: Standard Operating Procedures
Week 5: Training
Week 6: Quality Agreements
Week 7: Conducting and managing investigations
Week 8: Root cause
Week 9: Corrective and preventive action (CAPA)
Week 10: Inspection preparation, support and conduct
Week 11: Document management, record retention and reporting
Week 12: Institutional Review Boards (IRB) and subject protection
Week 13: Trial progress reports
Week 14: Accountability for the investigational product
Week 15: Final Exam

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http://york.cuny.edu/student-development/ossd
Instructor’s Bibliography:


Course Number: PHS 503         Section:                 Semester:
Professor:                                      Office:                  Phone:                          Email:
Office Hours:
Class in Session:

Course Description: The basic principles of pharmacology; general principles of drug action; pharmacokinetics; pharmacodynamics; neuropharmacology; cardiovascular pharmacology; endocrine pharmacology; pharmacology of chemotherapeutic agents.

Prerequisites: Department permission.

Learning Objectives: By the end of this course, students should be able to:

1. Demonstrate the principles of drug action, including basic pharmacokinetics, dose-response relationships, and receptor binding.
2. Describe the therapeutic uses and routes of administration of the major classes of drugs.
3. Demonstrate the mechanism of action of each of the major classes of drugs at the molecular, cellular, organ and organ system levels.
4. Use their knowledge of drug mechanisms of action to predict therapeutic and adverse effects.
5. Recognize the side effects associated with major classes of drugs.


Grading Policy: Final grade will be determined as follows:

- Quizzes                        25%
- Exams (3 one-hour exams)       40%
- Final Exam (1 two-hour exam)   35%

Course Outline:
- Week 1: General Principles of Pharmacology
- Week 2: Drug Receptors, Pharmacokinetic, and Pharmacodynamics
- Week 3: Introduction to the Autonomic Pharmacology
- Week 4: Cholinoceptor–Activating, Cholinoceptor-Blocking and Cholinesterase-Inhibiting Drugs
- Week 5: Adrenoreceptors Agonists, Antagonists, and Sympathomimetic Drugs; Exam
- Week 6: Cardiovascular-Renal Drugs
- Week 7: Histamine, Serotonin, and Ergot Alkaloids
Week 8: Drugs with Important Actions on Smooth Muscle  
Week 9: Introduction to the Pharmacology of the Central Nervous System  
Week 10: Drugs that Act in the Central Nervous System; Exam  
Week 11: Anti-inflammatory Drugs  
Week 12: Hypothalamic and Pituitary Hormones  
Week 13: Endocrine Drugs  
Week 14: Chemotherapeutic Drugs; Exam  
Week 15: Final Exam

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http://york.cuny.edu/student-development/ossd

Instructor’s Bibliography:  
Course Description: The mechanisms by which toxicants enter the body and the biotransformation processes that result in disease-producing entities; cellular mechanisms of toxicity and the major target organs affected by toxins; some applications of toxicology, such as clinical toxicology and regulatory toxicology.

Prerequisites: Department permission; PHS 503: Advanced Pharmacology.

Learning Objectives: By the end of this course, students should be able to:
1. Recognize the principles and approaches used to investigate the metabolism of toxicants in laboratory mammals and in humans and of the metabolic activation of chemicals to toxic metabolites.
2. Demonstrate the fundamental process of cancer, cell proliferation, chemical-induced DNA damage and DNA repair mechanisms.
3. Illustrate the target organ toxicity involving the following organ systems: liver, kidney, blood, cardiovascular, immune, skin, gastrointestinal, pulmonary, reproductive, endocrine, and central and peripheral nervous systems.
4. Describe methods involved in evaluation of the toxic effects of chemicals on selected organ systems.


Grading Policy: Final grade will be determined as follows:
   Quizzes 15%
   Exams (3 one-hour exams) 50%
   Final Exam (1 two-hour exam) 35%

Course Outline:
Week 1: General Principles of Toxicology
Week 2: Absorption, Distribution, Excretion of toxicants, Biotrasformations of Xenobiotics.
Week 3: Non-Organ Directed Toxicity
Week 4: Toxic Response of the Immune System
Week 5: Toxic Response of the Liver; Exam
Week 6: Toxic Response of the Kidney
Week 7: Toxic Response of the Respiratory System
Week 8: Toxic Response of the Nervous System
Week 9: Toxic Response of the Heart and the Blood
**Week 10:** Toxic Response of the Skins; Exam
**Week 11:** Toxic Response of the Reproductive System
**Week 12:** Toxic Agents: pesticides, metals, solvents, radioactive materials
**Week 13:** Environmental Toxicology
**Week 14:** Clinical Toxicology, Regulatory Toxicology, Food Toxicology; Exam
**Final Exam**

**College Policies:**

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**Instructor’s Bibliography:**
Course Number: PHS 515  
Professor:  
Office:  
Office Hours:  
Class in Session: 

Semester:  
Phone:  
Email:  

Course Description: Study of the relations between international regulatory authorities and analysis of the regulatory processes for pharmaceuticals in the European Union, Japan, Canada, South America, China and India.

Prerequisites: Department permission; PHS 505: Foundations of Regulatory Affairs.

Learning Objectives: By the end of this course, students should be able to:

1. Recognize the significance of the International Conference on Harmonization (ICH) for the registration of pharmaceuticals for human use.
2. Differentiate and compare the regulatory processes of different countries.
3. Recognize global problems in the pharmaceutical business and the common strategies used by the Food and Drug Administration (FDA) and other agencies to overcome them.

Text: Pathway to Global Product Safety and Quality - A Special Report, US Food and Drug Administration. Electronic copy available at: 

Ensuring Safe Foods and Medical Products Through Stronger Regulatory Systems Abroad, Institute of Medicine (2012). Electronic copy available at: 


Global Engagement, US Food and Drug Administration. Electronic copy available at: 

Grading Policy: Final grade will be determined as follows:
Exam (1 one-hour exam) 35%  
Final (1 two-hour exam) 35%  
Final Report 20%  
Oral Presentation 5%  
Participation 5%  

**Course Outline:**

**Week 1:** Overview of FDA and Regulatory Process in the US  
**Week 2:** Pathway to Global Product Safety and Quality  
**Week 3:** Pathway to Global Product Safety and Quality (Continued)  
**Week 4:** International Conference on Harmonisation  
**Week 5:** Core Elements of Regulatory System  
**Week 6:** Critical Issues in Developing Countries  
**Week 7:** European Union; Exam  
**Week 8:** European Medicines Agency  
**Week 9:** Ministry of Health, Labour and Welfare - Japan  
**Week 10:** Health Canada  
**Week 11:** Global Engagement  
**Week 12:** Global Engagement (Continued)  
**Week 13:** The Problem of Counterfeit Medications  
**Week 14:** Case Studies and Presentations  
Final Exam; Final Report Due  

**College Policies: INC**

**Grades:**

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Appendix B

Tables 1a & 1b: Graduate Program Schedule
### Table 1A: Graduate Program Schedule—Full-time Students

- **Indicate academic calendar type:** ☐ Semester ☐ Quarter ☐ Trimester ☐ Other (describe): 
- **Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)**
- **Use the table to show how a typical student may progress through the program; copy/expand the table as needed.**

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
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<th>Credits</th>
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<tr>
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</tr>
<tr>
<td>CTM 501: Introduction to Clinical Research and Clinical Trial Terminology</td>
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<td>CTM 503: Clinical Trial Project Management</td>
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<tr>
<td>PHS 504: Advanced Biostatistics</td>
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<td>CTM 505: Ethical Consideration for Clinical Research</td>
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<td>CTM 506: Clinical Trial Implementation</td>
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<td>CTM 507: Introduction to Medical Writing—Document preparation</td>
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<td>Elective 1</td>
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<td>CTM 508: Clinical Trial Data Management</td>
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<td>CTM 509: Drug Safety and Pharmacovigilance</td>
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<tr>
<td>CTM 510: Clinical Trial Management Capstone Project</td>
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</tr>
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<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Totals:</td>
<td>Credits: 36</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable:

- **New** = indicate if new course
- **Prerequisite(s)** = list prerequisite(s) for the noted course
Table 1B: Graduate Program Schedule—Part-time Students

- Indicate academic calendar type: ☑ Semester  ☐ Quarter  ☐ Trimester  ☐ Other (describe):
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

<table>
<thead>
<tr>
<th>Term: Fall 1</th>
<th>Term: Spring 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>CTM 501: Introduction to Clinical Research and Clinical Trial Terminology</td>
<td>3</td>
</tr>
<tr>
<td>CTM 502: Foundation of Regulatory Affairs In a Global Environment</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total: 6</td>
<td>Term credit total: 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term: Fall 2</th>
<th>Term:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>CTM 503: Clinical Trial Project Management</td>
<td>3</td>
</tr>
<tr>
<td>PHS 504: Advanced Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total: 6</td>
<td>Term credit total: 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term:</th>
<th>Term:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Credits</td>
</tr>
<tr>
<td>CTM 508: Clinical Trial Data Management</td>
<td>3</td>
</tr>
<tr>
<td>CTM 509: Drug Safety and Pharmacovigilance</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total: 6</td>
<td>Term credit total: 6</td>
</tr>
</tbody>
</table>

Program Totals: Credits: 36

Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable:

New = indicate if new course  Prerequisite(s) = list prerequisite(s) for the noted course
Appendix C:

Faculty Information
## Existing Core Faculty

**Department Expectations:** Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Member Name, Title, and Rank</th>
<th>Courses to be taught</th>
<th>Full-time or Part-time; if Full-time identify % of time to the program</th>
<th>Highest Earned Degree, Discipline, IHE</th>
<th>Additional qualifications that demonstrate professional competence relative to the specific program</th>
</tr>
</thead>
</table>
| Melvin Silberklang, PhD Adjunct Professor Department of Biology | CTM 502: Foundation of Regulatory Affairs In a Global Environment  
CTM 503 Clinical Trial Project Management  
CTM 507: Introduction to Medical Writing—Document Preparation  
CTM 514: Medical Writing: Investigational Applications for Drugs, Biologics and Medical devices  
CTM 515: Medical Writing: Drugs, Biologics and Medical Devices License Applications  
Chief Scientific Officer: Forticell Bioscience  
- Experience developing and managing FDA-compliant Quality Systems  
- participated in the design and management of GMP-compliant manufacturing processes, GLP-compliant preclinical studies and GCP-compliant human clinical trials  
- wrote U.S. Pharmacopoeia monographs  
- developed in-house product-specific training programs for CRAs and sales and marketing representatives.  
- has written and filed both FDA-approved IND (1) and IDE (3) applications to initiate new clinical trials, and FDA-approved PMA and orphan device exemptions to allow final product marketing. |
| Alexander Birk, PhD Adjunct Assistant Professor Department of Biology | CTM 501: Introduction to Clinical Research and Clinical Trial Terminology  
PHS 503: Advanced Pharmacology  
CTM 506: Clinical Trial | Part-time | Ph.D. Pharmacology, Cornell University | 2010 – 2015 Research Assistant Professor, Dept. Pharmacology, Weill Cornell Medical College, NY  
2007 – 2010 Assistant Professor, Institute for Hepatitis and Virus Research of Drexel University, Doylestown, PA  
2005 – 2007 Instructor, Dept. Pharmacology, Weill Cornell Medical College, NY  
2004 – 2005 Dept. Biochemistry, Weill Cornell Medical College, |
## Existing Core Faculty

**Department Expectations:** Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th><strong>Title</strong></th>
<th><strong>Department</strong></th>
<th><strong>Courses Taught</strong></th>
<th><strong>Teaching Experience</strong></th>
<th><strong>Coursework and Certifications</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulbul Chakravarti, PhD</td>
<td>Adjunct Professor</td>
<td>Department of Biology</td>
<td>Implementation CTM 508: Clinical Trial Data Management, CTM 509: Drug safety and Pharmacovigilance</td>
<td>Experience with Phase I clinical studies, Phase II and III studies in USA and Qatar, and marketing phase in USA. Involved in the development of both GMP- and CGP-compliant manufacturing processes for N-MET; presently, N-MET is in the global market.</td>
<td>Teaching experience: Pharmacology, Chemistry, Biology and Parasitic Diseases: York College (CUNY), Bronx Community College (CUNY), Keck Graduate Institute, College at Brockport (SUNY), Rochester Institute of Technology, and University of Alabama at Birmingham. Pharmaceutical industry experience: Research Scientist at Wyeth Vaccines (Pfizer). Coursework: Regulatory Affairs Professional Society (RAPS) training certifications: Regulatory Basic Bundles, Medical Writing Complete Package, Clinical Trial Foundation</td>
</tr>
<tr>
<td>Laura L. Beaton, PhD</td>
<td>Associate Professor</td>
<td>Department of Biology</td>
<td>PHS 504: Advanced Biostatistics</td>
<td>15%</td>
<td>Ph.D. Biological Sciences, McMaster University, Canada Faculty, Doctoral Program in Biology, The Graduate School and University Center, CUNY.</td>
</tr>
</tbody>
</table>
**Existing Core Faculty**

*Department Expectations:* Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. **Identify the program director.** Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

**Note:** Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Courses Taught</th>
<th>Percentage</th>
<th>Qualifications/Professional Experience</th>
<th>Department/Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam A. Profit, PhD</td>
<td>PHS 503: Advanced Pharmacology</td>
<td>15%</td>
<td>Ph.D. Bioorganic Chemistry, Stony Brook University, NY Postdoctoral research: Albert Einstein College of Medicine, NY. Senior Research Scientist, Merck Research Laboratories, Rahway, NJ (2000-2004).</td>
<td>Department of Chemistry</td>
</tr>
<tr>
<td>Timothy Kirk, PhD</td>
<td>CTM 505: Ethical Consideration for Clinical Research</td>
<td>15%</td>
<td>Ph.D. Philosophy, Villanova University, Villanova, PA Adjunct Assistant Professor of Medical Ethics and Nursing NYU Langone Medical Center/NYU School of Nursing (2013-present) Ethics Consultant VNSNY Hospice &amp; Palliative Care (2011-present)</td>
<td>Department of History</td>
</tr>
</tbody>
</table>
Appendix D:

Faculty to be Hired
Faculty to be Hired

Department Expectations: Identify the specific job title, courses to be taught, and qualifications for each position and the specific timeline by which the faculty member(s) will be hired. The job descriptions and minimum qualifications of faculty to be hired meet the meet minimum academic qualifications as identified in Part 52.2(b) of Commissioner’s regulation. The date provided by which faculty to be hired will be in place must be clear and directly connected to when they are needed to discharge their responsibilities during program implementation. The Department reserves the right to request more information concerning recruitment and hiring of faculty if it is needed to make a determination concerning compliance with program registration standards.

<table>
<thead>
<tr>
<th>Position Title, and Rank</th>
<th>Highest Earned Degree, Discipline, and additional qualifications</th>
<th>Courses to be taught</th>
<th>Date by which they will begin job duties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Professor</td>
<td>Ph.D.</td>
<td>To be determined</td>
<td>September 2018</td>
</tr>
<tr>
<td>Assistant/Associate Professor</td>
<td>Ph.D.</td>
<td>To be determined</td>
<td>September 2019</td>
</tr>
<tr>
<td>Part-time Adjunct</td>
<td>Ph.D.</td>
<td>To be determined</td>
<td>September 2018</td>
</tr>
</tbody>
</table>
Appendix E:

New Resources
<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1 Academic Year²</th>
<th>Year 2 Academic Year†</th>
<th>Year 3 Academic Year†</th>
<th>Year 4 Academic Year†</th>
<th>Year 5 Academic Year†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$110,000.00</td>
<td>$190,465.00</td>
<td>$194,274.30</td>
<td>$198,159.79</td>
<td>$202,122.99</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$15,000.00</td>
<td>$15,300.00</td>
<td>$15,606.00</td>
<td>$15,918.12</td>
<td>$16,235.48</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>$2,500.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Other</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>Total all</td>
<td>$132,500.00</td>
<td>$213,765.00</td>
<td>$217,880.30</td>
<td>$222,077.91</td>
<td>$226,358.47</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year, new resources with adjustments for inflation, if a continuing cost.
[5] Specify what is included in "other" category, (e.g., student financial aid).
Appendix F:

Projected Revenue Related to the Proposed Program
Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th>Revenues[1]</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Academic Year[2]</td>
<td>Academic Year†</td>
<td>Academic Year†</td>
<td>Academic Year†</td>
<td>Academic Year†</td>
</tr>
<tr>
<td>Tuition Revenue[3]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>03. Total</td>
<td>$182,540</td>
<td>$323,220</td>
<td>$329,684</td>
<td>$336,278</td>
<td>$343,004</td>
</tr>
<tr>
<td>Other Revenue[7]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources§</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>08. From New Sources**</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>09. Total</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Grand Total[8]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources§</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>11. From New Sources**</td>
<td>$182,540</td>
<td>$323,220</td>
<td>$329,684</td>
<td>$336,278</td>
<td>$343,004</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$182,540</td>
<td>$323,220</td>
<td>$329,684</td>
<td>$336,278</td>
<td>$343,004</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[3] Please explain how tuition revenue was calculated.
[5] New sources means revenue engendered by new students. The revenue from new sources from one year should be carried over to the next year as revenues from continuing sources with adjustments for inflation.
[6] Public institutions should include here regular State appropriations applied to the program.
[7] Specify what is included in "other" category.
[8] Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
Appendix G:

Supporting Materials: Expenditures
## DIRECT OPERATING EXPENSES

Include additional expenses incurred by other programs when satisfying needs of new program. Faculty need should be commensurate with "net section needs" based on enrollment (see "Enroll & Seat Need Projections" tab)

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (list separately)</td>
<td>110000</td>
<td>190465</td>
<td>194274.3</td>
<td>198159.79</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (41.6%)</td>
<td>45760</td>
<td>79233.44</td>
<td>80818.11</td>
<td>82434.47</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Full-Time Faculty on Program Exp Worksheet)</td>
<td><strong>$155,760.00</strong></td>
<td><strong>$269,698.44</strong></td>
<td><strong>$275,092.41</strong></td>
<td><strong>$280,594.26</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Time Faculty Actual Salaries</td>
<td>15000</td>
<td>15300</td>
<td>15606</td>
<td>15918.12</td>
</tr>
<tr>
<td>Part Time Faculty Actual Fringe Benefits (24.3%)</td>
<td>3645</td>
<td>3717.90</td>
<td>3792.26</td>
<td>3868.10</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Part-Time Faculty Program Exp Worksheet)</td>
<td><strong>$18,645.00</strong></td>
<td><strong>$19,017.90</strong></td>
<td><strong>$19,398.26</strong></td>
<td><strong>$19,786.22</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (41.6%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Full-Time Staff on Program Exp Worksheet)</td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
</tr>
</tbody>
</table>

## PART-TIME STAFF (do not include library staff in this section)

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Replacement Costs (replacement of full-time faculty - e.g. on release time - with part-time faculty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Hourly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Part-Time Staff on Program Exp Worksheet)</td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
<td><strong>-$</strong></td>
</tr>
<tr>
<td>LIBRARY</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Library Resources</td>
<td>2500</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td>Library Staff Full Time (List Separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (41.6%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Library Staff Part Time (List Separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL (Links to Library on Program Exp Worksheet)</td>
<td>$2,500.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Furniture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (Links to Equipment on Program Exp Worksheet)</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LABORATORIES</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Equipment</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
</tr>
<tr>
<td>Other (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL (Links to Laboratories on Program Exp Worksheet)</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLIES AND EXPENSES (OTPS)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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</thead>
<tbody>
<tr>
<td>Consultants and Honoraria</td>
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<td>Membership Fees</td>
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<td>Advertising and Promotion</td>
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<td>Computer Repair and Maintenance</td>
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<td>Equipment Repair and Maintenance</td>
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<tr>
<td><strong>New Total Supplies and OTPS Expenses</strong> (Links to Supplies on Program Exp Worksheet)</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
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</table>

**CAPITAL EXPENDITURES**
- Facility Renovations
- Classroom Equipment
- Other (list separately)

**TOTAL** (Links to Capital Expenditures on Program Exp Worksheet) $- $- $- $- $- $-

**Other** (list separately)

**TOTAL** (Links to Other on Program Exp Worksheet) $- $- $- $- $- $-
Appendix H:
The Five-Year Revenue Projections for Program
The Five-Year Revenue Projections for Program
SENIOR COLLEGE (GRADUATE) WORKSHEET
Year 1 = Fall 2018

<table>
<thead>
<tr>
<th>EXISTING FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tuition Income (calculates 2% increase per year after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
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<tr>
<td># of EXISTING FULL-TIME, Out-of-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Annual Avg # of Credits per FT student (24-30)</td>
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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Tuition</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<tr>
<td>Total Fees</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out-of-State Tuition &amp; Fees</td>
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<td>$0</td>
<td>$0</td>
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<td>$0</td>
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<tr>
<td>TOTAL EXISTING FULL-TIME TUITION REVENUE</td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>EXISTING PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
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<tr>
<td></td>
<td>Year One</td>
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<td>Year Three</td>
<td>Year Four</td>
<td>Year Five</td>
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<tr>
<td><strong>Existsing Part-Time In-State</strong></td>
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<tr>
<td><strong>Tuition &amp; Fees:</strong></td>
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<td>$0</td>
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<tr>
<td><strong>Student Fees:</strong></td>
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<td>0</td>
<td>0</td>
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</tr>
<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>Total Out-of-State Tuition &amp; Fees</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>TOTAL EXISTING PART TIME REVENUE</strong></td>
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<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)</strong></td>
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<td><strong>Tuition &amp; Fees:</strong></td>
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<tr>
<td># of NEW FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Tuition Income (Calculates 2% increase per year after Fall 2015)</td>
<td>$10,130</td>
<td>$10,332</td>
<td>$10,539</td>
<td>$10,749</td>
<td>$10,964</td>
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<tr>
<td>Total Tuition</td>
<td>$40,520</td>
<td>$72,324</td>
<td>$73,770</td>
<td>$75,246</td>
<td>$76,751</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$40,520</td>
<td>$72,324</td>
<td>$73,770</td>
<td>$75,246</td>
<td>$76,751</td>
</tr>
</tbody>
</table>

**Tuition & Fees:**

| # of NEW FULL-TIME, Out-of-State Students (linked from "Enroll & Seat Need Projections") | 1 | 2 | 2 | 2 | 2 |
| Annual Avg # of Credits per FT student (24-30) | 24 | 24 | 24 | 24 | 24 |
| Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015) | $780 | $796 | $812 | $828 | $845 |
| Total Tuition | $18,720 | $38,208 | $38,972 | $39,752 | $40,547 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | |
| Total Fees | 0 | 0 | 0 | 0 | 0 |
| Total Out-of-State Tuition & Fees | $18,720 | $38,208 | $38,972 | $39,752 | $40,547 |

**TOTAL NEW FULL-TIME TUITION REVENUE** | $59,240 | $110,532 | $112,743 | $114,997 | $117,297 |

<table>
<thead>
<tr>
<th>NEW PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of NEW PART-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>15</td>
<td>28</td>
<td>28</td>
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<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>12</td>
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<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
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<td>$434</td>
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<tr>
<td><strong>Total Fees</strong></td>
<td>$76,500</td>
<td>$145,824</td>
<td>$148,740</td>
<td>$151,715</td>
<td>$154,750</td>
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<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
<td>$76,500</td>
<td>$145,824</td>
<td>$148,740</td>
<td>$151,715</td>
<td>$154,750</td>
</tr>
<tr>
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<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
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<tr>
<td># of NEW PART-TIME, Out-of-State Students</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
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<tr>
<td><strong>Total Enrolled Credits</strong> (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td>$780</td>
<td>$796</td>
<td>$812</td>
<td>$828</td>
<td>$845</td>
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<tr>
<td><strong>Tuition Income (Specify Rate per credit) calculates 2% increase per year</strong></td>
<td>$46,800</td>
<td>$66,864</td>
<td>$68,201</td>
<td>$69,565</td>
<td>$70,957</td>
</tr>
<tr>
<td><strong>Total Tuition</strong></td>
<td>$46,800</td>
<td>$66,864</td>
<td>$68,201</td>
<td>$69,565</td>
<td>$70,957</td>
</tr>
<tr>
<td><strong>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Fees</strong></td>
<td>$46,800</td>
<td>$66,864</td>
<td>$68,201</td>
<td>$69,565</td>
<td>$70,957</td>
</tr>
<tr>
<td><strong>Total Out-of-State Tuition &amp; Fees</strong></td>
<td>$46,800</td>
<td>$66,864</td>
<td>$68,201</td>
<td>$69,565</td>
<td>$70,957</td>
</tr>
<tr>
<td><strong>TOTAL NEW PART-TIME REVENUE</strong></td>
<td>$123,300</td>
<td>$212,688</td>
<td>$216,942</td>
<td>$221,281</td>
<td>$225,706</td>
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**TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)**

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<tr>
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<th>Year Three</th>
<th>Year Four</th>
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<tbody>
<tr>
<td>$182,540</td>
<td>$323,220</td>
<td>$329,684</td>
<td>$336,278</td>
<td>$343,004</td>
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**OTHER REVENUE**

<table>
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<tr>
<th>Other Revenue From Existing Sources (specify and explain) - LINKS TO REVENUE SPREADSHEET ROW 13</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
</table>

| Other Revenue New (specify and explain) (LINKS TO REVENUE SPREADSHEET ROW 15) |
|---------------------------------------------------------------------------------|----------|----------|------------|-----------|-----------|
Appendix I

Evaluation Report for Program Proposal
I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

The objectives of the program are clearly stated (p.10, IV). A successful clinical trial professional requires a good understanding of global regulatory considerations as well as the ability to understand, manage, and lead team activities. It is suggested that an objective related to understanding regulatory considerations in countries worldwide be added. In addition, it is suggested that teamwork skills be expanded to managing a clinical trial, not only in conducting a clinical trial.

The program tends to have a focus on FDA GCP. In today’s environment, ICH GCP (E6) governs and guides the conduct of clinical trials both in the US and globally. In addition, more trials are being conducted outside the US, so a clinical trial professional is required to have an in-depth understanding of ICH GCP and its application. In the objectives section (p. 10, IV), FDA GCP should be replaced with ICH GCP.

Overall, the Core and Elective Courses would provide the required education to the students, with the following comments:

- CTM 502: focus on ICH GCP, as well as FDA regulations
- Consider adding a required course on project management which would include tools and techniques for managing the clinical trial activities, provide education on vendor and site oversight, educate on good documentation practices, explain importance of leadership, teamwork, and interpersonal skills, and emphasize ongoing inspection readiness and preparation. One of the main skills needed by a clinical research professional is the ability to see the end-to-end process / linkages and prioritize and manage those activities cross-functionally.
- CTM 513 and CTM 516: while having in-depth exploration of data management and PV as Elective Courses is valuable, these two topics do not seem to be discussed in a meaningful way in the Core Courses. Both topics are critical to the conduct of a clinical trial and are essential knowledge for all students.
- CTM 507: This course appears to focus on submission writing, which is not a core competency for someone managing clinical trials. An overview of medical writing should
include protocol development and review, clinical study report process, investigator brochure preparation and updates, as well as submission information. CTM 507 would be better positioned as an Elective Course.

- CTM 508: Marketing and finance as related to subject recruitment and budget preparation are important to clinical research professionals. It is also important to consider the desired labeling while planning a clinical trial so that the proper data is collected to support the desired labeling claims. The learning objectives seem appropriate, but the course outline seems to include topics which may not be as relevant. It is recommended that this course be 1-2 hr / 1-2 cr as the topic does not carry the same weight as Clinical Trial Implementation, for example.
- Consider adding a course that provides an overview of medical writing, data management, global regulatory affairs and PV / safety to address the comments above.
- Consider adding an elective around clinical trial quality and compliance. Content could include concepts of quality management systems, SOPs, training, quality agreements, conducting and managing investigations / root cause / CAPAs, and inspection preparation, support and conduct.

2. **Comment on the special focus of this program, if any, as it relates to the discipline.**

The Capstone Project aspect of the program is a key component to help prepare graduates to directly enter the industry. The application of the course work to actual situations is critical for success in obtaining a position.

3. **Comment on the plans and expectations for continuing program development and self-assessment.**

Unable to assess

4. **Assess available support from related programs.**

Unable to assess

5. **(Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?**

Based on assessment provided in the proposal, it seems that the need will continue. From an industry perspective, qualified individuals who have the required skillsets of technical knowledge, critical thinking and problem-solving capability, and interpersonal / leadership skills are always in demand.

II. **Faculty**

6. **Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.**
The proposed faculty to initiate the program seems suitable. Their knowledgeable should be supplemented with adjunct who are currently working in the area of clinical trial conduct and management.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

Unable to assess

8. Evaluate credentials and involvement of adjunct and support faculty.

As noted above, the core faculty seems suitable and adjunct faculty will be an essential component to provide students with current, real-life situations.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

Unable to assess

10. (Only for programs requiring master plan amendment.) What is the institution’s commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

Unable to assess

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

Overall, the course content is appropriate. Table 5 maps the program courses to the competency areas. From my perspective, the most important competencies for a clinical research professional are clinical trial operations, study & site management, leadership & professional, and communication & teamwork. Any program should ensure that these competencies are adequately covered to position graduates for success. Please also see comments on #1.
External Reviewer Conflict of Interest Statement

I am providing an external review of the application submitted to the NYS Education Department by:

York College of the City University of New York

(Name of institution or Applicant)

The application is for (circle A or B below)

A) New Degree Authority

B) Registration of a new academic program by an existing institution of higher education:

Master's Program in Clinical Trial Management

(Title of Proposed Program)

I affirm that I:

1. am not a present or former employee, student, member of the governing board, owner or shareholder of, or consultant to the institution that is seeking approval for the proposed program or the entity seeking approval for new degree authority, and that I did not consult on, or help to develop, the application;

2. am not a spouse, parent, child, or sibling of any of the individuals listed above;

3. am not seeking or being sought for employment or other relationship with the institution/entity submitting the application;
4. do not have now, nor have had in the past, a relationship with the institution/entity submitting the application that might compromise my objectivity.

Name of External Reviewer (please print):

Kathy Goldstein

Signature:

Date: 19 May 2017
Appendix J

Enrollment and seat projections
## Enrollment and seat projections

<table>
<thead>
<tr>
<th>Projected Enrollment</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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</thead>
<tbody>
<tr>
<td><strong>Existing Full-time Students</strong></td>
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<tr>
<td>In-State</td>
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<tr>
<td>Out-of-State</td>
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<tr>
<td><strong>Existing Full-time Total</strong></td>
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</tr>
<tr>
<td><strong>Existing Part-time Students</strong></td>
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<td>In-State</td>
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<td>Out-of-State</td>
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</tr>
<tr>
<td><strong>Existing Part-time Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Full-time Students</strong></td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>In-State</td>
<td>4</td>
<td>7</td>
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<tr>
<td>Out-of-State</td>
<td>1</td>
<td>2</td>
<td>2</td>
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<tr>
<td><strong>NEW Full-time Total</strong></td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
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<tr>
<td><strong>New Part-time Students</strong></td>
<td>20</td>
<td>35</td>
<td>35</td>
<td>35</td>
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<tr>
<td>In-State</td>
<td>15</td>
<td>28</td>
<td>28</td>
<td>28</td>
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</tr>
<tr>
<td>Out-of-State</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>New Part-time Total</strong></td>
<td>20</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

**NOTES:**
- **New** students are students who would not otherwise have been enrolled in your college if this program were not offered. The proposal text should explain the basis for this enrollment estimate.
- **Existing** students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.
Appendix K

Sample job salaries for Clinical Research Associates in New York
Job Description for Clinical Research Associate I

Participates in the design, administration and monitoring of clinical trials. Analyzes and evaluates clinical data gathered during research. Ensures compliance with protocol and overall clinical objectives. May require a BS, RN, or BSN degree or equivalent and 0-3 years of experience in the field or in a related area. Knowledge of FDA regulatory requirements is required. Has knowledge of commonly-used concepts, practices, and procedures within a particular field. Relies on instructions and pre-established guidelines to perform the functions of the job. Works under immediate supervision. Primary job functions do not typically require exercising independent judgment. Typically reports to a supervisor or manager.

Clinical Research Associate I's Annual Base Salary

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Salary</th>
<th>Location</th>
<th>Date Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Research Associate I</td>
<td>$57,764</td>
<td>Albany, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$53,930</td>
<td>Binghamton, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$62,592</td>
<td>Brentwood, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$64,777</td>
<td>Bronx, NY</td>
<td>December 28, 2016</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$64,777</td>
<td>Brooklyn, NY</td>
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</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$53,889</td>
<td>Buffalo, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$54,871</td>
<td>Clay, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$59,903</td>
<td>Hempstead, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$55,126</td>
<td>Henrietta, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$62,592</td>
<td>Huntington, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$52,492</td>
<td>Jamestown, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$59,903</td>
<td>Levittown, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$63,793</td>
<td>Mount Vernon, NY</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$59,480</td>
<td>New Rochelle, NY</td>
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<tr>
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<td>$64,777</td>
<td>New York, NY</td>
<td>December 28, 2016</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$53,204</td>
<td>Niagara Falls, NY</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$59,727</td>
<td>Poughkeepsie, NY</td>
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<tr>
<td>Clinical Research Associate I</td>
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<td>Queens Village, NY</td>
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<td>Clinical Research Associate I</td>
<td>$55,126</td>
<td>Rochester, NY</td>
<td>December 28, 2016</td>
</tr>
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<td>Clinical Research Associate I</td>
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<td>Staten Island, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Job Title</td>
<td>Salary</td>
<td>Location</td>
<td>Date Updated</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------</td>
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<tr>
<td>Clinical Research Associate I</td>
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<td>December 28, 2016</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$53,801</td>
<td>Troy, NY</td>
<td>December 28, 2016</td>
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<tr>
<td>Clinical Research Associate I</td>
<td>$53,460</td>
<td>Utica, NY</td>
<td>December 28, 2016</td>
</tr>
<tr>
<td>Clinical Research Associate I</td>
<td>$63,967</td>
<td>Yonkers, NY</td>
<td>December 28, 2016</td>
</tr>
</tbody>
</table>
Appendix L

Sample Job Opportunities
Sample Job Description #1

Clinical Trial Associate (CTA)
Axovant Sciences - New York, NY
The Clinical Trial Associate (CTA) contributes to the execution of clinical studies by providing support the Operational Team to ensure the objectives of the study are met - delivery of the study on time, within budget, and of high quality in compliance with ICH/GCP, Regulatory Authorities’ regulations/guidelines, and applicable SOPs/WPs. Interacts with Clinical Trial Managers, Clinical Monitoring Liaisons, CRO, Clinical Supply, etc. to track and monitor certain aspects of clinical trial execution.

ACCOUNTABILITIES:

- Track and provide updates on clinical activities, including, but not limited to, site selection, initiation and monitoring, subject enrollment, data collection, drug shipments, compliance, etc.
- Organize and maintain project working files, track critical documents and eTMF status, and report discrepancies to the Clinical Trial Manager(s)
- Collate and review performance metrics and quality indicators to assist the study team in driving study execution
- Review essential clinical documents in accordance with SOPs and procedural documents (site regulatory documents, eTMF).
- Manage study/site - level IP authorization of shipments to sites

BEHAVIORAL REQUIREMENTS:
To achieve our Company's vision and mission, we are committed to hiring people who "do what is right" not because a policy requires it, but because they value ethics and recognize the critical importance of compliance to the success of the business. At Axovant, each individual is accountable for compliance, not just those who work in Legal and Compliance. By weaving compliance into the fabric of our corporate DNA, we safeguard our most precious assets, from our reputation to the trust of the customers and patients who rely on us. We believe that it is only through a culture of compliance, in which ethics are a fundamental part of how we do business, that we guarantee our success in the long run.

Given our commitment to ethics and compliance, we seek to hire likeminded individuals who are committed to ethically-achieved performance. Behavioral requirements for this position include:

- Being an integrity role model by visibly and consistently speaking and acting the values of our Code of Business Conduct and Ethics;
- Timely completing, and ensuring you understand the content of, all required legal and compliance training courses;
- Acting with respect and in a professional manner in all business relationships (with colleagues within Axovant and with external stakeholders).

REQUIREMENTS:

Education: Bachelor’s degree from an accredited college or university

Experience (e.g. Jobs, supervisory, industry, international, etc): 3 years of health sciences experience is required (pharmaceutical industry or related experience is preferred; work in the areas of clinical operations, and/or project management is a plus)

Specialized knowledge, Licenses, etc.: Knowledge of ICH/GCP; Strong oral and written skills; Strong organizational, and problem-solving skills; Knowledge of MS applications (including, but not limited to, MS Excel, PowerPoint, etc.); Knowledge of clinical systems (including, but not limited to, IxRS, CTMS, etc.)

Other skills/attributes:
- Demonstrated alignment with Axovant values and culture


Sample Job Description #2

**Clinical Research Coordinator**
Columbia University

<table>
<thead>
<tr>
<th><strong>Job Title</strong></th>
<th>Clinical Research Coordinator</th>
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<tr>
<td><strong>Job Code Title</strong></td>
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<tr>
<td><strong>Job Requisition Number</strong></td>
<td>086310</td>
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<tr>
<td><strong>Department</strong></td>
<td>7540- PED Pediatrics</td>
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<tr>
<td><strong>Location</strong></td>
<td>Medical Center</td>
</tr>
<tr>
<td><strong>Job Type</strong></td>
<td>Officer Full-Time Regular</td>
</tr>
<tr>
<td><strong>Bargaining Unit</strong></td>
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</tr>
<tr>
<td><strong>If temporary, indicate duration</strong></td>
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</tr>
<tr>
<td><strong>Hours Per Week</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Job Family</strong></td>
<td>Research (Laboratory and Non-Laboratory)</td>
</tr>
<tr>
<td><strong>Salary Grade</strong></td>
<td>Officer 104</td>
</tr>
<tr>
<td><strong>Salary Range</strong></td>
<td></td>
</tr>
</tbody>
</table>
Working with a dedicated team of physicians and researchers, the Clinical Research Coordinator will coordinate a multi-site grant funded study and assist with national registries and IRB submissions. Overall duties and responsibilities will include:

1. Planning and coordinating the initiation of research study protocol, and the establishment of operating policies and procedures.
2. Planning, implementing, and maintaining data collection and analysis systems in support of research protocol; may coordinate the collection and analysis of research data.
3. Recruits, instruct, and coordinate research subjects and/or volunteers, as appropriate to specific study objectives and work scope.
4. Ensures the smooth and efficient day-to-day operation of research and data collection activities; acts as the primary administrative point of contact for internal research staff and as the principle operational liaison for other research organizations, funding agencies and regulating bodies.
5. Supervises and coordinates the provision of support services to investigators and researchers.
6. Monitors the progress of research activities; develops and maintains records of research activities, and prepares periodic and ad hoc reports, as required by investigators, administrators, funding agencies, and/or regulatory bodies.
7. Performs miscellaneous job-related duties as assigned

Minimum Qualifications for Grade Applicant **MUST** meet these minimum qualifications to be considered an applicant

- Requires a bachelor's degree or equivalent in education and experience, plus three years of related experience.

Additional Position-Specific Minimum Qualifications Applicant **MUST** meet these minimum qualifications to be considered an applicant

Special Instructions

Preferred Qualifications CCRC eligible or certified

Essential Functions

Additional Essential Functions (Limit to 3950 characters.)

Special Indications This position works with:

- Bloodborne pathogens
- Contact with patients and/or research subjects

HIPAA Compliance training required

- Yes

Participation in Medical Surveillance required

- Yes
Sample Job Description #3

Clinical Research Associate
DOCS
New York, NY

Job Summary

DOCS clients include small, mid and large sized Pharmaceutical companies in addition to many leading Biotechnology, Medical Device companies and CROs. As a global partner, DOCS currently offers global resourcing solutions to our clients.

Roles & Responsibilities of the position

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Under the supervision of project lead or clinical study manager, help facilitate information flow between all members of the clinical operations/clinical trial site team, including in-house departments, clinical project team members, external CRO or contracted members, vendors, and other personnel as appropriate.
- Support coordination of day-to-day activities of clinical trials.
- May help create/track detailed project plans for assigned clinical trials.
- Prepares and facilitates the review of case report forms, protocols, investigator's brochures, instructions for use, study operations manuals, site and FDA annual reports.
- Develops and maintains relationships with outside consultants and vendors as required for each protocol.
- Reviews study budgets within the established guidelines, provides initial review of study contracts for changes in consultation with the project lead or clinical study manager.
- May participate in the identification, evaluation and selection of clinical investigators.
- May train and mentor less experienced CRAs, CTAs and new team members (as applicable).
- Perform monitoring visits to regional clinical sites or at problem sites (as required).
- Interfaces externally with clinical investigators, investigational sites and project vendors.
- Receive, review, track/inventory and filed all documents pertaining to applicable clinical research studies.
- Prepare, maintain, and return/archive project master files as applicable.
- Perform project master file reviews as outlined in project specific plan.
- Request, manage, distribute and track study supplies.
- Update and maintain study-specific trackers and systems under direction of Project Lead.
- Coordinate, provide set up, and attend project meetings including: internal, CRA, client meetings and presentations.
- Assist with distribution of documents.
- Assist in identifying and implementing best practices and continuous improvement

**Job Requirements**

CRA with strong monitoring experience.
CRAs with Site Monitoring experience.
Medical Device experience is preferred, but not required.
Prefers candidates who have experience working at Sponsors rather than sites.


**Sample Job Description #4**

**Research Coordinator**
NYU Langone Medical Center, New York, NY  
**Job ID:** 1034596_RR00012720  
**Area of Talent:** Research  
**Position Type:** Full-Time/Regular  
**Location:** NYU School of Medicine  
**Shift:** 09:00 AM to 05:00 PM

NYU Langone Medical Center, a world-class, patient-centered, integrated, academic medical center, is one of the nation’s premier centers for excellence in clinical care, biomedical research and medical education. Located in the heart of Manhattan, NYU Langone is composed of four hospitals – Tisch Hospital, its flagship acute care facility; Rusk Rehabilitation; the Hospital for Joint Diseases, one of only five hospitals in the nation dedicated to orthopaedics and rheumatology; and Hassenfeld Children’s Hospital, a comprehensive pediatric hospital supporting a full array of children’s health services across the medical center – plus the NYU School of Medicine, which since 1841 has trained thousands of physicians and scientists who have helped to shape the course of medical history. The medical center’s tri-fold mission to serve, teach and discover is achieved 365 days a year through the seamless integration of a culture devoted to excellence in patient care, education and research. For more information, go to www.NYULMC.org.

**Position Summary:**
We have an exciting opportunity to join our team as a Research Coordinator. In this role, the successful candidate Responsible for providing moderate to advanced range of coordination of Research studies conducted at the Medical Center, assists with the recruitment, enrollment, grant submissions, research data collection and study coordination activities. Performs intra-operative monitoring and serves as liaison with internal and external funding agencies. Ensures the accurate execution of research protocols in accordance with Good Clinical Practices, HIPAA, and required obligations to patient/subject, Principal Investigator, Research Team and sponsor. Interfaces directly with patients/subjects and Principal Investigator in support of the clinical trials if applicable. Establishes liaisons with relevant parties at the Medical Center that may include: Research Nurses, Research Pharmacists, Program Managers, Medical Technicians, Clinical Information Systems and regulatory Services. Might assist in the initiation and management of research studies. Works under general direction
**Job Responsibilities:**

- **Human Subjects Research** As applicable, oversee the submission of necessary documents required by the NYU Institutional Board (IRB), NYU Office of Clinical Trials and any other appropriate parties in order to obtain approval to conduct human subjects research (e.g., ensures the update and submission of necessary documents and/or forms to appropriate destination). Might prepare, audit and submit monthly enrollment statistics to the Office of Clinical Trials, and provides other information in timely manner, as necessary.

- **Study Regulations** Aware of study regulatory status and keep an up to date copy of regulatory documents. Assists with the informed consent process and ensure that the patient/subject fully understands what is required of them throughout the study. Follows through regularly with the patient/subjects reminding them of visits and compliance. May monitor any outward effects or issues regarding patient/subject safety and report this to the Principal Investigator, Physician and Research Nurse.

- **Data Management** Responsible for collecting and auditing patient information for the research project(s). This may include abstraction of data from the patient chart (e.g., laboratory or diagnostic test results, surgical/radiation treatments delivered, adverse drug reactions, etc); abstraction of data for publications, or data collection from outside physicians offices. Audits and manages data from and into the database. Prepares forms and reports, compiles and analyses data, statistics, and other materials for reports. Conducts study visits, obtains and documents information within the time frame specified.

- **Recruitment** – Screens potential patients/subjects for eligibility to the study. This may include gathering information from the medical record, physician referral, advertisement and directly scheduling a visit to evaluate the patient/subject. Reviews all the elements of the screening process with the Principal Investigator that being: inclusion/exclusion criteria, completed informed consent, documentation of the event and the patient/subject willingness to participate in the study.

- **Clinical Competency** – competency in performing EKG, phlebotomy technique, centrifuge, handling, storing and shipping of specimens. Clinical training and didactic competency tests may be required to perform basic procedures as part of position expectations. In house training and certification will be provided. Other trainings and competencies may be included as required.

- **Continuous Learning** – Position requires ongoing continuing education in all areas of research development (training programs are provided through the SOM). Promotes own professional growth and development in research role and maintains current expertise in area of practice. Maintains annual requirement of 10 CEUs in continuing research education; employee must demonstrate proof of ongoing research education. Serves as a resource to peers and works collaboratively with other disciplines within the area of expertise.

- **Reporting and Analysis** Researches, compiles and consolidates data and conducts preliminary analyzes to data collected for presentation to sponsoring and regulatory agencies. Provides reports to all necessary parties (e.g., the principal investigator, sponsoring agency, etc.) on the progress of the study as needed. Formulates, prepares database and generates preliminary measurement reports for review by PI. May complete assessments on study subjects/patients following protocol (with proper training); continues to follow-through with items and patients as part of the research study.

- **Grants** Prepares and submit grant applications and other grants related an activity such as developing grants applications/proposals and fund raising activities if applicable. Collects and organizes required paperwork for submission if applicable. Follow up and coordinates resolution of all issues progress. Reports to the sponsors to fund medical research in the division.
• Budget – Develops a preliminary draft budget and submit to the Director/Principal Investigator. Reviews sponsor-proposed budget for adequate coverage and recommend changes as appropriate. Assists in the preparation of funding reports to funding agencies and helps identify new potential sponsors/agents for trials and researches. Monitor budget throughout trial.
• Decision Making and Problems Solving Combines and evaluates information and data to make decisions about relative importance of information and choosing the best solution to solve problems. Resolves complex situations and refers non solved issues and questions with recommendation to supervisor.
• Participates in special projects and performs other duties as required.

Minimum Qualifications:
To qualify you must have a Bachelor degree or equivalent in business administration, health care administration or related field. >Minimum of two years of progressively responsible project coordination experience, preferably in a research setting. >Proficiency in using various Microsoft Office applications such as Word, Excel, Access, Power Point and Outlook. Familiar with Internet applications. >Effective oral, written, communication, interpersonal skills. >Ability to interface effectively with all levels of management and must work and communicate effectively with both internal and external customers. >Ability to work within a team environment as well as independently. >Commitment to continuous learning as required by department administration. >Ability to work and make decisions independently. >Ability to operate research related equipment. >Time management skills and ability to multitask. >Ability to identify, analyze and solve problems: Ability to work well under pressure.

Preferred Qualifications:
Clinical Research Coordinator (CRC) Certification is preferred (required in some disciplines). >Knowledge of basic medical terminology is preferred. >Experience working in an Academic Medical Center preferred

Qualified candidates must be able to effectively communicate with all levels of the organization.

Appendix M

Science student interest survey
Q1 What is your year in school?

Answered: 48  Skipped: 9

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year</td>
<td>20.83%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>25.90%</td>
</tr>
<tr>
<td>Junior</td>
<td>16.67%</td>
</tr>
<tr>
<td>Senior</td>
<td>31.25%</td>
</tr>
<tr>
<td>Post-graduate</td>
<td>6.25%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>
Q2 What is your current major?

- Biology: 67.65% (23 responses)
- Biotechnology: 14.71% (5 responses)
- Chemistry: 2.94% (1 response)
- Clinical Lab Sciences: 0.00% (0 responses)
- Environmental Health Sciences: 0.00% (0 responses)
- Health Sciences: 0.00% (0 responses)
- Pharmaceutical Sciences: 14.71% (5 responses)
- Physician Assistant: 0.00% (0 responses)
- Psychology: 0.00% (0 responses)
- Other (please specify): 0.00% (0 responses)

Total: 34 responses
Q3 What are your plans for future study?

Answer Choices

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain work experience before applying to graduate/professional program</td>
<td>22.86%</td>
</tr>
<tr>
<td>Attend a Master’s program upon graduation</td>
<td>28.57%</td>
</tr>
<tr>
<td>Attend a PhD program upon graduation</td>
<td>11.43%</td>
</tr>
<tr>
<td>Attend medical school</td>
<td>22.86%</td>
</tr>
<tr>
<td>Unsure</td>
<td>14.29%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>
Q4 Which factors will you consider when selecting a graduate program to attend? (Check all that apply).

Answered: 35  Skipped: 13

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of evening classes</td>
<td>31.43%</td>
</tr>
<tr>
<td>Availability of weekend classes</td>
<td>34.29%</td>
</tr>
<tr>
<td>Cost of program</td>
<td>77.14%</td>
</tr>
<tr>
<td>Availability of online courses</td>
<td>22.86%</td>
</tr>
<tr>
<td>Location</td>
<td>57.14%</td>
</tr>
<tr>
<td>Availability of Financial Aid</td>
<td>57.14%</td>
</tr>
<tr>
<td>Admissions requirement GPA</td>
<td>62.86%</td>
</tr>
<tr>
<td>Availability of transportation</td>
<td>17.14%</td>
</tr>
<tr>
<td>Accreditation of program</td>
<td>45.71%</td>
</tr>
<tr>
<td>Size of classes</td>
<td>22.86%</td>
</tr>
<tr>
<td>Length of program</td>
<td>48.57%</td>
</tr>
<tr>
<td>Qualifications of professors</td>
<td>34.29%</td>
</tr>
</tbody>
</table>

Total Respondents: 35
Q5 The Master’s Program would likely involve three semesters of coursework (36 credits). If you decided to enroll in the program, would you be a full-time student?

Answered: 35  Skipped: 13

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>82.86%</td>
</tr>
<tr>
<td>No</td>
<td>17.14%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>

Q6 Would you consider applying to a Master’s degree program in Clinical Trial Management?

Answered: 35  Skipped: 13

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, at York College, CUNY</td>
<td>65.71%</td>
</tr>
<tr>
<td>Yes, at a private college</td>
<td>5.71%</td>
</tr>
<tr>
<td>No, I’m not interested.</td>
<td>28.57%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>
Appendix N

Attestation and Assurances
Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institutions' goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(o).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.¹

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with §52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

<table>
<thead>
<tr>
<th>CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
</tr>
<tr>
<td>![Signature Image]</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>5/8/2017</td>
</tr>
</tbody>
</table>

Type or print the name and title of signatory
Panayiotis Meleties, Provost and Sr. Vice President for Academic Affairs

Phone Number
718-262-2806

¹ The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
RESOLVED, that the program in Health Services Administration offered at the School of Professional Studies of the Graduate School and University Center and leading to the Bachelor of Science, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: This fully on-line undergraduate program will provide students with the appropriate coursework in both health care management and general practices in business. Students will be sought after by organizations such as hospitals, nursing homes, urgent care clinics and managed care organizations. The fully on-line delivery will be particularly attractive to individuals already working in the professional and looking to advance their career.
CUNY School of Professional Studies

CUNY School of Professional Studies
at the Graduate School and University Center

Proposal to Establish a
Bachelor of Science in Health Services Administration

Anticipated Start
Spring 2018

Approved by the
CUNY School of Professional Studies Curriculum Committee on
April 27, 2017

Approved by the
CUNY School of Professional Studies Governing Council
May 11, 2017

Ellen Karl, MBA, RHIA, CHDA, FAHIMA
Academic Director
Health Information Management Program
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EXECUTIVE SUMMARY

The CUNY School of Professional Studies (CUNY SPS) proposes a 120-credit online Bachelor of Science degree in Health Services Administration that will help to address a need in the healthcare community for a baccalaureate degree related to healthcare administration.

Health Services Administration is the field relating to leadership, management, and administration of hospitals, hospital networks, health care systems and public health systems, as well as clinics, nursing homes and smaller medical facilities. The Bureau of Labor Statistics terms those who are employed as administrators as medical and health services managers. Medical and health services managers are the planners, directors and coordinators who work behind the scenes to keep hospitals, nursing homes, group practices and other health care facilities running efficiently.

To be successful in health services administration, managers need to be well-versed in topics specific to health care, but also be knowledgeable in the principles of business. To that end, students graduating with a BS in Health Services Administration will be able to:

1. Describe the role of supervisors, managers, directors, and administrators in health services organizations.
2. Demonstrate entry-level management skills to plan, organize, direct and control the function and processes of a health service organization to ensure quality patient care.
3. Apply budget information and financial analysis to making decisions within health service organizations.
4. Evaluate laws and policy regulations as well as apply appropriate legal decisions and ethical considerations to the administration of health services organizations.
5. Exercise proficient communication skills including written and oral communication.
6. Engage in formal presentations and demonstrate technology competency with various electronic media.
7. Integrate the disciplines of science, mathematics, humanities, critical thinking, ethics, information literacy, and project management to the study of the healthcare ecosystem.

According to the Bureau of Labor Statistics, medical and health services managers held about 333,000 jobs in 2014. This is expected to grow by 17% between 2014 and 2024, which is significantly higher than the average growth rate for all occupations. In New York, there are a projected 1,190 openings annually for medical and health services managers through 2024 (New York State Department of Labor).

Initial recruitment will be targeted towards 1199SEIU members (the largest union for workers employed in private sector hospitals, nursing homes, mental health clinics, pharmacies, and home care and social service agencies) who do not yet have a college degree and who would like to improve their prospects for career advancement. In addition, recruitment will expand to all health care entities, with a primary emphasis on the over 400 hospitals and nursing homes in the New York City, Long Island and Hudson Valley regions.

In delivering resources to students in the Health Services Administration program, CUNY SPS will build on its current infrastructure, which supports dozens of degree and certificate programs as well as a portfolio of noncredit programs (both online and in-class). The student, faculty, and administrative services currently offered by CUNY SPS can readily be extended to this new program.

Initial start-up support for the program will be provided by the School with the expectation, based on enrollment projections, that the program will quickly become self-sustaining.
### General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUNY School of Professional Studies at the Graduate School and University Center AND CUNY School of Professional Studies</td>
<td>310500</td>
</tr>
<tr>
<td></td>
<td>310510</td>
</tr>
<tr>
<td>Proposed Program Title</td>
<td>Degree Award</td>
</tr>
<tr>
<td>Health Services Administration</td>
<td>BS</td>
</tr>
<tr>
<td>Address of Any Campus Where the Proposed Program Will Be Offered (main and/or branch campuses)</td>
<td>Full-time or Part-time ¹</td>
</tr>
<tr>
<td>365 Fifth Avenue New York, NY 10016</td>
<td>Full-time</td>
</tr>
<tr>
<td>All Program Format(s) (standard, distance education², evening, weekend and/or other)</td>
<td>HEGIS Code</td>
</tr>
<tr>
<td>Distance Education.</td>
<td>1202.00</td>
</tr>
<tr>
<td>Joint Registration IHE (if applicable)</td>
<td>Total Number of Credits</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Lead Contact [First Name, Last Name, Title]</td>
<td>Telephone Number</td>
</tr>
<tr>
<td>Otte, George, Associate Dean of Academic Affairs CUNY School of Professional Studies</td>
<td>646.344.7258</td>
</tr>
<tr>
<td>Email Address</td>
<td><a href="mailto:george.otte@cuny.edu">george.otte@cuny.edu</a></td>
</tr>
</tbody>
</table>

### Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

1. Please refer to §52.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

2. If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.

---

Proposal to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
That all educational activities offered as part of this proposed curriculum are aligned with the institution’s goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

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CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST

<table>
<thead>
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<th>Date</th>
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<tbody>
<tr>
<td>[Signature]</td>
<td>5/12/17</td>
</tr>
</tbody>
</table>

Type or print the name and title of signatory

Dr. George Otte, Associate Dean of Academic Affairs

Phone Number: 646.344.7258

---

3 The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.

Proposal to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
Program Purpose, Objectives and Targets

**Program Purpose**

*Department Expectation:* Clearly define a program purpose that is aligned to the degree award and program title.

Refer to narrative, beginning on page 6.

**Program Objectives**

*Department Expectation:* Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1. Goals and Student Learning Outcomes contained within the body of the proposal.

2.

3.

**Program Targets** - *Department Expectation:* Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. *Note:* There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

**Enrollment Projections**

*The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.*

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
</table>

See projections on in Table 8: Five-Year Revenue Projections for Programs Worksheet

<table>
<thead>
<tr>
<th>Annual Retention Rate Target (%)</th>
<th>Target graduation rate (%)</th>
<th>Target Job Placement Rate (%)</th>
</tr>
</thead>
</table>

**Curriculum and Course Information**

Please provide the following:

1. The applicable sample student program schedule table:
   - Table A: Undergraduate Program Schedule; or
   - Table B: Graduate Program Schedule
When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master’s degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Course information is contained within the proposal.</strong></td>
</tr>
</tbody>
</table>
NARRATIVE

Purpose and Outcomes

The CUNY School of Professional Studies (CUNY SPS) proposes a 120-credit online Bachelor of Science degree in Health Services Administration that will help to address a need in the healthcare community for a baccalaureate degree related to healthcare administration. The purpose of the program is to prepare students for managerial or supervisory positions in health care organizations through a combination of coursework in the healthcare discipline as well as in business.

Health Services Administration is the field relating to leadership, management, and administration of hospitals, hospital networks, health care systems and public health systems, as well as clinics, nursing homes and smaller medical facilities. The Bureau of Labor Statistics terms those who are employed as administrators as medical and health services managers. Medical and health services managers are the planners, directors and coordinators who work behind the scenes to keep hospitals, nursing homes, group practices and other health care facilities running efficiently. Specifically, medical and health services managers:

- work to improve efficiency and quality in delivering healthcare services
- develop departmental goals and objectives
- ensure that the facility in which they work is up to date on and compliant with new laws and regulations
- recruit, train, and supervise staff
- ensure compliance with labor relations mandates
- manage the finances of the facility, such as patient fees and billing
- create work schedules
- prepare and monitor budgets and spending to ensure departments operate within allocated funds
- represent the facility at investor meetings or on governing boards
- keep and organize records of the facility’s services, such as the number of inpatient beds used
- communicate with internal and external stakeholders

Program Learning Outcomes

To be successful in health services administration, managers need to be well-versed in topics specific to health care, but to also be knowledgeable in the principles of business. To that end, students graduating with a BS in Health Services Administration will be able to:

1. Describe the role of supervisors, managers, directors, and administrators in health services organizations.
2. Demonstrate entry-level management skills to plan, organize, direct and control the function and processes of a health service organization to ensure quality patient care.
3. Apply budget information and financial analysis to making decisions within health service organizations.
4. Evaluate laws and policy regulations as well as apply appropriate legal decisions and ethical considerations to the administration of health services organizations.
5. Exercise proficient communication skills including written and oral communication.
6. Engage in formal presentations and demonstrate technology competency with various electronic media.
7. Integrate the disciplines of science, mathematics, humanities, critical thinking, ethics, information literacy, and project management to the study of the healthcare ecosystem.

