I. Action Items

A. Approval of the minutes of the April 16, 2018 meeting

B. Policy Calendar

1. College of Staten Island – Establishment of the Department of Engineering and Environmental Science and the Department of Physics and Astronomy and the Closing of the Department of Engineering Science and Physics

2. CUNY Graduate School of Public Health and Health Policy - Change in Degree Award from DPH to PhD


4. Lehman College - MS in Human Performance and Fitness

C. Information Items

1. Brooklyn College - Center for Cancer Research

2. Baruch College - Center for Trading and Financial Markets Research
The meeting was called to order by Committee Vice Chair Fernando Ferrer at 6:54 p.m.

The following people were present:

**Committee Members:**  
Hon. Fernando Ferrer, Vice Chair  
Hon. Henry T. Berger  
Hon. Charles A. Shorter  
Prof. Martin Burke, faculty member  
Mr. Wali Ullah, student member  
President William J. Fritz, COP Liaison

**University Staff:**  
Executive Vice Chancellor and University Provost  
Vita Rabinowitz

**Trustee Staff:**  
Senior Advisor to the Chancellor and Secretary of the Board Gayle M. Horwitz  
Assistant Secretary Towanda Lewis  
Ms. Adalina Quinones

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 26, 2018.** Moved by Trustee Henry Berger and seconded by Trustee Charles Shorter, the minutes were unanimously approved as submitted.

B. **POLICY CALENDAR**

1. **City College - Honorary Degrees.**  
   Anita Hill, Professor of Law, Social Policy and Women's Studies, Brandeis University  
   Doctor of Humane Letters  
   Seymour Moskowitz '54, Co-Founder and retired President, CoVant Management, Inc.  
   and College Benefactor  
   Doctor of Science  

   Executive Vice Chancellor and University Provost (EVC&UP) Vita Rabinowitz highlighted the career successes of Anita Hill and Seymour Moskowitz as City College recommends their candidacy to receive an honorary degree, noting that Anita Hill is University Professor of Law, Public Policy and Women's Studies at the Heller Graduate School of Policy and Management at Brandeis University, and Seymour Moskowitz is a distinguished alumnus of The City College of New York, class of 1954 with a degree in Mechanical Engineering.

2. **CUNY Graduate School of Public Health and Health Policy - Honorary Degree.**  
   Cecile Richards, President of the Planned Parenthood Federation of America  
   Doctor of Science  

   EVC&UP Rabinowitz highlighted the career successes of Cecile Richards as the CUNY Graduate School of Public Health and Health Policy recommends her candidacy to receive an honorary degree, noting that as president of Planned Parenthood Federation of America and Planned Parenthood Action Fund, Ms. Richards leads a movement that
has worked for more than 100 years to build a healthier and safer world for women, young people, and marginalized communities.

3. **Medgar Evers College - Honorary Degree.**
   Deval Patrick, Managing Director of Bain Capital Double Impact, former Governor of Massachusetts
   Doctor of Laws

   EVC&UP Rabinowitz highlighted the career successes of Deval Patrick as Medgar Evers College recommends his candidacy to receive an honorary degree, noting that consistent with Medgar Evers College’s mission of equal opportunity and social engagement, Mr. Patrick’s work throughout his years of political service are an inspiration and prove him to be an instrumental voice in encouraging civic engagement and policy reform.

4. **Macaulay Honors College - Honorary Degree.**
   Christopher Hayes, Broadcast and Print Journalist
   Doctor of Humane Letters

   EVC&UP Rabinowitz highlighted the career successes of Christopher Hayes as Macaulay Honors College recommends his candidacy to receive an honorary degree, noting that he has brought to a wide and diverse audience his sharp analytical skills, deep investigation into current political and social issues, and commitment to equality of opportunity.

5. **The Graduate School and University Center - Honorary Degrees.**
   Neal Katyal, Law Professor and Lawyer specializing in National Security
   Doctor of Humane Letters
   Katharine Viner, Journalist, Playwright and Editor-in Chief of *The Guardian*
   Doctor of Humane Letters

   EVC&UP Rabinowitz highlighted the career successes of Neal Katyal and Katharine Viner as the Graduate School and University Center recommends their candidacy to receive an honorary degree, noting that Neal Katyal is the former Acting Solicitor General of the United States, the Paul and Patricia Sanders Professor of National Security Law at Georgetown University Law Center, and a partner at Hogan Lovells, and Katharine Viner, internationally prominent journalist, is the first female editor-in-chief of the Guardian, a position she has held since June 2015.

   Moved by Committee Vice Chair Ferrer and seconded by Trustee Berger, and following discussion, items I.B.1 through I.B.5 were unanimously approved for submission to the Board.

6. **Queensborough Community College – AS in Film and Media Production.**
   EVC&UP Rabinowitz stated that this program, which leads to both direct employment and transfers seamlessly to Brooklyn College, will prepare students for careers in the growing fields of film and television production. There are currently 52 television series on a wide variety of platforms being shot in New York City. This combined with films and other projects such as advertising and game design provide significant employment opportunities for graduates in many fields. This program was designed in part, launched by a $30,000 grant from the New York State Department of Labor.

   Prof. Martin Burke expressed his approval of the proposal.

7. **Queensborough Community College – AA in Psychology.**
   EVC&UP Rabinowitz stated that psychology is one of the most popular undergraduate majors in the United States.
Many students at Queensborough Community College already pursue the study of this field. This program will allow the College to better identify these students early on in their college careers and provide better advising to psychology students. The curriculum has been structured to comply with both the CUNY Psychology Gateway Course initiative as well as with the recommendations of the American Psychological Association. An articulation agreement has already been signed with York College and others, which is in the same borough, are being pursued.

Trustee Shorter requested additional information regarding the articulation agreement in terms of the number of students in the program.

Moved by Committee Vice Chair Ferrer and seconded by Trustee Shorter, and following discussion, items I.B.6 and I.B.7 were unanimously approved for submission to the Board.

8. Queens College – MS in ED in Early Childhood Special Education and Bilingual Education. EVC&UP Rabinowitz stated that data shows that early intervention agencies and the New York City Department of Education increasingly seek to hire dually certified teacher candidates, such as those certified in early childhood special education and bilingual education. If approved, Queens College will be the first institution in the New York metropolitan area that offers a fully integrated interdisciplinary program at the early childhood (birth to 2nd grade) level. The proposed 43-credit program will attract candidates from Queens College's undergraduate childhood education program, as well as other undergraduate teacher preparation programs in the region.

Prof. Burke inquired about the role of adjunct faculty in the Master of Science in Education program as well as faculty hire.

Moved by Committee Vice Chair Ferrer and seconded by Trustee Berger, and following discussion, the item was unanimously approved for submission to the Board.

9. Medgar Evers and York Colleges – Establishing New Start-Up NY Initiatives. EVC&UP Rabinowitz stated that Pienso is the leading machine learning platform for non-programmers. Medgar Evers College’s (MEC) partnership with Pienso will provide the College with student mentors, internships, and post-graduate employment opportunities as well as faculty research collaborators. iHealthscreen is a medical technology company seeking to develop and commercialize screening systems for a wide range of medical conditions. York College’s partnership with iHealthscreen will provide the college with student mentors, philanthropic support, faculty engagement and post-graduation student employment.

Trustee Shorter inquired about the number of jobs that will be formed through MEC’s partnership with Pienso in the first five years.

Moved by Committee Vice Chair Ferrer and seconded by Trustee Berger, and following discussion, the item was unanimously approved for submission to the Board.

10. City College – Restructuring of the School of Education. EVC&UP Rabinowitz stated that the proposed new departments, (1) Leadership and Human Development and (2) Curriculum and Instruction are relatively equal in size in regard to number of faculty, number of students and number of programs. There are opportunities for collaboration among existing programs and opportunities for the development of new programs to maintain or increase enrollment in this reorganization. There are no additional cost associated with departmental reorganization.

Trustee Berger inquired about faculty involvement and approval of the reorganization.
Committee Vice Chair Ferrer further inquired about fiscal and personnel consequences of the reorganization.

Moved by Trustee Berger and seconded by Committee Vice Chair Ferrer, and following discussion, the item was unanimously approved for submission to the Board.

II. INFORMATION ITEM:

1. CUNY Graduate School of Public Health and Health Policy – Establishment of The Center for Immigrant, Refugee and Global Health. EVC&UP Rabinowitz stated that the mission of the Center is to advance scholarship, practice and understanding of the transnational policies, programs, institutions and ethos that influence global health.

A discussion about the Center followed, including the number of anticipated students, faculty composition and structure, CUNY resources, and growth formation.

Committee Vice Chair Ferrer moved to adjourn the meeting. The motion was seconded by Trustee Shorter and the meeting was adjourned at 7:24 p.m.

RESOLVED: that the Department of Engineering Science and Physics be closed at the College of Staten Island (CSI) and that both the Department of Engineering and Environmental Science and the Department of Physics and Astronomy be established effective August 1, 2018 subject to financial ability.

EXPLANATION: Pursuant to a thorough review and with the agreement of the concerned faculty, CSI proposes to dissolve the existing Department of Engineering Science and Physics and the instructional staff to be transferred to either 1) the newly created Department of Engineering and Environmental Science or 2) the newly created Department of Physics and Astronomy.

The establishment of the Department of Engineering and Environmental Science and the Department of Physics and Astronomy will facilitate the growth of programs, foster new academic initiatives; facilitate accreditation and curricular development activities that will be more discipline based; and improve chances of obtaining federal grants in support of the programs. The formation of these two new departments with their unique branding and focus will have strong positive implications in their ability to attract top faculty and students to their respective programs.

The creation of these two new departments was reviewed and approved at the College by the appropriate bodies. This proposal will neither impact degree programs nor courses offered by the College nor affect the tenure of any faculty member.

A separate resolution is being submitted to the Board of Trustees via the Chancellor’s University Report to effect the transfer of personnel. Contingent upon approval of the Board of Trustees, designated faculty will be transferred to the newly created Engineering and Environmental Science Department or the Physics and Astronomy Department effective August 1, 2018, with their present rank and status. The resolution regarding these personnel actions is being recommended to the Board of Trustees in the June 2018 University Report.
RESOLVED, that effective August 1, 2018 the following faculty members of the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT be transferred from the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT and appointed to the ENGINEERING AND ENVIRONMENTAL SCIENCE DEPARTMENT:

<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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</thead>
<tbody>
<tr>
<td>Neophytos A. Antoniades</td>
<td>Professor</td>
<td>Engineering Science &amp; Physics (ESP)</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/2003</td>
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<tr>
<td>Alfred Levine</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1970</td>
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<td>William Fritz</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/1/2008</td>
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<tr>
<td>Syed Rizvi</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1996</td>
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</tr>
<tr>
<td>Erlan Feria</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1982</td>
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<tr>
<td>Lihong Li</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/2003</td>
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<tr>
<td>Athanasios Koutavas</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/2005</td>
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<tr>
<td>Jessica (Xin) Jiang</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/2008</td>
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<td>Dwight Richards</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/2008</td>
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<tr>
<td>Leonard Winkler</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1970</td>
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<tr>
<td>Chang Min Kim</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1986</td>
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<tr>
<td>Satyaprakash Das</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/1/1985</td>
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<tr>
<td>Tracy Campbell</td>
<td>Senior CLT</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>2/1/1994</td>
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<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>
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<td><strong>UNTENURED MEMBERS</strong></td>
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<tr>
<td>Mark Feuer</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/27/2013</td>
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<tr>
<td>Vinay Vaishampayan</td>
<td>Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/27/2014</td>
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<td>David Lindo-Atichati</td>
<td>Assistant Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/26/2015</td>
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<tr>
<td>Aleksandar Haber</td>
<td>Assistant Professor</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/25/2016</td>
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<td>Thomas Rodberg</td>
<td>CLT</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>9/2/2014</td>
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<td><strong>CERTIFICATED LECTURERS</strong></td>
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<td>Jane Alexander</td>
<td>Lecturer –Doctoral Schedule</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/26/2015</td>
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<td>Alan Benimoff</td>
<td>Lecturer-Doctoral Schedule</td>
<td>ESP</td>
<td>Engineering &amp; Environmental Science</td>
<td>8/26/2015</td>
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</table>
EXPLANATION: Contingent upon approval of the abolishment of the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT by the Board of Trustees, the above named instructional staff will be transferred from the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT to the ENGINEERING AND ENVIRONMENTAL SCIENCE DEPARTMENT.

* 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 ENGINEERING AND ENVIRONMENTAL SCIENCE DEPARTMENT 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 ENGINEERING AND ENVIRONMENTAL SCIENCE DEPARTMENT 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.
COLLEGE – TRANSFER AND APPOINTMENT OF FACULTY FROM THE Department of ENGINEERING SCIENCE & PHYSICS TO THE DEPARTMENT OF PHYSICS & ASTRONOMY

RESOLVED, that effective August 1, 2018 the following faculty members of ENGINEERING SCIENCE AND PHYSICS DEPARTMENT be transferred from the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT and appointed to the PHYSICS & ASTRONOMY DEPARTMENT:

<table>
<thead>
<tr>
<th>NAME (Last, First)</th>
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<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><strong>TENURED MEMBERS</strong></td>
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<tr>
<td>Gorokhovsky, Anshel</td>
<td>Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>9/1/1996</td>
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<tr>
<td>Incera, Vivian</td>
<td>Professor/Dean</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>8/25/2016</td>
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<td>Kuklov, Anatoly</td>
<td>Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>2/1/1997</td>
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<td>Liu, Charles</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>9/1/2003</td>
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<td>Oganesyan, Vadim</td>
<td>Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>9/1/2008</td>
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<td>Rice, Emily</td>
<td>Associate Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
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<td>Schreiber, William</td>
<td>Professor</td>
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<td>Zaitsev, Alexandre</td>
<td>Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>2/1/2003</td>
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<tr>
<td>Jackeline Figueroa</td>
<td>Senior CLT</td>
<td>ESP</td>
<td>Physics &amp; Astrophysics</td>
<td>9/1/2000</td>
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<tr>
<td><strong>UNTENURED MEMBERS</strong></td>
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<tr>
<td>Ge, Li</td>
<td>Assistant Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>1/27/2014</td>
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<tr>
<td>Gopalakrishnan, Sarang</td>
<td>Assistant Professor</td>
<td>ESP</td>
<td>Physics and Astronomy</td>
<td>8/25/2016</td>
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</table>
EXPLANATION: Contingent upon approval of the abolishment of the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT by the Board of Trustees, the above named instructional staff will be transferred from the ENGINEERING SCIENCE AND PHYSICS DEPARTMENT to the PHYSICS & ASTRONOMY DEPARTMENT.

* 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 PHYSICS & ASTRONOMY DEPARTMENT 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.
RESOLVED, that the program in Public Health leading to the DPH now lead to a PhD effective June 25, 2018 subject to financial ability.

EXPLANATION: New accreditation criteria were implemented by the School’s professional accrediting body, the Council on Education for Public Health (CEPH) in October 2016, defining the purpose and student learning outcomes of a Doctor in Public Health degree. The curriculum of the DPH program, as it exists currently, was examined in the context of the new accreditation criteria over a nearly two-year long process. Faculty found that the program’s mission and curriculum are better aligned with the CEPH criteria for the Ph.D. Hence we are proposing changing the degree award.
1.B.3 – MEDGAR EVERS COLLEGE – ESTABLISHING NEW START-UP NEW YORK INITIATIVES

RESOLVED, that the Board of Trustees of The City University of New York approve the selection of both Sologistics, LLC and LexSet.ai LLC to participate in the Start-Up NY program (the “Program”) through Medgar Evers College. Sologistics’, and LexSet.ai’s participation in the Program shall be subject to all University and New York State requirements. This action will be effective as of June 25, 2018.

EXPLANATION: Sologistics is a project management firm specializing in reengineering businesses for solar adoption in New York State. They will provide Medgar Evers College with student mentors and internship opportunities, support the faculty with curriculum development and applied research opportunities as well as provide the College with potential full-time employment opportunities for graduates.

LexSet.ai has developed a business to business software application for use in the on-line consumer furniture and home supply industries. They will also provide Medgar Evers College with student mentors and internship opportunities, support the faculty with curriculum development and applied research opportunities as well as provide the College with potential full-time employment opportunities for graduates.
Overview of Businesses for consideration by CUNY Board of Trustees, June, 2018
Sologistics LLC is a solar project management firm specializing in business process re-engineering. The company is developing several renewable energy apps, including a project management tool called, Greenlight™, all to be marketed on the SF AppExchange. Under development too is a solar sales app, an education app & a solar site survey tool. All will be used in pursuit of shortening implementation time and cutting through red tape and barriers to solar adoption in NY. While some companies provide similar services piecemeal, none offer Sologistics’ complement of services or has the technological ability to seamlessly scale projects.

Founder: Fayeann Lawrence
Website: https://sologistics.us

- Joint Sponsorship Committee Meeting: May 18, 2018
- Business Location: Brooklyn Navy Yard
- Academic Benefits:
  - Student Mentor
  - Student Internship Sponsor
  - Curriculum Development Advisor
  - Faculty Research Collaborator
  - Local Employer – will publish job opportunities with MEC’s Career Services Office
- Five-year job projection: 10 (minimum)
LexSet.ai LLC is a fully integrable B2B solution that provides Artificial Intelligence (AI)-powered object recognition, spatial search, product assembly assistance, and automated surface tiling for online furniture and home supply consumers.

Founders: Francis Bitonti, Leslie Karpas, Azam Khan
Website: https://www.lexset.ai

- Joint Sponsorship Committee Meeting: May 18, 2018
- Business Location: Brooklyn Navy Yard
- Academic Benefits:
  - Student Mentor
  - Student Internship Sponsor
  - Curriculum Development Advisor
  - Faculty Research Collaborator
  - Local Employer – will publish job opportunities with MEC’s Career Services Office
- Five-year job projection: 5 (minimum)
RESOLVED, that the program in Human Performance and Fitness leading to the Master of Science at Lehman College be approved effective June 25, 2018 subject to financial ability.

EXPLANATION: Lehman College proposes to establish an MS in Human Performance and Fitness which aims to equip students with skills and competencies required to function efficiently in the exercise science, physical fitness and wellness, and/or community health education profession. Employment opportunities are in settings such as corporate and community fitness programs, health clubs, and similar fitness-related industries as well as teachers seeking permanent certification. The new program combines the studies of anatomy, kinesiology, physiology, nutrition and exercise – is an excellent way to tap into a plentiful job market whose goal is the promotion of a healthier nation through exercise and wellness programs. In addition, the program will prepare students for doctoral programs in areas related to exercise science.
LEHMAN COLLEGE
OF
THE CITY UNIVERSITY OF NEW YORK

A PROPOSAL TO ESTABLISH A DEGREE PROGRAM IN

HUMAN PERFORMANCE AND FITNESS

LEADING TO A

MASTER OF SCIENCE (MS)

SPONSORED BY
THE DEPARTMENT OF HEALTH SCIENCES
Approval: 12/6/2017

APPROVED BY
LEHMAN COLLEGE FACULTY SENATE
Approval: ADD DATE

Institutional Representative: Dr. Harriet Fayne, Provost

Contact Person: Dr. Gul Tiryaki-Sonmez, Director, Program of Exercise Science
Department of Health Sciences
718-960-7755
Gul.sonmez@lehman.cuny.edu

Provost’s Signature: ________________________________

Provost’s Name: ________________________________
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<td>2.1. National Needs</td>
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<td>2.2. Regional and Local Needs</td>
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<td>3.1. Demand for a Master’s Degree in Human Performance and Fitness</td>
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Executive Summary

The Exercise Science faculty in the Department of Health Sciences at Lehman College of The City University of New York proposes to establish master’s degree program in Human Performance and Fitness leading to a Master of Science (MS) degree. It is proposed that the new program enroll its first students in the Fall of 2018. This program will be offered under the sponsorship of the Exercise Science faculty in Department of Health Sciences. The proposed program aims to equip students with necessary skills and competencies required to function efficiently in the field of exercise science, and physical fitness and wellness. With personal health and fitness occupying much of our nation's attention, the new program – a graduate degree in Human Performance and Fitness, stressing and tying together the studies of anatomy, kinesiology, physiology, nutrition and exercise – is an excellent way to tap into a plentiful job market whose goal is the promotion of a healthier nation through exercise and fitness programs. The program will emphasize the preparation of the students for corporate and community fitness programs, health clubs, and similar fitness-related industries. Although the program does not fulfill teacher certification requirements, it would be of particular appeal to public school teachers (primary and secondary) in health and physical education, who are required by New York State to obtain a master’s degree for continued employment. Positions in sales or marketing of medical, fitness, sports supplements and sports-related equipment may also be appropriate for students with this degree. In addition, the program will prepare students for doctoral programs in areas related to exercise science, and carry out research that advances the emerging body of literature in human health, fitness and performance.

According to the U.S. Department of Labor Bureau of Labor Statistics, employment of fitness trainers and instructors is expected to grow 10% from 2016 to 2026, outpacing the average for all occupations. The accelerating demand is attributed to businesses, government and insurance organizations becoming increasingly more cognizant of the benefits of health and fitness programs for their employees, and thereby incentives to join gyms and other types of health clubs is expected to increase the need for fitness professionals. Moreover, employment in the field is expected to grow as the general public continues to increase participation in organized sports as a form of entertainment, recreation, and physical conditioning, particularly aging baby boomers who are staying active later in life. In addition, physical education teachers in secondary schools are required to obtain a master’s degree to maintain their jobs and gain promotion. Thus, our proposed program will be of prime interest to a broad range of individuals.

Demand for the program is evident in current Lehman students. The teaching faculty and student advisors in the program of Exercise Science at Lehman College regularly receive inquiries from students who express a desire to enroll in a Master’s degree program in an exercise-related field of study. The Exercise Science undergraduate program at Lehman College currently has over 300 declared majors and many students in the program are very much interested in pursuing a graduate degree in the field. In addition, the program has established itself as one of the premier research institutions in the field of strength and conditioning. The faculty have combined to publish well over 100 scientific papers in the past five years, and have spoken at numerous national and international conferences. As such, the faculty receives many inquiries from prospective students around the world about the availability of studying in a graduate-level exercise-related program at Lehman.

The proposed Graduate Degree Program in Human Performance and Fitness at Lehman College is consistent with the 90x30 initiative that seeks to double the number of high-quality degrees and certificates that students at the college will earn by the year 2030. As noted in the initiative, the Bronx ranks next to last in educational achievement of all 62 counties in New York State, with only 27.7% of residents attaining an associate’s degree.
or higher. Our proposed program will help to increase the employment, wages, and physical, mental, and emotional health and well-being of the community.

The proposed curriculum will be supported by the current Department of Health Sciences. After mapping out a program in advance with the Graduate Program Director, students must complete, with an average of B or better, 33 total credits in the Human Performance and Fitness degree program. All students will be required to take 18 credits in common core courses. Students wishing to pursue the thesis track option will take an additional 9 elective credits plus 6 credits of thesis. Students opting for the capstone track will take an additional 12 elective credits plus 3 credits of capstone.

The Human Performance and Fitness Program is currently expected to enroll 15 new students in the first year. It is expected that the revenues generated from the initial enrollment will make the program self-sustaining from the outset. Given the anticipated student enrollment moving forward, we will hire a full-time faculty line for a fourth faculty member after the first year of implementation. As more qualified students apply, we anticipate expanding enrollment to 25 new students in the second year and 30 new students in the third year. As student enrollment increases, an additional faculty member would be requested to help meet teaching demand.

ii. Abstract

The Exercise Science faculty in the Department of Health Sciences at Lehman College of The City University of New York proposes to establish a master’s degree program in Human Performance and Fitness leading to the Master of Science (MS) degree. It is proposed that the new program enroll its first students in the Fall of 2018. The proposed program aims to equip students with necessary skills and competencies required to function efficiently in the exercise science, and physical fitness and wellness. With personal health and fitness occupying much of our nation's attention, the new program – a graduate degree in Human Performance and Fitness, stressing and tying together the studies of anatomy, kinesiology, physiology, nutrition and exercise – is an excellent way to tap into a plentiful job market whose goal is the promotion of a healthier nation through exercise and fitness programs. The program will emphasize the preparation of the students for corporate and community fitness programs, health clubs, and similar fitness-related industries. Although the program does not fulfill teacher certification requirements, it is suitable for public school teachers (primary and secondary) in health and physical education for completion of their master’s degree, who are required by New York State to obtain a graduate degree for continued employment. Positions in sales or marketing of medical, fitness, sports supplements and sports-related equipment may also be appropriate for students with this degree. In addition, the program will prepare students for doctoral programs in areas related to exercise science, and carry out research that advances the emerging body of literature in human health, fitness and performance.
1. Purposes and Goals

Lehman College of The City University of New York proposes to establish master’s degree program in Human Performance and Fitness leading to the Master of Science (MS) degree. It is proposed that the new program enroll its first students in Fall 2018. This program will be offered under the sponsorship of the Department of Health Sciences. The proposed program aims to equip students with necessary skills and competencies required to function efficiently in the exercise science, physical fitness and wellness, and/or community health education profession. With personal health and fitness occupying much of our nation’s attention, the new program – a major in Human Performance and Fitness, stressing and tying together the studies of anatomy, kinesiology, physiology, nutrition and exercise – is an excellent way to tap into a plentiful job market whose goal is the promotion of a healthier nation through exercise and wellness programs. The program will emphasize the preparation of the students for corporate and community fitness programs, health clubs, and similar fitness-related industries. Although the program does not fulfill teacher certification requirements, it would be of particular appeal to public school teachers (primary and secondary) in health and physical education, who are required by New York State to obtain a master’s degree for continued employment. Positions in sales or marketing of medical, fitness, sports supplements and sports-related equipment may also be appropriate for students with this degree. In addition, the program will prepare students for doctoral programs in areas related to exercise science, and carry out research that advances the emerging body of literature in human health, fitness and performance.

2. Needs

A. National needs

Exercise science, the study of physiological and functional adaptations to movement, encompasses a wide variety of disciplines including, but not limited to: exercise physiology, sports nutrition, sport psychology, motor control/development, and biomechanics. The study of these disciplines is integrated into the academic preparation of exercise science professionals. Exercise science professionals work in health services and the fitness industry, and are skilled in evaluating health behaviors and risk factors, conducting fitness assessments, designing appropriate exercise prescriptions, and motivating individuals to modify negative health habits and maintain positive lifestyle behaviors for health promotion. They conduct these activities in health care, university, corporate, commercial and community settings where their clients participate in health promotion and fitness-related activities.

Physical activity is a positive modulator of health and wellness. A dose-response relationship has been shown between the number of hours performing leisure time physical activity, with those at the highest levels of participation showing a 37% lower risk of all-cause mortality compared to those who are sedentary 1. Similar findings are seen for reductions in mortality from cardiovascular disease and cancer with increasing amounts of physical activity. Moreover, physical inactivity has a marked detrimental effect on the economy. Recent evidence shows that up to 2.6% of total direct health costs can be attributed to sedentary behavior, leading researchers to conclude that the promotion of physical activity is an important non-pharmaceutical action to substantially reduce the costs of public health care 2.

The costs of inactivity are related, in large part, to negative consequences of sedentary behavior on body composition; specifically, the ratio of fat mass to lean mass. A national obesity epidemic exists in the United States, with more than 35.0% of men and 40.4% of women considered obese 3. Obesity is strongly associated with increased cardiometabolic risk, and it is an independent risk factor for all-cause mortality 4. Alarmingly, ~17% of 2- to 19-year-olds in the United States are classified as obese 5. Obese youth are at risk for short-term
medical and psychosocial consequences including abnormalities in growth, blood pressure, lipids, and glucose metabolism, as well as negative self-image and lower quality of life 6, 7. In addition, overweight youth are at risk for becoming obese and developing medical consequences including increased risk of subsequent diabetes, cardiovascular disease, hypertension, gallbladder disease, and osteoarthritis 8, 9. These health problems, which were extremely rare before adulthood, are now occurring at increasingly younger ages. Minority populations, including African-Americans and Hispanics, as well as individuals of low socio-economic status are particularly at risk for obesity and its associated cardiometabolic risks 10, 11.

Moreover, an offshoot of the aging process is a gradual and progressive loss of muscle tissue. Human muscle mass and force reach peak levels between the second and fourth decades of life 12. Thereafter, it is estimated that we lose approximately ½% of our muscle mass per year after the fourth decade of life, increasing to 1%–2% annually after the age of 50 and then accelerating to 3% annually after the age of 60 13, 14. This age-associated loss of muscle has been termed sarcopenia. The rapidly aging population combined with progressively greater life expectancy makes sarcopenia a major public health concern 14. Maintenance of adequate muscle mass has been shown to play a primary role in preventing functional impairment as well as the onset of a multitude of chronic diseases 15. The decrease in muscular strength and power associated with sarcopenia is at the root of many of these health and wellness issues independent on age, size, physical activity, or co-morbidities, indicating a link between sarcopenia and generalized frailty 14. Muscle loss contributes to a reduced ability to carry out activities of daily living (ADLS), impairing the capacity for independent living and thereby increasing the burden to the caregiver and community 15, 16. Although aging in itself has a negative impact on muscle development over time, sarcopenia is largely a function of sedentarism; regimented exercise is widely considered to be the most effective strategy to combat the age-related loss of muscle and strength 17, 18.

The aforementioned facts indicate a vital role for fitness professionals to make an impact on society. This is borne out by the burgeoning number of career opportunities for those in the field. According to the U.S. Department of Labor Bureau of Labor Statistics, employment of fitness trainers and instructors is expected to grow 10% from 2016 to 2026, outpacing the average for all occupations 19. The accelerating demand is attributed to businesses, government and insurance organizations becoming increasingly more cognizant of the benefits of health and fitness programs for their employees, and thereby incentives to join gyms and other types of health clubs is expected to increase the need for fitness professionals. Moreover, employment in the field is expected to grow as the general public continues to increase participation in organized sports as a form of entertainment, recreation, and physical conditioning, particularly aging baby boomers who are staying active later in life.

The health and fitness industry is a dynamic and expanding field. As health care in America continues to remodel itself, exercise science professionals are certain to play an evolving role as providers of many fitness, health and wellness services within a wide variety of delivery systems. The elimination of negative health behaviors for some segments of the population will guide much of the planning and implementing of appropriate wellness programs. Perhaps one of the more exciting challenges facing the exercise science professional going forward is knowing that many changes are coming and that possessing higher levels of education will enhance their career options.

A major focus of the Healthy People 2020 initiative is to improve the health of all Americans through the promotion of increased physical activity, which is stated to “improve the health and quality of life of Americans
of all ages, regardless of the presence of a chronic disease or disability” \(^{20}\). As such, the private, public and government sectors are destined to become pivotal players in helping Americans choose healthy lifestyles, while offering more employment opportunities for the exercise science professional. In addition, the marketplace is becoming much more global, offering several international career opportunities in worksite health promotion centers that provide health education, fitness programming, fitness assessment, lifestyle activities and behavior modification programs.

A master’s degree is a pre-requisite for many exercise-related jobs. Most of the higher paying positions in the field require graduate level training, and the ability to advance in the field is often predicated on educational background. For example, a career as a strength and conditioning coach at Division 1 and professional levels almost invariably requires a master’s degree to interview for the position. Similarly, teachers in physical education are required to obtain a master’s degree to continue employment, even though they are already have achieved teaching certification. Moreover, fitness trainers who possess a master’s degree receive higher pay at many organizations than those who do not, and the ability to rise to managerial levels is often predicated on educational status. Employment titles of graduates in the program include but are not limited to: Strength and Conditioning Coach; Fitness Manager; Sports Scientist; Master-Level Personal Trainer; Chief Science Officer (fitness/supplement-related company); and Corporate Wellness Coordinator. Thus, a master’s degree is very important both to employment and career advancement in the field.

**B. Regional and Local Needs**

Recent statistics from the Robert Wood Johnson Foundation show that the Bronx is the least healthy county in New York State \(^{21}\). It ranks last in quality of life, with 28% of Bronx residents reporting poor to fair health; no other borough in New York City (NYC) exceeded 17% in this metric (see Figure 1). Moreover, according to the Bronx Healthy REACH, a project of the New York City based Institute for Urban Family Health that addresses racial disparities in health outcomes in areas of the southwest Bronx where the population is more than 95% Black and Hispanic, residents of the Bronx have the greatest percentage of obesity and diabetes among residents of all other NYC residents. These statistics are borne out in 2017 data showing adult obesity rates (30%) and physical inactivity levels (31%) in Bronx County are far above the State average and higher than any other borough \(^{21}\) (see Figures 2 and 3).

The combination of obesity and physical inactivity has a decidedly negative effects on their cardio-metabolic health, and this fact is consistent with those who reside in the Bronx. According to the Center for Disease Control, an estimated 12.3% of residents are diagnosed as diabetic; more than any other borough \(^{22}\) (See Figure 4). Furthermore, among all diabetic Bronx residents, the greatest numbers reside in neighborhoods populated primarily by African-American and Hispanic residents, with diabetes being most prevalent among blacks and Hispanics in all of New York City.

Alarmingly, the health crisis in the Bronx extends to the borough’s youth. In NYC, over 20% of students in elementary school have a body mass index greater than the 95\(^{th}\) percentile, and the rate is 31% among Hispanic students, who comprise the majority of students in the Bronx \(^{23}\). This index percentile places the students at great risk for coronary heart disease and other associated conditions. **Based on the aforementioned information, there is a dire need in the Bronx for qualified exercise science professionals who can work to help others reduce modifiable disease risk factors and improve quality of life.**
Figure 1

Percentage of NYC Residents Reporting Poor Quality of Life

Bronx: 28
Queens: 17
Brooklyn: 17
Manhattan: 15
Staten Island: 14

Figure 2

Percentage of NYC Residents Who are Obese

Bronx: 30
Staten Island: 28
Queens: 24
Brooklyn: 23
Manhattan: 15
Figure 3

Percentage of NYC Residents Who are Inactive

<table>
<thead>
<tr>
<th>Borough</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Bronx</td>
<td>31</td>
</tr>
<tr>
<td>Staten Island</td>
<td>29</td>
</tr>
<tr>
<td>Queens</td>
<td>28</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>26</td>
</tr>
<tr>
<td>Manhattan</td>
<td>18</td>
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Figure 4

Percentage of NYC Residents with Diabetes

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<tr>
<th>Borough</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Bronx</td>
<td>12.3</td>
</tr>
<tr>
<td>Queens</td>
<td>11.2</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>10.3</td>
</tr>
<tr>
<td>Staten Island</td>
<td>9.5</td>
</tr>
<tr>
<td>Manhattan</td>
<td>6.7</td>
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C. Institutional Needs
The Bronx is in dire need of qualified professionals trained in exercise science to meet the pressing health and fitness needs of its unique population. A master’s degree is the acknowledged advanced degree for health and fitness professionals. It is a credential that sets recipients apart from other practitioners, and is generally required for attaining mid- to high-level positions in fitness and wellness, as well as attaining higher pay in existing positions. Although the program does not fulfill teacher certification requirements, it would be of particular appeal to public school teachers (primary and secondary) in health and physical education, who are required by New York State to obtain a master’s degree for continued employment. In addition, a master’s degree is generally a pre-requisite for entry into doctoral programs for those who seek careers as professors and/or researchers in the field. There are a number of universities across the country that provide programs related to human performance and fitness, lending credence to the popularity of this degree.

Currently, there is no institution located in the Bronx that provides a master’s degree in any exercise science-related area. Within the City University of New York, the only institutions awarding such a degree are Queens College (MS in Nutrition and Exercise Sciences) and Brooklyn College (MS in Exercise and Sport Science). Further, the program proposed herein would be the only graduate degree program in New York City specifically developed with a focus on enhancing human performance and fitness. This not only has applicability to disease prevention, but also to promoting greater athletic abilities, which is a primary goal of an increasing percentage of the population and of particular relevance to youth fitness. Importantly, a Lehman College master’s degree program in Human Performance and Fitness would offer academic training where its residents live and work, without having to travel 3 or more hours per day to attend Brooklyn or Queens for that education and training.

As noted above, the Lehman College Master’s Degree Program in Human Performance and Fitness would differ from the programs at Brooklyn College and Queen’s College insofar as it will be more specific to the area of human performance, emphasizing resistance training and coaching theory as well as sports management/marketing. The programs at the other institutions are more focused on cardiorespiratory fitness and rehabilitation. There is a big need and demand in the methodology of coaching and training principles in the Bronx and its surrounding area since many physical education teachers and health educators coach their school teams but do not have enough foundation to do so effectively. Our program will provide the requisite advanced knowledge about training in different sports, leading to better coaching and management of athletes. Moreover, personal trainers and other fitness professionals require this knowledge to work with a growing-segment of the population who have athletic-related fitness aspirations.

The proposed graduate degree program in Human Performance and Fitness at Lehman College is consistent with the 90x30 initiative that seeks to double the number of high-quality degrees and certificates that students at the college will earn by the year 2030. As noted in the initiative, the Bronx ranks next to last in educational achievement of all 62 counties in New York State, with only 27.7% of residents attaining an associate’s degree or higher. Our program will help to increase the employment, wages, and physical, mental, and emotional health and well-being of the community.

3. Students

A. Demand for Master’s Degree in Human Performance and Fitness
The teaching faculty and student advisors in the program of Exercise Science at Lehman College regularly receive inquiries from students who express a desire to enroll in a Master’s degree program in an exercise-
related field of study. The Exercise Science undergraduate program at Lehman College currently has over 300 declared majors and many students in the program are very much interested in pursuing a graduate degree in the field. In addition, the program has established itself as one of the premier research institutions in the field of strength and conditioning. The faculty have combined to publish well over 100 scientific papers in the past five years, and have spoken at numerous national and international conferences. As such, the faculty receives many inquiries from prospective students around the world about the availability of studying in a graduate-level exercise-related program at Lehman.

To assess interest of undergraduate exercise science students in the proposed master’s degree program, we carried out a survey in four of our upper level courses (EXS 423, EXS 424, EXS 425, and EXS 430) asking the following questions:

1. Would you be interested in enrolling in the program?
   a. Yes __________  
   b. No __________

2. If yes, what time period would you consider enrolling
   a. Within 1 year graduation __________  
   b. Within 2 years graduation __________  
   c. Within 3 years graduation __________

3. If yes, what would your primary reason be for attending:
   a. Better pay __________  
   b. Career advancement __________  
   c. Personal knowledge __________

A total of 74 students responded to the survey. Of the respondents, 70% stated that they would be interested in attending the program. A majority (69%) of those interested in attending indicated a timeline for applying of 1 year after graduation; 23% indicated a timeline of 2 years and 8% indicated a timeline of 3 years. The primary reasons given for attending were career advancement (75%), better pay (13%) and personal knowledge (12%). These findings highlight the overwhelming interest in the program from current Lehman exercise science students.

It is our intention to admit a class of 15 students in the fall semester of the first year, with a smaller number of students entering in the spring semester and then progressively increasing over time as the program gains popularity. As shown in Table 1, we anticipate that the program will approach 90 enrolled students after 5 years. The projected enrollment is based on the number of inquiries that we have received over the past several years, the marketing efforts that we will pursue, and the anticipated publicity that is generated from the program’s success while factoring in an attrition rate of 1 student per semester.

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<td>15</td>
<td>10</td>
<td>15</td>
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<tr>
<td>Fall Continuing</td>
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<td>18</td>
<td>23</td>
<td>36</td>
<td>48</td>
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<tr>
<td><strong>Fall Total</strong></td>
<td><strong>15</strong></td>
<td><strong>28</strong></td>
<td><strong>38</strong></td>
<td><strong>56</strong></td>
<td><strong>73</strong></td>
</tr>
<tr>
<td>Spring Continuing</td>
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<td>27</td>
<td>32</td>
<td>43</td>
<td>56</td>
</tr>
<tr>
<td>Spring New</td>
<td>5</td>
<td>12</td>
<td>15</td>
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Table 1: 5-Year Projected Enrollment

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<th>19</th>
<th>39</th>
<th>47</th>
<th>63</th>
<th>86</th>
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B. Recruitment Strategy
The targeted student body for the Lehman College Graduate Program in Human Performance and Fitness will focus on students graduating from the Lehman College Exercise Science Undergraduate Program, as well targeting those graduating from other exercise-related undergraduate programs around the world. A mixed marketing approach will be developed in conjunction with the Office of Graduate Admission to target current educators, fitness organizations, pharmaceutical companies, undergraduate exercise science directors and healthcare organizations. Social media platforms will also be used to target prospective students and make them aware of the opportunities for graduate studies in Human Performance and Fitness at Lehman. In addition, we will send emails to the administration at secondary schools in the Tri-State area so they can let teachers in health and physical education know about the possibility of obtaining their master’s degree in our program to meet the requirements for continued employment.

4. Curriculum
The proposed curriculum will be supported by the current Department of Health Sciences. After mapping out a program in advance with the Graduate Program Director, students must complete a minimum of 33 credits in Human Performance and Fitness, attaining an average of B or better. All students will be required to take 18 credits in common core courses. Students will then have two options: A 6-credit thesis consisting of 9 elective credits or a 3-credit capstone project consisting of 12 elective credits. Students will be encouraged to enroll in a full course load (9 credits) each semester to facilitate completion of the program in four semesters. Consistent with the Lehman undergraduate/graduate initiative, students enrolled in the undergraduate Exercise Science program at Lehman with a GPA of 3.0 or higher and who have taken >90 credits will be permitted to take up to 12 credits of graduate classwork and receive credit for the classes at the master’s degree level if/when they matriculate into the Human Performance and Fitness program.

A. Admission Requirements
- Bachelor’s degree (or its equivalent) from an accredited college or university
- Demonstration of the potential to pursue graduate study successfully—that is, attainment of a minimum undergraduate Grade Point Average (GPA) of 3.0 in the undergraduate record as a whole and a 3.0 in courses specific to exercise science. Extraordinary circumstances for applicants with a lower GPA will be considered on a case-by-case basis at the discretion of the program director.
- A minimum of 30 credit hours in exercise-related coursework. Those who do not meet these requirements can apply for special circumstances and admission will be considered on case-by-case basis. Viable candidates will be required to take leveling courses at the undergraduate level based on their academic background and then admitted conditionally provided they pass these courses.
- Submission of three letters of recommendation, at least two of which must be from a person directly involved in the field of exercise science, either as a professor, researcher, or practitioner
- Submission of a personal statement of approximately 500 words indicating as precisely as possible the applicant’s preparation for master’s work and interest in pursuing a career in the fitness field
B. Proposed Graduate Curriculum
The requirements of the proposed Master of Science degree program in Human Performance and Fitness are as follows:

Option 1: Thesis

Core Courses ............................................................................................................................................ 18 Credits
   EXS 501 Physical Activity, Exercise and Fitness ................................................................. 3 credits
   EXS 502 Advanced Exercise Physiology ........................................................................... 3 credits
   EXS 503 Advanced Research Methods in Exercise Science ........................................... 3 credits
   EXS 504 Advanced Exercise Testing and Prescription ..................................................... 3 credits
   EXS 505 Advanced Sports Nutrition ............................................................................... 3 credits
   EXS 506 Applied Training Methodologies ...................................................................... 3 credits

Elective Courses .......................................................................................................................................... 9 Credits
   EXS 615 Advanced Biomechanics and Kinesiology .......................................................... 3 credits
   EXS 616 Advanced Motor Learning .................................................................................. 3 credits
   EXS 626 Fitness Management and Marketing ................................................................. 3 credits
   EXS 665 Psychology of Sport .............................................................................................. 3 credits
   **EXS 680 Special Topics in Exercise Science ................................................................. 3 credits

Thesis .......................................................................................................................................................... 6 Credits
   EXS 790 Thesis Workshop 1 ............................................................................................... 3 credits
   EXS 791 Thesis Workshop 2 ............................................................................................... 3 credits

Option 2: Capstone Project

Core Courses ............................................................................................................................................ 18 Credits
   EXS 501 Physical Activity, Exercise and Fitness ................................................................. 3 credits
   EXS 502 Advanced Exercise Physiology ........................................................................... 3 credits
   EXS 503 Advanced Research Methods in Exercise Science ........................................... 3 credits
   EXS 504 Advanced Exercise Testing and Prescription ..................................................... 3 credits
   EXS 505 Advanced Sports Nutrition ............................................................................... 3 credits
EXS 506 Applied Training Methodologies .............................................................. 3 credits

Elective Courses ........................................................................................................ 12 Credits
- EXS 615 Advanced Biomechanics and Kinesiology .............................................. 3 credits
- EXS 616 Advanced Motor Learning ...................................................................... 3 credits
- EXS 626 Fitness Management and Marketing ..................................................... 3 credits
- EXS 665 Psychology of Sport ................................................................................ 3 credits
- **EXS 680 Special Topics in Exercise Science ...................................................... 3 credits

Capstone Project ......................................................................................................... 3 Credits
- EXS 795 Capstone Project Workshop ................................................................... 3 credits

C. Proposed Sequence of Courses (Thesis Option)
Semester 1:
- EXS 501 Physical Activity, Exercise and Fitness
- EXS 502 Advanced Exercise Physiology
- EXS 503 Advanced Research Methods in Exercise Science

Semester 2:
- EXS 504 Advanced Exercise Testing and Prescription
- EXS 505 Advanced Sports Nutrition
- EXS 506 Applied Training Methodologies

Semester 3:
- EXS 615 Advanced Biomechanics and Kinesiology
- EXS 665 Psychology of Sport
- EXS 790 Thesis Workshop 1

Semester 4:
- EXS 626 Fitness Management and Marketing
- EXS 791 Thesis Workshop 2

D. Proposed Sequence of Courses (Capstone Option)
Semester 1:
- EXS 501 Physical Activity, Exercise and Fitness
- EXS 502 Advanced Exercise Physiology
EXS 503 Advanced Research Methods in Exercise Science

Semester 2:
- EXS 504 Advanced Exercise Testing and Prescription
- EXS 505 Advanced Sports Nutrition
- EXS 506 Applied Training Methodologies

Semester 3:
- EXS 615 Advanced Biomechanics and Kinesiology
- EXS 665 Psychology of Sport
- EXS 616 Advanced Motor Learning

Semester 4:
- **EXS 680 Special Topics in Exercise Science**
- EXS 795 Capstone Project Workshop

**denotes existing course**

**E. Thesis Requirement (Option 1)**
Students choosing the thesis option will be required to submit a final thesis on a research study on a topic of their choice that must be approved by a faculty advisor. Students will be advised to secure a working relationship with a faculty advisor whose area of expertise aligns with their thesis interest by the time they have completed 15 credits in the program. The thesis must be a study of publishable quality; students in this option will be encouraged and provided with appropriate support to submit their project for publication in a refereed journal. The final thesis will be read by the faculty advisor and a second reader approved by the Graduate Program Director. Two copies of the thesis approved by the faculty advisor—one in electronic format (.pdf), one in print—will be submitted to the Graduate Program Director.

**F. Capstone Requirement (Option 2)**
Students choosing the capstone option will be required to submit a final project on a topic of their choice. Students will be advised to secure a working relationship with a faculty advisor whose area of expertise aligns with their capstone interest by the time they have completed 15 credits in the program. The project should be either a narrative or systematic review of literature; meta-analysis of data can also be included as part of the capstone project. The project must be of publishable quality; students in this option will be encouraged and provided with appropriate support to submit their project for publication in a refereed journal. The final project will be read by the faculty advisor and a second reader approved by the Graduate Program Director. Two copies of the project approved by the faculty advisor—one in electronic format (.pdf), one in print—will be submitted to the Graduate Program Director.
5. **Cost Assessment**

**A. Faculty**

Lehman College has three full-time faculty members in exercise science as listed in Table 2 below. Each member is fully qualified to teach the courses in the program. In addition, the exercise science program has 6 adjunct faculty with a minimum of a master’s degree in an exercise-related field.

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gul Tiryaki-Sonmez</td>
<td>Professor</td>
</tr>
<tr>
<td>Brad Schoenfeld</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Andrew Alto</td>
<td>Instructor</td>
</tr>
</tbody>
</table>

**New Faculty**

We plan to hire a full-time lecturer (see Appendix F for qualifications, etc.) line for a fourth faculty member in the Graduate Program in Human Performance and Fitness after the first year of implementation. The Program is currently expected to enroll 15 new students in the first year. As more qualified students apply, we anticipate expanding enrollment to 25 new students in the second year and 30 new students in the third year. As student enrollment increases, an additional faculty member would be requested.