Impact on CUNY SPS

The BS in Health Services Administration will be part of the CUNY SPS’s Health Information Management program area.
**Need and Justification**

**Program Need**
The rapidly changing structure and financing of healthcare, coupled with the increasing number of baby boomers and those with chronic conditions who will require healthcare services, will require current and future medical and health services managers to be prepared to deal with evolving integrated healthcare delivery systems, technological innovations, an increasingly complex regulatory environment, restructuring of work, and an increased focus on preventive care. These are part of the contributing factors to the 17% projected growth of the number of medical and health services managers from 2014 to 2024. These positions will need to be filled by individuals who hold the requisite experience and credentials, which typically includes a baccalaureate degree or higher in health administration, health management, nursing, public health administration, or business administration.

There is data to suggest, however, that a large number of incumbent workers in the healthcare field do not have the credentials necessary to move into such positions. 1199SEIU United Healthcare Workers East (1199SEIU), New York’s largest union for workers employed in private sector hospitals, nursing homes, mental health clinics, pharmacies, and home care and social service agencies, had 137,427 union members covered by the National Benefit Fund as of September 2014. Of those, 36,811 had attended CUNY at some point, of which 11,302 (31%) earned a CUNY degree. As of September 2014, there were 18,100 (13%) of those who had attended CUNY, but did not earn a degree and were not enrolled. Although some may have earned a degree elsewhere, this is a substantial number of individuals employed in the healthcare industry without a degree. This likely holds true for workers in non-1199SEIU organizations as well.

In addition, for incumbent workers who have an associate’s degree in a clinical field, a clinical credential, or a license, there is a great need to upgrade their education to obtain higher level positions within their own internal organizations.

One of the impediments to pursing a baccalaureate degree for this population is the availability of a program that is both relevant to their field and provided during times that these potential students are available. Because many are subject to shift work, and/or have family obligations, it is difficult to commit to a set schedule of classes typical of a face-to-face program. This program will be unique in that it will be fully online, and will provide courses particularly important in the health services industry of today, including human resource management, project management, accounting and budgeting, medical terminology, health law and ethics as well as the organization of today’s health care ecosystem.

**Comparable Programs**
There are two CUNY Senior Colleges that offer a B.S. in Health Services Administration or in Health Administration and one college that offers a concentration in Health Care Management, none of which are online. The programs at Lehman College and York College require a cumulative GPA of 2.5 or better before students may take the upper division courses, while the New York City College of Technology program requires applicants to already have an associate degree and licensure or certification in a clinical health science discipline or the full-time equivalent of two years’ employment in health care. Of the non-CUNY programs, one is online; however, the tuition is substantially higher than the CUNY rate.

The Program Comparison worksheet, which follows, shows the main points of difference between the CUNY SPS program and a variety of programs. The most significant differences include:

- **Cost:** The programs that are part of CUNY and SUNY are similarly priced, as well as the University of Central Florida.

When looking at the remainder of the programs, some are significantly more costly.

---


Online: The fully online programs listed in the worksheet, Southern New Hampshire University and the University of Central Florida, are competitively priced with our program.

Prerequisites: This program will not require applicants to have an AAS degree in a health science field and a license, which will provide an additional opportunity for students who wish to transfer without first completing the associate’s degree as well as those who have already started a career in healthcare.

Program Comparison

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program</th>
<th>Admission Requirements</th>
<th>Format</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City College of Technology</td>
<td>BS in Health Services Administration</td>
<td>AAS degree in a health science field and a license.</td>
<td>Face-to-face</td>
<td>CUNY tuition</td>
</tr>
<tr>
<td>Lehman College</td>
<td>BS in Health Services Administration</td>
<td>2.5 GPA</td>
<td>Face-to-face</td>
<td>CUNY tuition</td>
</tr>
<tr>
<td>York College</td>
<td>BS in Health Science, concentration in Health Care Management</td>
<td>2.5 GPA</td>
<td>Face-to-face</td>
<td>CUNY tuition</td>
</tr>
<tr>
<td>Long Island University, CW Post</td>
<td>BS in Health Care Administration</td>
<td>2.5 GPA, 24 credits</td>
<td>Face-to-face</td>
<td>$1,072/credit</td>
</tr>
<tr>
<td>Drexel University</td>
<td>BS in Health Services Administration</td>
<td>None.</td>
<td>Online</td>
<td>$479/credit</td>
</tr>
<tr>
<td>Stony Brook University</td>
<td>BS in Health Science, concentration in Health Care Management</td>
<td>2.0 GPA and 90 credits</td>
<td>Face-to-face</td>
<td>$270/credit</td>
</tr>
<tr>
<td>SUNY Brockport</td>
<td>BS in Healthcare Studies, Healthcare Administration Track</td>
<td>None</td>
<td>Face-to-face</td>
<td>$270/credit</td>
</tr>
<tr>
<td>Southern New Hampshire University</td>
<td>BS in Healthcare Administration</td>
<td>None</td>
<td>Online</td>
<td>$320/credit</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>BASc in Health Services Management</td>
<td>2.0 GPA and 45 credits</td>
<td>80% Online</td>
<td>$436/credit</td>
</tr>
<tr>
<td>University of Central Florida</td>
<td>BS in Health Services Administration</td>
<td>2.0 GPA</td>
<td>Online</td>
<td>$254.34/credit</td>
</tr>
</tbody>
</table>

Enrollment in Lehman’s BS in Health Administration, New York City College of Technology’s BS in Health Services Administration, as well as enrollment in Queensborough Community College’s A.S. in Health Sciences suggests that demand for these types of programs has been increasing.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program</th>
<th>Enrollment (fall)</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehman</td>
<td>BS in Health Administration</td>
<td>287</td>
<td>354</td>
</tr>
<tr>
<td>NYCCT</td>
<td>BS in Health Services Administration</td>
<td>216</td>
<td>209</td>
</tr>
<tr>
<td>York College</td>
<td>BS, Health Science</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Queensborough CC</td>
<td>AS, Health Sciences</td>
<td>1,057</td>
<td>1,054</td>
</tr>
</tbody>
</table>

7 The B.S. in Health Science offers an interdisciplinary approach of study for students seeking to enter the world of health care in a variety of ways. The major will allow for these students to pursue a rigorous course of study before selecting an area of concentration (Health Care Management or Pre-Health Professional Studies) that best suits their career and study interests.

8 The A.S. degree program in Health Sciences provides the preprofessional training (the first two years) for a broad spectrum of baccalaureate majors in the Health Sciences.

Proposal to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
Employment Opportunities for Program Graduates

Medical and health services managers is ranked seventh by U.S. News and World Report’s Best Business Jobs. According to the Bureau of Labor Statistics, medical and health services managers held about 333,000 jobs in 2014. This number is expected to grow by 17% between 2014 and 2024, which is significantly higher than the average growth rate for all occupations. In New York, there is a projected 1,190 openings annually for Medical and Health Services Managers through 2024.

The national median annual Health Services Manager salary is $107,326, as of January 30, 2017, with a range usually between $95,790 and $121,036. In New York, the median salary is $116,290, with an entry level average of $78,990 and an experienced level average of $157,710.

For those who wish to continue their education once completing this degree, students would be prepared to pursue a Masters in Health Administration or a related Master’s degree, which is increasingly required for senior level positions.

A sample of job postings may be found in the Appendix.

Recruitment

Target Student Population

1199SEIU, although the largest union for workers employed in private sector hospitals, nursing homes, mental health clinics, pharmacies, and home care and social service agencies, represents only 20% (approximately 200,000) of the over one million employees in health care and social assistance in the New York City, Long Island and Hudson Valley regions in 2016.

Thus, while initial recruitment will be targeted towards 1199SEIU members who do not yet have a college degree and who would like to improve their prospects for career advancement, recruitment will expand to all health care entities, with a primary emphasis on the over 400 hospitals and nursing homes in the New York City, Long Island and Hudson Valley regions.

<table>
<thead>
<tr>
<th>Region</th>
<th>Hospitals</th>
<th>Nursing Homes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson Valley</td>
<td>34</td>
<td>42</td>
<td>76</td>
</tr>
<tr>
<td>Long Island</td>
<td>23</td>
<td>79</td>
<td>102</td>
</tr>
<tr>
<td>New York City</td>
<td>59</td>
<td>173</td>
<td>232</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
<td><strong>294</strong></td>
<td><strong>410</strong></td>
</tr>
</tbody>
</table>


Proposal to Establish a Bachelor of Science in Health Services Administration

CUNY School of Professional Studies

Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017

Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
Recruitment will not only target those in non-clinical areas, but will also include disciplines such as Radiology Technicians, Radiotherapists, Respiratory Therapists, Surgical Technologists, Laboratory Technicians, and Medical Coders. Outreach will be made to CUNY community colleges that have these programs.

Marketing Plan
A broad-based recruitment plan will be developed by the academic director with support from the CUNY SPS marketing team. We will employ relationship marketing, contacting industry professional organizations and unions (e.g. 1199) through a combination of digital, print, and in-person channels.

We will begin marketing the program by hosting online information sessions for potential students. We will make these convenient for the working student by hosting these at both the lunch hour as well as in the evening. In addition to these online information sessions, we will host several face-to-face sessions. We will reach out to the local healthcare institutions, 1199SEIU, and CUNY community colleges to market all of the events.

Enrollment

Admissions Requirements
Applicants for bachelor degree programs at CUNY SPS must have a minimum of 24 earned credits from a regionally accredited institution, with a cumulative GPA of 2.5 or better.

Preferred applicants would hold a related associate degree with a minimum grade point average of 2.5 and licensure or certification in an allied health science discipline or the full-time equivalent of two years’ employment in a health care setting.

Transfer Credit:
All bachelor’s degree candidates are eligible to transfer up to 90 academic credits from previous educational institutions. Students must successfully complete at least 30 academic credits at CUNY SPS while matriculated for the degree.

During the transfer evaluation process, courses taken at other institutions are used to fulfill CUNY SPS requirements, where possible. The credit value of transferred courses is assigned to match the credit value of the equivalent course. Other acceptable forms of transfer credit include assessment of prior learning via portfolio evaluation; credit for college-level subject-area examinations such as CLEP, UExcel or DANTES/DSST; and credit for ACE-evaluated corporate or military training. Official transfer credit evaluations are made after a student is accepted and CUNY SPS has received final and official transcripts from all institutions attended.

Enrollment Projections

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>Fa</td>
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<tr>
<td>40</td>
<td>59</td>
<td>92</td>
<td>99</td>
<td>122</td>
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</table>

Detailed five-year enrollment projections are presented in Table 8 in the Appendix.
Curriculum

A mix of coursework from several disciplines is essential to achieving the learning outcomes needed to pursue a career in the field of health services administration. This includes coursework from Business, Health Information Management, Mathematics, Biology, and Communications. As a result, the proposed curriculum has been developed by leveraging courses from CUNY SPS’s catalog, along with three new courses.

Completion of the B.S. in Health Services Administration will require a total of 120 credits, distributed as follows. All courses are three credits, unless noted otherwise. All courses already exist in CUNY SPS except those marked with an asterisk.

<table>
<thead>
<tr>
<th>General Education – 39 credits</th>
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<tbody>
<tr>
<td>HSA Core – 54 credits</td>
</tr>
<tr>
<td>BIO 200 - Human Biology</td>
</tr>
<tr>
<td>BUS 305 - Accounting Fundamentals</td>
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<tr>
<td>CIS 101 - Computer Fundamentals and Applications</td>
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<tr>
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<td>PHE 200 - Introduction to Public Health</td>
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<td>PHIL 201 - Bioethics for Health Professions</td>
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<tr>
<td>PROM 210 - Project Management</td>
</tr>
<tr>
<td>RM 201 - Introduction to Research Methods</td>
</tr>
<tr>
<td>HSA Electives – 15 credits from the following</td>
</tr>
<tr>
<td>BIO 310 - Pathophysiology and Pharmacology</td>
</tr>
<tr>
<td>BUS 200 - Introduction to Business</td>
</tr>
<tr>
<td>BUS 306 - Managerial Accounting</td>
</tr>
<tr>
<td>BUS 325 - Principles of Management Information Systems</td>
</tr>
<tr>
<td>CM 333 - Corporate Communications</td>
</tr>
<tr>
<td>ECO 201 - Microeconomics</td>
</tr>
<tr>
<td>ECO 202 - Macroeconomics</td>
</tr>
<tr>
<td>HCA 300 - Urban Health Services and Institutions (4 credits)</td>
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<tr>
<td>HCA 301 - Urban Health Issues and Public Policy (4 credits)</td>
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<tr>
<td>HSA 350 – Special Topics in Health Services Administration</td>
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<tr>
<td>SPAN 110 - Spanish for Health Professions</td>
</tr>
<tr>
<td>LAS Electives – 12 credits</td>
</tr>
</tbody>
</table>

Progression Criteria
Progression through the program is based upon a student passing all HSA, HIM, and BUS courses with a minimum grade of C and an overall GPA of 3.0.
Course Descriptions

BIO 200 - Human Biology (3 credits)
Prerequisite: None
A one semester course in anatomy and physiology. Describes the organization of the human body. Provides and defines the terminology used to describe the location and function of anatomical structures. Outlines the basic chemical concepts essential for understanding physiological processes. Topics include: homeostasis, cells, the skeletal system, the muscular system, the circulatory system, the respiratory system, the digestive system, the reproductive system and the endocrine system.

BIO 310 - Pathophysiology and Pharmacology (3 credits)
Prerequisite: BIO 200
This course combines the study of human disease processes and treatments. The etiology and pathogenesis of diseases are discussed along with the application of diagnostic procedures and patient care. The pathology and underlying principles of the human systems are presented, along with characteristics of typical drugs, side effects, cautions, and interactions.

BUS 200 - Introduction to Business (3 credits)
Prerequisite: None
The purpose of this survey course is to develop a fundamental understanding of the role of business in society, providing valuable exposure to the major functional areas of business: the global business arena, management, finance, accounting, and marketing.

Note that this course is intended for non-business majors, as the first course in any business minor (for non-business majors), for students whose major is undecided but who have not yet taken business courses, or to give business elective transfer credit for a similar course taken elsewhere prior to study at the CUNY School of Professional Studies.

BUS 305 - Accounting Fundamentals (3 credits)
Prerequisite: Any 200-level math course
This course provides the fundamentals for the identification, measurement, and reporting of financial and economic events of enterprises and businesses. The accounting concepts and standards studied will be used in conjunction with accounting software, and focuses on such topics as assets, liabilities, the accounting cycle, inventory, internal controls, accounting receivables, cash flow statements, financial statements and corporate accounting.

BUS 306 - Managerial Accounting (3 credits)
Prerequisite: BUS 305
Organizations use accounting information for planning and controlling operations. Students develop a framework for measuring managerial performance through an analytical treatment of cost behavior under dynamic conditions by employing tools such as job and process costing and forecasting, operational budgeting and forecasting, activity-based costing, variable costing, cost estimation, cost-volume-profit analysis, balance sheets, cash flow, standard costing, differential costing, capital planning and projections, and variance analysis.

BUS 325 - Principles of Management Information Systems (3 credits)
Prerequisite: None
This course introduces the student to the use of management information systems as a business resource for achieving competitive advantage. Topics covered include: the major information technology (IT) applications used in business; the central role of databases and data warehouses; the importance of IT in the growth of e-commerce; the role of decision support systems and artificial intelligence; the IT infrastructure; the impact of outsourcing; information security. Case studies will be analyzed and discussed.
CIS 101 - Computer Fundamentals and Applications (3 credits)
Prerequisite: None
This course is an introduction to computers and their use in information processing. Topics include hardware and software concepts, elements of telecommunications, networks, and the Internet. Emphasis is on using computer programs such as word processing, spreadsheets, and data base management, as well as Internet applications.

CM 333 - Corporate Communications (3 credits)
Prerequisite: None
This course is an overview of the various areas where media professionals must perform in a corporate or institutional environment to promote a brand or product, to specific, varied publics. In many ways the skills and practices of traditional Public Relations apply to Corporate Communications, however the nuances of dealing with different publics that the corporate communicator need to interact with, require careful study and consideration.

The importance of learning and mastering the skills involved in branding, promoting and protecting a brand - whether it is a breakfast cereal, an athlete or a candidate for president - are increasingly important and valuable in the current state of every organization and industry.

COM 210 - Writing at Work (3 credits)
Prerequisite: ENG 101 or equivalent
An overview of professional workplace writing, including audience assessment, preparation for writing and research, design, editing, and collaborative writing. Models of effective writing and practice in preparing business correspondence, reports, instructions, proposals, presentations, and web content develop competence in creating documents routinely required of professionals in organizations. Relevant for a wide variety of professions.

ECO 201 – Microeconomics (3 credits)
Prerequisite: None
An investigation of the microeconomy as seen through the eyes of the individual consumer and firm. Economic concepts, including profits, employment and resources via supply and demand, elasticity, utility, costs, and market structures are applied to significant contemporary economics problems.

ECO 202 – Macroeconomics (3 credits)
Prerequisite: None
This course is a study of factors determining national output, income, employment, and prices; the impact of government spending, taxation, and monetary policy; the banking system; economic growth; and international trade.

HCA 300 - Urban Health Services and Institutions (4 credits)
Prerequisite: None
This course will use New York City as the context within which to examine a variety of urban health services and institutions, reviewing their historical development, financing mechanisms and regulatory and legislative oversight. Service provision in private and public institutions will be compared and contrasted, and the impact of services examined within a wide range of health contexts, including HIV/AIDS services, mental health, disabilities services, reproductive services, elder care, child health, and more. The course will also analyze how class, race/ethnicity, gender and sexuality affect provision of and access to services. Policies that influence the delivery of services and the functioning of institutions, such as the development of managed care, will be critically analyzed.

HCA 301 - Urban Health Issues and Public Policy (4 credits)
Prerequisite: None
This course will present a range of key health issues and problems that confront urban communities in the U.S. Students will examine the impact of these issues on the health of urban residents, with attention to variations in impact related to race, ethnicity, gender and class. Issues include environmental health, homelessness, urban substance abuse, access to care among disabled health care populations, infectious diseases, immigrant health, urban violence, occupational health for
urban workers, among others. Policies that have been enacted or proposed to address each of these issues will be presented and critically evaluated throughout the course.

HIM 200 - Medical Terminology (3 credits)
*Prerequisite: None*
This course focuses on the development of medical terminology. In addition, students learn to articulate concepts of body systems, components within individual systems, and relationships between systems, for example, the division of the body into body cavities and planes. The remainder of the course applies the terminology of body systems to issues of disease, diagnostic and therapeutic tests, and procedures.

HIM 205 - Health Care Delivery Systems (3 credits)
*Prerequisite: None*
This course provides an overview of the history of healthcare organizations in the United States, and where appropriate, touches on features of other global systems so that students develop a broader perspective of how healthcare can and cannot be delivered effectively and efficiently. It focuses on the organization of healthcare systems, healthcare operations, accreditation standards, and applicable federal and state regulatory and licensing requirements. The course also covers the location, use, and application of resources for ongoing operation, as well as current trends in healthcare service delivery (e.g., e-health).

HIM 332 - Quality and Performance Improvement (3 credits)
*Prerequisite: HIM 205 and MATH 215*
The course surveys the evolution of quality management in healthcare focusing on managing critical resources and risk. Additional topics include quality control methods as well as the importance of utilizing case management and critical path analysis. Students will discuss the importance of and methods for measuring outcomes (e.g., patient surveys, data sets). Performance improvement methods, research guidelines, data presentation, and corresponding regulations are introduced.

HIM 360 - Privacy and Security of Health Information (3 credits)
*Prerequisite: HIM 205*
This course will outline the terms and concepts related to the privacy and security of health information. Students will be introduced to topics such as threat identification, data security mechanisms, and business continuity. They will further explore the requirements of the Health Insurance Portability and Accountability Act (HIPAA), privacy and security rules as well as other laws and organizations that regulate health information practice.

HIM 365 - Management in Health Care (3 credits)
*Prerequisite: HIM 205, ENG 102 OR COM 210*
This course introduces the principles of managing people and other organizational resources. Students will learn how to plan, organize, lead, and evaluate human resources. Topics include: management and leadership, motivations, team building, communication, productivity, performance appraisal, recruitment, job development and training.

HIM 370 - Organizational Development and Planning (3 credits)
*Prerequisite: HIM 332*
This course introduces strategic planning and organizational development. The interplay of strategic leadership, management, and planning will be discussed. Other topics include organizational assessment and benchmarking, change management, and leading enterprise-level projects. The course also covers accounting principles, budget processes, cost benefit analysis, and healthcare finance.

*HSA 350 – Special Topics in Health Services Administration*
*Prerequisite: HSA 369 and HIM 370, additional pre-requisites may vary depending on topic*
This seminar style course supports students to stay on top of the current trends in the field of health services administration. Special topics could include: changes in the healthcare funding landscape, changes in health care technology, legal or compliance issues.
**HSA 369 - Health Information Technology (3 credits)**
*Prerequisite: CIS 101 and HIM 205*
Information systems hold great promise for improving healthcare quality and lowering skyrocketing healthcare costs. From applying best practices in information systems to challenges in health information technology (HIT), students are prepared to enter the health technology field. Topics include an introduction to HIT standards, health-related data structures, and software applications and enterprise architecture in healthcare and public health organizations. The workflow and processes embedded in the healthcare industry are discussed in depth. Considerable time is spent exposing students to emerging trends in healthcare technologies, such as scanning and imaging devices that produce data. Case studies are included to ensure that students have a broad exposure to technology in healthcare. Students gain hands-on experience with open source HIT systems.

**HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care (3 credits)**
*Prerequisite: HIM 205, HIM 360*
Legal concepts, regulatory agency requirements, and compliance and their interaction in the health care ecosystem will be explored in depth. Decision-making models are used to address and understand complex health care issues.

**HSA 499 - Health Services Administration Capstone (3 credits)**
*Prerequisite: HIM 369, HIM 370*
All students are expected to complete a senior research project under the direction of a faculty mentor. This capstone project will expand upon and integrate work completed in previous courses and provide students with an opportunity to apply methods of scholarly and/or action research to issues and problems of their own choosing.

**MATH 215 - Introduction to Statistics (3 credits)**
*Prerequisite: None*
Introduces the basic principles of statistics and probability, with an emphasis on understanding the underlying concepts, real-world applications, and the underlying story that the numbers tell. Uses Microsoft Excel’s statistical functions to analyze data. Provides an introduction to probability, descriptive statistics, hypothesis testing, and inferential statistics.

**PHE 200 - Introduction to Public Health (3 credits)**
*Prerequisite: None*
This course introduces students to the basic tenets of public health. The course provides a history of public health, an introduction to the five core disciplines of public health (Epidemiology, Biostatistics, Environmental Health, Social and Behavioral Health, and Health Policy and Management), and an overview of the field’s primary functions such as assessment, policy development, and assurance. Students are introduced to the impact of information technology on the field.

**PHIL 201 - Bioethics for Health Professions (3 credits)**
*Prerequisite: None*
An exploration of complex contemporary ethical problems from healthcare, the environment, and bioethics. Issues include problems of human experimentation and informed consent, end of life issues, reproductive technology, genetic privacy, abortion, allocation of resources, and humans’ relationship with their environment. Classical and contemporary ethical theories, moral theories, and the fundamentals of scientific integrity will be applied to make principled, defensible, moral judgments.

**PROM 210 - Project Management (3 credits)**
*Prerequisite: CIS 101 or IS 200*
Students learn to plan, organize, lead, and evaluate projects-large and small-to ensure that requirements are delivered on time and within budget. Topics include the essentials of initiating a project, defining requirements, scheduling tasks, managing scope, working in cross-functional teams, communicating effectively, resolving conflict, and closing a project. While budget development is beyond the scope of this course, students will be expected to understand simple project budgets. In addition to traditional task lists and timelines, students must generate project charters, change notices, progress reports, and project closing documents.
RM 201 - Introduction to Research Methods (3 credits)
Prerequisite: None
This course provides an introduction to research approaches characteristic of the social and behavioral sciences. These involve observations of behavior and other strategies that result in descriptive accounts, including field studies, content analysis, and surveys. Statistical methods for analyzing descriptive data, including measures of central tendency and variability and graphing will be included, along with questions about validity and research ethics. The course engages students in the planning, conducting, reporting and evaluation of research.

SPAN 110 - Spanish for Health Professions (3 credits)
Prerequisite: None
Intended for students who have no background in the Spanish language, this course facilitates effective communication between patients and their healthcare providers (nurses, doctors, medical staff), through emphasis on basic, practical language needed to communicate with Spanish-speaking patients and their families in various settings. Building basic language fluency at the same time as medical terminology with cultural competency woven throughout, students will learn to gather and share basic information like greetings, goodbyes, patient intake, discussion of symptoms, location of pain and injuries, body parts, numbers, time, doses, and units of measure. Focus is on learning and becoming comfortable with basic medical Spanish phrases and medical Spanish vocabulary.

Articulation Agreement
An Articulation Agreement has been executed with Guttman Community College’s A.A. in Business Administration. The agreement is included in the appendices.

Support for Student Retention and Progress towards Completion
CUNY SPS has developed an extensive set of student services, beginning at the point of inquiry and designed to maximize student retention and success and promote efficient completion of degree requirements. The proposed program expects to build upon these services by providing:
- Individualized advisement on course selection that takes into account the full set of demands on the student’s time and their career and academic goals;
- Career and further academic planning guidance beginning in their first semester, delivered by the Career Services office and faculty.
- An interactive orientation to online study and to the mechanics of using Blackboard, the program’s content delivery system;
- Ongoing assessment of the foundation skills that underlie academic and professional success;
- Access to training in the use of software tools required in courses and in the professional workplace, along with helpdesk services;
- Online library services and training in the skills underlying information literacy; and,
- Full financial aid services.
Curricular Map

<table>
<thead>
<tr>
<th>Course Code and Title</th>
<th>Meets Learning Outcome</th>
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<tbody>
<tr>
<td>BIO 200 - Human Biology</td>
<td>X</td>
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<tr>
<td>BUS 305 - Accounting Fundamentals</td>
<td>X</td>
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<tr>
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<tr>
<td>RM 201 - Introduction to Research Methods</td>
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<tr>
<td>PLOs met with required coursework</td>
<td>3 4 3 4 10 6 10</td>
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1. Define the role of supervisors, managers, directors, and administrators in health services organizations.
2. Demonstrate entry-level management skills to plan, organize, direct and control the function and processes of a health service organization.
3. Apply budget information and financial analysis to making decisions within health service organizations.
4. Evaluate laws and policy regulations as well as apply appropriate legal decisions to the administration of health services organizations.
5. Exercise proficient communication skills including written and oral communication.
6. Engage in formal presentations and demonstrate technology competency with various electronic media.
7. Integrate the disciplines of science, mathematics, humanities, critical thinking, information literacy, and project management to the study of the healthcare ecosystem.
Faculty

Role of Faculty in Development of Program:
All but three courses already exist at CUNY SPS. The new courses were developed by Ellen Karl, Academic Director of the Health Information Management programs, and Janet Mohlenhoff, Clinical Professor of Health Information Management.

Teaching Faculty for the Program:
All faculty teaching in the program will either have higher level experience in the health care space or in business. All healthcare related courses will be taught by faculty having had a Director, AVP, or VP position that would uniquely qualify them for instructing our students for their future career in healthcare. All business faculty will be vetted by the Business program prior to teaching their assigned courses.

Faculty Development
Faculty new to teaching online and/or with CUNY SPS are required to attend and pass with a minimum grade of 85% CUNY SPS’ “Preparation for Teaching Online: A Foundational Workshop for CUNY Faculty.”

Provided by CUNY SPS’ Office of Faculty Development and Instructional Technology, this two-week asynchronous, instructor-facilitated workshop is designed to prepare faculty for teaching online and/or hybrid classes. The workshop models effective design and facilitation skills and addresses design issues, pedagogical approaches to teaching online and hybrid courses, as well as organization and management of an online class. It also provides an opportunity for faculty to become more familiar with the environment of the Blackboard LMS from both a student and instructor perspective. The total time on task is estimated at an average of 10 hours for participants. There are no face-to-face meetings required, but additional assistance (in person or online) is available.

This foundational workshop has the following objectives, expressed in terms of outcomes for faculty participants:
- To gain first-hand experience in and appreciation of the needs of an online learner;
- To become familiar with the basic operations and features of a Blackboard classroom from both student and instructor perspectives;
- To identify the salient differences and requirements between face-to-face, hybrid and fully online courses;
- To identify some widely accepted best practices for online and hybrid teaching;
- To apply to one’s own course the necessary instructional design, organizational and facilitation skills, and overall communication strategies as modeled in the certification workshop;
- To reflect on past teaching approaches and begin to devise likely strategies for effective assignments and assessments;
- To demonstrate basic competencies in producing the essential elements of an online syllabus and schedule, creating an effective announcement, and providing an ice-breaking introductory topic;
- To design engaging discussion prompts that will result in active discussion and stimulate critical thinking;
- To share ideas concerning online and hybrid teaching with CUNY colleagues within an online community of learners; and
- To become familiar with templates and processes needed in order to be ready to teach online.

CUNY SPS’ Office of Faculty Development and Instructional Technology (OFDIT) also provides online tutorials and resource materials, as well as one-to-one assistance, for CUNY SPS faculty.

An important emphasis in preparing both course developers and trainers is specific strategies for creating and responding to written assignments. The program aims to develop student competence in writing not only in standard academic forms, but also for the purposes they encounter in the professional workplace. A writing handbook will be required for incoming students and used throughout the curriculum. Instructors will learn how to reference sections of the handbook as they are creating writing assignments and later giving feedback to students.

The proposed program will also take advantage of CUNY SPS’ Faculty Peer Mentoring Program (FPMP) for instructors hired to teach in the program online. FPMP is a research-based, formal peer mentoring program, pairing an experienced faculty member with a new CUNY SPS faculty member for the period of one semester. An essential element of this program
is that the peer mentor does not serve in any supervisory or evaluation role in relation to his/her mentee. The program, facilitated by OFDIT, is designed to provide new faculty with the appropriate learning models and skills to teach online effectively at CUNY SPS, offer social and informational support for new faculty, strengthen new faculty members’ connections to the online faculty community at CUNY SPS, and help bridge the gap between initial orientation or training in Blackboard and online teaching and actual management of one’s own online course.

The program features a Mentoring Manual for Mentors and Mentees that provides detailed information on procedures, expectations, and a schedule for each stage of the semester along with suggestions for fostering a rewarding mentoring relationship. All forms and guidelines in the Manual focus on best practices for online teaching and the process of self-reflection to improve one’s teaching.

Academic Policies
The proposed program will implement procedures intended to ensure that students are fully responsible for all assignments and that the highest standards of academic integrity are maintained. Such policies and procedures are a necessary component of all academic programs, regardless of the form of course delivery.

The program will address the issue of academic integrity, which includes, but is not restricted to plagiarism, through several mechanisms:

- **Clearly worded policy statement:** The program will introduce entering students to the policies regarding academic integrity during their initial orientation and then will have these policy statements included in the syllabus of every course. The policy statement will include a description of the kinds of behaviors that violate academic integrity standards, the procedures that will be followed when violations are thought to have occurred, and the consequences for students should violations be confirmed. In general, all students are bound by the academic policies established by the School of Professional Studies and published in the School’s website, academic handbook, and annual bulletin.

- **Detailed guidelines for students on how to avoid violations of academic integrity policies:** In some cases, students include unattributed sections of text, graphics, and other non-original elements in assignments without realizing that this is not allowed. To avoid such incidents, the program will develop and disseminate a detailed guide for students that includes, among other things, online sites where students can submit drafts of assignments before they are given to the instructor and where sections that are copied from other sources are identified.

- **Teaching practices and training:** Instructors will be introduced to the program policies with regard to academic integrity when they begin teaching in the program and will be expected to disseminate reminders to their students each semester. Additionally, instructors will be given guidelines on specific ways to structure assignments and tests so that the possibilities for plagiarism and cheating are minimized.

We are confident that these procedures, taken together, will ensure a program culture in which academic integrity is widely understood and valued and where violations are minimized and relatively easy to detect. We will continue to monitor the professional literature in this area so that our efforts are consistent with current best practice.
Support Services and Resources

In delivering resources to students in the BS in Health Services Administration, CUNY SPS will build on its current infrastructure, which supports dozens of degree and certificate programs as well as a portfolio of noncredit programs (both online and in-class). The student, faculty, and administrative services currently offered by CUNY SPS can readily be extended to this new program.

CUNY SPS has advisors who are trained to work with undergraduate and graduate students, and all services, including the registrar, bursar, and financial aid offices — available online and in person — likewise have the capacity to handle the additional students.

1. **Academic Advisement:** A dedicated advisor will provide advisement from pre-application through registration, completion of degree and graduation. In addition, students receive advisement from faculty teaching their courses and interact with each other and with faculty throughout the semester. This ongoing contact ensures that there are sufficient informal opportunities to discuss academic issues. Each student is issued a CUNY email account facilitating timely communications among students, instructors, advisors, and administrative staff.

2. **Instructional Technology:** The core educational technology infrastructure is CUNY’s enterprise Blackboard course management system. Blackboard supports the faculty’s requirement to share documents, have group discussions, assign collaborative projects, and respond to individual student questions or assignments.

Students are required to complete an online orientation designed to ensure an applied, experiential knowledge of the learning management system and the highly interactive pedagogy practiced by CUNY SPS online programs.

The CUNY SPS Help Desk is available to help students and faculty with any technology issues that may arise from 9:30am to 9:00pm Monday – Thursday, 9:30am – 5:00pm on Friday, and 9:30am to 4:30pm on Saturday. More than simply addressing problems as they arise, the Help Desk takes a proactive stance towards support by providing constituents with how-to guides and videos, live training, and regular updates on technology changes.

Other support services include admissions, registration, and grade reporting, which are all available online or in-person. Web-based tools, used by well-trained administrative staff, complement this support structure. Everything from admissions and financial aid to course registration and payment is available online. The majority of these services are paid for as part of the School’s general operating budget. Expenses other than personnel include the library, equipment, software and services, marketing, and supplies. The majority of library costs are shared over all CUNY SPS programs. Likewise, a base allocation is provided for equipment, software and services, supplies, and marketing.

3. **Library:** CUNY SPS partners with Baruch College’s Newman Library to deliver high quality access to online and in-person services. Through this partnership, the Newman Library provides CUNY SPS students and faculty with access to several hundred online databases and information resources in print and electronic formats. Users have access seven days a week to the library’s on-site computing facilities as well as remote access from off-campus locations to thousands of full-text journals, newspapers, and books. A Web-based reference service, in which librarians answer questions via “text chat,” is available 24 hours a day, seven days a week. Beyond the Newman Library, CUNY SPS students also have access to other libraries across the CUNY system.

4. **Writing Support and Tutoring:** Online writing and tutoring support is provided to CUNY SPS students by a consortium of diverse institutions. Students can choose to speak with a tutor through a live interactive Web conference, on the telephone, using text messaging, or via e-mail. Students may ask questions about specific subject areas, or, if they need assistance writing a paper, they may submit a written draft for a tutor to review. Tutors will not edit, correct, proofread, or rewrite papers. They will, however, coach students to consider the clarity of their work, point out inconsistencies in arguments, and identify problems with grammar. Likewise, if students need additional support in math or statistics, they are encouraged to work with a tutor. Should students need help with research projects, they can choose to work with Research and Information Literacy tutors, all of whom are doctoral students at CUNY.
5. **Career Services:** CUNY SPS’s Career Services Office helps both current students and alumni seek full-time employment, think through a career change, or explore internship opportunities. Additionally, the School is implementing programs to address on-the-job issues, professional development, and career assessment needs. The Career Services Office incorporates a mix of the latest technology and digital communications to offer a host of online tools and workshops that meet the diverse needs of this unique community. In addition to traditional methods of placement counseling, the Optimal Resume online career management program is available. This program provides extensive support for resumes, cover letters, interview practice, portfolios, etc., and places career resources within reach of any students or alumni seeking career assistance.

**Evaluation**

**Governance and Oversight**

The Governing Plan of CUNY SPS requires the appointment of the academic director of each degree program to serve on the Governing Council. In addition, each program will have appointed to the Governing Council full-time and consortial faculty elected by and in number equal to 25% of such faculty in each approved degree program who shall also serve for staggered three-year terms. This ensures that each program has representation on the school’s Governing Council.

**Program Oversight**

Oversight of the program will be led by the Dean of CUNY SPS, the Associate Deans, the Assistant Dean, the Academic Director, and appointed faculty for the program.

1. **Program Outcomes Assessment:** All degree programs are required to identify programmatic outcomes, which include student learning outcomes. Consistent with the requirements of regional accreditation agencies, the focus of evaluation will be on direct assessment of student achievement of learning outcomes using authentic evidence of student work. Assessment will be accomplished by establishing a program assessment cycle and instruments to evaluate student achievement of program competencies. Indirect assessment measures include student course evaluations, the Noel-Levitz survey of student engagement, and grade distributions. In addition to measures of academic achievement, data on retention, progress toward degree, degree completion, and post-graduation outcomes will be tracked as key indices of program success.

2. **Course Outcomes:** Learning outcomes are defined for each course and provide key reference points for course design and assessment. Courses will use a combination of evaluative devices, both formative and summative, to provide frequent measures of and feedback on student learning progress within courses. Faculty will provide students with written reports before mid-term, spelling out those areas where students can improve their performance.

3. **Satisfactory Progress toward degree:** The proposed program will conduct academic review sessions twice each year. These are sessions in which program leaders, along with academic support staff, review students’ records and make decisions with regard to both individual students’ status and program policy and practice.

4. **Instructor Performance:** Consistent with the practice of other CUNY SPS programs, the program will track instructor effectiveness closely. For courses taught online, each instructor’s readiness for online teaching will be assessed well before the beginning of each term, and necessary training will be required, both in the areas of pedagogy and use of technology tools. Each new instructor will be assigned an experienced online instructor as a mentor, with the mentor providing close oversight and guidance. In addition to reports from the mentors, each instructor—online or in-person—will have his or her course and teaching practices formally evaluated each term via a Peer Teaching Evaluation. Additionally, the extent to which students are successful in mastering course-specific objectives will be an important measure of the accomplishments of each instructor.
Cost Assessment

Budget Tables

Budget information is contained in the Appendices as follows:

- Table 5: New Resources
- Table 6: Projected Revenue
- Table 7: Five-Year Financial Projections Worksheet
- Table 8: Five-Year Revenue Projections Worksheet
- Table 9: Five-Year Enrollment and Course Section Projections
APPENDICES
Course Syllabi
Note: Syllabi are only included for courses that do not yet exist at CUNY SPS.
CUNY School of Professional Studies

Program: Health Services Administration
Course Name and Number: HSA 350 - Special Topics in Health Services Administration
Credits: 3 undergraduate credits
Prerequisite: HSA 369 and HIM 370, additional pre-requisites may vary depending on topic

Course Description:
This seminar style course supports students to stay on top of the current trends in the field of health services administration. Special topics could include: changes in the healthcare funding landscape, changes in health care technology, legal or compliance issues.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Explore specialized topics related to the degree
- Examine emerging issues and problems in depth
- Realize more flexibility and options in the field of study

Students will be required to: Requirements will vary, depending on the topic and instructional methodology.

Program Learning Outcomes/Competencies addressed by the course:
These will vary depending on the topic to be offered, readings, course activities and requirements.

Course Grading and Requirements:
These will vary, depending on the topic, and will conform to the CUNY SPS grading scale for undergraduate programs.

<table>
<thead>
<tr>
<th>Quality of Performance</th>
<th>Letter Grade</th>
<th>Range (%)</th>
<th>Quality Points /GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent – work is of exceptional quality</td>
<td>A</td>
<td>93-100</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>A-</td>
<td>90-92.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Good – Work is above average</td>
<td>B+</td>
<td>87-89.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>B</td>
<td>83-86.9</td>
<td>3</td>
</tr>
<tr>
<td>Below Average</td>
<td>B-</td>
<td>80-82.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Poor</td>
<td>C+</td>
<td>77-79.9</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>70-76.9</td>
<td>2</td>
</tr>
<tr>
<td>Failure</td>
<td>F</td>
<td>&lt; 70</td>
<td>0</td>
</tr>
</tbody>
</table>

Course Reading and Other Materials
These will vary, depending on the project or learning plan developed, and will meet the standards for graduate-level study.

ACCESSIBILITY AND ACCOMMODATIONS: The CUNY School of Professional Studies is firmly committed to making higher education accessible to students with disabilities by removing architectural barriers and providing programs and support services necessary for them to benefit from the instruction and resources of the University. Early planning is essential for many of the resources and accommodations provided. Please see: https://sps.cuny.edu/student-services/disability-services

ONLINE ETIQUETTE AND ANTI-HARASSMENT POLICY: The University strictly prohibits the use of University online resources or facilities, including Blackboard, for the purpose of harassment of any individual or for the posting of any material that is scandalous, libelous, offensive or otherwise against the University’s policies. Please see: http://catalog.sps.cuny.edu/content.php?catoid=2&navoid=205

ACADEMIC INTEGRITY: Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the educational mission of the City University of New York and the students’ personal and intellectual growth. Please see: https://sps.cuny.edu/about/dean/policies/academic-and-student-policies/academic-integrity

STUDENT SUPPORT SERVICES: If you need any additional help, please visit Student Support Services: https://sps.cuny.edu/student-services

Proposal to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
CUNY School of Professional Studies

Program: Health Services Administration
Course Name and Number: HSA 369 - Health Information Technology
Credits: 3 undergraduate credits
Prerequisite: CIS 101, HIM 205

Course Summary:
Information systems hold great promise for improving healthcare quality and lowering skyrocketing healthcare costs. From applying best practices in information systems to challenges in health information technology (HIT), students are prepared to enter the health technology field. Topics include an introduction to HIT standards, health-related data structures, and software applications and enterprise architecture in healthcare and public health organizations. The workflow and processes embedded in the healthcare industry are discussed in depth. Considerable time is spent exposing students to emerging trends in healthcare technologies, such as scanning and imaging devices that produce data. Case studies are included to ensure that students have a broad exposure to technology in healthcare. Students gain hands-on experience with open source HIT systems.

Student Learning Outcomes:
At the end of this course, students are able to:
- Describe general functions, purposes, and benefits of health information systems in various healthcare settings;
- Describe the federal initiatives and other significant developments that have influenced the evolution and adoption of health information systems;
- Compare/contrast different types of health information systems in terms of their ability to meet the needs of various types of healthcare enterprises;
- Explain how electronic health records affect patient safety, quality care, efficiency, productivity, and reporting/documentation mechanisms;
- Propose strategies to minimize major barriers to the adoption of electronic health records.
- Explain how the principles of healthcare data exchange and healthcare data standards relate to patient care, productivity, and data analysis; and
- Describe emerging healthcare technologies and the data that they produce;
- Evaluate, using case studies, the impact of the use of electronic health records on providers and patients.

Students are required to:
- Review and analyze any new and innovative products proposed in the healthcare market;
- Analyze and discuss case studies on electronic health records and other component systems;
- Complete a team project related to the use of information systems in a hospital environment; and
- Access and deploy an electronic health record system and analyze the workflow in a practice setting.

Program Learning Outcomes Addressed by the Course:
(5) Exercise proficient communication skills including written and oral communication.
(6) Engage in formal presentations and demonstrate technology competency with various electronic media.
(7) Integrate the disciplines of science, mathematics, humanities, critical thinking, information literacy, and project management to the study of the healthcare ecosystem.

Assignments
- Discussion Boards 25%
- Assignments 25%
- Neehr Perfect Labs 25%
- Midterm 10%
- Final Exam 15%
Grading

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Ranges %</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93 - 100</td>
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<tr>
<td>A-</td>
<td>90 - 92.9</td>
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<td>B-</td>
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<td>2.7</td>
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<tr>
<td>C+</td>
<td>77 - 79.9</td>
<td>2.3</td>
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<tr>
<td>C</td>
<td>73 - 76.9</td>
<td>2</td>
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<tr>
<td>C-</td>
<td>70 - 72.9</td>
<td>1.7</td>
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<td>D</td>
<td>60 - 69.9</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</td>
<td>0</td>
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Required Text(s): Required readings will be available either as links, PDFs in the course site or through the Library as e-reserves and in digital journals. Extensive use of the Curriculum Materials developed by the Office of the National Coordinator, Department of Health and Human Services is utilized in this course.

Required Resource: Subscription to Neehr Perfect; a simulated EHR.

Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>General Topic</th>
<th>Reading/Discussions</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is Health Informatics?</td>
<td>Read all assigned internet readings. Discussion board: Think about the different disciplines addressed in the readings. How are the disciplines of information management, information technology, and informatics related? How do they differ?</td>
<td>1. Consider the types of roles and responsibilities of health informaticians. Why are health informaticians critical to a health care organization, the community, and public health? Answer these questions in a one page paper. 2. Subscribe to Neehr Perfect EHR and complete Neehr Perfect Level I Scavenger Hunt: EHR Orientation.</td>
</tr>
<tr>
<td>2</td>
<td>Health Information Systems Overview</td>
<td>Read all assigned internet readings. Discussion Board; Think about the different types of information systems in terms of their ability to support the requirements of a health care enterprise. Pick one and discuss with your classmates how the system supports the requirements of a health care enterprise.</td>
<td>1. Perform an Internet search of health care organizations and locate one which is using at least two types of social media to achieve its goals. Write a two-page paper stating your findings. Each review should include a description of the organization, the types of social media used, and how they are using it. 2. Complete Level II Scavenger Hunt - Essentials Skills &amp; Usability</td>
</tr>
<tr>
<td>3</td>
<td>Electronic Health Records, Part I</td>
<td>Read all assigned internet readings. Discussion Board: Think about how the use of an EHR affects patient care safety, efficiency of care practices, and patient outcomes. Answer the following questions: • What are the major benefits of an electronic record to the patient, the clinician, the health care facility, and the public? • What are the major barriers to implementing an EHR in health care facilities? • What steps might be taken to promote the benefits and overcome barriers to widespread adoption of EHRs?</td>
<td>1. Research and identify the efforts going on in your state to further advance the adoption of EHRs. Write a two-page paper describing the results of your investigation. Include your opinion on how likely the efforts will be successful and your rationale for this conclusion. 2. Level III - Scavenger Hunt - The Power of the EHR</td>
</tr>
</tbody>
</table>
| 4 | **Electronic Health Records, Part II** | Read all assigned internet readings. Discussion Board: Consider the connection of EHRs to the Health Information Exchange (HIE) and the Nationwide Health Information Network (NHIN) initiatives. Answer the following questions:  
• What role does the EHR play in HIE?  
• What is the impact of HIE and NHIN on health care delivery and the practice of health care providers? | 1. Level IV Scavenger Hunt – Final Evaluation  
|---|---|---|---|
| 5 | **Computerized Provider Order Entry (CPOE)** | Read all assigned internet readings. Discussion Board: What are the advantages of a CPOE application coupled with a clinical decision support system? | Search the Internet and find one article describing the adoption of CPOE within a health care setting. Summarize the article and address the following questions:  
• What are the key points of the article?  
• What lessons learned does it describe? Prepare a report that discusses your findings |
| 6 | **Clinical Decision Support Systems, Part I** | Read all assigned internet readings. Discussion Board: Think about the following scenario. Post your thoughts to the questions and respond to two classmates.  
A nurse on the unit in an acute care hospital scans the bar codes of a patient’s wristband and the medication each time a medication is administered. On occasion an alert that the medication about to be administered is contra-indicated for the patient is shown. Answer the following questions and respond to two classmates.  
• Why is this scenario an example of clinical decision support?  
• What would be a benefit of the clinical decision support?  
• What is the role of clinical decision support in this situation?  
• Why is clinical decision support important at the point of care? | Neehr Perfect Activity: Clinical Decision through Orders |
| 7 | **Clinical Decision Support Systems, Part II** | Read all assigned internet readings. Discussion Board: Search the internet for a current article about CDSS. Provide the link to the article and summarize the article for your peers. Respond to two classmates. | Neehr Perfect Activity: Implementing Clinical Decision Support |
| 8 | **Midterm** | Read all assigned internet readings. | Watch the YouTube video - VA Telehealth: Real-Time Access To Care, https://www.youtube.com/watch?v=JJvmsMZoBzw  
As you listen, identify how the VA telehealth program supports clinical care for veterans and determine the economic benefit. Formulate an opinion on whether or not the program is effective from the patient and the provider standpoint. Write up your findings and judgment in a two-page paper. |
| 10 | Medical Imaging Systems | Read all assigned internet readings. Discussion Board: Read the article, [https://www.itnonline.com/article/top-trends-medical-imaging-technology](https://www.itnonline.com/article/top-trends-medical-imaging-technology). Where do you think mobile technology along with medical imaging systems will go in the future? Comment on the article and respond to two classmates. | Watch the YouTube video - Radiology Demo Video [http://www.youtube.com/watch?v=2i_7xLYCRU&feature=related] As you listen, write down the radiology imaging procedure before and then after the implementation of the PACS. What economic and technological factors were realized when the PACS was adopted? What was described as the future of radiology? Write up your findings in a paper and submit to your instructor. |
| 11 | Consumer Health Informatics | Read all assigned internet readings. Discussion Board: Do you or a family member have a personal health record (PHR)? Why or why not? Post about your personal experience with PHRs. Respond to two classmates. | Search the Internet for a personal health record (PHR) site and a site that is specifically set up with the consumer in mind. Review these sites with the consumer in mind to (a) experience their functionality, (b) assess their user-friendliness, and (c) assess their implications for consumer, health care providers, and health information systems. Write a paper describing the results of your investigation. Include your opinion on how these sites may impact health information systems. |
| 12 | Administrative, Billing, and Financial Systems | Read all assigned internet readings. Discussion Board: The Administrative Information Systems include many financial, support, and administrative systems such as the master patient index, decision support system, registration and admitting, the hospital information system, and the financial system. Select one system (not CDSS) and research and post your findings in 300 words or less. Respond to two classmates. | Watch the YouTube video - Medical Records Text Analytics Solution for Health Plans [http://www.youtube.com/watch?v=7c4kxYnuBNK] As you listen, prepare a document that describes the data analysis and trending process explained in the video. Decide whether or not, based on the description and what was covered in the reading, the critical elements to integrate clinical and financial data were met. Post your opinion in the discussion thread started by the instructor. |
| 13 | Master Patient Index and the Unique Patient Identifier | Read all assigned internet readings. Discussion Board: Read the article, [http://journal.ahima.org/2016/03/21/petition-calls-for-unique-patient-identifier-solution/](http://journal.ahima.org/2016/03/21/petition-calls-for-unique-patient-identifier-solution/). Discuss with your classmates any personal experience you, a friend, or family member may have had with misidentification in a health care setting. | What is a Master Patient Index? How is this related to a unique patient identifier? Compare and contrast these terms in the form of a one-page paper. |

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CUNY School of Professional Studies

Program: Health Services Administration
Course Name and Number: HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care
Credits: 3 undergraduate credits
Prerequisite: HIM 205, HIM 360

Course Summary:
Legal concepts, regulatory agency requirements, and compliance and their interaction in the health care ecosystem will be explored in depth. Decision-making models are used to address and understand complex health care issues.

Student Learning Outcomes:
At the end of this course, students are able to:
- Analyze policies and procedures to ensure organizational compliance with regulations and standards;
- Acquire knowledge and develop skills needed to manage the processes required compliance programs in healthcare organizations;
- Explain components, benefits, and value of compliance program to healthcare facility.
- Describe the economic, legal, ethical, and regulatory aspects of healthcare delivery.
- Explain differences between law, regulation, policy, and third-parties.
- Define various concepts of consent, forms of consent and advance directives.
- Analyze current healthcare regulations;
- Identify the top ten healthcare regulations affecting the industry today.

Students are required to:
- Review and analyze any new regulations proposed in the healthcare market;
- Analyze and discuss case studies on compliance and legal issues in healthcare

Program Learning Outcomes Addressed by the Course:
(4) Evaluate laws and policy regulations as well as apply appropriate legal decisions to the administration of health services organizations.
(5) Exercise proficient communication skills including written and oral communication.
(6) Engage in formal presentations and demonstrate technology competency with various electronic media.
(7) Integrate the disciplines of science, mathematics, humanities, critical thinking, information literacy, and project management to the study of the healthcare ecosystem.

Assignments:
- Assignments 30%
- Discussion Boards 25%
- Exams (3 – 15% each) 45%

Grading

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Ranges %</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<tr>
<td>C-</td>
<td>70 - 72.9</td>
<td>1.7</td>
</tr>
<tr>
<td>D</td>
<td>60 - 69.9</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</td>
<td>0</td>
</tr>
</tbody>
</table>

Required Text(s): Required readings will be available either as links, PDFs in the course site or through the Library as e-reserves and in digital journals.
**Course Outline:**

<table>
<thead>
<tr>
<th>Week</th>
<th>General Topic</th>
<th>Reading/Discussion</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compliance in Healthcare: Establishing a compliance program</td>
<td>Read all assigned internet readings. Discussion Board: Review this YouTube video regarding compliance. <a href="https://www.youtube.com/watch?v=sbeE-JCZlzo">https://www.youtube.com/watch?v=sbeE-JCZlzo</a>. What aspects of compliance do you think are most important? Respond to two classmates.</td>
<td>1. Complete an internet search. Identify three compliance monitors that are a part of a healthcare compliance program. Provide your source and summarize the monitor and the agency requiring the compliance. 2. Subscribe to the OIG HHS e-mail list found here, <a href="https://oig.hhs.gov/">https://oig.hhs.gov/</a>.</td>
</tr>
<tr>
<td>2</td>
<td>Identifying compliance &amp; ethics risks</td>
<td>Read all assigned internet readings. Discussion Board: Review the most recent OIG enforcement actions from your e-mail subscription. Comment on one of the enforcement actions and respond to two classmates.</td>
<td>Review the scenarios at <a href="https://oig.hhs.gov/fraud/enforcement/cmp/pds.asp">https://oig.hhs.gov/fraud/enforcement/cmp/pds.asp</a>. Select one scenario. Comment on how your selected scenario could have been handled by the provider to prevent such an action.</td>
</tr>
<tr>
<td>3</td>
<td>Conducting audits and enforcing a compliance program.</td>
<td>Read all assigned internet readings. Discussion Board: How does an organization ensure that their compliance program is being enforced? Post your thoughts and respond to two classmates.</td>
<td>Research the “Seven Component Framework” for auditing and monitoring. Review at least two references and cite them in your one page paper describing this process.</td>
</tr>
<tr>
<td>4</td>
<td>Benchmarking a compliance program against industry practices</td>
<td>Read all assigned internet readings. Discussion Board: How does benchmarking in a compliance program assist the organization?</td>
<td>Search the internet for benchmarks for the health care industry. Identify five benchmarks and indicate why they are important to the organization. Be sure to cite your sources.</td>
</tr>
<tr>
<td>6</td>
<td>Regulatory Issues in Healthcare: Review the origins and complexity</td>
<td>Read all assigned internet readings. Discussion Board: Why is the healthcare industry so complex today? How has history helped to foster this environment? Post your thoughts and respond to two classmates.</td>
<td>Review this video about the newest healthcare legislation, MACRA, <a href="https://www.youtube.com/watch?v=wiJy93HjiWE">https://www.youtube.com/watch?v=wiJy93HjiWE</a>. Define the components of MACRA and how this is effecting healthcare today.</td>
</tr>
<tr>
<td>7</td>
<td>Navigating the regulatory maze</td>
<td>Read all assigned internet readings. Discussion Board: How does a healthcare organization ensure that they are meeting their regulatory obligations? Post your thoughts and respond to two classmates.</td>
<td>Using the assigned reading and your research on the internet, define, describe, and distinguish between licensure, accreditation, and certification.</td>
</tr>
<tr>
<td>8</td>
<td>Determining the consequences of the regulatory system</td>
<td>Read all assigned internet readings. Discussion Board: What has the regulatory system done to the healthcare environment? Post your thoughts and respond to two classmates.</td>
<td>Who does what in terms of healthcare regulators? Make a comprehensive list for your State. You must include at least ten entities. Provide your sources and define and describe each entity mentioned.</td>
</tr>
<tr>
<td>9</td>
<td>Identifying the top ten issues in regulatory</td>
<td>Read all assigned internet readings. Discussion Board: TBD with current</td>
<td>Research on the internet the top ten regulatory issues in healthcare today. Write</td>
</tr>
<tr>
<td>Course Number</td>
<td>Course Title</td>
<td>Assignments</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Preparing for future regulatory healthcare issues</td>
<td>Read all assigned internet readings. Discussion Board: TBD with current events</td>
<td>1. TBD with events current to when this course is running.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Exam</td>
</tr>
<tr>
<td>11</td>
<td>Legal Issues in Healthcare: Describe the impact of Federal and State legal</td>
<td>Read all assigned internet readings. Discussion Board: TBD with current events</td>
<td>TBD with events current to when this course is running.</td>
</tr>
<tr>
<td></td>
<td>trends on healthcare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Identify health care professionals and legal–ethical Issues</td>
<td>Read all assigned internet readings. Discussion Board: As a future Health Services Administrator, what legal or ethical issue concerns you most (and might keep you up at night?) Post your thoughts and respond to two classmates.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Identify the physician’s ethical and legal issues.</td>
<td>Read all assigned internet readings. Discussion Board: Read the following article, <a href="http://www.americanbar.org/content/newsletter/publications/aba_health_esource_home/aba_health_law_esource_1303_tucker.html">http://www.americanbar.org/content/newsletter/publications/aba_health_esource_home/aba_health_law_esource_1303_tucker.html</a> What has been your (or your family’s) experience with informed consent? Do you think you were adequately informed? Post your thoughts and respond to two classmates.</td>
<td>Review the American Medical Association’s recently revised Code of Ethics, <a href="https://www.ama-assn.org/delivering-care/ama-code-medical-ethics">https://www.ama-assn.org/delivering-care/ama-code-medical-ethics</a>. There are 11 chapters. Select one that interests you. Summarize the chapter and indicate whether you believe this is a current issue that the AMA should have in their Code of Ethics.</td>
</tr>
<tr>
<td>14</td>
<td>What are the patient rights and responsibilities?</td>
<td>Read all assigned internet readings. Discussion Board: Are your rights being communicated to you at your health care provider? Were you aware of your rights as a patient? Post your thoughts and respond to two classmates.</td>
<td>Case Study: Patient Rights</td>
</tr>
<tr>
<td>15</td>
<td>Final Exam</td>
<td></td>
<td>Exam</td>
</tr>
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</table>

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**STUDENT SUPPORT SERVICES:** If you need any additional help, please visit Student Support Services: [https://sps.cuny.edu/student-services](https://sps.cuny.edu/student-services)
Proposed to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

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CUNY School of Professional Studies

Program: Health Services Administration
Course Name and Number: HSA 499 – Health Services Administration Capstone
Credits: 3 undergraduate credits
Prerequisite: HIM 369, HIM 370

Course Summary:
All students are expected to complete a senior research project under the direction of a faculty mentor. This capstone project will expand upon and integrate work completed in previous courses and provide students with an opportunity to apply methods of scholarly and/or action research to issues and problems of their own choosing.

Student Learning Outcomes:
At the end of this course, students are able to:
- Synthesize all prior coursework and apply that knowledge to this capstone experience.
Students are required to:
- Propose a research project to the student’s faculty mentor;
- Under the mentor’s guidance, complete a research project applying previously gained knowledge from their coursework.

Program Learning Outcomes Addressed by the Course:
(5) Exercise proficient communication skills including written and oral communication.
(6) Engage in formal presentations and demonstrate technology competency with various electronic media.
(7) Integrate the disciplines of science, mathematics, humanities, critical thinking, information literacy, and project management to the study of the healthcare ecosystem.

Assignments:
Research Project:
- 25% for outline
- 25% for draft
- 50% for final report

Grading

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<tr>
<td>A</td>
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<td>87 - 89.9</td>
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<td>B-</td>
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<td>C+</td>
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<td>73 - 76.9</td>
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Required Text(s): TBD

Course Outline: This pace of this course will be determined between the mentor and the student.

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STUDENT SUPPORT SERVICES: If you need any additional help, please visit Student Support Services: https://sps.cuny.edu/student-services
Table 1a: Undergraduate Degree Program Schedules

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<th>§ Indicate academic calendar type:</th>
<th>x Semester</th>
<th>Quarter</th>
<th>Trimester</th>
<th>Other (describe)</th>
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**B.S. in Health Services Administration - FT Schedule**

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<tr>
<td>General Education - English Composition</td>
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<tr>
<td>General Education - Mathematical and Quantitative Reasoning</td>
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<tr>
<td>General Education - Life and Physical Sciences</td>
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<tr>
<td>General Education - Creative Expression</td>
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<tr>
<td>General Education - Individual and Society</td>
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**Year 1 - Fall**

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<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
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</thead>
<tbody>
<tr>
<td>General Education - World Cultures and Global Issues - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>General Education - U.S. Experience in its Diversity - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>General Education - English Composition - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>General Education - Scientific World - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>CIS 101 - Computer Fundamentals and Applications</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
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**Year 1 - Spring**

<table>
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<tr>
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<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 205 - Health Care Delivery Systems</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>MATH 215 - Introduction to Statistics</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>COM 210 - Writing at Work</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>ENG 101 or equivalent</td>
</tr>
<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>TBD</td>
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<tr>
<td>BIO 200 - Human Biology</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
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<td><strong>Term credit total:</strong></td>
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**Year 2 - Fall**

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHE 200 - Introduction to Public Health</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>HIM 200 - Medical Terminology</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
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<tr>
<td>PHIL 201 - Bioethics for Health Professions</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
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<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
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<td>Maj</td>
<td>New</td>
<td>TBD</td>
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<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
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<td>Maj</td>
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**Year 2 - Spring**

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
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<th>Prerequisite(s)</th>
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<tbody>
<tr>
<td>PROM 210 - Fundamentals of Project Management</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
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<td>CIS 101 or IS 200</td>
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<tr>
<td>BUS 305 - Accounting Fundamentals</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
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<td>Any 200-level math course</td>
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<tr>
<td>HIM 360 - Privacy and Security of Health Information</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>HIM 205</td>
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<tr>
<td>HSA 369 - Health Information Technology</td>
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<td>Maj</td>
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<td>CIS 101, HIM 205</td>
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<tr>
<td>HIM 332 - Quality and Performance Improvement</td>
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<td>HIM 205 and MATH 215</td>
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### Year 3 – Fall

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<td>HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care</td>
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<td>HIM 205, HIM 360</td>
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<tr>
<td>BUS 200 - Introduction to Business</td>
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<td>RM 201 - Introduction to Research Methods</td>
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<td>HIM 365 - Management in Health Care</td>
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<td>HIM 205, ENG 102 OR COM 210</td>
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Term credit total: 15

### Year 3 - Spring

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<td>CM 333 - Corporate Communications</td>
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<td>BUS 325 - Principles of Management Information Systems</td>
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<td>ECO 201 - Microeconomics</td>
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<td>HSA 499 - Health Services Administration Capstone</td>
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Term credit total: 15

Program Totals: 120 75 54
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<th>Maj</th>
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<th>Prerequisite(s)</th>
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<tr>
<td>General Education - English Composition</td>
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<td>3</td>
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<tr>
<td>General Education - Life and Physical Sciences</td>
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<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>General Education - Creative Expression</td>
<td>3</td>
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<td>New</td>
<td>None</td>
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<tr>
<td>General Education - Individual and Society</td>
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<td>Electives</td>
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Term credit total: 30

Year 1 - Fall

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<tr>
<td>General Education - World Cultures and Global Issues - TBD by student</td>
<td>3</td>
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<td>General Education - U.S. Experience in its Diversity - TBD by student</td>
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<td>Maj</td>
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<td>General Education - English Composition - TBD by student</td>
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Term credit total: 9

Year 1 - Spring

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<tr>
<td>General Education - Scientific World - TBD by student</td>
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<td>CIS 101 - Computer Fundamentals and Applications</td>
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Term credit total: 6

Year 2 - Fall

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<tr>
<td>HIM 205 - Health Care Delivery Systems</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
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<tr>
<td>MATH 215 - Introduction to Statistics</td>
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Term credit total: 6

Year 2 - Spring

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<th>New</th>
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<tbody>
<tr>
<td>BIO 200 - Human Biology</td>
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<td>3</td>
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<tr>
<td>COM 210 - Writing at Work</td>
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<td>ENG 101 or equivalent</td>
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Year 3 - Fall

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<th>Prerequisite(s)</th>
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<tr>
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<td>Maj</td>
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<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Term credit total: 6

Year 3 - Spring

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHE 200 - Introduction to Public Health</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>TBD</td>
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</table>

Term credit total: 6

Year 4 - Fall

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education - SPS Common Core Option - TBD by student</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>TBD</td>
</tr>
<tr>
<td>PHIL 201 - Bioethics for Health Professions</td>
<td>3</td>
<td>3</td>
<td>Maj</td>
<td>New</td>
<td>None</td>
</tr>
</tbody>
</table>

Term credit total: 6
<table>
<thead>
<tr>
<th>Year 4 – Spring</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>PROM 210 - Fundamentals of Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 305 - Accounting Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 5 - Fall</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>BUS 200 - Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>HIM 360 - Privacy and Security of Health Information</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Year 5 - Spring</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>HSA 369 - Health Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>HIM 332 - Quality and Performance Improvement</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 6 - Fall</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>CM 333 - Corporate Communications</td>
<td>3</td>
</tr>
<tr>
<td>RM 201 - Introduction to Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 6 - Spring</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>HIM 370 - Organizational Development and Planning</td>
<td>3</td>
</tr>
<tr>
<td>HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 7 - Fall</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>BUS 306 - Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>HIM 365 - Management in Health Care</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 7 - Spring</th>
<th>Check course classification(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number &amp; Title</td>
<td>Cr</td>
</tr>
<tr>
<td>ECO 201 - Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HSA 499 - Health Services Administration Capstone</td>
<td>3</td>
</tr>
<tr>
<td>BUS 325 - Principles of Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Term credit total:</td>
<td>9</td>
</tr>
</tbody>
</table>

Program Totals:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>120</td>
</tr>
<tr>
<td>LAS</td>
<td>75</td>
</tr>
<tr>
<td>Maj</td>
<td>54</td>
</tr>
</tbody>
</table>
## Table 2: Full-Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ellen Karl, Academic Director</td>
<td>HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care HSA 499 - Health Services Administration Capstone</td>
<td>30%</td>
<td>MBA, Concentration in Health Administration; University of Miami, Coral Gables, FL</td>
<td>Registered Health Information Administrator Certified Health Data Analyst Fellow, American Health Information Management Association</td>
</tr>
<tr>
<td>Janet Mohlenhoff, Clinical Professor of Health Information Management.</td>
<td>HIM 360 - Privacy and Security of Health Information</td>
<td>25%</td>
<td>Masters, Public Administration Alfred University</td>
<td>Registered Health Information Administrator Certified Coding Specialist Certified Tumor Registrar</td>
</tr>
</tbody>
</table>
### Table 3: Part-Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Program Courses to be Taught</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications: list related certifications/ licenses; occupational experience; scholarly contributions, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridget Doman, Adjunct Assistant Professor</td>
<td>HIM 365 - Management in Health Care</td>
<td>Masters Public Administration; Alfred University</td>
<td>Registered Health Information Administrator (RHIA)</td>
</tr>
<tr>
<td>Diana Skarbek, Adjunct Lecturer</td>
<td>HIM 332 - Quality and Performance Improvement</td>
<td>Masters of Health Services Administration Program, St. Joseph's College, Standish Maine</td>
<td>Registered Health Information Administrator (RHIA), Certified Coding Specialist, AHIMA Approved ICD-10-CM/PCS Trainer.</td>
</tr>
<tr>
<td>Ira Stolzenberg, Adjunct Lecturer</td>
<td>BUS 305 - Accounting Fundamentals</td>
<td>MBA Taxation, Baruch College; BS Accounting, Brooklyn College</td>
<td>Certified Public Accountant (CPA)</td>
</tr>
<tr>
<td>James Brown, Adjunct Professor</td>
<td>BIO 200 - Human Biology</td>
<td>Ph.D. Microbiology Waksman Institute of Microbiology, joint degree: Rutgers University and the University of Medicine and Dentistry of New Jersey</td>
<td>High-complexity Clinical Laboratory Director (HCLD)</td>
</tr>
<tr>
<td>Joan Mosely, Adjunct Lecturer</td>
<td>MATH 215 - Introduction to Statistics</td>
<td>M.S. Education, Capella University; B.S. Mathematics, Virginia Commonwealth University.</td>
<td>NYS Teacher of Mathematics, 7-12, Permanent; NYS School District Leader; Executive Director; Office of Adult and Continuing Education for New York City Dep't. of Education; symposium presenter.</td>
</tr>
<tr>
<td>Kate Moss, Adjunct Lecturer</td>
<td>COM 210 - Writing at Work</td>
<td>Ph.D. Candidate, English, CUNY Graduate Center; M.Phil. English, CUNY Graduate Center</td>
<td>Freelance writer; website developer; Communication Fellow; Morton Cohen Dissertation Year Travel Award, English Department, CUNY GC; numerous conference presentations and lectures.</td>
</tr>
<tr>
<td>Kerry Moore, Adjunct Lecturer</td>
<td>HIM 200 - Medical Terminology</td>
<td>Master of Health Informatics and Information Management; University of Tennessee</td>
<td>Registered Health Information Administrator (RHIA)</td>
</tr>
<tr>
<td>Marsha Faden, Adjunct Lecturer</td>
<td>HIM 370 - Organizational Development and Planning</td>
<td>MBA, Desales University</td>
<td>Registered Health Information Administrator (RHIA); Certified Compliance Professional, Health Care Fraud and Abuse Institute, Rockville, MD</td>
</tr>
<tr>
<td>Instructor</td>
<td>Course</td>
<td>Degree Details</td>
<td>Additional Information</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Michael Fagan</td>
<td>PROM 210 - Project Management</td>
<td>M.S. Telecommunications Management: Stevens Institute of Technology</td>
<td>Master's Certificate in Project Management; Stevens Institute of Technology; PMP Certification</td>
</tr>
<tr>
<td>Nina Hien, Adjunct Associate Professor</td>
<td>RM 201 - Introduction to Research Methods</td>
<td>Ph.D. Cultural Anthropology; Cornell University; M.A. Cultural Anthropology, New School for Social Research; M.A. Journalism, University of Missouri–Columbia</td>
<td></td>
</tr>
<tr>
<td>Robert Robinson, Adjunct Assistant Professor</td>
<td>PHIL 201 - Bioethics for Health Professions</td>
<td>Ph.D. Political Philosophy, University of Georgia; M.A. Philosophy, Florida State University</td>
<td></td>
</tr>
<tr>
<td>Stephanie Carey, Adjunct Lecturer</td>
<td>PHE 200 - Introduction to Public Health</td>
<td>Master's in Public Health, University of Medicine &amp; Dentistry of New Jersey</td>
<td></td>
</tr>
<tr>
<td>Steven Faden, Adjunct Lecturer</td>
<td>HSA 369 - Health Information Technology</td>
<td>MBA in Healthcare Quality Management, Desales University</td>
<td>Registered Health Information Administrator (RHIA); Certified Professional in Health Quality (CPHQ)</td>
</tr>
</tbody>
</table>
Table 4: Faculty to be Hired

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th>No. of New Positions</th>
<th>Minimum Qualifications</th>
<th>Expected Course Assignments</th>
<th>Expected Hiring Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>None at this time</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Table 5: New Resources

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$75,808</td>
<td>$198,124</td>
<td>$202,087</td>
<td>$206,129</td>
<td>$210,251</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$38,409</td>
<td>$56,196</td>
<td>$80,240</td>
<td>$95,795</td>
<td>$111,812</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$99,384</td>
<td>$101,371</td>
<td>$103,399</td>
<td>$105,467</td>
<td>$107,576</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Library</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
</tr>
<tr>
<td>Equipment</td>
<td>$2,000</td>
<td>$2,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<td>Laboratories</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (OTPS)</td>
<td>$20,700</td>
<td>$20,850</td>
<td>$21,005</td>
<td>$21,164</td>
<td>$21,328</td>
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<tr>
<td>Capital Expenditures</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Other</td>
<td>$8,500</td>
<td>$8,500</td>
<td>$8,500</td>
<td>$8,500</td>
<td>$8,500</td>
</tr>
<tr>
<td>Total all</td>
<td>$247,301</td>
<td>$389,541</td>
<td>$417,730</td>
<td>$439,554</td>
<td>$461,967</td>
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### Table 6: Projected Revenue

<table>
<thead>
<tr>
<th>Revenues</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02. From New Sources</td>
<td>$217,679</td>
<td>$424,973</td>
<td>$551,007</td>
<td>$634,670</td>
<td>$721,531</td>
</tr>
<tr>
<td><strong>03. Total</strong></td>
<td>$217,679</td>
<td>$424,973</td>
<td>$551,007</td>
<td>$634,670</td>
<td>$721,531</td>
</tr>
<tr>
<td>State Appropriation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05. From New Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>06. Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other Revenue</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08. From New Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>09. Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>11. From New Sources</td>
<td>$217,679</td>
<td>$424,973</td>
<td>$551,007</td>
<td>$634,670</td>
<td>$721,531</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$217,679</td>
<td>$424,973</td>
<td>$551,007</td>
<td>$634,670</td>
<td>$721,531</td>
</tr>
</tbody>
</table>
Table 7: Five-Year Financial Projections for Program Worksheet

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIRECT OPERATING EXPENSES</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Academic Director - 30%</td>
<td>$30,697</td>
<td>$31,311</td>
<td>$31,937</td>
<td>$32,575</td>
<td>$33,227</td>
</tr>
<tr>
<td>Clinical Professor - 100% FTE</td>
<td>$0</td>
<td>$80,000</td>
<td>$81,600</td>
<td>$83,232</td>
<td>$84,897</td>
</tr>
<tr>
<td>Clinical Professor - 25% FTE</td>
<td>$19,508</td>
<td>$19,898</td>
<td>$20,296</td>
<td>$20,702</td>
<td>$21,116</td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (51.0%)</td>
<td>$25,604</td>
<td>$66,916</td>
<td>$68,254</td>
<td>$69,620</td>
<td>$71,012</td>
</tr>
<tr>
<td><strong>Sub Total F/T Faculty</strong></td>
<td>$75,808</td>
<td>$198,124</td>
<td>$202,087</td>
<td>$206,129</td>
<td>$210,251</td>
</tr>
<tr>
<td>Part Time Faculty Actual Salaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjunct Faculty</td>
<td>$33,990</td>
<td>$53,731</td>
<td>$75,009</td>
<td>$88,774</td>
<td>$102,949</td>
</tr>
<tr>
<td>Part Time Faculty Actual Fringe Benefits (13%)</td>
<td>$4,419</td>
<td>$6,985</td>
<td>$9,751</td>
<td>$11,541</td>
<td>$13,383</td>
</tr>
<tr>
<td><strong>Sub Total P/T Faculty</strong></td>
<td>$38,409</td>
<td>$60,716</td>
<td>$84,760</td>
<td>$100,315</td>
<td>$116,332</td>
</tr>
<tr>
<td>Full Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Director</td>
<td>$65,817</td>
<td>$67,133</td>
<td>$68,476</td>
<td>$69,846</td>
<td>$71,242</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (51%)</td>
<td>$33,567</td>
<td>$34,238</td>
<td>$34,923</td>
<td>$35,621</td>
<td>$36,334</td>
</tr>
<tr>
<td><strong>Sub Total F/T Staff</strong></td>
<td>$99,384</td>
<td>$101,371</td>
<td>$103,399</td>
<td>$105,467</td>
<td>$107,576</td>
</tr>
<tr>
<td>Part Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (13%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Sub Total P/T Staff</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>LIBRARY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Resources</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (51%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (13%)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Sub Total Library</strong></td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
</tr>
<tr>
<td><strong>EQUIPMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Hardware</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
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<td>Other (list separately)</td>
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<td>Intellectual Property (course development)</td>
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Table 8: Five-Year Revenue Projections for Programs Worksheet

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<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>PT</td>
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<tr>
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<tr>
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<tr>
<td>PT</td>
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<td>Cohort #10</td>
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<td>39</td>
<td>28</td>
<td>25</td>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>

Assumptions:
1. Tuition based on projected rate.
2. Enrollment and graduation figures are based on available retention and graduation rates at CUNY SPS.
3. New cohort size based on the following: Year one, fall enrollment target is 40 students, spring target is 30 students. In year two, a 15% increase from previous fall is expected for new fall students, and 5% increase for spring students. From there on, there is an anticipated new cohort enrollment increase of 3%.
Table 9: Five-Year Enrollment and Course Section Projections

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1st Term</td>
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<td>3rd Term</td>
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</tr>
<tr>
<td>Full-Time</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>20</td>
<td>25</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Part-Time</td>
<td>32</td>
<td>47</td>
<td>74</td>
<td>80</td>
<td>97</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Full time section seats*</td>
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<td>47</td>
<td>76</td>
<td>78</td>
<td>101</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>94</td>
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<tr>
<td>Part time section seats*</td>
<td>64</td>
<td>94</td>
<td>147</td>
<td>160</td>
<td>194</td>
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<td>TOTAL SEATS</td>
<td>96</td>
<td>141</td>
<td>223</td>
<td>238</td>
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<tr>
<td>Taught by Clinical Professors</td>
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<tr>
<td>Taught by Adjuncts</td>
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<td>6</td>
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<td>7</td>
<td>9</td>
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<tr>
<td>Adjuncts per year</td>
<td>8</td>
<td>12</td>
<td>18</td>
<td>21</td>
<td>25</td>
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</table>

Full time seats calculated at four seats per student. Part time seats calculated at two seats per student.
ARTICULATION AGREEMENT FORM

A. SENDING AND RECEIVING INSTITUTIONS

Sending College: Gutman Community College
Program: Business Administration
Degree: Associate of Arts (A.A.)

Receiving College: CUNY School of Professional Studies
Program: Health Services Administration
Degree: Bachelor of Science (B.S.)

B. ADMISSION REQUIREMENTS FOR SENIOR COLLEGE PROGRAM

Graduates of the A.A. in Business Administration degree from Gutman Community College (GCC) will qualify for admission into the CUNY School of Professional Studies (CUNY SPS) Bachelor of Science degree in Health Services Administration if they have maintained a minimum overall GPA of 2.5 and are in good academic standing at GCC. Applicants must have a grade of C or better in freshman composition, its equivalent, or a higher-level English course. Applicants will follow the standard admissions process, which includes completing a transfer application.

Total transfer credits granted toward the baccalaureate degree: 60

Total additional credits required at the senior college to complete baccalaureate degree: 60

Total credits required to complete the baccalaureate degree: 120
C.-transfer-credit-awarded

GCC graduates who complete the Associate in Arts (A.A.) degree in Business Administration will receive 60 credits toward the Bachelor of Science (B.S.) degree in Health Services Administration at CUNY SPS.

<table>
<thead>
<tr>
<th>Common Core</th>
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</thead>
<tbody>
<tr>
<td>Required Core</td>
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</tr>
<tr>
<td>ENGL 103: Composition I</td>
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<tr>
<td>ENGL 203: Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 103: Statistics (or MATH 103a and MATH 103b)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 122: Introduction to Biology: Life in New York City</td>
<td>3</td>
</tr>
<tr>
<td>Flexible Core</td>
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<tr>
<td>LASC 101: City Seminar I</td>
<td>3</td>
</tr>
<tr>
<td>LASC 102: City Seminar II</td>
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<tr>
<td>LASC 200: The Arts in New York City</td>
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<tr>
<td>SOSC 111: Ethnographies of Work I</td>
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</tr>
<tr>
<td>CHEM 110: Introduction to Chemistry</td>
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<tr>
<td>SOSC 113: Ethnographies of Work II</td>
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</table>

| Total Common Core | 30 |

Program Curriculum Requirements

<table>
<thead>
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<tbody>
<tr>
<td>ACCT 121: Principles of Accounting I (ACC 171 in major)</td>
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<tr>
<td>ACCT 123: Principles of Accounting II (ACC 272 in major)</td>
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<tr>
<td>BUSI 102: Introduction to Business</td>
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</tr>
<tr>
<td>BUSI 201: Business Law and Ethics (BBA 336 in concentration option)</td>
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<tr>
<td>ECON 201: Macroeconomics (ECO 166 in major)</td>
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<tr>
<td>ECON 203: Microeconomics (ECO 167 in major)</td>
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<tr>
<td>ECON 204: Contemporary Economic Issues</td>
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<tr>
<td>INFT 203: Introduction to Management Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>MATH 100: College Algebra &amp; Trigonometry*</td>
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</tr>
<tr>
<td>MATH 201: Precalculus* (MAT 172 in major)</td>
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</tr>
</tbody>
</table>

| Total Program Curriculum Credits                                    | 30  |
| Total Program Credits                                                | 60  |

*Students with advanced standing in Mathematics may take approved liberal arts electives.

GCC Total Program Requirements: 60
Total Credits Transferred from GCC to CUNY SPS: 60
### D. SUMMARY OF TRANSFER CREDITS FROM GCC AND CREDITS TO BE COMPLETED AT SPS

<table>
<thead>
<tr>
<th></th>
<th>Total Credits for the Baccalaureate</th>
<th>Transfer Credits from GCC</th>
<th>Credits Satisfied with Common Core</th>
<th>Credits to be Completed at SPS</th>
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<td>Major Electives</td>
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<td><strong>Total</strong></td>
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### E. COURSE EQUIVALENCIES

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<tr>
<td>ACCT 121: Principles of Accounting I</td>
<td>BUS 305 - Accounting Fundamentals Required</td>
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<td>ACCT 223: Principles of Accounting II</td>
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<td>BUSI 102: Introduction to Business</td>
<td>BUS 200 - Introduction to Business Major elective</td>
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<tr>
<td>ECON 201: Macroeconomics</td>
<td>ECO 202 - Macroeconomics Major elective</td>
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<td>ECON 203: Microeconomics</td>
<td>ECO 201 - Microeconomics Major elective</td>
</tr>
<tr>
<td>INFT 203: Introduction to Management Information Systems</td>
<td>BUS 325 - Principles of Management Information Systems Major elective</td>
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<tr>
<td>BUSI 201: Business Law and Ethics</td>
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<tr>
<td>ECON 204: Contemporary Economic Issues</td>
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<td>MATH 215 - Introduction to Statistics Required</td>
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<tr>
<td>MATH 120: College Algebra &amp; Trigonometry OR MATH 201: Precalculus</td>
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<tr>
<td>MATH 201: Precalculus OR LAS Elective</td>
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Free Electives
F. SENIOR COLLEGE REQUIREMENTS FOR THE BACCALAUREATE DEGREE

Students will be required to take the following courses at CUNY SPS after completing the A.A. in Business Administration GCC. Courses with an asterisk will not be required by students who have fulfilled the course equivalency at GCC, as outlined in section E.

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<thead>
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<th>Courses</th>
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<td><strong>Required Major Requirements</strong></td>
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<tr>
<td>Core</td>
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<tr>
<td>BIO 200 - Human Biology</td>
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<tr>
<td>BUS 305 - Accounting Fundamentals*</td>
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<td>CIS 101 - Computer Fundamentals and Applications</td>
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<td>COM 210 - Writing at Work</td>
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</tr>
<tr>
<td>HIM 200 - Medical Terminology</td>
<td>3</td>
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<td>HIM 205 - Health Care Delivery Systems</td>
<td>3</td>
</tr>
<tr>
<td>HIM 302 - Quality and Performance Improvement</td>
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<tr>
<td>HIM 360 - Privacy and Security of Health Information</td>
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<tr>
<td>HIM 365 - Management in Health Care</td>
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<tr>
<td>HIM 370 - Organizational Development and Planning</td>
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<td>HSA 359 - Health Information Technology</td>
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<tr>
<td>HSA 450 - Compliance, Regulatory, and Legal Issues in Health Care</td>
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<tr>
<td>HSA 499 - Health Services Administration Capstone</td>
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<tr>
<td>MATH 215 - Introduction to Statistics*</td>
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<tr>
<td>PHE 200 - Introduction to Public Health</td>
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<td>PHIL 201 - Bioethics for Health Professions</td>
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<td>PROM 210 - Project Management</td>
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<td>RM 201 - Introduction to Research Methods</td>
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<tr>
<td>BUS 200 - Introduction to Business*</td>
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<tr>
<td>BUS 325 - Principles of Management Information Systems*</td>
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<tr>
<td>ECO 201 - Microeconomics*</td>
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<td>ECO 202 - Macroeconomics*</td>
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<tr>
<td>BIO 310 - Pathophysiology and Pharmacology</td>
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<td>BUS 306 - Managerial Accounting</td>
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<td>CM 333 - Corporate Communications</td>
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<tr>
<td>HCA 300 - Urban Health Services and Institutions</td>
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<tr>
<td>HCA 301 - Urban Health Issues and Public Policy</td>
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<td>SPAN 110 - Spanish for Health Professions</td>
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<tr>
<td><strong>Electives – 18, 15 satisfied with GCC courses</strong></td>
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<tr>
<td><strong>Total Number of Credits to be Completed at CUNY SPS</strong></td>
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</tr>
<tr>
<td><strong>Total Credits Transferred from GCC</strong></td>
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<tr>
<td><strong>Total Credits Required for the Baccalaureate Degree</strong></td>
<td>120</td>
</tr>
</tbody>
</table>
G. ARTICULATION AGREEMENT FOLLOW-UP PROCEDURES

1. Procedures for reviewing, updating, modifying or terminating agreement:

   When either of the degree programs involved in this agreement undergoes a change, the agreement will be reviewed and revised accordingly by a representative from each institution.

2. Procedures for evaluating agreement, i.e., tracking the number of students who transfer under the articulation agreement and their success:

   The CUNY Institutional Research Database will be used to track all transfer students, including their performance (credit accumulation and GPA) and persistence (retention and graduation).

3. Sending and receiving college procedures for publicizing agreement, e.g., college catalogs, transfer advisers, Websites, etc.:

   This articulation agreement will be publicized on the GCC and CUNY SPS College websites. Transfer advisers at GCC will promote this agreement with eligible students.

H. Additional Information (e.g., financial aid, transfer scholarships)

Transfer students are eligible to apply for financial aid that is normally available to other junior standing students.

Students who register for a minimum of 12 credits per semester are eligible for all federal and state grant programs for which they meet income eligibility requirements.

Effective Date: Spring 2018
Proposal to Establish a Bachelor of Science in Health Services Administration
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

Signatures

Guttman Community College
Dr. Howard Wach
Vice President for Academic Affairs and Provost
5/8/17

CUNY School of Professional Studies
Dr. George O'Reilly
Associate Dean of Academic Affairs
5/8/17

Dr. Patricia Price
Dean of Academic Affairs
5/9/17

Ellen Karl
Academic Director, Health Information Management and Health Services Administration
5/8/17
May 1, 2017

John Mogulescu  
Dean of the School of Professional Studies and  
Senior University Dean for Academic Affairs  
119 West 31st Street  
New York, NY 10001

Dear Dean Mogulescu:

I am writing to express the support of the 1199SEIU Training and Employment Funds for the proposal to establish a new Bachelor of Science degree in Health Services Administration (HSA) at the CUNY School of Professional Studies (SPS). The proposed HSA program will provide an avenue for our members to pursue a career in a non-clinical but indispensable area of healthcare in preparing them for advancement within the industry.

Each year, the Fund supports thousands of health care workers seeking education at CUNY to enhance their careers, pursue and attain employment upgrades and strengthen their contributions to health care in our city. We recognize that a HSA degree program will furnish our members with the necessary education and skills attainment to move up the career ladder into administrative positions. Moreover, this degree program will no doubt provide further opportunities for Fund-CUNY working partnerships. Indeed, among other collaborations, the Fund and CUNY SPS are currently partnering on an innovative Medical Coding apprenticeship program.

The Fund’s educators, counselors, and member advisors look forward to working in partnership with the CUNY SPS to ensure that our members have the skills needed for changing future in health care.

Sincerely,

Sandi Vito  
Executive Director
May 10, 2017

John Mogulescu
Dean of the School of Professional Studies and
Senior University Dean for Academic Affairs
119 West 31st Street
New York, NY 10001

Dear Dean Mogulescu:

I am writing to express the support of the Greater New York Hospital Association (GNYHA) for the proposal to establish a new Bachelor of Science degree in Health Services Administration at the CUNY School of Professional Studies.

GNYHA is a trade association representing nearly 250 not-for-profit hospitals and continuing care facilities, both voluntary and public, in the metropolitan area and throughout New York, as well as in New Jersey, Connecticut, and Rhode Island. GNYHA works with its member facilities and collaborates with other stakeholders on a variety of advocacy, policy and operational areas, focusing on delivery system reform and quality improvement. Among GNYHA’s activities is to host chief information officer (CIO) forums and work with our hospitals and nursing facilities on projects that will promote more efficient use of technology and innovative strategies for promoting population health.

This is a wonderful opportunity for employees in the health care industry to pursue a Bachelor’s degree in healthcare, preparing them for important higher level roles within the industry. It is imperative that leaders in healthcare be well-versed in the topics included in the new Health Services Administration program, such as compliance, legal and regulatory issues, and health information technology (HIT). The proposed program will provide the content crucial to health care administration, including many of the principles of business and operations so critically needed to work in the future health care environment.

We strongly support the proposal for this program.

Sincerely,

Tim Johnson
Senior Vice President
**Application for Addition of the Distance Education Format to a Registered Program**

<table>
<thead>
<tr>
<th>Name of Institution:</th>
<th>CUNY School of Professional Studies at the Graduate School and University Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO or Designee:</td>
<td>George Otte, Associate Dean of Academic Affairs</td>
</tr>
<tr>
<td>Signature:</td>
<td>Date: 5/12/17</td>
</tr>
</tbody>
</table>

The signature of the institutional representative indicates the institution’s commitment to support the proposed distance education program.

<table>
<thead>
<tr>
<th>Distance Education Contact Person:</th>
<th>George Otte, Associate Dean of Academic Affairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone:</td>
<td>646.344.7258</td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:george.otte@cuny.edu">george.otte@cuny.edu</a></td>
</tr>
</tbody>
</table>

Program Title: Health Services Administration  
Program Code: TBD  
Degree or Certificate Awarded: B.S.  
HEGIS Code: 1202.00

Anticipated enrollment in distance program:

<table>
<thead>
<tr>
<th>Initial:</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum by year 3:</td>
<td>125</td>
</tr>
</tbody>
</table>

Term length (in weeks) for the distance program: 15

(Is this the same as term length for classroom program?) Yes X No

How much "instructional time" is required per week per credit for a distance course in this program? **Answer:** Instructional time is the same as traditional in-person courses – 45 hours per course.

(Do not include time spent on activities that would be done outside "class time", such as research, writing assignments, or chat rooms.)

What proportion or percentage of the program will be offered in Distance Education format? **Answer:** 100%

---

**Part A: Institution-wide Issues:** Submit this part for the first Distance Education program proposed by your institution. This will be kept in a master file, and will not need to be resubmitted for each new proposed online program, unless there are changes.

**Answer:** This is not the first online degree program at the CUNY School of Professional Studies.
Part B: Program-Specific Issues: Submit this part for each new request to add Distance Education Format to a registered program.

I. LEARNING DESIGN

How does your institution ensure that the same academic standards and requirements are applied to the program on campus and through distance learning? If the curriculum in the Distance Education program differs from that of the on-ground program, please identify the differences.

Answer: To ensure that the standards and requirements of the proposed program are fully consistent with programs that are 100% face-to-face in the City University and elsewhere, fulltime faculty from several CUNY colleges were involved in the program design.

Online programs at the CUNY School of Professional Studies are designed, developed, and implemented according to the New York State Education Department’s Principles and Standards of Good Practice for Distance Education. This program will also follow best practices in online education identified by the Middle States Commission on Higher Education and the Western Cooperative for Educational Telecommunications. These organizations expect colleges and universities to demonstrate their institutional commitment to a new program. CUNY has proven its commitment through its insistence on academic rigor, its investment of resources in learner support, and its mandate for ongoing program evaluation and continuous improvement. As is the case for the School’s current degrees, the Dean will oversee and implement continuous improvement through regularly scheduled assessment of student satisfaction, learning effectiveness, student outcomes, and faculty satisfaction. In addition to internal control processes, the CUNY SPS will participate in Middle States reviews through its affiliation with the CUNY Graduate School and University Center.

Are the courses that make up the distance learning program offered in a sequence or configuration that allows timely completion of requirements?

Answer: Yes, the courses will be offered in a configuration that allows timely completion of requirements. The course offering schedule will provide all students with the opportunity to enroll full-time each semester, including summer, and to meet enrollment requirements for financial-aid eligibility. Course pre- and co-requisites also have been set to allow for uninterrupted progress through the required coursework.

How do faculty ensure that the technological tools used in the program are appropriate for the content and intended learning outcomes?

Answer: The new program will use the complete suite of online education tools offered by the University. In addition to software options standard throughout the University, the online programs use other technology options that facilitate interaction and collaboration between students and their instructors and peers. Also, instructors are trained to use resources to create online mini-lectures that can be accessed by students repeatedly and on a 24/7 basis. Decisions about “which technologies to use for which activities” were derived from previous experience in the online programs offered at the School of Professional Studies and a long history of online education at the City University of New York.

As part of the program’s overall quality control initiative, consortial faculty and other instructional staff meet each semester to evaluate individual student progress as well as macro-level program trends. Critical to these discussions are effective pedagogies and appropriate technologies. Faculty can draw on their own experiences with these technologies and from student input from end-of-term surveys. At these meetings, the group will set and refine plans for using new technology tools. Additionally, program leaders and faculty will interact regularly with software and hardware vendors and, through conference attendance and other means, keep informed about new options.
How does the program provide for appropriate and flexible interaction between faculty and students, and among students?

**Answer:** Regular interaction and collaboration between students and with their faculty is essential for the success of distance learning programs. To create and support these exchanges, the program will use the communication features of the University’s Blackboard course management system, including many innovative plug-ins that allow students to collaborate efficiently. Students will participate in online discussions, co-author team projects, keep running journals of their field experiences, and create their own blogs for communicating research results. For those times that students wish to work together in small groups, they will have access to Blackboard Collaborate, an online tool that will allow students located anywhere to see each other’s computer screens; co-author a document or spreadsheet simultaneously; and communicate both in text and, if they choose, with audio and visual connections.

How do faculty teaching online courses verify that students are doing their own work?

**Answer:** All students are bound by the academic policies established by the CUNY School of Professional Studies and published in the School’s web site, academic handbook, and annual bulletin. However, that does not diminish the need to develop assessment mechanisms that ensure that each student leaves with the knowledge and skills expected of program graduates. Instructors routinely use the SafeAssign and Turn-It-In feature of the Blackboard course management system that compares students’ written work with a very large database of previously published work and highlights sections that have been copied without appropriate attribution. To make certain that each student is doing his or her own work, faculty routinely replace traditional quizzes and exams that test for facts and information acquisition with project-based work, which assesses practice-based competencies and has longer time-on-task requirements.

With project-based assessment, faculty often require pre-project proposals and other incremental submissions that establish a narrative pattern which, when changed midstream, makes cheating obvious. Further, the extended submission stream makes it difficult for anyone to serve as a “stand in,” as could happen with isolated remote exams. Public course discussion forums provide another device that establishes each student’s narrative voice which is hard for someone else to reproduce. When faculty do give exams, the questions often are open-ended so that students must synthesize the material from previous learning modules. This technique limits the chances of someone else doing the students’ work.

**II. OUTCOMES AND ASSESSMENT**

Distance learning programs are expected to produce the same learning outcomes as comparable classroom-based programs. How are these learning outcomes identified -- in terms of knowledge, skills, or credentials -- in course and program materials?

**Answer:** Each course syllabus has a clear set of competencies—identifying required subject matter mastery, contextual considerations, and practice-based skills—that students must demonstrate to successfully complete the course. In addition, program outcomes will be clearly outlined in web site content, bulletins, and other program materials. Faculty will also review these requirements at the beginning of each course. The broad learning outcomes specified for the program was developed by faculty and expert practitioners.

Describe how the means chosen for assessing student learning in this program are appropriate to the content, learning design, technologies, and characteristics of the learners.

**Answer:** The majority of courses will emphasize complex project-based and case analysis assignments so that students will have to demonstrate a more complete understanding of the concepts and information in courses and mastery of course content. The majority of courses require presentations, either individually or in teams, in which students present their own solutions to problems and cases. Rubrics will be developed for these assignments and
shared with students as guides for their work and for the interpretation of feedback. This mode of assessment is a critical supplement to the fact-based measurements afforded by exams and quizzes.

III. PROGRAM EVALUATION

What process is in place to monitor and evaluate the effectiveness of the distance learning program on a regular basis?

**Answer:** The CUNY School of Professional Studies uses a two-part process for monitoring academic quality and tracking programmatic outcomes of its distance learning programs. The program’s academic director—someone holding faculty rank—will supervise ongoing operations on a semester-by-semester basis and be responsible for addressing student concerns in all aspects of their enrollment. In addition, there will be a group of consortial faculty members who will guide the program’s content, quality of education, and student learning. The consortial faculty, along others who teach in the program, will meet twice each semester to evaluate individual student progress as well as macro-level program trends. At these meetings, the larger group will set and refine the agenda for the year to come.

Secondly, the dean and associate deans will (and do) take a proactive role in monitoring and understanding student success and satisfaction for all programs. The School’s senior leadership, academic directors, and senior staff at CUNY SPS regularly review student progress and retention metrics.

How will the evaluation results be used for continuous program improvement?

**Answer:** Each year, the CUNY School of Professional Studies conducts a strategic planning process, tied to the University-wide Performance Management Process (PMP), where administrative and academic directors come together to discuss the successes and challenges of the previous year and to set a course for the next. By combining the perspectives of those who teach and others who provide critical student and administrative support, the School is better able to create holistic solutions for the problems that students face. By bringing together representatives from across all programs, the School is sure to develop inclusive responses that better serve everyone.

During the planning process, evidence provides the backbone for future action; pass rates, retention and graduation statistics, student survey results, and a breadth of operational performance metrics will guide the planning process and future resource investments. Individual student stories add depth and quality to these metrics and are especially valuable in identifying opportunities for improvement.

How will the evaluation process assure that the program results in learning outcomes appropriate to the rigor and breadth of the college degree or certificate awarded?

**Answer:** The evaluation process includes an “academic review” each term, attended by the academic director and consortial faculty, as well as any teaching faculty who wish, to meet and discuss each student’s performance. This review of both quantitative and qualitative data provides in-depth information about students’ competency acquisition, beyond simple alpha-numeric grades. It also gives faculty the information they need to guide students in upcoming courses.

Students’ thesis and other research projects will be evaluated by faculty as part of the ongoing assessment process for academic programs, to ascertain that program learning outcomes and goals are being met.
Evidence of Current Jobs

Quality Improvement - Manager Job

Full Job Title: Manager, Quality Improvement - NY
Job Number: 1605207
Location: New York, NY
Date Posted: 3-31-2017

Conducts oversight and management of Accreditation initiatives, state and regulatory quality compliance, HEDIS and quality improvement initiatives for PIPs, QIPs, QIA's, delegation audits and external quality reviews. Applies medical knowledge and analytical skills to effectively and efficiently coordinate quality activities and improve performance metrics of organizational goals.

Department: Health Services - QI
Reports To: Sr Director, Quality Improvement

Essential Functions:

- Develops, implements and maintains a standardized quality management plan and program to ensure compliance with external regulatory and accreditation requirements.
- Establishes and maintains tracking and monitoring systems for health care quality improvement activities according to regulatory requirements, accreditation standards, policies and procedures and contractual agreements.
- Ensures high risk, high volume, and unusual events are monitored concurrently and retrospectively as they occur.
- Researches and develops performance measurement and outcome studies to assess and improve the health status of the membership. Plans, organizes and manages the design, development and analysis of a wide variety of topics relevant to health care services.
- Designs and develops methodologies for preventive care and health care evaluations. Researches and documents current health care standards for use in study design and methodologies. Conducts preventive studies to evaluate the continuity and coordination of care and to assess the quality and utilization of health care services. Provides assistance and guidance to clinical staff with regard to study design, methodology, data analysis and reporting.
- Manages and evaluates performance of staff related to clinical and health care services performance improvement activities. Provides department orientation to new staff and ongoing staff development to the entire department.
- Coordinates guidelines, studies and performance improvement activities in concert with the utilization management, quality management, pharmacy services, case management and disease management programs.
- Maintains a knowledge base of HEDIS requirements and implementing clinical performance methods to improve HEDIS performance.
- Prepares, compiles, reviews and submits monthly and quarterly reports for quality committee meetings.
- Coordinates all external programmatic oversight visits for contracted providers and ensures timely completion and follow up on corrective action plans.
- Participates in the development, review and updating of policies and procedures.
- Develops and analyzes reports to monitor and evaluate quality performance in meeting established goals related to quality improvement plan and contractual requirements.
- Provides guidance and training to new associates.
- Performs other duties as assigned.

Additional Responsibilities:

- Completes the state Licensed Health Care Risk Management certification program.
- Performs annual update on state Plan Risk Management Program Description.
- Coordinates the regular and systematic review of all potential adverse incidents in accordance with state statute.
- Completes AHCA Code 15 Reports for confirmed adverse incidents.
- Submits an annual AHCA adverse incident summary report.
- Presents summary reports of reported AHCA Code 15 adverse incidents through the state Plan quality committee structure and Board of Directors.

Candidate Education:

- Required A Bachelor's Degree in Health Care, Nursing, Public Health, Health Administration or directly related degree
- Required or equivalent work experience
- Preferred A Master's Degree in Healthcare
Management Analyst I - Hospital Administration

The Mount Sinai Hospital
The Mount Sinai Health System

Do you have what it takes to wear the badge?

The Mount Sinai Health System's commitment to excellence extends beyond delivering world-class health care. The System's ongoing success is dependent upon our highly motivated, nonclinical professionals working to improve business operations. Our leadership team is driven to provide exceptional service by cultivating a workforce that is dedicated to upholding Mount Sinai's mission of delivering innovative, breakthrough medicine with compassion and integrity.

Are you ready to discover the world of limitless possibilities that comes with wearing the badge? Explore more about this opportunity and how you can help us write a new chapter in our story of unrivaled patient care!

What You'll Do:
The Management Analyst, in Hospital Administration, provides analytical and project management support to senior management utilizing a wide range of state of the art performance improvement methodologies across all administrative and operational functions. Makes recommendations, prepares, reviews, and analyzes hospital-wide data from business and organizational systems to assist the Office of the Hospital President in decision making and the management of operating The Mount Sinai Hospital more efficiently and effectively.

- Prepares, reconciles and analyzes basic to moderately complex information relating to hospital staffing levels, capital expenditures, space utilization and other aspects of hospital operations.
- Provides coordination of various hospital projects as assigned by the Hospital President. May monitor project timelines, budgets, and targets.
- Provides accurate information to management for review, analysis and decision making.
- Creates reporting tools to simplify and communicate financial and operational objectives. Prepares forecasting models to assist in high-level decision making.
- Documents findings of studies and prepares recommendations for implementation of new systems, procedures or organizational changes.
- May assist in the development of training manuals and training implementations to improve processes.
- Prepares feasibility studies and business plans of moderate complexity to support new business developments.
- Prepares complex research and analysis to inform and support senior leadership's decision making related to specific initiatives.
- Preps monthly or quarterly reports and presentations as required.
- Advances the organization's ability to meet and exceed key strategic initiatives.
- Updates monthly metrics and reports trends.
- Documents current operations and provides recommendations on new procedures and methods for management.
- Prepares documents and diagrams to illustrate and describe operations, and presents findings and recommendations.
- Performs other duties as required.

What You'll Bring:
- Bachelors' degree in Healthcare Administration, Business Administration or related field required, Masters Degree preferred.
- Two years minimum experience in Research environment.
- Advanced skills in Microsoft Word, Excel, Outlook, PowerPoint required.
- Excellent organizational and analytical skills required.
Medicare Product Manager

Program: VillageCareMAX
Location: Manhattan
Employment Duration: Regular Full-Time
Job Code: 1523
Standard Weekly Hours: 35

VillageCare is a community-based, non-profit organization serving people with chronic care needs, as well as seniors and individuals in need of continuing care and rehabilitation services. VillageCare provides care and services for more than 12,000 unique individuals annually through its residential and community programs. Guided by the people we serve, we provide leadership to improve the health and quality of life of the diverse communities we serve and the quality of care and well-being of the people we serve.

Description

Position Summary
Play a key role in supporting all Medicare product management activities throughout the entire life cycle. Lead projects for annual and ongoing implementation activities to ensure that products/changes are implemented in consistency with regulatory and contractual requirements. Support day-to-day operations for cross functional teams to resolve issues and act as a subject matter expert for guidance. Manage regulatory reporting requirements, and collection of data to monitor/optimize product performance.

Essential Functions
Drives the annual implementation of Medicare products with vendors & operational teams including development of project plan, and tracking of milestones to ensure that all requirements are implemented timely
Acts as key liaison with cross-functional teams to support daily operations and help resolve issues related to benefits, provider network, claims, marketing, member mailings and membership
Oversees the development and validation of regulatory reporting related to Medicare products. Coordinates requirements for Medicare operational reporting needs
Participates in monitoring activities to audit compliance with regulatory requirements
Provides support in managing and interpreting memos from CMS and NYSDOH including assessment of operational impact and communication to stakeholders. Leads project for any required changes to work flow, and Policies & Procedures
Participates in testing activities related to system enhancements/modifications, letters, and benefits
Coordinates the collection of data to assess and monitor product performance against defined goals. Collaborates with Director and stakeholders to identify opportunities for improvement
Manages data collection for annual CMS bid planning and CMS audits
Evaluates requirements and specifications to ensure appropriate business processes are implemented to support product initiatives including STARS, risk adjustment and HEDIS
Conducts research to develop competitive analysis and industry best practices to support the development of product strategies and plan designs
Supports the review and production of required marketing and member materials to ensure accuracy, compliance and timely delivery
Serve as a subject matter expert on CMS and NYSDOH requirements related to Medicare products and operations

Essential Functions
Requires a minimum of Bachelor’s degree in business or health care administration, or a related field of study. Master’s degree in related field is preferred.
Minimum of 5 years experience working in a managed care environment that includes a minimum of 3 years focus on Medicare Advantage required
Knowledge and understanding of Medicare and Medicaid regulations required
Experience leading projects with solid knowledge of project management tools including MS Project and Visio
Strong analytical skills and creative problem solving skills
Proven ability to collaborate in a cross functional environment with internal and external stakeholders
Effective written and oral communications skills including the ability to communicate complex requirements in a simplified form
Ability to conduct comprehensive analysis of data and work with datasets
Experience with applicable software and database programs including Access, Excel, Word, PowerPoint

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Practice Manager
Practice Solutions Group - Long Island, NY

Job Title: Practice Manager

Practice Manager Job Purpose:
Ensures a medical practice, or group of related medical practices, remains financially sustainable while delivering good customer service. Makes key business decisions and oversees day-to-day practice operations. Works to expand medical practice to make it more profitable and better meet the needs of the local community.

Practice Manager Job Duties:
- Works with physicians to develop business strategies and patient services
- Designs and implements workplace procedures
- Liaises with general practitioners, nurses, physiotherapists, and other medical practice employees to ensure they have necessary support
- Manages practice and department budgets
- Oversees daily practice operations, including appointment scheduling, billing procedures, debt collections, cleaning, security, and occupational health and safety
- Leads a team made up of medical secretaries, receptionists, records staff, and, in some large practices, an assistant practice manager
- Controls the supply of medications and medical equipment
- Manages patient records and IT system
- Evaluates appointment procedures and patient services
- Recruits, trains, and supervises new administrative employees
- Recruits new patients
- Interacts with patients and gains customer feedback about the practice
- Addresses patient complaints in a compassionate and timely fashion
- Manages the production of patient brochures, newsletters, and other correspondence
- Monitors practice’s progress in meeting government targets

Practice Manager Skills and Qualifications:
People Person, Strong Oral and Written Communication Skills, Problem Solving Skills, Organizational Skills, Management Skills and Experience, Leadership Skills, Computer Literacy and Knowledge of Relevant Software, Budgeting Skills, Accounting Skills, Ability to Work as Part of a Team, Analytical Skills, Health and Safety Knowledge

EDUCATION AND/OR EXPERIENCE
1. Bachelor’s degree in related field,
2. Three to five years’ related experience, including clinical management and/or training;
or 3. Equivalent combination of education and experience.

Job Type: Full-time

Required education:
- Bachelor’s

Required experience:
- Practice Management: 3 years
- Medical Practice Management: 1 year
- Healthcare: 2 years
- Management: 2 years
Medicare Practice Performance Manager - Queens and Brooklyn, NY - 707352

Position Description
For those who want to invent the future of health care, here’s your opportunity. We’re going beyond basic care to health programs integrated across the entire continuum of care. Join us and help people live healthier lives while doing your life’s best work.(sm)

This role is responsible for provider performance management which is tracked by designated provider metrics, inclusive minimally of 4 STAR gap closure and coding accuracy. The person in this role is expected to work directly with care providers to build relationships, ensure effective education and reporting, and to proactively identify performance improvement opportunities through analysis and discussion with subject matter experts.

Primary Responsibilities:
- The Practice Performance Manager is responsible for program implementation and provider performance management which is tracked by designated provider metrics, inclusive minimally of 4 STAR gap closure and coding accuracy
- The person in this role is expected to work directly with care providers to build relationships, ensure effective education and reporting, proactively identify performance improvement opportunities through analysis and discussion with subject matter experts; and influence provider behavior to achieve needed results
- Functioning independently, travel across assigned territory to meet with providers to discuss UHG tools and programs focused on improving the quality of care for Medicare Advantage Members
- Execute applicable provider incentive programs for health plan
- Establish positive, long-term, consultative relationships with physicians, medical groups, IPAs and ACOs
- Develop comprehensive, provider-specific plans to increase their HEDIS performance and improve their outcomes
- Provide ongoing strategic recommendations, training and coaching to provider groups on program implementation and barrier resolution
- Act as lead to pull necessary internal resources together in order to provide appropriate, effective provider education, coaching and consultation. Training will include Stars measures (HEDIS / CAHPS / HOS / med adherence), and Optum program administration, use of plan tools, reports and systems
- Coordinate and lead Stars-specific JOC meetings with provider groups with regular frequency to drive continual process improvement and achieve goals
- Provide reporting to health plan leadership on progress of overall performance, HQPAFs, gap closure, and use of virtual administrative resource
- Facilitate/lead monthly or quarterly meetings, as required by plan leader, including report and material preparation
- Provide suggestions and feedback to Optum and health plan
- Work collaboratively with health plan market leads to make providers aware of Plan-sponsored initiatives designed to assist and empower members in closing gaps

Requirements
To be considered for this position, applicants need to meet the qualifications listed in this posting.

Required Qualifications:
- Bachelor’s Degree required or equivalent work experience
- 5+ years of healthcare industry experience
- 3+ years of experience managing relationships with physicians / hospitals / health systems
- Strong knowledge of the Medicare market
- Experience with Quality Measures
- Strong communication and presentation skills
- Strong problem solving skills
- Proven relationship building skills with clinical and non-clinical personnel
- Microsoft Office specialist with exceptional analytical and data representation expertise; Advanced Excel, Outlook, and PowerPoint skills
- Availability to travel up to at least 50% of the time

Preferred Qualifications:
- Registered Nurse
- Medical / clinical background
- Medicare Starts Rating System (STARS) experience
- HEDIS experience
- Strong knowledge of electronic medical record systems
- Consulting experience
- Knowledge base of clinical standards of care, preventive health, and Stars measures
- Experience in managed care working with network and provider relations / contracting
- Strong financial analytical background within Medicare Advantage plans (Risk Adjustment / STARS Calculation models
Operations Manager
Essen Healthcare - Bronx, NY
Due to growth and expansion, Essen Healthcare has an opening for a Practice Manager for our Medical House Calls Division. Essen Healthcare is mission driven organization and based in the Bronx NY area that provides quality care to the medically underserved communities in the Bronx. As New York State’s largest and most trusted visiting doctors program, EssenMED House Calls cares for nearly 4,000 patients throughout the Bronx, Brooklyn, Manhattan, Queens, Staten Island and Westchester. Founded in 2005, EssenMed House Calls “Brings the Doctor’s Office to the Homes of our patients. The entire Essen Healthcare team is dedicated to our mission of helping those in need and we seek the same interest in our next leader. Reporting to the Director of Operations this positon also works in collaboration with our Chief Medical Officer. Operations Manager will be responsible for:

- Medical House Call locations center management, including personnel administration
- Oversight of day to day operations of the location ensuring quality and efficiency
- Reporting Medical House Calls Activity
- Compliance with regulatory requirements/standards

Qualifications
Bachelor’s degree required (Master’s degree in Public Health, Business Administration preferred)
Four to Five years of experience in healthcare management role
Bilingual speaking preferred
Some travel is required as the organization is growing. Current Administration locations are in Bronx and Brooklyn offices.

This position starts at 65,000 per year and up based on experience (Not an Administrator role) offers competitive salary and benefits package including Paid Holidays, PTO, Medical, 401K plan, Dental & Vision Plan

Essen Healthcare is proud to be an equal opportunity employer, and we seek candidates who desire to work in and serve an ethnically-diverse population. To learn more about Essen, please visit our website at www.essenhealthcare.com

Job Type: Full-time

Job Location:

- Bronx, NY

Required education:

- Bachelor’s

Required experience:

- healthcare management: 4 years
- Operations Management: 1 year
- Staff Management: 1 year
- Staff Development: 1 year
Patient Navigator

Job Posting Date:
Nov 30, 2016

Requirements:

· A Baccalaureate degree in health care or human service related field
· Experience working in medical settings and interacting collaboratively with medical teams.
· Working knowledge of HIPPA regulations
· Demonstrates an understanding of population based disease management including community resources.
· Demonstrates an ability to function independently in a goal directed manner while communicating effectively with patient, family, significant others and providers at all levels. Demonstrates sensitivity to patient/family belief systems, ethnicity and culture as well as socioeconomic background.

Duties and Responsibilities:

Patient Navigator - Cancer Center - Full Time Days
You Can Help Make It Possible

Patient Navigator - Cancer Center

Whether an individual faces a possible cancer diagnosis, or has been diagnosed with cancer, it is very stressful. Beyond questions and concerns about the disease, questions may arise such as “what do I do next?,” “how am I going to get to my appointment?,” and “how am I going to pay for this?” The good news is NewYork-Presbyterian/Queens Patient Navigators have answers to these questions, and provide solutions and guidance to our patients during their cancer care experience.

The Patient Navigator guides patients through the health care system, including providers' offices, hospitals, insurance and payment systems, patient-support organizations and other components of the health care system. In addition, the Patient Navigator helps to identify barriers that may be preventing patients from receiving timely and high quality healthcare treatment and working to find solutions to those barriers.

Preferred Criteria

· Bilingual language skills
· Master's Degree in health care or human service related field

Join a hospital where employee engagement is at an all-time high. Enjoy competitive compensation along with benefits such as tuition reimbursement, hospital retirement contributions, and financial planning assistance. Start your life-changing journey today.
Managed Care:
Director, Quality Performance Improvement
Shift Type: Full Time
Shift: Day Job
Hours: 9:00 AM – 5:00 PM
Requisition: 0017Q1
Location: Medical Group – Corporate (MGCOR), Manhasset, NY

Qualifications
- Bachelor’s Degree in Healthcare Administration, Public Health or related field, required.
- Minimum of seven (7) years related quality and performance improvement experience, required.
- Strong negotiation and coalition skills to effectively facilitate work group meetings.
- Proven expertise in project planning, task prioritization, outcomes measurement and monitoring.
- Knowledge of medical terminology, health information technology, and current regulatory and accreditation standards in health care services.
- Basic understanding of quantitative and qualitative measurement, analytics and evaluation including the use of statistical process control in healthcare.

Excellent written and verbal communication skills. Strong working knowledge of Microsoft Office Suite products.

Job Description
Directs the administration and coordination of daily operations for quality improvement programs and initiatives; assist members with the implementation of strategies to improve the patient care experience, healthy outcomes, and healthcare values. Works directly with members and external stakeholders to accelerate the adoption of evidence-based practices and achieve provider-specific and aggregate improvement objectives.
1. Participates in the implementation of assigned programs and services to improve members’ quality and efficiency performance.
2. Identifies, develops and evaluates quality improvement initiatives.
3. Assists in coordination and evaluation of educational programs and activities to improve quality and patient safety.
4. Serves as key liaison between strategic partners and member participants to support implementation and integration of performance and quality improvement processes to optimize patient outcomes, enhance operational effectiveness and facilitate healthy communities.
5. Provides members’ guidance and support for data collection, analysis and performance measurement to facilitate improved patient outcomes and organizational efficiencies.
6. Monitors members’ performance data, identifies improvement trends and opportunities, and presents findings to senior leadership and members as appropriate.
7. Ensures program compliance with all applicable laws, contracts, regulations, and professional and educational standards.
8. Serves on member committees, task forces, and peer networks as appropriate.
9. Selects, develops, manages and evaluates direct reports. Ensures performance appraisals are completed in a timely fashion.
10. Develops an effective intra-disciplinary communications process within the department, across the Health System, outside business partners and vendors to optimize operations.
11. Assists in the review, revision, development, coordination and integration of policies and procedures.
12. Performs related duties, as required.

*ADA Essential Functions
RESOLVED, that the program in Research Administration and Compliance leading to the Master of Science, the Advanced Certificate in Research Administration and the Advanced Certificate in Research Compliance all offered at the School of Professional Studies of the Graduate School and University Center, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: There is a severe shortage of qualified individuals to manage large grants and oversee such issues as ethical concerns, compliance, intellectual property transfer, and policy development of large research projects. These programs will prepare graduates for successful careers in pre- and post-award research grant and project management employed by universities and other organizations conducting large scale research.
Proposal to Establish:
Master of Science in Research Administration and Compliance
Advanced Certificate in Research Administration
Advanced Certificate in Research Compliance

Anticipated Start
Spring 2018

Approved by the
CUNY School of Professional Studies Curriculum Committee on
April 27, 2017

Approved by the
CUNY School of Professional Studies Governing Council
May 11, 2017

Proponent:
Dr. Farida Lada
Associate University Provost for Research Administration and Compliance
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EXECUTIVE SUMMARY

The CUNY School of Professional Studies (CUNY SPS) proposes a 30-credit Master of Science degree in Research Administration and Compliance that will prepare a new generation of leaders in research administration and compliance at academic institutions, healthcare organizations, government agencies, and non-profit organizations and in industry. CUNY SPS also proposes to develop two Advanced Certificates, one in research administration and one in research compliance, which are designed such that credits from the Advanced Certificate programs may be transferred toward the Master of Science degree in Research Administration and Compliance.

The purpose of the program is to:
- ground students in governance, regulatory requirements, ethical standards and good practices surrounding research administration and compliance;
- provide conceptual and practical information for students to establish a sound philosophical grounding as they acquire skills that they will apply in the field;
- build students’ core competencies, practical skills and knowledge related to program development, management and leadership within a research enterprise; and,
- equip students with skills to develop policy, conduct policy analysis and implement policy across a diverse spectrum of research institutions and projects.

Program Outcomes
Students graduating with an M.S. in Research Administration and Compliance will be prepared to serve in leadership capacities in the research administration and compliance profession. Specifically, they will:
1. Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation.
2. Be able to analyze existing policies, and develop and implement new policies.
3. Demonstrate the ability to develop and lead programs around research administration/compliance.
4. Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
5. Demonstrate the ability to formulate research administration & compliance reports and presentations.
6. Be able to organize effectively across functional areas requiring leadership and negotiations.
7. Be able to investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

The target audience for the program will be multifold:
- Current research administration and compliance professionals who are looking to advance into more senior level positions but lack the required master’s degree.
- Junior level research administration and compliance professionals who are seeking to gain an advantage over those who have several more years of experience.
- Graduates from undergraduate programs in a variety of fields such as English, Sociology, Psychology, etc. who are looking for a career path.