### Table 2: Lehman College Faculty in Exercise Science

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gul Tiryaki-Sonmez</td>
<td>Professor</td>
</tr>
<tr>
<td>Brad Schoenfeld</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Andrew Alto</td>
<td>Instructor</td>
</tr>
</tbody>
</table>

**Form SED D 7: Faculty Biographical Sketches**

<table>
<thead>
<tr>
<th>Course Title</th>
<th># credits</th>
<th>Faculty Member Assigned to each Course</th>
<th>Highest Earned Degree and Discipline; College or University</th>
<th>Relevant Occupational Experience</th>
<th>Relevant Other Experience, Certificates</th>
<th>Recent Scholarly Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXS 601 Physical Activity, Exercise and Fitness</td>
<td>3</td>
<td>Gul Sonmez</td>
<td>PhD in Exercise Science, University of New Mexico</td>
<td>Experience in coaching athletes</td>
<td></td>
<td>Numerous publications in peer-reviewed journals, plus presentations, and invited talks</td>
</tr>
<tr>
<td>EXS 602 Advanced Exercise Physiology</td>
<td>3</td>
<td>Gul Sonmez</td>
<td>PhD in Exercise Science, University of New Mexico</td>
<td>Experience in coaching athletes</td>
<td></td>
<td>Numerous publications in peer-reviewed journals, plus presentations, and invited talks</td>
</tr>
<tr>
<td>EXS 603 Advanced</td>
<td>3</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and</td>
<td>Experience in personal</td>
<td>Certified Strength and</td>
<td>Numerous publications in</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Instructor</td>
<td>Degree/Qualifications</td>
<td>Experience</td>
<td>Publications/Activities</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>EXS 604</td>
<td>Advanced Exercise Testing and Prescription</td>
<td>Gul Sonmez</td>
<td>PhD in Exercise Science, University of New Mexico</td>
<td>Training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Peer-reviewed journals and textbooks, plus awards, presentations, and invited talks</td>
<td></td>
</tr>
<tr>
<td>EXS 605</td>
<td>Advanced Sports Nutrition</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus presentations, and invited talks</td>
<td></td>
</tr>
<tr>
<td>EXS 606</td>
<td>Applied Training Methodologies</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus presentations, and invited talks</td>
<td></td>
</tr>
<tr>
<td>EXS 615:</td>
<td>Advanced Kinesiology and Biomechanics</td>
<td>Andrew Alto</td>
<td>MA in Health Education and Promotion, Lehman College</td>
<td>Experience in personal training</td>
<td>Refereed paper in review plus conference presentations</td>
<td></td>
</tr>
<tr>
<td>EXS 616:</td>
<td>Advanced Motor Learning and Performance</td>
<td>Andrew Alto</td>
<td>MA in Health Education and Promotion, Lehman College</td>
<td>Experience in personal training</td>
<td>Refereed paper in review plus conference presentations</td>
<td></td>
</tr>
<tr>
<td>EXS 626:</td>
<td>Fitness Management and Marketing</td>
<td>Gul Sonmez</td>
<td>PhD in Exercise Science, University of New Mexico</td>
<td>Experience in coaching athletes</td>
<td>Numerous publications in peer-reviewed journals, plus presentations, and invited talks</td>
<td></td>
</tr>
<tr>
<td>EXS 665:</td>
<td>Psychology of Sport</td>
<td>Gul Sonmez</td>
<td>PhD in Exercise Science, University of New Mexico</td>
<td>Experience in coaching athletes</td>
<td>Numerous publications in peer-reviewed journals, plus presentations, and invited talks</td>
<td></td>
</tr>
</tbody>
</table>
### University of New Mexico

<table>
<thead>
<tr>
<th>Course</th>
<th>Instructor</th>
<th>Degree</th>
<th>Experience</th>
<th>Certification</th>
<th>Publications/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXS 680:</strong> Special Topics in Exercise Science</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Certified Strength and Conditioning Specialist</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus awards, presentations, and invited talks</td>
</tr>
<tr>
<td><strong>EXS 790:</strong> Thesis Workshop Thesis Workshop 1</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Certified Strength and Conditioning Specialist</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus awards, presentations, and invited talks</td>
</tr>
<tr>
<td><strong>EXS 791:</strong> Thesis Workshop 2</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Certified Strength and Conditioning Specialist</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus awards, presentations, and invited talks</td>
</tr>
<tr>
<td><strong>EXS 795:</strong> Capstone Project Workshop</td>
<td>Brad Schoenfeld</td>
<td>PhD in Health Promotion and Wellness, Rocky Mountain University</td>
<td>Experience in personal training, exercise and sports nutrition consultant to amateur and professional sports teams</td>
<td>Certified Strength and Conditioning Specialist</td>
<td>Numerous publications in peer-reviewed journals and textbooks, plus awards, presentations, and invited talks</td>
</tr>
</tbody>
</table>

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**Form SED D 8: Status of Each Faculty Member Listed in the Previous Pages**

<table>
<thead>
<tr>
<th>Faculty member</th>
<th>Title of position at Lehman College</th>
<th>Full-time (FT) or adjunct (Adj) at Lehman</th>
<th>If part-time in the program, specify other responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gul Sonmez</td>
<td>Professor</td>
<td>FT</td>
<td>N/A</td>
</tr>
<tr>
<td>Brad Schoenfeld</td>
<td>Assistant Professor</td>
<td>FT</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Form SED D 9: Number and Title of New Positions to Be Established and Minimum Qualifications

<table>
<thead>
<tr>
<th>Title of Position</th>
<th># New Positions</th>
<th>Minimum Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>1</td>
<td>PhD in exercise-related coursework</td>
</tr>
</tbody>
</table>

B. Facilities and Equipment

No additional space and equipment will be required for initiation of the program. The Lehman Human Performance Laboratory is a state-of-the-art facility that has received substantial funding from grants. We currently have several hundred thousand dollars-worth of equipment that allows sophisticated exercise-related testing and training for both practical and research purposes. Consistent with CUNY guidelines, we will seek to develop partnerships with supplement companies, equipment companies, hospitals, and other organizations to help pay for additional equipment, sponsorships of student travel for conferences and presentations, and other relevant expenses that may arise.

C. Library and Instructional Materials:

Lehman College’s Leonard Lief Library is housed in a modern, four-story building with an online catalog and circulation system providing access to over 200 online subscription databases. More than 300 state-of-the-art computer workstations are accessible for student use with full Internet access, as well as iPads, laptops, and eReaders available for loan at the Circulation-Reserve Desk. The Graduate Research Room is reserved exclusively for graduate student use, while the Access and Technology Center provides assistive technology for students with special needs. The Library’s homepage [http://www.lehman.edu/library/] links to the CUNY+ online library catalog, licensed electronic resources, electronic journals, and eBook packages.

The monograph collection of over 362,674 volumes is supplemented by 652,700 microforms (including ERIC documents), 95,112 electronic journals, and over 554,885 electronic books. The Library is a designated Depository for state and federal government documents. The research collection is augmented to support a robust undergraduate and graduate curriculum. Interlibrary loan service and CUNY’s own library intra-borrowing system are available to members of the community.

In addition to general and specialized non-circulating reference collections, the Library offers the Reserve collection including textbooks for requested courses. Specialized service areas include the Periodicals Room, well-equipped instructional labs, and Bronx History Archives. Reference librarians support student research during library hours, as well as offer special Consultations and online reference chat. The Library has an active instructional program instilling tenets of information literacy and critical evaluation of information sources.
The Library licenses a wide array of exercise-related journals from major publishers (Elsevier, Lippincott Williams & Wilkins, and Wiley), providing free access to thousands of peer-reviewed literature articles. When an article is not immediately available, it can usually be fulfilled via Interlibrary Loan.

D. **Budget Tables**

The new program will not affect the needs of Lehman College Library or Lehman’s central information resources. The projected costs and revenues are indicated below in Tables 3 and 4.

The Projected Revenues below use the figure of $440 per graduate credit. It is expected that the Human Performance and Fitness Program will be self-sustaining from the outset and given the anticipated student enrollment could hire an additional faculty member after the first year.
**Table 3**

Projected Expenditures for the Proposed MS Program in EXS *

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>1st Year 2018-2019 Academic Year</th>
<th>2nd Year 2019-2020 Academic Year</th>
<th>3rd Year 2020-2021 Academic Year</th>
<th>4th Year 2021-2023 Academic Year</th>
<th>5th Year 2023-2024 Academic Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Resources</td>
<td>$11,000 adjunct faculty</td>
<td>Salary for one full-time lecturer: $52,258 + fringe benefits 25,606 + start-up package 10,000</td>
<td>Total this year = $87,864</td>
<td>Salary for one full-time lecturer: $52,258 + fringe benefits 25,606</td>
<td>Salary for one full-time lecturer: $52,258 + fringe benefits 25,606</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Resources</td>
<td>Computer hardware: $3,000 Relevant software: $1,000 Supplies: $1,000 TOTAL: $5,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Library</strong></td>
<td></td>
<td>Additional Users: $500</td>
<td>Additional Users: $500</td>
<td>Additional Users: $500</td>
<td>Additional Users: $500</td>
</tr>
<tr>
<td>New Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Resources</td>
<td>Advertising and office supplies $1,250</td>
<td>Advertising and office supplies $1,250</td>
<td>Advertising and office supplies $1,250</td>
<td>Advertising and office supplies $1,250</td>
<td>Advertising and office supplies $1,250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>$17,750</td>
<td>$89,614</td>
<td>$79,614</td>
<td>$79,614</td>
</tr>
<tr>
<td>New Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Salary projected at $52,258, as per current PSC-CUNY Agreement. The amount is kept constant for five years as it coincides with the last step before longevity. Fringe benefits calculated at 49% of projected salary.
TABLE 4

Projected Revenues for the Proposed Program *

<table>
<thead>
<tr>
<th>Revenues</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Year 2018-2019 Academic Year</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Year 2019-2020 Academic Year</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Year 2020-2021 Academic Year</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; Year 2021-2023 Academic Year</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; Year 2023-2024 Academic Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Resources</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>$137,836</td>
<td>$271,618</td>
<td>$344,590</td>
<td>$482,426</td>
<td>$644,586</td>
</tr>
<tr>
<td>03. Total</td>
<td>$137,836</td>
<td>$271,618</td>
<td>$344,590</td>
<td>$482,426</td>
<td>$644,586</td>
</tr>
<tr>
<td><strong>State Revenue:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. From Existing Resources</td>
<td>No formula for additional aid</td>
<td>No formula for additional aid</td>
<td>No formula for additional aid</td>
<td>No formula for additional aid</td>
<td>No formula for additional aid</td>
</tr>
<tr>
<td>05. From New Sources</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</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><strong>Grand Total:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From New Sources</td>
<td>$137,836</td>
<td>$271,618</td>
<td>$344,590</td>
<td>$482,426</td>
<td>$644,586</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$137,836</td>
<td>$271,618</td>
<td>$344,590</td>
<td>$482,426</td>
<td>$644,586</td>
</tr>
</tbody>
</table>

*Formula for per student tuition revenue: number of matriculated full-time students x $4,054 per semester tuition and fees for NYS residents. Revenues are likely to be higher since some students will be out-of-state or international.
6. Evaluation

A. Internal Evaluation
Currently, the Health Sciences Department has a rigorous system for assessing and monitoring program outcomes. The proposed Human Performance and Fitness master’s degree program will become another component in the Department’s ongoing assessment plan. The following are the evaluation strategies that will be used to assess the proposed Human Performance and Fitness program:

Student Outcomes
It is essential to ensure that students are achieving high standards of learning in the program. The following tools will be employed to evaluate whether these standards are being met: individual course-based evaluations; grade point averages; and theses/capstone projects.

Course-based Evaluations
Faculty will evaluate students’ performance based on the pre-determined objectives of each course. Methods of evaluation will include examinations, projects, presentations, etc., which will be specified in the course syllabi. Course methods will be reviewed each semester to ensure that students are achieving the desired mastery of knowledge, and relevant changes will be made based on instructor insights and student feedback from the course/instructor assessments.

Grade Point Average
All students enrolled in the Human Performance and Fitness master’s degree program will be required to maintain an overall 3.0 (B) grade point average (GPA) to maintain active status in the program. The program director will be responsible for ensuring that students and intervening with those students who are in danger of falling below the minimum GPA requirement.

Thesis/Capstone Project
Students will be required to complete either a thesis or capstone project for successful completion of the program. Students must receive a B or higher grade on this requirement for graduation. Students will act in collaboration with their mentor/faculty advisor to choose an appropriate problem to research and propose a strategy to study the problem. The ability to successfully carry out such a research-oriented endeavor will display competency in the application of the knowledge, skills and dispositions acquired throughout their coursework.

Program Graduates
In the last semester prior to graduation, students in the Human Performance and Fitness program will be asked to complete an exit survey that assesses their overall experience in the program, from initial application to the filing for graduation. Suggestions for improving the academic, social, and experienced-based components of the program will be solicited from each student. Collected information and feedback will be shared with the relevant offices (e.g., graduate admissions, academic support, academic departments, etc.) to facilitate continuous program and operations improvement. In addition, we will attempt to follow up with student career achievements over time. This will entail sending student’s regular emails to ask about their career trajectory. The information will be entered into a spreadsheet and the faculty will assess to determine whether needs are being met and/or if other opportunities warrant revisions/additions to program curriculum.
Faculty Performance
Faculty will be evaluated according to a three-tier process that includes: 1) an annual administrative evaluation by the department chair of the individual’s scholarly activities and overall contributions to the department, the school, and the college; 2) peer evaluation of teaching; and 3) student course and teaching evaluations.

Administrative Evaluation
Each year, faculty members are required to submit an updated CV comprising their scholarly achievements (publications, grant activity, presentations, etc) to a data management site (Digital Measures). Moreover, untenured faculty undergo an annual evaluation meeting with the department chair that entails a review of their CV along with plans for new research and grants. Part of the chair’s role in the process is to support the untenured faculty in their quest to conduct innovative research that furthers their role as a leader-educator at the college. The chair also evaluates the faculty member on three areas of service: college-wide service, school-wide service, and department-wide service. If the faculty member is lacking in any of these areas, the chair makes recommendations for specific committee work and/or projects for the member to explore.

Peer Evaluation
Each semester, untenured full-time and all part-time faculty members are observed by a peer and evaluated for their teaching competency. The process involves the peer sitting in on a class and providing written commentary on the teaching performance of the instructor, including an assessment of the instructor’s strengths and weaknesses. The instructor is then provided with a copy of the written report and given an opportunity to discuss the observations, ask follow up questions, and raise any perceived issues with the report. This collaborative effort provides a systematic means to foster ongoing improvements in education in the program.

Course and Instructor Evaluation
Each semester, students enrolled in the Human Performance and Fitness master’s degree program will be afforded the opportunity to complete a course/instructor assessment through the Student Evaluation of Teaching and Learning (SETL) online survey. This survey provides quantifiable data based on a Likert-type scale, allowing objective comparisons based on mean scores. The results of these evaluations will be tabulated and then shared with the dean, department chair, and faculty member. Faculty strengths and weaknesses, as well as suggestions for improvement, will be discussed between the department chair and faculty member during the annual evaluation meeting. Appropriate professional development plans will be created based on mutual agreement between the chair and faculty members.

B. External Evaluation
(Please see Appendix B for the full CV of the external reviewer; Appendix C for the completed program review and; Appendix D for our response to the review.)
Appendix A

Courses and Syllabi in Human Performance and Fitness

EXS 501 Physical Activity, Exercise and Fitness. 3 hours, 3 credits. Exploration of the role of physical activity and exercise in the development and maintenance of health and fitness. Guidelines for physical activity and exercise in relation to health benefits are examined across the entire lifespan (infancy, childhood and adolescence, adulthood, and older ages), with consideration to the broader implications of their impact on local and global challenges.

EXS 502 Advanced Exercise Physiology. 3 hours, 3 credits. Human anatomy and physiology as related to physical activity, exercise, and work. Study of the musculoskeletal, endocrine, cardiovascular, and pulmonary systems; bioenergetics; and body composition, anatomy and physiology of aging, and health-related benefits.

EXS 503 Advanced Research Methods in Exercise Science: 3 hours, 3 credits. Concepts of research, statistics and evaluation in exercise science. Techniques of measurement and methods of analyzing and interpreting data.

EXS 504 Advanced Exercise Testing and Prescription. 3 hours, 3 credits. Principles of fitness and the development of exercise programs to enhance health and/or human performance in a variety of settings. Methods of evaluating physiological adaptation to exercise, using laboratory and field experiences.

EXS 505 Advanced Sports Nutrition. 3 hours, 3 credits. Nutritional and metabolic requirements of physical activity. The health and well-being benefits of an optimal diet-exercise regimen for physical activity, exercise, and sport participation will be emphasized.

EXS 506 Applied Training Methodologies. 3 hours, 3 credits. Applications of strength and conditioning theories and training principles including fitness testing, protocol design and goal assessment to clients in diverse exercise and fitness settings.

EXS 615: Advanced Kinesiology and Biomechanics. Study and application of anatomic and mechanical principles of human movement.


EXS 626: Fitness Management and Marketing. 3 hours, 3 credits. Management and marketing principles as they relate to budget, facility design, purchasing, scheduling, programming, and personnel issues in the field of exercise science and wellness.

EXS 665: Psychology of Sport. 3 hours, 3 credits. Theories, concepts, and intervention techniques of sport psychology. Topics covered include motivation theory applied to sport, team dynamics, psychological skills training, the psychology of sport injury, and burnout in sport.
**EXS 680: Special Topics in Exercise Science.** 3 hours, 3 credits. Examination of various topics in exercise science. Topics to be announced each semester.

**EXS 790: Thesis Workshop 1:** 3 hours, 3 credits. Development of competency in effective scientific writing and critical analysis of research.

**EXS 791: Thesis Workshop 2:** 3 hours, 3 credits. Design and execution of a publishable research study on an exercise-related topic that demonstrates content expertise

**EXS 795: Capstone Project Workshop:** 3 hours, 3 credits.

**denotes existing course**
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. **Type of change:** New Course

<table>
<thead>
<tr>
<th>Department(s)</th>
<th>Health Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career</td>
<td>[ ] Undergraduate [ x ] Graduate</td>
</tr>
<tr>
<td>Academic Level</td>
<td>[ X ] Regular [ ] Compensatory [ ] Developmental [ ] Remedial</td>
</tr>
<tr>
<td>Subject Area</td>
<td>Human Performance and Fitness</td>
</tr>
<tr>
<td>Course Prefix &amp; Number</td>
<td>EXS 501</td>
</tr>
<tr>
<td>Course Title</td>
<td>Physical Activity, Exercise and Fitness</td>
</tr>
<tr>
<td>Description</td>
<td>Exploration of the role of physical activity and exercise in the development and maintenance of health and fitness. Guidelines for physical activity and exercise in relation to health benefits are examined across the entire lifespan (infancy, childhood and adolescence, adulthood, and older ages), with consideration to the broader implications of their impact on local and global challenges.</td>
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3. **Rationale:**

EXS 501 is the entry-level course for graduate students that provides the basis for the role of exercise in overall health and wellness

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Interpret relationship between physical activity, exercise, fitness and health
   - Articulate physical activity recommendations and levels
   - Display an understanding of physical activity behavior (and experience of specialist measurement methods)
   - Demonstrate competence in assessment of health related fitness (and experience of specialist measurement methods)
   - Demonstrate competence in assessment of body composition (and experience of specialist measurement methods)
   - Discuss nuances of the psychology of physical activity and health
   - Describe physical activity, exercise, fitness and health issues in individuals aged 0-18 years
   - Describe sedentary behavior
   - Articulate determinants of physical activity across the life-span

5. **Date of Departmental Approval:** 12/6/17
### Type of change: New Course

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<td>Course Prefix &amp; Number</td>
<td>EXS 502</td>
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<tr>
<td>Course Title</td>
<td>Advanced Exercise Physiology</td>
</tr>
<tr>
<td>Description</td>
<td>Human anatomy and physiology as related to physical activity, exercise, and work. Study of the musculoskeletal, endocrine, cardiovascular, and pulmonary systems; bioenergetics; and body composition, anatomy and physiology of aging, and health-related benefits.</td>
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3. **Rationale:**

Exercise physiology is a foundational course in exercise science and an understanding of its nuances is essential to optimizing exercise prescription.

4. **Learning Outcomes (By the end of the course students will be expected to):**

   - Display an understanding of concepts and theories of exercise physiology, with an emphasis on skeletal muscle and exercise metabolism
   - Critically interpret and discuss research related to exercise physiology and its application to exercise performance
   - Articulate viewpoints related to exercise physiology, and support these viewpoints based on current evidence
   - Apply theoretical concepts in exercise physiology to practical situations
   - Demonstrate the ability to critically review current research and translate findings to topics discussed in class.

5. **Date of Departmental Approval:** 12/6/17
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DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. **Type of change:** New Course

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<td>Course Prefix &amp; Number</td>
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<tr>
<td>Course Title</td>
<td>Advanced Research Methods in Exercise Science</td>
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<tr>
<td>Description</td>
<td>Concepts of research and evaluation in exercise science. Techniques of measurement and methods of analyzing and interpreting data.</td>
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3. **Rationale:**

An understanding of research and its application is essential to being an evidence-based fitness professional. Moreover, the master’s thesis and final project, one of which is required for successful completion of the program, involves extensive research capabilities.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Display an ability to critically evaluate research including: a) identifying good research questions, b) locating and using appropriate literature sources, c) recognizing strengths and weaknesses of different experimental designs, and d) critiquing research studies
   - Demonstrate an ability to thoroughly review the literature on a given topic in exercise science
   - Develop the methods for data collection and statistical analysis for a given topic in exercise science
   - Display competency in applying the proper statistical approaches to different research designs
   - Discuss ethical issues associated with the research process
   - Describe the peer review process for manuscript publication.
   - Plan and prepare a research proposal

5. **Date of Departmental Approval:** 12/6/17
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<td>Course Prefix &amp; Number</td>
<td>EXS 504</td>
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<td>Course Title</td>
<td>Advanced Exercise Testing and Prescription</td>
</tr>
<tr>
<td>Description</td>
<td>Principles of fitness and the development of exercise programs to enhance health and/or human performance in a variety of settings. Methods of evaluating physiological adaptation to exercise, using laboratory and field experiences.</td>
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3. **Rationale:**

Exercise testing and prescription is a foundational course in exercise science and an understanding of its nuances is essential to safe and effective program design.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Demonstrate an understanding of the importance of physical activity and exercise to the health and well-being of both a healthy and a diseased population
   - Perform a risk stratification assessment and use the assessment to guide further exercise and exercise testing recommendations
   - Conduct assessments of cardiorespiratory endurance, muscular strength and endurance, body composition, balance, and flexibility
   - Interpret the results from exercise tests and apply them to program design

5. **Date of Departmental Approval:** 12/6/17
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DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

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<td>Course Prefix &amp; Number</td>
<td>EXS 505</td>
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<td>Course Title</td>
<td>Advanced Sports Nutrition</td>
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<tr>
<td>Description</td>
<td>Nutritional and metabolic requirements of physical activity. The health and well-being benefits of an optimal diet-exercise regimen for physical activity, exercise, and sport participation will be emphasized.</td>
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3. **Rationale:**

An understanding of nutrition is essential to exercise performance and adaptations.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Describe the nutritional requirements and their rationale for different sports and forms of exercise
   - Describe the biochemistry of nutrients during exercise and sports performance
   - Evaluate and discuss the current literature in sports nutrition
   - Demonstrate a working knowledge of nutritional software
   - Display an ability to critique fad diets as they relate to body composition and exercise performance
   - Describe the benefits and risks of ergogenic aids

5. **Date of Departmental Approval:** 12/6/17
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DEPARTMENT OF HEALTH SCIENCES

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<td>EXS 506</td>
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<tr>
<td>Course Title</td>
<td>Applied Training Methodologies</td>
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<tr>
<td>Description</td>
<td>Applications of strength and conditioning theories and training principles including fitness testing, protocol design and goal assessment to clients in diverse exercise and fitness settings.</td>
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3. **Rationale:**
Training methods form the core of how exercise is applied in practical settings. An understanding of the nuances is essential to optimizing performance and adaptations.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Apply scientific knowledge to train athletes and clients for the primary goals of improving athletic performance and fitness.
   - Critically interpret and discuss research related to training methods for optimal exercise-related performance and injury prevention
   - Demonstrate an ability to conduct sport-specific testing sessions.
   - Display an understanding of periodization models and their application to exercise programming for sports performance
   - Demonstrate an ability to design and implement safe and effective strength and conditioning and personal training programs to a variety of populations.

5. **Date of Departmental Approval:** 12/6/17
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DEPARTMENT OF HEALTH SCIENCES

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<td>Course Prefix &amp; Number</td>
<td>EXS 615</td>
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<tr>
<td>Course Title</td>
<td>Advanced Kinesiology and Biomechanics</td>
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<td>Description</td>
<td>Study and application of anatomic and mechanical principles of human movement.</td>
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3. **Rationale:**
An understanding of human kinematics and kinetics is important for optimizing exercise performance and reducing injury risk.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Display an understanding of the planes of motion and their relevance to exercise program design
   - Identify the relationship between anatomical structure, physiological function, and mechanical principles as they relate to the performance of basic and complex movement patterns.
   - Demonstrate an ability to identify the primary muscles and stabilizers involved in performance of various exercises
   - Observe and analyze kinematics and kinetics to critically evaluate performance in terms of efficient human movement
   - Critically interpret and discuss research related to biomechanics and its application to exercise performance

5. **Date of Departmental Approval:** 12/6/18
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DEPARTMENT OF HEALTH SCIENCES

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<td>Course Title</td>
<td>Advanced Motor Learning and Performance</td>
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<td>Description</td>
<td>Effects of psychological, social maturational, and neurophysiological factors on the learning and performance of movement patterns</td>
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3. **Rationale:**
The ability to teach a skill is central to a fitness professional’s job and understanding the processes related to motor learning facilitate optimal instruction.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Critique research of motor learning using theoretical and applied knowledge
   - Demonstrate an understanding of how each level of the central nervous system contributes to motor control and how the levels work cooperatively to carry out coordinated human movement
   - Interpret and apply research findings on motor learning to a variety of disciplines within exercise science
   - Demonstrate the knowledge and an understanding of essential theories and scientific applications of motor control and neural mechanisms
   - Discuss how specificity of learning affects skill acquisition
   - Display an ability to employ different motor learning strategies to optimize skill acquisition based on individual preferences and abilities across a wide variety of populations

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<td>Fitness Management and Marketing</td>
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<td>Description</td>
<td>Management and marketing principles as they relate to budget, facility design, purchasing, scheduling, programming, and personnel issues in the field of exercise science and wellness.</td>
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<tr>
<td>Credits</td>
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<tr>
<td>Hours</td>
<td>3</td>
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<td>Liberal Arts</td>
<td>[ ] Yes [ X ] No</td>
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<tr>
<td>Course Attribute (e.g. Writing Intensive, WAC, etc)</td>
<td>N/A</td>
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</tbody>
</table>
| General Education Component | X  Not Applicable  
  ____ Required  
  _____ English Composition  
  _____ Mathematics  
  _____ Science  
  _____ Flexible  
  _____ World Cultures  
  _____ US Experience in its Diversity  
  _____ Creative Expression |
3. **Rationale:**
Many fitness professionals seek to open their own fitness-related business and understanding how to manage and market the business is essential for its success.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Demonstrate a knowledge of theories in fitness management.
   - Compare and contrast management concepts in various fitness settings (e.g., corporate, commercial, hospital-based, community)
   - Demonstrate an understanding of the processes involved in applied strategic planning
   - Demonstrate an understanding of fitness personnel management
   - Describe steps and key considerations involved in fitness facility design
   - Describe the process required in the selection, purchase, and maintenance of equipment for fitness facilities
   - Demonstrate an understanding of basic marketing principles and accounting terminology
   - Describe the essentials of risk management planning

5. **Date of Departmental Approval:** 12/6/17
LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. **Type of change:** New Course

<table>
<thead>
<tr>
<th>Department(s)</th>
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<tr>
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<td>EXS 665</td>
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<tr>
<td>Course Title</td>
<td>Psychology of Sport</td>
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<tr>
<td>Description</td>
<td>Theories, concepts, and intervention techniques of sport psychology. Topics covered include motivation theory applied to sport, team dynamics, psychological skills training, the psychology of sport injury, and burnout in sport.</td>
</tr>
<tr>
<td>Pre/ Co Requisites</td>
<td>Departmental Permission</td>
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<td>Credits</td>
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<td>_____ Individual and Society</td>
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<td></td>
<td>_____ Scientific World</td>
</tr>
</tbody>
</table>
3. **Rationale:**
The psychological aspects of sport can have a major influence on performance; as such, practitioners who work with athletes must be aware of the underlying psychological factors and interventions that can be employed in this regard.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Identify and explain major theoretical frameworks used in sport psychology research.
   - Describe causal mechanisms of the major psychological theories that have been employed to study human behavior in the context of sport.
   - Demonstrate an ability to apply theoretical knowledge to encounter challenges commonly associated with sport and physical activity.
   - Critically evaluate social and psychological research and discuss its application to practical settings.
   - Discuss appropriate intervention strategies for sport performance enhancement.

5. **Date of Departmental Approval:** 12/6/17
### LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. **Type of change:** New Course

2. | Department(s) | Health Sciences |
   | Career | [ ] Undergraduate [ X ] Graduate |
   | Academic Level | [ X ] Regular [ ] Compensatory [ ] Developmental [ ] Remedial |
   | Subject Area | Human Performance and Fitness |
   | Course Prefix & Number | EXS 790 |
   | Course Title | Thesis Workshop 1 |
   | Description | Development of competency in effective scientific writing and critical analysis of research. |
   | Pre/ Co Requisites | Departmental Permission |
   | Credits | 3 |
   | Hours | 3 |
   | Liberal Arts | [ ] Yes [ X ] No |
   | Course Attribute (e.g. Writing Intensive, WAC, etc) | N/A |
   | General Education Component | X Not Applicable |
   | _____ Required | |
   | _____ English Composition | |
   | _____ Mathematics | |
   | _____ Science | |
   | _____ Flexible | |
   | _____ World Cultures | |
   | _____ US Experience in its Diversity | |
   | _____ Creative Expression | |
   | _____ Individual and Society | |
   | _____ Scientific World | |
3. **Rationale:**

The ability to write effectively in a scientific manner is essential to completion of the thesis option in the Master of Science/Human Performance and Fitness program.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Articulate research objectives in a clear, concise, scholarly manner
   - Formulate and write a research proposal
   - Effectively record data and experiments so that others can understand them in a manner that forms the basis of a thesis
   - Provide and respond to critical feedback on writing assignments
   - Discuss new ways to make scientific information understandable to scientists and their peers.

5. **Date of Departmental Approval:** 3/8/18
1. **Type of change:** New Course

2.

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<td>[ ] Individual and Society</td>
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<td>[ ] Scientific World</td>
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</table>

3. **Rationale:***
Completion of a research study is required for the thesis option in the Master of Science/Human Performance and Fitness program.

4. Learning Outcomes (By the end of the course students will be expected to):
   • Navigate the online IRB process and produce a proposal consistent with IRB guidelines.
   • Analyze data using appropriate measures and draw relevant conclusions from the findings.
   • Use a bibliographic reference manager in a manner consistent with publication in recognized peer-reviewed journals.
   • Narrate the research process clearly in the form of a formal multi-chapter master’s thesis manuscript, structured according to the guidelines set forth by the Human Performance and Fitness program.
   • Describe and discuss research clearly and succinctly, in written and oral forms, to faculty and mentors.

5. Date of Departmental Approval: 3/8/18
LEHMANN COLLEGE  
OF THE  
CITY UNIVERSITY OF NEW YORK  
DEPARTMENT OF HEALTH SCIENCES  
CURRICULUM CHANGE

1. **Type of change:** New Course

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</tbody>
</table>

3. **Rationale:**
Completion of a capstone project is required for the capstone option in the Master of Science/Human Performance and Fitness program.

4. **Learning Outcomes (By the end of the course students will be expected to):**
   - Articulate research objectives in a clear, concise, scholarly manner
   - Formulate and write a research proposal
   - Provide and respond to critical feedback on writing assignments
   - Discuss new ways to make scientific information understandable to scientists and their peers.
   - Analyze data using appropriate measures and draw relevant conclusions from the findings.
   - Use a bibliographic reference manager in a manner consistent with publication in recognized peer-reviewed journals.
   - Carry out a thorough literature review on an approved topic of choice
   - Produce a publishable paper on the topic either as a narrative or systematic review or meta-analysis.

5. **Date of Departmental Approval:** 3/8/18
APPENDIX B

External Reviewer CV

MICHAEL G. MILLER, PhD, EdD, AT, ATC, CSCS,*D, TSAC-F*D, NSCA-CPT*D, FNATA, FNSCA

CURRENT ADDRESS

Home: 2915 Valley Glenn Circle
Kalamazoo, MI 49004
(269) 599-2715

Work: Western Michigan University
Department of HPHE
1903 West Michigan Avenue
Kalamazoo, MI 49008-5426
(269) 387-2728
michael.g.miller@wmich.edu

EDUCATION

2011 Western Michigan University
Kalamazoo, MI
College of Education and Human Development
Doctor of Philosophy:
Evaluation, Measurement, and Research

2010 Western Michigan University
Kalamazoo, MI
College of Education and Human Development
Master of Arts:
Evaluation, Measurement, and Research

1996 West Virginia University
Morgantown, West Virginia
School of Physical Education
Doctor of Education:
Physical Education Teacher Education
Specialization in Exercise Physiology

1995 West Virginia University
Morgantown, West Virginia
School of Medicine
Master of Science:
Exercise Physiology

1991 West Virginia University
Morgantown, West Virginia
School of Physical Education
Master of Science:
Physical Education
Emphasis in Athletic Training

1990 California University of Pa.
California, Pennsylvania
School of Education
Bachelor of Science:
Athletic Training
UNIVERSITY TEACHING EXPERIENCE

2002-current  **Western Michigan University**, Department of HPHE
Professor/Graduate Athletic Training Program Director
- Sports Trauma Rehab
- Sports Trauma Evaluation
- Aquatic Therapy
- Sports Trauma Modalities
- Gross Anatomy
- Orientation and Emergency Management
- Athletic Training for Coaches
- Foundations of Sports Injuries
- Pharmacology for Sports (on-line)
- Thesis and Independent Research
- Readings
- Strength Training and Conditioning
- Muscular Strength and Endurance
- Analytical Techniques

2015-current  **Rocky Mountain University of Health Professions**
Concentration Tract Director - Doctor of Science in Human Sports Performance
- Direct all aspects of the DSc program
- Approve all dissertation topics
- Serve on DSc dissertation committees
- Recruit adjunct faculty

1999 – 2001  **Ohio University**, School of Recreation and Sport Sciences
Assistant Professor/Athletic Training Undergraduate Program Director
- Seminar: Sports Medicine
- Prevention/Management of Athletic Injuries
- Therapeutic Exercise
- Therapeutic Modalities
- Recognition/Evaluation of Athletic Injuries
- Recognition/Evaluation of Athletic Injuries 2
- Athletic Training Administration
- Exercise Prescription
- Emergency Management
- Research Methods

1998 - 1999  **West Virginia Wesleyan College**, Department of Health and Physical Education
Assistant Professor/Chairperson
• Elementary Rhythm and Movement
• PE Majors 2
• PE Majors 3
• Exercise and Weight Control
• First Aid and Safety
• Community Health
• PE Majors I
• Strength and Conditioning
• Tumbling and Gymnastics

1996 - 1998  University of North Florida, College of Health, Department of Health Science
Assistant Professor of Sports Medicine-Athletic Training
• Gross Anatomy (Physical Therapy and Athletic Training Programs)
• Principles of Strength and Conditioning
• Biomechanics
• Orthopedic and Injury Assessment of the Upper Extremity
• Athletic Training Administration
• Orthopedic Taping and Bracing
• Observation and Practicum in Athletic Training
• Lifestyle Modification
• Exercise Physiology -Section of Cardiopulmonary Physical Therapy

1993 - 1996  West Virginia University, School of Physical Education
Instructor (one year)/Doctoral Graduate Assistant (two years)
• Sports Injury Control and Management
• Therapeutic Modalities
• Orthopedic Assessment
• Gross Anatomy
• Exercise Physiology
• Kinesiology
• Methodology in Physical Education
• Physical Education Teaching Practicum
• Adaptive Physical Education
• Student Teacher Supervisor
• Basketball and Billiards
• Volleyball and Golf
• Badminton and Racquetball

1992 - 1993  Southern Connecticut State University, Department of Physical Education
Assistant Professor/Athletic Trainer (One year position)
• Therapeutic Modalities
• Care and Prevention
• Standard First Aid and Community CPR
• Basketball Skills
• Weight Training and Conditioning

1991 - 1992  **Lock Haven University**, Department of Health Sciences
Instructor/Athletic Trainer (One year position)
• Anatomy and Physiology with cat dissection
• Human Anatomy
• Care and Prevention of Athletic Injuries
• Safety Concepts/First Aid

**ATHLETIC TRAINING EXPERIENCE**

2010  Athletic Trainer – USTA 18 & 16 National Tennis Tournament – Kalamazoo College

2007-2008  Athletic Trainer – USTA 18 & 16 National Tennis Tournament – Kalamazoo College

2003  Athletic Trainer – USTA 18 & 16 National Tennis Tournament – Kalamazoo College

2002  Assistant Athletic Trainer – Kalamazoo Area High School Football (Friday night home games at various high schools)

2002  Athletic Trainer – Vicksburg JV Football

2002  Athletic Trainer USTA 18 & 16 National Tennis Tournament – Kalamazoo College

2002  Athletic Trainer – Kalamazoo Invitational Soccer Shootout, June 23

1997  Athletic Training coverage: Trinity Christian High School Football
University of North Florida, Volleyball Tournaments
Gate River Run, Jacksonville, Florida

1996  Kid’s Café Assistant Director/Medical Director, Jacksonville, Florida

1994  Head football athletic trainer, South Junior High School, Morgantown, WV

1993 - 1994  Assistant Athletic Trainer, West Virginia University
Responsible for men’s soccer and non-revenue sports
Supervised undergraduate and graduate athletic trainers

1992 - 1993  Assistant Athletic Trainer, Southern Connecticut State University
Responsible for football, volleyball, men’s gymnastics, and men’s soccer teams
Supervised and advised student athletic trainers
1991 - 1992 Assistant Athletic Trainer, Lock Haven University
Responsible for football, field hockey, lacrosse, softball, basketball, and track teams
Supervised and advised student athletic trainers

PROFESSIONAL MEMBERSHIPS

2008 - 2009 American Educational Research Association
2011-2016 American Evaluation Association
2007- 2011 National Scholars Honor Society
2006 – current Aquatic Exercise Association
  (ICHPER-SD)
2002 - current Michigan Athletic Trainers’ Society
2002 - 2011 American College of Sports Medicine
1992 - current National Strength and Conditioning Association
1987 - current National Athletic Trainers’ Association

PROFESSIONAL CERTIFICATIONS

Michigan Licensed Athletic Trainer
NSCA Certified Strength and Conditioning Specialist with Distinction (CSCS*D)
Tactical Strength and Conditioning- Facilitator with Distinction (TSAC-F*D)
National Strength and Conditioning Association – Certified Personal Trainer with Distinction (NSCA-CPT*D)
BOC Certified Athletic Trainer
Commonwealth of Pennsylvania - Class A Certification

Aquatic Fitness Professional Certification (AFPC)

Facial Movement Taping Level I and II (FMT I/II)

Functional Movement System (FMS) – Level 1

Y-Balance certified

American Red Cross CPR/AED for the Professional Rescuer & First Aid/CPR Instructor

NPI - 1497802086

UNIVERSITY SERVICE

Western Michigan University

2017 American Association of University Professors (AAUP) Negotiation team member
2016-17 Athletic Training Faculty Search Committee Chair
2015 WMU Research and Creative Activities Poster and Performance Day - Judge
2014-2016 College of Education and Human Development Dean’s Advisory Council
2014 Exercise Science Faculty Search Committee Member
2014-current University HSIRB Committee Member
2011-current College of Education and Human Development Promotion Committee
2012-2015 HPHE Policy Committee Member
2011-2015 WMU Graduate Studies Council Committee member
2011-2015 WMU Physician Assistant Program Musculoskeletal Module Facilitator
2010 WMU Research and Creative Activities Poster Judge
2010 Undergraduate Athletic Training Search Committee Chair
2008 – current WMU FRACAA grant review committee
2007 – 2014 HPHE Personnel Committee Member
2007 – 2010 Faculty Senate Campus Planning and Finance Committee – Vice Chair
2007 – 2012 Chair, Academic Subcommittee – Inter-collegiate Athletics
2006 - 2012 Faculty Senate Library Committee Member
2006 First year Experience (FYE) Instructor
2005- 2012 Western Michigan University Athletic Board Member
2005 Undergraduate Athletic Training Search Committee Member
2004 - 2007 Graduate Research and Creative Scholar Award Selection Committee
2003 – 2007 HPHE Department AAUP Representative
2003 Mentoring Healthy Habits - Mentor
2003 Exercise Science Search Committee Member
2002 – 2007 HPHE Policy Committee Member
2002 - 2006 HPHE Graduate Council
2002 – current HPHE Exercise Science/Athletic Training Core Group Member

Ohio University
2001 Pew Higher Education Roundtable – Selected Member
2001 Ohio University’s Colloquium on Teaching – Selected Member
2001 Ohio Teaching Enhancement Program – Selected Member
2001 Exercise Physiology Search Committee Member
2000 - 2001 College of Health and Human Services Policies Committee Member
1999 - 2001 Enhancement Committee Member - Chair

West Virginia Wesleyan College
1999 Nutrition Planning Committee Member
1998 – 1999 Chairperson, Department of Health and Physical Education

University of North Florida
1997 - 1998 University Tuition Exchange Committee Member
University Osprey Card Committee Member
University Technology Planning Committee Member
Physical Therapy Anatomy Professor Search Committee Member
1996 - 1998 Chair, Technology Committee, College of Health
1997 Distinguished Professor Search Committee Member
1996 - 1997 Chair, Faculty and Staff Affairs, College of Health

Lock Haven University
1992 Athletic Training Search Committee Member

GRANTS (funded)

2009 Binkley H, Miller MG, Faignebaum, A, Tolbert, T. Care to Play . Center for Physical Activity and Health in Youth. Middle Tennessee State University. $10,300

2009 Miller MG, Michael TJ, Bensley R. CPR for Everyone.. American Heart Association/ American Red Cross. $104,000

2008  Cheatham, C., Standley, R., Miller, MG., Michael, T. & Liu, Y. Effects of High Dose Fish Oil Supplementation on Delayed Onset Muscle Soreness (DOMS) and Inflammatory Markers. *GlaxoSmithKline.* $4,775

2006  Miller MG & Berry DC. Great Lakes Athletic Trainers’ Association Research Grant. An Investigation of Clinical Instructor/Supervisors Behaviors with Athletic Training Students. $1,200

2006  Miller MG. Western Michigan University Faculty Grant (FRACASF). Absorption Characteristics of Ultrasonically Applied Ketoprofen. $7,461

2006  Miller MG. Product Grant from IOMED. Provided Iontophoresor and 96 electrodes. $1,800

2005  Miller MG. Product Grant from OrthoDX. Provided Electrical Stimulation Unit. $1,500

2004  Miller MG. Product Grant from Fitter International. Provided 10 classic balance boards. $300.00

2003  Miller MG. Product grant from Rothhammer International, Inc. Provided 5 Sprint Aqua Steps. $500

2003  Miller MG. Product Grant from BREG. Provided 6 Turf and Court ankle braces. $150

2003  Miller MG. Product grant from Road Runner Sports. Provided 19 pairs of Asics Gel Creed running shoes. $2,000

2003  Miller MG. President’s Faculty Laptop Initiative. Dell Laptop Computer. $1,800

2000  Miller MG & Berry DC. Assessment of Athletic Training Student Clinical Behaviors. Ohio University College of Health and Human Services Scholarly Activity Award. $4,838.88

2000  Berry DC & Miller MG. Mouthguard Usage for Appalachian High School Athletes. John Houk Research Grant. $500

1998  Miller MG. Product grant from PEAK Nutrition. Provided Creatine Monohydrate for a research study. $1,200


1995  Miller MG. Dissertation Research Grant. West Virginia University, $500.00
GRANTS (not funded)


2009  **Miller MG**, Cheatham CC, Binkley H, Tolbert, T. Surveillance of Adolescent Football Experience (SAFE). NFL Charities Medical Grant. $89,000

2008  **Miller MG** & Chase C. The Effects of Aquatic Training on the Fear of Falling in Community Living Older Persons. National Swimming Pool Foundation, $57,600

2008  **Miller MG**. Integration of physiological concepts and technology to enhance undergraduate learning and research in athletic training. National Science Foundation, Course Curriculum Laboratory Instruction, phase 1, $104,000

2004  Wimer J, **Miller MG**, Berry DC. A Surveillance Study of Student Engagement Patterns in Classroom and Clinical Education Settings Using Cellular Telephones with Wireless Internet Access. NATA Research and Education Foundation. $88,117

2002  **Miller MG** & Berry DC. Observational Analysis of Athletic Training Students’ Clinical Field Experiences. NATA Research and Education Foundation.

2001  **Miller MG**. Comparisons of Plasma Ketoprofen Absorption Rates Between Phonophoresis and Direct Topical Application. Ohio University Research Committee Grant.

1999  **Miller MG** & Holcomb WR. Conceptual Knowledge Structures of Student Athletic Trainers. NATA Educational Foundation.

1998  Holcomb WR & **Miller MG**. Vastus Medialis Oblique Strength Augmentation with Neuromuscular Electrical Stimulation. NATA Educational Foundation.
### FUNDED CONTRACTS

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<th>Year</th>
<th>Details</th>
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<td>Clinical contracts from 15 High Schools, 1 Community College, 1 Private College for the graduate athletic training program. $306,000.</td>
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<td>Clinical contracts from 16 High Schools, 1 Community College, 1 Private College for the graduate athletic training program. $306,000.</td>
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<td>Clinical contracts from 17 High Schools, 1 Community College, 1 Private College for the graduate athletic training program. $333,360.</td>
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<tr>
<td>2004</td>
<td>Clinical contracts from 17 High Schools, 1 Community College and 2 at a Private College for the graduate athletic training program. $231,400.</td>
</tr>
</tbody>
</table>
2003  Clinical contracts from 14 High Schools, 1 Community College and 2 at a Private College for the graduate athletic training program. $209,100.

2002  Clinical contracts from 14 High Schools, 1 Community College and 2 at a Private College for the graduate athletic training program. $209,100.

PATENT

2008  Mouthguard Wear Strip - provisional patent #61/127,614

PROFESSIONAL SERVICE

2017  NSCA Moderator- Annual Conference
2017  NATA Moderator- Annual Conference
2016-2017 NSCA State Clinic Host Organizer
2016   ATEC Moderator
2015/17 NATA Research and Education Foundation Grant reviewer
2014  NSCA Research Poster Judge. NSCA National Convention, Las Vegas, NV
2011-2014/16 NATA Annual Meeting Convention Proposal Reviewer
2010  NSCA Research Poster Judge. NSCA National Convention, Orlando, FL
2008-current NSCA Abstract Reviewer
2007  Student Research Poster Judge. NSCA National Convention, Atlanta GA
2007/2014 NSCA Grant Reviewer. NSCA
2007  NATA Moderator. Free Communications. NATA National Convention, Anaheim, CA
2005 –2014 NSCA CSCS exam host
2005  BOC Examiner, Alma, Michigan – January 30
2004  BOC Examiner, Alma, Michigan – February 8
2003  NATA Research and Education Foundation Judge; 2003 NATA Clinical Symposia, St. Louis, MO

2002  NATA Research and Education Foundation Undergraduate Poster Judge; 2002 NATA Clinical Symposia, Dallas, TX

2002  BOC Examiner; Alma, Michigan

2002  BOC Examiner; East Lansing, Michigan

2001-2002  Competencies & Proficiencies Committee Member – Subcommittee of the JRC-AT

2001  BOC Examiner; Granville, Ohio

1999  BOC Examiner; Pittsburgh, Pennsylvania

1997  BOC Examiner; Orlando, Florida

1995  Abstract Reviewer, NATA Research and Education Foundation

1996  BOC Examiner; Pittsburgh, Pennsylvania

1996  Guest Examiner, California University of PA Athletic Training Program

1995  BOC Examiner; Pittsburgh, Pennsylvania

1995  Exercise Physiologist, Mountainview Rehabilitation Hospital Aquatic Therapy Program

1995  National Youth Sports Program Medical Director

1990  National Youth Sports Program Medical Director

PROFESSIONAL COMMITTEES

2015-2017  Transition to Practice Workgroup member

2015- current  Athletic Training Education Conference (ATEC) committee member

2014-current  NATA Education Advancement Committee - chair

2017-current  NSCA Board Member- Vice President
2014-current  NSCA Board Member

2014-current  NATA Executive Committee on Education committee member

2013-current  NATA Liaison for the NSCA

2010-2011  NATA 2011 Convention Program Committee

2009-2012  Mid-American Conference (MAC) Cartwright Award Committee

2007  NSCA Strategic Planning Summit Member

2006 – current CAATE Ethics Committee Member

2006 – 2011  NATA Liaison for the NSCA


2004 – 2009  National Strength and Conditioning Association (NSCA) Education Committee Chair

2002 - 2006  BOC Task Force on Continuing Education

2002  Kalamazoo County Government, Human Services Department – Physical Activity Health Issue Team Member

2002 – 2008  Professional Education Committee Member – Michigan Athletic Trainers’ Society

2002 - 2011  CAATE Site Reviewer

2001- 2013  BOC Home Study Reviewer

2001 - 2009  National Strength and Conditioning Association - Education Committee Member

1998 - 1999  West Virginia State Director for the National Strength and Conditioning Association

EDITORIAL BOARD/JOURNAL REVIEWER


2015  Athletic Training Education Journal – Editorial Board Member

2014 – current Manuscript Reviewer – Athletic Training & Sports Health Care

2005 – 2007 Assistant Editor - ICHPER-SD Research Journal

2002 - 2010 Editorial Review Board Member – The Physical Educator

2002 – current Manuscript Reviewer - Journal of Athletic Training

1997 - 2002 Reviewer - Strength and Conditioning Journal

HONORS/AWARDS

2017 NSCA Fellow
2016 GLATA Educator of the Year
2015 NATA Most Distinguished Athletic Trainer
2014-current Excellence in Discovery, Western Michigan University, OVPR
2012 NATA Fellow
2012-current NSCA Ironman
2008 Bronze Award NSCA Certification Commission
2000 California University of Pennsylvania Athletic Training Program Distinguished Alumnus

PROFESSIONAL PRESENTATIONS

NATIONAL


64) Hanson NJ, Miller MG, Lothian DD, Miller CL, Michael TJ, Lee S. (2017). Does a performance enhancing mouthguard have the ability to decrease blood lactate and increase power? Free Communication/Poster, NSCA National Conference, Las Vegas, NV.


50) Krasinski D, Thrasher A, **Miller MG**, Holcomb WR. (2013). Effects of Applied Pressure on Intramuscular Temperature During Ultrasound Treatments, Poster presentation: Therapeutic Intervention, NATA Annual Meeting and Clinical Symposium. Las Vegas, NV.


33) **Miller MG** & Berry DC. (2007). Creating multimedia modules as a method to enhance athletic training students’ learning outcomes and computer literacy skills. Poster Presentation, National Athletic Trainers’ Association Educators Conference, Dallas, TX.


7) Berry DC, Miller MG, Berry LM. (2002). Utilizing Time and Active Learning in Athletic Training Clinical Education: Reported Through the Eyes of Athletic Training Students. Free Communications, Poster Presentations: Education. NATA National Convention, Dallas, TX.

6) Miller MG, Berry DC. (2000). Student and Instructor Knowledge Similarities as Determined by the Pathfinder Program. Free Communications, Thematic Poster Session: Teaching Athletic Training. NATA National Convention, Nashville, TN.