The curriculum has been developed by full-time CUNY faculty and with consultation from subject-matter experts, both internal and external to CUNY.

In delivering resources to students in the Research Administration and Compliance programs, CUNY SPS will build on its current infrastructure, which supports dozens of degree and certificate programs as well as a portfolio of noncredit programs (both online and in-class). The student, faculty, and administrative services currently offered by CUNY SPS can readily be extended to this new program.

Initial start-up support for the program will be provided by the School with the expectation, based on enrollment projections, that the program will quickly become self-sustaining.
### General Information

<table>
<thead>
<tr>
<th>Institution (Legal Name)</th>
<th>Institution Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUNY School of Professional Studies at the Graduate School and University Center AND</td>
<td>310500</td>
</tr>
<tr>
<td>CUNY School of Professional Studies</td>
<td>310510</td>
</tr>
<tr>
<td>Proposed Program Title</td>
<td>Degree Award</td>
</tr>
<tr>
<td>Research Administration and Compliance</td>
<td>MS</td>
</tr>
<tr>
<td>Research Administration</td>
<td>Advanced Certificate</td>
</tr>
<tr>
<td>Research Compliance</td>
<td>Advanced Certificate</td>
</tr>
<tr>
<td>Address of Any Campus Where the Proposed Program Will Be Offered</td>
<td>Full-time or Part-time ¹</td>
</tr>
<tr>
<td>(main and/or branch campuses)</td>
<td></td>
</tr>
<tr>
<td>365 Fifth Avenue</td>
<td>Full-time</td>
</tr>
<tr>
<td>New York, NY 10016</td>
<td></td>
</tr>
<tr>
<td>All Program Format(s) (standard, distance education², evening, weekend and/or other)</td>
<td>HEGIS Code</td>
</tr>
<tr>
<td>Distance Education</td>
<td>0506.00</td>
</tr>
<tr>
<td>Joint Registration IHE (if applicable)</td>
<td>Total Number of Credits</td>
</tr>
<tr>
<td>Lead Contact [First Name, Last Name, Title]</td>
<td></td>
</tr>
<tr>
<td>Otte, George, Associate Dean of Academic Affairs</td>
<td></td>
</tr>
<tr>
<td>CUNY School of Professional Studies</td>
<td></td>
</tr>
<tr>
<td>Email Address</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:george.otte@cuny.edu">george.otte@cuny.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

¹ Please refer to §52.2(c) and §145-2.1 of the Regulations of the Commissioner for definitions and information concerning full and part time study. Note: Only programs registered as full time are eligible for TAP. Programs are subject to audit by the NYS Office of the State Comptroller and the Higher Education Services Corporation (HESC) for financial aid compliance purposes.

² If a major portion of the program (50% or more) can be completed through study delivered by distance education then the program must be registered in the distance education format. Hybrid or blended courses do not count toward the 50%.
Attestation and Assurances

On behalf of the institution, I hereby attest to the following:

That all educational activities offered as part of this proposed curriculum are aligned with the institution’s goals and objectives and meet all statutory and regulatory requirements, including but not limited to Parts 50, 52, 53 and 54 of the Rules of the Board of Regents and the following specific requirements:

That credit for study in the proposed program will be granted consistent with the requirements in §50.1(o).

That, consistent with §52.1(b)(3), a reviewing system has been devised to estimate the success of students and faculty in achieving the goals and objectives of the program, including the use of data to inform program improvements.3

That, consistent with §52.2(a), the institution possesses the financial resources necessary to accomplish its mission and the purposes of each registered program, provides classrooms and other necessary facilities and equipment as described in §52.2(a)(2) and (3), sufficient for the programs dependent on their use, and provides libraries and library resources and maintains collections sufficient to support the institution and each registered curriculum as provided in §52.2(a)(4), including for the program proposed in this application.

That, consistent with §52.2(b), the information provided in this application demonstrates that the institution is in compliance with the requirements of §52.2(b), relating to faculty.

That all curriculum and courses are offered and all credits are awarded, consistent with the requirements of §52.2(c).

That admissions decisions are made consistent with the requirements of §52.2(d)(1) and (2) of the Regulations of the Commissioner of Education.

That, consistent with §52.2(e) of the Regulations of the Commissioner of Education: overall educational policy and its implementation are the responsibility of the institution’s faculty and academic officers, that the institution establishes, publishes and enforces explicit policies as required by §52.2(e)(3), that academic policies applicable to each course as required by §52.2(e)(4), including learning objectives and methods of assessing student achievement, are made explicit by the instructor at the beginning of each term; that the institution provides academic advice to students as required by §52.2(e)(5), that the institution maintains and provides student records as required by §52.2(e)(6).

That, consistent with §52.2(f)(2) of the Regulations of the Commissioner of Education, the institution provides adequate academic support services and that all educational activities offered as part of a registered curriculum meet the requirements established by state, the Rules of the Board of Regents and Part 52 of the Commissioner’s regulations.

<table>
<thead>
<tr>
<th>CHIEF ADMINISTRATIVE or ACADEMIC OFFICER/ PROVOST</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td>5/12/17</td>
</tr>
</tbody>
</table>

Type or print the name and title of signatory: Dr. George Otte, Associate Dean of Academic Affairs

Phone Number: 646.344.7258

3 The Department reserves the right to request this data at any time and to use such data as part of its evaluation of future program registration applications submitted by the institution.
Program Purpose, Objectives and Targets

Program Purpose

Department Expectation: Clearly define a program purpose that is aligned to the degree award and program title.

Refer to narrative, beginning on page 6.

Program Objectives

Department Expectation: Articulate between 1 and 3 program-level (curriculum-level) objectives that are clearly defined and directly aligned with the program purpose and proposed degree award.

1. Goals and Student Learning Outcomes contained within the body of the proposal.

2.

3.

Program Targets - Department Expectation: Establish realistic enrollment, retention, graduation, and job placement targets for this program that are connected to the reviewing system by which the success of students and faculty in achieving such goals and objectives of the program are determined. Note: There are not specific Department defined targets required for the registration of curricula. The Department expects institutions to establish targets that reflect the espoused quality of the program, and to periodically and systematically review such targets are they related to program implementation.

Enrollment Projections

The Department assumes that Year 5 enrollment projections will be full-capacity relative to existing and new resources planned.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
</table>

See projections on in Table 8: Five-Year Revenue Projections for Programs Worksheet

Annual Retention Rate Target (%) | Target graduation rate (%) | Target Job Placement Rate (%)
Curriculum and Course Information

Please provide the following:

1. The applicable sample student program schedule table:
   • Table A: Undergraduate Program Schedule; or
   • Table B: Graduate Program Schedule

   When completing the program schedule table please refer to the requirements in §52.2(c) of the Regulations of the Commissioner concerning completion of Associate, Baccalaureate and Master's degree programs.

2. Please list the course titles for all new courses included as part of the proposed program, and, either attach the course syllabi or, if such syllabi are not yet available, provide course descriptions and objectives in the chart below.

<table>
<thead>
<tr>
<th>New Course Titles</th>
<th>Indicate that course syllabi are attached or, provide course descriptions and objectives (if course syllabi are not available)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Course information is contained within the proposal.</td>
</tr>
</tbody>
</table>

PROGRAMS CHART

<table>
<thead>
<tr>
<th>Program</th>
<th>Award</th>
<th>HEGIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Administration and Compliance</td>
<td>M.S.</td>
<td>0506.00</td>
</tr>
<tr>
<td>Research Administration</td>
<td>Advanced Certificate</td>
<td>0506.00</td>
</tr>
<tr>
<td>Research Compliance</td>
<td>Advanced Certificate</td>
<td>0506.00</td>
</tr>
</tbody>
</table>
NARRATIVE

Purpose and Outcomes

The CUNY School of Professional Studies (CUNY SPS) proposes a 30-credit Master of Science degree in Research Administration and Compliance that will prepare a new generation of leaders in research administration and compliance at academic institutions, healthcare organizations, government agencies, and non-profit organizations and in industry. CUNY SPS also proposes to develop two Advanced Certificates, one in research administration and one in research compliance, which are designed such that credits from the Advanced Certificate programs may be transferred toward the Master of Science degree in Research Administration and Compliance.

The purpose of the program is to:

- ground students in governance, regulatory requirements, ethical standards and good practices surrounding research administration and compliance;
- provide conceptual and practical information for students to establish a sound philosophical grounding as they acquire skills that they will apply in the field;
- build students’ core competencies, practical skills and knowledge related to program development, management and leadership within a research enterprise; and,
- equip students with skills to develop policy, conduct policy analysis and implement policy across a diverse spectrum of research institutions and projects.

Context for the M.S. in Research Administration and Compliance Degree

As a result of the federal government's investment in research programs following World War II, scientific research at colleges and universities in the United States started increasing. In response, academic institutions assigned administrative roles responsible for identifying funding sources, submitting proposals, receiving and managing funds, reporting back to funding agencies and overall stewardship of federal funds dedicated to research. This gave rise to the profession of research administration, and, in the 1960s, the formation of the National Council of University Research Administrators (NCURA) and the Society of Research Administrators International (SRAI) (Roberts, 2016).

By the 1970s and 1980s, the federal government issued a number of regulations pertaining to the terms and conditions of federal awards (Myers, 2008). To train research administration professionals in the skills and knowledge of administering such grants, the Research Administration Certificate Council (RACC) was established in 1993 (Roberts, 2016). The regulatory requirements surrounding federal funds for research continue to evolve, and most recently, in 2013, the federal Office of Management and Budget issued the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. This guidance provides a government-wide framework for grants management which will be complemented by additional efforts to strengthen program outcomes through innovative and effective use of grant-making models, performance metrics, and evaluation.4

Alongside the advancement of financial rules and regulations for research was the development of research integrity and compliance policies. In the 1970s, and continuing to the present day, the federal government established regulatory requirements related to the responsible and ethical conduct of research and protection of intellectual property resulting from federally funded research. These regulations gave rise to a large spectrum of compliance areas, including: protection of human and animal subjects; patent protection and technology transfer; research misconduct and requirements for training in the responsible conduct of research; conflicts of interest; use of embryonic stem cells in research; biosafety; export controls; and most recently reproducibility.

As with the financial research administration side of the research enterprise, professional organizations were established in order to provide professional development in these areas. These include Public Responsibility in Medicine and Research (PRIM&R), Scientists Center for Animal Welfare (SCAW), Alliance of Technology Transfer Professionals (ATTP), and Association of Research Integrity Officers (ARIO). These organizations introduced professional certifications in their respective areas.

As regulations became more complex and governments increased enforcement, as well as with the rise in global research collaborations starting in the 1990’s, institutions moved towards a policing approach to research administration and compliance, resulting in a rift between researchers and the administration. In its report on The Globalization of Clinical Trials, the US Food & Drug Administration (2001) states, “the number of foreign clinical investigators conducting drug research under Investigational Drug Applications increased 16-fold in the past decade.” In his keynote address at the Globalization and the Diplomacy of Science, Dr. Makhema (2010) remarks:

“My definition of globalization in science is as follows: It is the process of increasing the connectivity and interdependence of the world’s scientific community in areas of research and scientific development. This definition has implications for the development of the physical and human infrastructure for scientific activities. It also implies homogeneity, benchmarking, uniformity of scientific processes, competencies and activities.

Connectivity of the research infrastructure requires standardization of research administration practices and harmonization of regulatory requirements across countries and governments. This, in turn, requires professionals who can communicate and strategize across cultural and national borders in an effort to support the researchers.

Over the last 15 years, the field has made efforts to merge the divide between researchers and administration with a move towards a more balanced approach of promoting and supporting research led by administrative professionals who can conduct in-depth, high level analysis of the regulations and ethical standards, their applicability and implementation within the context of the specific institution and its research. While establishment of the professional organizations in both the financial administration and research compliance and integrity areas was the beginning of the professionalization of research administrators, the educational opportunities that are available through them is often singularly focused in a specific area of research administration or compliance, which leaves most professionals unfamiliar with the entire breadth of the research administration and compliance field, and without the necessary management and leadership training to serve as effective leaders with broad perspectives within research institutions. Thus, research administrators and compliance officers typically learn how to do their jobs via on-the-job training and experience over many years.

This proposed program is in direct response to the education and training needed in the field of research compliance and administration.

**Program Outcomes**

Students graduating with an M.S. in Research Administration and Compliance will be prepared to serve in leadership capacities in the research administration and compliance profession. Specifically, they will be able to:

1. Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation.
2. Analyze existing policies, and develop and implement new policies.
3. Demonstrate the ability to develop and lead programs around research administration/compliance.
4. Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
5. Formulate research administration and compliance reports and presentations.
6. Organize effectively across functional areas requiring leadership and negotiations.
7. Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

**Impact on CUNY SPS**

This program will create a new area within CUNY SPS.
**Need and Justification**

Research administration and compliance expertise is needed across a diverse group of organizations, including academic institutions, research institutes and centers, hospitals, clinics, and pharmaceutical industry. Each step within the life cycle of research is governed by a large number of complex regulations related to the financial stewardship of research funds, the ethical and compliant conduct of research, and the management, preservation and dissemination of research data and results. Each of these areas overlap in their functions, and require high-level expertise to integrate concepts, policy requirements and ethical considerations to both assess and improve existing institutional programs, and to effectively develop new research programs.

Yet, this system has an employment landscape where institutions typically require their senior level positions to have extensive experience (minimum of 10-15 years), while also having a nebulous career path for those who enter it. Thus, there are far fewer individuals with the requisite experience, knowledge and education than there are jobs. In addition, many of the more experienced leaders are reaching retirement age.

The need for education in research administration and compliance has been recognized by professionals in the field, and in response several degree programs have been introduced within the last 15 years. In fact, in 2008, the need for formal training and education in the financial research administration field was recognized by NCURA, and the organization “issued a call for proposals for Planning Grants for a Master’s Degree in Research Administration” (Roberts, 2016). The grant was awarded to the University of Central Florida. Since then, additional academic institutions have also started offering master’s degrees in research administration and several have introduced degrees in clinical research administration.

Further evidence for the need for such programs is the newly launched Research Administrator Professional Development Program (RAPDP) at the University of California Berkley. The RAPDP “is a training curriculum designed for both new and experienced Research Administrators. The program consists of 25 workshops that cover foundational, pre-award, post-award and specialized topics.” The purpose of this initiative is to create a talent pipeline and foster recognition of the field as a profession. It enables employees to assess their baseline competencies and skills, and obtain professional proficiency through sequential in-depth skill building via a standardized learning and development curriculum that is complemented by formalized on-the-job training.”

The focus of these existing programs, both non-credit and degrees alike, is primarily on financial administration or on clinical research administration. As such, students are trained to become effective administrators in one of the research administration areas, but do not provide the breadth of knowledge and skills necessary for professionals who wish to advance into leadership positions. This leaves a need for degree programs that bring together the financial and non-financial or compliance sides of research administration to produce graduates who can become leaders within a research enterprise. In 2013, “The Senior Leadership Institute sponsored by SRA in 2013 brought together executive leaders from across the country and the world. These senior leaders had an opportunity to share ongoing concerns as well as emerging “hot topics” with each other… (which) led to the question of what forms of advanced professional development is provided to the senior management/senior director levels of our research management and administration offices.” It is with this need in mind that we propose the Master in Research Administration and Compliance program.

The M.S. in Research Administration and Compliance program proposed here is being developed to create a clear, attainable career path for entry level research administration and compliance staff to become competent, highly skilled leaders in a shorter amount of time. It is designed to provide education related to financial research administration, research compliance, ethics and integrity, clinical research administration and compliance, and intellectual property issues, as well as education and skills necessary for policy development and implementation, program management, and...

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leadership, with the aim of creating high level professionals who are able to identify the connections across all of these areas and to make effective business decisions for their research enterprise.

Comparable Programs
The program’s aim is to develop highly skilled leaders with a broad organizational perspective. Given this, the program will differentiate from other existing programs in two key ways:
1. It will provide in-depth coursework in research compliance and ethics, financial research administration, and clinical research administration and compliance. This differs from existing programs, which have as their primary focus either financial research administration with some compliance interspersed, or that focus entirely on clinical research administration.
2. It will include coursework in leadership, program evaluation, policy development, and management, each of which provide essential knowledge and skills for individuals who wish to become senior leaders in research organizations.

The Program Comparison Worksheet, which follows, shows the main points of difference between the CUNY SPS program in Research Administration and Compliance and other programs.
## Program Comparison Worksheet

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program Title</th>
<th>Tuition</th>
<th>Target</th>
<th>Format</th>
<th>Requirement</th>
<th>Other Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johns Hopkins University: Krieger School of Arts &amp; Sciences Advanced Academic Programs</td>
<td>M.S. in Research Administration</td>
<td>$3,566/ course</td>
<td>Research practitioners &amp; those who seek to begin a career in research administration</td>
<td>Online</td>
<td>12 courses: 4 core + min. 2 curriculum tracks + Capstone</td>
<td>Aimed at creating administrators in specific areas of administration depending on chosen track.</td>
</tr>
<tr>
<td>University of Central Florida: College of Health and Public Affairs</td>
<td>Master of Research Administration</td>
<td>$655/ credit</td>
<td></td>
<td>Online</td>
<td>36 credits</td>
<td>Designed “to prepare individuals to practice as a highly trained and ethical research administrator”.</td>
</tr>
<tr>
<td>Rush University: College of Health Sciences</td>
<td>M.S. in Research Administration</td>
<td>$592/ credit</td>
<td>Current &amp; future research administration professionals</td>
<td>Online</td>
<td>46 credits: 11 core courses + 5 electives + Research Project</td>
<td>“Designed to prepare formally trained, advanced-level personnel for research administration leadership positions at colleges and universities, government agencies, hospitals, nonprofit agencies and in industry.” Focus on financial research administration.</td>
</tr>
<tr>
<td>Emmanuel College: Graduate and Professional Programs</td>
<td>M.S. in Management with a specialization in Research Administration</td>
<td>$2,192/ course</td>
<td>Fact-to-face evenings or full online options</td>
<td>36 credits: 10 core courses + capstone</td>
<td>“Prepare to be an effective leader in a variety of sponsored research environments.” Focus on sponsored research and related financial research administration.</td>
<td></td>
</tr>
<tr>
<td>Central Michigan University: College of Graduate Studies</td>
<td>M.S. in Administration with a concentration in Research Administration</td>
<td>$548/ credit (in state); $819/ credit (out of state)</td>
<td></td>
<td>Hybrid</td>
<td>36 credits: 11 required + 2 electives</td>
<td>Coursework geared toward sponsored research financial research administration and appears to create administrators.</td>
</tr>
<tr>
<td>George Washington University: School of Medicine and Health Sciences</td>
<td>B.S. in Health Sciences in Clinical Research Administration/ MS in Health Sciences in Clinical Administration</td>
<td>BS: $560/ credit MS: $870/ credit</td>
<td>Working clinical research professionals, or those in a related field</td>
<td>Online</td>
<td>“Grounded in practical skills and knowledge that will prepare you to lead the business and science of clinical research”</td>
<td></td>
</tr>
<tr>
<td>Walden University: Public Health and Health Sciences</td>
<td>M.S. in Clinical Research Administration</td>
<td>$825/ credit</td>
<td></td>
<td>Online</td>
<td>“Prepare you for key roles managing and monitoring life-changing clinical research phases and processes”</td>
<td></td>
</tr>
</tbody>
</table>
Workforce Trends and Employment Opportunities for Program Graduates

As noted above, institutions typically require candidates for their senior level positions to have a minimum of 10-15 years of experience due to the absence of formal training in the field and the high legal and reputational risks of non-compliance and questionable practices. The supply of individuals with such extensive experience is diminishing, given that it is a very young field and many of those who started working in the field in its infancy are now reaching retirement age. In addition, with the continuous increase in complexity of these functions, more and more employers are requiring advanced degrees for senior level positions.

The program being proposed will serve to close the generational gap between young emerging professionals who lack sufficient experience to advance to senior level positions, and the more experienced professionals who are approaching retirement. The program will further serve as a persisting pipeline for creating future leaders.

Students graduating from this program can expect to become Administrators in one of the areas of research administration and compliance, and with sufficient experience can aim to become leaders holding senior executive positions at academic institutions, healthcare organizations, research centers and institutions, government agencies, or in industry.

Research administration and compliance professionals are hired by a diverse set of employers:

- At research institutions and hospitals, these individuals are hired at entry level, mid-level and senior level positions in financial research administration and research compliance, each area having a variety of focused positions. Position titles include coordinators, administrators, managers, assistant and associate directors and directors in each area; education specialists and QA/QI specialists, amongst others.
- Research institutions and hospitals also hire executive leadership on the research side of the administration, to include Assistant/Associate Vice Presidents, Vice Presidents, Assistant/Associate Provosts and Provosts, amongst others.
- Government agencies have a large variety of positions overseeing grants administration, policy development, etc., which vary by agency.
- Many research administration and compliance professionals who leave employment become consultants, again because of the limited number of individuals with sufficient expertise.

According to a 2011 study on research administrator salaries, “those with a masters or doctoral degree will have higher levels of income than those with lower levels of educational achievement. The exception to this is for those with lower levels of educational achievement and over 20 years of research administration experience” (Shambrook, 2011).

According to PayScale.com in January 2016, the majority of research administrators across the US earned between $42,455 and $87,197 a year, with a median of $59,850. The U.S. Bureau of Labor Statistics (BLS, www.bls.gov) projected that the employment of all types of natural sciences managers, including clinical research administrators, would grow by an approximate three percent between 2014 and 2024. Many job openings will be directly related to the replacement of retiring professionals, and competition for such positions is expected to be high. Clinical research administrators can find employment in various industries, from pharmaceutical firms and hospitals to scientific research and development laboratories.

The 2015 IRB Workload and Salary Survey by Public Responsibility in Medicine & Research found that 38% of Institutional Review Board professionals have a master’s degree, 32% have a bachelor’s degree and 18% have a doctoral degree or equivalent. A similar survey of animal welfare administrators found that 25% have a master’s degree, 44% have a bachelor’s degree and 18% have a doctoral degree or equivalent.

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It is anticipated that there will be a greater demand for research administrators and compliance professionals who have an advanced degree. In fact, according to a profile of research administrators in 2015 presented at the 2015 Society of Research Administrators International Symposium, the number of Research Administrators with master’s degrees is on a statistically significant upward trajectory. A sample of job postings may be found in the Appendix.

Recruitment

Target audience for the program will be multifold:
- Current research administration and compliance professionals who are looking to advance into more senior level positions but lack the required master’s degree.
- Junior level research administration and compliance professionals who are seeking to gain an advantage over those who have several more years of experience.
- Graduates from undergraduate programs in a variety of fields such as English, Sociology, Psychology, etc. who are looking for a career path.

Marketing and Recruitment Plan
The program will be marketed via:
- Direct marketing to research administration and compliance offices/staff
- Advertising through professional organization web sites and newsletters
- Presence and dissemination of information at professional conferences
- Dissemination of information at student career fairs
- Message dissemination on social media
- Word of mouth

Enrollment

Enrollment Projections
We anticipate an initial class of approximately 25-35 students. Over time, given that the master’s program would attract both existing professionals in the field and recent graduates of BA or BS programs, we expect each cohort to enroll up to 50 or more students over time.

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<td>46</td>
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Detailed five-year enrollment projections are presented in Table 8 in the Appendix.

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Admissions Requirements

*M.S. in Research Administration and Compliance*

Applicants for master's degree programs at CUNY SPS must have earned a bachelor's degree from an accredited institution, with a GPA of 3.0 or better to qualify for admission. We encourage application from people with a variety of undergraduate majors and professional backgrounds. Background as a research administration and/or compliance professional is an advantage, but is not essential.

Applicants are required to submit official transcripts from all colleges and universities attended, write a personal statement, upload a resume and provide two letters of recommendation.

*Advanced Certificates*

Candidates for admission to advanced certificate programs must possess a bachelor's degree with a 3.0 GPA or higher from an accredited undergraduate institution. Applicants are required to submit official transcripts from all colleges and universities attended. Applicants are also required to write a personal statement, upload a resume.

*Transfer Credit:*

Consistent with CUNY SPS policy, M.S. in Research Administration and Compliance programs will accept up to 12 credits of graduate credits for transfer. Transfer credits will be evaluated on an individual basis to determine applicability to the M.S. in Research Administration and Compliance at CUNY SPS. There is no statute of limitation for transfer credits.
**Curriculum**

M.S. in Research Administration and Compliance

The proposed curriculum provides a solid foundation of knowledge and skills required to become a successful research administration and compliance professional. The curriculum is designed such that it provides academic knowledge, allows the students to apply basic knowledge to real scenarios, and to transfer and present the knowledge in various formats. Students will receive education in three key areas:

1. financial research administration;
2. research integrity, ethics and compliance; and,
3. leadership in research enterprise.

Combined, these three areas will allow the students to obtain an in-depth understanding of the administration and compliance needs of a research enterprise and to serve in a leadership role.

Completion of the program requires 30 credits, as follows:

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<td>BUS 600 - Organizational Behavior and Leadership</td>
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<td>RAC 600 - Introduction to Financial Research Administration</td>
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<td>RAC 699 - Research Administration and Compliance Practicum</td>
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**Electives – three courses from the following:**  

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<td>BUS 640 - Accounting for Business Decisions</td>
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<td>PROM 600 - Fundamentals of Project Management</td>
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<td>RAC 614 - Program Evaluation Methods</td>
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<td>RAC 660 - Sponsored Research Management and Oversight</td>
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<tr>
<td>RAC 670 - Special Topics in Research Administration and Compliance</td>
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</table>

**Total** 30
Advanced Certificate in Research Administration

The proposed curriculum provides a solid foundation of knowledge and skills required to become a successful research administration professional. The curriculum is designed such that it provides academic knowledge, allows the students to apply basic knowledge to real scenarios, and to transfer and present the knowledge in various formats.

Completion of the program requires 12 credits, as follows:

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<tr>
<td>RAC 697 - Research Administration Practicum</td>
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<td><strong>Total</strong></td>
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Advanced Certificate in Research Compliance

The proposed curriculum provides a solid foundation of knowledge and skills required to become a successful research compliance professional. The curriculum is designed such that it provides academic knowledge, allows the students to apply basic knowledge to real scenarios, and to transfer and present the knowledge in various formats.

Completion of the program requires 12 credits, as follows:

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<td><strong>Total</strong></td>
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Course Descriptions

Note: Courses with an asterisk are part of CUNY SPS’s catalog of existing courses.

*BUS 600 - Organizational Behavior and Leadership (3 Credits)
Prerequisite: None
This course is designed to introduce students to the major concepts, models, theories, and research in the field of organizational behavior and leadership. We will cover relevant theories and concepts from psychology, sociology, anthropology, and social psychology. Although the course is analytical and conceptual in nature, the primary focus is on applying behavioral science knowledge to the practice of management and leadership. The course focuses on individual and small-group processes, ethics, managing group and inter-group processes, creating meaningful change, and improving organizational effectiveness.

*BUS 640 - Accounting for Business Decisions (3 Credits)
Prerequisite: One undergraduate course in Accounting and one in Computer Applications.
The course introduces fundamental principles in accounting and demonstrates how these principles are used in preparing and interpreting financial statements of business organizations. Emphasis is given to the effect of transactions and events on the financial position, profitability, and cash flows of business enterprises as well as the use of accounting information in decision making.

*PROM 600 - Fundamentals of Project Management (3 Credits)
Prerequisite: None
This course is designed to provide an overview of project management practices and techniques and their practical application to managing projects. The participants will review practices recognized by the Project Management Institute (PMI) and learn how these can be used to address a range of project challenges. Throughout the course, participants will work in teams to complete exercises and apply what they have learned. Participants should have at least one year experience managing projects.

RAC 600 - Introduction to Financial Research Administration (3 Credits)
Prerequisite: None
This course will provide students with a historical perspective of research administration regulations and introduce them to the various elements of research administration including: pre- and post-award administration; proposal development, submission, review and award negotiation; administrative and fiscal regulations; accountability and risk management; and fiscal stewardship. The course will provide an understanding of how all of these elements come together within the research enterprise, and how to manage related non-compliance or fraud. The course will also examine how administration of research conducted solely within the United States may differ from the administration of global research collaborations.

RAC 601 - Introduction to Research Compliance, Ethics and Integrity (3 Credits)
Prerequisite: None
This course will provide students with a historical perspective of research compliance regulations and ethical standards and introduce them to: regulations and ethics surrounding human and animal subject research; biosafety issues; export control requirements; conflicts of interest; responsible conduct of research; and research integrity. The course will provide an understanding of how all of these elements come together within the research enterprise, and how to manage related non-compliance. The course will also examine how regulatory and ethical oversight of research conducted solely within the United States may differ from similar oversight of global research collaborations.

RAC 602 - Introduction to Clinical Research Administration and Compliance (3 Credits)
Prerequisites: None
This course will introduce students to legal, regulatory and ethical issues surrounding clinical research. Students will also be introduced to the process of development of innovative clinical products and related regulations, ethics and standards that must be complied with from basic research to commercialization. Finally, students will explore how the practical aspects of clinical research administration and compliance differ from the application of administration and compliance requirements in other types of research.
RAC 610 - Policy Development, Analysis and Implementation (3 Credits)
Prerequisite: None
This course will examine theories of policy development. Students will learn how to influence or develop new policies; analyze and evaluate existing policies; and implement policies in light of legal, ethical and practical requirements. Students will also be introduced to the concepts of agenda setting and problem solving. The course will equip students with the knowledge to analyze and identify policy issues and possible problems that can arise in policy formulation and implementation.

RAC 612 - Intellectual Property, Technology Transfer and Commercialization (3 Credits)
Prerequisite: None
This course will introduce students to US intellectual property laws; methods for safeguarding institutional intellectual property, including various types of agreements; functions and management of a technology transfer office; and the process of commercializing innovative products.

RAC 614 - Program Evaluation Methods (3 Credits)
Prerequisite: None
Students in this course will learn the concepts, methods and theories surrounding program evaluation. It will cover the fundamentals of program evaluation, including needs assessments, process evaluation and monitoring. Students will gain the knowledge and skills necessary to perform high quality program evaluations that will have significant impact.

RAC 650 - Advanced Responsible Conduct of Research (3 Credits)
Prerequisite: RAC 600
Students will conduct in-depth analysis of case studies pertaining to major topic areas in the responsible conduct of research. Students will learn how to distinguish responsible research conduct from questionable research practices through the application of relevant ethical guidelines and governmental policies. Students will also be familiarized with various types of research misconduct and the elements that lead to a finding of research misconduct.

RAC 651 - Ethical Issues in Clinical Research (3 Credits)
Prerequisite: None
This course will provide a framework for understanding the central issues of ethics that arise in the conduct of clinical research.

RAC 660 - Sponsored Research Management and Oversight (3 Credits)
Prerequisite: RAC 600
This course will provide an in-depth understanding of internal controls and the audit process as applied to sponsored programs through regulation outlined in 2 CFR 200 and the government published guidelines on internal controls and financial audits. Students will be required to actively participate by choosing an area of research administration in which they will create policies, processes, and documented internal controls. After creating these documents, they will use sample data to perform a small audit of the area they have already studied, culminating in a mini audit report for that area.

RAC 670 - Special Topics in Research Administration and Compliance (3 Credits)
Prerequisite: None
This course will offer the opportunity to study special topics within the scope of Research Administration and Compliance. Topics may vary and could include in-depth study of research conducted in an international setting, biobanking, use of big data in research or other topics relevant to the field.

RAC 697 - Research Administration Practicum (3 Credits)
Prerequisites: Permission of the Academic Director
This course will provide a practicum experience that will prepare students for leadership roles in research administration. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will
develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

**RAC 698 - Research Compliance Practicum (3 Credits)**  
*Prerequisites: Permission of the Academic Director*  
This course will provide a practicum experience that will prepare students for leadership roles in research compliance. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

**RAC 699 - Research Administration and Compliance Practicum (3 Credits)**  
*Prerequisites: Permission of the Academic Director*  
This course will provide a practicum experience that will prepare students for leadership roles in research administration and/or research compliance. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

Support for Student Retention and Progress towards Completion  
CUNY SPS has developed an extensive set of student services, beginning at the point of inquiry and designed to maximize student retention and success and promote efficient completion of degree requirements. The proposed program expects to build upon these services by providing:

- Individualized advisement on course selection that takes into account the full set of demands on the student’s time and their career and academic goals;
- Career and further academic planning guidance beginning in their first semester, delivered by the Career Services office and faculty;
- An interactive orientation to online study and to the mechanics of using Blackboard, the program’s content delivery system;
- Ongoing assessment of the foundation skills that underlie academic and professional success;
- Access to training in the use of software tools required in courses and in the professional workplace, along with helpdesk services;
- Online library services and training in the skills underlying information literacy; and,
- Full financial aid services.

External Evaluation  
An external evaluation has been conducted by Dr. Stephen Hansen, interim Chancellor at Southern Illinois University Edwardsville. He has served as the Associate Vice Chancellor for Research, and as Dean of Research Administration. In addition, Dr. Hansen is an Emeritus Member of the National Council of University Research Administrators.

The full evaluation will be included in the appendix.

Dr. Hansen’s review concludes his evaluation with “Overall, this program is well conceived and developed. It addresses a significant need for professionals in the field of Research Administration and Compliance. The goals and purposes of the program are clear and well-articulated.”

Dr. Hansen included two recommendations. These are listed below, along with responses from the program developers:
Dr. Hansen: The identification of courses are appropriate for the purpose and focus of this master's program. However, it would be useful for students to have an introduction to the overall profession of Research Administration that would encompass the various structures and functions of research administration in order for the students to better understand the broader context and development of the profession.

Response: While we are in general agreement with Dr. Hansen’s concern, we do not feel it necessitates a full course, especially since potential students may already be employed in the field of research administration and/or compliance. Instead, to accomplish this, the student orientation will include an optional session, which will provide an overview of the research administration and compliance profession, how these two major areas overlap, and possible career pathways for the students.

Dr. Hansen: The organization of knowledge, structure, and requirements for the courses are of appropriate rigor for a master’s degree. I would recommend, however, that the student evaluation and requirements for RAC610 be reconsidered. The requirements for this course do not seem to be at the same level of rigor as other courses in the curriculum. I also recommend that reconsideration of RAC660. As currently structured, the course is teaching students how to audit a program, which is not the same as managing a program of research administration. A more broadly conceived course on Management of Research Administration might be more useful for students.

Response: Regarding RAC610, the requirements are based on the responsibilities of senior level staff within the research administration and compliance fields, and the complexity or difficulty will be based on the policy topic of choice. Topic of choice will be approved by teaching faculty and is expected to set the tone for the remainder of the project requirements. With respect to RAC 660, the course covers internal controls, policy writing, process development and improvement, in addition to auditing functions. However, we note that the course description itself does focus on auditing. Thus, we have modified the course description to more accurately reflect the course contents.
**Curricular Map**

**Program Learning Outcomes**
1. Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation.
2. Analyze existing policies, and develop and implement new policies.
3. Demonstrate the ability to develop and lead programs around research administration/compliance.
4. Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
5. Formulate research administration & compliance reports and presentations.
6. Organize effectively across functional areas requiring leadership and negotiations.
7. Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

**M.S. in Research Administration and Compliance**

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**PLOs met with required coursework**

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**Advanced Certificate in Research Administration**

**Course**

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**PLOs met with required coursework**

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Faculty

Role of Faculty in Development of Program:
The Concept Paper for the proposed degree was shared widely with faculty and subject-matter experts, both internal and external to CUNY. Through this process, an advisory committee to consult on the program curriculum and to develop the syllabi was created. The following individuals contributed to the development of the program and the related syllabi:

- Farida Lada, Associate University Provost for Research Administration and Compliance, CUNY
- Kristin Sommer, Professor of Psychology and Research Integrity Officer, Baruch College
- Nicholas Grosskopf, Associate Professor of Public Health, CUNY Graduate School of Public Health & Health Policy and York College; Chair, CUNY University Integrated Institutional Review Board; Co-Director, Collaborative Research Group on Health Policy & Promotion, York College
- Deb Chakravarti, Professor of Chemistry, York College; Director of York College-FDA Partnership
- Lillian Smith, Legal Counsel, Children's Hospital Los Angeles; previously, Director, Strategic Initiatives & Legal Liaison, UCLA Office of Intellectual Property & Industry Sponsored Research
- Stephanie Endy, Associate Vice President for Research, Case Western Reserve University
- Rosamond Rhodes, Professor of Philosophy, The Graduate Center, CUNY; Professor of Medical Education & Director of Bioethics Education, Icahn School of Medicine at Mount Sinai; Professor of Bioethics, Clarkson University

Academic Director
The program proponent, Dr. Farida Lada, Associate University Provost for Research Administration and Compliance, will provide initial oversight during the first year of the program. During this time Dr. Lada will also assist CUNY SPS in recruiting, hiring and transitioning the program to a full-time Academic Director. The Academic Director will oversee the program, and will responsible for managing faculty, coordinating course offerings, student advisement, and performing School service. A job description is included in the appendix.

Teaching Faculty for the Program:
Faculty who will teach in this program will include full-time and part-time CUNY faculty, as well as practitioners in the areas of research administration and compliance. Practitioners may include faculty members of research administration and/or compliance professional organizations, Directors, Vice Presidents, Associate Provosts and Deans of research administration and/or compliance.

Faculty Development
Faculty new to teaching online and/or with CUNY SPS are required to attend and pass with a minimum grade of 85% CUNY SPS’ “Preparation for Teaching Online: A Foundational Workshop for CUNY Faculty.”

Provided by CUNY SPS’ Office of Faculty Development and Instructional Technology, this two-week, asynchronous, instructor-facilitated workshop is designed to prepare faculty for teaching online and/or hybrid classes. The workshop models effective design and facilitation skills and addresses design issues, pedagogical approaches to teaching online and hybrid courses, as well as organization and management of an online class. It also provides an opportunity for faculty to become more familiar with the environment of the Blackboard LMS from both a student and instructor perspective. The total time on task is estimated at an average of 10 hours for participants. There are no face-to-face meetings required, but additional assistance (in person or online) is available.

This foundational workshop has the following objectives, expressed in terms of outcomes for faculty participants:
- To gain first-hand experience in and appreciation of the needs of an online learner;
To become familiar with the basic operations and features of a Blackboard classroom from both student and instructor perspectives;

To identify the salient differences and requirements between face-to-face, hybrid and fully online courses;

To identify some widely accepted best practices for online and hybrid teaching;

To apply to one’s own course the necessary instructional design, organizational and facilitation skills, and overall communication strategies as modeled in the certification workshop;

To reflect on past teaching approaches and begin to devise likely strategies for effective assignments and assessments;

To demonstrate basic competencies in producing the essential elements of an online syllabus and schedule, creating an effective announcement, and providing an ice-breaking introductory topic;

To design engaging discussion prompts that will result in active discussion and stimulate critical thinking;

To share ideas concerning online and hybrid teaching with CUNY colleagues within an online community of learners; and

To become familiar with templates and processes needed in order to be ready to teach online.

CUNY SPS’ Office of Faculty Development and Instructional Technology (OFDIT) also provides online tutorials and resource materials, as well as one-to-one assistance, for CUNY SPS faculty.

An important emphasis in preparing both course developers and trainers is specific strategies for creating and responding to written assignments. The program aims to develop student competence in writing not only in standard academic forms, but also for the purposes they encounter in the professional workplace. A writing handbook will be required for incoming students and used throughout the curriculum. Instructors will learn how to reference sections of the handbook as they are creating writing assignments and later giving feedback to students.

The proposed program will also take advantage of CUNY SPS’ Faculty Peer Mentoring Program (FPMP) for instructors hired to teach in the program online. FPMP is a research-based, formal peer mentoring program, pairing an experienced faculty member with a new CUNY SPS faculty member for the period of one semester. An essential element of this program is that the peer mentor does not serve in any supervisory or evaluation role in relation to his/her mentee. The program, facilitated by OFDIT, is designed to provide new faculty with the appropriate learning models and skills to teach online effectively at CUNY SPS, offer social and informational support for new faculty, strengthen new faculty members’ connections to the online faculty community at CUNY SPS, and help bridge the gap between initial orientation or training in Blackboard and online teaching and actual management of one’s own online course.

The program features a Mentoring Manual for Mentors and Mentees that provides detailed information on procedures, expectations, and a schedule for each stage of the semester along with suggestions for fostering a rewarding mentoring relationship. All forms and guidelines in the Manual focus on best practices for online teaching and the process of self-reflection to improve one’s teaching.

Academic Policies
The proposed program will implement procedures intended to ensure that students are fully responsible for all assignments and that the highest standards of academic integrity are maintained. Such policies and procedures are a necessary component of all academic programs, regardless of the form of course delivery.

The program will address the issue of academic integrity, which includes, but is not restricted to plagiarism, through several mechanisms:

- **Clearly worded policy statement:** The program will introduce entering students to the policies regarding academic integrity during their initial orientation and then will have these policy statements included in the syllabus of every course. The policy statement will include a description of the kinds of behaviors that violate
academic integrity standards, the procedures that will be followed when violations are thought to have occurred,
and the consequences for students should violations be confirmed. In general, all students are bound by the
academic policies established by the School of Professional Studies and published in the School's website,
academic handbook, and annual bulletin.

- **Detailed guidelines for students on how to avoid violations of academic integrity policies:** In some cases,
  students include unattributed sections of text, graphics, and other non-original elements in assignments without
  realizing that this is not allowed. To avoid such incidents, the program will develop and disseminate a detailed
  guide for students that includes, among other things, online sites where students can submit drafts of
  assignments before they are given to the instructor and where sections that are copied from other sources are
  identified.

- **Teaching practices and training:** Instructors will be introduced to the program policies with regard to academic
  integrity when they begin teaching in the program and will be expected to disseminate reminders to their
  students each semester. Additionally, instructors will be given guidelines on specific ways to structure
  assignments and tests so that the possibilities for plagiarism and cheating are minimized.

We are confident that these procedures, taken together, will ensure a program culture in which academic integrity is
widely understood and valued and where violations are minimized and relatively easy to detect. We will continue to
monitor the professional literature in this area so that our efforts are consistent with current best practice.

**Support Services and Resources**

To support students in this new program, CUNY SPS will build on its current infrastructure, which supports dozens of
degree and certificate programs as well as a portfolio of noncredit programs (both online and in-class). The student,
faculty, and administrative services currently offered by CUNY SPS can readily be extended to this new program.

CUNY SPS has advisors who are trained to work with undergraduate and graduate students, and all services,
including the registrar, bursar, and financial aid offices — available online and in person — likewise have the capacity
to handle the additional students.

1. **Academic Advisement:** A dedicated advisor will provide advisement from pre-application through registration,
   completion of degree and graduation. In addition, students receive advisement from faculty teaching their
   courses and interact with each other and with faculty throughout the semester. This ongoing contact ensures
   that there are sufficient informal opportunities to discuss academic issues. Each student is issued a CUNY email
   account facilitating timely communications among students, instructors, advisors, and administrative staff.

2. **Instructional Technology:** The core educational technology infrastructure is CUNY’s enterprise Blackboard
   course management system. Blackboard supports the faculty’s requirement to share documents, have group
   discussions, assign collaborative projects, and respond to individual student questions or assignments.

   Students are required to complete an online orientation designed to ensure an applied, experiential knowledge of
   the learning management system and the highly interactive pedagogy practiced by CUNY SPS online programs.

   The CUNY SPS Help Desk is available to help students and faculty with any technology issues that may arise
   from 9:30am to 9:00pm Monday – Thursday, 9:30am – 5:00pm on Friday, and 9:30am to 4:30pm on Saturday.
   More than simply addressing problems as they arise, the Help Desk takes a proactive stance towards support by
   providing constituents with how-to guides and videos, live training, and regular updates on technology changes.

   Other support services include admissions, registration, and grade reporting, which are all available online or in-
   person. Web-based tools, used by well-trained administrative staff, complement this support structure.
Everything from admissions and financial aid to course registration and payment is available online. The majority of these services are paid for as part of the School’s general operating budget. Expenses other than personnel include the library, equipment, software and services, marketing, and supplies. The majority of library costs are shared over all CUNY SPS programs. Likewise, a base allocation is provided for equipment, software and services, supplies, and marketing.

3. **Library**: CUNY SPS partners with Baruch College’s Newman Library to deliver high quality access to online and in-person services. Through this partnership, the Newman Library provides CUNY SPS students and faculty with access to several hundred online databases and information resources in print and electronic formats. Users have access seven days a week to the library’s on-site computing facilities as well as remote access from off-campus locations to thousands of full-text journals, newspapers, and books. A Web-based reference service, in which librarians answer questions via “text chat,” is available 24 hours a day, seven days a week. Beyond the Newman Library, CUNY SPS students also have access to other libraries across the CUNY system.

4. **Writing Support and Tutoring**: Online writing and tutoring support is provided to CUNY SPS students by a consortium of diverse institutions. Students can choose to speak with a tutor through a live interactive Web conference, on the telephone, using text messaging, or via e-mail. Students may ask questions about specific subject areas, or, if they need assistance writing a paper, they may submit a written draft for a tutor to review. Tutors will not edit, correct, proofread, or rewrite papers. They will, however, coach students to consider the clarity of their work, point out inconsistencies in arguments, and identify problems with grammar. Likewise, if students need additional support in math or statistics, they are encouraged to work with a tutor. Should students need help with research projects, they can choose to work with Research and Information Literacy tutors, all of whom are doctoral students at CUNY.

5. **Career Services**: CUNY SPS’s Career Services Office helps both current students and alumni seek full-time employment, think through a career change, or explore internship opportunities. Additionally, the School is implementing programs to address on-the-job issues, professional development, and career assessment needs. The Career Services Office incorporates a mix of the latest technology and digital communications to offer a host of online tools and workshops that meet the diverse needs of this unique community. In addition to traditional methods of placement counseling, the Optimal Resume online career management program is available. This program provides extensive support for resumes, cover letters, interview practice, portfolios, etc., and places career resources within reach of any students or alumni seeking career assistance.

**Evaluation**

**Governance and Oversight**

The Governing Plan of CUNY SPS requires the appointment of the academic director of each degree program to serve on the Governing Council. In addition, each program will have appointed to the Governing Council full-time and consortial faculty elected by and in number equal to 25% of such faculty in each approved degree program who shall also serve for staggered three-year terms. This ensures that each program has representation on the school’s Governing Council.

**Program Oversight**

Oversight of the program will be led by the Dean of CUNY SPS, the Associate Deans, the Assistant Dean, the Academic Director, and appointed faculty for the program.

1. **Program Outcomes Assessment**: All degree programs are required to identify programmatic outcomes, which include student learning outcomes. Consistent with the requirements of regional accreditation agencies, the focus of evaluation will be on direct assessment of student achievement of learning outcomes using authentic
evidence of student work. Assessment will be accomplished by establishing a program assessment cycle and instruments to evaluate student achievement of program competencies. Indirect assessment measures include student course evaluations, and grade distributions. In addition to measures of academic achievement, data on retention, progress toward degree, degree completion, and post-graduation outcomes will be tracked as key indices of program success.

2. **Course Outcomes**: Learning outcomes are defined for each course and provide key reference points for course design and assessment. Courses will use a combination of evaluative devices, both formative and summative, to provide frequent measures of and feedback on student learning progress within courses. Faculty will provide students with written reports before mid-term, spelling out those areas where students can improve their performance.

3. **Satisfactory Progress toward degree**: The proposed program will conduct academic review sessions twice each year. These are sessions in which program leaders, along with academic support staff, review students’ records and make decisions with regard to both individual students’ status and program policy and practice.

4. **Instructor Performance**: Consistent with the practice of other CUNY SPS programs, the program will track instructor effectiveness closely. For courses taught online, each instructor’s readiness for online teaching will be assessed well before the beginning of each term, and necessary training will be required, both in the areas of pedagogy and use of technology tools. Each new instructor will be assigned an experienced online instructor as a mentor, with the mentor providing close oversight and guidance. In addition to reports from the mentors, each instructor—online or in-person—will have his or her course and teaching practices formally evaluated each term via a Peer Teaching Evaluation. Additionally, the extent to which students are successful in mastering course-specific objectives will be an important measure of the accomplishments of each instructor.

**Cost Assessment**

**Budget Tables**

Budget information is contained in the Appendices as follows:

- Table 5: New Resources
- Table 6: Projected Revenue
- Table 7: Five-Year Financial Projections Worksheet
- Table 8: Five-Year Revenue Projections Worksheet
- Table 9: Five Year Enrollment and Course Section Projections
References


Course Syllabi

Note: Syllabi are only included for courses that do not yet exist at CUNY SPS.
CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 600 - Introduction to Financial Research Administration
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will provide the students with a historical perspective of research administration regulations and introduce them to the various elements of research administration including: pre- and post-award administration; proposal development, submission, review and award negotiation; administrative and fiscal regulations; accountability and risk management; and fiscal stewardship. The course will provide an understanding of how all of these elements come together within the research enterprise, and how to manage related non-compliance or fraud. The course will also examine how administration of research conducted solely within the US may differ from the administration of global research collaborations.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Demonstrate an in-depth understanding of the life cycle of sponsored programs
- Apply the fundamental regulations guiding sponsored programs
- Interpret the financial regulations shaping the research enterprise

Program Learning Outcomes/Competencies addressed by the course:
1. Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation
4. Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
5. Formulate research administration reports and presentations

Course Grading and Requirements:
- Discussion Board Participation (30%): Students are required to post two questions each week to the discussion board from the required readings as well as respond to at least two other students' questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to think outside the box.
- Build a Budget (10%): Build an allowable budget, as described in the assignment for week 4.
- Mock Administrative Proposal Review (15%): Conduct an administrative review, as described in the assignment for week 5.
- Video Presentation on International Collaborations (15%): Develop and submit a video presentation on international collaborations, as described in the assignment for week 9.
- Internal Controls Flow Charts (15%): Develop and submit internal control flow charts, as described in the assignment for week 10.
- Outlines of Evaluation Methods (15%): Develop and submit an outline of evaluations methods, as described in the assignment for week 12.

Grading Scale

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Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies

Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

Required Text:

Regulatory Resources:
Regulatory resources to be used as applicable to the topic within the course outline. Regulatory resources to be updated over time.
- Federal Acquisition Regulations, Subpart 1.1: https://www.acquisition.gov/?q=browsefar
- US Code of Federal Regulations, 2 CFR 1: http://www.ecfr.gov/cgi-bin/text-idx?SID=58811909d0ee0f350a1b0e2f4a09b0d&mc=true&node=pt2.1.1&rgn=dv5

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Course Outline:

Week 1 – History and Overview of the Research Enterprise

Reading:
National Research Council, Chapters 2 & 6
Council on Government Relations, Principles II: 1-2

Assignment
Discussion board participation
Week 2 – Finding Funding  
*Reading:*  
Hall, Chapter 2  
Smith, Chapter 5  

*Assignment*  
Discussion board participation

Week 3 – Key Financial Principles  
*Reading:*  
• Smith, Chapter 4  
• Kulakowski & Chronister, Chapters 37, 41 & 42  
• Council on Government Relations, Principles III:1-11  

*Assignment*  
Discussion board participation

Week 4 – Developing a Budget and the Budget Narrative  
*Reading:*  
Hall, Chapter 4  
Kulakowski & Chronister, Chapter 31  
Council on Government Relations, Principle II-3  

*Assignment*  
Discussion board participation  
Build and submit an allowable budget developed in MS Excel to include personnel, supplies, travel, services, subawards and facilities & administration costs.

*Additional Resources*  
Microsoft Excel Tutorial for Beginners #1 Video: [https://www.youtube.com/watch?v=8L1OVkw2ZQ8](https://www.youtube.com/watch?v=8L1OVkw2ZQ8)

Week 5: The Grant Proposal: Review and Submission  
*Reading:*  
Hall, Chapter 5  
Kulakowski & Chronister, Chapter 28  

*Assignment:*  
Discussion board participation  
Conduct a mock administrative proposal review of proposal provided by the instructor and submit your review comments.

Week 6 – Procurement  
*Reading:*  
Smith, Chapter 6  
Council on Government Relations, Principles III: 12-13  

*Assignment*  
Discussion board participation
Week 7 – Award Acceptance and Negotiation
Reading:
Council on Government Relations, Principle II-4

Assignment
Discussion board participation

Week 8 – Award Management
Reading:
Council on Government Relations, Principles II: 5-7 & 9
Hall, Chapter 9

Assignment
Discussion board participation

Week 9 – International Collaborations
Reading:
Council on Government Relations, Principles II-8 & III: 14-15
Kulakowski & Chronicle, Chapter 32

Assignment
Discussion board participation
Prepare and submit a 15 minute video presentation for an audience of researchers planning to participate in international grants for the first time.

Week 10 – Internal Controls: Business Processes, Control Points and Risk Assessments
Reading:
http://grants.complianceexpert.com/agency-guidance-and-regulations/compliance-supplement/part-6-internal-control-1.102122
http://www.usg.edu/audit/briefing/internal_control_issues_concerning_grant_awards

Assignment
Discussion board participation
Develop and submit flow charts for internal control processes related to 2 research administration functions.

Week 11 – Compliance Monitoring and Audits
Reading:
Kulakowski & Chronicle, Chapter 41
Council on Government Relations, Principle V
Week 12 – Institutional Assessment and Evaluation

Reading:
Smith, Chapter 17

Assignment
Discussion board participation
Develop and submit an outline of the methods you would use to evaluate an existing research administration program, and to identify ways to improve on existing deficiencies.

Week 13 – External Assessment and Evaluation

Reading:
National Research Council, Chapters 4 & 5

Assignment
Discussion board participation

Week 14 – Leadership and Management Roles of Research Administration Professionals

Reading:
Kulakowski & Chronister, Chapters 1 & 6
Smith, Chapters 1 & 8

Assignment
Discussion board participation

Week 15 – External Relations

Smith, Chapter 2
Kulakowski & Chronister, Chapters 10, 11 & 18

Assignment
Discussion board participation

ACCESSIBILITY AND ACCOMMODATIONS: The CUNY School of Professional Studies is firmly committed to making higher education accessible to students with disabilities by removing architectural barriers and providing programs and support services necessary for them to benefit from the instruction and resources of the University. Early planning is essential for many of the resources and accommodations provided. Please see: https://sps.cuny.edu/student-services/disability-services

ONLINE ETIQUETTE AND ANTI-HARASSMENT POLICY: The University strictly prohibits the use of University online resources or facilities, including Blackboard, for the purpose of harassment of any individual or for the posting of any material that is scandalous, libelous, offensive or otherwise against the University's policies. Please see: http://catalog.sps.cuny.edu/content.php?catoid=2&navoid=205

ACADEMIC INTEGRITY: Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the educational mission of the City University of New York and the students’ personal and intellectual growth. Please see: https://sps.cuny.edu/about/dean/policies/academic-and-student-policies/academic-integrity

STUDENT SUPPORT SERVICES: If you need any additional help, please visit Student Support Services: https://sps.cuny.edu/student-services
CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RCA 601 - Introduction to Research Compliance, Ethics and Integrity
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will provide students with a historical perspective of research compliance regulations and ethical standards and introduce them to: regulations and ethics surrounding human and animal subject research; biosafety issues; export control requirements; conflicts of interest; responsible conduct of research; and research integrity. The course will provide an understanding of how all of these elements come together within the research enterprise, and how to manage related non-compliance. The course will also examine how regulatory and ethical oversight of research conducted solely within the United States may differ from similar oversight of global research collaborations.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Demonstrate an in-depth understanding of the concepts surrounding research integrity and ethics
- Identify, apply and analyze research compliance requirements
- Draw connections amongst the various areas of research ethics, integrity and compliance in order to formulate a comprehensive conception of the research enterprise
- Critique related programs within an existing research enterprise
- Design related programs or recommend restructuring of existing ineffective programs

Program Learning Outcomes/Competencies addressed by the course:
(1) Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation.
(2) Analyze existing policies, and develop and implement new policies.
(4) Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
(6) Organize effectively across functional areas requiring leadership and negotiations.
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

Course Grading and Requirements:
- Opening Statement: Write a 0.5-1 page statement about yourself, your career goals, why you are taking this course and what you expect to learn from it. Write about what component of the course would be of most interest to you. Submit the opening statement to the discussion board.
- The Lab & Reflection Paper (20%): Play The Lab, an interactive movie on research misconduct, as one or more of the characters. Write a reflection paper in response to your experience as a character in the movie, or in response to something specifically mentioned in the movie. Post your reflection paper, and make at least 3 responses to other reflection papers. Length: 1 page
- Discussion Board Participation (20%): Students are required to post two questions to the discussion board from the required readings as well as respond to at least two other students’ questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to think outside the box.
- Reflection Paper on Questionable Research Practices (20%): see assignment for week 3.
- Presentation on Human Subject Research (10%): see assignment for week 6.
- Graphic Representation on Use and Care of Animals and Biosafety (10%): see assignment for week 8.
- Education Plan for Export Controls (10%): see assignment for week 9.
- Outline for Managing Conflicts of Interest (10%): see assignment for week 10.

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Textbooks

- National Research Council, Division on Earth and Life Studies, Institute of Medicine, Board on Health Sciences Policy, Committee on Assessing Integrity in Research Environments. (2002). *Integrity in Scientific Research: Creating an Environment That Promotes Responsible Conduct*. National Academy of Sciences.

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Course Outline

**Week 1 - Introduction to the concepts of research compliance, research ethics and research integrity & the differences amongst these concepts; course overview**

*Reading*

- US DHHS Office of Research Integrity Infographics: [https://ori.hhs.gov/infographics](https://ori.hhs.gov/infographics)

*Assignment:* Write an opening statement – due week 2

**Week 2 - Elements of a research organization and its structure**

*Reading*

- National Research Council, 2002, Chapter 3
- Bankert & Amdur, Chapters 2-2 and 2-4

*Assignment*

- Opening statement due
- Discussion board participation due

**Week 3 - Research Integrity and Responsible Conduct of Research (RCR)**

*Reading*

- National Research Council, 2002, Chapter 2
Assignment: Identify and review 3 scholarly papers on questionable research practices, and write a brief (1-3 page) reflection paper on this topic.

Week 4 - Research Misconduct
Reading
- Steneck et al., 2015, Part III

Assignment
- Play The Lab (https://ori.hhs.gov/thelab) and write reflection paper – due week 5
- Discussion board participation due

Week 5 – Protection of Human Subjects – History & Evolution
Reading
- Steneck, 2007, Chapter 3

Assignment: Discussion board participation due

Week 6 – Protection of Human Subjects – Present Day Oversight
Reading
- Bankert & Amdur, Chapters 1-3

Assignment
- Discussion board participation due
- Identify a practical-theoretical problem within a specific discipline employing human subject research, and prepare a 10-15 minute video presentation on how to address the problem; your audience is the researchers conducting this type of research.

Week 7 – Use and Care of Animals
Reading
- National Research Council, 2011, Chapters 1-2
- Petrie & Wallace, Chapters 1-2

Assignment: Discussion board participation due

Week 8 – Biosafety & Radiation Safety
Reading
Proposal to Establish a Master of Science in Research Administration and Compliance
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Assignment
- Discussion board participation due
- Prepare and submit a graphic representation of the overlapping concerns across the Use and Care of Animals and Biosafety

Week 9 – Export Control Requirements

Reading
- US Department of the Treasury Office of Foreign Assets Control (OFAC) web site: https://www.treasury.gov/about/organizational-structure/offices/Pages/Office-of-Foreign-Assets-Control.aspx
- Handout: Export Control Overview

Assignment
- Discussion board participation due
- Develop and submit a plan for raising awareness about and providing education to researchers on the topic of export controls.

Week 10 – Conflicts of Interest

Reading

Assignment
- Discussion board participation due
- Prepare and submit an outline of mechanism by which you would manage conflicts involving exchange of funds and intellectual property across an inventor’s research institution and his/her spinoff company.

Week 11 – Mentor and Trainee Responsibilities, Peer Review & Authorship

Reading
- Steneck, 2007, Chapters 7, 9 & 10
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- Wager, 2007

Assignment: Discussion board participation due

**Week 12 – Data Management and Ownership & Collaborative Science**

*Reading*

Assignment: Discussion board participation due

**Week 13 – Research Governance in the International Arena**

*Reading*
- Steneck, et.al., 2015, Part I
- Singapore Statement on Research Integrity: [http://www.singaporestatement.org/statement.html](http://www.singaporestatement.org/statement.html)

Assignment: Discussion board participation due

**Week 14 – Current Events or Topics**

*Reading*
- TBD by instructor

Assignment: Discussion board participation due

**Week 15 – Course wrap up**

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CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 602 - Introduction to Clinical Research Administration & Compliance
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will introduce students to legal, regulatory and ethical issues surrounding clinical research. Students will also be introduced to the process of development of innovative clinical products and related regulations, ethics and standards that must be complied with from basic research to commercialization. Finally, students will explore how the practical aspects of clinical research administration and compliance differ from the application of administration and compliance requirements in other types of research.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Map new drug discovery and development process from research laboratory to patient: Preclinical research as well as Clinical Trial Phases I, II, III and IV
- Analyze ethical issues related to Clinical Trials and Informed Consent
- Apply Good Laboratory Practice (GLP), current Good Manufacturing Practice (cGMP) and Good Clinical Practice (GCP)
- Differentiate between and draw connections amongst roles of different contributors in a Clinical Trial such as Sponsor, Investigator, Monitor, Institutional Review Board (IRB)/Independent Ethics Committee (IEC), Contract Research Organizations (CROs), Data Monitoring Committees, etc.
- Formulate Clinical Trial data management system to maintain integrity, quality and privacy of Clinical Trial data
- Apply US Food and Drug Administration (FDA) and the International Conference on Harmonization (ICH) GCP Guidance Documents
- Implement product safety and regulatory requirements

Students will be required to:
- Carry out case studies involving retrospective analysis of a topic relevant to Clinical Research with class presentation and submission of a written report.
- Participate in discussions related to Clinical Research case studies.
- Reflect on what they have learned during the course.

Program Learning Outcomes/Competencies addressed by the course:
(1) Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation
(2) Analyze existing policies, and develop and implement new policies
(3) Demonstrate the ability to develop and lead programs around research administration/compliance
(4) Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms
(5) Formulate research administration and compliance reports and presentations
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion

Course Grading and Requirements:
- Discussion Board Participation (20%): Students are required to post 2 questions each week to the discussion board from the required readings, and respond to at least two questions from other students. The purpose of this is to foster an engaging class discussion.
- **Graphic Representation of Stakeholder Relationships (20%)**: Develop and submit a graphic representation of the relationship amongst the various stakeholders involved in the clinical trial process, and make recommendations for any changes you would make to the existing relationship structure.

- **Reflection Paper (20%)**: Prepare and submit a reflection paper on the globalization of clinical trials and related challenges.

- **Outline of Critical Analysis Paper (10%)**: Draft and submit an outline of your final critical analysis paper.

- **Critical Analysis Paper (30%)**: Students will prepare and submit a critical analysis paper on the regulatory and ethical issues, and good practices that may be applicable within each step of either the drug development process or the lifecycle of a medical device.

### Grading Scale

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### Required Texts:


### Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library's e-resources.

### Course Outline:

**Week 1 - Introduction to: medical codes & oaths and evolution of regulations related to clinical research; Tuskegee syphilis study; thalidomide disaster; The Nuremberg Code; The Declaration of Helsinki; The Belmont Report**

**Reading**

- Emanuel et al, Parts I & II
- Waller et al, Chapter 1

**Assignment**: Discussion Board Participation
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Week 2 – Drug discovery, development and approval process; preclinical trials, and clinical trials phases I-IV
Reading
• Hill & Rang, Chapter 4

Assignment: Discussion Board Participation

Week 3 – Lifecycle of medical device
Reading
• Ogrodnik, Chapter 1 & 9
• US FDA web site on Device Discovery and Concept, https://www.fda.gov/ForPatients/Approvals/Devices/ucm405378.htm

Assignment: Discussion Board Participation

Week 4 – Governance of drug development process – a global perspective
Reading
• Ng, Chapters 7 & 8
• Ogrodnik, Chapter 9
• International Council for Harmonisation web site: http://www.ich.org/home.html

Assignment: Discussion Board Participation

Week 5 – History and evolution of US regulations pertaining to clinical trials; current US FDA regulations governing clinical trials
Reading
• US FDA web site on Clinical Trials and Human Subject Protection Regulations, https://www.fda.gov/ScienceResearch/SpecialTopics/RunningClinicalTrials/ucm155713.htm

Assignment
• Discussion Board Participation
• Outline of Critical Analysis Paper due

Week 6 – Intellectual property rights in drug development
Reading
• Hill & Rang, Chapter 19
• Ogrodnik, Chapter 13

Assignment: Discussion Board Participation

Week 7 – Roles and agendas of the various stakeholders in the protection of human subjects of clinical trials and the relationship amongst the stakeholders: sponsor, investigators, subjects, institutional review boards (IRB)/independent ethics committee (IEC), independent data monitoring committee (iDMC), monitors, contract research organizations
Reading
• Excerpts from various texts
Assignment
- Discussion Board Participation
- Graphic representation of stakeholder relationships

**Week 8 – Ethics of pre-clinical and clinical research**

*Reading*
- Emanuel et al, Part VII
- Waller et al, Chapter 8
- Selections from Ng, Chapters 4, 5 & 6

Assignment: Discussion Board Participation

**Week 9 – Clinical Trial Agreements**

*Reading*

Assignment: Discussion Board Participation

**Week 10 – Recruitment of human participants for clinical trials; vulnerable populations; informed consent**

*Reading*
- Emanuel et al, Parts IV, V & VI
- Waller et al, Chapter 2

Assignment: Discussion Board Participation

**Week 11 – Managing and monitoring clinical trials; corrective and preventive action plans (CAPA)**

*Reading*
- Good, Chapters 13 & 14
- US FDA web site on Corrective and Preventive Actions (CAPA), https://www.fda.gov/ICECI/Inspections/InspectionGuides/ucm170612.htm

Assignment: Discussion Board Participation

**Week 12 – Adverse events and safety reporting**

*Reading*

Assignment: Discussion Board Participation

**Week 13 – Challenges related to globalizing clinical trials**

*Reading*
• Selections from Petryna (2009)
• Selections from Petryna et al (2006)

**Assignment**
- Discussion Board Participation
- Reflection paper due

**Week 14 – New challenges and future perspectives on clinical research**

**Reading**
- To be determined

**Assignment**
- Discussion Board Participation
- Critical Analysis Paper due

**Week 15 – Course wrap up**

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Program: Research Administration and Compliance
Course Name and Number: RAC 610 - Policy Development, Analysis and Implementation
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will examine theories of policy development. Students will learn how to influence or develop new policies; analyze and evaluate existing policies; and implement policies in light of legal, ethical and practical requirements. Students will also be introduced to the concepts of agenda setting and problem solving. The course will equip the students with the knowledge to analyze and identify policy issues and possible problems that can arise in policy formulation and implementation.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Identify and consult with stakeholders to determine policy needs, expectations and demands
- Conduct evaluation of institutional needs and existing policy
- Develop policies in response to policy gaps or emerging needs
- Construct solutions to the problems that may arise when implementing policies in practice
- Design a policy implementation plan

Program Learning Outcomes/Competencies addressed by the course:
1. Analyze existing policies, and develop and implement new policies.
2. Organize effectively across functional areas requiring leadership and negotiations.
3. Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

Course Grading and Requirements:
- Discussion Board Participation (30%): Students are required to post two questions each week (weeks 2-13) to the discussion board from the required readings as well as respond to at least two other students' questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to think outside the box.
- Final Project (70% total): You will work on various components of the final project, starting in week 1. At the end of the term, you will compile all components for a final project submission in week 14. Choose between the following formats for the final compiled project submission (1) create a mini e-book; (2) develop a 10-slide PowerPoint presentation with a script; (3) create a zine; (4) make a short video presentation for which you write a script; or (5) write a formal 6-8 page paper on your topic. The project components will be graded as follows:
  o Review of existing policies and suggested improvements – 10%
  o Report on policy recommendations – 10%
  o Identification of stakeholders, their agendas and areas of influence – 10%
  o Development of implementation plan, alternate implementation strategies, and identification of strategy constraints – 10%
  o Development of message – 10%
  o Development of policy monitoring and evaluation structure – 10%
  o Final compiled project – 10%
Grading Scale

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Textbooks

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Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Course Outline:

**Week 1 - Introduction to policy development, analysis and implementation; course overview**

*Reading*
Bardach & Patashnik, Part I

*Assignment:* Identify an area of policy related to the governance of research and an organization or organizational unit for your final project. Due Week 3.

**Week 2 - Problem identification, agenda setting and prioritization**

*Reading*
Bardach & Patashnik, Part II
Community Tool Box - Influencing Policy Development: [http://ctb.ku.edu/en/influencing-policy-development](http://ctb.ku.edu/en/influencing-policy-development), Sections 1-4

**Week 3 – Policy formulation**

*Reading*
Bardach & Patashnik, Part III

**Week 4 – Analysis of existing organizational policy**

*Reading*
Bardach & Patashnik, Part IV and Appendix A

*Assignment:* Review existing policy on your selected topic at your organization of choice and suggest improvements or additions to the policy. Due Week 5.

**Week 5 – Organizational structure and policy environment**

*Reading*
Assignment: Prepare a report that places your policy recommendations within the context of the organization you chose and its environment. Due Week 8.

**Week 6 – Identifying the stakeholders – Allies & Opponents**

*Reading*

Community Tool Box - Influencing Policy Development: [http://ctb.ku.edu/en/influencing-policy-development](http://ctb.ku.edu/en/influencing-policy-development), Sections 6 & 7


Assignment: For your chosen policy and organization, identify key stakeholders, their respective agenda and areas of influence. Due Week 8.

**Week 7 – Strategic decision making**

*Reading*

Community Tool Box - Influencing Policy Development: [http://ctb.ku.edu/en/influencing-policy-development](http://ctb.ku.edu/en/influencing-policy-development), Section 8


**Week 8 – Policy implementation strategies**

*Reading*

Bardach & Patashnik, Part IV and Appendices D


Assignment: For your recommended policy changes and/or additions, develop a policy implementation plan, identify alternative implementation strategies and implementation constraints. Due Week 9.

**Week 9: Framing the message**

*Reading*


Assignment: For your recommended policy changes, develop the messages that must be disseminated, and identify the audience for each message. Due Week 10.

**Week 10: Policy monitoring and evaluation**

*Reading*

Community Tool Box - Influencing Policy Development: [http://ctb.ku.edu/en/influencing-policy-development](http://ctb.ku.edu/en/influencing-policy-development), Section 12

Assignment: For your recommended policy changes, develop a policy monitoring and evaluation structure. Due Week 10.

**Week 11: Institutional policy framework for fostering integrity in research**

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Week 12: Institutional policy framework toward protection of human subjects of research
Reading
National Research Council (2002), Chapter 4

Week 13: Institutional policy framework toward protection of animal subjects of research
Reading
Bankert & Amdur, Chapter 2-2

Week 14: Policy focus – select topic
Assignment: Final project due

Week 15 – Course wrap up

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Program: Research Administration and Compliance
Course Name and Number: RAC 612 - Intellectual Property, Technology Transfer & Commercialization
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will introduce students to US intellectual property laws; methods for safeguarding institutional intellectual property, including various types of agreements; functions and management of a technology transfer office; and the process of commercializing innovative products.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Identify the different forms of intellectual property protection with a focus on patents and copyrights, the most common forms of intellectual property resulting from academic research
- Demonstrate basic knowledge of the activities performed in technology transfer offices, including patenting, marketing, valuation, IP law, business development, licensing, and intellectual asset management
- Understand and apply the variety of strategies employed to safeguard institution-owned intellectual property, including the basic elements of patent and copyright protection, the patent prosecution process in the U.S. and worldwide, and other protections
- Analyze common considerations used to determine commercial potential of institution-owned intellectual property
- Discern the different methods and agreement types used to convey rights to third parties to commercialize and further develop institution-owned intellectual property
- Obtain a practical understanding of other considerations such as costs, timelines, inventorship, what constitutes a public disclosure and how that affects rights worldwide
- Differentiate between and draw connections amongst relationships, roles and responsibilities of tech transfer office personnel, academic inventors and authors, and outside counsel, including whether/when to conduct a prior art search, inventorship issues, federal funding and sponsored research, and establishing communication channels to avoid loss of rights

Program Learning Outcomes/Competencies addressed by the course:
(1) Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation
(2) Analyze existing policies, and develop and implement new policies
(5) Formulate research administration and compliance reports and presentations

Course Grading and Requirements:
- Discussion Board Participation (30 points): Students are required to post two questions each week to the discussion board from the required readings as well as respond to at least two other students’ questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to “think differently”.
- Reflection Papers (30%): Write and submit 3 reflection papers, worth 10% each
- Develop a Graphic Model to Plan Your Final Intellectual Property Strategy (20%)
- Develop an Intellectual Property Strategy (20%): Review existing, proposed or theoretical IP strategy of an organization, published on the Internet or within journal articles. Analyze the strategy, its effectiveness in achieving the organization’s mission, and recommend changes to make it more effective.
Grading Scale

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Required Readings:
- Association of University Technology Managers. (2007). In the Public Interest: Nine Points to Consider in Licensing University Technology: [http://www.autm.net/AUTMMain/media/Advocacy/Documents/Points_to_Consider.pdf](http://www.autm.net/AUTMMain/media/Advocacy/Documents/Points_to_Consider.pdf)

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<tr>
<td>3</td>
<td>Introduction to the patent prosecution process, including obtaining U.S. and worldwide rights, the role of faculty inventors, technology transfer offices, outside counsel, and licensees.</td>
<td>Technology Transfer Practice Manual, Vol. 3 McManus, Part II and Part III</td>
<td>Discussion Board Participation</td>
</tr>
<tr>
<td>4</td>
<td>Basic Copyright Law, including authorship, scope of protections, copyright rights, and discerning institution-owned copyrights versus faculty-owned copyrights</td>
<td>Technology Transfer Practice Manual, Vol. 1 Technology Transfer Practice Manual, Vol. 3</td>
<td>Discussion Board Participation 1st reflection paper due</td>
</tr>
</tbody>
</table>
mechanisms, including evaluation of legal factors, commercial opportunities, and available resources to protect the technology.

| 6 | Overview of Licensing and Technology Transfer | Nine Points to Consider in Licensing University Technology  
COGR 21 Questions Paper  
Intellectual Property Licensing Basics for Nonprofits  
McManus, Part I | Discussion Board Participation |
|---|--------------------------------------------|-------------------------------------------------------------|
| 7 | Intellectual Property Valuation: Considerations used to identify potentially licensable assets, the market for licensing assets, and other due diligence activities | Technology Transfer Practice Manual, Vol. 3  
McManus, Part IV | Discussion Board Participation |
| 8 | Technology Transfer Strategies: Identifying commercial opportunities and establishing target licensees. | Successful Technology Licensing (WIPO)  
McManus, Part IV and Part V | Discussion Board Participation  
2nd reflection paper due |
| 9 | Technology Transfer Strategies: Marketing and business development strategies to identify and assess appropriate licensees. | Successful Technology Licensing (WIPO)  
McManus, Part IV and Part V | Discussion Board Participation |
| 10 | Technology Transfer Agreement Development, including term sheets, options, and licenses. | Technology Transfer Practice Manual, Vol. 4  
McManus, Part VI | Discussion Board Participation |
| 11 | Developing and Executing a Licensing Strategy | Technology Transfer Practice Manual, Vol. 4  
Successful Technology Licensing (WIPO)  
McManus, Part VI | Discussion Board Participation  
Graphic model of Intellectual Property Strategy due |
| 12 | Defining Appropriate Terms and Conditions for a License | Technology Transfer Practice Manual, Vol. 4  
Successful Technology Licensing (WIPO)  
Nine Points to Consider in Licensing University Technology | Discussion Board Participation  
3rd reflection paper due |
| 13 | Ensuring Compliance with Technology Transfer Agreements | Technology Transfer Practice Manual, Vol. 4  
McManus, Part VI | Discussion Board Participation |
| 14 | Other Common Considerations Unique to Academic Institutions: Conflicts of Interest, Applicable Policies to Ensure IP Assignment and Rights, Governmental Rights and Rights of Other Research Sponsors | Technology Transfer Practice Manual, Vol. 4  
Nine Points to Consider in Licensing University Technology | Discussion Board Participation  
Intellectual Property Strategy due |
| 15 | Course wrap up | | |
ACCESSIBILITY AND ACCOMMODATIONS: The CUNY School of Professional Studies is firmly committed to making higher education accessible to students with disabilities by removing architectural barriers and providing programs and support services necessary for them to benefit from the instruction and resources of the University. Early planning is essential for many of the resources and accommodations provided. Please see: https://sps.cuny.edu/student-services/disability-services

ONLINE ETIQUETTE AND ANTI-HARASSMENT POLICY: The University strictly prohibits the use of University online resources or facilities, including Blackboard, for the purpose of harassment of any individual or for the posting of any material that is scandalous, libelous, offensive or otherwise against the University’s policies. Please see: http://catalog.sps.cuny.edu/content.php?catoid=2&navoid=205

ACADEMIC INTEGRITY: Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the educational mission of the City University of New York and the students’ personal and intellectual growth. Please see: https://sps.cuny.edu/about/dean/policies/academic-and-student-policies/academic-integrity

STUDENT SUPPORT SERVICES: If you need any additional help, please visit Student Support Services: https://sps.cuny.edu/student-services
Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 614 - Program Evaluation Methods
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
Students in this course will learn the concepts, methods and theories surrounding program evaluation. It will cover the fundamentals of program evaluation, including needs assessments, process evaluation and monitoring. Students will gain the knowledge and skills necessary to perform high quality program evaluations that will have significant impact.

Student Learning Outcomes:
At the end of this course, students will be able to:

- Describe methods for engaging key constituencies in planning, implementing and presenting findings of evaluation studies
- Design and implement systematic evaluations of various types of interventions including programs and policies

Students will be required to:

- Identify common methodological, organizational and logistic obstacles to effective evaluation and describe strategies for overcoming these obstacles
- Develop strategies for finding resources needed for evaluation of various kinds of programs and policies
- Design and implement systematic evaluations of various types of interventions including programs and policies

Program Learning Outcomes/Competencies addressed by the course:
(4) Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms.
(6) Organize effectively across functional areas requiring leadership and negotiations.

Course Grading and Requirements:
Most assignments will be evaluated using holistic grading rubrics that will be posted to our Blackboard course site. Students are encouraged to use the criteria on the rubrics in helping construct their assignments (e.g., headings/sections, sub-sections, etc.).

The relative weight of each course component is as follows:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation &amp; Professionalism</td>
<td>10%</td>
</tr>
<tr>
<td>Critical Discussion Leader</td>
<td>20%</td>
</tr>
<tr>
<td>Response Papers</td>
<td>15%</td>
</tr>
<tr>
<td>Response Paper #1</td>
<td>5%</td>
</tr>
<tr>
<td>Response Paper #2</td>
<td>5%</td>
</tr>
<tr>
<td>Response Paper #3</td>
<td>5%</td>
</tr>
<tr>
<td>Evaluation Plan, Outcomes and Integrated Report</td>
<td>55%</td>
</tr>
<tr>
<td>Evaluation Plan Component #1: Background</td>
<td>5%</td>
</tr>
<tr>
<td>Evaluation Plan Component #1: Description of the Evaluation</td>
<td>15%</td>
</tr>
<tr>
<td>Evaluation Outcomes Component #1: Results/Findings</td>
<td>5%</td>
</tr>
<tr>
<td>Evaluation Outcomes Component #2: Discussion, Conclusions &amp; Recommendations</td>
<td>10%</td>
</tr>
<tr>
<td>Integrated Evaluation Report</td>
<td>20%</td>
</tr>
</tbody>
</table>

100%

Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

52
Grading Scale

<table>
<thead>
<tr>
<th>Quality of Performance</th>
<th>Letter Grade</th>
<th>Range %</th>
<th>GPA/ Quality Pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent - work is of exceptional quality</td>
<td>A-</td>
<td>90 - 92.9</td>
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</tr>
<tr>
<td></td>
<td>C</td>
<td>70 - 76.9</td>
<td>2</td>
</tr>
<tr>
<td>Failure</td>
<td>F</td>
<td>&lt; 70</td>
<td>0</td>
</tr>
</tbody>
</table>

Participation & Professionalism: Your participation in class activities and discussions is expected throughout the semester. Class sessions will consist mainly of online interactive discussions, team activities, virtual guest speakers and the occasional audio-embedded or video lecture. Your instructor has the perspective that all classes are essentially intercultural encounters, among people in the class, between the reader and the author, and that we are all learning how to learn from one another.

Critical Discussion (Seminar) Leader: Each student will be required to lead a minimum of two online critical discussions on supplemental articles/papers during at least two class sessions. Seminar Leaders should post 3-5 critical discussion questions to our Blackboard Discussion Board Forum at least 3 days before the scheduled class sessions for peer review. Students will be required to moderate the discussion throughout the week, posting clarifying questions and facilitating critical interaction.

Response Papers: Over the course of the semester we will be reading about and discussing different aspects of the evaluation and research process. Students will be required to develop several short papers (2-4 pages) in response to common questions, problems and dilemmas encountered in the field. These areas will include: 1) Ethics in Evaluation (including CITI Certificate); 2) Differing Perspectives on the Role of Evaluation; and 3) Analyzing and Critiquing Evaluation Reports.

Evaluation Plan, Outcomes and Integrated Report: Following the steps of the Herman et al. handbook, Newcomer et al. text and CDC recommendations/guidelines, each student will execute a professional level evaluation plan and description of outcomes (2 parts) using an existing program or policy rooted in one area of institutional social welfare and/or policy (e.g., educational, child welfare, public health, etc.). It is strongly recommended that students choose a program/policy with which they are not closely involved. However, these areas are quite broad and comprehensive and include baseline measures, output/outcomes goals and priority populations. The evaluation plan will be written prospectively (such as a grant proposal) while the description of outcomes will be written retrospectively (such as a published article). At the conclusion of the course, students will be required to submit one integrated evaluation report, which combines elements of both documents and would be appropriate for dissemination to stakeholders (more below).

Students will demonstrate a “systems” and systematic approach by explicating program/policy theory, uncovering program questions, identifying stakeholders for the problem solution and, therefore, for the evaluation; focus on the problem that has the highest implications and is amenable to change (most important and most changeable); select design, sampling, data collection, and measurement techniques likely to lead to an interpretable and meaningful result; incorporate likely competing hypotheses in the design and measurement plan; create an analytic plan for the data; draw conclusions and make recommendations likely to improve the program or policy and the welfare of those it serves; include a logic model for the program and evaluation; and have a recommendation for sustainability of effects if effects are found.

Each component of the plan and description of outcomes will be constructed and submitted for instructor feedback sequentially over the course of the semester. At the end of the semester each student will submit a completed evaluation report (culmination of all written components, including conclusions and recommendations), similar to what may be submitted by a professional evaluation consultant to a host agency/organization (15-20 pages). Students will also prepare a brief (10-15 minute) audio or video presentation of their completed plan (tailoring the dissemination to a specific group of stakeholders). The page lengths listed next to each component are recommendations. Refer to each assignment’s rubric for a detailed description of criteria (the criteria listed below are just a summary).
1) Evaluation Plan Components (written prospectively)
   a) Background (3-4 pages)
      i) Description of the Problem/Concern the Program Addresses
      ii) Identification of the Host/Sponsoring Agency or Organization
      iii) Description & Rationale of the Program/Policy
      iv) Program/Policy Logic Model & Timeline
   b) Description of the Planned Evaluation (4-5 pages)
      i) Purpose(s) of the Evaluation
      ii) Proposed Engagement of Stakeholders
      iii) Proposed Evaluation Design
      iv) Proposed Data Analysis Plan
      v) Proposed Evaluation Budget

2) Evaluation Outcome Components (written retrospectively)
   a) Identification and Description of Key Results or Findings (hypothetical) (2-3 pages)
   b) Discussion of Key Results/Findings, Conclusions & Recommendations (5-7 pages)

3) Integrated Evaluation Report Components (written retrospectively) (15-20 pages total, excluding appendices)
   a) Abstract/Executive Summary
   b) Background Information about the Program/Policy
   c) Description of the Evaluation
   d) Evaluation Results/Findings
   e) Discussion of Results/Findings
   f) Conclusions & Recommendations
   g) Appendices
      i) Program/Policy Staffing
      ii) Program/Policy Timeline
      iii) Evaluation Measures (instrumentation, protocols, etc.)
      iv) Evaluation Matrix/Flowchart (evaluation questions, program/policy objectives, measures, data collection techniques, data utilization, etc.)
      v) Program/Policy Activities/Initiatives/Materials
      vi) Evaluation Budget
      vii) Program Logic Model

Required Texts:

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Other Recommended Texts/Reading (Specific to Different Areas of Monitoring/Evaluation)

Approaches to Evaluation and Evaluation Design

**Sampling**

**Measurement**

**Analytic Plans and Interpretation of Data**
- SUNY Downstate’s Pyramid of Evidence. [http://library.downstate.edu/EBM2/2100.htm](http://library.downstate.edu/EBM2/2100.htm).

**Other Resources:**

*A number of the above publications emanate from the Center for the Study of Evaluation at UCLA. University of Arizona also has a strong evaluation department.*

**Recommended Journals (Core Journals in Evaluation):**

- *Evaluation and Program Planning*  
  *American Journal of Evaluation*  
  *Advances in Program Evaluation*  
  *Canadian Journal of Program Evaluation*  
  *Educational Evaluation and Policy Analysis*  
  *Evaluation Review*  
  *Evaluation and the Health Professions*  
  *Evaluation in Education and Human Services*  
  *Evaluation Journal of Australasia*  
  *Journal of Personnel Evaluation in Education*  
  *Evaluation Exchange*  
  *Journal of Multidisciplinary Evaluation*  
  *MandE (Monitoring and Evaluation) News*  
  *New Directions for Evaluation*  
  *Studies in Educational Evaluation*  
  *Practical Assessment, Research and Evaluation*  
  *Journal of Empirical Research on Human Research Ethics*  

**Recommended Websites:**

- American Evaluation Association (AEA): [www.eval.org](http://www.eval.org)
- CDC Evaluation Working Group: [www.cdc.gov/eval](http://www.cdc.gov/eval)
- Heckathorn’s Respondent-Driven Sampling (RDS) Resources: [www.respondentdrivensampling.org](http://www.respondentdrivensampling.org)
- The Community Toolbox: [http://ctb.ku.edu/en](http://ctb.ku.edu/en)
- American Statistical Association: [www.amstat.org](http://www.amstat.org)
- American Education Research Association (AERA): [www.aera.net](http://www.aera.net)
- CUNY’s approved Human Research Protection Program Training (CITI): [www.cititraining.org](http://www.cititraining.org)

Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
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Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment/Required Reading</th>
<th>Activity/Due</th>
</tr>
</thead>
</table>
| 1    | 1) Introduction to the Course, Policies & Expectations  
2) Systems Thinking & Evaluation  
3) Program/Policy Evaluation vs. Research  
4) Standards of Evaluation: Utility, Feasibility, Propriety & Accuracy  
5) Identifying a Public Health Program/Policy to Evaluate  
6) Identifying Stakeholders (Clients or Consumers of Evaluation) | 1) Rossi, et al., Chapter 1  
|      | 1) Formative vs. Summative Evaluation (Evaluation Approach): Purposes, Benefits, Expectations  
2) Determining the Program/Policy’s Development/Phase (Generalized Planning Model)  
3) Program/Policy Goals & SMART Objectives  
4) Envisioning the Evaluation Plan  
5) Engaging Stakeholders in the Evaluation Process & CBPR  
6) Efficacy vs. Effectiveness; Evidence-Based vs. Evidence-Informed | 1) Rossi et al., Chapter 2  
2) Newcomer et al., Chapters 1 & 2  
3) Herman et al., Introduction & Chapter 1  
| 3    | 1) Describing the Program/Policy: Logic & Conceptual Models  
2) Focusing the Evaluation & Developing Evaluation Questions/Evaluation Framework  
3) Ethics in Evaluation  
4) Funding Meaningful Evaluations | 1) Rossi et al., Chapters 3-5  
2) Newcomer et al., Chapters 3 & 4  
| 4    | 1) More on Formative vs. Summative Evaluation: Process & Outcome M&E  
2) Evaluation Focus: Strengths, Weaknesses & Matching the Design to Program/Policy Theory, Goals & Objectives  
3) Critical Discussion Leader(s) | 1) Rossi et al., Chapters 6 & 7  
2) Newcomer et al., Chapter 5  
3) Herman et al., Chapter 2  
| 5 | 1) Evaluation Design & Assessing Impact: RCTs, Quasi-Experimental, Observational/Non-Experimental, the RE-AIM Framework & Other Possible Designs  
2) Qualitative, Quantitative, Mixed & Multi-Methods in Evaluation Design: Concepts, Constructs, Variables & Operationalization  
3) Critical Discussion Leader(s) | 1) Rossi et al., Chapters 8 & 9  
2) Newcomer et al., Chapters 6-8  
3) Herman et al., Chapters 3 & 4  
| 6 | 1) Recruitment & Sampling: Developing & Maintaining Sampling Frames  
2) Critical Discussion Leader(s): GG & Carlos | 1) Newcomer et al., Chapter 9  
| 7 | 1) Measurement in Evaluation: Validity, Reliability, Development & Characteristics of Strong Measures  
2) Data Collection: More on Qualitative/Quantitative/Mixed/Multi-Methods  
3) Guest Speaker  
4) Critical Discussion Leader(s) | 1) Newcomer et al., Chapters 13-21  
| 8 | 1) Data Analysis Plan: Does the Analysis Fit the Evaluation Design & Data?  
2) Detecting Program/Policy Effect & Practical Significance; Data Limitations  
3) Connecting Data Analysis Plan to Program/Policy Goals & Objectives  
4) Connection to Dissertation Research Proposals/Plans  
5) Effect Size Conversion (Excel File Tool)  
6) Critical Discussion Leader(s): | 1) Rossi et al., Chapter 10  
| 9 | 1) Methods for Analyzing Qualitative & Quantitative Data: Descriptive & Inferential  
2) Introduction/Review of Software Specific to Different Types of Analysis  
3) Writing-Up Qualitative/Quantitative Results: Best Practices & Recommendations  
4) Statistical Test Cheat Sheet  
5) Critical Discussion Leader(s) | 1) Newcomer et al., Chapters 22 & 23  
| 10 | 1) Evaluating Advocacy & Policy: What’s Different?  
2) Guest Speaker:  
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</table>
| 11 | 1) Budgeting for Evaluations  
2) Measuring Efficiency | 1) Rossi et al., Chapter 11  
2) Newcomer et al., Chapter 24 |
|   |   |   |
| 12 | 1) Meta-Evaluation  
3) Critical Discussion Leader(s): | 1) Rossi et al., Chapter 12  
2) Newcomer et al., Chapters 25 & 26  
3) Herman et al., Appendix A  
|   | 13 |   |
| 13 | 1) Disseminating Evaluation Findings: Varying Stakeholders, Modes & Channels  
2) Guest Speaker:  
3) Authorship in Publication  
|   | 14 |   |
| 14 | 1) Translating Evaluation Findings into Practice & Policy  
2) Guest Speaker:  
|   | 15 |   |
| 15 | Course wrap up |   |

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Proposal to Establish a Master of Science in Research Administration and Compliance

CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 650 - Advanced Responsible Conduct of Research
Credits: 3 credits, graduate
Prerequisite: RAC 601

Course Summary:
Students will conduct in-depth analysis of case studies pertaining to major topic areas in the responsible conduct of research. Students will learn how to distinguish responsible research conduct from questionable research practices through the application of relevant ethical guidelines and governmental policies. Students will also be familiarized with various types of research misconduct and the elements that lead to a finding of research misconduct.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Demonstrate an in-depth understanding of the major topics in the responsible research conduct
- Identify questionable research practices at each stage of the research process
- Articulate best practices toward responsible conduct of research
- Identify and apply the major ethical principles that guide research with human and animal subjects
- Understand the responsibilities of mentors and protégés in mentoring relationships
- Evaluate questionable research practices and allegations of research misconduct
- Construct the processes required to make a finding of research misconduct

Program Learning Outcomes/Competencies addressed by the course:
(1) Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation.
(6) Organize effectively across functional areas requiring leadership and negotiations.
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

Course Grading and Requirements:
- Case study analyses (60%): Students will prepare written analyses of 12 case studies, worth 5% each. Each analysis will include 1) a discussion of major ethical issues or questionable practices reflected in the case study, 2) a list of possible solutions or courses of action, and 3) the student's preferred solution or course of action, along with a rationale. Evaluations will be based on how well the student demonstrates an understanding of the problem at hand and can apply the relevant guidelines/recommendations to address the problem.
- Discussion Board Participation (20%): Students are required to post two questions each week to the discussion board from the required readings as well as respond to at least two other students' questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to "think differently". Students are also expected to make one weekly post in response to another student's questions.
- Develop an RCR Training Program (20%): At the end of the course, students will develop a comprehensive RCR training program for a specific research enterprise.

Grading Scale

<table>
<thead>
<tr>
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<td>A</td>
<td>93 - 100</td>
<td>4</td>
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<td>Good - work is above average</td>
<td>A-</td>
<td>90 - 92.9</td>
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<tr>
<td>Poor</td>
<td>C+</td>
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</tr>
<tr>
<td>Poor</td>
<td>C</td>
<td>70 - 76.9</td>
<td>2</td>
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<tr>
<td>Failure</td>
<td>F</td>
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<td>0</td>
</tr>
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</table>

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Case Studies and On-line Resources:
- My Boss Puts His Name on My Papers: https://ori.hhs.gov/case-one-my-lab-boss-puts-his-name-my-papers-and-proposals
- Longitudinal Research with At Risk Children and Adolescents: http://155.97.32.9/~bbenham/Phil%207570%20Website/csVulnerable%20Subject%20Spring%2007.pdf
- Magic Key: https://ori.hhs.gov/case-three-magic-key
- Struggling to Understand Plagiarism: https://ori.hhs.gov/case-two-struggling-understand-plagiarism
- Reproducibility or Luck? The Struggle to Get Results: https://ori.hhs.gov/images/ddblock/SCRIPT-02-hi-res.mp4
- Accusations of Falsifying Data: https://ori.hhs.gov/case-four-accusations-falsifying-data

Course Outline:

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<th>Case Study</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Overview of Syllabus and Topics in Responsible Conduct of Research</td>
<td>Macrina, Ch. 1</td>
<td></td>
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<tr>
<td>2</td>
<td>Ethics in Science</td>
<td>Macrina, Ch. 2</td>
<td>Case 2.1, Macrina, pg. 42</td>
</tr>
<tr>
<td>3</td>
<td>Mentoring: Mentor and Protégé Responsibilities</td>
<td>Macrina, Ch. 3</td>
<td>“The Business of Mentoring”</td>
</tr>
<tr>
<td>4</td>
<td>Authorship and Peer Review</td>
<td>Macrina, Ch. 4</td>
<td>“My Boss Puts His Name on My Papers”</td>
</tr>
<tr>
<td>5</td>
<td>Ethical Treatment of Human Subjects</td>
<td>Macrina, Ch. 5</td>
<td>“Longitudinal Research with At Risk Children and Adolescents”</td>
</tr>
<tr>
<td>6</td>
<td>Ethical Treatment of Animal Subjects</td>
<td>Macrina, Ch. 6</td>
<td>Case 6.3, Macrina, pgs. 198-199</td>
</tr>
<tr>
<td>7</td>
<td>Recognizing and Avoiding Conflict of Interest</td>
<td>Macrina, Ch. 7</td>
<td>“Taking Advantage of Patient Trust”</td>
</tr>
<tr>
<td>8</td>
<td>Collaborative Research: Domestic and International Norms and Policies</td>
<td>Macrina, Ch. 8</td>
<td>“Alternative Therapies and Awkward Collaborations”</td>
</tr>
<tr>
<td>9</td>
<td>Intellectual Property</td>
<td>Macrina, Ch. 9</td>
<td>Case 9.1, Macrina, pg. 318</td>
</tr>
<tr>
<td>10</td>
<td>Scientific Record Keeping and Data Management</td>
<td>Macrina, Ch. 10</td>
<td>Case 10.7 Macrina, pgs. 355</td>
</tr>
<tr>
<td>11</td>
<td>Science and Social Responsibility</td>
<td>Macrina, Ch. 11</td>
<td>“Magic Key”</td>
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<td>12</td>
<td>Research Misconduct: Plagiarism, Fabrication and Falsification of Data</td>
<td>42 CFR 93.103</td>
<td>“Struggling to Understand Plagiarism”</td>
</tr>
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<td>Develop a RCR Training Program</td>
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Program: Research Administration and Compliance  
Course Name and Number: RAC 651 - Ethical Issues in Clinical Research  
Credits: 3 credits, graduate  
Prerequisite: None

Course Summary:  
This course will provide a framework for understanding the central issues of ethics that arise in the conduct of clinical research.

Student Learning Outcomes:  
At the end of this course, students will be able to:  
- Demonstrate an understanding of the historical evolution of research ethics and the development of protection of human subjects  
- Identify and employ the guiding principles of research ethics  
- Evaluate clinical studies in terms of ethical considerations  
- Analyze the research ethics literature and use it in addressing questions related to clinical research  
- Justify decisions about the ethical conduct of research in terms of reasons that reasonable scientists should accept

Program Learning Outcomes/Competencies addressed by the course:  
(1) Demonstrate an in-depth understanding of the governance, regulatory requirements, ethical standards and good practices related to research and innovation;

Course Grading and Requirements:  
- 5 Reflection Papers (50%): Students will prepare 5 reflection papers, worth 10% each. Reflection papers will be due every 3 weeks, and should be on one or more of the topics covered in the most recent 3 week period.  
- Discussion Board Participation (30%): Students are required to post two questions each week to the discussion board from the required readings as well as respond to at least two other students’ questions. The purpose of this is to foster an engaging class discussion. Think of questions that will challenge your classmates to “think differently”.  
- Mock Review of a Sample Clinical Trial Proposal (20%): Students will review a sample clinical trial proposal and develop a review report to include: identification of any ethical concerns or contradictions, recommendations for resolution of the ethical concerns or contradictions, acknowledgment of well-developed ethical implementation plans, etc.

Grading Scale

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Required Texts: Current literature on the identified topics to be used, as identified by topic within the course outline below. List of required reading to be updated over time.

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.
Course Outline:

1. **The Social Value of Research**

2. **The Structure of Scientific Proof: Research Design & Placebo Control Trials**

3. **Historical Uses of Human Subjects**
   - Todd L. Savitt, "The Use of Blacks for Medical Experimentation and Demonstration in the Old South" 1982

   Assignment: Reflection paper due

4. **Evolution of Clinical Trial & Institutional Oversight**
   - The Nuremberg Code
   - The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research
   - World Medical Association Declaration of Helsinki
   - World Health Organization Principles for Clinical Trials and Good Clinical Practice (GCP)
   - Federal Regulations Regarding the Protection of Human Subjects of Research [Common Rule]
     http://www.hhs.gov/ohrp/humansubjects/commonrule/
   - Council for International Organizations of Medical Sciences (CIOMS) 2016 http://www.cioms.ch/ethical-guidelines-2016/

5. **Participation in Research**

6. **Assessing Risks and Benefits**
● Ganesh Suntharalingam et al., “Cytokine Storm in a Phase 1 Trial of the Anti-CD28 Monoclonal Antibody TGN1412” 2006 NEJM

Assignment: Reflection paper due

7. Research with Vulnerable Groups Part I

8. Research with Vulnerable Groups Part II

9. Informed Consent & the Therapeutic Misconception

Assignment: Reflection paper due

10. Broad Consent in Biobank Research and the Learning Health Care System
● Christine Grady et al. Broad Consent for Research with Biological Samples: Workshop Conclusions, American Journal of Bioethics, 2015 PMCID: PMC4791589

11. Informed Consent and Confidentiality in Genetic Research
12. Subject Inducements

Assignment: Reflection paper due

13. Conflict of Interest and Payments for Researchers
- Bruce M Psaty, “Conflict of Interest, Disclosure and Trial Reports,” April 8, 2009; JAMA 301(14): 1477-1479.

14. International Research
- Robert Levine. The “Best Proven Therapeutic Method” Standard in Clinical Trials in Technologically Developing Countries’ 1998 IRB (Vol. 20 No.1)

15. Course wrap up
Assignment
- Reflection paper due
- Mock Reivew of a Clinical Trial due

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Proposal to Establish a Master of Science in Research Administration and Compliance

CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 660 - Sponsored Research Management and Oversight
Credits: 3 credits, graduate
Prerequisite: RAC 600

Course Summary:
This course will provide an in-depth understanding of internal controls and the audit process as applied to sponsored programs through regulation outlined in 2 CFR 200 and the government published guidelines on internal controls and financial audits. Students will be required to actively participate by choosing an area of research administration in which they will create policies, processes, and documented internal controls. After creating these documents they will use sample data to perform a small audit of the area they have already studied, culminating in a mini audit report for that area.

Student Learning Outcomes:
At the end of this course, students will be able to:
• Develop research administration policies
• Establish research administration processes
• Understand and apply the principles of financial audits
• Create, evaluate and understand an audit report

Students will be required to work in teams to:
• Write a policy
• Write a process
• Perform a mock audit with limited scope
• Create sample audit documents
• Present results of each step

Program Learning Outcomes/Competencies addressed by the course:
(2) Analyze existing policies, and develop and implement new policies
(4) Evaluate existing research administration/compliance programs, and identify and implement program improvement mechanisms
(5) Formulate research administration & compliance reports and presentations
(6) Organize effectively across functional areas requiring leadership and negotiations
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion

Course Grading and Requirements:
Seven presentations in short video formats: 5% each for total of 35%
Discussion board participation: 30%
Internal Control Plan: 5%
Policy on Internal Controls: 5%
Develop Process of Choice: 5%
Audit Report: 5%
Audit Presentation for Decision Makers: 15%
Grading Scale

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Required Texts:
- 2 CFR 200 subpart F

Additional Resources: Any additional readings will be uploaded to Blackboard in the folder for the week that the reading is due or can be retrieved through the library’s e-resources.

Course Outline:

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<th>Reading</th>
<th>Assignment</th>
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<td>3</td>
<td>Policy writing</td>
<td>Reading: excerpts from Writing Effective Policies and Procedures: A Step-By-Step Resource for Clear Communication 1st Edition by Nancy J. Campbell (Author)</td>
<td>Write and submit a policy of choice related to internal controls</td>
</tr>
<tr>
<td>5</td>
<td>Process development</td>
<td>Reading: excerpts from Writing Effective Policies and Procedures: A Step-By-Step Resource for Clear Communication 1st Edition by Nancy J. Campbell (Author)</td>
<td>Develop a process of choice related to your sample internal control and sample policy, and post to discussion board as a Word document or a flow chart. Provide feedback on each other’s process.</td>
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<tr>
<td><strong>7</strong></td>
<td>Continuous process improvement</td>
<td>Improving Business Processes</td>
<td>Take class feedback to your process and address weaknesses; re-submit</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td>Continuous process improvement</td>
<td>Improving Business Processes</td>
<td>Presentations and discussion board participation</td>
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<td><strong>9</strong></td>
<td>Audit Methodology</td>
<td>Blue Book excerpts: <a href="http://www.gao.gov/financial_audit_manual/overview">http://www.gao.gov/financial_audit_manual/overview</a></td>
<td>Select data to audit from sample data set; test internal controls from earlier project.</td>
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<td>Audit methodology</td>
<td>Blue Book excerpts: <a href="http://www.gao.gov/financial_audit_manual/overview">http://www.gao.gov/financial_audit_manual/overview</a></td>
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<td>Audit Process</td>
<td>Blue Book excerpts: <a href="http://www.gao.gov/financial_audit_manual/overview">http://www.gao.gov/financial_audit_manual/overview</a></td>
<td>Manipulate data set to perform mini audit of part of internal control from earlier project; submit an audit report.</td>
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<td>Blue Book excerpts: <a href="http://www.gao.gov/financial_audit_manual/overview">http://www.gao.gov/financial_audit_manual/overview</a></td>
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<td>Audit Findings</td>
<td>Blue Book excerpts: <a href="http://www.gao.gov/financial_audit_manual/overview">http://www.gao.gov/financial_audit_manual/overview</a></td>
<td>Prepare results of mini sample audit for project in video format for the decision makers as the audience.</td>
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CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 670 - Special Topics in Research Administration and Compliance
Credits: 3 credits, graduate
Prerequisite: None

Course Summary:
This course will offer the opportunity to study emerging topics within the scope of Research Administration and Compliance. Topics may vary and could include in-depth study of research conducted in an international setting, biobanking, use of big data in research or other topics relevant to the field.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Develop in-depth understanding of an emerging topic within research administration and/or compliance
- Evaluate policies related to the selected topic
- Apply policies related to the selected topic

Program Learning Outcomes/Competencies addressed by the course:
- Determined by course topic.

Course Grading and Requirements:
Course grading and requirements will be specified based on the course topic.

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Required Texts: Determined by course topic.

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CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 697 - Research Administration Practicum
Credits: 3 credits, graduate
Prerequisite: Permission of the Academic Director

Course Summary:
This course will provide a practicum experience that will prepare students for leadership roles in research administration. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

Student Learning Outcomes:
At the end of this course, students will be able to:
- Originate an individualized practicum approved by and supported by the instructor
- Demonstrate judgment in developing their own objectives and learning goals with the instructor

Students will be required to:
- Exercise a considerable amount of independence throughout the semester as they execute the practicum
- Consult at regular intervals with the instructor to review goals and progress

Program Learning Outcomes/Competencies addressed by the course:
(6) Organize effectively across functional areas requiring leadership and negotiations.
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

Course Grading and Requirements: Course grading and requirements will be specified in a contract to be developed by the mentor and student prior to the beginning of the semester.

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CUNY School of Professional Studies

Program: Research Administration and Compliance
Course Name and Number: RAC 698 - Research Compliance Practicum
Credits: 3 credits, graduate
Prerequisite: Permission of the Academic Director

Course Summary:
This course will provide a practicum experience that will prepare students for leadership roles in research compliance. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

Student Learning Outcomes:
At the end of this course, students will be able to:
• Originate an individualized practicum approved by and supported by the instructor
• Demonstrate judgment in developing their own objectives and learning goals with the instructor
Students will be required to:
• Exercise a considerable amount of independence throughout the semester as they execute the practicum
• Consult at regular intervals with the instructor to review goals and progress

Program Learning Outcomes/Competencies addressed by the course:
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Course Grading and Requirements: Course grading and requirements will be specified in a contract to be developed by the mentor and student prior to the beginning of the semester.

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</tr>
<tr>
<td>Below Average</td>
<td>B-</td>
<td>80 - 82.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Poor</td>
<td>C+</td>
<td>77 - 79.9</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>70 - 76.9</td>
<td>2</td>
</tr>
<tr>
<td>Failure</td>
<td>F</td>
<td>&lt; 70</td>
<td>0</td>
</tr>
</tbody>
</table>

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Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

CUNY School of Professional Studies
Program: Research Administration and Compliance
Course Name and Number: RAC 699 - Research Administration and Compliance Practicum
Credits: 3 credits, graduate
Prerequisite: Permission of the Academic Director

Course Summary:
This course will provide a practicum experience that will prepare students for leadership roles in research administration and/or research compliance. The instructor will provide experiential learning options and/or simulation alternatives. The instructor and the student will develop a set of guidelines for the course, including the scope of reading and writing assignments. These guidelines will be submitted to the Academic Director in the form of a course proposal and plan.

Student Learning Outcomes:
At the end of this course, students will be able to:
• Originate an individualized practicum approved by and supported by the instructor
• Demonstrate judgment in developing their own objectives and learning goals with the instructor
Students will be required to:
• Exercise a considerable amount of independence throughout the semester as they execute the practicum
• Consult at regular intervals with the instructor to review goals and progress

Program Learning Outcomes/Competencies addressed by the course:
(6) Organize effectively across functional areas requiring leadership and negotiations.
(7) Investigate policy related problems, consider alternatives, and perform analysis to reach a conclusion.

Course Grading and Requirements: Course grading and requirements will be specified in a contract to be developed by the mentor and student prior to the beginning of the semester.

Grading Scale

<table>
<thead>
<tr>
<th>Quality of Performance</th>
<th>Letter Grade</th>
<th>Range %</th>
<th>GPA/ Quality Pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent - work is of</td>
<td>A</td>
<td>93 - 100</td>
<td>4</td>
</tr>
<tr>
<td>exceptional quality</td>
<td>A-</td>
<td>90 - 92.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Good - work is above average</td>
<td>B+</td>
<td>87 - 89.9</td>
<td>3.3</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>B</td>
<td>83 - 86.9</td>
<td>3</td>
</tr>
<tr>
<td>Below Average</td>
<td>B-</td>
<td>80 - 82.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Poor</td>
<td>C+</td>
<td>77 - 79.9</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>70 - 76.9</td>
<td>2</td>
</tr>
<tr>
<td>Failure</td>
<td>F</td>
<td>&lt; 70</td>
<td>0</td>
</tr>
</tbody>
</table>

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CUNY School of Professional Studies
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Table 1b: Research Administration and Compliance Schedules

| § Indicate academic calendar type: x Semester ____ Quarter ____ Trimester ____ Other (describe) |
| |
| M.S. in Research Administration and Compliance: Full-Time Schedule |
| Year 1 - Fall |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 600 - Introduction to Financial Research Administration | 3 | X | None |
| RAC 601 - Introduction to Research Compliance, Ethics and Integrity | 3 | X | None |
| RAC 610 - Policy Development, Analysis and Implementation | 3 | X | None |
| BUS 600 - Organizational Behavior and Leadership | 3 | | |
| Term credit total: | 12 |
| Year 1 - Spring |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 602 - Introduction to Clinical Research Administration and Compliance | 3 | X | None |
| BUS 640 - Accounting for Business Decisions | 3 | | One undergraduate course in Accounting and one in Computer Applications |
| RAC 612 - Intellectual Property, Technology Transfer and Commercialization | 3 | X | None |
| RAC 650 - Advanced Responsible Conduct of Research | 3 | X | RAC 601 |
| Term credit total: | 12 |
| Year 2 - Fall |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 699 - Research Administration and Compliance Practicum | 3 | X | Permission of the Academic Director |
| PROM 600 - Fundamentals of Project Management | 3 | | |
| Term credit total: | 6 |
| PROGRAM TOTAL CREDITS | 30 |
| M.S. in Research Administration and Compliance: Part-Time Schedule |
| Year 1 - Fall |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 600 - Introduction to Financial Research Administration | 3 | X | None |
| RAC 601 - Introduction to Research Compliance, Ethics and Integrity | 3 | X | None |
| Term credit total: | 6 |
| Year 1 - Spring |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 610 - Policy Development, Analysis and Implementation | 3 | X | None |
| BUS 600 - Organizational Behavior and Leadership | 3 | | |
| Term credit total: | 6 |
| Year 2 - Fall |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 602 - Introduction to Clinical Research Administration and Compliance | 3 | X | None |
| BUS 640 - Accounting for Business Decisions | 3 | | One undergraduate course in Accounting and one in Computer Applications |
| Term credit total: | 6 |
| Year 2 - Spring |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 612 - Intellectual Property, Technology Transfer and Commercialization | 3 | X | None |
| RAC 650 - Advanced Responsible Conduct of Research | 3 | X | RAC 601 |
| Term credit total: | 6 |
| Year 3 - Fall |
| Course Number & Title | Cr | New | Prerequisite(s) |
| RAC 699 - Research Administration and Compliance Practicum | 3 | X | Permission of the Academic Director |
| PROM 600 - Fundamentals of Project Management | 3 | | |
| Term credit total: | 6 |
| PROGRAM TOTAL CREDITS | 30 |
### Advanced Certificate in Research Administration: Part-Time Schedule

<table>
<thead>
<tr>
<th>Year 1 - Fall</th>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAC 600 - Introduction to Financial Research Administration</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>RAC 612 - Intellectual Property, Technology Transfer and Commercialization</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td><strong>Term credit total:</strong></td>
<td><strong>6</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1 - Spring</td>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>New</td>
<td>Prerequisite(s)</td>
</tr>
<tr>
<td></td>
<td>RAC 660 – Sponsored Research Management and Oversight</td>
<td>3</td>
<td>X</td>
<td>RAC 600</td>
</tr>
<tr>
<td></td>
<td>RAC 697 - Research Administration Practicum</td>
<td>3</td>
<td>X</td>
<td>Permission of the Academic Director</td>
</tr>
<tr>
<td></td>
<td><strong>Term credit total:</strong></td>
<td><strong>6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PROGRAM TOTAL CREDITS 12**

### Advanced Certificate in Research Compliance: Part-Time Schedule

<table>
<thead>
<tr>
<th>Year 1 - Fall</th>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAC 601 - Introduction to Research Compliance, Ethics and Integrity</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>RAC 612 - Intellectual Property, Technology Transfer and Commercialization</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td><strong>Term credit total:</strong></td>
<td><strong>6</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1 - Spring</td>
<td>Course Number &amp; Title</td>
<td>Cr</td>
<td>New</td>
<td>Prerequisite(s)</td>
</tr>
<tr>
<td></td>
<td>RAC 602 - Introduction to Clinical Research Administration and Compliance</td>
<td>3</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>RAC 698 - Research Compliance Practicum</td>
<td>3</td>
<td>X</td>
<td>Permission of the Academic Director</td>
</tr>
<tr>
<td></td>
<td><strong>Term credit total:</strong></td>
<td><strong>6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PROGRAM TOTAL CREDITS 12**
Table 2: Full-Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farida Lada, Associate University Provost for Research Administration and Compliance</td>
<td>Introduction to Research Compliance, Ethics and Integrity</td>
<td>30%</td>
<td>PhD, Governance and Policy Analysis, Maastricht University MBA, University of Louisville</td>
<td>Research Law Certificate</td>
</tr>
</tbody>
</table>
Table 3: Part-Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title</th>
<th>Program Courses to be Taught</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines</th>
<th>Additional Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephanie Endy, Associate Vice President for Research, Case Western Reserve University</td>
<td>Introduction to Financial Research Administration</td>
<td>MA, Assyriology, University of Chicago</td>
<td>Certified Research Administrator</td>
</tr>
<tr>
<td>Deb Chakravarti, Professor, York College</td>
<td>Introduction to Clinical Research Administration and Compliance</td>
<td>Dphil, Immunochemistry, University of Oxford</td>
<td>Director, York College FDA Partnership Coordinator, MS in Pharmaceutical Sciences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PhD, Biochemistry, University of Calcutta</td>
<td></td>
</tr>
<tr>
<td>Lillian Smith, Legal Counsel, Children's Hospital Los Angeles</td>
<td>Intellectual Property, Technology Transfer and Commercialization</td>
<td>JD University of New Hampshire - Franklin Pierce Law Center</td>
<td></td>
</tr>
<tr>
<td>Nicholas Grosskopf, Associate Professor, CUNY Graduate School of Public Health and Health Policy</td>
<td>Program Evaluation Methods</td>
<td>EDD, Health Education, Teachers College, Columbia University</td>
<td>Chair, CUNY UI-IRB</td>
</tr>
<tr>
<td>Nicholas Steneck, Director of the Research Ethics and Integrity Program &amp; Professor Emeritus, University of Michigan</td>
<td>Advanced Responsible Conduct of Research</td>
<td>PhD, History, University of Wisconsin</td>
<td>Director, Research Ethics &amp; Integrity Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Established &amp; directed ORI/NIH Research on Research Integrity Program</td>
<td>Chair / Co-Chair, World Conference on Research Integrity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chair / Co-Chair, World Conference on Research Integrity</td>
<td></td>
</tr>
<tr>
<td>Henry Silverman, Professor, University of Maryland School of Medicine</td>
<td>Ethical Issues in Clinical Research</td>
<td>MD, Johns Hopkins University</td>
<td>Program Director, NIH funded Middle East Research Ethics Training Initiative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ex-Chair of Clinical Ethics Committee</td>
</tr>
<tr>
<td>Jim Casey, Director of the Office of Research, American University</td>
<td>Sponsored Research Management and Oversight</td>
<td>M.P.A., University of Dayton</td>
<td>Director, Office of Sponsored Programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J.D., University of Dayton</td>
<td>NCURA Distinguished Service Award</td>
</tr>
</tbody>
</table>
Table 4: Faculty to be Hired

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th>No. of New Positions</th>
<th>Minimum Qualifications</th>
<th>Expected Course Assignments</th>
<th>Expected Hiring Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor/Academic Director</td>
<td>1</td>
<td>PhD and an experienced researcher.</td>
<td>Research Administration and Compliance Practicum courses</td>
<td>Year two of the program.</td>
</tr>
<tr>
<td>Adjunct lecturer</td>
<td>1</td>
<td>TBD</td>
<td>Special Topics in Research Administration and Compliance</td>
<td>As needed</td>
</tr>
</tbody>
</table>

Note: Job description for the Academic Director follows on the next page.
JOB DESCRIPTION
PROFESSOR OF RESEARCH ADMINISTRATION AND COMPLIANCE/ACADEMIC DIRECTOR – CUNY SCHOOL OF PROFESSIONAL STUDIES

Job Class: Faculty
Job ID Number: TBD
Department: Research Administration and Compliance
Location: SPS: School of Professional Studies
Closing Date: Open Until Filled

Description
Faculty Vacancy Announcement

In 2003, the Board of Trustees of the City University of New York created the CUNY School of Professional Studies (SPS) with the purpose of meeting the educational needs of working adults, organizations, and employers. Since then, SPS has developed into a well-established school serving New York City's dynamic marketplace through the provision of timely, innovative, and academically rigorous programs of study designed to address new or unmet needs. Home to CUNY's first fully online undergraduate degrees and groundbreaking master's degree programs, SPS has found new ways of fulfilling CUNY's mission of access, reaching students with new modes of instruction, new courses and curricula, and new kinds of learning tailored for diverse requirements and constituencies. It has launched a dozen degrees since 2006, and there are more currently in development. Enrollments have grown to over 3,000 students in the credit-bearing programs, and the School has seen more growth in its non-credit offerings, with a portfolio of grant-funded programs currently accounting for more than $10 million.

SPS currently seeks candidates for a Professor of Research Administration and Compliance who will also serve as the Academic Director of the School's new online MS in Research Administration and Compliance program, slated to begin in Spring, 2018 pending NYSED approval. Responsibilities include recruiting and managing faculty, coordinating course offerings, student advisement, and performing School service.

Performs teaching, research and guidance duties in area(s) of expertise. Shares responsibility for committee and department assignments including administrative, supervisory, and other functions.

Qualifications
- Ph.D.
- Experience teaching at the Masters level
- Experience and facility with online teaching and learning in higher education
- Minimum of 10 years working in a senior or leadership position related to research administration and compliance
- Record of active membership in related professional organizations.

Salary Range
Commensurate with experience.