2) Holcomb WR, Kleiner DM, Miller MG. (1997). The Effects of Long Term Ankle Bracing on Strength of the Ankle Musculature. Free Communications/Poster, NATA National Convention, Salt Lake City, UT.

1) Francis K, Kleiner DM, Holcomb WR, Miller MG. (1997). The Effects of Long Term Ankle Bracing on Size and Range of Motion of the Ankle. Free Communications/Poster, NATA National Convention, Salt Lake City, UT.

INTERNATIONAL

2) Crelinsten AD, **Miller MG**. (2008). Effectiveness In Improving Performance With The Bigger Faster Stronger In-Season Training Program. 42nd Annual Conference of the Canadian Athletic Therapists Association. Montreal, Canada.


**DISTRICT**


4) Cargo JS, Michael TJ, Hanson NJ, Weideman C, **Miller MG**. (2016). Effect of a Seven-Week Rock Climbing Course on Physical Fitness and Performance. ACSM Annual Meeting, Boston MA.


2) **Miller MG**, Berry DC. (2008). Approved clinical instructors are appropriately engaged in clinical behaviors with athletic training students. Oral Presentation, Great Lakes Athletic Trainers* Association Annual Meeting, Toledo, OH.

1) Berry, DC, **Miller, MG**, Berry, LM. (2003). Tibial Plateau Stress Fracture in a Male Recreation Runner. EATA Conference, Boston, MA.

**STATE**


13) **Miller MG**. (2016). The NSCA and Functions. NSCA Michigan State Clinic, Kalamazoo, MI.

12) **Miller MG**. (2015). NSCA Updates from the BOARD. NSCA Michigan State Clinic, Ypsilanti, MI.


9) Stark, MA, **Miller MG.** (2008). Nurses’ perceptions of the use of hydrotherapy in labor. 26th Annual Kalamazoo Community Medical Health and Sciences Research Day. Western Michigan University, Kalamazoo, MI.


7) Crelinsten AD, **Miller MG.** (2008). Effectiveness in improving performance with the Bigger Faster Stronger in-season training program. 26th Annual Kalamazoo Community Medical Health and Sciences Research Day. Western Michigan University, Kalamazoo, MI.


5) Malolepszy L, Berry DC, **Miller MG.** (2001). Internal Hemorrhoids in a Female Collegiate Soccer Player. Poster Presentation. Ohio Athletic Trainers’ Association Annual Meeting, Columbus. OH.

4) **Miller MG.** (1999). Advising Athletes on Today’s Performance Enhancing Supplements. West Virginia Athletic Trainers’ Association Annual Symposium, Buckhannon, WV.

3) **Miller MG.** (1994). Picking Up the Pace - Mid West AAHPERD Convention. Morgantown, WV.

2) **Miller MG.** (1994). Taping Procedures - Mid West AAHPERD Convention. Morgantown, WV.

1) **Miller MG.** (1994). Management of Acute Ankle Sprain - AIM Symposium. West Virginia University, Morgantown, WV.

**INVITED**

8) **Miller MG.** (2011). Aquatic Therapy. MATS Student Symposium, Grand valley State University, Granville, MI.

6) **Miller MG.** (2008). Asthma for Athletes. Middle Tennessee State University Distinguished Lecture Series, Murfreesboro, TN.

5) **Miller MG.** (2008). Aquatics as a Tool for Athletes. Middle Tennessee State University Distinguished Lecture Series, Murfreesboro, TN.

4) **Miller MG.** (2005). Asthma in Athletics. Texas Asthma Coalition; Austin Tx.


1) **Miller MG.** (1994). Strength Considerations of Male and Female Adolescents. Mineral County Schools, Keyser, WV.

**PUBLICATIONS**

**ABSTRACTS (refereed)**


**MANUSCRIPTS**


52) Hanson NJ, Miller MG, Michael TJ. Deception of ambient temperature does not elicit performance benefits during a 5KM run in hot, humid conditions. JSCR *in press*


**TEXTBOOKS**


2) Berry DC, Miller MG, Berry LM. (2010). Case Responses & Interpretations to Athletic & Orthopedic Injury Assessment. Scottsdale, AZ: Holcomb Hathaway

TEXTBOOK CHAPTERS


INVITED BOOK REVIEWS


EVALUATION EXPERIENCE

2011- 2015 Research and Evaluation Consultant for iEval, Battle Creek, MI
APPENDIX C

External Evaluation Report

THE STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
Office of College and University Evaluation

Evaluation Report Form for Program Proposals
Please refer to the Department’s guidance on external reviews for information about when external reviews are required and the selection of external reviewers.

Institution: Lehman College
Program title: Human Performance and Fitness
Degree: Master of Science (MS)
Date of evaluation: 1/18/18

External Reviewer Name (please print): Michael G. Miller
External Reviewer Title and Institution: Professor – Western Michigan University

I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

The proposed Master degree program targets the physical fitness/activity needs of the general public and also fulfills a role to educated and advance scholarship in the prosed area. The degree also fills a need for a graduate degree program in the region, specifically the Bronx area where educational opportunities are
difficult to obtain. The degree will enhance educational and scholarship opportunities of students and faculty and fit well with the department’s overall strategic priorities. Additionally, the quality of faculty already housed within the department, and their national/international recognition will be an asset for student recruitment. The curriculum has the necessary components to meet the advanced educational need as proposed and the credits required for graduation falls within standard ranges of similar programs throughout the country.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

The proposed Master degree in Human Performance and Fitness will concentrate on advancing knowledge and experiences in fitness/conditioning/scholarship and allow students who matriculate through the program to find meaningful employment opportunities. The program was developed based upon the requests of current undergraduate students seeking to further advance their education plus the trends of society and emphasis on exercise and employment prospects as defined by the U.S. Dept of Labor and Statistics. Upon examining program credits, the number advertised within and then calculated via course sequencing do not match, apparently with the total thesis credit hour requirement. Additionally, 12 credits for thesis (if this is the requirement) is extreme for master level, and usually associated with dissertation credit requirements.

3. Comment on the plans and expectations for continuing program development and self-assessment.

The evaluation plan covers the main aspects to determine program quality and effectiveness. However, other potential evaluation strategies may be including employment type/location data of students who graduate within 6 months and implementing employer evaluating of past students and recommendations for program improvement based upon job duties and responsibilities.

4. Assess available support from related programs.

Proposal appears to be a self-funding model, with initial support via the dept with the hopes that the program supports itself in years to come. Developing partnerships with local businesses or corporations may benefit the program for capital expenses, sponsorships of travel and research, and other expense items that often appear.

5. 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?

The need for this degree and program is evident in your geographic location, with no college/university offering such program and other master degree programs similar in nature are several hours of commute. I would like to know the existence of other “similar” titled and degree programs in the country, instead
of just comparing to exercise science or exercise physiology. I would also like to know how enrollment numbers were tabulated/justified to determine the program feasibility? Moreover, examples of potential employment placements and opportunities and how this would be different and more easily obtained compared to someone having an undergraduate degree would be useful.
II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

Currently, 3 faculty have been identified to oversee the program, all of whom are already employed at Lehman College. These faculty have a strong publication record and notoriety in the proposed degree area. Their leadership, knowledge of the proposed curriculum content and research acumen will enhance the educational opportunities of the students and more importantly, serve as mentors and conduits for future student employment. This area is the strongest component of the proposal and will lead and assist in recruiting highly qualified and more importantly, motivated students to enroll.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

A 4th faculty member to assist in the implementation of the program has been solicited. As such, beginning operational processes (teaching/research) appears to be overloaded on the current faculty, that have FTE already within the department. As the program comes to fruition, overload will be required and or release time and hiring of adjuncts to teach undergraduate courses or supervise laboratory projects/activities will be required. This was not identified in the current proposed budget. With an undergraduate program consisting of 300 students plus the anticipation of 100 future students at the graduate level (400 in total), even with the additional hire, a 1:100 faculty/student ratio will result in low quality and hardship when conducting research. The graduate degree proposed, with the number of students wanted, will require more than 1 additional faculty. Programs of that size (at the graduate level) often have 4-5 faculty, not counting faculty at the undergraduate level.

8. Evaluate credentials and involvement of adjunct and support faculty.

Limited information is provided to adequately answer this section. However, as mentioned previously, adjunct faculty/support faculty will be required to take on a larger role in the undergraduate degree to allow the qualified faculty identified in this proposal to be successful.

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 library, with its current resources and ability of faculty and students to access information remotely is adequate. The courses in exercise testing and
prescription, advanced training methodologies, and biomechanics may require additional resources in order to ensure students are progressing in their knowledge and practical experiences beyond the undergraduate level. No internship/practical sites were proposed for students, but if this area becomes part of the program, resources may be required for student quality experiences. The additional hire of the proposed 1 faculty (and perhaps more) will require start-up packages, which is turn adds to the overall budget, but at the same time, may be useful in obtaining equipment necessary for the program and offset capital purchases. Funds for student travel to conferences to present research or capstone projects should be considered and integral for promoting Lehman College.

10. **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 department and College appear to be vested in this degree and a generous package has been proposed, however, may fall short in terms of faculty required and equipment need for practical and research experiences of students and faculty. A larger initial investment may be required with timely boluses of funds as the program develops over the next 5-6 years.

### 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:**
1. Qualified faculty with international recognition and research prowess
2. Academic program based upon societal needs and trends that will not dissipate over the years
3. Academic coursework advances undergraduate knowledge in the respective discipline
4. Increase the potential for many students to seek a terminal degree and may lead to Lehman College offer said degree program
5. Credits for program completion within normal realms of all master degree programs

**Considerations:**
1. More faculty/adjuncts may be required to meet the curricular offering and scholarship opportunities required
2. Processes for a current undergraduate to matriculate into the new master degree program
3. Suggest not concentrating on proposal justification of “increasing knowledge in sport” but for “…exercise and movement activities which includes “sports” coaching, etc”
4. How will educational background/undergraduate degrees related or even not
related be factored into admissions? Especially students in the local area who now want a degree and work in the field

5. Might want to consider a stats course or embed stat concepts within the research methods course. Many PhD programs look for both types of classes for their admissions

6. Consider two options, capstone and thesis (and each one have more specific electives with less options) that will be useful for advancing their careers, for example, a student who wants to become a PhD would benefit from biomechanics as a requirement instead as an elective

7. Any practical or internship requirements?
APPENDIX D

Response to External Review

Program:
Response to: Comment on the special focus of this program, if any, as it relates to the discipline.

- Apparently our wording wasn’t clear. The thesis option has 6 credits for the thesis and the capstone option has 3 credits for the capstone, consistent with the credits noted in the curriculum section. We have revised the wording to clarify as follows: After mapping out a program in advance with the Graduate Program Director, students must complete, with an average of B or better, 33 total credits in the Human Performance and Fitness degree program. All students will be required to take 18 credits in common core courses. Students wishing to pursue the thesis track option will take an additional 9 elective credits plus 6 credits of thesis. Students opting for the capstone track will take an additional 12 elective credits plus 3 credits of capstone.

Response to: Comment on the plans and expectations for continuing program development and self-assessment.

- We have revised the proposal to include following student career trajectories over time and using this information to determine whether modifications in curriculum are warranted to better serve the students.

Response to: Assess available support from related programs.

- We have amended the proposal to indicate that we will endeavor to develop sponsorships with supplement companies, equipment companies, hospitals, and other organizations to help offset costs for equipment, sponsorships of student travel for conferences and presentations, and other relevant expenses that may arise.

Response to: 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?

- The projected enrollment is based on the number of inquiries that we have received over the past several years, the marketing efforts that we will pursue, and the anticipated publicity that will be generated from the program’s success. We have added text to address this issue.

- We have revised the text to note that there are a number of universities around the country that have degrees specific to Human Performance and Fitness, but that none exist within the greater New York area.

- We have added text to reflect the opportunities available for those who obtain a master’s degree in the field.

Faculty:
Response to: Evaluate credentials and involvement of adjunct and support faculty.

- We have added text to discuss current adjunct roles in the program and hiring of an additional adjunct in the first year has been noted in the budget.

Resources:
Response to: 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.

- We have consulted with the library staff and feel the resources are sufficient to carry out the program as intended. We have amended the proposal to factor in start-up packages for hired faculty into the budget. We have addressed the potential expenses for student travel as noted in the section above on available support, stating that we will endeavor to cover such outlays by sponsorships from outside organizations. There will not be an internship so the issue raised by the external reviewer would not be relevant in this regard.

Response to: 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 Exercise Science lab has received substantial internal and external funding over the past several years and we now possess a good amount of equipment and resources sufficient to carry out the master’s program and provide students with a rich experience. As time goes on we will apply for additional grants to further support the program as needs arise.

Summary Comments and Additional Observations

Response to: More faculty/adjuncts may be required to meet the curricular offering and scholarship opportunities required

- We have added text to reflect that additional faculty may be required to meet the demand of the program, and will be requested as the need arises.

Response to: Processes for a current undergraduate to matriculate into the new master degree program

- We do not feel that current students should receive preferential consideration for entry into the program. As per the suggestion of the external reviewer, we have added text to reflect that undergrad students with a GPA of 3.0 or higher and who have taken >90 credits can take up to 12 credits of graduate classwork and receive credit for these classes at the master’s degree level if/when they matriculate into our program.

Response to: Suggest not concentrating on proposal justification of “increasing knowledge in sport” but for “…exercise and movement activities which includes “sports” coaching, etc”

- We have revised the text to reflect the requested change.

Response to: How will educational background/undergraduate degrees related or even not related be factored into admissions? Especially students in the local area who now want a degree and work in the field

- We have revised the proposal to state that prospective students who do not meet the listed requirements can apply for special circumstances and admission will be considered on case-by-case basis.

Response to: Might want to consider a stats course or embed stat concepts within the research methods course. Many PhD programs look for both types of classes for their admissions

- The course in Advanced Research Methods (EXS 603) has a substantial statistics component. We have revised the description to reflect this fact.
Response to: Consider two options, capstone and thesis (and each one have more specific electives with less options) that will be useful for advancing their careers, for example, a student who wants to become a PhD would benefit from biomechanics as a requirement instead as an elective

- We feel that the two options are interchangeable in a student’s career path. The options are intended to allow students a choice as to whether they want to carry out original research or rather immerse themselves in an exhaustive review and write up of current literature on a topic of interest. Thus, we do not feel a change is warranted in the curriculum based on option.

Response to: Any practical or internship requirements?

- Given the limited number of credits in a master’s degree program, we feel the courses are best directed at the classroom and lab. Moreover, many if not most of the students in the program will be working, so they will be gaining practical experience while attending classes.
APPENDIX E

Curriculum Vitae of Faculty

Brad Schoenfeld

HIGHER EDUCATION:

A. DEGREES

<table>
<thead>
<tr>
<th>Institution</th>
<th>Dates Attended</th>
<th>Degree and Major</th>
<th>Date Conferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocky Mountain University</td>
<td>2011-2014</td>
<td>PhD in Health Promotion and Wellness</td>
<td>2014</td>
</tr>
<tr>
<td>University of Texas Permian Basin</td>
<td>2008-2010</td>
<td>M.S. in Exercise Science</td>
<td>2010</td>
</tr>
<tr>
<td>Pace University</td>
<td>1980-1985</td>
<td>B.A. in Management</td>
<td>1985</td>
</tr>
</tbody>
</table>

B. Additional higher education in progress

EXPERIENCE

A. TEACHING

<table>
<thead>
<tr>
<th>Institution</th>
<th>Dates</th>
<th>Rank</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehman College</td>
<td>2014-present</td>
<td>Assistant Professor</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Rocky Mountain University</td>
<td>2014-present</td>
<td>Adjunct Professor</td>
<td>Health Science</td>
</tr>
<tr>
<td>Lehman College</td>
<td>2013-2014</td>
<td>Instructor</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Lehman College</td>
<td>2011-2013</td>
<td>Substitute Lecturer</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Lehman College</td>
<td>2010-2011</td>
<td>Adjunct Instructor</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Westchester Community College</td>
<td>2010-2013</td>
<td>Adjunct Instructor</td>
<td>Physical Education</td>
</tr>
</tbody>
</table>

EXPERIENCE

A. OTHER

<table>
<thead>
<tr>
<th>Institution</th>
<th>Dates</th>
<th>Rank</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey Devils Hockey</td>
<td>2017-present</td>
<td>Sports Nutrition Consultant</td>
<td>N/A</td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Training Center for</td>
<td>1994-2011</td>
<td>Owner/Director</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACADEMIC AND PROFESSIONAL HONORS
• 2016 United States Sports Academy: Dwight D. Eisenhower Fitness Award for outstanding achievement in fitness and contributions to the growth and development of sport fitness through outstanding leadership activity
• 2011 Personal Trainer of the Year (National Strength and Conditioning Association)
• 2001 IDEA Master Trainer
• New York State Merit of Scholastic Achievement
• Alpha Chi Honor Society

PUBLICATIONS (last 5 years only)
• Schoenfeld, B.J. Contreras, B. (2017). The Roman Chair back extension is/is not a safe and effective exercise. Strength and Conditioning Journal. 39(3), 42-45


deficits and technical factors that limit performance: Part I. Strength and Conditioning Journal, 36(6), 4-27.

- Schoenfeld, B.J. (2014). The importance of maintaining objectivity in drawing evidence-based conclusions. Sports Medicine, 44(1), 143-145
- Schoenfeld, B.J. (2013). What is the minimum intensity threshold for resistance training-induced hypertrophic adaptations? Sports Medicine, 43(12), 1279-1288


**BOOKS**


**BOOK CHAPTERS**


CONFERENCE PRESENTATIONS


- Schoenfeld, B. (2016). *Strategies to Maximize Muscle Growth.* Fitness Institute Congress Annual Conference. Copenhagen, Denmark


**PhD THESIS TITLE:** Effects of different volume-equated resistance training loading strategies on muscular adaptations in well-trained men

**PUBLICATIONS (prior to last 5 years)**


UNPUBLISHED WORK (supported by evidence)
a. Works accepted for publication


b. Works submitted for publication

• Nunes, J.P., Ribeiro, A.S., Schoenfeld, B.J., Cyrino, E.S. (In Review). Are the additional strength gains observed in periodized vs. non-periodized resistance training due to the principle of variation or the specificity of training? *Sports Medicine,*


• Varvik, F.T., Schoenfeld, B.J. (In Review). Do type 1 muscle fibers have the same muscle growth potential as type 2 muscle fibers? *Muscle and Nerve*


• Dos Santos, L., Ribeiro, A.S., Schoenfeld, B.J., Cyrino, E.S. (In Review). Effects of pyramid systems performed with wide or narrow repetition zone on muscular strength and hypertrophy in older women. *Journal of Strength and Conditioning Research,*


• Bocalini, D.S., Schoenfeld, B.J. (In Review). Multivariate analysis to evaluate the resistance to fatigue in active and inactive individuals. *Frontiers in Physiology,*


• Lasevicius, T., **Schoenfeld, B.J.,** Grgic, J., (In Review). Resistance training performed 2 versus 3 days per week elicits similar increases in muscular strength and hypertrophy in resistance-trained men. *Journal of Strength and Conditioning Research*.

c. **Works in progress**

• Tinsley, G., **Schoenfeld, B.J.** (In Progress). Body composition changes in an elite figure competitor across multiple competitions: A case study.

• Escalante, G., **Schoenfeld, B.J.** (In Progress). Precompetition training practices and body composition changes in elite bodybuilders.

• Orlic, I., **Schoenfeld, B.J.** (In Progress). Effects of very high vs moderately high frequency resistance training on muscular adaptations.

• Feriche, B., **Schoenfeld, B.J.** (In Progress). Effects of acute hypoxia on muscular adaptations.

• Sumrall, S., **Schoenfeld, B.J.**, Berger, C. (In Progress). Resistance training rest between sets: influence on respiratory exchange ratio


• **Schoenfeld, B.J.**, Arciero, P. (In Progress). Strength and body composition changes in a structured resistance training program consuming protein either pre- or post-workout.

• Feriche, B., **Schoenfeld, B.J.** (In Progress). Muscle power trainability in conditions of hypoxia.

• Ogborn, D., **Schoenfeld, B.J.** (In Progress). Evidence based personal Training: A narrative review

• Pereira, P.E., Azevedo, P., **Schoenfeld, B.J.** (In Progress). Effects of different eccentric action tempos on muscular adaptations

• Johnson, K., Vandusseldorp, T., **Schoenfeld, B.J.** (In Progress). Inclusion of no-load isometric contractions to traditional resistance training

• Maden-Wilkinson, T., Thompson, S., Hembrough, D., Balshaw, T., Franchi, M., **Schoenfeld, B.** (In Progress). The effects of loading intensity and training to failure on muscle architecture and functional adaptations.

• Maloney, S., **Schoenfeld, B.J.** (In Progress). Effects of adding loaded intraset stretch to traditional resistance training.

• **Schoenfeld, B.J.** (In Progress). Resistance training loading zones to maximize hypertrophy: A re-examination of the repetition continuum.

• **Schoenfeld, B.J.,** Contreras, B., Alto, A., Belliard, R. (In Progress). Efficacy of a virtual reality training system on muscular adaptations and cardiorespiratory fitness.

• **Schoenfeld, B.J.,** Miller, M.G. (In Progress). Comparison of post-exercise energy expenditure in a combined bout of resistance training and aerobic interval training versus each bout alone.
• Smolarek Ade, C., de Salles, B.F., de Souza Junior, T.P., Schoenfeld, B.J., (In Progress). Strength decline in sedentary males and females of different ages
• Negaresh, R., Schoenfeld, B.J., (In Progress). Is caffeine consumption beneficial to winning a wrestling tournament? A preliminary study

**GRANTS RECEIVED**

**a. Multiple**


**b. Individual**

• Schoenfeld, B. (2017). Efficacy of a virtual reality training system on muscular adaptations and cardiorespiratory fitness. $36,815.10. Status: Funded


c. **Works in progress**


d. **Not Funded**


**SERVICE TO THE DEPARTMENT**

- Search Committee member for REC Assistant/Associate Professor Position, Lehman College (2018)
- Search Committee chair for Exercise Science Assistant Professor/Associate Professor/Lecturer Position, Lehman College (2016-2017)
- Search Committee chair for HSA Assistant/Associate Professor Position, Lehman College (2016)
- Search Committee member for REC Assistant/Associate Professor Position, Lehman College (2016)
- Department Representative for Accepted Student Reception (2016)
- Search Committee chair for HSA Assistant/Associate Professor Position, Lehman College (2015-2016)
- Search Committee member for DFN Assistant/Associate Professor Position, Lehman College (2015)
- Curriculum Committee chair, Lehman College (2017)
- Curriculum Committee member, Lehman College (2014 – 2016)
- Search Committee member for DFN Internship Coordinator Position, Lehman College (2014)
- Ad Hoc Committee member for Establishing a Physical Education Program, Lehman College (2014)
- Assessment Coordinator, Lehman College (2013 - Present)

**SERVICE TO THE COLLEGE**

- Developed the Graduate Program in Human Performance and Fitness for the Exercise Science Program (2017)
- Invited presentation/discussion at the Leonard Lief Library (December, 2017)
- Chair for Lehman Athletics Compliance Committee, Lehman College (2016-present)
- Project Senior Muscle: An Initiative by the Lehman College School of Health Sciences, Human Services, and Nursing for Health Promotion and Wellness in the Bronx, NY (2016)
- NCAA Faculty Athletic Representative (2016-present)
  - Responsible for ensuring that all Lehman athletic programs are in compliance with NCAA rules
  - Act as a liaison between student athletes and faculty to resolve any issues related to academic aspects of athletic participation
- Search Committee member for Associate Dean Position, Lehman College (2015)
- Featured in ‘Lehman Today’

**SERVICE TO THE UNIVERSITY**

- Faculty Member, Institute for Health Equity, City University of New York (2017-present)
  - Serve on Research subcommittee to determine how to best integrate research into the mission of the Institute
  - Help to set policies and procedures for the Institute

**COMMUNITY SERVICE**

**a. Professional Service**

- National Strength and Conditioning Association: Member and Fellow (2000 - Present)
  - Ad Hoc Committee for NSCA Expansion into Brazil: Chair (2016)
  - Finance Committee: Chair (2013-2014)
  - Blue Ribbon Panel to Examine Offering Specialty Credentialing: Chair (2014)
  - Committee to review the Policies and Procedures Manual: Member (2014)
  - Secretary/Treasurer (2013 - 2014)
- Board of Directors: Member (2012 - Present)
- Conference Committee: Liaison (2012 - Present)
- Special Populations Exam Development Committee: Member (2010 - 2014)
- Ad Hoc Committee for Feasibility of a Personal Training Journal: Chair (2012)
- Blue Ribbon Panel to Examine Advancement of Personal Training Certification: Co-Chair (2012)
- Personal Trainer Special Interest Group: Member (2011 - 2012)
- Ad Hoc Committee for Feasibility of a Special Populations Journal: Member (2011 - 2012)
- Conference Committee: Member (2008 - 2012)