How to Apply
Open until filled with review of applications to begin TBD.
# Table 5: New Resources

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>$0</td>
<td>$157,152</td>
<td>$161,866</td>
<td>$166,722</td>
<td>$171,724</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>$38,450</td>
<td>$104,507</td>
<td>$143,269</td>
<td>$176,446</td>
<td>$208,416</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>$0</td>
<td>$102,366</td>
<td>$105,437</td>
<td>$108,600</td>
<td>$111,858</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Library</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (OTPS)</td>
<td>$28,200</td>
<td>$29,335</td>
<td>$29,489</td>
<td>$29,648</td>
<td>$29,811</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other</td>
<td>$28,300</td>
<td>$8,300</td>
<td>$4,300</td>
<td>$4,300</td>
<td>$4,300</td>
</tr>
<tr>
<td><strong>Total all</strong></td>
<td><strong>$102,450</strong></td>
<td><strong>$409,160</strong></td>
<td><strong>$449,361</strong></td>
<td><strong>$490,716</strong></td>
<td><strong>$531,110</strong></td>
</tr>
</tbody>
</table>
Table 6: Projected Revenue

<table>
<thead>
<tr>
<th>Revenues</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02. From New Sources</td>
<td>$255,188</td>
<td>$610,002</td>
<td>$818,998</td>
<td>$997,766</td>
<td>$1,169,967</td>
</tr>
<tr>
<td>03. Total</td>
<td>$255,188</td>
<td>$610,002</td>
<td>$818,998</td>
<td>$997,766</td>
<td>$1,169,967</td>
</tr>
<tr>
<td>State Appropriation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05. From New Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06. Total</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Other Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08. From New Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09. Total</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>11. From New Sources</td>
<td>$255,188</td>
<td>$610,002</td>
<td>$818,998</td>
<td>$997,766</td>
<td>$1,169,967</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$255,188</td>
<td>$610,002</td>
<td>$818,998</td>
<td>$997,766</td>
<td>$1,169,967</td>
</tr>
</tbody>
</table>
Table 7: Five-Year Financial Projections for Program Worksheet

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIRECT OPERATING EXPENSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Director</td>
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Table 8: Five-Year Revenue Projections for Programs Worksheet

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Total Head Count - FT  
Total Head Count - PT  
TOTAL HEADCOUNT

| PT Fees   | $1,506  | $2,678  | $4,867   | $5,786   | $6,559   | $6,514   | $7,567   | $7,764   | $8,780   | $8,834   |
| Full-Time Revenue | $37,208 | $77,643 | $147,614 | $181,899 | $205,112 | $203,864 | $247,164 | $230,527 | $254,071 | $255,260 |
| FT Tuition | $58,650 | $69,822 | $159,426 | $190,715 | $240,644 | $245,899 | $303,272 | $312,732 | $347,061 | $382,755 |
| PT Fees   | $4,003  | $6,225  | $11,097  | $13,275  | $16,751  | $17,743  | $21,110  | $21,769  | $24,160  | $26,643  |
| Part-Time Revenue | $62,653 | $76,047 | $270,523 | $283,990 | $257,394 | $272,641 | $324,382 | $334,501 | $371,240 | $409,399 |
| Tuition Revenue Per Term | $99,458 | $166,067 | $269,019 | $315,706 | $342,217 | $345,664 | $402,380 | $416,619 | $451,648 | $506,117 |
| Revenue   | $255,188 | $610,002 | $818,998 | $997,766 | $1,169,967 |
| Existing State Appropriations | $0 | $0 | $0 | $0 | $0 |
| New State Appropriations | $0 | $0 | $0 | $0 | $0 |

Assumptions:
1. Tuition based on projected rate.
2. Enrollment and graduation figures are based on available retention and graduation rates at CUNY SPS.
Table 9: Five Year Enrollment and Course Section Projections

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Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017
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Application for Addition of the Distance Education Format to a Registered Program

Name of Institution: **CUNY School of Professional Studies at the Graduate School and University Center**

CEO or Designee: **George Otte, Associate Dean of Academic Affairs**

Signature: ___________________________ Date: 5/12/17

The signature of the institutional representative indicates the institution’s commitment to support the proposed distance education program.

Distance Education Contact Person: **George Otte, Associate Dean of Academic Affairs**

Telephone: **646.344.7258** Fax: 

E-mail: **george.otte@cuny.edu**

Program Title: **Research Administration and Compliance** Program Code: **TBD**

Degree or Certificate Awarded: **M.S.** HEGIS Code: **0506.00**

**Anticipated enrollment** in distance program:

Initial: 30 Maximum by year 3: 125

**Term length** (in weeks) for the distance program: **15**

(Is this the same as term length for classroom program?) Yes ☒ No ☐

How much "**instructional time**" is required per week per credit for a distance course in this program?

**Answer:** Instructional time is the same as traditional in-person courses – 45 hours per course.

(Do not include time spent on activities that would be done outside "class time", such as research, writing assignments, or chat rooms.)

What proportion or percentage of the program will be offered in Distance Education format?

**Answer:** 100%

**Part A: Institution-wide Issues:** Submit this part for the first Distance Education program proposed by your institution. This will be kept in a master file, and will not need to be resubmitted for each new proposed online program, unless there are changes.

**Answer:** This is not the first online degree program at the School of Professional Studies.
Part B: Program-Specific Issues: Submit this part for each new request to add Distance Education Format to a registered program.

I. LEARNING DESIGN

How does your institution ensure that the same academic standards and requirements are applied to the program on campus and through distance learning? If the curriculum in the Distance Education program differs from that of the on-ground program, please identify the differences.

Answer: To ensure that the standards and requirements of the proposed program are fully consistent with programs that are 100% face-to-face in the City University and elsewhere, fulltime faculty from several CUNY colleges were involved in the program design.

Online programs at the CUNY School of Professional Studies are designed, developed, and implemented according to the New York State Education Department’s Principles and Standards of Good Practice for Distance Education. This program will also follow best practices in online education identified by the Middle States Commission on Higher Education and the Western Cooperative for Educational Telecommunications. These organizations expect colleges and universities to demonstrate their institutional commitment to a new program. CUNY has proven its commitment through its insistence on academic rigor, its investment of resources in learner support, and its mandate for ongoing program evaluation and continuous improvement. As is the case for the School’s current degrees, the Dean will oversee and implement continuous improvement through regularly scheduled assessment of student satisfaction, learning effectiveness, student outcomes, and faculty satisfaction. In addition to internal control processes, the CUNY SPS will participate in Middle States reviews through its affiliation with the CUNY Graduate School and University Center.

Are the courses that make up the distance learning program offered in a sequence or configuration that allows timely completion of requirements?

Answer: Yes, the courses will be offered in a configuration that allows timely completion of requirements. The course offering schedule will provide all students with the opportunity to enroll full-time each semester, including summer, and to meet enrollment requirements for financial-aid eligibility. Course pre- and co-requisites also have been set to allow for uninterrupted progress through the required coursework.

How do faculty ensure that the technological tools used in the program are appropriate for the content and intended learning outcomes?

Answer: The new Liberal Arts program will use the complete suite of online education tools offered by the University. In addition to software options standard throughout the University, the online programs use other technology options that facilitate interaction and collaboration between students and their instructors and peers. Also, instructors are trained to use resources to create online mini-lectures that can be accessed by students repeatedly and on a 24/7 basis. Decisions about “which technologies to use for which activities” were derived from previous experience in the online programs offered at the School of Professional Studies and a long history of online education at the City University of New York.

As part of the program’s overall quality control initiative, consortial faculty and other instructional staff meet each semester to evaluate individual student progress as well as macro-level program trends. Critical to these discussions are effective pedagogies and appropriate technologies. Faculty can draw on their own experiences with these technologies and from student input from end-of-term surveys. At these meetings, the group will set and refine plans for using new technology tools. Additionally, program leaders and faculty will interact regularly with software and hardware vendors and, through conference attendance and other means, keep informed about new options.

How does the program provide for appropriate and flexible interaction between faculty and students, and among students?
**Answer:** Regular interaction and collaboration between students and with their faculty is essential for the success of distance learning programs. To create and support these exchanges, the program will use the communication features of the University’s Blackboard course management system, including many innovative plug-ins that allow students to collaborate efficiently. Students will participate in online discussions, co-author team projects, keep running journals of their field experiences, and create their own blogs for communicating research results. For those times that students wish to work together in small groups, they will have access to Blackboard Collaborate, an online tool that will allow students located anywhere to see each other’s computer screens; coauthor a document or spreadsheet simultaneously; and communicate both in text and, if they choose, with audio and visual connections.

How do faculty teaching online courses verify that students are doing their own work?

**Answer:** All students are bound by the academic policies established by the CUNY School of Professional Studies and published in the School’s web site, academic handbook, and annual bulletin. However, that does not diminish the need to develop assessment mechanisms that ensure that each student leaves with the knowledge and skills expected of program graduates. Instructors routinely use the SafeAssign and Turn-It-In features of the Blackboard course management system that compares students’ written work with a very large database of previously published work and highlights sections that have been copied without appropriate attribution. To make certain that each student is doing his or her own work, faculty routinely replace traditional quizzes and exams that test for facts and information acquisition with project-based work, which assesses practice-based competencies and has longer time-on-task requirements.

With project-based assessment, faculty often require pre-project proposals and other incremental submissions that establish a narrative pattern which, when changed midstream, makes cheating obvious. Further, the extended submission stream makes it difficult for anyone to serve as a “stand in,” as could happen with isolated remote exams. Public course discussion forums provide another device that establishes each student’s narrative voice which is hard for someone else to reproduce. When faculty do give exams, the questions often are open-ended so that students must synthesize the material from previous learning modules. This technique limits the chances of someone else doing the students’ work.

**II. OUTCOMES AND ASSESSMENT**

Distance learning programs are expected to produce the same learning outcomes as comparable classroom-based programs. How are these learning outcomes identified—in terms of knowledge, skills, or credentials—in course and program materials?

**Answer:** Each course syllabus has a clear set of competencies—identifying required subject matter mastery, contextual considerations, and practice-based skills—that students must demonstrate to successfully complete the course. In addition, program outcomes will be clearly outlined in web site content, bulletins, and other program materials. Faculty will also review these requirements at the beginning of each course. The broad learning outcomes specified for this program was developed in collaboration with full time faculty and current adjunct faculty who are expert practitioners and well as staff of service agencies responsible for staff education.

Describe how the means chosen for assessing student learning in this program are appropriate to the content, learning design, technologies, and characteristics of the learners.

**Answer:** The majority of courses will emphasize complex project-based and case analysis assignments so that students will have to demonstrate a more complete understanding of the concepts and information in courses and mastery of course content. The majority of courses require presentations, either individually or in teams, in which students present their own solutions to problems and cases. Rubrics will be developed for these assignments and shared with students as guides for their work and for the interpretation of feedback. This mode of assessment is a critical supplement to the fact-based measurements afforded by exams and quizzes.
III. PROGRAM EVALUATION

What process is in place to monitor and evaluate the effectiveness of the distance learning program on a regular basis?

Answer: The CUNY School of Professional Studies uses a two-part process for monitoring academic quality and tracking programmatic outcomes of its distance learning programs. The program’s academic director—someone holding faculty rank—will supervise ongoing operations on a semester-by-semester basis and be responsible for addressing student concerns in all aspects of their enrollment. In addition, there will be a group of consortial faculty members who will guide the program’s content, quality of education, and student learning. The consortial faculty, along others who teach in the program, will meet twice each semester to evaluate individual student progress as well as macro-level program trends. At these meetings, the larger group will set and refine the agenda for the year to come.

Secondly, the dean and associate deans will (and do) take a proactive role in monitoring and understanding student success and satisfaction for all programs. The School’s senior leadership, academic directors, and senior staff at CUNY SPS regularly review student progress and retention metrics.

How will the evaluation results be used for continuous program improvement?

Answer: Each year, the CUNY School of Professional Studies conducts a strategic planning process, tied to the University-wide Performance Management Process (PMP), where administrative and academic directors come together to discuss the successes and challenges of the previous year and to set a course for the next. By combining the perspectives of those who teach and others who provide critical student and administrative support, the School is better able to create holistic solutions for the problems that students face. By bringing together representatives from across all programs, the School is sure to develop inclusive responses that better serve everyone.

During the planning process, evidence provides the backbone for future action; pass rates, retention and graduation statistics, student survey results, and a breadth of operational performance metrics will guide the planning process and future resource investments. Individual student stories add depth and quality to these metrics and are especially valuable in identifying opportunities for improvement.

How will the evaluation process assure that the program results in learning outcomes appropriate to the rigor and breadth of the college degree or certificate awarded?

Answer: The evaluation process includes an “academic review” each term, attended by the academic director and consortial faculty, as well as any teaching faculty who wish, to meet and discuss each student’s performance. This review of both quantitative and qualitative data provides in-depth information about students’ competency acquisition, beyond simple alpha-numeric grades. It also gives faculty the information they need to guide students in upcoming courses.

Students’ thesis and other research projects will be evaluated by faculty as part of the ongoing assessment process for academic programs, to ascertain that program learning outcomes and goals are being met.
External Evaluation

Evaluation Report Form for Program Proposals

Institution: [CUNY School of Professional Studies]

Evaluator: [Dr. Stephen Hansen, Emeritus Professor and Dean Southern Illinois University Edwardsville]

Program Title: [Research Administration and Compliance]

Degree Title: [Master of Science]

Date: [April 25, 2017]

1. PROGRAM

1.1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

A high-quality master’s program is unified in its purpose. This unity is centered on the faculty’s and the students’ collective understanding of the purpose and goals of the program. Unity of purpose develops a sense of collective ownership of and commitment to the program. It shapes the values and customs of the program and it builds effective professional relationships among the faculty and students. The proposed MS in Research Administration is clear in its purpose as professional master’s degree that prepares students for occupations in Research Administration. The purposes are clear, specific, and appropriate for a professional master’s program.

The structure and requirements for the program are appropriate. The 30 hour curriculum includes a solid core, important for any quality master’s degree program. The core required courses give students the breadth and depth needed to understand the Research Administration. The core requirements also give students a shared learning experience that defines the values, issues, and skills of the profession. The curriculum includes a capstone experience in RAC 699, Practicum. A capstone experience is important for a professional master’s degree in that it allows the students to integrate and apply the skills, theory, and methods of the Research Administration profession. I strongly recommend that the RAC699 Practicum require a written product from the students that tangibly demonstrates that they have successfully integrated and applied the skills, theory, and methods of the profession.

The identification of courses are appropriate for the purpose and focus of this master’s program. However, it would be useful for students to have an introduction to the overall profession of Research Administration that would encompass the various structures and functions of research administration in order for the students to better understand the broader context and development of the profession. Perhaps this perspective on the profession could be integrated in RAC610, RAC660, or BUS600.

The organization of knowledge, structure, and requirements for the courses are of appropriate rigor for a master’s degree. I would recommend, however, that the student evaluation and requirements for RAC610 be reconsidered. The requirements for this course do not seem to be at the same level of rigor as other courses in the curriculum. I also recommend that reconsideration of RAC660. As currently structured, the course is teaching students how to audit a program, which is not
the same as managing a program of research administration. A more broadly conceived course on Management of Research Administration might be more useful for students.

The mechanisms for the program are appropriate. The admission, retention, and graduation standards are good and will help assure a quality program. Further, the program administration with a graduate program director is appropriate and will help provide a strong learning environment for the students. The plans for program monitoring and assessment are strong and will help the program director and the faculty strengthen the learning experience for students.

1.2. Comment on the special focus of this program, if any, as it relates to the discipline.

This program offers a special focus on compliance. This special focus gives a unity of purpose and clear identity for this professional master’s program and it will help distinguish the CUNY MS in Research Administration from master’s degree programs in research administration offered by other institutions. Because the areas of financial and non-financial compliance are so complex and specialized, and because there is a great need for trained professionals, the focus on compliance of this program is important and timely.

1.3. Comment on the plans and expectations for continuing program development and self-assessment.

Evaluation and assessment are important aspects of any program. The program faculty need to be closely involved in both the evaluation of students and the assessment of the program’s curriculum and courses. The plans for program development and assessment appear appropriate. Monitoring student progress is clear. Assessing course outcomes and student learning goals is also strong. Faculty need to be routinely engaged in assessing the learning outcomes for students, which is included in this plan. Lastly, the evaluation and assessment of the faculty is clear and appropriate for the this program.

1.4. Assess available support from related programs.

This proposed master’s program is drawing support from the disciplines of Management, Accounting, Philosophy (Ethics), and Public Administration. It is also receiving infrastructure support from Academic Advisement, Instructional Technology, the Library, the Writing Center, and Career Services. All of these forms of support are important for the creation of a quality professional program.

1.5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

Not applicable.

2. FACULTY

2.1. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

A high quality graduate program must have a strong faculty actively engaged in the scholarly practice of the discipline/profession. This program is staffed by one tenure/tenure track faculty member and
seven part-time (adjunct) faculty members. Individually and collectively, the academic and professional qualifications of the the full-time and adjunct faculty are strong. A number of these individuals are recognized nationally for their expertise in the area of compliance.

2.2. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

☐ The qualifications of the faculty are outstanding. Strong graduate programs typically depend upon a core of tenured members of the faculty. This program could be strengthened by including more tenured faculty from other appropriate disciplines in the teaching and governance of the MS in Research Administration. For example, tenured faculty from the departments of Management, Accounting, Philosophy, and Public Administration might enhance the quality of the program.

2.3. Evaluate credentials and involvement of adjunct and support faculty.

☐ The qualifications of the adjunct and support faculty are very strong. These individuals will greatly enhance the quality of the program.

3. RESOURCES

3.1. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities, practica and internship sites, and support services for the program, including use of resources outside the institution.

☐ The institutional commitment to providing a supportive learning environment is strong. The IT, library, Advisement, and tutoring services adequately support the program.

3.2. (Only for programs requiring master plan amendment.) What is the institution’s commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

☐ The operating budget and revenue plan is appropriate.

4. SUMMARY COMMENTS AND ADDITIONAL OBSERVATIONS

Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.

☐ Overall, this program is well conceived and developed. It addresses a significant need for professionals in the field of Research Administration and Compliance. The goals and purposes of the program are clear and well articulated. The supportive units, e.g. IT, the library, and Advisement, are in place to provide a supportive learning environment. The academic administration of the program assures a solid infrastructure for the program. More importantly, the academic experience – the core coursework, the overall curriculum, the academic rigor of the courses, the quality of the faculty, the practicum, and the structure of the curriculum – provide the elements essential for a quality graduate program. This program is appropriate, feasible, timely, and of good quality.
Letters of Support

April 11, 2017

Farida Lada, PhD, MBA
Associate University Provost for Research Administration & Compliance
The City University of New York
205 East 42nd Street
New York, NY 10017

Dear Dr. Lada:

On behalf of the National Council of University Research Administrators, I am writing in support of the proposed on-line MS in Research Administration & Compliance to be offered by the CUNY School of Professional Studies.

Founded in 1959, NCURA is a non-profit higher education association with over 7,500 members in 38 countries around the world. Our core mission is to provide continuing education to research administrators, at all levels, and to promote the profession of research administration.

As we continue the transition of generations in the workplace we believe that now, more than ever before, it is critical to prepare tomorrow’s leaders. To continue the important work of supporting research and to ensure America’s investment in it has positive outcomes, we must have individuals who are equipped with the knowledge and understanding of the profession. We believe your program can help us achieve this goal.

We hope the proposed degree will be approved and look forward to working with you and to supporting research...together.

Sincerely,

Kathleen Larmett
Executive Director
Dear Dr. Lada,

In my capacity as an internationally recognized expert on research administration and compliance, I am delighted to write this letter in full support of The City University of New York’s proposal to establish an online Master of Science program in Research Administration and Compliance through CUNY’s School of Professional Studies (CUNY SPS).

I have read the CUNY SPS proposal in its entirety, and believe it is thoroughly formulated, thoughtfully reasoned, and, in sum, it meaningfully outlines a cutting-edge graduate program for the training and education of a new generation of research administrators. There is a solid demand – both domestically and globally – for research administrators at academic institutions, healthcare organizations, government agencies, non-profit organizations, in industry, and at philanthropic foundations, and with this in mind the CUNY SPS proposal very accurately states:

*The program being proposed will serve to close the generational gap between young emerging professionals who lack sufficient experience to advance to senior level positions, and the more experienced professional who are approaching retirement. The program will further serve as a persisting pipeline for creating future leaders.*

The proposed CUNY SPS degree program is indeed solid, and I sincerely believe it will be approved and most successful.

All my very best,

John M. Carfora, Ed.D., CCEP, RIO
Associate Provost
Research Advancement and Compliance
Office of Academic Affairs
Loyola Marymount University
1 LMU Drive, Suite 4820
Los Angeles, CA 90045-2659
Telephone: 310-338-6004
E-Mail: jcarfora@lmu.edu
Web Address: www.lmu.edu/orsp
Evidence of Current Jobs

Manager, Contracts and Compliance

Institution: Weill Cornell Medical College
Location: New York City, NY
Category:
- Admin - Sponsored Programs, Grants, and Contracts
- Admin - Assessment, Accreditation, and Compliance

Posted: 03/16/2017
Type: Full Time

Job: WCMC-Administration
Primary Location: New York City
Organization: Joint Clinical Trials Office
Schedule: Full-time
Overtime Status: Exempt
Grade: 7

Description:
Position Summary

The Manager of Contracts & Compliance is responsible for successfully managing the performance of the Joint Clinical Trials Office (JCTO) contracting group in accordance with the directives of Joint Clinical Trials Office leadership. This includes oversight of the contracting process and management of all legal agreements within the purview of the JCTO. This position has significant responsibilities in the areas of Human Resource Management, Supervision, Training and Education, Professional Development, Contracting and Compliance, Performance Reporting and Metrics, Communications and Customer Service and Strategic Planning and Growth.

Position Activities

- Executes growth strategies by setting performance goals and growth targets for the contracts group in accordance with the goals and objectives of JCTO leadership and NYP/WCMC leadership. Provides services, data and metric performance reporting to leadership.
- Reviews, negotiates and approves legal agreements prior to execution. Interprets legal policies and implements procedures and SOPs in accordance with newly issued internal and external policies for the JCTO policy manual. Reviews and approves legal agreements drafted and negotiated by the contracting staff. May be delegated with the authority to sign documents.
- Upholds the highest level of customer service. Seeks feedback from internal and external customers and adjusts workflow and communication style in response to feedback. Seeks continual improvement.
- Responsible for recruitment, hiring, onboarding and orientation, training and development, supervising, providing
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resources (workstations, space, phones) and writing performance evaluations for specialists and administrative staff.

- Reviews and suggests improvements for software/hardware technology including JCTO contracting databases, applications and systems to ensure modernization, integration and sustainability.
- Reviews and maintains the contracts section of the JCTO website; ensures content is relevant and links current news and policy information as it relates to contracting.
- Attends committee meetings including CSEC and others as appropriate and incorporates relevant information into the activities of the contracts group. Prepares, organizes and presents educational programs to staff and to the research community.
- Liaise with University Council, NPY Legal, the Office of Sponsored Research Administration (OSRA), Departments and Divisions and other partners. Develops new contractual relationships with affiliates and outside entities and negotiates and amends master contracts with sponsors.
- Tracks, validates and reports performance metrics to JCTO leadership monthly, quarterly, and annually and on an ad hoc basis. Identifies metrics to demonstrate the scope of work performed, and the turnaround time achieved, by the contracts group. Researches competitor metrics and benchmarks accordingly.
- Performs other related duties as assigned.

Qualifications:
Minimum Requirements

- Master's Degree and at least 2 years' of experience in healthcare or other directly relevant work experience.
- Four or more years of experience in contract interpretation and negotiations.
- Proficient in working with the implementation of an electronic research administration system and a broad range of ITS skills.
- Experience managing staff.

Skill and Abilities

- Strong communication, negotiation, organization and interpersonal skills essential.
- Skilled in determining strengths and weaknesses in subordinate staff, and able to identify areas for growth. Demonstrated ability to coach, train and provide staff development.
- Demonstrated ability to work with peer managers to enhance business processes that cross functional teams.
- Demonstrated ability to solicit feedback and react calmly to constructive criticism.

Working Conditions/Physical Demands
No additional working conditions/physical demands provided.

No relocation assistance is provided for this position. Visa sponsorship is not available for this position.

APPLICATION INFORMATION

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Weill Cornell Medical College is an equal opportunity, affirmative action educator and employer.
Executive Director of Clinical Research Administration
Hospital for Special Surgery

THE SEARCH

Hospital for Special Surgery (HSS) invites nominations and applications for the newly-created position of Executive Director of Clinical Research Administration. This is a unique opportunity to join the world’s best hospital for orthopedic surgery and musculoskeletal health as it moves to further expand and elevate its clinical research initiatives. Currently, HSS leads by example: its extraordinary achievements in patient care have set the standard for orthopedics and rheumatology throughout the world. By investing further in clinical research, the Hospital will drive advancement in these fields, raising the bar on clinical best practices and educating the next generation of researchers. In this way, HSS will continue to serve as a leader in musculoskeletal health through the generation and dissemination of knowledge. The Hospital is currently opening a new Innovation Center focused on more rapidly translating its clinical research findings to the bedside and beyond for the benefit and well-being of its patients. Above all else, HSS helps patients do what they need and love to do.

Reporting to the Vice President for Research Administration, the Executive Director of Clinical Research Administration will play a crucial role in advancing and supporting ground-breaking clinical research by further developing an administrative infrastructure that encourages and rewards discovery.

HSS surgeons and specialists seek a leader who will demonstrate best practices in the management of clinical research and who will streamline administrative processes to clear the way for fully-engaged clinicians to conduct meaningful research.

THE ROLE

Reporting to the Vice President for Research Administration, the Executive Director for Clinical Research Administration will serve as a key member of the HSS Research Institute’s executive team. The Executive Director (ED) will manage and oversee all clinical research pre- and post-award administration and will be accountable for developing a comprehensive, integrated clinical research support strategy that elevates HSS as the leader in musculoskeletal clinical research. Supported by seven direct reports in central administration and in collaboration with clinical research managers across HSS departments and service lines, the ED will work seamlessly with clinicians, administrators, and external partners to ensure the efficient and effective implementation of clinical research projects.

A subject matter expert on clinical research affairs, the ED will provide inspirational guidance to the HSS research community, driving new standards of excellence across the institution. The successful ED will identify and remove impediments to the efficient conduct of research, establish and maintain a customer service orientation in clinical research administration, and work in partnerships across the Hospital to further develop and grow clinical research.
OPPORTUNITIES AND CHALLENGES FOR THE EXECUTIVE DIRECTOR

Lead and implement a strategic plan for clinical trial growth

The ED will develop and implement a strategic plan for the growth of clinical trials, paying special attention to best practices in the field and the overall strategic plan of HSS. Working collaboratively across the hospital with clinicians, researchers and administrative staff, the ED will identify current deficits and incorporate solutions to common pain points and problems experienced by users along the continuum. The ED will ensure that a more efficient and user friendly system emerges in order to fully engage and support investigators leading research funded though industry contracts, government programs, and philanthropy.

Support and promote excellence in clinical research

With an eye toward elevating clinical research at HSS to match its world-class stature in patient care, the ED will further develop and implement a highly collaborative strategic plan that improves the current operations of clinical research and contributes to the success of the clinical research enterprise. The ED will develop and maintain productive relationships across the research and clinical communities at HSS, while directing others to advance the administrative systems and processes used to manage clinical research and clinical trials. Working in close collaboration with senior leadership and other research administration staff, the ED will guide and support the clinical trials staff through this period of growth and change. At all times, the ED will ensure that best practice principles are applied to the conduct of clinical trials and that all regulatory and compliance mandates are maintained.

Build a culture focused on customer service and attention to the needs of investigators

To encourage the growth of the clinical research enterprise, the ED will ensure that investigators feel supported in their efforts by removing any barriers to initiating and conducting clinical research. By applying process improvements to the operational aspects of clinical research administration, the ED will lessen the administrative load on investigators. Through transparent and open communication with investigators and administrative staff, the ED will establish a more centralized and accountable clinical research administrative organization. This clearly defined organizational structure will encourage a higher level of engagement and satisfaction among the investigators and increase the likelihood of further research projects. Above all, the ED will promote a customer service orientation throughout the research administrative infrastructure.

Develop current talent and hire new talent

With further expansion of clinical research, the ED will need to address the changing needs in resources allocation. The ED will assess the current state of resources and develop a responsive strategy for deploying them, as well as a strategy to recruit and train additional staff. The ED will also engage clinical research staff across HSS departments and service lines to create a seamless process of collaboration in addressing the administrative needs of investigators. Through this strategy, the ED will assemble an experienced clinical research team ready to support and address the needs of a growing research enterprise.
QUALIFICATIONS AND EXPERIENCE

The successful candidate will have significant experience in the administration and oversight of a rigorous clinical research program in an academic medical center, and/or an industry setting comparable in scope, size, and complexity to HSS.

This individual will have a track record of leadership based on a philosophy of collaboration and a customer-service orientation. A thorough understanding of the regulations governing safe and compliant clinical trials is required.

Other desired skills, experience, and personal qualities include:

- At least seven years of progressively responsible experience related to overseeing and managing clinical research.

- Thorough knowledge of clinical research best practices, regulatory practices, and sponsored research administration processes and requirements.

- Experience in coordinating and managing health care professionals in a collaborative and team-building fashion in a clinical research environment.

- Strong leadership experience with a proven ability to anticipate and address organizational needs with data-driven analytical solutions.

- Demonstrated success working with a diverse community of scientists, clinicians, executives, and staff.

- Experience serving as an ambassador for clinical research across an institution’s faculty, advisory boards, and leadership committees.

- An advanced degree in science, business management, healthcare management, or a related field is preferred, as is certification as a research professional. Prior experience as a research coordinator or clinical research Nurse is highly preferred.

TO APPLY

Hospital for Special Surgery has retained Isaacson, Miller, a national executive search firm, to assist in this search. All inquiries, nominations and applications, should be directed in confidence to:

Isaacson, Miller
Patricia Hastie, Vice President
Ariannah Mirick, Managing Associate
Laura Mariani, Associate
263 Summer Street
Boston, MA 02210
www.imsearch.com/6138

Electronic submission of materials is strongly encouraged.

Hospital for Special Surgery is an Equal Opportunity Employer.
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**Advertised Summary Job Description**

The Associate Director of Research Administration is responsible for the Department's overall budget planning, tracking and management as related to the execution of the department's research related budget and financial operations. This includes analyzing, monitoring and evaluating the Department's pre-award, post-award, and sponsored and non-sponsored research activities. Job responsibilities include leading the budget and strategic planning processes, evaluating budget variances and making recommendations on appropriate corrective actions, prepare and present monthly budget and financial performance reports for departmental research activities. He/she is also responsible for serving as the Department's central liaison with SPF, SPA and CTO for matters related to grant management. The position will supervise the research administration team. This position will ensure the efficient, cost effective, administration and financial management of grants and contracts throughout the Department in compliance with internal and external policies and procedures. The Associate Director of Research Administration will report to the Senior Director of Research Administration.

**Minimum Qualifications for Grade**

Applicant MUST meet these minimum qualifications to be considered an applicant

Requires a bachelor's degree or equivalent in education and experience, plus five years of related experience.

**Additional Position-Specific Minimum Qualifications**

Applicant MUST meet these minimum qualifications to be considered an applicant

Must be able to demonstrate strong skills in financial analysis and financial management and an ability to interact with a broad spectrum of people, be highly organized, and work independently as well as a member of a team, meet deadlines and multi-task. Excellent oral/written communication, organizational, analytical, adaptable, creative, detail oriented and computer (e.g. Microsoft Office, Microsoft Excel, Microsoft Access) skills required. The position requires a motivated individual who has demonstrated leadership abilities, the ability to plan, possesses excellent interpersonal and strong organizational qualities who can interact with physicians, administrators, senior leadership and researchers and direct the activities of others.

**Special Instructions**

**Preferred Qualifications**

Experience with NIH application process and knowledge of research funding, competitive peer review funding system, research administration that includes financial operations in research organizations, regulatory affairs, and strategic planning preferred. Master's Degree in Business Administration preferred. Knowledge of
<table>
<thead>
<tr>
<th>Essential Functions</th>
<th>University financial accounting system preferred.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Essential Functions (Limit to 3950 characters.)</td>
<td></td>
</tr>
<tr>
<td>Special Indications</td>
<td>This position works with:</td>
</tr>
<tr>
<td>HIPAA Compliance training required</td>
<td>Yes</td>
</tr>
<tr>
<td>Participation in Medical Surveillance required</td>
<td>No</td>
</tr>
<tr>
<td>What type of posting? Is this a waiver request?</td>
<td>Standard Posting</td>
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<td>jobs.columbia.edu/applicants/Central?quickFind=160721</td>
</tr>
<tr>
<td>EEO Statement</td>
<td>Columbia University is an Equal Opportunity/Affirmative Action employer -- Race/Gender/Disability/Veteran.</td>
</tr>
<tr>
<td>Local Hiring</td>
<td>Columbia University is committed to the hiring of qualified local residents.</td>
</tr>
</tbody>
</table>
Columbia University's Mortimer B. Zuckerman Mind Brain Behavior Institute seeks a Magnetic Resonance (MR) Research Administrator to lead the Magnetic Resonance core group. Working in collaboration with the Zuckerman faculty and lab staff, the incumbent will serve as the "office manager and business director" for the Institute's MR core supervising and directing the imaging activities for all research studies executed. Reporting directly to the Director of MR Research, the individual provides overall senior support for the daily operations of all administrative and financial MR activities within the MR core. The individual will also work in collaboration with faculty and staff from Biomedical Engineering and Radiology in support of the research of the Director of MR Research.

Responsibilities include, but are not limited to the following:

- Oversees and manages all scheduling of MR system use, reimbursement, service contracts, maintenance, upgrades, and MR core office functions, including supply orders and inventory control.
- Manages accounting for all operating costs of the MR Core and prepares monthly reports outlining scanner volume.
- Aids in preparation and management of grants and contracts related to system use.
- Serves as the central point of contact for all copies of all IDE, IRB, IACUC, controlled substance, volunteer recruiting and consent, HIPPA, user training and other records related to experiments conducted on the instruments of the MR Core.
- Facilitates collaborative relationships directly with Principal Investigators (PI) and works cooperatively with students and staff members on all aspects of MR Imaging administration.
- Serves as a representative of the Zuckerman Institute on MR Imaging matters.
- Manages MR core team providing general supervision on all activities including work schedules, in-service trainings, performance reviews; ensures staff members remain in compliance with all regulatory Institute, Department and University requirements.
- Develops and ensures implementation of policy and Standard Operating Procedures (SOPs) related to operations, logistics and safety while maintaining documentation of training for all system users.
- Provides support on special projects and performs other job related duties, as required.

Minimum Qualifications for Grade

Applicant MUST meet these minimum qualifications to be considered an applicant

Master's degree in research administration or similar field, including at least five (5) years of related experience is required. Prior experience in a management / supervisory role is necessary. Must be proficient in Excel.
Demonstrated customer service focus with the ability to interact and collaborate with multiple constituencies. Excellent analytical, organizational, interpersonal, oral and written communication skills. Ability to handle multiple projects under tight time deadlines. Ability to work as a member of a collaborative team while exercising independent judgment essential.

The successful candidate must possess effective leadership and possess a proven ability to lead staff in a change environment. The candidate will be flexible in nature, have a sound judgment with a collaborative style that fosters teamwork and cooperation beyond the immediate team to the broader organization. Must have a passion for excellent customer service and commitment to exceptional quality.

The employee taking this position will be called upon to perform many duties as mentioned herein and other, as required to build and maintain a new research lab in a complex and changing environment with many scientists and technicians using a large inventory to scientific instruments in studies involving human volunteer and lab animal subjects. The successful applicant will be able to operate comfortably and effectively in this highly stimulating environment.

The Zuckerman Institute brings together researchers to explore aspects of mind and brain, through the exchange of ideas and active collaboration. The Zuckerman Institute's home will be the Jerome L. Greene Science Center on Columbia's new Manhattanville campus.

More information about the Zuckerman Mind Brain Behavior Institute can be found at: www.zuckermaninstitute.columbia.edu

Special Instructions

Preferred Qualifications
Prior experience in a MR core facility research environment highly desired, in particular in setting up and/or managing a laboratory.

Essential Functions

Additional Essential Functions (Limit to 3950 characters.)

Special Indications
This position works with:
There are no special indications for this position

HIPAA Compliance training required
No

Participation in Medical Surveillance required
No

What type of posting? Is this a waiver request?
Standard Posting

Requisition Open Date
04-10-2017

Requisition Close Date
Open Until Filled

Quick Link
jobs.columbia.edu/applicants/Central?quickFind=161570

EEO Statement
Columbia University is an Equal Opportunity/Affirmative Action employer -- Race/Gender/Disability/Veteran.

Local Hiring
Columbia University is committed to the hiring of qualified local residents.
Research Program Manager, Department of Medicine/Clinical Trials Office (Division of General Medicine)

Job Posting Number: 12396

Research – Clinical
New York, NY
February 13, 2017

Company Overview:
At Memorial Sloan Kettering (MSK), we’re not only changing the way we treat cancer, but also the way the world thinks about it. By working together and pushing forward with innovation and discovery, we’re driving excellence and improving outcomes. For the 27th year, MSK has been named a top hospital for cancer by U.S. News & World Report. We are proud to be on Becker’s Healthcare list as one of the 150 Great Places to Work in Healthcare in 2016, as well as Glassdoor’s annual Employees’ Choice Awards 2017. We’re treating cancer, one patient at a time. Join us and make a difference every day.

Job Description:
Collaborates directly with the Vice Chairman, Administrator of the Department of Medicine, Manager of the Clinical Trials Office, Director of Protocol Operations and other DoM Program Managers to provide leadership in developing and improving the conduct of all research in the assigned Department of Medicine Clinical Trial Office (Division of General Medicine). Assists with implementation of Department Chairman’s research vision and goals. Provides oversight and management of the day-to-day operations of the assigned clinical trials office. Responsible for ensuring the highest data quality, operations and staff management, quality assurance, regulatory compliance, data management, and strategic planning. Works with Director of Protocol Operations, Department Administrator and leads management and staff to ensure appropriate funding and budgeting related to all aspects of clinical research. Collaborate and integrate with the Office of Clinical Research (OCR) Clinical Research Administration in institutional efforts to improve the quality of clinical research at MSKCC in assigned CTO.

Responsibilities include:
- Research Program Planning and Development
- Staff Management
- Operational Management and Staff Development
- Reporting, Quality Control & Continuous Process Improvements
- Financial Management
- Human Participant Protection and Regulatory Compliance
- Special Projects

You need:
- Bachelor’s degree with at least 7 years of clinical research and/or related experience required.
- Master’s degree strongly preferred.
- This position requires the ability to apply broad technical, clinical/professional knowledge and significant job-related experience.
- Excellent written and verbal communication skills are essential.
- Communication Skills: The ability to independently develop education materials for staff, department, clinicians, prepare manuscripts, evaluations, and reports and oral communication skills to present complex information in a clear and concise manner.
- Information Management Skills: The ability to communicate, explain, interpret, share and present information to employees, management and clinical staff and patients at MSKCC as well as appropriate external contacts.
- Analytical Skills: The ability to perform basic math calculations as well as a knowledge of statistics and budgeting, budget development and management.
- Administrative Skills: The ability to plan and organize meetings, develop programs, manage research projects and prioritize work across several services/departments is essential.
- Computer Skills: Microsoft applications at a senior level.
- Federal Regulations: Must have a comprehensive knowledge and understanding of the regulations pertaining to human subject protection (including 21 CFR and 45 CFR 46 of the United States Code of Federal Regulations) and Health Insurance Portability and Accountability Act (HIPAA).

Closing:
MSK is an equal opportunity and affirmative action employer committed to diversity and inclusion in all aspects of recruiting and employment. All qualified individuals are encouraged to apply and will receive consideration without regard to race, color, gender, gender identity or expression, sexual orientation, national origin, age, religion, creed, disability, veteran status or any other factor which cannot lawfully be used as a basis for an employment decision.
Grants Administrator

<table>
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<tr>
<th>Institution:</th>
<th>Weill Cornell Medical College</th>
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<td>Location:</td>
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<tr>
<td>Category:</td>
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Job: WCMC-Administration
Primary Location: New York City
Organization: Pulmonary/Critical Care
Schedule: Full-time
Overtime Status: Exempt
Grade: 6

Description:

Position Summary

Reporting to the Division Administrator of Pulmonary, provides administrative and financial management for the faculty within the Pulmonary Division to support its basic and translational research programs and educational programs. The individual is expected to manage pre-award, post-award and compliance for Divisions with approximately $5.0 million in annual research funding and is expected to grow to $10 million.

Position Activities

- Manages the administration and submission of grant applications, including the development of budgets, manages grants submission/pending databases, and manages quarterly and annual progress reports and with meeting all sponsor reporting requirements.
- Verifies grant set-ups, budget and project periods and budget revisions in financial system are accurate and completes subcontract PO set up.
- Ensures that Effort and Time System is continually updated as pending grants are submitted and new grants are awarded. Acts as a liaison with central business offices, such as RASP, Contracts, Research Accounting and Research Compliance. Provide support to faculty with payment requisitions, reimbursements, petty cash and purchasing requests.
- Assist investigators with preparation, editing and compilation of applications and proposals, as well as IRB and IACUC submissions. Manages database of faculty and post doc biosketches and other support documents.
- Oversees post-award/financial administration for all basic and translational research grants (approx. 3 million per year of total costs). Approves and monitors all expenses allocated to basic and translational research accounts. Verifies that expenses are appropriate based upon the approved budget for each grant study. Processes and monitors payments owed to other University departments; monitors grants of Divisional faculty that are housed administratively in other WMC divisions departments.
Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

- Administrates pre and post-award activities for approximately basic and translational 10 research grants and contracts and 3 discretionary accounts. Reviews and approves budget proposals, implements payroll, staffing and space requirements and ensures that deadlines are met for application routing purposes. Serves as Division's primary liaison to Office of Sponsored Research Administration (OSRA): plays a critical role in disseminating and ensuring faculty and staff adherence to WCMC, NYPH, NIH and other agency regulations and guidelines. Coordinates planning and organization of NIH and other site visits.

- Assists the Divisional Administrators with completion of annual budget by providing information on research funding and expenditures for grant funds. Also assists in annual space survey and certification of faculty and staff effort reports; tracks faculty and staff "Other Support" for grant applications and on an ongoing basis.

- Provide support to faculty with payment requisitions, reimbursements, petty cash and purchasing requests.

- On at least a monthly basis prepares grant reports to be reviewed with investigators. Reviews reports with Division Chief and Divisional Administrator and distributes to PI's. Monitors revenue and expenses against fiscal year budget projections. If requested, attends meetings with PI's to review financial issues related to grants.

- Suggests process improvements for review and consideration.

- Performs other related duties as assigned.

Qualifications:

Minimum Requirements

- Bachelor's degree

- Three + years related administrative experience in a medical/office setting, which must include experience in grants administration.

Highly Desired Requirements

- Master's degree preferred.

- Experience with the administration of both federal and foundation grant funding.

- Experience with NIH policies and sponsored research regulations including A-21 and A-110.

- Highly organized and detail oriented.

- Strategic thinker.

Skill and Abilities

- Must have excellent organizational, time-management and interpersonal skills.

- Ability to manage multiple large-scale projects and meet deadlines

- Excellent computer skills required, including Excel, Word, Power Point and WMC FRS or similar accounting software.

- Must have strong accounting/financial/grants management background.

- Excellent interpersonal skills including the proven ability to facilitate positive work relationships and resolve conflict.

Working Conditions/Physical Demands

No additional working conditions/physical demands provided.

APPLICATION INFORMATION

<table>
<thead>
<tr>
<th>Contact:</th>
<th>Weill Cornell Medical College</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
Grants Research Manager

Institution:
Weill Cornell Medical College

Location:
New York City, NY

Category:
Admin - Sponsored Programs, Grants, and Contracts

Posted:
11/16/2016

Type:
Full Time

Weill Cornell Medical College

Job: WCMC-Administration

Primary Location: New York City

Organization: Pulmonary/Critical Care

Schedule: Full-time

Overtime Status: Exempt

Grade: 7

Description:

Position Summary
Reporting to the Division Administrator of Pulmonary, the Research manager oversees administrative and financial management for the Division of Pulmonary Department of Medicine, to support its basic and translational research programs and educational programs. In conjunction with the Division Administrator and Division Chief works on executing the research agenda for the Division's research faculty. This position manages pre-award, post-award and compliance for Divisions with approximately $6 million in annual research funding in FY16 and is expected to grow to $10 million in FY17.

Position Activities

Pre-Award/Compliance
Manages the administration and submission of 60 grant applications, including the preparation, editing, and compilation of applications and proposals, development of budget. Collects paperwork from collaborators at other institutions, Compiles extensive paperwork required by institution for interval review & routing purposes, Assists faculty with overall formatting of proposal for submission to agency, Compiles JIT information. Assists investigators with preparation, editing and compilation of applications and proposals.

Reporting and Data Entry:
- Manages grants submission/pending databases.
- Manages database of faculty and post doc biosketches and other support documents. Maintains shadow system for SAP activity to reconcile expenses and provide monthly expense information to PIs; resolves discrepancies. Prepares ad hoc reports for PIs as requested. Creates financial projections for faculty - forecasts future financial scenarios and suggests alternative spending plans for review & consideration by PIs. Disseminates policy and grant opportunity information to faculty and their staff members.
- Verifies grant set-ups, budget and project periods and budget revisions in financial system are accurate.
- Manages quarterly and annual progress reports and with meeting all sponsor reporting requirements.
- Ensures that Effort and Time System is continually updated as pending grants are submitted and new grants are awarded.
- Completes subcontract PO set up.
- Provides support to faculty with payment requisitions, reimbursements, petty cash and purchasing requests.

Post Award/Financial Management
- Oversees post-award/financial administration for all basic and translational research grants (approx. 6 million per year of total costs). Approves and monitors all expenses allocated to ~60 basic and translational research accounts. Verifies that expenses are appropriate based upon the approved budget for each grant study. Coordinates with faculty and sponsored research accounting when financial reports and invoices are due. Reviews and approves budget proposals, implements payroll, staffing and space requirements.

Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

105
• Processes and monitors payments owed to other University departments; monitors grants of Divisional faculty that are housed administratively in other WMC divisions departments Processes and monitors transfers of grant payments from NYP to WCM.
• Monitors annual programmatic and financial reporting of the Division's NHLBI funded program project grant, PPG and serves as the primary point person to multiple sites and the NHLBI.
• Facilitates divisional approval of new academic staff and research reappointments. Initiates requests to add or update payroll system with new staff members and salary increases for reappointments.
• Serves as Division's primary liaison to Research related central office, including Office of Sponsored Research Administration (OSRA); Research Finance, Research IT and EHS; plays a critical role in disseminating and ensuring faculty and staff adherence to WCMC, NYPH, NIH and other agency regulations and guidelines. Coordinates planning and organization of NIH and other site visits.
• Assists the Divisional Administrators with completion of annual budget by providing information on research funding and expenditures for grant funds. Also assists in annual space survey and certification of faculty and staff effort reports; tracks faculty and staff "Other Support" for grant applications and on an ongoing basis.
• Provides support to faculty with payment requisitions, reimbursements, petty cash and purchasing requests.
• On at least a monthly basis prepares grant reports to be reviewed with Investigators. Reviews reports with Division Chief and Divisional Administrator and distributes to PI's. Monitors revenue and expenses against fiscal year budget projections. Attends meetings with PI's to review financial issues related to grants.
• Suggests process improvements for review and consideration. Performs other related duties as assigned. Coordinates various aspects of research faculty lab moves including working with Divisional, Departmental and College Leadership developing budgets, systems access, and grant transfers. Assists with onboarding of new staff members including arranging for access to relevant systems and coordination of training.
• Acts as intermediary for faculty by elevating issues and concerns to higher management for consideration.
• Provides general support to research labs in resolving issues related to payroll, purchasing, P-cards, ITS, and WCM cores administration.
• Performs other related duties as assigned.

Qualifications:
Minimum Requirements
• Bachelor's degree.
• Five + years related administrative experience in a healthcare/ business setting with experience in grants administration or financial reporting.

Highly Desired Requirements
• Experience with NIH policies and sponsored research regulations including A-21 and A-110.
• Highly organized and detail oriented. * Strategic thinker.
• Experience with the administration of both federal and foundation grant funding.
• Master's degree.

Skill and Abilities
• Excellent computer skills, including Excel, Word, Power Point and WMC FRS or similar accounting software.
• Demonstrated strong accounting/financial/grants management experience.
• Excellent interpersonal skills including the proven ability to facilitate positive work relationships and resolve conflict.
• Ability to manage multiple large-scale projects and meet deadlines.
• Demonstrated organizational, time-management and interpersonal skills.

Working Conditions/Physical Demands
• No additional working conditions/physical demands provided.
• No relocation assistance is provided for this position.
• Visa sponsorship is not available for this position.

Weill Cornell Medicine is committed to excellence in patient care, scientific discovery and the education of future physicians in New York City and around the world. The doctors and scientists of Weill Cornell Medicine-faculty from Weill Cornell Medical College, Weill Cornell Graduate School of Medical Sciences, and Weill Cornell Physician Organization-are engaged in world-class clinical care and cutting-edge research that connect patients to the latest treatment innovations and prevention strategies. Located in the heart of the Upper East Side's scientific corridor, Weill Cornell Medicine's powerful network of collaborators extends to its parent university Cornell University; to Qatar, where an international campus offers a U.S. medical degree; and to programs in Tanzania, Haiti, Brazil, Austria and Turkey. Weill Cornell Medicine faculty provide comprehensive patient care at NewYork- Presbyterian/Weill Cornell Medical Center, NewYork- Presbyterian/Lower Manhattan Hospital and NewYork-Presbyterian/Queens. Weill Cornell Medicine is also affiliated with Houston Methodist.
EOE/M/F/Vet/Disabled
Clinical Research Quality Assurance Director
The Execu|Search Group
New York City, NY, US
Posted 53 days ago
Be one of the first 10 applicants.
Job description

About The Opportunity
An established healthcare facility located in New York City is actively seeking a self-motivated and experienced individual for a promising opportunity on their staff as a Clinical Research Quality Assurance Director. In this role the Clinical Research Quality Assurance Director will direct and actively manage the development and daily operations of the facility's centralized clinical research quality assurance program. Apply today!

Company Description
Healthcare Facility

Job Description
The Clinical Research Quality Assurance Director will:
- Ensure that the clinical research program, including investigational product development, adheres to all federal regulatory requirements and ICH guidance on Good Clinical Practice and Good Manufacturing Practice
- Plan for and oversee all internal and external audits across clinical research program and manufacturing facilities
- Plan for and oversee all internal and external monitoring across the clinical research program and manufacturing facilities to ensure compliance with institutional, federal and other applicable clinical research regulations
- Ensure top quality research is performed by tracking essential metrics, evaluating risks, crafting trend reports and implementing policies and procedures
- Act as a primary liaison with clinical department leadership to efficiently and effectively meet the clinical research goals

Required Skills
- Bachelor’s Degree
- 7-10 years of clinical research experience
- 4-7 years of management leadership
- Strong communication skills
- Excellent problem-solving abilities
- Strong ability and understanding on how to collect, analyze, interpret and prepare data for presentation
- Superior time management, administrative and computer skills

Desired Skills
Senior Grants Specialist
Job ID: 1037211_RR00015789
Area of Talent: Research
Position Type: Full-Time/Regular
Location: NYU School of Medicine,
Shift: 09:00 AM to 05:00 PM variable hours

View Job Cart

NYU Langone is one of the nation’s premier academic medical centers that includes five hospitals (Tisch Hospital, Rusk Rehabilitation, Hospital for Joint Diseases, Hassenfeld Children’s Hospital of New York, and NYU Lutheran Medical Center) and more than 200 ambulatory locations across the New York metropolitan area. It also includes NYU School of Medicine, which since 1841 has trained thousands of physicians and scientists who have helped to shape the course of medical history. Our trifold mission to serve, teach, and discover is achieved daily through an integrated academic culture devoted to excellence in patient care, education, and research. Learn more about NYU Langone.

Position Summary:
We have an exciting opportunity to join our team as a Senior Grants Specialist.
In this role, the successful candidate will be responsible for working with the faculty to process and review grant applications, maintaining database of applications and managing information systems providing up-to-date sponsor policies and regulations. The candidate will be responsible for performing complex grant administration and fiscal management tasks relating to a wide range of grant activities to include interacting regularly with principal investigators/scientist and administrators from academic departments, leading grant preparation and submission process, overseeing and supporting all aspects of the grants program, as well as conducting ongoing monitoring and evaluations. The candidate will coordinate activities related to the application, set up grant accounts, and will be responsible for the management of new awards and continuing grants and/or contracts from a variety of federal, state, and private sources.

Job Responsibilities:
- Prepares grant applications and supporting documentation to ensure compliance with funding requirements. Processing and review of grant proposals to include: reviews NIH continuation applications, and assists in review of all other applications; for NIH non-competing continuations, notify investigators of upcoming deadlines; tracks continuation proposals; enters data for all proposals reviewed and maintains electronic database pertaining to applications; ensures budgets in accord with sponsor policies; keeps up-to-date on federal policies, notifies supervisor of changes, and recommends action when necessary; and prepares monthly report of continuations activity.
- Reviews and processes sponsor awards for financial and research compliance. Reviews requested actions for compliance with NYU, sponsor and governmental policies and assists the Principal Investigator, research team, and administrative department in attaining appropriate sponsor administrative approvals. Ensures appropriate account set-up, executes necessary changes during the period of performance, and coordinates project closeouts. Engages with departments as needed to insure Human Subjects (IRB), Animal Subjects (IACUC), and rDNA (IBC) compliance. Maintains award and compliance data for SPA records and maintains its accuracy in the internal grants database.
- Tracks status of proposals and provides additional information as required by funding source: facilitates the development and submission of reports in accordance with grantor guidelines; develops and maintains contacts with local, State and federal funding agencies.
- Reports on status of grant processing activities on a regular basis by: preparing summary reports of applications submissions and outcomes; communicates the needs for new policies and procedures to supervisor in a timely manner; communicates reasons for delay in accomplishing a task to supervisor within a reasonable time; meets regularly to review pending proposals and actions to be taken.
- IACUC and IRB compliance approval information: reviews and updates approval database; updates application database; sends certifications of approvals to sponsors in a timely manner; notifies faculty with pending approvals to submit protocols to appropriate institutional committee; and maintains records for grants ensuring compliance with applicable regulations and policies, including with financial reporting and budgeting.
- Interfaces with senior management and program directors to expedite or facilitate internal processing of proposals. Tracks existing grants deadlines, monitors status of progress reports and seeks continuation of grant funding for current programs. Faculty assistance which consists of: for continuation applications, contacts investigators prior to competing deadline to determine whether application will be submitted and if not, why and if a later deadline will be used; contacts investigators to ensure non-competing continuations and competing renewals are submitted on time; assists faculty and administrators in
preparation of budgets; provides policies and procedures, compliance information, and RFAs to faculty; responds in a timely manner to faculty requests for information.

- Training programs: provide hands-on training sessions for administrators in preparing budgets, developing proposals, responding to compliance requests; assist in the development of evaluation criteria and the collection of data to measure grant program effectiveness; creates and distributes standards and special reports, studies, summaries and analyses as needed. Participates in the training of new grants specialists and Department Educational offerings to promote faculty, student, and administrative know how.
- Contract issues: assists Contracts Specialists in review and resolution of issues.
- Maintains a current awareness of changes or new Federal regulations; maintains familiarity with trends, issues, and advances in grants administration through periodic review of relevant journals or other literature; consults websites of professional organizations (e.g. NCURA, SRA); readily accepts new responsibilities and assignments; and recognizes when help is needed by others and offers guidance and assistance.
- Performs other duties as assigned.

**Minimum Qualifications:**
- To qualify you must have a B.A./B.S. degree and three years of broad grants administration or other relevant experience in all aspects of proposal review.
- Knowledge of grant policies and regulations for the public and private sectors.
- Must be able to meet deadlines and be proficient in the use of computers, including database management, spreadsheets, word processing applications and the Internet.
- Excellent organizational, time management, oral, written, communication/interpersonal skills.
- The ability to work with a wide variety of personalities as part of a team.

**Preferred Qualifications:**
- Master’s Degree in applicable field (MBA, MPA, MPH, etc.) a plus

*Qualified candidates must be able to effectively communicate with all levels of the organization.*

NYU Langone provides its staff with far more than just a place to work. Rather, we are an institution you can be proud of, an institution where you’ll feel good about devoting your time and your talents. NYU Langone Medical Center is an equal opportunity and affirmative action employer committed to diversity and inclusion in all aspects of recruiting and employment. All qualified individuals are encouraged to apply and will receive consideration without regard to race, color, gender, gender identity or expression, sex, sexual orientation, transgender status, gender dysphoria, national origin, age, religion, disability, military and veteran status, marital or parental status, citizenship status, genetic information or any other factor which cannot lawfully be used as a basis for an employment decision. We require applications to be completed online.

If you wish to view NYU Langone Medical Center’s EEO policies, please click here. Please click here to view the Federal “EEO is the law” poster or visit http://www1.eeoc.gov/employers/poster.cfm for more information.
Job Title: Research Finance and Post Award Administrator

Job Code Title

Job Requisition Number: 087077

Department: INACTIVE-544-ORTHOPEDIC SURGERY
7532- ORT Orthopaedic Surgery

Location: Medical Center

Job Type: Officer Full-Time Regular

Bargaining Unit

If temporary, indicate duration

Hours Per Week

Job Family: Research Support (Laboratory and Non-Laboratory)

Salary Grade: Officer 105

Salary Range: Commensurate With Experience

Advertised Summary Job Description:

Will be responsible for the budgets of the department's research divisions and provide the Director of Research Support and Administration with regular ARC reports of project balances and expenditures. Will communicate frequently with PIs to keep them apprised of the project's financial business developments and assist them in the administration of awards, providing PIs with business and accounting expertise. Ensure that the award's budget and other data elements in ARC and/or FDS accurately reflect the terms of the award and the completed endorsement form or other associated forms. Review project expenditures, including fringe benefit, facilities and administration, and tuition charges, on a regular and timely basis.

Review ARC reports and review project financial transactions with the PI and/or the PI's research coordinator on a monthly basis.

Ensure that project expenditures, including those received from the Orthopaedic Scientific Research Foundation, are charged in accordance with the terms and conditions of the award and/or university policy.

Review general ledgers for unallowable costs posted to the award's fund line throughout the project period and work with the Finance Manager to ensure that any unallowable charges are promptly transferred to an appropriate fund line in accordance with the university's cost transfer policy.

Ensure that the project complies with all appropriate university payroll, reimbursement, accounting, and personnel policies and practices.

Monitor encumbrance balances on a monthly basis and ensure that the balance reflects current purchase obligations for the award and that purchase orders are closed out on a timely basis.

Provide the PI with regular accounting reports of project balances and expenditures, as well as projections of future expenditures.

Assist PIs with all administrative aspects of an award, including maintenance of internal records related to project expenses, activities, and reports.

Ensure that the PI has approved all appropriate transactions (e.g. cost transfers) in accordance with university policies.

Ensure that the percent of salaries charged corresponds to actual time spent on the project.

Prepare effort cards for the PI prior to certification and ensure that all effort cards are completed and processed on time and certified by the appropriate official in accordance to the university's effort certification policies.

Ensure that the project operates in accordance with its budget.

Assist in the preparation of financial reports or invoices when required on awards that require confirmation of completion of deliverables prior to submission or supplemental information that must accompany any financial report or invoice.
Proposal to Establish a Master of Science in Research Administration and Compliance
CUNY School of Professional Studies
Approved by the CUNY School of Professional Studies Curriculum Committee, April 27, 2017
Approved by the CUNY School of Professional Studies Governing Council, May 11, 2017

### Minimum Qualifications for Grade

**Applicant MUST meet these minimum qualifications to be considered an applicant**

- Requires a Bachelor's degree or equivalent in education and experience, plus four years of related experience in grant submission/administration.

### Additional Position-Specific Minimum Qualifications

**Applicant MUST meet these minimum qualifications to be considered an applicant**

- Proficiency in Windows Operating environment and MS Word and Excel required. The candidate should have strong communication skills both written and verbal.

### Preferred Qualifications

- A Master's degree in business or accounting is highly desirable. The applicant should possess a solid understanding of the Columbia ARC and RASCAL systems. Possess the ability to rapidly assimilate and retain University fiscal and academic policies, procedures, and practices. Have a thorough knowledge of sound business management principles, policies, and techniques. Have the ability to work under occasional pressure and to adjust to constant changes and handle multiple tasks. Be able to use judgment, tact, and resourcefulness to establish and maintain professional and effective working relationships.

### Essential Functions

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General Administration: General Administration:
Admin Manager - Research

Shift Type: Full Time
Shift: Day Job
Hours: 9:00 AM – 5:00 PM
Requisition: 0012VU
Location: NWPP Manhasset (FPPMN), New Hyde Park, NY

Apply Now

Job Description

Job Details
Under the direction of the Cancer Institute’s Sr. Administrative Director of Clinical Research, the Administrative Manager will provide quality assurance oversight and administrative support to Cancer Clinical Trials Office (CCTO) researchers and staff.

The incumbent must be able to handle multiple projects simultaneously and work independently using initiative and good judgment. Excellent oral and written communication, coupled with strong interpersonal skills and professionalism, are necessary for success.

Primary duties are listed below:

- Oversee CCTO research activity to ensure compliance with ICH GCP and federal, state, and institutional rules (laws, regulations, guidance, and policies).
- Develop an annual strategic plan for integration of clinical research compliance into the multi-disciplinary and multi-site trial management; develop program goals and objective that show a mandate of research compliance, data integrity and training opportunities using benchmarks and metrics to evaluate the plan’s success and achievability.
- Develop and implement a global strategic monitoring plan for the CCTO. The plan should include: monitoring objectives, volume, presentation to review the findings with the audited groups, training courses developed directly from audit findings, and a monitoring schedule for CCTO studies conducted throughout the Northwell Health network.
- Manage (both directly and indirectly) central office staff, including PRMC (Protocol Review and Monitoring Committee) and DSMC (Data and Safety Monitoring Committee) coordinator, and compliance and auditing staff.
- Provide assistance with education of and document creation for CCTO policies, tutorials, guidances, and supplemental forms which support clinical data collection, subject recruitment, organizational management of health system requirements and overall efficient study conduct.

Qualifications

- Bachelor’s Degree in Business Administration, Healthcare Administration or related field, required. Master’s Degree, preferred.
- Knowledge of oncology and research regulations
- Minimum of three (3) years relevant managerial experience in a health care/research setting
General Administration:
Admin Manager - Research
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- Knowledge of oncology and research regulations
- Minimum of three (3) years relevant managerial experience in a health care/research setting
The University of Pennsylvania, the largest private employer in Philadelphia, is a world-renowned leader in education, research, and innovation. This historic, Ivy League school consistently ranks among the top 10 universities in the annual U.S. News & World Report survey. Penn has 12 highly-regarded schools that provide opportunities for undergraduate, graduate and continuing education, all influenced by Penn’s distinctive interdisciplinary approach to scholarship and learning. Penn offers a unique working environment within the city of Philadelphia. The University is situated on a beautiful urban campus, with easy access to a range of educational, cultural, and recreational activities. With its historical significance and landmarks, lively cultural offerings, and wide variety of atmospheres, Philadelphia is the perfect place to call home for work and play. The University offers a competitive benefits package that includes excellent healthcare and tuition benefits for employees and their families, generous retirement benefits, a wide variety of professional development opportunities, supportive work and family benefits, a wealth of health and wellness programs and resources, and much more.

Duties

Manage proposal development, budget development and related pre-award activities for diverse sponsor portfolio. Manage post award activities including account setup, monitor and review of all sponsored projects expenditures including fund projections. Monitor and enforce compliance with sponsor guidelines and OMB Uniform Guidance. Meet with principal investigators to discuss and advise them
on financial issues related to their portfolios. Maintain salary grids and work with payroll coordinator to ensure faculty and staff are paid correctly. Assist in the preparation of effort reports. Participate in specific projects, including the annual budget submission. Work on the more complicated grants including training grants and program project with multiple sub-contracts.

Grants Manager B: The Grants Manager B will work more independently and actively participate in specific projects, including the annual budget submission. The Grants Manager B will work on the more complicated grants including training grants and program project with multiple sub-contracts. Moreover, it is expected that the Grants Manager B candidate will have a greater grants management experience than the Grants Manager A candidate, such that s/he can make greater contributions, including engaging in financial analysis.

The grants manager will report to the Director of Research Administration for the Department of Medicine; have an indirect reporting relationship on an as needed basis with multiple DOM Divisions; and the PSOM Office of Research Support Services.

| Qualifications | Grants Manager A:  
| Bachelor’s degree and 3 years to 5 years of experience or equivalent combination of education and experience required.  
| Experience with NIH and other federal granting agencies is required. Proficiency with Microsoft Excel, Adobe, and Business Objects.  
| Excellent critical thinking, analytical, verbal and written communication is required. Working knowledge of Uniform Guidance is required.  
| Ability to apply solid organizational and time management skills to a deadline drive, multiple priority work environment is required.  
| Familiarity with UPENN sponsored research policies and related financial system is preferred.  
| Grants Manager B:  
| Same as Grants Manager A with five to seven year of grant and contract administration or an equivalent combination of education and experience. Master’s degree preferred. |

| Affirmative Action Statement | Penn adheres to a policy that prohibits discrimination on the basis of race, color, sex, sexual orientation, gender identity, religion, creed, national or ethnic origin, citizenship status, age, disability, veteran status, or any other legally protected class. |

| Special Requirements | Background check required after a conditional job offer is made. Consideration of the background check will be tailored to the requirements of the job. |

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Compliance Specialist (Institutional Animal Care and Use Program Administrator)
The Pennsylvania State University

Details

**Posted:** March 16, 2017  
**Location:** University Park, Pennsylvania  
**Salary:** 49,000.00 - 103,000.00  
**Type:** Full Time - Experienced  
**Sector:** College / University  
**Discipline:** Academic / Research  
**Preferred Education:** 4 Year Degree

The Institutional Animal Care and Use (“IACUC”) Program Administrator ensures the University’s Animal Care and Use Program is and remains compliant with federal, state and local regulations and policies governing the use of vertebrate animals in research, teaching or testing. The selected candidate will oversee and manage the daily administrative activities associated with the Animal Care and Use Program, which involves overseeing and organizing Institutional Animal Care and Use Committee (IACUC) activities, developing policies and procedures, managing reports of non-compliance, and facilitating strategic program management and goal setting activities. In conjunction with the Director, this position will coordinate staff support activities relating to the IACUC Program. The IACUC Administrator will also review and approve protocols, act as a voting member on the IACUC, prepare IACUC meeting minutes as assigned and serve as a resource for researchers while guiding them in maintaining compliant research programs. The incumbent will assist with the development, implementation and presentation of the research compliance education and training programs for research staff and students using vertebrate animals, maintain professional relationships with regulatory agencies and accrediting body colleagues, independently complete and submit related reports, and inform committees, faculty, and staff of relevant information obtained. The IACUC Administrator is expected to participate in professional development activities to maintain current knowledge of the regulations and national accreditation standards. This position is also expected to serve as the subject matter expert for the development and maintenance of related databases and electronic systems and assist in training the University community to use the electronic systems. The selected candidate will promote the University as a key player in the IACUC compliance arena by participating in and presenting at national conferences. The incumbent will develop, organize, prepare for and participate in IACUC related activities (e.g., AAALAC site visits, USDA inspections, facility inspections, and education activities for animal users) and support the activities of other compliance programs as need.

Typically requires a Bachelor's degree or higher plus six years of related experience, or an equivalent combination of education and experience. Master’s degree and experience with research administration is preferred. The selected candidate should have earned, or be eligible to earn the Certified Professional IACUC Administrator (CPIA) credential. Candidates must be able to exercise a wide range of independent judgment and discretion, maintain confidentiality, have excellent interpersonal and communication skills, and have demonstrated the ability to work independently. Familiarity of federal, state and local regulations and policies governing research is preferred. The relevant documents include: the Animal Welfare Act Regulations, and the Public Health Service Policy on the Humane Care and Use of Laboratory Animals, and the NIH Guidelines for Research involving Recombinant DNA Molecules. The candidate should be proficient with Microsoft office and experience and/or knowledge of electronic data management systems is desired.

Apply online at [https://psu.jobs/job/69790](https://psu.jobs/job/69790)

CAMPUS SECURITY CRIME STATISTICS: For more about safety at Penn State, and to review the Annual Security Report which contains information about crime statistics and other safety and security matters, please go to [http://www.police.psu.edu/clery/](http://www.police.psu.edu/clery/), which will also provide you with detail on how to request a hard copy of the Annual Security Report.

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Internal Number: 69790
### Job Details

**Hot Req No**  
**Title**  
**Human Research Protection Specialist Subject Matter Expert**  
**City**  
**Falls Church**  
**State**  
**VA**

**Description**
AFSC seeks a Human Research Protection Specialist SME with biomedical research expertise to assist with oversight of human research protection programs, Institutional Review Boards (IRBs), human subject protection standards, policy and procedure development, and regulatory compliance.

- Assist in the development and implementation of human subject protection standards, policies, procedures and systems relative to clinical research and cross-discipline human subject research, research subject protection, and institutional and investigator compliance. Serve as point-of-contact for assigned Commands and provide guidance and oversight, as needed.
- Provide consultation for updating regulations and policies at the component level.
- Assess Command compliance with federal and institutional regulations and policies through the following tasks:
  - Periodic review of Command Assurances for the protection of human research subjects. Assurance reviews can include an application, Command Instructions, IRB roster, IRB Policies and Procedures, agreements with other Commands, and summaries of training for key staff.
- Review and analysis of institution-specific Management Plans, Instructions, policies, and procedures. Provide a written report for each assessment including specific findings and recommendations to further institutional compliance and/or initiate quality improvements.
- Conduct site inspections and assist visits with Commands on a regular basis. Coordinate with the Command staff and other site inspection or assist visit team members, including leadership, if any. Site inspections and assist visits may include: interviews with human research protection staff, interviews with researchers, review of Command research files, and review of investigator files. Evaluate and assess findings objectively and integrate all activities and results into a final Assessment report or summary.
- Headquarters Level Review of IRB reviewed protocols for which the Program has regulatory oversight. Provide a written report for each protocol reviewed and keep track of trends. Communicate findings to IRB staff to ensure compliance.
- Serve as a subject matter expert to Institutional Officials, Human Research Protections Officers (HRPOs), Institutional Review Board (IRB) members and staff, and other HRPP staff on human research protection and compliance regulations, policies, and procedures. Subject matter expertise includes knowledge of human research ethical foundations, federal regulations, requirements, GCP standards, and standards for the responsible conduct of research.
- Serve as site inspection or assist visit team member for other HRPP staff members, as needed.
- Perform full range of subject matter research and analyses. Interpret results to determine validity and significance. Prepare written reports presenting the results, interpretations, conclusions, and impact analysis. Identify need for new processes, systems, methods or approaches, guidance documents, standards, and training needs.

### Requirements

**Skills Needed:**
- Subject matter expertise in human research protection, including application of the Common Rule and subparts B, C and D; HIPAA, and other human research protection regulatory requirements
- Exceptional communication skills (verbal and written), with proven technical writing abilities (Writing sample required to be provided)
- Superior analytic, problem solving, and negotiating skills
- Excellent demonstrated project and time-management skills
- Demonstrated success in change management
- Travel required up to 8 times per year. Travel to domestic and international destinations possible
- Human subjects protection and regulatory compliance certification (or obtained within 6 months of hire)
- Must be able to work independently in Microsoft Windows 7 and Microsoft Office 2010 (Excel, Outlook, Powerpoint, Publisher, and Word)
- Interim Secret Clearance required to start
Preferred skills:
• 4+ years post advanced-degree experience in relevant field(s)
• Biomedical experience preferred
• Experience conducting human subject research
• Experience with military health topics, such as post-traumatic stress disorder or traumatic brain injury
• Experience working with Institutional Review Boards

Education and Experience:
• Minimum of 4 years’ experience in human research protection and compliance oversight
• Bachelor’s degree in biomedical or socio-behavioral field required, Master’s degree preferred

Physical Requirements:
The physical requirements described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

General Office Demands:
• Must accurately record your daily timesheet per AFSC’s Timekeeping Policy
• Must be able to operate general office equipment including but not limited to: computer, phones and related media and information devices on most or all workdays
• Ability to communicate and interact with others, both in person and/or by telephone to conduct business
• Working under time pressure
• Working rapidly for long periods to meet deadlines
• Must be able to travel as needed and adhere to AFSC travel policies and procedures.
• Physical requirements can typically be characterized as active: Lifting, bending, sitting on the floor, climbing may be required in the position. Requires lifting or moving various pieces of equipment, maximum 40 lbs. Position may require work on hands and knees to conduct program activities.

Major Job activities and mental requirements:
• Multiple concurrent tasks
• Ability to perform under stress
• Reading and comprehension
• Writing
• Problem solving
• Confidentiality
• Customer contact

Our Equal Employment Opportunity Policy:
Armed Forces Services Corporation (AFSC) is an equal opportunity employer. We recruit, employ, train, compensate, and promote without regard to race, religion, creed, color, national origin, age, gender, sexual orientation, marital status, disability, veteran status, or any other basis protected by applicable federal, state or local law.

• Equal Opportunity Employer/Protected Veterans/Individuals with Disabilities.
• Please view Equal Employment Opportunity Posters provided by OFCCP here.
• The contractor will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. However, employees who have access to the compensation information of other employees or applicants as a part of their essential job functions cannot disclose the pay of other employees or applicants to individuals who do not otherwise have access to compensation information, unless the disclosure is (a) in response to a formal complaint or charge, (b) in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or (c) consistent with the contractor’s legal duty to furnish information.
RESOLVED, that the program in Public and Community Health offered at La Guardia Community College and leading to the Associate’s in Science, be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: The proposed program aims to equip students with the necessary skills and competencies required to transfer into 4 year programs in Public Health or Community Health Education.

LaGuardia Community College is uniquely poised to offer this degree as it presently offers. The Health Sciences department at LaGuardia Community College presently offers nine majors in allied health with over two thousand incoming students annually as well as EMT an a several programs such as EMT, Community Health Worker that often function the first steps on the public health educational ladder. The proposed program will create additional educational pathways for health science students in majors with enrollment limits. An articulation agreement with York College has been signed, and other agreements are being developed.
PROPOSAL TO ESTABLISH AN ASSOCIATE OF SCIENCE (A.S.) PROGRAM IN PUBLIC AND COMMUNITY HEALTH EFFECTIVE FALL 2018 (expected)

SPONSORED BY THE HEALTH SCIENCES DEPARTMENT OF LAGUARDIA COMMUNITY COLLEGE

Approved by
LaGuardia Community College Curriculum Committee, 09/29/16
LaGuardia Community College Academic Senate, 10/26/16

College Representative: Ann E. Feibel, Dean for Division of Academic Affairs and Associate Provost
Contact: David S. Bimbi, Professor, Health Sciences Department
Telephone: 718-482-5759
Email: dbimbi@lagcc.cuny.edu

Provost’s Signature: 

Provost’s Name: Dr. Paul Arcario
Provost and Sr. Vice President for Academic Affairs
LaGuardia Community College
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EXECUTIVE SUMMARY

LaGuardia Community College proposes to establish an Associate of Science (AS) degree program in Public & Community Health (PCH). This program was developed with the vision of providing a degree program for students who have an interest in a career in Public or Community Health settings. The PCH program will be offered under the sponsorship of the Department of Health Sciences. The proposed program aims to equip students with the necessary skills and competencies required to transfer into 4 year programs in Public Health or Community Health Education. The proposed program also fulfills the recommendations of The City University of New York Public Health Workforce Project urging the development of associate degree programs to create a continuum or ladder of public health education from community colleges to graduate education.

The Workforce Project also identified several converging factors make this the opportune time for CUNY to pursue a continuum of public health education: 1) The recommendations of the Association of Schools and Programs of Public Health (ASPPH) Task Force on the Future of Public Health Education provides a blueprint for a continuum of public health education that is reflective of the public health workforce needs among other relevant concerns; 2) emerging trends in public health and the Affordable Care Act represent strong opportunities for which CUNY is uniquely positioned; and 3) the commitment and support of CUNY and the partner institutions to create a unified approach to public health education within the university.

Within CUNY, LaGuardia Community College is uniquely positioned to create an associate’s degree program in public health based upon all of the above recommendations. LaGuardia Community College’s Division of Adult and Continuing Education (ACE) presently offers several programs (e.g., EMT, Community Health Worker) that provide the first steps on the public health educational ladder. The Health Sciences department at LaGuardia Community College presently offers nine majors in allied health with over two thousand incoming students annually. The proposed PCH program will create additional educational pathways for health science students.

The PCH program at LaGuardia Community College is 60 credits. Our proposed program in Public & Community Health would articulate with the B.S. Program in Public Health at York College. It is proposed that this new program enroll its first cohort in Fall 2018.

1The City University of New York Public Health Workforce Project. Preparing the Public Health Workforce for the New York Metropolitan Region. 2014.
I. Abstract

The mission of LaGuardia Community College of the City of University of New York is to educate and graduate one of the most diverse student populations in the country to become critical thinkers and socially responsible citizens who help to shape a rapidly evolving society.

Recently guidelines were established for the creation of programs in Public Health at community colleges with the charge to create programs in Public Health in community colleges nationwide. Locally, the City University of New York Health Workforce Project has recommended creating clear educational ladders in Public Health system wide by establishing clear articulation agreements and/or dual AS/BS dual degree programs. The Public Health Program at LaGuardia Community College LAGCC is designed for seamless progression into the upper division baccalaureate programs at CUNY and elsewhere in Community Health, Health Administration, Health Science or Public Health.

II. Purpose and Goals

The purpose of the developing a Public and Community Health program is to offer students an allied health program of study that will allow them to earn an Associate of Science degree at LaGuardia Community College (LAGCC). The goal of the program is to enroll and graduate students who have an interest in Public and Community Health as well as providing additional educational opportunities for students at LAGCC. The proposed curriculum provides a foundation in the discipline designed for seamless progression from LAGCC into the upper division baccalaureate programs at CUNY and elsewhere in Community Health, Health Administration, Health Science or Public Health. The proposed PCH program articulates with Public Health program at York College (see Appendix K).

III. Need and Justification

Public health and related fields are among the fastest growing employment sectors in the NY region and nationally, with an estimated 250,000 new workers needed nationally by 2020. More than 25% of public health workers have retired in the past decade and only 20% of the current workforce has formal training in public health. With the retirement of individuals without formal educational training in public health, those with AS and BS degrees will be prepared to replace them and thereby respond to the workforces needs.

This broad definition of the public health workforce definition includes some categories of workers who are not included in standard enumerations, such as those employed in the occupational safety and health in industry, unions, and government; those engaged population-focused health education work on behalf of community based organizations (heart disease, cancer, or diabetes) as well as large health care systems; and lastly, those employed by both governmental agencies and other health settings.
Official public health agencies are the most common employers of the nearly 500,000 identifiable public health workers in the United States. In 2000, federal agencies employed 19 percent of this workforce; state agencies, 33 percent; and local public health agencies, 34 percent. Other settings, such as schools of public health, accounted for the remaining 14 percent.

According to the Bureau of Labor Statistics, national employment of health educator and community health workers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. The median annual wage for all community health workers and health educators was $43,840 in May 2015.¹ New York State ranks third and the New York City metropolitan region ranks first in employment for community health workers. In employment for health educators New York state ranks second and the metropolitan region first. Community health workers and health educators with a bachelor’s degree had a mean annual wage of $56,690 in 2015. Growth in employment for community health workers and health educators will be driven by efforts to improve health outcomes and to reduce health care costs by teaching people about healthy habits and behaviors and utilization of available health care services.

LaGuardia Community College is exceptionally positioned to take advantage of the increasing demand for associate degree programs in Public Health to prepare the workers needed by the implementation of the Affordable Care Act. Health Sciences majors are also popular with at the college accounting for over 1,000 each term. However, many students may not succeed in their desired health science major due to enrollment limits and grades. The proposed general education curriculum for PCH program includes many of the courses common across most of the majors in the Health Sciences Department and thus creates a new major option for students that builds upon some credits already earned.

Finally, the Health Sciences Department at LaGuardia Community College has implemented a new “First Year Seminar in Health Sciences” required of all majors. The curriculum specifically includes a review of all majors offered within the department as well as career and educational ladders for each. Therefore, the Health Sciences Department will be able to promote implementation of the major to current students, as well as to new students who initially chose another health science major.

IV. Students

A. Interest/Demand
This proposed program has been created in response to student interest for careers in public health as well as expressed interest in non-clinical majors in the health sciences. The PCH will also draw health sciences students who must change majors due to the limited number of eligible seats in various health majors and rigorous candidacy guidelines.

B. Enrollment Projections
It is our intention to admit an individual class of students during the 2017-2018 academic year. Data from the LaGuardia Community College Office of Institutional Research indicates high admittance rates in the various programs within the Health Science Department. Using those rates, we have constructed the table below to indicate projected student enrollment. Possible attrition has been taken into consideration given the fact that it not uncommon for LaGuardia students, given the pressures of job and family life, to take a break for a semester, with the prospects of returning. With advisement from the Public & Community Health Program director and the Health Sciences advisement team, students will be closely monitored and informed of their graduation plan.

In the proposed degree program, it is anticipated that initial total enrollment will be 60 students in the first year and 160 after five years – taking graduation and negative attrition into account. Below is Table 1 with a summary of anticipated enrollment over the first five years of the program:

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<td>90</td>
<td>120</td>
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Table 1- Enrollment Projections for PCH program

C. Admission Requirements
Admission requirements for students who enroll in the A.S Public & Community Health Program will be the same for all applicants to majors within the Health Sciences Department. Prior to admission to the college students are afforded an opportunity to speak with an admissions counselor before submitting an application to CUNY. Counselors will review the PCH program of study, the college’s academic calendar and student services. New and transfers students who apply to the Health Sciences Department will be required to take the First Year Seminar in Health Sciences, in addition to seeking advisement from the Student Advisement Health Sciences team.
IV. Curriculum

A. The proposed curriculum for Public & Community Health (PCH) is designed to meet multiple goals:

1) Alignment with the curricular models proposed by the League for Innovations in Community Colleges and Public Health (CCPH) Project Recommendations for Public Health Programs www.league.org/ccph

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<thead>
<tr>
<th>Core Requirements</th>
<th>Description</th>
<th>Program course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational 3 credits</td>
<td>• Human Health/Personal Health &amp; Wellness including a population health and determinants of health focus</td>
<td>• SCH160 Health &amp; Wellness</td>
</tr>
<tr>
<td>Public Health Core 6 credits</td>
<td>• Overview of Public Health</td>
<td>• SCN195 Community Health &amp; SCN196 Community Research • SCH205 History &amp; Principles of Public Health</td>
</tr>
</tbody>
</table>

**Generalist Public Health**

<table>
<thead>
<tr>
<th>Required Public Health 9 credits</th>
<th>Description</th>
<th>Program course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialization: Generalist • Models encouraged to allow transfer to partnering bachelor’s degree programs</td>
<td>• SCH150 Drugs &amp; Society • SCH210 Human Sexuality • SCN194 HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td>Experiential Learning 3 credits</td>
<td>• Supervised curriculum with learning outcomes and opportunities for reflection</td>
<td>• SCH235 Epidemiology</td>
</tr>
<tr>
<td>Electives 9 credits</td>
<td>• Wide range of potential electives with emphasis on broad population issues such as Health &amp; Diversity, Global Health, Prevention &amp; Community Health</td>
<td>• SCH215 Social Determinants • SCH225 Behavior Change • SCH285 Health &amp; Diversity</td>
</tr>
</tbody>
</table>

2) The General Education requirements for the proposed program include the background domains suggested by the Council for Education for Public Health Accreditation (CEPH) and the Association of Schools & Programs of Public Health (ASPPH).
   a. Math/Quantitative Reasoning: Students should have an introduction to basic statistics.
   b. Science: Biological and life sciences and the concepts of health and disease

3) Articulation and transfer to York College’s (CUNY) Public Health program.
# B. Public & Community Health Proposed Curriculum

## A. Required Core  
**English**  
6 credits  
- ENG101 Composition I  
  (ENA101 or ENC101, depending on placement scores)  
- ENG102 Writing Through Literature  

**Mathematical and Quantitative Reasoning**  
3 credits  
- MAT115 College Algebra and Trigonometry  
- MAT117 Algebra and Trigonometry (depending on placement scores)  
- MAT119 Statistics w/ Elementary Algebra (depending on placement scores)  
- MAT120 Elementary Statistics  

**Life and Physical Sciences**  
3 credits  
- SCB101 Topics in Biological Sciences  
- SCB206 Introduction to Neuroscience  
- SCC101 Topics in Chemistry  
- SCP101 Topics in Physics  
- SCP105 Life in the Universe  
- SCP140 Topics in Astronomy  

## B. Flexible Core  
**18 credits**  
Select one course from each of the five flexible core categories AND one additional course from any flexible core category.  
- World Cultures & Global Issues  
- U.S. Experience in its Diversity  
- Creative Expression  
- Individual & Society  
- Scientific World  

To complete the degree requirements from the Flexible Core, students are advised to select courses from the recommended course selections listed on the program website. Note: Students can select only two courses from any one flexible core category.  

In addition, the following course is a Program Core pre-requisite required as part of the Flexible Core: SSY101 Psychology (a pre-req for SCH215 Social Determinants).  

## C. Program Core  
**30 credits**  

**Health Sciences**  
- HSF 090 Health Sciences First Year Seminar  
  0 credits  
- Select one of the following courses  
  3 credits  
  - SCH150 Drugs, Society & Human Behavior  
  - SCH210 Human Sexuality  
  - SCD200 Introductory Nutrition  

**Community Health**  
12 credits  
- SCH160 Health & Wellness  
- SCN194 HIV/AIDS, Science & Society  
- SCN195 Community Health  
- SCN196 Community Health Research  
- SCH285 Health & Diversity  

**Public Health**  
12 credits  
- SCH205 History/Principles of Public Health  
- SCH215 Social Determinants  
- SCH225 Health Behavior Change  
- SCH235 Epidemiology  

**Unrestricted Elective**  
3 credits  

**Total**  
60 Credits
C. Student support and advisement

LaGuardia Community College has designed a team-based advisement model that incorporates professional advisors, faculty and peer mentors to support and guide students towards attainment of their career goals. The team is introduced to students in the “First Year Seminar in Health Sciences.” This course informs students of the support services available at the college, requirements for each major, the advising team and the advising process.

The Advisement Plan for the PCH program will begin with the students developing a graduation plan, with the PCH faculty, during the First Year Seminar. Students will review the requirements of the PCH major, then meet with the advisement team for information about course selection, program sequence, and resources to support completion of their associate degree. From the second semester onward, students will be expected to meet with a member of the team before registering each term to ensure proper selection of courses for progression through the program. In addition to individual advising, the PCH program faculty will also participate in Orientation and Informational Sessions, Health Science Advising Events.
### V. Curriculum Requirements (LaGuardia Community College)

<table>
<thead>
<tr>
<th>GENERAL EDUCATION</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Liberal Arts</th>
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<tr>
<td><strong>Required Core</strong></td>
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</tr>
<tr>
<td><strong>English</strong></td>
<td>ENA/C/G 101 Composition I</td>
<td>ENG 99</td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>EN 102 Writing/Literature</td>
<td>ENG 101</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>MAT 115 College Algebra and Trigonometry or MAT 120 Elementary Statistics I (or equivalent depending on placement)</td>
<td>MAT 96</td>
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<tr>
<td><strong>Science</strong></td>
<td>LPS</td>
<td>MAT 96, ENG 99</td>
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<td><strong>Flexible Core</strong></td>
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<td>18</td>
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<tr>
<td>World Cultures &amp; Global Issues</td>
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<td>U.S. Experience in its Diversity</td>
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<td>3</td>
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<tr>
<td>Creative Expression</td>
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<td></td>
<td>3</td>
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<tr>
<td>Individual &amp; Society</td>
<td></td>
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<tr>
<td>Scientific Work</td>
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<tr>
<td>Additional Flexible Core</td>
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<td><strong>Total General Education Credits</strong></td>
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### HEALTH SCIENCES

#### PUBLIC & COMMUNITY HEALTH

- **Health Sciences** | 3
- HSF 090 First Year Seminar in Health Sciences | 1

**Choose one of the following courses:** | 3

- SCD 200 Introductory Nutrition | MAT 96, ENG 101 | 3
- SCH 150 Drugs & Society | MAT 96, ENG 99 | 3
- SCH 210 Human Sexuality | MAT 96, ENG 99 | 3

#### Community Health

- SCH 160 Health and Wellness | MAT 95, ENG 101 (pre/co) | 3
- SCN 194 HIV/AIDS & Society | ENG 101 | 3
- SCN 195 Community Health | ENG 101 | 2
- SCN 196 Community Research | SCN 195 (pre/co) | 1
- SCH 285 Health & Diversity | SCH 215, ENG 102 | 3

#### Public Health

- SCH 205 History & Principles of Public Health | SCN 195 | 3
- SCH 215 Social Determinants | SCH 160, SCN 195, SSY 101 | 3
- SCH 225 Health Behavior Change | SCH 205, SCH 215 | 3
- SCH 235 Epidemiology | SCH 205, SCH 215, MAT 120 (or MAT 119 depending on placement) | 3

**Unrestricted Elective** | 3
### Graduation Plan: Public & Community Health

#### First Year

<table>
<thead>
<tr>
<th>Fall – First Semester</th>
<th>15 credits</th>
<th>Spring – Second Semester</th>
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<tr>
<td>HSF090 Health Sciences</td>
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<td>ENG102 Writing/Literature</td>
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<td>(prereq ENA/C/G101)</td>
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<tr>
<td>ENA/C/G101 Composition I</td>
<td>3</td>
<td>LPS</td>
<td>3</td>
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<td>MQR</td>
<td>3</td>
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<td>Flex Core 2</td>
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<td>Health Sciences Elective</td>
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<tr>
<td>SCH160 Health and Wellness</td>
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<td>SCN195 Community Health</td>
<td>2</td>
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<tr>
<td>(prereq MAT 95; pre-co ENG101)</td>
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<td>(prereq MAT 96, ENG101)</td>
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</tr>
<tr>
<td>SCH160 Health and Wellness</td>
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<td>SCN196 Community Health Research</td>
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<tr>
<td>(prereq MAT 95; pre-co ENG101)</td>
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<td>(pre/co-req SCN195)</td>
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#### Second Year

<table>
<thead>
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<td>Flex Core 6</td>
<td>3</td>
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<tr>
<td>Flex Core 5</td>
<td>3</td>
<td>General Elective</td>
<td>3</td>
</tr>
<tr>
<td>SCN194 HIV/AIDS &amp; Society</td>
<td>3</td>
<td>SCH225 Health Behavior Change</td>
<td>3</td>
</tr>
<tr>
<td>(prereq MAT 96, ENA/C/G101)</td>
<td></td>
<td>(prereq SCH205, SCH215)</td>
<td></td>
</tr>
<tr>
<td>SCH205 History &amp; Principles of Public Health</td>
<td>3</td>
<td>SCH235 Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>(prereq ENG102, SCN195/6; pre-co SCH160)</td>
<td></td>
<td>(prereq MAT 115 or 120, SCH205, SCH215)</td>
<td></td>
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<tr>
<td>SCH215 Social Determinants of Health</td>
<td>3</td>
<td>SCH285 Health &amp; Diversity</td>
<td>3</td>
</tr>
<tr>
<td>(prereq SSY101, SCN195/196; pre-co SCH160, SCH205)</td>
<td></td>
<td>(prereq SCH215; pre-co SCH235, SCH285)</td>
<td></td>
</tr>
</tbody>
</table>
VI. Cost Assessment

A. Faculty
Depending on enrollment and student needs (e.g., evening sections) the college will consider hiring additional faculty

B. Facilities and Equipment
No special space or equipment needs will be needed.

C. Library and Instructional Materials
See Appendices
VII. Evaluation

The proposed program will be monitored both internally and externally. Student demographic data and student evaluations of courses will be completed each semester. Graduates of the program complete an exit survey. Externally the program will be evaluated by transfer rates, retention rates, and job placement statistics.

The formative and summative data collected includes:
- Student course surveys (indicating course, program, support services satisfaction as well as self-evaluation of outcome attainment)
- Course grades
- E Portfolio Assignments
- Program retention and graduation rates
- Graduate self-evaluation and program satisfaction
- Student and peer evaluation of faculty teaching effectiveness

Student learning outcome assessment and evaluation:

LaGuardia’s outcomes assessment plan is designed to assess institutional effectiveness in terms of learning and teaching and using the resultant data to improve our pedagogies and academic programs. The plan is designed to assess overall student achievement of the College’s general education core competencies (which include Inquiry and Problem-Solving, Global Learning, and Integrative Learning which are expressed through three abilities: Oral, Written, and Digital Communication) as well as each major’s programmatic competencies. In line with our commitment to the academic, career, and personal growth and development of every student, the assessment system will use a variety of assessment tools to evaluate the effectiveness of learning and teaching.

For the Periodic Program Review (PPR) process, each program, led by faculty members, conducts a self-study, with student learning outcomes – along with a review of major issues and concerns (e.g., curriculum, facilities, student enrollment, retention, and graduation). The self-study report is reviewed by the Provost and Senior Vice President for Academic Affairs. A site visit by an external evaluator, often from a faculty at a college that we articulate the program with, reviews the report. The PPR involves a five-year time period which incorporates a planning year, an active review year, and three years of implementation. Note that implementation is based on faculty members’ recommendations which are data-driven findings, as uncovered through the PPR process, which are approved by the Health Sciences department chairperson and senior leaders within Academic Affairs.

The course and program data related to student learning outcome attainment are summarized, analyzed and discussed at faculty meetings. Faculty members review these findings in comparison with program outcomes and make recommendations. The decisions and recommendations of the systematic program assessment plan provide the basis of the program budgetary requests to support the needs and efforts of the faculty (including requests for additional faculty lines); to operate the program at optimum levels; and maximize achievement of student learning and program outcomes. This data will be shared with college faculty and used to determine the need for new resources as the program evolves.
Appendix A: Course Descriptions for Required Courses

Existing Courses

**HSF 90 First Year Seminar for Health Sciences, 0 credits**
This First Year Seminar is required of all new students majoring in a program within the Health Sciences Department. This course addresses issues related to contemporary college life and provides students with the skills to transition to campus culture, develop a clear understanding of the learning process, and acquire the skills and dispositions essential to the study and practice of the health sciences in a professional capacity.

**SCH 160 Health & Wellness, 3 credits**
Personal health behavior is examined in the areas of cardiovascular health, stress, sex and sexuality, substance abuse, nutrition, and physical activity. Chronic and communicable diseases will also be examined. Students will analyze the role of health risk behaviors in the development of disease, injury and chronic illness. *Prerequisites: MAT 95; Pre-corequisite ENA/C/G 101*

**SCN 194 HIV/AIDS, Science & Society, 3 credits (Urban Studies/Writing Intensive)**
This interdisciplinary course examines in historical context the socio-political responses to HIV/AIDS both nationally and internationally. The biology of HIV transmission, AIDS etiology and treatment, as well as prevention science strategies will be reviewed. The course will also extensively cover the historical role of New York City in the development of HIV/AIDS activism and the impact of the epidemic on local NYC communities. *Prerequisites: MAT 96, ENA/C/G 101*

**SCN 195 Community Health, 2 credits (Urban Studies/Writing Intensive)**
This course is a basic orientation to public and community health including: the role of science, policy and ethics; the nature of health and disease; prevention of disease and public health measures; healthcare systems; and careers in health. NYC Department of Health initiatives and data, as well as NYC historical events in health are used to illustrate course concepts. Students will apply knowledge of course material through two short research reports. *Prerequisite: MAT 96, ENG101*

**SCN 196 Community Health Research, 1 credit**
This course provides an overview of open sources of health data on New York City residents available for public use. Students will be introduced to the process of preparing and presenting research through development of an ePortfolio project focused on a specific health issue within their local community. *Pre/co-requisite: SCN195 Community Health*

New Courses

**SCH 205 History & Principles of Public Health**
This course is designed to introduce the history and enterprise of public health and strategies used in public health promotion and disease prevention initiatives. The course will provide students with an opportunity to learn about past, present and future key public health topics of importance, and to apply public health strategies to prevent or minimize these problems among culturally diverse populations across the lifespan. *Prerequisite: ENG102 Writing through Literature,*
SCH 215 The Social and Behavioral Determinants of Health, 3 credits
This course introduces students to the various biological, psychological, socio-cultural, economic, environmental, institutional, organizational and political factors influencing health behavior and relevant disparities in health outcomes. Students are exposed to core theories and models used in the analysis of health behavior and outcomes from a systems perspective. Emphasis is placed on applying theories/models at various levels of influence to current health problems as a basis for intervention design. Prerequisites: SSY101 General Psychology, SCN195 Community Health, SCN196 Community Health Research; Pre/co-requisite: SCH160 Health & Wellness, SCH205 History & Principles of Public Health

SCH 225 Health Behavior Change, 3 credits
This course introduces students to techniques used to initiate and maintain change for health behaviors (e.g., healthy eating, physical activity, smoking cessation, stress reduction, substance abuse prevention and chronic disease maintenance). Stages of change theory, relapse prevention and motivational interviewing from a public health perspective will be explored in depth. Students will examine the application of theory to behavioral health within a specific population in a research paper. Prerequisites: SCH205 History & Principles of Public Health, SCH215 Social & Behavioral Determinants of Health

SCH 235 Epidemiology, 3 credits
This course introduces the background, basic principles and methods of public health epidemiology. Particular emphasis is on applying epidemiologic methods to public health problems such as measures of disease frequency, study designs and bias, effect modification, outbreak investigations, screening, causality and ethical issues. Required assignments are focused on the interpretation and evaluation of health information from published epidemiologic studies. Prerequisites: MAT115 Algebra (or MAT117 depending on placement), or MAT120 Statistics (or MAT119 depending on placement), SCH215 Social & Behavioral Determinants of Health

SCH 285 Health & Diversity [Capstone], 3 credits
This capstone course explores from a systems perspective traditionally underserved racial, ethnic, immigrant, and emerging groups with disparities based upon age, gender, sexual orientation, disability, physical and mental health, geography and environment. Cultural competency as a tool to reduce these health disparities will be examined. A required ePortfolio project focuses on health issues within a specific population and available culturally competent community programs and services. Prerequisite: SCH225 Health Behavior Change, SCH235 Epidemiology
Appendix B: Syllabi for New Courses

SCH 205 History & Principles of Public Health
This course is designed to introduce the history and enterprise of public health and strategies used in public health promotion and disease prevention initiatives. The course will provide students with an opportunity to learn about past, present and future key public health topics of importance, and to apply public health strategies to prevent or minimize these problems among culturally diverse populations across the lifespan. Prerequisites: SCN195 Community Health, SCN196 Community Health Research; Pre/co-requisite: SCH160 Health & Wellness

REQUIRED TEXT:

GRADING POLICY:
Quizzes (5 @ 3% each) 15%
Exams (2 @ 25% each): 50%
Issue Critiques (3 @ 5% each): 15%
Public Health Project: 10%
Community Resources Presentation: 10%

WEEKLY TOPICS:
1. The origins and content of public health responses over history and the development of the public health responses system in the United States
2. Measuring population health, categories of health and major trends in health in the United States over the last century
3. Public Health & the Health System: the three levels of prevention and five strategies for intervention
4. Strategies, laws and public health agencies used by governments to influence the health of their citizens
5. Development of public health practice standards over the last century: Core functions, essential services and community health assessment
6. Exam 1
7. The public health workforce and competency frameworks for routine and emergency practice
8. The infrastructure of public health, organizational management, resources, categories of public health information systems, and community coalitions Infrastructure of Public Health
9. Categories of public health interventions, community vs. clinical preventative services, planning, implementing and evaluating programs
10. Types of emergencies and disasters, categories of bioterrorism agents, and the roles, responsibilities and competencies of public health workers in emergency preparedness and response
11. Major lessons learned from achievements in public health in the 20th century and major challenges for the century ahead
12. Community Presentations
13. Finals Week, Exam 2
SCH 215: The Social and Behavioral Determinants of Health, 3 credits

COURSE DESCRIPTION: This course introduces students to the various biological, psychological, socio-cultural, economic, environmental, institutional, organizational and political factors influencing health behavior and relevant disparities in health outcomes. Students are exposed to core theories and models used in the analysis of health behavior and outcomes from a systems perspective. Emphasis is placed on applying theories/models at various levels of influence to current health problems as a basis for intervention design. Prerequisites: SSY101 General Psychology, SCN195 Community Health, SCN196 Community Health Research; Pre/co-requisite: SCH160 Health & Wellness, SCH205 History & Principles of Public Health


GRADING POLICY:
Exams, 3 @ 25% each: 75%
Research Presentation: 10%
Research Paper: 15%

WEEKLY TOPICS:
1. Introduction to theory: Theories vs. models, defining concepts, constructs and variables and influence health and health behavior
2. Self-Efficacy Theory: The importance of vicarious experiences, sense of mastery and verbal persuasion on health behavior
3. The Theory of Reasoned Action and the Theory of Planned Behavior: Attitudes, subjective norms, volitional and behavioral control and health related behavioral intentions
4. The Health Belief Model: Cues to action, perceived susceptibility, benefits and barriers to preventative health behavior
5. Exam 1
6. Attribution Theory: Internal and external locus of control, stability, and controllability as factors related to health
7. The Trans-Theoretical Model: The five stages of change, the ten processes of change, and decisional balance in health behavior
8. Social Cognitive Theory: Reciprocal determinism, observational learning, expectations, expectancies and health behavior
9. Exam 2
10. Diffusion of Innovations: Adoption of new ideas, products and processes related to health through communication channels, and social systems
11. Ecological Models of Health: Intrapersonal, interpersonal, institutional, community and societal dimensions
12. Social Capital Theory: Networks, relationships, trust and community cohesion; Theory in Action
13. Exam 3
SCH 225: Health Behavior Change, 3 credits

COURSE DESCRIPTION: This course introduces students to techniques used to initiate and maintain change for health behaviors (e.g., healthy eating, physical activity, smoking cessation, stress reduction, substance abuse prevention and chronic disease maintenance). Stages of change theory, relapse prevention and motivational interviewing from a public health perspective will be explored in depth. Students will examine the application of theory to behavioral health within a specific population in a research paper. Prerequisites: SCH205 History & Principles of Public Health, SCH215 Social & Behavioral Determinants of Health


GRADING POLICY:
Exams, 3 @ 20% each: 60%
Research Critique: 15%
Literature Review: 15%

WEEKLY TOPICS:
1. Introduction to individual and socio-ecological theories of behavior used to guide both observational and intervention-based health behavior research
2. Community-based participatory research (CBPR), the chronic care model (CCM) and the practice change model (PCM)
3. Psychosocial predictors of behavior change, self-efficacy, beliefs, social support and developmental differences across the lifespan
4. Applying major theories to examine culture, health disparities, acculturation, ethnocentrism, and strategies (e.g., cultural competency) to incorporate culture into research and health care
5. Exam 1, Research Presentations
6. Barriers to dietary behavior change and client centered approaches to healthy changes; individual, social and built environment and physical activity; the biological, psychological and social factors that influence tobacco use.
7. Stress, disease and effective stress management techniques; multiple risk factor behavior change interventions.
8. Chronic disease management and review of effective behavioral interventions for cardiovascular disease, diabetes, chronic obstructive pulmonary disease
9. Chronic disease management and review of effective behavioral interventions for infectious diseases, cancer & obesity
10. Exam 2, Research Presentations
11. Measures of health behavior, validity, reliability, adaptations for special populations and translating research into practice
12. Community and system interventions in schools, workplaces, health care settings and the built environment
13. Finals Week, Exam 3
**SCH 235 Epidemiology, 3 credits**

**COURSE DESCRIPTION:** This course introduces the background, basic principles and methods of public health epidemiology. Particular emphasis is on applying epidemiologic methods to public health problems such as measures of disease frequency, study designs and bias, effect modification, outbreak investigations, screening, causality and ethical issues. Required assignments are focused on the interpretation and evaluation of health information from published epidemiologic studies. *Prerequisites:* MAT115 Algebra (or MAT117 depending on placement) or MAT120 Statistics (or MAT119 depending on placement), SCH215 Social & Behavioral Determinants of Health


**GRADING POLICY:**
- Quizzes, 5 @ 3% each: 15%
- Midterm: 25%
- Homework, 5 @ 5% each: 25%
- Data Analysis Project: 10%
- Final Exam: 25%

**WEEKLY TOPICS:**
1. Course Overview; History, Philosophy, and Uses of Epidemiology
2. Important Terms & Basic Principles of Epidemiology
3. Measures of Morbidity & Mortality; Age Adjustment
4. Descriptive Epidemiology
5. Sources for Data Use in Epidemiology
6. Study Designs 1: Ecological, Cross-Sectional and Case Control
7. Study Design 2: Cohort Studies
8. Study Design 3: Experimental Studies & Randomized Controlled Trials (RCTs)
9. Measures of Effect & Data Interpretation Issues
10. Screening for Disease in the Community & Epidemiology of Infectious Diseases
11. Epidemiology Aspects of Environmental and Occupational Health & Social, Behavioral and Psychological
12. Epidemiology as a Profession; Ethical Issues in Applied Epidemiology
13. Finals Week
SCH 285: Health & Diversity, 3 Credits

COURSE DESCRIPTION: This capstone course explores from a systems perspective traditionally underserved racial, ethnic, immigrant, and emerging groups with disparities based upon age, gender, sexual orientation, disability, physical and mental health, geography and environment. Cultural competency as a tool to reduce these health disparities will be examined. A required ePortfolio project focuses on health issues within a specific population and available culturally competent community programs and services. Pre/co-requisites: SCH225 Health Behavior Change, SCH235 Epidemiology


GRADING POLICY:
Exams, 2 @ 25% each: 50%
Reflections, 2 @ 5% each: 10%
Annotated Bibliography: 15%
Final Project: 25%

WEEKLY TOPICS:

1. Course Overview; Health from a Socio-Cultural perspective
2. Ethno-medicine: Cultural systems related knowledge Cultural Competency guidelines and practice
3. Required assignments workshops (Annotated Bibliography and Final Project
4. The etiology, morality and cultural beliefs and practices related to health and the stigma and othering of disease
5. Cultural healers and cultural institutions of health
6. Socio-cultural ecologies of disease and illness Etiology, morality and cultural beliefs and practices related to health
7. Culture, subculture and risk and current challenges in public health Cultural healers and cultural institutions of health
8. Research philosophies and examining culture, sub-culture and constructions of health
9. The “Person-Centered Approach to Cultural Competence” and the intersection of culture and health in program development and evaluation
10. Cultural Competency guidelines and the National Standards for Culturally and Linguistically Appropriate Services, 2016 (CLAS)
11 & 12. Project Presentations
## Appendix C: Undergraduate Program Schedule

### Year 1: Fall I
<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
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<tr>
<td>ENA/C/G 101 Composition I</td>
<td>3</td>
<td>x</td>
<td>ENG 99</td>
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<tr>
<td>MQR</td>
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<td>x</td>
<td>MAT 96</td>
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<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible Core 2</td>
<td>3</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCH160 Health &amp; Wellness</td>
<td>3</td>
<td>x</td>
<td>MAT 95, ENG 101</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term credit total: 15 12 3

### Year 1: Spring I

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prereq(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 102 Writing/Literature</td>
<td>3</td>
<td>x</td>
<td>ENG 101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LPS</td>
<td>3</td>
<td>x</td>
<td>MAT 96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible Core 3: SSY 101</td>
<td>3</td>
<td>x</td>
<td>ENG 99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences Elective</td>
<td>3</td>
<td>x</td>
<td>ENG 99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCN 195 Community Health</td>
<td>2</td>
<td>x</td>
<td>ENG 101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCN 196 Community Health Research</td>
<td>1</td>
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<td>SCN 195</td>
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<td></td>
</tr>
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</table>

Term credit total: 15 9 9

### Year 2: Fall I

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
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<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prereq(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible Core 4</td>
<td>3</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible Core 5</td>
<td>3</td>
<td>x</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SCN194 HIV/AIDS &amp; Society</td>
<td>3</td>
<td>x</td>
<td>MAT96, ENG101</td>
<td></td>
<td></td>
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<tr>
<td>SCH 205 History &amp; Principles of Public Health</td>
<td>3</td>
<td>x</td>
<td>ENG 102, SCH160, SCN 195/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCH 215 Social Determinants</td>
<td>3</td>
<td>x</td>
<td>SSY 101, SCH 160, SCN 195/6</td>
<td></td>
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</tbody>
</table>

Term credit total: 15 6 12

### Term: Spring I

<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Cr</th>
<th>LAS</th>
<th>Maj</th>
<th>New</th>
<th>Prereq(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible Core 6</td>
<td>3</td>
<td>x</td>
<td></td>
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</tr>
<tr>
<td>Unrestricted Elective</td>
<td>3</td>
<td>x</td>
<td>SCH 225 Health Behavior Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCH 225 Health Behavior Change</td>
<td>3</td>
<td>x</td>
<td>x</td>
<td>SCH 205, SCH 215</td>
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</tr>
<tr>
<td>SCH 235 Epidemiology</td>
<td>3</td>
<td>x</td>
<td>x</td>
<td>MAT115, MAT117, MAT119, or MAT120, or SCH 205, SCH 215</td>
<td></td>
</tr>
<tr>
<td>SCH 285 Health &amp; Diversity</td>
<td>3</td>
<td>x</td>
<td>x</td>
<td>SCH 205, SCH 215</td>
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</tbody>
</table>

Term credit total: 15 3 12

## Totals for General Education Plus Public Health

<table>
<thead>
<tr>
<th>Program Totals:</th>
<th>Credits: 60</th>
<th>Liberal Arts &amp; Sciences: 30</th>
<th>Major: 30</th>
<th>Elective &amp; Other: 0</th>
</tr>
</thead>
</table>

Cr: credits  LAS: liberal arts & sciences  Maj: major requirement  New: new course Prereq(s): list prerequisites for listed course
### Appendix D: Full-Time Faculty

<table>
<thead>
<tr>
<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; occupational experience; scholarly contributions, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Bimbi, Program Director</td>
<td>SCN 194 HIV/AIDS &amp; Society, SCH 160 Health &amp; Wellness, SCH 205 History of Public Health, SCH 225 Health Behavior</td>
<td>75%</td>
<td>Ph.D. Psychology, Health Concentration CUNY</td>
<td>20 years’ research in behavioral health; Faculty Affiliate, CUNY School of Public Health</td>
</tr>
<tr>
<td>Justin Brown</td>
<td>SCN 195 Community Health, SCN 196 Community Research, SCH 215 Social Determinants, SCH 235 Epidemiology, SCH 285 Health &amp; Diversity</td>
<td>100%</td>
<td>Ph.D. Psychology, CUNY</td>
<td>Affiliate, CUNY Center for Health Equity; former director of community health center</td>
</tr>
<tr>
<td>Juline Koken</td>
<td>SCN 194 HIV/AIDS &amp; Society, SCH 150 Drugs &amp; Society, SCH 210 Human Sexuality</td>
<td>25%</td>
<td>Ph.D. Psychology, Women’s Studies Certificate, CUNY</td>
<td>Board member, NY Harm Reduction Coalition; Motivational Interviewing Trainer</td>
</tr>
<tr>
<td>Herbert Samuels</td>
<td>SCN 194 HIV/AIDS &amp; Society, SCH 150 Drugs &amp; Society, SCH 210 Human Sexuality</td>
<td>25%</td>
<td>Ph.D. Psychology</td>
<td>Clinical Psychology</td>
</tr>
</tbody>
</table>
Appendix E: Faculty to be hired

N/A
## Appendix F: PROGRAM EXPENDITURES - New Resources

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Year 1 Academic Year²</th>
<th>Year 2 Academic Year³</th>
<th>Year 3 Academic Year⁴</th>
<th>Year 4 Academic Year⁵</th>
<th>Year 5 Academic Year⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Time Faculty</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Part Time Faculty</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Full Time Staff</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>0 500</td>
<td>0 200</td>
<td>0 200</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Equipment</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Laboratories</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total all</td>
<td>500</td>
<td>200</td>
<td>200</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.

[2] Specify the academic year.


[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year, new resources with adjustments for inflation, if a continuing cost.

[5] Specify what is included in "other" category, (e.g., student financial aid).
## Appendix G: Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue[3]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources[4]</td>
<td>$63,000</td>
<td>$128,520</td>
<td>$147,477</td>
<td>$200,568</td>
<td>$204,580</td>
</tr>
<tr>
<td>02. From New Sources[5]</td>
<td>$31,500</td>
<td>$48,195</td>
<td>$98,318</td>
<td>$133,712</td>
<td>$204,580</td>
</tr>
<tr>
<td><strong>03. Total</strong></td>
<td>$94,500</td>
<td>$176,715</td>
<td>$245,795</td>
<td>$334,281</td>
<td>$409,159</td>
</tr>
<tr>
<td><strong>State Revenue[6]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. From Existing Sources[8]</td>
<td>$802,500</td>
<td>$749,000</td>
<td>$762,375</td>
<td>$775,750</td>
<td>$789,125</td>
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<tr>
<td>05. From New Sources[**]</td>
<td>$80,250</td>
<td>$80,250</td>
<td>$147,125</td>
<td>$147,125</td>
<td>$147,125</td>
</tr>
<tr>
<td><strong>06. Total</strong></td>
<td>$882,750</td>
<td>$829,250</td>
<td>$909,500</td>
<td>$922,875</td>
<td>$936,250</td>
</tr>
<tr>
<td><strong>Other Revenue[7]</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources[8]</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>08. From New Sources[**]</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>09. Total</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Grand Total[8]</strong></td>
<td>$865,500</td>
<td>$877,520</td>
<td>$909,852</td>
<td>$976,318</td>
<td>$993,705</td>
</tr>
<tr>
<td>10. From Existing Sources[8]</td>
<td>$111,750</td>
<td>$128,445</td>
<td>$245,443</td>
<td>$280,837</td>
<td>$351,705</td>
</tr>
<tr>
<td>11. From New Sources[**]</td>
<td>$977,250</td>
<td>$1,005,965</td>
<td>$1,155,295</td>
<td>$1,257,156</td>
<td>$1,345,409</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.
[2] Specify the academic year.
[3] Please explain how tuition revenue was calculated.
[4] Existing sources means revenue that would have been received by the institution even if the proposed program were not approved.
[5] New sources means revenue engendered by the proposed program. The revenue from new sources from the previous year should be carried over to the following year as revenues from new sources with adjustments for inflation, if a continuing source of revenue.
[6] Public institutions should include here regular State appropriations applied to the program.
[7] Specify what is included in “other” category.
[8] Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
## Appendix H – Projected Enrollment

<table>
<thead>
<tr>
<th>Projected Enrollment</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>20</td>
<td>40</td>
<td>45</td>
<td>60</td>
<td>60</td>
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<tr>
<td>Out-of-State</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Existing Full-time Total</strong></td>
<td>20</td>
<td>40</td>
<td>45</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td><strong>Existing Part-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Existing Part-time Total</strong></td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td><strong>New Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>10</td>
<td>15</td>
<td>30</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>NEW Full-time Total</strong></td>
<td>10</td>
<td>15</td>
<td>30</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td><strong>New Part-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-State</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>New Part-time Total</strong></td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

**NOTES:**

*New* students are students who would not otherwise have been enrolled in your college if this program were not offered. The proposal text should explain the basis for this enrollment estimate.