- Frontiers in Physiology: Review Editor (2017 - Present)
- Journal of Strength and Conditioning Research: Senior Associate Editor (2017 - Present)
- Strength and Conditioning Journal: Evidence-Based Training Column Editor (2015 - Present)
- Strength and Conditioning Journal: Associate Editor-in-Chief (2013 - Present)

b. Board Service

- Editorial Advisory Board Member: Frontiers in Physiology (2017 - Present)
- Scientific Advisory Board Member: Dymatize Europe (2016 - Present)
- Advisory Board Member/National Strength and Conditioning Association – Spain Affiliate (2015 - Present)
- Community Advisory Board Member, North Central Bronx/Jacobi Hospital (2015-2017)
- Editorial Advisory Board Member: Journal of Strength and Conditioning Research (2014 - Present)
- Scientific Advisory Board Member: Dymatize Nutrition Corporation (2013 - Present)
- Editorial Advisory Board Member: Journal of the International Society of Sports Nutrition (2013 - Present)
- Board of Directors Member/National Strength and Conditioning Association (2012 - Present)
- Board of Directors Member/American Academy of Personal Training (2009 - 2010)

MEDIA

a. Internet

- Self.com (December 2017). “Following a Specific Fitness Program Is the Key to Hitting Your Goals.” [https://www.self.com/story/following-a-specific-fitness-program-is-key-to-losing-weight](https://www.self.com/story/following-a-specific-fitness-program-is-key-to-losing-weight)
- Bodybuilding.com (December 2017). “7 Ways to Make Your Workouts More Hardcore.” [https://www.bodybuilding.com/content/7-ways-to-make-your-workouts-more-hardcore.html](https://www.bodybuilding.com/content/7-ways-to-make-your-workouts-more-hardcore.html)
• The Conversation.com (September 2017). “BCAA Supplements are Just Hype – Here’s a Better Way to Build Muscles.” [https://theconversation.com/bcaa-supplements-are-just-hype-heres-a-better-way-to-build-muscles-84411](https://theconversation.com/bcaa-supplements-are-just-hype-heres-a-better-way-to-build-muscles-84411)


• Vitamin Shoppe. (March 2017). Let’s Set The Record Straight About Fasted Cardio [https://whatsgood.vitaminshoppe.com/2017/03/15/fasted-cardio/](https://whatsgood.vitaminshoppe.com/2017/03/15/fasted-cardio/)

• T-Nation. (March 2017). Tip: Rest This Long Between Sets [https://www.t-nation.com/training/tip-rest-this-long-between-sets](https://www.t-nation.com/training/tip-rest-this-long-between-sets)


b. Magazine


• Muscular Development Magazine. (August 2017). The Best Rep Range for Muscle Growth. [Link]
• Experience Life. (July 2017). [Link]
• Time Magazine (June 2016) Why Weight Training is Ridiculously Good for You. [Link]
• Paste Magazine. (June 2017). Achieve More in the Gym by Varying the Rep Range. [Link]
• Nutrition Action. (May 2017). Running on Empty. [Link]
• Men’s Health. (April 2017). The Brutally Honest Story Of What Happened After This Man’s Transformation. [Link]
• Fitness Rx for Women. (April 2017). 10 Minute Glute Blasting Circuits. [Link]
• Men’s Health. (March 2017). The Best Weight Lifting Advice for Men Over 40. [Link]
• Women’s Health Magazine. (March 2017). What Happens To Your Weight Loss When You Do The Same Workout Every Day. [Link]
• Fitness Rx for Women. (March 2017). Can You Target the Lower Abs. [Link]
• Men's Fitness. (January 2017). “45 Minute Transformation Workout”. [Link]
• Muscular Development Magazine. (December 2016). “Partial versus Full Range of Motion Reps”. [Link]
• Fitness Rx. (December 2016). “Split versus Full Body Routines”. [Link]
• Fitness Magazine. (October 2016). “Your Snoozefest Strength-Training Routine Is Boring Your Muscles Too”. [Link]
• Shape. (October 2016). “Shoulder Pain”. [Link]
- Men's Health. (October 2016). “Trade Secrets to Make This Week Your Biggest Ever”  
  http://www.menshealth.co.uk/building-muscle/pt-trade-secrets-to-make-this-week-your-biggest-ever
  http://www.menshealth.co.uk/building-muscle/get-big/the-simplest-way-to-build-more-muscle
- Oxygen. (October 2016). “Gain Without Pain”  
  http://www.oxygenmag.com/article/gain-pain-12174
- Fitness Rx. (September 2016). “Fasted Cardio and Changes in Body Composition”  
  http://www.muscleandfitness.com/workouts/back-exercises/back-basics-reeves-deadlift
  http://www.outsideonline.com/2109091/fasting-could-make-you-faster
  http://www.cosmopolitan.com/health-fitness/a59450/fat-burning-hack/
  http://www.menshealth.com/fitness/how-often-should-you-lift
- Muscle and Fitness. (May 2016). “Sculpt Stronger Leaner Legs”  
  http://www.oxygenmag.com/article/finetune-workout-11991
  http://www.menshealth.com/fitness/best-lower-abs-exercise
  http://health.usnews.com/wellness/articles/2016-03-25/should-you-even-bother-with-cardio
  http://www.menshealth.com/fitness/new-bodybuilding-rules
- Self. (December 2015). “Ultra-Effective Butt Exercises”  
- Men's Fitness. (November 2015). “Get Swole”  
  http://www.mensfitness.com/training/build-muscle/get-swole-whats-deal-pump
- Self Magazine. (September 2015). “Best Workout for Fat Loss”  
  http://www.muscleandfitness.com/muscle-fitness-hers/hers-workouts/ultimate-mix
- Men's Journal. (August 2015). “How to Box Jump Like JJ Watt”  
- Shape Magazine. (August 2015). “Plateau-Busting Strategies”  
• Men's Health Magazine. (March 2015). “Time Tested Bodybuilding Techniques”
• Men's Health Magazine. (February 2015). “Why Heavy Weights Aren’t the Only Way to Build Size and Strength”
• Details Magazine. (January 2015): “Muscle versus Cardio”
  http://www.details.com/story/muscle-vs-cardio
• Men's Health Magazine. (January 2015). “Brand New Study Puts Dieting Confusion to Rest”
  http://www.menshealth.com/nutrition/brand-new-study-puts-dieting-confusion-rest
• Women's Health Magazine. (December 12, 2014): “Partial Squat Variation”
  http://www.womenshealthmag.com/fitness/partial-squat-variation

c. Newspaper
• The Independent (October 2017). “BCAA supplements are just hype.”
  http://www.independent.co.uk/life-style/health-and-families/bcaa-supplements-are-just-hype-heres-a-better-way-to-build-muscles-a7969961.html
• Global News. (June 2017). “8 reasons why weight training is incredible for your health.”
• Washington Post. (May 9, 2014): “How to Refuel After a Workout”
  https://www.washingtonpost.com/national/health-science/how-to-refuel-after-a-workout-without-undermining-your-hard-work/2014/05/19/7c16871c-da0f-11e3-b745-87d39690c5c0_story.html
• Financial Post. (November, 2011). “Little bending required for these ab exercises.”
  http://www.financialpost.com/m/little+bending+required+for+these+exercises/5719017/story.html

d. Television
• WSMV - Channel 4, Nashville, TN. (January 2017). “Workout Tips for the New Year”
  http://www.wsmv.com/clip/13011599/nsca-workout-tips-1617

MEMBERSHIP IN PROFESSIONAL SOCIETIES (last 5 years only)
• National Strength and Conditioning Association
• United Kingdom Strength and Conditioning Association
Gul Tiryaki-Sonmez

TITLE: PROFESSOR

DEPARTMENT: HEALTH SCIENCES

EFFECTIVE DATE: September 2007

SALARY RATE:

HIGHER EDUCATION

A. DEGREES

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<th>Institution</th>
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<th>Degree &amp; Major</th>
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<tr>
<td>Oklahoma State University</td>
<td>1/1984 – 5/1986</td>
<td>M.S. Exercise Sciences</td>
<td>05/1986</td>
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B. Additional Higher Education and/or Education in Progress

EXPERIENCE

A. Teaching

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<tr>
<td>Lehman College</td>
<td>9/2016– present</td>
<td>Professor</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Lehman College</td>
<td>9/2007 – 9/2016</td>
<td>Associate Professor</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Abant Izzet Baysal University</td>
<td>2/1999 – 9/2006</td>
<td>Professor</td>
<td>Physical Education and Sports</td>
</tr>
<tr>
<td>Institution</td>
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<td>Rank</td>
<td>Department</td>
</tr>
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<tr>
<td>Sakarya University</td>
<td>1/1997 – 2/1999</td>
<td>Associate Professor</td>
<td>Physical Education and Sports</td>
</tr>
<tr>
<td>Dicle University</td>
<td>4/1996 – 1/1997</td>
<td>Associate Professor</td>
<td>Physical Education and Sports</td>
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<tr>
<td>Middle East Technical University</td>
<td>9/1993 – 4/1996</td>
<td>Associate Professor</td>
<td>Physical Education and Sports</td>
</tr>
<tr>
<td>Middle East Technical University</td>
<td>9/1990 – 4/1993</td>
<td>Assistant Professor</td>
<td>Physical Education and Sports</td>
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### B. Other

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<tbody>
<tr>
<td>Lehman College</td>
<td>9/2007-Present</td>
<td>Director of Exercise Science Program</td>
<td>Health Sciences</td>
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<tr>
<td>Lehman College</td>
<td>7/2014 – 7/2017</td>
<td>Chair</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Lehman College</td>
<td>9/2007-2009</td>
<td>Founder of Exercise Science Program</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Abant Izzet Baysal University</td>
<td>2/2004 – 9/2006</td>
<td>Vice President</td>
<td>Academic Affairs</td>
</tr>
<tr>
<td>Abant Izzet Baysal University</td>
<td>02/1999-9/2006</td>
<td>Chair &amp; Graduate Studies Coordinator of Department of Exercise Science</td>
<td>Physical Education and Sports</td>
</tr>
<tr>
<td>Sakarya University</td>
<td>1/1997 – 2/1999</td>
<td>Director &amp; Graduate Studies Coordinator of the School of Sports and Physical Education</td>
<td>Physical Education and Sports</td>
</tr>
<tr>
<td>Fenerbahce Sports Club, Istanbul, Turkey</td>
<td>1/1997 – 2/1999</td>
<td>Coordinator of Computerized Match Analyses &amp; Assistant Director of Foreign Relations</td>
<td>Performance analysis</td>
</tr>
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ACADEMIC AND PROFESSIONAL HONORS

Candidate for “Science Woman of Year”, nominated by the “Women’s Journal”, Turkey, 1996
Scholarship to pursue doctorate in Exercise Physiology in USA, Turkish Ministry of National Education, 1982
Having graduated as the premier student from the Youth and Sports Academy, Ankara, Turkey, 1981
National Folk dancer, National Folk Dance Team, Turkey, 1974-1981
National Athlete, National Track & Field Team, Turkey, 1979-1981

PUBLICATIONS  (last five years only)

Peer-reviewed articles:


INVITED SPEAKER

“Inactivity and Obesity Rates in Different Countries”

“Physical Activity and Appetite Hormones”
Invited Speaker to give lectures for Doctoral students at Faculty of Sports, Uludag University, Turkey, 15 April, 2016.

“Inactivity and Obesity”
Invited speaker and give lectures at Josef Pilsudski University of Physical Education in Warsaw, Poland, September 23-27, 2015.

INTERNATIONAL PRESENTATIONS:


Olcucu B, Vatansever S, Tiryaki- Sonmez G., Oner S. Effect of Acute Exercise on Hunger in Healthy Woman. 4th International Conference on Science Culture and Sports. 22-26 May 2015, Ohrid, Makedonia.

Vatansever S, Olcucu B, Tiryaki- Sonmez G., Oner S. Obestatin Response To Resistance Exercise in Male. 4th International Conference on Science Culture and Sports. 22-26 May 2015, Ohrid, Makedonia.


LOCAL PRESENTATIONS

**PH.D. THESIS TITLE:**

The Effects of Sodium Bicarbonate and Sodium Citrate Administration on 600m Running Performances, May 1990

**PUBLICATIONS** (Prior to “last five years”)

**Books:**


**Book Chapters:**


**Peer-reviewed articles:**

Aydin, K., Sozbir, K., Yuktasir, B., Yalcin, H. B., Yildiz, N., **Tiryaki–Sonmez, G.** The Comparison of EMG Activities of Knee Extensor Muscles Between Soccer Players and Sprinters During Countermovement Jump


UNPUBLISHED WORK (Supported by Evidence)

Works accepted for publication:

Peer Reviewed

Non-Peer Reviewed:

Works submitted for publication:

Peer-reviewed articles:


**Works in progress:**


1. The effects of exercise on obestatin hormone and food intake in obese and normal weight adults.

2. The effects of whole body vibration exercises on body composition markers in male athletes.

3. Effects different types of exercises on muscle strength and EMG activities

4. The effect of Pilates exercise on the levels of Salivary Cortisol and Salivary Alpha Amylase activity.

**Grant writing in progress**

1. The anti-oxidative and anti-inflammatory effects of Rosemary extract after acute high-intensity exercise on the immune and oxidative systems (NIH grant application)

2. Prevention of Childhood Obesity (NIH grant application)

**GRANTS RECEIVED**

a. Multiple

b. Individual

**Grants received:**


2. CUNY 2015-2016 Student Technology Fee Grant - Exercise Science/Pre-physical Therapy, $30,672.

4. PSC-CUNY 43 Research Award (2012)-The Effects of Resistance Exercise on Obestatin Hormone and Food Intake, City University of NewYork (CUNY), $3,200.

5. PSC-CUNY 42 Research Award (2011)-The Effects of Exercise on Obestatin Hormone and Food Intake, City University of NewYork (CUNY), $3,500.

6. Shuster Fellowship Award (2008) – The Effects of Exercise on the Level of Hormones Regulating Food Intake in Young Adults, Lehman College, CUNY. $ 4,000.

7. Scientific Research Funding, Project Director (2004-06) – Establishment of the Exercise Physiology Lab, Abant Izzet Baysal University, Bolu, Turkey. $150,000.

8. Turkish Soccer Foundation, (1996) - Conference Organization. $10,000


10. Scientific Research Funding, Project Director (1992-94) - Physiological Effects of Altitude Training,

11. Middle East Technical University, Ankara, Turkey. $30,000.

Grants submitted, but not funded;


SERVICE TO THE COLLEGE

Chair of the Department of Health Science, July 2014-July 2017

Member of the College P&B Committee, July 2014-July 2017

The Senate Committee on the Budget and Long Range Planning - September 2015 -Present
Member of the Instructional support Services Program (ISSP) Advisory Committee 2011-present

Member of the Faculty Election Committee, 2008-Present

Member of the Foundations of Excellence “All Students” Dimension Committee, 2010-2011

SERVICE TO THE DEPARTMENT

Director of the Exercise Science Program, Department of Health Science at Lehman College, 2009-Present.

Developed the Undergraduate Program in Exercise Science Program with option of Pre-Physical Therapy and with option of Exercise and Movement Science, 2010- Present.

Developed the Undergraduate Program in Exercise Science Program in the Department of Health Science at Lehman College, 2007- Present.

Member of the Departmental P&B Committee. 2014-Present

Member of the Departmental Grade Appeal Committee, 2011- Present.

Advising more than 300 students majoring in Exercise Science- 2007- Present.

Prepared Internship Manual-2012

Chair of the Search Committee for a new faculty in Exercise Science Program, 2009-2013

Member of the Departmental Curriculum Committee, 2008-2014

Member of Search Committee for new faculty in different programs of the Department of Health Sciences at Lehman College, Spring 2008

SERVICE TO THE UNIVERSITY

- Member of Focus Group for Housing at CUNY, Spring 2008
- Representative of Department of Health Sciences in Open House of Lehman College, Fall 2007
- Representative of Department of Health Sciences in Open House of Lehman College, Spring 2013.

COMMUNITY SERVICE

- Volunteer to be a soccer coach for Riverdale Soccer club, Riverdale, Bronx, NY., 2007-2012
• Volunteer as Classroom Representative: PS 24, Riverdale, Bronx, NY. 2009-2013

• Volunteer as Learning Leader: PS 24, Riverdale, Bronx, NY. 2009-2013

MEMBERSHIP IN PROFESSIONAL SOCIETIES (last five years only)

• American College of Sports Medicine

• American Society of Exercise Physiologist

• International Network on Sport and Health Sciences

PROFESSIONAL ACTIVITIES

• Editor of International Journal of Sports, Exercise and Training Science, 2015-Present.

• Regional Editor in Journal of Biomedical Human Kinetics, University of Physical education, Warsaw, Poland. 2010- Present.

• Scientific Committee Member of Olympic Sport and Sport for All XXI International Congress, September 14-16, 2017.

• Scientific Committee Member of International Science and Football Conference, 24-25 March 2016, Qatar.

• Quantative Reasoning workshop-2011-2012

• Critical Thinking Assessment -2010- 2011

• Scientific Committee of 10th International Sport Sciences Congress, November 10-12, 2010, Antalya, Turkey.


• Writing Across The Curriculum- 2007-2008

• Writing Across The Curriculum, "Revamping Writing" Workshop, May 2015
• Writing Across The Curriculum, "Peer Review Boot camp" Workshop, April 2015

• Grant writing lecture presented by Dean Latimer, School of Health Sciences, Human Services, and Nursing at Lehman College; October 2014

• Preparation for Teaching Online: A Certification Workshop For CUNY Faculty, January, 2012
Andrew Alto  
2728 Henry Hudson Parkway, Apt #25C  
(917) 870-2513  
Andrew.Alto@Lehman.cuny.edu

EDUCATION

Doctorate of Education in Sport and Performance Psychology  (July 2017 to Present)  
Concentration-Sports and Exercise Science  
University of Western States, Portland, OR

Master of Arts in Health Education and Promotion  December 2016  
City University of New York –Lehman College, Bronx, NY

Bachelor of Science in Exercise Science  May 2015  
City University of New York –Lehman College, Bronx, NY

Honors & Awards:
• Presidential Scholar (May 2014, May 2015)
• Degree Honors: Departmental Honors in Exercise Science
• Degree Honors: Magna Cum Laude
• Dean’s List (May 2013)

SCHOLARLY PUBLICATIONS


CONFERENCE PRESENTATIONS


CONTINUING EDUCATION

• Performance Summit- Juggernaut Training Systems.  February 2017
• 4th Annual Rutgers Human Performance Conference  April 2017
• Reviewer  March 2017-Present
PROFESSIONAL MEMBERSHIPS AND CERTIFICATIONS

- CPR/AED Certified by the American Heart Association November 2014 – Present
- NSCA- Certified Strength and Conditioning Specialist: ID: 7248050313 December 2016– Present
- American Society for Biomechanics, November 2014
- American College of Sports Medicine, June 2014
- National Strength and Conditioning Association, February 2013

PROFESSIONAL EXPERIENCE

Instructor (Exercise Science) August 2017–Present
Lehman College, Bronx, NY

Substitute Lecturer (Exercise Science) August 2016 – Present
Lehman College, Bronx, NY

Adjunct Lecturer (Exercise Science) June 2016–July 2016
Lehman College, Bronx, NY
- Taught Introduction to Exercise Science to undergraduate students

Teaching Assistant (Exercise Science) January 2016 – May 2016
Lehman College, Bronx, NY
- Led lab activities in strength and conditioning testing
- Instructed students on proper lab techniques
- Educated students on the essentials in strength and conditioning testing
- Added evidence based information to class discussions and teaching

Head Research Assistant (Exercise Science) February 2015 – May 2015
Lehman College, Bronx, NY
- Recruited research participants based on specific criteria
- Supervised and instructed 7 other research assistants on proper training techniques
- Organized and led weekly group meetings to ensure the research is running optimally
- Trained research subjects based on the specific exercise protocol provided by the head researcher
- Educated and instructed assistants and subjects on proper lifting techniques and the essentials to remaining efficient and effective throughout the research

Research Assistant (Exercise Science) August 2014 – December 2014
Lehman College, Bronx, NY
- Fulfilled duties carried out in being a Head Research Assistant with the exclusion of supervising other assistants
• Developed daily reports for the Head Researcher based on the needs of the research and ways to keep it running optimally

**Group Fitness Instructor/Workshop Leader**
*Lenox Hill Neighborhood House. New York, NY*  
*October 2013 – April 2014*

- Constructed and led group fitness classes for members and guests of Lenox Hill
- Helped to develop and lead health workshops based on nutrition, fitness, health promotion and behavioral changes
- Developed and implemented weekly recreational trips for members in order to promote physical activity and mental health

**Floor Trainer/Fitness Attendant**
*Riverdale YM-YWHA, Bronx, NY*  
*February 2010 – June 2012*

- Supervised fitness room ensuring members were exercising safely and the gym was running efficiently at all times
- Educated and instructed members on proper use of equipment and recommended specific exercises and programs to help them achieve their goals
- Created and led group exercise classes for children ages 8-12
- Aided in the development and promotion of the Y yearly race to raise funds for infrastructure improvements and added member services

**COURSE TAUGHT**

- **Introduction to Exercise Science (EXS 264):** Orientation to the Field of Exercise Science, professional roles, nature, scope and significant of physical activity and exercise. Basic concepts of fitness and assessments as applied to individuals and unique groups.
- **Behavioral Aspects of Physical Activity (EXS 265):** Conceptual and theoretical frameworks for understanding the behavioral component of physical activity and exercise, and for developing intervention strategies for enhancing physical activity and exercise behavior.
- **Kinesiology & Biomechanics (EXS 315):** Study and application of anatomic and mechanical principles of human movement.
- **Motor Learning and Control (EXS 316):** Effects of psychological, social maturational, and neuropsychological factors on the learning and performance of movement patterns
- **Exercise Physiology 1 (EXS 323):** Human anatomy and physiology as related to physical activity, exercise, and work. Study of the nervous, endocrine, muscular, and cardiovascular systems. Factors that affect physiological function, energy transfer, and exercise performance.
- **Exercise Testing and Prescription (EXS 326):** Principles of fitness and the development of exercise programs to enhance health and/or human performances in a variety of settings. Methods of evaluating physiological adaptation to exercise using laboratory and field experiences.
- **Exercise Physiology 2 (EXS 423):** Human anatomy and physiology as related to physical activity, exercise, and work. Study of the nervous, endocrine, muscular, and cardiovascular systems. Factors that affect physiological function, energy transfer, and exercise performance.
- **Theory and Methods of Strength and Conditioning (EXS 425):** Strength production from a physiological, neurological, biomechanical, and bioenergetic perspective.
APPENDIX F

Qualifications for Human Performance and Fitness New Hire - Lecturer-Level Position

Position Description and Duties

• Teach graduate courses in Lehman College’s Human Performance and Fitness program;
• Mentor and advise students in the program;
• Manage the program's action research project process;
• Assist with assessment and program development initiatives;
• Seek external funding for research and program improvements;
• Service to college, school and department;
• Participate in student recruitment, application and admissions processes; and
• Perform additional administrative duties for credit load assignment.
• Collaborate with faculty in the department on curricula, assessment, and department projects.
• Mentor students outside of the classroom (e.g. major's club, internships, and student-faculty collaborative research).

Qualifications Required

• Minimum master's degree in Exercise Science or a related field from an accredited institution;
• Experience in teaching graduate-level courses in exercise science;
• Experience in a lab, clinical, or professional setting directly related to exercise science.
• Current knowledge in technology, best practices, and recent trends in the exercise science field.
• Advanced fitness certification (e.g. Certified Strength & Conditioning Specialist) and professional affiliation is preferred.
APPENDIX G

References


C. 1. - Brooklyn College - Center for Cancer Research
Proposal
April 23, 2018

Brooklyn College
Center for Cancer Research

Submitted by:

Maria Contel
Professor and Chairperson
Department of Chemistry

Jennifer Basil
Professor and Chairperson
Department of Biology
Executive Summary

Brooklyn College is educating the next generation of leaders in cancer research. Our undergraduate and doctoral students—diverse, intellectual, and striving—are eager to engage in more basic and applied cancer research. At the same time, the very professions related to that research—university faculty in biology, chemistry and related fields, research scientists at public and private institutions, medical doctors, and others across the health industry—want and need our diverse graduates. These professions recognize that diversity enhances the quality and impact of research teams. Brooklyn College is therefore a conduit for students who bring new perspective and insight to a field that needs them.

Cancer research is a major area of scholarly focus at Brooklyn College. Many biology and chemistry faculty members at the College work with undergraduate and doctoral students in their laboratories, performing basic and applied research on cancer and generating impressive results. Discoveries from their findings produce patents, models, new treatments, diagnostic tools, and prevention methods that may be used in clinical settings for the benefit of cancer patients.

Brooklyn College is now ready to expand greatly its fundamental (basic and applied) research on cancer, complementing the research performed at medical centers for cancer treatment across Brooklyn and the larger N.Y.C. area. Combining our research forces with local cancer treatment centers and hospitals opens the possibility of new modes of translational cancer research in the borough. Translational research is the “bench-to-bedside” model that transforms the findings of fundamental research into actual medical practice and treatment.

With the proposal, we seek to establish the Brooklyn College Center for Cancer Research (“BC-CCR”). The BC-CCR will enhance our ability to deliver first class educational opportunities to our deserving undergraduate and graduate students. It will enhance our ability to attract outstanding faculty, staff, and students to our academic community. It will deepen our programmatic commitment to this important area of scientific inquiry. It will expand our positive impact on the borough through deeper collaborations with local hospitals and cancer centers delivering crucial services to cancer patients. Importantly, the BC-CCR will be the first research center with a focus on cancer at the City University of New York (“CUNY”).

Cancer Incidence and Mortality in Brooklyn

Cancer is an enormous public health challenge, and its effects are especially acute in the borough of Brooklyn. Consistent with other populations, the incidence of cancer diagnosis in Brooklyn is very high; however, mortality from the disease is worse here. As a result, this disease deserves special and intensive research attention by the academy, given our student population and the challenges faced by the surrounding community. Brooklyn College is uniquely placed to make a difference in fundamental research on this disease in service of this high-risk community.
A staggering 40% of Americans will be diagnosed with cancer during their lifetimes. In 2017 cancer took the lives of 600,000 adults and 2,000 children in the U.S.\textsuperscript{1} N.Y. State cancer incidence is the fifth highest among the 50 states and the District of Columbia. Cancer is the second leading cause of death in the state among adults and children, and the number of people who are diagnosed with cancer every year has been increasing. N.Y. State cancer incidence in 2014\textsuperscript{2} was 477 cases per 100,000 persons. About 1,000 children under the age of 20 are diagnosed with cancer in the state each year, and childhood cancers represent only 1% of the total diagnoses.\textsuperscript{2}

Cancer does not affect everyone equally. People from low socio-economic backgrounds, people of color, and those who are foreign-born are less likely to have information regarding or access to prevention, diagnosis, and free treatments for cancer (e.g., clinical trials). Brooklyn is an ethnically, economically, and educationally diverse urban nucleus with a population of 2.6 million and a high population density.\textsuperscript{4} Foreign-born inhabitants represent 38% of the population and a variety of languages besides English are spoken in Brooklyn households. More than a fifth of the population lives in poverty, almost twice the national average. All these factors must be considered when comparing cancer incidence and mortality with other boroughs in N.Y.C., N.Y. State, and other states in the U.S.

Brooklyn evinces health disparities in cancer mortality. In N.Y.C., the average rate per 100,000 persons diagnosed with cancer is 513 males and 416 females, and average annual death rates of 174 males and 126 females.\textsuperscript{3} For the borough of Brooklyn, the incidence rates are slightly lower, at 511 males and 414 females diagnosed per 100,000 annually. However, mortality rates are worse in Brooklyn at 179 males and 131 females per 100,000 annually.\textsuperscript{5}

Therefore, cancer is an extraordinary burden in our borough and one of the main health issues we face. Cancer’s challenges are far reaching: affecting not only the people diagnosed, but also their families, friends, and caregivers. Cancer impacts the physical and emotional health of many people, including and especially patients and their families. It impacts their work, everyday life, and finances. Cancer deeply affects the borough of Brooklyn. The BC-CCR will expand relevant fundamental cancer research and partner with hospitals and medical centers to better serve the Brooklyn community.

Medical Centers for Cancer Treatment and Research in Brooklyn

A number of hospitals and medical centers in Brooklyn offer patients cancer treatment. Those serving patients are: Brooklyn Cancer Center at Maimonides Medical Center, SUNY Down-State Cancer Institute, New Cancer Center at New York Presbyterian-Brooklyn Methodist Hospital, and the Brooklyn Hospital Center. Some N.Y.C.-based hospital and medical centers like Memorial Sloan Kettering Cancer Center also offer specific services in Brooklyn (chemotherapy and acupuncture) at Memorial Sloan Kettering Brooklyn Infusing Center.

These medical centers are also actively involved in research, including clinical trials for new treatments and diagnoses. Their research examines cancer’s impact on the population of Brooklyn, including cancer prevention, health disparities, and outcomes.
**Brooklyn College Overview**

Brooklyn College provides a transformative, distinctive, and affordable education to students from all backgrounds. We have a special commitment to serve immigrants and first-generation college students from the diverse communities that make up our City and State. Through outstanding research and academic programs in the arts, business, education, humanities, and the sciences, we graduate well-rounded individuals who think critically and creatively to solve problems. They become the leaders who serve their communities and transform their fields and professions.

Brooklyn College enrolls 17,580 students—14,406 undergraduates and 3,174 graduate students. They come from 143 nations and speak about 100 different languages. A majority of Brooklyn College students are under-represented minorities and a majority of them are Pell-eligible.

Brooklyn College is a local center for community outreach by scientists and students alike. Faculty in the School of Natural and Behavioral Sciences at Brooklyn College have partnered with many high schools on educational projects, and students take college-level courses or transfer STEM courses into college upon graduation. Brooklyn College faculty from the School of Natural and Behavioral Sciences also mentor high school students from local schools (Brooklyn Tech, Midwood, Erasmus, James Madison, etc.) in scientific research in their laboratories and in collaboration with local hospitals (either for NYSEF and/or the Intel Westinghouse Competition). Many of these students and teachers are affected by, and wish greatly to study, cancer.

The faculty at Brooklyn College is dedicated to serving its unique and diverse student body. The students themselves provide critical outreach in their own communities, including translation services, education, and health advocacy. Brooklyn College, therefore, has an established and firm foothold in the borough as a source of excellent discovery, education, and community support.

**Cancer Research at Brooklyn College**

At Brooklyn College, there is a strong research focus on cancer, primarily in the Chemistry and Biology Departments. Research runs the gamut of areas from abnormalities in cell division to pre-clinical drug development. Immunotherapy is an area of increased interest among our cancer scientists, as three cancer faculty have projects that have direct or indirect connections to the field. Brooklyn College has also developed a strong research effort in microbial causes and consequences of cancer (physiological and environmental), which is unique across CUNY.

In the Biology Department at Brooklyn College, nine faculty members engage in cancer research or cancer-related research. In the Chemistry Department, eleven faculty members engage in cancer research or cancer-related research. These two Departments host an average of 100 researchers per year (postdoctoral fellows, doctoral, master’s, undergraduate and high school students) who perform cancer research or cancer-related research in Brooklyn College science laboratories. Additionally, faculty members in the Computer and Information Sciences Department, the Health and Nutrition Sciences Department, the Mathematics Department, and the Psychology Department also engage in cancer-related research. See Appendix 1, which
provides short profiles of relevant information on the principal investigators in each Department engaging in relevant research.

Interest among our students in cancer research is so high that our Biology Department runs a highly successful Cancer Biology Senior/Master’s course. Importantly, a large proportion of Brooklyn College science mentees researching cancer belong to groups traditionally underrepresented in biomedical research and the physical sciences. Many of these underrepresented students have been supported by successful Brooklyn College programs such as the Minority Access to Research Careers (MARC), Research Initiative for Science Enhancement (RISE), Louis Stokes Alliance for Minority Participation in Research and Girls in Science Technology Engineering and Math (GSTEM). Brooklyn College Biology also partners with Columbia University via the Columbia University Center for Cancer Systems Therapeutics (CAST) Scholars Program, a synergistic partnership with student researchers at Brooklyn College.

Cancer researchers at Brooklyn College collaborate with a number of prestigious cancer centers, medical schools, and universities in the N.Y.C. area, across the U.S., and overseas. The collaborating institutions in New York City include: Memorial Sloan Kettering Cancer Center, Mt. Sinai School of Medicine, Albert Einstein College of Medicine, Cornell University, New York University Medical School, New York University Polytech, Columbia University, Rockefeller University, SUNY Downstate University, and St. Johns University, and at CUNY: The Advanced Science Research Center ("ASRC"), City College, Hunter College, Lehman College, and John Jay College.

Across the U.S., cancer researchers at Brooklyn College have collaborations with the Wellman Center for Photomedicine at Harvard Medical School, Frederick National Laboratory for Cancer Research, Yale University, University of Hawaii Cancer Center, Saint Louis University School of Medicine, College of Pharmacy at the University of Minnesota, University of New Mexico School of Medicine, Indiana University, Michigan State University, University of Colorado School of Medicine, the University of Colorado, Brandeis University, Ohio State University, University of Idaho, University of Puerto Rico, and Nicolaus Copernicus University. Three of these institutions (Memorial Sloan Kettering Cancer Center, Frederick National Laboratory for Cancer Research and the University of Hawaii Cancer Center) are National Cancer Institute-designated centers. One of our cancer researchers at Brooklyn College is a full member of the University of Hawaii Cancer Center.

Collaborations Brooklyn College cancer researchers enjoy overseas include the Université Catholique de Louvain (Belgium), Max Planck Institute for Complex Systems (Germany), Cardiff University (UK), Nagoya City University (Japan), Weizmann Institute (Israel), Technion (Haifa, Israel), Universidade Nova de Lisboa (Lisbon, Portugal), Humanitas University (Milan, Italy), the Italian University of Switzerland, Universidad de Cuernavaca (Mexico), and the City University of Hong Kong (Hong Kong, China). During the past five years, these research groups have raised about $11 million in grants, have published about 120 papers, have issued five U.S. patents, and have three U.S. patents submitted or pending on topics directly related to cancer.

Brooklyn College is now poised to expand its fundamental research in cancer, complementing the work of local medical centers. We seek to expand and enhance our established research excellence in this disease, deepening our collaborations with local hospitals and cancer centers in Brooklyn and the N.Y.C. area to achieve this aim.
**Research Facilities at Brooklyn College**

We have a serious challenge in our research facilities at Brooklyn College. Our faculty and students perform high-quality, rigorous cancer research—21st Century science—in early 20th Century research laboratories. Our student teaching laboratories are also in critical need of repair. Much of the infrastructure of our laboratories dates to the actual founding of the campus in 1930. Brooklyn College is the only senior college left at CUNY without a new science facility. Brooklyn College is therefore in dire need of a structural transformation in the sciences.

Brooklyn College students are teeming to engage in fundamental research. For example, both the Biology and Chemistry Departments have experienced a significant increase in the number of students who major in those disciplines every year for each of the last ten years. These students deserve first class facilities in which to learn and conduct research that will contribute to their communities. We must modernize and enhance our research facilities via substantial infrastructural adjustments that will support our engaged and productive scientists and our rapidly growing population of scientists-in-training. A primary focus of the BC-CCR, therefore, will be to transform the research laboratory facilities on campus to support outstanding scientific inquiry in the causes and cures of cancer.

**Timeline**

We plan to implement the Brooklyn College Center for Cancer Research in three phases.

**Phase I. Years 1-2**

During the first year of the project, we will formally establish the BC-CCR by obtaining approval from the Brooklyn College Policy Council and the CUNY Board of Trustees. We will then identify a Scientific Director and an Associate Director of the BC-CCR, along with administrative support from the Office of Sponsored Research and the School of Natural and Behavioral Sciences.

During the first phase, we will establish an Advisory Board. The President, Vice President for Institutional Advancement, and the Dean of the School of Natural and Behavioral Sciences will raise funds for the BC-CCR, assisted by the Scientific Director, Associate Director, BC-CCR Advisory Board, and Brooklyn College Foundation Board.

During the first year of the project, we will develop institutional collaborations with cancer centers in Brooklyn, the N.Y.C. area, and out of State. These collaborations will have an educational or research component (e.g., bio specimens and pathology data from centers and hospitals, co-mentoring of students and post docs). We are in discussions with SUNY Downstate Cancer Institute and the University of Hawaii Cancer Center. We have already initiated successful discussions with the ASRC, the Graduate Center, and individual cancer researchers across CUNY to explore possibilities. We have also drafted a letter of understanding with Memorial Sloan Kettering Cancer Center (herein, “MSKCC”). See Appendix 2.

We have planned that our collaboration with MSKCC will include: a) the development of joint research experiences for undergraduates and undergraduate summer programs, b) participation in NIH initiatives, such as US4 partnership scientific collaboration between MSKCC and other colleges in CUNY (such as the City College), c) participation of Brooklyn College undergraduate students in summer programs already in place at MSKCC, d) the expansion of already existing research collaborations (including undergraduate and graduate researchers), e)
participation on doctoral committees by faculty at both institutions, f) the creation of a pipeline of Brooklyn College students to PhD and PhD/MD programs and postdoctoral positions at MSKCC, and pipeline for postdoctoral fellows at MSKCC for faculty positions at Brooklyn College, g) access to MSKCC facilities, seminars, and symposia for Brooklyn College doctoral and graduate students, h) training from MSKCC faculty at Brooklyn College in courses and seminars, i) participation of MSKCC faculty and researchers in our annual research retreats, and j) help in building outreach programs with the community including medical translation. Brooklyn College will be a “hub” for patient education and resources in Brooklyn, such access to free clinical trials at MSKCC.

The BC-CCR collaboration with the ASRC will enhance the inclusion of researchers, faculty, and students alike at the ASRC. The directors of the ASRC (for Nanotechnology and Structural Biology) are enthusiastic to establish collaborations, co-mentor doctoral and undergraduate students, provide faculty and students training in a variety of techniques in ASRC specialties (see Appendix 2), and participate in the annual BC-CCR retreat. ASRC faculty members are committed to developing and delivering relevant workshops at Brooklyn College.

The BC-CCR collaboration with the University of Hawaii Cancer Center will initially involve the exchange of researchers, primarily undergraduate and doctoral students, between the two institutions through some support from a P30 grant and the expansion of existing scientific collaborations. The UHCC will also support the creation of the BC-CCR by sharing information on the successful creation of their Cancer Center, now a National Cancer Institute-designated center.

During these two first years, we will increase efforts to support and attract excellent faculty to Brooklyn College to enhance our critical mass of faculty focused on cancer research. We will also seek expertise in new, relevant areas at Brooklyn College, such as Cancer Pharmacology, Immunotherapy, Cancer Prevention, Cancer Health Disparities, and Mental Health focused on cancer patients.

During the second year, we will create and establish an Annual Cancer Research Retreat at Brooklyn College, inviting CUNY and non-CUNY cancer researchers. We will develop and introduce more cancer-related courses in the curriculum of the Biology, Chemistry and allied departments, including seminars offered at Brooklyn College by collaborating faculty at partner institutions and hospitals.

We plan to establish a Master’s Program in Cancer Studies, again with support from many collaborators. We will also identify grants, fellowships, awards, and programs with help from the OSRP to support and expand our population of undergraduate, master’s and PhD students training in cancer research, including programs for underrepresented groups in the physical and biomedical fields. Current faculty will continue with their robust and ongoing research agendas and individual grant applications.

Expected outcomes for this phase are:

- Approval of the BC-CCR proposal by the Brooklyn College Policy Council and the CUNY Board of Trustees.
- Establishment of an Advisory Board for the BC-CCR.
- Naming of Scientific Director and Associate Director, including administrative support.
• Promotion of the BC-CCR in CUNY and across the borough via public seminars, social media, and seminars and exchanges among collaborators.
• Recruitment of researchers to a variety of departments in the cancer research area (developing a critical mass)
• Establishment and enhancement of institutional collaborations with other cancer centers.
• Identification of N.Y.C., N.Y. State, Federal, foundation, business, and private funds to support the BC-CCR.
• Identification of funding opportunities for undergraduate and graduate students with input from OSRP to conduct cancer research.
• Identification of funds to develop and support cancer research facilities, instrumentation, and other critical ongoing needs.
• Incorporation of at least three new areas of focus in both cancer research and courses across departments.
• Development of a plan for a new accredited Master’s or certificate program in cancer research.
• Establishment of an Annual Cancer Research Retreat with local cancer researchers.
• Initiation of a pipeline to cancer research for students from Brooklyn, via education, training, and collaboration with scientific and community partners.

We will assess the outcomes and benchmarks for Phase I of the project at the end of year 2.

**Phase II. Years 3-5**

During years 3-5 of the BC-CCR, we will expand several of the initiatives begun in Phase I. We will focus our efforts on supporting and attracting faculty with a focus on cancer research across a variety of disciplines to expand mentoring and to reach the critical mass of faculty we have to apply for Institutional Federal Grants to help support the BC-CCR, especially for instrumentation and technical support. The BC-CCR will promote expanded educational activities, such as seminars, workshops and one-day events with collaborators, to attract doctoral, Master’s and undergraduate students.

During Phase II, we will also use our relationships with local high schools to identify and support students interested in cancer research early in the pipeline. By this point, the BC-CCR will have a portfolio of grants, fellowships, awards and programs to help undergraduate, Master’s and PhD students to allow us to perform cancer research at expanding levels. Existing faculty and new hires will continue with their research efforts and individual grant applications. We will also develop activities for community outreach on cancer topics.

During this period, we will intensify the recruitment of doctoral students focused on cancer research. The BC-CCR faculty will also create an accredited interdisciplinary Master’s or certificate program via a collaboration between the Biology and Chemistry Departments and other Departments of the School of Natural and Behavioral Sciences at Brooklyn College.

To promote the BC-CCR at national and international levels, we will organize and host a conference on a specific area of cancer research. Both Dr. Contel and Dr. Basil have ample experience in conference organization at these levels, including fundraising for them.
The expected outcomes for Phase II are:

- Continued aggressive fundraising campaign and the deployment of raised funds on cancer research facilities, instrumentation, and other ongoing needs for the BC-CCR.
- Promotion of the BC-CCR in CUNY and across the borough.
- Promotion of the BC-CCR at undergraduate and graduate level.
- Development of a critical mass of faculty focused on cancer research across a variety of Departments.
- Incorporation of more doctoral students in cancer research through the CUNY doctoral programs in the School of Natural and Behavioral Sciences.
- Continued institutional collaborations with cancer centers and local hospitals.
- Submission of applications and requests to N.Y.C., N.Y. State, foundations and federal sources of funding to support the BC-CCR.
- Establishment of a new interdisciplinary accredited Master’s or certificate program in Cancer Studies.
- Continued annual cancer research retreats and seminars at Brooklyn College.
- A conference on a specific area of focus in cancer research.
- Increased outreach to local high schools and to the larger Brooklyn patient community.

Phase III. Year 6 and beyond

At five years, the BC-CCR will review and revise the expected outcomes and benchmarks attained during Phases I and II. From this point forward, the BC-CCR should be eligible for several large federal grants specific to cancer centers (such as P30, NCI) and a variety of business grants to develop drug discovery. As mentoring and outreach is critical to the BC-CCR, our educational and research activities will deepen and expand, including outreach via student researchers, faculty researchers, and hospital partners to the Brooklyn Community as a whole (e.g., high-school mentoring, internships, public talks, and partnering with local teachers).

Benefits

The benefits of the BC-CCR to Brooklyn College and to the larger borough of Brooklyn are great and may be categorized follows:

For Undergraduate and Graduate Students

- The BC-CCR will build on our extensive faculty research agenda in cancer, including student research and programs.
- The BC-CCR will provide unique and intensive training in cancer research to high school, undergraduate, Master’s and doctoral students at Brooklyn College.
- The BC-CCR will increase recruitment and retention of PhD students from a diversity of backgrounds, strengthening the mission of the College.
- The BC-CCR will attract undergraduate and graduate students in the sciences and across disciplines to study at Brooklyn College.
• The BC-CCR will provide students training and volunteer opportunities to work with cancer patients and their families in both research and outreach, including counseling, advocacy, serving as bridges between patients and medical centers (e.g., recruitment of patients for free clinical trials), and serving as translators.

• The BC-CCR will allow us to develop a new interdisciplinary Master’s or certificate program in Cancer Studies.

• The BC-CCR will create excellent cancer research laboratories, instrumentation rooms, and core facilities for Brooklyn College for undergraduate and graduate researchers and students, meeting N.Y. State and Federal Guidelines for safety.

For Faculty and Staff
• The BC-CCR will attract excellent faculty and staff with expertise in a variety of cancer disciplines who could contribute enormously to the College’s mission of serving our unique and enthusiastic students while increasing excellence in research.

• The BC-CCR will increase the visibility of a number of our Brooklyn College faculty members in the Biology, Chemistry, Biochemistry, and a variety of other CUNY PhD programs.

• The BC-CCR will allow researchers to apply for prestigious and substantial federal, institutional, and private sector grants (e.g., National Cancer Institute, American Cancer Association, Department of Defense, American Cancer Association, Cancer Research Institute, Drug Development grants from companies).

For Brooklyn College
• The BC-CCR will be the first cancer center for basic and applied research in Brooklyn and across CUNY and it will spark broad public interest, drawing attention to Brooklyn College, to the borough of Brooklyn, and allowing for the recruitment of a variety of excellent and diverse students at every point in the pipeline.

• The BC-CCR will complement a variety of scholarship in the college in film, writing, performing arts, business, increasing visibility and prestige for all existing programs.

• The BC-CCR will build institutional relationships with SUNY Downstate Medical School in Brooklyn and other cancer centers in N.Y. (e.g., Sloan Kettering), increasing our breadth of mentoring, research, and providing access to biomedical and pathology specimens.

• The BC-CCR will establish strong community ties through outreach, collaborating through local schools, public talks, and advocacy with local hospitals.

For CUNY
For CUNY, the BC-CCR will help the University to develop a more ambitious CUNYwide cancer research agenda. The BC-CCR can serve as “seed” for a broader initiative in cancer research. In addition to the support from the CUNY ASRC (already described), the Graduate Center has offered support for such an initiative. The Graduate Center Dean of Sciences Dr. Joshua Brumberg, for instance, is interested in developing an allied program, committee, website, and annual retreat at the GC.

Research leads in cancer at Brooklyn College are contacting scholars focused on cancer across the CUNY colleges and have already identified a number of key people interested in such an initiative, which will strengthen collaboration and the sharing of intellectual and technical resources. Some of these interested researchers are: a) at CCNY (Karen Hubbard, Mahesh K.
Leadership, Governance, and Staff

The CUNY Manual of General Policy § 1.9.2.1 on centers indicates:

*Each college shall follow any applicable local approval process for creation of new centers consistent with its established governance plan. The process should include a recommendation from the college governance body. The college shall inform the Office of Academic Affairs of the intention to create new centers. After the Office of Academic Affairs has reviewed proposed centers for conformity with this policy, the college will place an item in the special actions section of the University Report, and the Vice Chancellor for Academic Affairs will present the new centers to the Board of Trustees Committee on Academic Policy, Program, and Research as an information item.*

Pursuant to these rules, we are moving through governance bodies to obtain appropriate approvals. On March 19, 2018, we consulted with University Provost Vita Rabinowitz and the Office of Academic Affairs at CUNY on the development of the BC-CCR. On March 21, 2018, we obtained a positive and unanimous recommendation on the establishment of the BC-CCR from the Brooklyn College Policy Council, the governance body at the College. We are now sending the proposal to the CUNY Board of Trustees Committee on Academic Policy, Program, and Research, chaired by Trustee Jill O’Donnell-Tormey, Ph.D., who happens to be Chief Executive Officer and Director of Scientific Affairs at the Cancer Research Institute, a pioneer in bringing immunotherapies to cancer patients.

Once we have finished establishing the BC-CCR through formal governance mechanisms, we will identify a Scientific Director and an Associate Director of the Center. The Scientific Director will report to the Dean of the School of Natural and Behavioral Sciences and will direct and develop the BC-CCR, assisted by the Advisory Board, the President and the Vice-president for Institutional Advancement at Brooklyn College, and the Dean.

Plans for the BC-CCR will be delineated by 1) Faculty and staff members of the School of Natural and Behavioral Sciences involved in cancer research and 2) Department Chairs of Departments with heavily research-active faculty in cancer. The Director and Associate Director will also play a strong role in the identification of research areas of focus, education and outreach projects, grant sources with federal and local agencies, and collaborations with local, national, and international entities.

The Advisory Board will provide advice for the mission and activities of the BC-CCR and will advise the Director and Associate Director in areas such as fund raising, development, educational activities, research, outreach and patient advocacy. The members of this board should be diverse in terms of expertise and interests in the BC-CCR. The Advisory Board will be comprised of Brooklyn College faculty, administrators, and alumni and will also have some external members from other prestigious cancer centers in N.Y.C.
In terms of staff, the BC-CCR will require a Director and Associate Director with ample interdisciplinary knowledge and experience in cancer research, as well as administrative talent and experience. A full-time Scientific Director for the BC-CCR may be considered after Phase I.

The BC-CCR and its leadership will require assistance in operations, personnel management, grant administration, facilities overseeing, and other organizational and operational aspects by a full-time professional administrator with extensive experience in grant management in scientific settings, preferably a full HEO. In the future, part- or full-time administrative support may also be necessary to support Center activities and leadership. The College, Office for Institutional Advancement, Alumni Office, and Advisory Board will provide the support for fundraising, public relations and outreach activities.

**Estimated Costs**

A successful BC-CCR will have a range of annual, operational and one-time, facilities costs. Once it is fully up and running, we estimate that the BC-CCR will have about $250,000 in annual operational costs, including reassigned time for the Director and Associate Director, dedicated administrative support, and travel support for its leadership to obtain training and identify opportunities for institutional and federal funds and collaborations outside N.Y.C., including visiting other established cancer centers. It will need website and social media publicity, updated and managed by a postdoctoral fellow with scientific background. It will need consulting fees for researchers who have established successful cancer centers and who could provide advice.

The BC-CCR will also need funds to recruit doctoral students focused on cancer research, grad B line students who are part-time faculty. It will need modest support for a 1-2-day cancer research retreat on the campus. It will need some support to establish a new interdisciplinary Master’s or certificate program. Finally, it will need support for community outreach activities and for training undergraduates in a variety of basic cancer research areas, translational research, and collaborations with local cancer centers and hospitals.