*Existing* students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.
<table>
<thead>
<tr>
<th>Section Seats per Student</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full-time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>New Courses</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total (normally equals 10)</strong></td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Part-Time Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
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<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
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<tr>
<td>New Courses</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total (normally equals 4-6)</strong></td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seat &amp; Section Needs</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seat Need for Existing Students</strong></td>
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<td></td>
<td></td>
<td></td>
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<td>Existing Courses</td>
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<td>75</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
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<td>New Courses</td>
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<td>50</td>
<td>90</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Seat Need for New Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
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<td>50</td>
<td>50</td>
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</tr>
<tr>
<td>New Courses</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total Seat Need</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
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<td>105</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Avail. Seats in Existing Courses</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Seat Need in Existing</td>
<td>50</td>
<td>105</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>New Courses</td>
<td>30</td>
<td>60</td>
<td>110</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td><strong>All Courses</strong></td>
<td><strong>80</strong></td>
<td><strong>165</strong></td>
<td><strong>260</strong></td>
<td><strong>270</strong></td>
<td><strong>270</strong></td>
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<td><strong>Average Seats per Section</strong></td>
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<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
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<tr>
<td>New Courses</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>Net New Section Need</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Courses</td>
<td>1.5625</td>
<td>3.28125</td>
<td>4.6875</td>
<td>4.6875</td>
<td>4.6875</td>
</tr>
<tr>
<td>New Courses</td>
<td>1.2</td>
<td>2.4</td>
<td>4.4</td>
<td>4.8</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.7625</strong></td>
<td><strong>5.68125</strong></td>
<td><strong>9.0875</strong></td>
<td><strong>9.4875</strong></td>
<td><strong>9.4875</strong></td>
</tr>
</tbody>
</table>
Appendix I - Supporting Materials Revenue:
The Five-Year Revenue Projections for Program

<table>
<thead>
<tr>
<th>Tuition &amp; Fees:</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Students are students currently enrolled in another program at your college, or students who would have enrolled in another program at your college, had the new program not been established.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Majors (Enter # of EXISTING FULL TIME In State Students)</td>
<td>20</td>
<td>40</td>
<td>45</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$3,150</td>
<td>$3,213</td>
<td>$3,277</td>
<td>$3,343</td>
<td>$3,410</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$63,000</td>
<td>$128,520</td>
<td>$147,477</td>
<td>$200,568</td>
<td>$204,580</td>
</tr>
<tr>
<td><strong>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Instate Tuition &amp; Fees</td>
<td>$63,000</td>
<td>$128,520</td>
<td>$147,477</td>
<td>$200,568</td>
<td>$204,580</td>
</tr>
<tr>
<td><strong>Total Tuition &amp; Fees:</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of Majors (Enter # of EXISTING FULL TIME Out of State Students)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$6,300</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out of State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

**TOTAL EXISTING FULL TIME TUITION REVENUE** | $63,000 | $128,520 | $147,477 | $200,568 | $204,580 |

<table>
<thead>
<tr>
<th>Tuition &amp; Fees:</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Majors (Enter # of EXISTING PART-TIME In State Students)</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer) i.e. 6 Fall, 6 Spring, 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$135</td>
<td>$138</td>
<td>$140</td>
<td>$143</td>
<td>$146</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Instate Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

Tuition & Fees:

| Number of Majors (Enter # of EXISTING PART-TIME Out of State Students) | 0 | 0 | 0 | 0 | 0 |
| Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer) i.e. 6 Fall, 6 Spring, 3 Summer=15 | |
| Tuition Income (Specify Rate per credit) calculates 2% increase per year | $210 | $214 | $218 | $223 | $227 |
| Total Tuition | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | 0 |
| Total Fees | $0 | $0 | $0 | $0 | $0 |
| Total Out of State Tuition & Fees | $0 | $0 | $0 | $0 | $0 |

**TOTAL EXISTING PART TIME REVENUE**

$0 $0 $0 $0 $0

**TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)**

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>$63,000</td>
<td>$128,520</td>
<td>$147,477</td>
<td>$200,568</td>
<td>$204,580</td>
</tr>
</tbody>
</table>

Tuition & Fees:

*New Students are students who would NOT have enrolled in another program at your college, had the new program not been established.*

<p>| Number of Majors (Enter # of NEW FULL TIME In State Students) | 10 | 15 | 30 | 40 | 60 |
| Tuition Income (Specify Rate per credit) calculates 2% increase per year | $3,150 | $3,213 | $3,277 | $3,343 | $3,410 |
| Total Tuition | $31,500 | $48,195 | $98,318 | $133,712 | $204,580 |</p>
<table>
<thead>
<tr>
<th>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Instate Tuition &amp; Fees</td>
<td>$31,500</td>
<td>$48,195</td>
<td>$98,318</td>
<td>$133,712</td>
</tr>
</tbody>
</table>

Tuition & Fees:

<table>
<thead>
<tr>
<th>Number of Majors (Enter # of NEW FULL TIME Out of State Students)</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$6,300</td>
<td>$6,426</td>
<td>$6,555</td>
<td>$6,686</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out of State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

TOTAL NEW FULL TIME TUITION REVENUE

<table>
<thead>
<tr>
<th>Year</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
<th>Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Majors (Enter # of NEW PART-TIME In State Students)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer) i.e. 6 Fall, 6 Spring, 3 Summer=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$135</td>
<td>$138</td>
<td>$140</td>
<td>$143</td>
<td>$146</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Instate Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

Tuition & Fees:

<table>
<thead>
<tr>
<th>Number of Majors (Enter # of NEW PART-TIME Out of State Students)</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+Spring+Summer) i.e. 6 Fall, 6 Spring, 3 Summer=15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit) calculates 2% increase per year</td>
<td>$210</td>
<td>$214</td>
<td>$218</td>
<td>$223</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Out of State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>TOTAL NEW PART TIME REVENUE</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)</td>
<td>$31,500</td>
<td>$48,195</td>
<td>$98,318</td>
<td>$133,712</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>One</th>
<th>Year</th>
<th>Two</th>
<th>Year</th>
<th>Three</th>
<th>Year</th>
<th>Four</th>
<th>Year</th>
<th>Five</th>
</tr>
</thead>
<tbody>
<tr>
<td># CURRENT FTEs (use prorated FTEs for PT Students)</td>
<td>300</td>
<td>280</td>
<td>285</td>
<td>290</td>
<td>295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriation per FTE (FY18)</td>
<td>$2,675</td>
<td>$2,675</td>
<td>$2,675</td>
<td>$2,675</td>
<td>$2,675</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATE REVENUE FROM EXISTING SOURCES -LINKS TO REVENUE SPREADSHEET ROW 9</td>
<td>$802,500</td>
<td>$749,000</td>
<td>$762,375</td>
<td>$775,750</td>
<td>$789,125</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| # NEW FTEs (use prorated FTE for PT Students) | 30 | 30 | 55 | 55 | 55 |
| Appropriation per FTE (FY18) | $2,675 | $2,675 | $2,675 | $2,675 | $2,675 |
| STATE REVENUE FROM NEW SOURCES -LINKS TO REVENUE SPREADSHEET ROW 11 | $80,250 | $80,250 | $147,125 | $147,125 | $147,125 |

FOR YEARS 2-5 INCLUDE CONTINUING FTE FROM PREVIOUS YEARS

<table>
<thead>
<tr>
<th>Year</th>
<th>One</th>
<th>Year</th>
<th>Two</th>
<th>Year</th>
<th>Three</th>
<th>Year</th>
<th>Four</th>
<th>Year</th>
<th>Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Revenue From Existing Sources (specify and explain)-LINKS TO REVENUE SPREADSHEET ROW 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Revenue New (specify and explain) (LINKS TO REVENUE SPREADSHEET ROW 15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</table>
Appendix J – Supporting Materials:
The Five-Year Financial Projections for Program

<table>
<thead>
<tr>
<th>Direct Operating Expenses (Include additional expenses incurred by other programs when satisfying needs of new program):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Current Full Time Faculty Replacement Costs (list separately)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>New Full Time Faculty Base Salary (list separately)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (33.0%)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Total (Links to Full-Time Faculty on Program Exp Worksheet)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Part Time Faculty Actual Salaries</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Part Time Faculty Actual Fringe Benefits (10%)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Total (Links to Part-Time Faculty Program Exp Worksheet)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Full Time Staff Base Salary (list separately)</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (33%)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td>Total (Links to Full-Time Staff on Program Exp Worksheet)</td>
</tr>
<tr>
<td>0 0 0 0 0</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(DO NOT INCLUDE NEW LIBRARY STAFF IN THIS SECTION)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Part Time Staff Base Salary (list separately)</td>
</tr>
<tr>
<td>Graduate Assistants</td>
</tr>
<tr>
<td>Student Hourly</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (10.0%)</td>
</tr>
<tr>
<td><strong>Total (Links to Part-Time Staff on Program Exp Worksheet)</strong></td>
</tr>
<tr>
<td>LIBRARY</td>
</tr>
<tr>
<td>Library Resources</td>
</tr>
<tr>
<td>Library Staff Full Time (List Separately)</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (33%)</td>
</tr>
<tr>
<td>Library Staff Part Time (List Separately)</td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (10.0%)</td>
</tr>
<tr>
<td><strong>TOTAL (Links to Library on Program Exp Worksheet)</strong></td>
</tr>
<tr>
<td>EQUIPMENT</td>
</tr>
<tr>
<td>Computer Hardware</td>
</tr>
<tr>
<td>Office Furniture</td>
</tr>
<tr>
<td>Other (Specify)</td>
</tr>
<tr>
<td><strong>Total (Links to Equipment on Program Exp Worksheet)</strong></td>
</tr>
<tr>
<td>LABORATORIES</td>
</tr>
<tr>
<td>Laboratory Equipment</td>
</tr>
<tr>
<td>Other (list separately)</td>
</tr>
<tr>
<td><strong>TOTAL (Links to Laboratories on Program Exp Worksheet)</strong></td>
</tr>
<tr>
<td>Category</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SUPPLIES AND EXPENSES (OTPS)</td>
</tr>
<tr>
<td>Consultants and Honoraria</td>
</tr>
<tr>
<td>Office Supplies</td>
</tr>
<tr>
<td>Instructional Supplies</td>
</tr>
<tr>
<td>Faculty Development</td>
</tr>
<tr>
<td>Travel and Conferences</td>
</tr>
<tr>
<td>Membership Fees</td>
</tr>
<tr>
<td>Advertising and Promotion</td>
</tr>
<tr>
<td>Accreditation</td>
</tr>
<tr>
<td>Computer Software</td>
</tr>
<tr>
<td>Computer License Fees</td>
</tr>
<tr>
<td>Computer Repair and Maintenance</td>
</tr>
<tr>
<td>Equipment Repair and Maintenance</td>
</tr>
<tr>
<td>New Total Supplies and OTPS Expenses (Links to Supplies on Program Exp Worksheet)</td>
</tr>
<tr>
<td>CAPITAL EXPENDITURES</td>
</tr>
<tr>
<td>Facility Renovations</td>
</tr>
<tr>
<td>Classroom Equipment</td>
</tr>
<tr>
<td>Other (list separately)</td>
</tr>
<tr>
<td>TOTAL (Links to Capital Expenditures on Program Exp Worksheet)</td>
</tr>
<tr>
<td>Other (list separately)</td>
</tr>
<tr>
<td>TOTAL (Links to Other on Program Exp Worksheet)</td>
</tr>
</tbody>
</table>
Appendix K: Articulation Agreement with York College

A. SENDING AND RECEIVING INSTITUTIONS

Sending College: LaGuardia Community College  
Department: Health Sciences  
Program: Public & Community Health  
Degree: A.S.

Receiving College: York College  
Department: Health & Physical Education/Gerontological Studies & Services  
Program: Public Health (Community Health)  
Degree: B.S.

B. ADMISSION REQUIREMENTS FOR SENIOR COLLEGE PROGRAM  
(e.g., minimum GPA, audition/portfolio)

- Minimum cumulative GPA of 3.0 for all coursework completed and at least 12 credits with a minimum GPA of 3.0 in the following Public Health courses: SCH 205 (PH 201) and SCH 235 (PH 210) or SCH 215 (PH 215) or SCH 225 (PH 225) or PH 320 or PH 330 or PH 340 are required to be formally admitted to the Public Health Program at York College.

Total transfer credits granted toward the baccalaureate degree: 60

Total additional credits required at the senior college to complete baccalaureate degree: 60

C. ARTICULATION AGREEMENT FOLLOW-UP PROCEDURES

1. Procedures for reviewing, up-dating, modifying or terminating agreement:  
This agreement will be reviewed annually by the department Chairs at both LaGuardia Community College and York College. All agreed upon changes will be added as an amendment to this agreement. Either party reserves the right to terminate this agreement at any time.

2. Procedures for evaluating agreement, i.e., tracking the number of students who transfer under the articulation agreement and their success:  
LaGuardia Community College will track how many students transfer to York. In turn, York will inform LaGuardia Community College about the academic progress of transfer students.

3. Sending and receiving college procedures for publicizing agreement, e.g., college catalogs, transfer advisers, Websites, etc.:  
Notice of this articulation will be posted in the LaGuardia Community College catalog and website as well as all program materials, (e.g., handbook, advising guide). Respective transfer and academic advisors at each institution will be provided with copies of this document.
D. COURSE TO COURSE EQUIVALENCIES AND TRANSFER CREDIT AWARDED

<table>
<thead>
<tr>
<th>LaGuardia Community College</th>
<th>York College</th>
<th>Credit Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course &amp; Title</strong></td>
<td>Cr.</td>
<td><strong>Course &amp; Title</strong></td>
</tr>
<tr>
<td><strong>General Education Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 101 Composition I</td>
<td>3</td>
<td>ENG 125 Composition I</td>
</tr>
<tr>
<td>ENG 102 Writing Through Literature</td>
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<td>ENG 126 College Composition II</td>
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<tr>
<td>Life &amp; Physical Sciences</td>
<td>3</td>
<td>Required Core Science</td>
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<tr>
<td>Math &amp; Quant. Reasoning I</td>
<td>3</td>
<td>Required Core Math</td>
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<tr>
<td><strong>World Cultures &amp; Global Issues</strong></td>
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<td><strong>World Cultures &amp; Global Issues</strong></td>
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<tr>
<td><strong>U.S Experience in its Diversity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td><strong>U.S Experience in its Diversity</strong></td>
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<td><strong>Creative Expression</strong></td>
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<td><strong>Creative Expression</strong></td>
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<tr>
<td><strong>Individual &amp; Society</strong></td>
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<td><strong>Individual &amp; Society</strong></td>
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<tr>
<td><strong>Scientific World</strong></td>
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<td><strong>Scientific World</strong></td>
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<tr>
<td>SSY 101 General Psychology</td>
<td>3</td>
<td><strong>Scientific World</strong></td>
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<tr>
<td>(pre-requisite for SCH 215)</td>
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<tr>
<td><strong>Additional Flex Core</strong></td>
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<td><strong>Additional Flex Core</strong></td>
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<tr>
<th>LaGuardia Program Requirements</th>
<th>York Program Requirements</th>
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<tr>
<td>SCH 205 History &amp; Principles of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>SCH 215 Social Determinants of Health</td>
<td>3</td>
</tr>
<tr>
<td>Course Title</td>
<td>Credits</td>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>SCH 235 Epidemiology                                                       3</td>
<td>PH 210 Epidemiology for Public Health Practice                              3</td>
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<tr>
<td>SCH 225 Health Behavior Change                                              3</td>
<td>PH 225 Principles &amp; Practices of Health Behavior Change                     3</td>
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<td><strong>SUBTOTAL</strong>                                                                <strong>12</strong></td>
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<td><strong>LaGuardia Program Requirements</strong>                                          <strong>6</strong></td>
<td><strong>York Program Electives</strong>                                                  <strong>6</strong></td>
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<tr>
<td>SCH 285 Health &amp; Diversity                                                  3</td>
<td>PH 285 Health Equity &amp; Cultural Responsiveness                              3</td>
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<td><strong>SUBTOTAL</strong>                                                                <strong>6</strong></td>
<td><strong>SUBTOTAL</strong>                                                                <strong>6</strong></td>
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<tr>
<td><strong>LaGuardia Program Electives (choose one)</strong>                                <strong>3</strong></td>
<td><strong>York Program Electives</strong>                                                  <strong>3</strong></td>
</tr>
<tr>
<td>SCD 200 Introductory Nutrition                                              3</td>
<td>HE 314 Nutrition &amp; Health                                                   3</td>
</tr>
<tr>
<td>SCH 150 Drugs, Society &amp; Human Behavior                                     3</td>
<td>HE 342 Drug Use &amp; Abuse                                                     3</td>
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<tr>
<td>SCH 210 Human Sexuality                                                    3</td>
<td>HE 241 Sex &amp; Sexuality                                                     3</td>
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<td><strong>SUBTOTAL</strong>                                                                <strong>3</strong></td>
<td><strong>SUBTOTAL</strong>                                                                <strong>3</strong></td>
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<td><strong>LaGuardia Program Requirements</strong>                                          <strong>9</strong></td>
<td><strong>Other Courses at York</strong>                                                   <strong>9</strong></td>
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<tr>
<td>SCH 160 Health &amp; Wellness                                                  3</td>
<td>HE Elective                                                                 3</td>
</tr>
<tr>
<td>SCN 195 Community Health                                                   2</td>
<td>HE 201 Foundations of Health                                                2</td>
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<tr>
<td>SCN 196 Community Health Research                                          1</td>
<td>HE Elective                                                                 1</td>
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<tr>
<td>General Elective                                                           3</td>
<td>General Elective                                                           3</td>
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<td><strong>SUBTOTAL</strong>                                                                <strong>9</strong></td>
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<td><strong>TOTAL</strong>                                                                  <strong>60</strong></td>
<td><strong>TOTAL</strong>                                                                  <strong>60</strong></td>
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## E. SENIOR COLLEGE UPPER DIVISION COURSES REMAINING FOR BACCALAUREATE DEGREE

<table>
<thead>
<tr>
<th>Course and Title</th>
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<tr>
<td><strong>College Option</strong></td>
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<tr>
<td>WRIT 303 Research and Writing</td>
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<td>Lower Level Writing Intensive Course</td>
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<td><strong>Subtotal</strong></td>
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<td><strong>Prerequisite and Major Courses</strong></td>
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<tr>
<td>BIO 281 Human Structure &amp; Function</td>
<td>4</td>
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<tr>
<td>PH 330 Public Policy</td>
<td>3</td>
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<tr>
<td>PH 320 Biostatistics</td>
<td>3</td>
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<td>PH 325 Assessment</td>
<td>3</td>
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<td>PH 335 Planning</td>
<td>3</td>
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<tr>
<td>PH 340 Environment</td>
<td>3</td>
</tr>
<tr>
<td>PH 415 Community Intervention</td>
<td>3</td>
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<tr>
<td>PH 435 Field Experience I</td>
<td>2</td>
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<tr>
<td>PH 425 Evaluation Methods</td>
<td>3</td>
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<tr>
<td>PH 450 Public Health &amp; Societies (WI)</td>
<td>3</td>
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<td>PH 445 Field Experience II</td>
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<td>HE/PH/PE/PSY Elective</td>
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<td><strong>Subtotal</strong></td>
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<td><strong>Other Courses</strong></td>
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<td>BIO 120 Human Reproduction</td>
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<td>Liberal Arts Electives</td>
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<td><strong>TOTAL</strong></td>
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Effective Date: Fall 2017

Dr. Paul Arcario
Provost and Vice-President of Academic Affairs

Philip Gimber,
Chair, Health Sciences Department

Dr. Panayiotis Meleties
Provost and Senior Vice President of Academic Affairs

Dr. David Ajuluchukwu
Chair, Health & Physical Education Department

RESOLVED, that the School of Education be established at Medgar Evers College encompassing the newly established Department of Developmental and Special Education as well as the newly established Department of Multicultural Early Childhood and Elementary Education and that the Department of Education within the School of Liberal Arts and Education be abolished and the name of the School of Liberal Arts and Education be renamed the School of Liberal Arts effective August 1, 2017 subject to financial viability.

EXPLANATION: Pursuant to academic and institutional planning, and following consultation by the President and Provost with faculty and students affected by the reorganization, and the administrative leadership, Medgar Evers College proposes to create a new School of Education that will: (1) reassign its existing Education Department into two academic departments: the Department of Multicultural Early Childhood and Elementary Education which is beginning a search for a fifth faculty member, and the Department of Developmental and Special Education. The Education Department currently operates under the School of Liberal Arts and Education and offers one pre-professional and three professional degree programs. The Department is accredited by the National Council for Teacher Education (2003, 2013). Creation of a School will enhance the ability of faculty members to more effectively practice within the developmental levels of their disciplines, to conduct innovative research, and to refine and expand professional development of practicing educators. It will allow for a more focused approach to programmatic and curricular development, thereby enabling the departments to keep pace with the dynamic changes in educator preparation as mandated by New York State Certification requirements.
MEDGAR EVERS COLLEGE – TRANSFER AND APPOINTMENT OF FACULTY FROM THE DEPARTMENT OF EDUCATION TO THE DEPARTMENT OF MULTICULTURAL EARLY CHILDHOOD AND ELEMENTARY EDUCATION.

RESOLVED, that effective August 1, 2017 the following faculty members of the Department of Education be transferred from the Department of Education and appointed to the Department of Multicultural Early Childhood and Elementary Education:

<table>
<thead>
<tr>
<th>NAME (Last, First)</th>
<th>PRESENT RANK</th>
<th>FORMER DEPT.</th>
<th>NEW DEPT.</th>
<th>SENIORITY DATE (NEW DEPT.)</th>
<th>FULL TIME APPOINTMENT DATE (COLLEGE) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diaz, Rosalina</td>
<td>Associate Professor</td>
<td>Education</td>
<td>Multicultural Early Childhood and Elementary Education</td>
<td>8/1/2017</td>
<td>9/1/2007</td>
</tr>
<tr>
<td>Saran, Rupam</td>
<td>Associate Professor</td>
<td>Education</td>
<td>Multicultural Early Childhood and Elementary Education</td>
<td>8/1/2017</td>
<td>8/26/2009</td>
</tr>
<tr>
<td>NAME (Last, First)</td>
<td>PRESENT RANK</td>
<td>FORMER DEPT.</td>
<td>NEW DEPT.</td>
<td>SENIORITY DATE (NEW DEPT.)</td>
<td>FULL TIME APPOINTMENT DATE (COLLEGE) *</td>
</tr>
<tr>
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<td>----------------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Johnson, Tabora</td>
<td>Assistant Professor</td>
<td>Education</td>
<td>Multicultural Early Childhood and Elementary Education</td>
<td>8/1/2017</td>
<td>8/25/2011</td>
</tr>
<tr>
<td>Lawrence, Salika</td>
<td>Associate Professor</td>
<td>Education</td>
<td>Multicultural Early Childhood and Elementary Education</td>
<td>8/1/2017</td>
<td>8/26/2015</td>
</tr>
</tbody>
</table>

EXPLANATION: Contingent upon approval of the abolishment of the Department of Education by the Board of Trustees, the above named instructional staff will be transferred from the Department of Education to the Department of Multicultural Early Childhood and Elementary Education.

* Pursuant to Section 6212 of the New York State Education Law, seniority of tenured persons is governed by the date of appointment to the department. Tenured persons transferred and appointed effective the same date to the Department of Multicultural Early Childhood and Elementary Education shall have the same date of seniority as a result of these transfers. The President, therefore, shall break these ties in seniority between and among the tenured members by using each member’s original date of appointment to his or her first full-time instructional staff title at the College.

At such time as the untenured faculty member (s) may become tenured, his/her/their seniority would be governed by the date of
appointment to the new department and the President will apply the same tie-breaking principle.

Each impacted instructional staff member has been advised of his/her seniority date in the new department.

MEDGAR EVERS COLLEGE – TRANSFER AND APPOINTMENT OF FACULTY FROM THE DEPARTMENTS OF EDUCATION, ENGLISH AND MATHEMATICS TO THE DEPARTMENT OF DEVELOPMENTAL AND SPECIAL EDUCATION.

RESOLVED, that effective August 1, 2017 the following faculty members of the Departments of Education, English and Mathematics be transferred from the Departments of Education, English and Mathematics, and appointed to the Department of Developmental and Special Education:

<table>
<thead>
<tr>
<th>NAME (Last, First)</th>
<th>PRESENT RANK</th>
<th>FORMER DEPT.</th>
<th>NEW DEPT.</th>
<th>SENIORITY DATE (NEW DEPT.)</th>
<th>FULL TIME APPOINTMENT DATE (COLLEGE) *</th>
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<tbody>
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<td><strong>TENURED MEMBERS</strong></td>
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<tr>
<td>Wright, Donna</td>
<td>Associate Professor</td>
<td>Education</td>
<td>Developmental and Special Education</td>
<td>8/1/2017</td>
<td>9/1/2004</td>
</tr>
<tr>
<td>Chow-Tai, Kamau</td>
<td>College Laboratory Technician</td>
<td>English</td>
<td>Developmental and Special Education</td>
<td>8/1/2017</td>
<td>7/1/2003</td>
</tr>
<tr>
<td>NAME (Last, First)</td>
<td>PRESENT RANK</td>
<td>FORMER DEPT.</td>
<td>NEW DEPT.</td>
<td>SENIORITY DATE (NEW DEPT.)</td>
<td>FULL TIME APPOINTMENT DATE (COLLEGE) *</td>
</tr>
<tr>
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<td>---------------------------------------</td>
</tr>
<tr>
<td>Hoyte, Ken</td>
<td>Associate Professor</td>
<td>Education</td>
<td>Developmental and Special Education</td>
<td>8/1/2017</td>
<td>8/25/2011</td>
</tr>
<tr>
<td>LaFontant, Margareth</td>
<td>Assistant Professor</td>
<td>Education</td>
<td>Developmental and Special Education</td>
<td>8/1/2017</td>
<td>8/26/2015</td>
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<table>
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<th>Name</th>
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<tr>
<td>Baker, Ivor</td>
<td>Lecturer</td>
<td>English</td>
<td>Developmental and Special Education</td>
<td>8/1/2017</td>
<td>9/1/2008</td>
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<tr>
<td>Name</td>
<td>Position</td>
<td>Department</td>
<td>Date</td>
<td>Seniority Date</td>
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<tr>
<td>Odunukwe, Herbert</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>8/1/2017</td>
<td>9/1/2006</td>
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<tr>
<td>Russell, Wayne</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>8/1/2017</td>
<td>9/1/2008</td>
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</table>

EXPLANATION: Contingent upon approval of the abolishment of the Department of Education by the Board of Trustees, the above named instructional staff will be transferred from the Departments of Education, English and Mathematics to the Department of Developmental and Special Education.

* Pursuant to Section 6212 of the New York State Education Law, seniority of tenured persons is governed by the date of appointment to the department. Tenured persons transferred and appointed effective the same date to the Department of Developmental and Special Education shall have the same date of seniority as a result of these transfers. The President, therefore, shall break these ties in seniority between and among the tenured members by using each member’s original date of appointment to his or her first full-time instructional staff title at the College.

At such time as the untenured faculty member (s) may become tenured, his/her/their seniority would be governed by the date of appointment to the new department and the President will apply the same tie-breaking principle.

Certificated lecturers transferred effective the same day to the Department of Developmental and Special Education have the same date of seniority in the department as a result of these transfers. The President, therefore, shall break these ties in seniority between and among the tenured members by using each member’s original date of award of the Certificate of Continuous Employment at the College.

Each impacted instructional staff member has been advised of his/her seniority date in the new department.
RESOLVED, That the Board of Trustees hereby adopts a policy that all undergraduate colleges at the University may grant course credit for advanced placement courses offered in secondary schools provided the student scores 3 or above on the advanced placement test effective June 26, 2017.

This resolution supersedes the February 25, 2013 resolution on AP placement, is applicable to all students entering CUNY in Fall 2017, and may be applied on a case-by-case basis to any currently enrolled student.

EXPLANATION: The proposed policy allows colleges a greater discretion in evaluating AP credit for transfer. Colleges may choose to grant AP credit to students with scores of 3 or higher, in line with the commonly accepted nationwide practice as well as the existing SUNY policy. Previously CUNY colleges were prevented from granting credit for courses passed with a score of 3, which created a perceivable disadvantage for students.
RESOLVED, That the Board of Trustees hereby adopts a policy that all undergraduate colleges at the University will award 30 credits to students who have completed an International Baccalaureate (IB) diploma with a score of 30 or higher. Each college may develop specific guidelines articulating IB courses with courses in the major and general education requirements.

Students who have completed an IB diploma with a score of 29 or less and students who did not complete a diploma will be guaranteed credit for higher-level IB exams with scores of “5” or better. The credit awarded will apply toward the overall number of credits required for graduation and in some cases toward major and general education requirements, as determined by each college. This resolution will become effective June 26, 2017.

EXPLANATION: The IB diploma, in existence since in 1968, is a rigorous two-year academic program for students aged 16 to 19 offered at schools around the world. It aims to support schools by providing outstanding research-based education, developing both disciplinary and interdisciplinary knowledge and understanding in a global context. The courses are generally considered to have a higher level of rigor than Advance Placement courses and are linked to a high rate of college success and degree completion.

More than 1.5 million students around the world have participated in the IB since its inception. As of 2015, the United States was the country with the most IB diploma students.

Universities in over 90 countries recognize the IB, including many selective institutions across the US, as well as all SUNY schools. The proposed policy brings CUNY policy in line with a widespread national and international practice, ensuring that high-achieving students with an IB diploma have no disincentive to attend CUNY.
I.B.15 – GRADUATE SCHOOL AND UNIVERSITY CENTER – ESTABLISHMENT OF THE CUNY SCHOOL OF LABOR AND URBAN STUDIES

WHEREAS, New York City has a long and proud history of organized labor in both the public sectors and private sector industries such as construction, entertainment, healthcare and fashion,

WHEREAS, New York City continues to be a city whose success heavily relies on the work done by members of labor unions,

WHEREAS, organized labor needs leadership educated and trained in the knowledge and skills to negotiate effectively on behalf of its members,

WHEREAS, The Joseph S. Murphy Institute for Worker Education and Labor Studies has supported that education at both the graduate and undergraduate levels, as well as in non-credit bearing programs,

WHEREAS, The Joseph S. Murphy Institute for Worker Education and Labor Studies has provided a home to scholars interested in research in the areas of labor and urban studies,

RESOLVED, that the Chancellor develop and implement a plan to transition The Joseph S. Murphy Institute for Worker Education and Labor Studies to The CUNY School of Labor and Urban Studies as a division of The Graduate School and University Center, and that the University General Counsel work with relevant parties to revise the governance plan of the Graduate School and University Center to incorporate this new School. This action will be approved effective June 26, 2017, subject to financial ability.

EXPLANATION: The Joseph S. Murphy Institute for Worker Education and Labor Studies is currently housed within the School of Professional Studies (SPS) of the Graduate School and University Center. The Institute works with SPS to offer graduate and undergraduate degree and certificate programs to adult students and has special relationships with local unions to provide advisement and other student services to their members. The Institute also manages both the Community Semester and the New York Union semester, programs offering internships in labor organizing to college students. The Institute also provides non-credit training programs for unions. Faculty affiliated with the Institute produce impressive scholarship in labor and urban studies. The establishment of the School will provide the fields of labor studies and urban studies with greater visibility in both the academic and labor communities.
RESOLVED, that the CUNY Research Misconduct Policy be revised to accommodate both a change in title of the university-wide research administrator as well as to include this individual as a consultant in the inquiry stage of the matter effective June 26, 2017.

EXPLANATION: The Office of Academic Affairs has reorganized its Research Administration division. The title of Vice Chancellor for Research is no longer used. The individual responsible for research compliance in the central administration is the Vice Provost for Research. In addition, since research misconduct has university-wide implications, it has been deemed necessary that the Vice Provost for Research should actively participate in discussions with the college President and the campus Research Integrity Officer during the inquiry stage of the process. This resolution updates the current Research Misconduct Policy approved on March 2, 2015.

Modifications to the CUNY Policy Regarding the Disposition of Allegations of Research Misconduct Item 6.6

The RIO will provide the Respondent an opportunity to review and comment on the preliminary Inquiry report. Upon receipt of the comments from the Respondent, the RIO will attach the Respondent's comments to the preliminary Inquiry report and submit this final Inquiry report to the President. Upon receipt of the final Inquiry report, the President, in consultation with the University Vice Provost for Research and the RIO, will make the decision as to whether to refer the case to the Vice Chancellor for Research for an Investigation.
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<td>Overview</td>
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<td>Conceptual Framework</td>
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<td>15-18</td>
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<td>19</td>
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<td>Proposed 5 Year Budget</td>
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<td>II. Press Releases – If available</td>
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<tr>
<td>III. Letters of Endorsement</td>
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<tr>
<td>i. New York State Assemblyman Walter T. Mosley</td>
<td></td>
</tr>
<tr>
<td>ii. New York State Senator Jesse Hamilton</td>
<td></td>
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<tr>
<td>iii. New York State Senator Kevin Parker</td>
<td></td>
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<tr>
<td>iv. Appropriation received from Elected Officials</td>
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<tr>
<td>IV. Program Booklet</td>
<td></td>
</tr>
<tr>
<td>V. Brochure – Center for Cognitive Development</td>
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</tbody>
</table>
RESOLVED, that the Center for Cognitive Development be established at Medgar Evers College in accordance with the Policy Guidelines on Centers and Institutes set forth by the Board of Trustees.

EXPLANATION:
Medgar Evers College seeks to address the disparities among culturally and linguistically diverse student populations in K-16 education systems in New York City by using research to guide targeted support to improve learner outcomes. The College’s demonstrated commitment and capacity to establish programs that increase minority and disadvantaged students’ access to and mastery of educational opportunities will be better analyzed, understood, and served through the establishment of the Center for Cognitive Development. The high rates of developmental education needs across New York City, and in particular, Central Brooklyn, serve as the catalyst for establishment of the Center for Cognitive Development that will examine and address the plethora of deficits and provide customized interventions through its Cradle to College Pipeline and beyond.
OVERVIEW

The MEC Center for Cognitive Development will be a research-based repository of resources for all stakeholders involved in the education of culturally and linguistically diverse populations: researchers, policy-makers, school leaders, teachers, parents and students. The Center will be housed in the proposed School of Education to serve all academic departments as well as feeder programs and other educational initiatives undertaken by the College, including the MEC Pipeline Initiative. Led by a resident faculty with a PhD in Cognitive Neuroscience, the Center will promote innovative research focused on the many variables that impact learning among culturally and linguistically diverse populations and will provide a variety of services and resources aimed at improving educational outcomes.

Conceptual Framework

Philosophy

Grounded in the theories of Jean Piaget¹, Erik Erikson², Lev Vygotsky³, Jerome Bruner⁴ and others, the MEC Center for Cognitive Development will be the first repository for cross-disciplinary cutting-edge research on the many complex factors that influence and predict successful learning outcomes for diverse children in urban communities. Based on Bloom’s taxonomy, the cognitive domain looks at the human progression of skills used for learning: Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation.⁵ Current

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researchers categorize these skills in a hierarchical and active fashion as the ability to remember, understand, apply, analyze, evaluate and create.\(^6\)

![Bloom's Taxonomy: Cognitive Domain](image)

The Center for Cognitive Development is deeply rooted to the four stakeholder strands of the conceptual framework of the School of Education: principals, parents, teachers and students, and reiterates the following values:

- We believe in the holistic development of all learners.
- We also believe that in depth knowledge of all factors that contribute to or inhibit learning are tantamount to developing effective and timely interventions and support services.
- We see the individual, home, school and community, and the interactions among them, as important and unique aspects of diversity that make up urban life.
- We understand that gaining knowledge is a complex and interactive process that includes: students learning how to learn and assessing their own learning; teachers

creating positive learning experiences and reflecting on their teaching and its impact on learners; families learning how to create and maintain supportive learning environments, and communities providing equitable access to resources, services, and career opportunities.

**Vision:** *Charting a New Course for Learning and Development in Urban Communities*

**Mission:** The mission of the Center for Cognitive Development is to explore learning and development over time and across all spheres of life from early childhood through adulthood and provide customized interventions, products and services to meet the unique and diverse needs of learners in urban communities.

*Fig. 2: Center for Cognitive Development Framework*
GOALS

The Center will use comprehensive assessments to appropriately coordinate interventions to maximize the cognitive as well as other domains of learner experiences. The Center will operate as an umbrella for collaborative research among faculty, customization and coordination of services and resources, and sharing of the knowledge and experiences of culturally responsive education. The primary purpose of the Center is to systematically and intentionally conduct research and use data to design interventions and match resources to achieve the following goals and outcomes by the year 2022:

1. Improve learner achievement from early childhood through college

70% of young children will meet the Pre-K Common Core Learning Standards
70% of P-12 students will meet the Grade Level Common Core Learning Standards
70% of High School students will pass the New York State Regents Examination
75% of High School students will attend college
75% of college students will graduate with a Bachelor’s Degree
70% of students will participate in enhanced instructional academic activities
70% of students will engage in non-academic and social learning opportunities
70% of students will receive customized interventions and supportive services
2. Increase the resiliency and effectiveness of school leaders

- 75% of principals will participate in leadership enhancement activities
- 70% of principals will demonstrate effective management skills
- 70% of principals will demonstrate resilient leadership attitudes
- 70% of principals will access support services and supplemental resources

3. Enhance teacher knowledge and skills through high quality, customized professional development activities

- 75% of teachers will participate in customized professional development activities
- 75% of teachers will effectively use research and data to guide instruction
- 75% of teachers will practice culturally responsive pedagogy
- 75% of teachers will earn additional certification in new skill areas

4. Use research and data to provide parent education and resources to improve engagement and advocacy
60% of parents will participate in educational enrichment programs
60% of parents will access college and community resources and services
50% of parents will pursue higher education degrees or professional certificates
50% of parents will assume leadership and advocacy roles in schools

5. Disseminate accurate information about the learning and development of diverse learners in urban schools in Central Brooklyn and environs

80% of faculty research will be disseminated annually by the Center
70% of faculty research will be published annually by local publishers
60% of faculty research will be published annually by national publishers
50% of faculty research will be published annually by international publishers

RATIONALE FOR THE CENTER

It is well known that a myriad of physiological and environmental factors comingle in shaping cognitive development, among them are personal characteristics, home, school, community and societal variables. Using a holistic approach, the Center for Cognitive Development will investigate these variables to disentangle their effects on the cognitive domain. The Center proposes to blend expertise from the fields of education, neuroscience, and psychology with current research-based resources and products from veteran publishing and
marketing agencies to provide customized responses to the current issues encountered in urban schools, particularly in Central Brooklyn.

Exploration of the variables that contribute to learning and student success is a national education phenomenon captured in several longitudinal studies, with the most definitive ones being those in special education commissioned by the US Department of Education: the National Longitudinal Transition Studies\(^7\) and the Special Education Elementary Studies.\(^8\) Other studies exploring factors that influence learning include the National Survey of Student Engagement\(^9\) and those from the National Research Centers on Student Learning,\(^10\) among others to provide scientific findings to inform education. However, what these studies lack is the direct approach to uncovering the specific variables that correlate with and predict learning for very diverse and migrant urban communities such as those found in Central Brooklyn and the wider New York City region. They also fail to analyze how access to or lack thereof of key resources affect student outcomes and may result in marginalization of meaningful educational opportunities and experiences. The MEC Center for Cognitive Development will explore these unchartered territories to gain a clearer understanding about student learning in the diaspora.

New York City has one of the largest public school populations in the US with over one million students. It is a diverse student body, broken down as follows: 28\% (293,046) Black or African American; 40\% (415,637) Hispanic or Latino; 14\% (148,158) White, 15\% (159,081) Asian or Pacific Islander; 1\% (7,642) American Indian or Alaska Native; 1\% (7,436) Multiracial; 14\% (143,838) Limited English Proficient Students; 20\% (203,319) Students with Disabilities,

and 74% (764,296) Economically Disadvantaged Students. With this wide diversity among its student population, among them large representations of minority or economically disadvantaged groups, the need for intentional educational interventions that are culturally and linguistically responsive is evident.

Data from the 2013-2014 elementary school performance reports on State standardized tests show that MEC Pipeline Schools had lower rates of mathematics proficiency (testing at Level 3 or Level 4) compared to Brooklyn borough average as well as NYC average across all 3 grade levels (Table 1).

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>3rd Grade</th>
<th>4th Grade</th>
<th>5th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC Pipeline Schools</td>
<td>22.3%</td>
<td>27.0%</td>
<td>24.9%</td>
</tr>
<tr>
<td>Brooklyn Borough</td>
<td>33.0%</td>
<td>39.4%</td>
<td>35.3%</td>
</tr>
<tr>
<td>New York City</td>
<td>33.1%</td>
<td>38.9%</td>
<td>35.2%</td>
</tr>
</tbody>
</table>

The standardized test performances are more discerning when broken down across groups as identified in Table 2 below. For not only are minority students performing below average proficiency citywide on mathematics, but also on English language Arts. Results show that only Asians/Pacific Islanders, Whites and Multiracial groups had proficiency levels close to or above 50%.

<table>
<thead>
<tr>
<th>NYC Public Schools Groups (1,031,000)</th>
<th>Grades 3-8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ELA % Proficient at Levels 3 and 4</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>27</td>
</tr>
<tr>
<td>Black or African American</td>
<td>18</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>18</td>
</tr>
<tr>
<td>Asian or Native Hawaiian/Other Pacific Islander</td>
<td>49</td>
</tr>
</tbody>
</table>

The above snapshots show a need for earlier intervention, prior to middle school, in both ELA and mathematics for minority and disadvantaged groups of students. Exposure to and engagement in culturally responsive academic experiences for early learners can increase interest and result in better proficiency rates at the elementary levels. This Center will address this need through its early learning (PK-6) Pipeline Initiatives components.

The domino effect caused from deficits in early learning is seen in the middle school performances, particularly in the mathematics statewide assessments for 2013-2014 as shown on Table 3 below.

### Table 3: 6th, 7th and 8th Grade Mathematics Proficiency Rates – 2013-2014

<table>
<thead>
<tr>
<th></th>
<th>6th Grade</th>
<th>7th Grade</th>
<th>8th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC Pipeline</td>
<td>16.4%</td>
<td>17.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Brooklyn Borough</td>
<td>28.7%</td>
<td>33.5%</td>
<td>24.5%</td>
</tr>
<tr>
<td>New York City</td>
<td>28.8%</td>
<td>34.1%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

Across schools, districts, borough and city averages, the 8th Grade math proficiency decreased because students were encouraged to take the Integrated Algebra Regents Examination and then exempted from their 7th or 8th grade assessments. This had the greatest impact at the 8th grade level as it highlighted some of the weaknesses of on-track 8th grade math students. Among the middle schools with test data, 16 out of 21 schools had no students who tested at Level 4 in Mathematics. In fact, for the 2013-2014 school year, only 23 of the 1833 on-track 8th grade math
students tested at Level 4 in Mathematics, which may partially explain the low percentage of MEC Pipeline high school students who eventually obtained Advanced Regents designations. Deficits at the middle school level will be addressed through the Center for Cognitive Development.

By the high school grade levels, Regents and Advanced Regent attainment are even more disappointing. Among the MEC Pipeline high school students, representative of the Central Brooklyn area, there were lower percentages of graduates obtaining Regents and Advanced Regents designations (see Table 4).

Table 4: Comparison of 2010 Cohort Graduation, Regents and Advanced Regent Attainment

<table>
<thead>
<tr>
<th>MEC Pipeline High Schools</th>
<th>2010 Cohort</th>
<th>Cohort Graduates</th>
<th>Cohort with Regents</th>
<th>Cohort with Advanced Regents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,143</td>
<td>59.6%</td>
<td>56.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Brooklyn Borough</td>
<td>20,187</td>
<td>65.6%</td>
<td>62.0%</td>
<td>18.0%</td>
</tr>
<tr>
<td>New York City</td>
<td>72,759</td>
<td>66.4%</td>
<td>62.8%</td>
<td>18.3%</td>
</tr>
</tbody>
</table>

A closer look at the Citywide High School performances paints a clearer picture of the under-preparedness of students to enter college and degree programs of study. Table 5 below shows that the only group meeting proficiency levels at the high school level is Asians/Pacific Islanders, indicating a serious deficit in student achievement.

Table 5: NYC Public High School (Grades 9-12) Regents Attainment by Groups

<table>
<thead>
<tr>
<th>NYC Public Schools Groups (1,031,000)</th>
<th>Grade 9-12 2014 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% ELA/Math Aspirational Performance Measure</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>21</td>
</tr>
<tr>
<td>Black or African American</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>16</td>
</tr>
<tr>
<td>Asian or Native Hawaiian/Other Pacific Islander</td>
<td>55</td>
</tr>
<tr>
<td>White</td>
<td>43</td>
</tr>
</tbody>
</table>
Compared to Brooklyn Borough and New York City averages, the Medgar Evers Pipeline High School Cohort has a lower SAT participation rate and lower SAT category and combined scores as shown in Table 5 below:

<table>
<thead>
<tr>
<th>Comparison Cohorts</th>
<th>Cohort Participation</th>
<th>Critical Reading</th>
<th>Mathematics</th>
<th>Writing</th>
<th>Combined SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline High Schools</td>
<td>60.2%</td>
<td>409</td>
<td>423</td>
<td>403</td>
<td>1235</td>
</tr>
<tr>
<td>Brooklyn Borough</td>
<td>65.6%</td>
<td>434</td>
<td>461</td>
<td>428</td>
<td>1323</td>
</tr>
<tr>
<td>NYC High Schools</td>
<td>62.3%</td>
<td>442</td>
<td>465</td>
<td>438</td>
<td>1345</td>
</tr>
</tbody>
</table>

The evidence shows that schools in the Central Brooklyn area that are representative of the Medgar Evers College Pipeline are the schools with the greatest need for academic interventions in New York City. The proposed **Center for Cognitive Development** will provide the support and interventions needed to the Pipeline Initiative to improve student engagement and grade level achievement in these Central Brooklyn high-need schools.

The College’s review and reflection of past years student outcomes showed critical needs that warranted immediate steps to improve outcomes and progression in degree programs. The greatest challenge continues to be the developmental needs of first time freshmen in areas of mathematics, reading and writing. As Table 6 indicates, the College had 86% of the total Fall Freshmen in 2013 requiring developmental education in at least one area.13

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Table 7: Developmental Needs of First Time Freshmen

<table>
<thead>
<tr>
<th>ACADEMIC YEAR</th>
<th>Total First Time Freshmen</th>
<th>Total in Need of Remediation</th>
<th>Needs 1</th>
<th>Needs 2</th>
<th>Needs 3</th>
<th>Needs Any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2011</td>
<td>1201</td>
<td>934</td>
<td>42.3%</td>
<td>19.3%</td>
<td>16.2%</td>
<td>77.8%</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>1045</td>
<td>882</td>
<td>51.1%</td>
<td>17.8%</td>
<td>15.5%</td>
<td>84.4%</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>1046</td>
<td>897</td>
<td>59.3%</td>
<td>17.1%</td>
<td>9.3%</td>
<td>85.8%</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>1100</td>
<td>870</td>
<td>43.1%</td>
<td>22.4%</td>
<td>13.4%</td>
<td>79.1%</td>
</tr>
<tr>
<td>Fall 2015</td>
<td>1092</td>
<td>738</td>
<td>42.1%</td>
<td>16.2%</td>
<td>8.7%</td>
<td>67.6%</td>
</tr>
</tbody>
</table>

The College recognizes the need to support students with developmental education in order to facilitate their credit accumulation and progression through their degree programs. To meet these needs the English and Mathematics departments developed specific developmental courses to improve student progress. Using results from diagnostic pre-tests, faculty individualized instruction, interventions and developed study plans for students. Assessment of students’ strengths and needs garnered from diagnostics lead to more focused interventions, including tutoring, technology-based and hands-on instruction, approaches that are supported by research. The Center for Cognitive Development will use diagnostic data and conduct further research to identify impediments to learning in order to provide more appropriate and timely interventions for students.

CONFERENCES, WORKSHOPS, RESEARCH PROJECTS, RESIDENCIES

A main purpose of the Center for Cognitive Development is to conduct pertinent research and disseminate these findings at the local, national and international levels. To that end, annual

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conferences would be a major activity produced by the Center. The Center proposes to host two local conferences annually, as well as a biannual international conference.

MEC’s interest in global partnerships in education will promote the sharing of international research as well as provide opportunities for national distinguished fellowships (visiting professors/researchers), and international residency programs for faculty researchers. This exchange of expertise allows for culturally and linguistically responses to the education of diverse immigrant populations and will benefit the College, the Central Brooklyn community, and the City University of New York.

RESEARCH

Primary research will focus on the social, cultural, linguistic, economic, and health issues, among others, that impact learning among diverse populations. Secondary research will utilize scientifically proven resources and customized intervention practices for cognitive skill building and evaluate the impact of these interventions on student learning outcomes across disciplines and over time. This research will inform constituents about the factors that contribute to and improve cognitive development of learners as well as the efficacy of selected practices on the education of urban populations, particularly among diverse learners in the Brooklyn area. Emanating from longitudinal research studies would be the validation of best practices to enhance the database on urban education both nationally and internationally.

CENTER LEADERSHIP AND GOVERNANCE/ PERSONNEL

Dr. Ken Jamel Hoyte, a cognitive neuroscience specialist and special education faculty member in the Education Department, will serve as Executive Director for the Center for
Cognitive Development. His primary responsibilities will include coordination of research projects, assessments, resources, intervention services, workshops, conferences and residencies. He will also be responsible for identifying and securing external funding to support and sustain the Center’s operations.

A **Full-time Research Assistant** will be hired to support the research activities of the Center. A **Diagnostician/ NYS Licensed Psychologist** will be hired to provide diagnostic services. Other staffing will include two **College Administrative Assistants**.

The Center for Cognitive Development will be housed under the proposed School of Education and will be governed by the appointed Executive Dean of the School of Education, reporting to the Provost and Senior Vice President of Academic Affairs. The Center will work in collaboration with and provide resources and support to the following main areas across the College and the Central Brooklyn community:

1. **School of Education** – Consists of three operating units that offer college-readiness programs, as well as pre-professional and nationally accredited degree programs and licensure certificates in education. The Center for Cognitive Development will guide research and provide diagnostic and intervention services and resources for the following areas:
   a. College Readiness
   b. Departmental Degree Programs
   c. Departmental Certificate Programs
   d. Field and Clinical Practice Experiences
   e. State Licensure Requirements
   f. Laboratory Schools (Action Research)
2. **MEC Pipeline Initiative** - An initiative that aims to improve college opportunity, access and preparedness for over 30,000 students by using customized interventions from elementary through high schools throughout the borough of Brooklyn. The Center for Cognitive Development will provide needed support to the following areas of the Pipeline Initiative:

   a. Partner School Leadership
   b. Partner School Professional Development for Teachers and Staff
   c. Parent Academy
   d. Student Academies
   e. Community Resources

3. **Research, Resources and Publication Dissemination** – This component combines the major activities of the Center for Cognitive Development as a research-based repository that conducts research, assessments and utilizes the information to effect change in the trajectory of student learning outcomes in urban, multicultural societies. It is the defining product for the establishment of the Center as a new and critical element in the College’s contribution to local, regional, national and global education enterprises.

   a. Educational and Psychological Assessments
   b. Customized Interventions
   c. Learning Community Research-based Products and Services
   d. Research Studies
   e. Publications
4. **College-wide Academic Departments** – The Center will use an all-inclusive approach that promotes collaboration across disciplines in research projects, subject-specific and program interventions and services for student populations from PK-16 aimed at improving both student learning and teacher professional development in the following areas.

   a. Departmental Academic Programs
   b. MEC General Education Program
   c. Research Initiatives across Disciplines
   d. Culturally Responsive Pedagogy – Studies on Best Practices

5. **School of Professional and Continuing Development** – The Center for Cognitive Development will also explore and support beyond-college and out-of-college learning opportunities in the following ways:

   a. Adult Learner Assessments (Diagnostics)
   b. Customized Interventions
   c. Research-based Instructional Materials

Education and advanced preparation are required for employment. College readiness out of high school is critical for transition to college and advanced training. College preparedness is critical to career attainment. Therefore, understanding how to educate diverse learners, educating diverse learners and providing resources to support their learning and advanced preparation are critical for closing the gaps in student achievement and ultimately the gaps in minority representation in emerging career fields in their communities. This Center has significant implications for future sustainable development in Brooklyn, New York City, and countries around the world.
RESOURCE ALLOCATION

Personnel

Executive Director – Dr. Ken J. Hoyte (Current Faculty /6 hrs. release time)

Diagnostican (licensed) – New Hire $80,000

Research Assistant – New Hire $55,000

2 Community Resource Support Staff $60,000 $195,000

Space Requirements: Office Equipment $200,000

Workshops, Conferences, Professional Development, Research $200,000

Miscellaneous Expenses – Office Supplies, Materials $50,000

TOTAL INITIAL OPERATING BUDGET $645,000

PAST RECORD OF FUNDING

The Center for Cognitive Development received initial funding in the amount of $50,000 in 2016 from the New York City Council to support its start-up activities. The Education Department has a track record of securing federal and state grants. During the last five years, the Education Department received over $5M in federal and state funding. The establishment of the Center will be another avenue for attracting major Federal and local funding.

PROPOSED 5-YEAR BUDGET

<table>
<thead>
<tr>
<th>BUDGET ITEM</th>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
<th>YEAR 5</th>
<th>TOTAL</th>
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<td>Resources:</td>
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<td>State/City Aid</td>
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<td>3,050,000</td>
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<td></td>
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<td>Activities</td>
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<td>TOTAL</td>
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<td>450,000</td>
<td>455,000</td>
<td>480,000</td>
<td>485,000</td>
<td>2,515,000</td>
</tr>
</tbody>
</table>

**ADVISORY BOARD**

A college-wide and community-based board of nine members will provide oversight for the Center’s operations. Founding members include:

**Dr. Sheilah M. Paul**, Acting Dean, *School of Liberal Arts & Education*

**Dr. Chiyedza Small**, Biology Department, *School of Science, Health & Technology*

**Mr. Wallace Ford**, Department of Public Administration, *School of Business*

**Dr. Hollie Jones**, Chair, Psychology Department, *School of Liberal Arts*

**Dr. Donna Wright**, Education Department, *Education Department*

**Dr. Doris McEwen, Dean of College Readiness/Brooklyn Pipeline Initiative**

(Community-based Neuroscientist) - To be selected

Community School Leader – To be selected

Parent Leader – To be selected

**SUPPORTING DOCUMENTS**

I. Draft Brochure – Center for Cognitive Development
II. Letters of Endorsement – *Elected Official*

III. Letter of Funding Support – Local Elected Officials

Press Releases and Program Booklet will be developed after CUNY approval
July 25, 2016

Mr. James B. Milliken  
CUNY Chancellor  
Office of the Chancellor  
205 East 42nd Street  
New York, NY 10017

Dear Mr. Milliken:

I write to you regarding my support of the proposal to establish a Center for Cognitive Development in the School of Global Education at Medgar Evers College in Brooklyn, New York. I agree that the establishment of this Center is critical to understanding the learning and developmental challenges among the widely diverse student population in Central Brooklyn.

Medgar Evers College has a long history of community involvement and intervention, and provides a wide range of community development opportunities for the Central Brooklyn population. Your recent Pipeline Initiative that includes over 80 schools is a prime example of the College’s commitment to improving the prospects for underserved students and families. Not only will this research-based facility uncover evidence about the many factors that contribute to, or impede learning and development in urban areas, but also provide the appropriate interventions, services, and resources to holistically improve learner outcomes. The Center’s work will add significantly to local, regional, national and international understanding of culturally and linguistically diverse urban education.

I respectfully request that City University of New York approve the Medgar Evers’s proposal that will, no doubt, be another asset to the community. If I may be of additional assistance please feel free to contact me at 718-596-0100. Thank you for your time and consideration on this matter.

Sincerely,

Walter T. Mosley  
New York State Assemblyman, 57th AD

WTM/hr
July 27, 2016

James B. Milliken  
Chancellor,  
City University of New York  
205 East 42nd Street  
New York, NY 10017

Dear Chancellor Milliken,

I am pleased to offer my support to the proposal to establish a Center for Cognitive Development in the School of Global Education at Medgar Evers College in Brooklyn, New York. I agree with Dr. Rudy Crew that the establishment of this Center is critical to understanding the learning and developmental challenges among the widely diverse student population in Central Brooklyn.

Medgar Evers College has a long history of community involvement and intervention, and provides a wide range of community development opportunities for the Central Brooklyn population. The recent Pipeline Initiative that includes over 80 schools is a prime example of the College's commitment to improving the prospects for underserved students and families. The Center's mission to explore learning and development over time and across all spheres of life from early childhood through adulthood and provide customized interventions, products and services to meet the unique and diverse needs of learners in urban communities, is a much-needed resource for our community.

Not only will this research-based facility uncover evidence about the many factors that contribute to, or impede learning and development in urban areas, but also provide the appropriate interventions, services, and resources to holistically improve learner outcomes, particularly among marginalized populations, such as those found in Central Brooklyn. This is a novel approach. The Center's work will add significantly to local, regional, national and international understanding of culturally and linguistically diverse urban education.

I believe that Medgar Evers College is well positioned to carry out this mandate, and am confident that its experienced administrators, faculty and staff can and will achieve these objectives.
I fully endorse this proposal, and pledge my support for the establishment of the Center for Cognitive Development in the School of Global Education. I request the City University of New York to approve Medgar Evers College's proposal that will, no doubt, be another asset to the community, the College, and the University system.

Sincerely Yours,

[Signature]

Jesse Hamilton
New York State Senator
20th Senate District
July 27, 2016

Dr. Rudolph F. Crew  
President  
Medgar Evers College of CUNY  
1650 Bedford Avenue  
Brooklyn, NY 11225

Dear Mr. Crew:

This letter supports the proposal to establish a Center for Cognitive Development in the School of Global Education at Medgar Evers College in Brooklyn, New York. We agree that the establishment of this Center is critical to understanding the learning and developmental challenges faced by the widely diverse student population in Central Brooklyn.

Medgar Evers College has a long history of community involvement and intervention, and provides a wide range of community development opportunities for the Central Brooklyn community. Your recent Pipeline Initiative that includes over 80 schools is a prime example of the College’s commitment to improving the prospects for underserved students and families. The Center’s mission to explore learning and development over time and across all spheres of life from early childhood through adulthood and provide customized interventions, products and services to meet the unique and diverse needs of learners in urban communities, is a much-needed resource for this community. I am proud to support such a vision.

Not only will this research-based facility uncover evidence about the many factors that contribute to, or impede learning and development in urban areas, but also provide the appropriate interventions, services, and resources to holistically improve learner outcomes - particularly among marginalized populations, such as those found in Central Brooklyn and in the 21st Senate District. The Center’s work will add significantly to local, regional, national and international understanding of culturally and linguistically diverse urban education.

We also believe that Medgar Evers College is well positioned to carry out this mandate, and are confident that its experienced administrators, faculty and staff can achieve these objectives. I fully endorse this proposal to establish the Center for Cognitive Development in the School of Global Education.
I urge the City University of New York to approve the College’s proposal that will, no doubt, provide another asset to the community, the College, and the University. If you have any questions or concern, please do not hesitate to contact me at my office at (718) 629-6401.

Yours in Partnership,

KEVIN PARKER
## Search Results - 2016 Funded:

<table>
<thead>
<tr>
<th>ORGANIZATION NAME</th>
<th>AMOUNT ($)</th>
<th>MEMBER</th>
<th>SOURCE</th>
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<td>27,830</td>
<td>Brooklyn Delegation</td>
<td>Adult Literacy Initiative</td>
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<td>150,000</td>
<td>Speaker</td>
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<tr>
<td>Medgar Evers College</td>
<td>50,000</td>
<td>Speaker</td>
<td>Local</td>
</tr>
</tbody>
</table>

Center of Cognitive Development. Funds will be used for teaching project-based learning and the incorporation of the arts which may not always be intuitive or accessible to new or seasoned teachers. Teachers can expect a wide breadth of benefits including improvements on state assessments, decreases in students behavioral issues and an overall enhanced classroom experience.

Address: N/A

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>EIN</th>
<th>STATUS</th>
<th>AGENCY</th>
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<td>133893536</td>
<td>Cleared</td>
<td>CUNY</td>
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</tbody>
</table>

Download Full List of 2016 Funded Grants (in Excel)
process that includes: students learning how to learn and assessing their own learning; teachers creating positive learning experiences and reflecting on their teaching and its impact on learners; families learning how to create and maintain supportive learning environments, and communities providing equitable access to resources, services, and career opportunities.

SYNTHESIS
Creating

EVALUATION
Evaluating

ANALYSIS
Analyzing

APPLICATION
Applying

COMPREHENSION
Understanding

KNOWLEDGE
Remembering

Bloom's Taxonomy: Cognitive Domain

DISSEMINATION OF BEST PRACTICES
- Regional Conferences
- National Conferences
- International Conferences
- Publications
- Developmental Products

CENTER FOR COGNITIVE DEVELOPMENT
Medgar Evers College • School of Global Education
718-270-4910 (t) • 718-270-4828 (f)
www.mec.cuny.edu/soge-ccd

CENTER FOR COGNITIVE DEVELOPMENT
Charting a New Course for Learning and Development in Urban Communities
Clinical & Educational Diagnostics
Interventions, Support Services & Resources
Cutting-Edge Research
Dissemination of Best Practices
VISION
Charting a New Course for Learning and Development in Urban Communities

MISSION
To explore learning and development over time and across all spheres of life from childhood through adulthood and provide customized interventions, products and services to meet the unique and diverse needs of learners in urban communities.

GOALS
• Improve learner achievement
• Increase school leaders’ resiliency and effectiveness
• Enhance teacher knowledge and skills
• Provide parent education and resources
• Conduct innovative research
• Disseminate research findings and best practices

THE CENTER AT WORK FOR YOU
The Medgar Evers College Center for Cognitive Development is a research-based repository of resources for all stakeholders involved in the education of culturally and linguistically diverse populations: researchers, policy-makers, school leaders, teachers, parents and students.

The Center serves all Pipeline Schools, Academic Departments, feeder programs and other educational initiatives undertaken by Medgar Evers College.

The Center promotes innovative action and scientific research focused on the many variables that impact learning among culturally and linguistically diverse populations.

The Center provides a wide menu of services and resources to improve educational outcomes.

CUSTOMIZED LEARNING SOLUTIONS
• Culturally Responsive Diagnostics
• Laboratory Schools
• Special Education Research-Based Interventions
• Developmental Education
• National Standardized Test Preparation
• Licensure Examination Preparation

CLINICAL & EDUCATIONAL DIAGNOSTICS
• Know your learning strengths and preferences
• Understand your needs
• Comprehensive Screening and Evaluations

INTERVENTIONS & SUPPORT SERVICES
Use of Customized Interventions
• Response to Intervention (RtI)
• Universal Design for Learning (UDL)
• Culturally Responsive Pedagogy
• Supplemental Instruction
• Tutoring
• Mentoring

RESOURCES & RESOURCE PARTNERS
Access to Scientifically-Proven Research-based Products and Services from veteran partners:
• Pearson Learning
• Houghton Mifflin Harcourt
• Kaplan
• Scholastic
• National Training Network
• Adelaide Sanford Institute

CORE VALUES OF THE CENTER FOR COGNITIVE DEVELOPMENT
We believe in the holistic development of all learners.

We also believe that in depth knowledge of all factors that contribute to or inhibit learning are tantamount to developing effective and timely interventions and support services.

We see the individual, home, school and community, and the interactions among them, as important and unique aspects of diversity that make up urban life.

We understand that gaining knowledge is a complex and interactive