The following lists estimated annual operating costs associated with the BC-CCR:

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reassigned time for Director &amp; Associate Director</td>
<td>$ 75,000</td>
</tr>
<tr>
<td>Administrative support</td>
<td>$ 75,000</td>
</tr>
<tr>
<td>Travel</td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Consulting fees and contractual service</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Annual retreats and meeting</td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Public relations and social media support</td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Recruitment of PhDs</td>
<td>$ 2,000</td>
</tr>
<tr>
<td>Master’s program support</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Fundraising support</td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Supplies/materials</td>
<td>+ $ 10,000</td>
</tr>
<tr>
<td></td>
<td>$262,000</td>
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</tbody>
</table>

We have developed plans for operational revenue for the BC-CCR. Initially, and in an ongoing fashion, we plan to draw a stream of income from a percentage of indirect cost recovery from the scientific grants from participating Brooklyn College faculty in the School of Natural and
Behavioral Sciences managed by the Research Foundation at CUNY. The Vice President for Facilities and Administration at Brooklyn College Alan Gilbert has assessed the potential cash flow from this area and is convinced we can allocate such a stream of income annually that would cover the start-up operational costs for the BC-CCR. Longer term, we also plan to provide operational costs of the BC-CCR with revenue from an endowment we raise from enthusiastic donors.

Given the facilities challenges we face at Brooklyn College, facilities costs for the BC-CCR will be significant. They will include the repair, construction, and modernization of laboratories that are outdated. They will include the purchase of new instrumentation and furniture. These costs will be substantial, but they will be one-time investments that will enhance the teaching and research facilities for the whole campus.

We plan to raise the costs for facilities renovation from a variety of sources, including reallocated internal funds, as well as potential grants or gifts from N.Y.C., N.Y. State, CUNY, federal agencies, collaborating institutions, hospitals, private donors, and others.

**Donor Interest**

The CUNY Manual of General Policy § 1.9.4.1 on centers indicates:

> Centers, as campus-based entities will generally be funded through a combination of external sponsored program funds and campus-based support. It is University policy that tax-levy support for centers should be limited in extent and duration so that it does not constitute a burden on the instructional budget of campuses. While occasional central tax-levy support for campus-based centers is allowed, as a rule, campuses should expect to support centers within their own budgets and from sponsored programs.

Although the operations of the BC-CCR will be funded initially through release time granted by Brooklyn College, the Center will rapidly become funded by external sponsorship, grants, and gifts. In fact, there is tremendous donor interest in the BC-CCR. For example, a major donor to the College, Bernard H. and Ethel B. Garil agreed to be honored at this May's Brooklyn College “Best of Brooklyn” Gala because of their interest in the development of the BC-CCR. They are strong philanthropists in cancer research and they are thrilled about the prospect of the BC-CCR.

We presented the idea of the BC-CCR to the Brooklyn College Foundation Board at its last meeting in early March, and, according to long-term staff in our Institutional Advancement office, the directors of that Board have never been as excited about a project. Three Brooklyn College faculty members (including the two authors of this concept paper) and four Brooklyn College undergraduate and graduate students presented their cancer research agendas to the Board, as well as their strong support for the plan to develop the BC-CCR. The Foundation Board members, some of our top donors at the College, engaged, asked questions, and marveled at the sophistication of the research being conducted at the College, which they previously did not know existed.

The day after that Board meeting, one donor called the President to indicate she wanted to donate $50,000/year to a program at the BC-CCR. Another donor emailed the President to
indicate that she wanted to redirect funds her mother gave the College many years ago, which have fallen into disuse because of changed circumstances, to the BC-CCR.

We believe there are major naming opportunities that a wide range of donors will find attractive at the BC-CCR, and the President has indicated that the BC-CCR will form the central focus of the College’s next major capital campaign. The donors have indicated that they are thrilled that the BC-CCR is “the next big thing at Brooklyn College.” Donors’ naming opportunities may include:

- Named Center for Cancer Research at Brooklyn College $5 million
- Named Laboratory at the Center for Cancer Research $2 million
- Named Professorship at the Center for Cancer Research $1 million
- Named Annual Conference at the Center for Cancer Research $500,000
- Named Fellowship at the Center for Cancer Research $350,000
- Named Scholarship at the Center for Cancer Research $75,000

Independent of naming opportunities, we believe that a wide range of current and potential donors will find the opportunity to give to a cancer center at their alma mater very attractive. There is not a graduate of Brooklyn College whose life has not been touched by this disease. The opportunity to give back to the academic home that nurtured their intellectual growth and serve the greater good of the community at the same time by funding cancer research will be tremendous.

In sum, the Brooklyn College faculty and administration are tremendously excited about the development of the BC-CCR. We believe it will provide the College with extraordinary opportunity and value for our undergraduate and graduate students, academic excellence, reputation, and larger community.

Contact

For further information and inquiries, please contact:

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Dr. Jennifer Basil  
Professor and Chairperson  
Biology Department, Brooklyn College  
City University of New York
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https://www.census.gov/quickfacts/fact/table/kingscountybrooklynboroughnewyork/SBO020212

Cancer Incidence and Mortality for Kings County (Brooklyn), 2010-2014.

Appendix 1

Brooklyn College Faculty Engaged in Cancer Research or Cancer-Related Research

School of Natural and Behavioral Sciences

Biology Department

Nicolas Biais, Assistant Professor
Nicolas Biais, PhD, uses biophysical approaches and interdisciplinary toolkit (optical tweezers, magnetic tweezers, fluorescence and electronic microscopy, molecular biology, genetics, microfabricated substrates etc.) in his mechno-microbiological research. He is interested in understanding the role of physical forces in the biology of piliated bacteria, in particular the human pathogen Neisseria gonorrhoeae and the related human commensal N. elongata, with both basic and applied goals in mind. His work has useful implications in understanding mechanisms of cancer cell migration and adhesion at a new site. He has $471,000 in grant funding from the National Institutes of Health (NIH) and has other collaborative funding. He has authored or co-authored 13 high-impact peer-reviewed research articles e.g., Nature Microbiology, Science etc. He also has established domestic and international collaborations that include ASRC-CUNY (Amédee Des Georges), Memorial Sloan Kettering (Morgan Huse), Indiana University (Yves Brun, Ankur Dalia) and Max Planck Institute for Complex Systems (Vasily Zaburdaev).

Jeremy Draghi, Assistant Professor
Jeremy Draghi, PhD, uses mathematical model to understand fundamental questions about evolution. His group examines rapid evolution in viruses and bacteria that happens in lab and out in nature, using computational simulations in concert with collaborative experiments. His research will provide insights into how to predict the risk of new emerging viral pathogens in humans through understanding the theoretical side of evolution. His approach to understand complex adaptations that lead to random chance of gene expression can also be extended to understand the cancer cell evolution. He has secured $250,000 in funding from NSF and classroom research based IDEA grant from CUNY. He has published 2 peer-reviewed articles since he joined Brooklyn College and had excellent past record of publications including articles in journal Nature and Science. He has established multiple collaborations at Yale University (Paul Turner), Michigan State University (Norma Cece Martinez-Gomez) and University of Idaho (Eric Bruger, Chris Marx, Sergey Stoyler).

Amy Ikui, Associate Professor
Amy Ikui, PhD, is interested in understating how “DNA Replication Licensing”, only once per every cell division is regulated to avoid chromosome instability using a baker’s yeast (S. cerevisiae) organismic model. Multiple rounds of DNA duplications otherwise could lead to
tumorigenesis and cancer in higher eukaryotes. She has secured $1.6 million in grant funding from the National Institutes of Health (NIH) and $36,000 from CUNY for her research. She has authored or co-authored 7 high-impact peer-reviewed research articles e.g. *Proceedings of National Academy of Sciences, Molecular Biology of the Cell* etc. She also has established collaborations with Rockefeller Center, NY (Fredrick Cross); Brandeis University, Massachusetts (Yoshida Satoshi) and overseas with Nagoya City University, Japan (Keiko Kono).

**Peter Lipke, Professor**

Peter Lipke, PhD, has long been involved in research that is related to candidiasis and other fungal diseases, which are a cause of morbidity and mortality in a large number of cancer victims. His research interests include structure and function of cell adhesion proteins that mediate pathogen-host interactions and biofilm formation. His extensive work with collaborators in biophysics and medicine, highlights functional amyloids at the cell surface activating cell adhesion, and are potential targets for antifungal drugs. Biofilm formation has been shown to be a factor in the hosting of cancer-causing vectors linked to colon cancer. Every cancer center therefore has the infectious disease unit that operates to manage fungal pathogenesis in cancer patients. He has published 21 high-impact research articles and multiple times his research hit the cover page of “Eukaryotic Cell”. Lipke is a well-known scientist in his field and has World-wide collaborations. He has a long list of secured funding by NIH, NSF, Mycologics, Inc., Biothera, Inc. etc. He had been a SCORE director at Brooklyn College and also has secured funding for Pedagogy and mentoring by NSF, NIH, and NYC Board of Ed.

**Theodore R Muth, Associate Professor**

TR Muth, PhD, focuses on microbial ecology in urban environments. He is very much interested in collaborating with other cancer researchers in the field to explore human microbiome and cancer. He has obtained $1.6 million funding from NSF and USDA including an instrument grant. He has been also awarded prestigious BARD fellowship. He has 9 high-impact research articles and urban metabolomics project in NYC has been highlighted in local and national news media. He has national and international (Weizmann Institute, Israel) as well as at Brooklyn College (Maria Contel).

**Anjana Saxena, Associate Professor**

Anjana Saxena, PhD, investigates cancer cell signaling in human cancer-derived cells. Her research focuses on dissecting the role/s of nucleoli, the nuclear “stress sensors” that relay cellular interpretation of growth and proliferation signals determining cellular fate (cell death or survival), with the potential to identify novel approaches to induce cytotoxicity in cancer cells. She had $432,000 funding from NIH, $70,000 from CUNY, $50,000 from New York Academy of Sciences. She has been awarded STF from Brooklyn College (for instrument grant) and competitive MICR travel awards (from American Associations for Cancer Research) multiple times. She has established collaborations within CUNY [Hunter College: Frida Kleiman; Brooklyn College: Xinyin Jiang and ASRC, CUNY (Rinat Abzalimov)] as well as at NYU Langone Medical Center (George Miller), NYU School of Dentistry (Xin Li), NYU Polytech (Jin Montclare), Ohio State Univ. (Dario Palmieri). She has authored or co-authored 9 high-impact peer-reviewed
research articles including “Cancer Discovery” article in 2018. Her PhD, MA, UG and HS students are first or co-authors on several publications.

**Mara Schvarzstein, Assistant Professor**
Mara Schvarzstein, PhD, investigates how cooperative behavior of chromosomes, centrosomes and microtubules ensure accurate segregation of chromosome during meiosis, the specialized cell division that gives rise to the sperm and egg, in roundworm (C. elegans) model organism. Mis-aligned chromosomes are the basis where loss and gain of chromosomes lead to aneuploidy in cancer. She has secured $471,000 in grant funding from the National Institutes of Health (NIH) and CUNY student Tech fee. She has published 2 high-impact research articles where her UG and graduate students are co-authors.

**Shaneen Singh, Associate Professor**
Shaneen Singh, PhD, investigates the normal and aberrant cellular signal transduction pathways using computer modeling approaches. Their research goal is to integrate the traditional sequence analysis bioinformatics tools to analyze genome-wide data with structural modeling and calculations of the bio-physical properties. Using *in silico* modeling between protein/membrane, protein-protein and protein-RNA interactions her group predicts a molecular basis of the regulation and functioning of such interactions that can be experimentally testable. These tools are valuable to dissect aberrant cancer cell signaling. She had $750,000 past funding from NSF. She has also got $15,000 from Concarlo Holdings LLC., and similar support from CUNY. She has well established collaborations within the department as well as with SUNY downstate (Stacy Blain), Ohio State Univ. (Dario Palmieri) and Columbia University’s Center for Cancer Systems therapeutics (CaST, Diana Murray).

**Barbara Studamire, Assistant Professor**
Barbara Studamire, PhD, evaluates how virus-host interactions occur with the focus on viral gene integration in the host genome. Using retrovirus Moloney murine leukemia virus as the model, her research examines basic questions about mechanisms that have direct implications in developing some cancers, gene therapy vectors, and in the progression of retroviral infections such as HIV-1, the causative agent of AIDS. She had $471,000 funding from NIH and has published 4 high-impact research articles. She has established collaborations with Columbia University (Stephen Goff), UMDNJ (William Schneider) and Hunter College (Rivka Rudner).

**Chemistry Department**

**Maria Contel, Professor**
Maria Contel, PhD, is an inorganic/organometallic synthetic chemist that has specialized during the past 8 years on developing metal-based drugs with potential as anticancer drugs (especially for renal and breast cancer). More recently she is working on delivery carriers for targeting and minimizing side effects of different cancer chemotherapeutics. Since 2009 she has authored or co-authored 20 articles in this specific field and has secured so far $2 million in grant funding from the National Institutes of Health for cancer research. She is the main inventor in 2 patent applications. She is a full member of the University of Hawaii Cancer Center UHCC (NCI...
designated center) and has collaborations with Memorial Sloan Kettering Cancer Center (Prof. Jason Lewis), the CUNY Advanced Science Research Center (Prof. Rein Ulijn) in nanomedicine; City College of NY (Prof. Karen Hubbard) and the UHCC (Prof. Joe Ramos) in cancer biology. She also has established collaborations with different universities overseas in Europe, Asia and Latin-America.

Lesley Davenport, Professor
Lesley Davenport, PhD, conducts research in biophysical chemistry and uses fluorescence spectroscopy to study the folding and dynamics of specific DNA sequences found in chromosomal telomeres, which can form G-quadruplexed DNA. Such “knot-like” structures have the potential to inhibit the activity of telomerase, a key enzyme in tumorigenesis. She has collaborations with the NIH (Dr. Jay Knutson) and Bucknell University (Dr. Brian Williams). Dr. Davenport has received $715,000 from the NIH in past funding for this project and is listed as an inventor on several patents.

Terry Dowd, Associate Professor
Terry Dowd, PhD, is a Biochemist who has specialized in structural studies of various proteins and bone mineral properties in disease. Three of the structural projects include the bone protein osteocalcin, which is involved in prostate cancer metastasis, structural studies of Connexin mutants from nonfunctional channels which are associated with cancer and a tumor related zinc finger protein study. Since 2009 she has 9 papers on these projects and has secured $400,000 in NIH funding for nonfunctional gap junction structural studies. She has a Visiting Faculty Appointment and collaborations at Albert Einstein College of Medicine (Ted Bargiello, Steven Almo), Cornell University (Marjolein van der Meulen) and the CUNY Advanced Science Research Center (Daniel Keedy).

Emilio Gallicchio, Assistant Professor
Emilio Gallicchio, PhD, develops advanced computational methods for free energy based virtual screening of small molecule drugs and peptido-mimetic compounds against protein receptors. Computational models developed in Gallicchio's lab have been scored in international blinded competitions as some of best in selecting the most effective compounds among large ligand libraries. The laboratory is currently engaged in interdisciplinary collaborations, among others, with medicinal chemistry laboratories at CUNY and in Switzerland to help discover inhibitory compounds against viral targets and mRNA regulatory proteins involved in the onset of autism and cancer. Dr. Gallicchio is the author of 75 peer-reviewed papers, 10 of which since joining Brooklyn College in 2013. He has acquired $181,000 in grant funding from the NSF and CUNY.

Guillermo Gerona-Navarro, Assistant Professor
Guillermo Gerona-Navarro, Ph.D. is a researcher focused on developing chemical probes to effectively disrupt intracellular protein-protein interactions with a key role in epigenetic molecular mechanisms, known to be crucial in cancer development and prognosis. His research is currently funded by the NIH ($457,000, 3 years). As a result of this project, Dr. Gerona-Navarro recently submitted two patents to the CUNY Technology Commercialization Office, and 2 scientific papers to peer-reviewed journals.
Brian Gibney, Professor
Brian R. Gibney, PhD, is an inorganic chemist specializing in using metalloproteins to understand human cancer gene activation by zinc as a metalloregulatory process. This research is focused on elucidating the thermodynamic contributions of zinc- and DNA-binding to the protein folding reactions of zinc finger transcription factor proteins, the largest single class of metalloproteins in the human genome. These studies are aimed at facilitating both the rational design of tumor suppressor therapies and improved prediction of the process of cancer gene activation. For this project relevant to the proposed Cancer Center, he has published 7 papers and secured NIH and CUNY funding, $435,000 and $12,000, respectively.

Alexander Greer, Professor
Alexander Greer, Ph.D. is a researcher in organic photochemistry, fiber optic-guided drug delivery, and the photodynamic therapy of tumors. Dr. Greer has been active in using laser devices to kill glioma cells, ovarian cancer cells, and head and neck cancer cells, which he has been studying with Drs. Theresa Busch, Keith Cengel, and Timothy Zhu at Perelman School of Medicine, University of Pennsylvania, as well as an implantable 3D-printed surface for targeted dental photodynamic therapy, which he is studying with Dr. Deepak Saxena at the NYU College of Dentistry. In the past 5 years, Dr. Greer has co-authored 31 peer-reviewed scientific articles and obtained $585,000 in grant funding from the National Science Foundation and through a small business technology-transfer grant from the National Institutes of Health. Dr. Greer has filed one patent application, in connection with a company that he co-founded, SingletO2 Therapeutics LLC.

Andrzej Jarzecki, Associate Professor
Andrzej Jarzecki, Ph.D. has an expertise in the advanced quantum-mechanical methods capable for accurate prediction of structural and spectroscopic properties of molecules with a special focus on complexes formed with various transition, toxic and cancerous metals. His current collaboration with Nicolaus Copernicus University, Chemistry Department, targets computational applications in medicinal chemistry of platinum and ruthenium complexes.

Laura Juszczak, Associate Professor
Laura Juszczak, Ph.D. focuses on the cation-π interaction, a noncovalent interaction of cations with the delocalized π electrons on the face of an aromatic ring. Her group recently discovered (JACS 217 2017 Juszczak and Eisenberg) that this noncovalent interaction involving tryptophan may be characterized spectroscopically by visible fluorescence, sharing characteristics with the neutral tryptophan radical. The cancer relevance of this discovery is that cation-π interactions between methylated lysine on histone tails and multiple aromatic residue pockets result in recruitment of remodeling proteins responsible for gene expression. Dr. Juszczak has received $175,000 in NIH funding in the past and $15,000 in PSC-CUNY funding, and would welcome collaboration to study this interaction in gene expression systems.
Aneta Mieszawska, Assistant Professor
Aneta Mieszawska, Ph.D. conducts research in nanomedicine, with focus on drug inclusion into nanoparticle carriers to remove systemic toxicity of chemotherapy agents, solubilize highly potent small drug molecules, and achieve drug targeting into cancer cells to heighten the therapy outcomes. Dr. Mieszawska is particularly interested in epithelial ovarian cancer, where survival rates have not changed dramatically over the past four decades. Dr. Mieszawska conducts her research in collaboration with Dr. John Martignetti M.D. Ph.D. from the Department of Obstetrics/Gynecology & Reproductive Sciences at Icahn School of Medicine at Mount Sinai, and Dr. Rein Ulijn from the ASRC CUNY. Since joining BC in 2013 Dr. Mieszawska has published 4 peer-reviewed scientific articles in this field. She has received $457,000 in grant funding from the National Institutes of Health and $28,500 in grants from CUNY.

Ryan P. Murelli, Associate Professor
Ryan P. Murelli, Ph.D. is the world’s experts in 7-hydroxytropolones, which have potential therapeutic usage against several human diseases owing to their 'privileged' enzymatic inhibition mechanism. Relevant to the proposed Cancer Center, Dr. Murelli has been particularly active in studying oncoviruses including Hepatitis B virus, which they are studying with Dr. John E. Tavis of St. Louis University School of Medicine, and Kaposi’s Sarcoma-Associated Virus, which they are studying with Dr. Stuart F. J. Le Grice of The National Cancer Institute-Frederick. Since joining BC in 2010, the Murelli group has authored or coauthored 22 peer-reviewed scientific articles and secured over $2.5 million in grant funding, mostly from the National Institutes of Health. He is also a listed as co-inventor on 3 patent applications, one of which has been recently licensed by Casterbridge Pharmaceuticals.

Mariana Torrente, Assistant Professor
Mariana Torrente, Ph.D. focuses on the epigenetic component of neurodegenerative disease and the role of protein misfolding in disease. Her group recently uncovered distinct histone modification patterns involved in neurodegenerative diseases such as Parkinson’s disease and ALS (ACS Chemical Neuroscience 2018). Moving forward, the Torrente group will explore the role of p53 misfolding in cancer, as well as the interaction of cancer processes with neurodegenerative diseases. In the past five years, Dr. Torrente has co-authored publications in the most high impact journals such as Science and Cell. Since joining Brooklyn College, Dr. Torrente has received over $480,000 in NIH funding, as well as funding from PSC-CUNY (Enhanced award, 2015) and an ARSC SEED award (2015). In 2016, she was the recipient of the Feliks Gross Award (highest award for an Assistant Professor at CUNY).

Computer and Information Science Department
Devorah Kletenik, Assistant Professor
Devorah Kletenik, PhD, is a Computer Scientist whose areas of research include machine learning and algorithms. Some of her research has focused on algorithms for machine learning when there are feature costs, which often occurs in medical data (including that specific to cancer).
Department of Health and Nutrition Sciences

Xinyin Jiang, Assistant Professor

Xinyin Jiang, PhD, RD, investigates the role of nutrition in metabolic diseases and cancer. Her research focuses on elucidating how the availability of dietary methyl nutrients such as folate, choline, and vitamin B\textsubscript{12} influences the development and progression of gestational diabetes mellitus and breast cancer using cellular and rodent models. She also works with a cohort of patients to translate laboratory findings into clinical applications. Her research has the potential to improve dietary guideline and generate therapeutic diets that aid in chronic disease prevention and treatment. She has received a $470,000 career development award from the NIH and obtained $53,000 from CUNY and $50,000 from the New York Academy of Sciences for pilot research projects and collaborative work (co-I: Brooklyn College, Anjana Saxena). She has also established collaborations with SUNY Downstate Medical Center (John Kral, Lori Hoepner, Mudar Dalloul) and Cornell University (Marie Caudill). She has authored or co-authored 20 peer-reviewed research articles in the past 5 years. Her graduate and undergraduate students are first or co-authors on several publications.

Mathematics Department

Sandra Kingan, Associate Professor

Sandra Kingan is a mathematician whose area of expertise is combinatorics including graph theory, matroid theory, algorithms and applications to complex networks. She has written numerous papers and served as Principal Investigator for an NSF grant and several smaller grants. She has also written a graph theory book titled "Graphs and Networks: From Königsberg to Connectomes," which will be published soon. Her work on complex networks has applications to the analysis of protein networks of cancerous tissues, an area she plans to pursue in the near future.

Psychology Department

Cheryl Carmichael, Assistant Professor

Cheryl Carmichael, PhD, is a Social Psychologist who specializes in the study of close relationships. Her research examines the psychological and behavioral underpinnings of the association between close relationship quality and reduced mortality risk. She has conducted research on how the quantity and quality of early adulthood social connections predicts emotional well-being in midlife, how support that is not consciously perceived by a partner can be beneficial to the self and the relationship, and how the quality of received support for positive events contributes to personal and relational well-being. Her research can be applied to understanding how social experiences contribute to quality of life for cancer patients and their caregivers.

Jennifer Drake, Assistant Professor

Jennifer Drake, Ph.D. is a Developmental Psychologist whose research program focuses on the psychology of the arts. She examines the emotion regulation benefits of engaging in drawing for children and adults. She has shown that drawing improves psychological and psychophysiological well-being when used as a form of distraction rather than expression. Her
Laura Reigada, Associate Professor

Laura Reigada, PhD, is an Associate Professor at the City University of New York at Brooklyn College and is faculty in the Health Psychology and Clinical Science doctoral program at the Graduate Center. Her research focuses on early identification of medical patients who are at increased risk for comorbid problems and worsen disease adjustment; elucidating the dynamic interplay between psychological and disease processes (e.g., inflammation); developing empirically validated, multidisciplinary treatments targeting both illness-specific and general psychiatric symptoms; and evaluating the utility and efficiency (both in terms of economic gains and health benefits) of cross-disciplinary approaches. Since 2008 she has published 11 papers on these topics and has secured $350,000 in grant funding to study the assessment and treatment of internalized conditions (e.g., anxiety, pain) and associated physical correlates (biomarkers of inflammation, microbiota) in pediatric physical illness. Among individuals diagnosed with cancer, she is interested in examining: 1) the role of emotion regulation as an early marker of adjustment and health, and 2) the complex interplay between psychological processes (e.g., tolerance of uncertainty, attentional biases, cognitive flexibility) that contribute to biopsychosocial outcomes. The long-term aim is to develop risk and resilience profiles that can inform interventions that target malleable psychological factors. Additionally, she is a licensed clinical psychologist and has an Adjunct Faculty Appointment and collaborators at Mount Sinai School of Medicine in the Department of Pediatrics (Laurie Keefer, Keith Benkov). She was Associate Editor of the Journal of Behavior Medicine and was president of the NYC-CBT association.
Appendix 2

Memorial Sloan Kettering Cancer Center

March 15, 2018

Dr. Maria Contel  
Professor and Chair, Chemistry  
Brooklyn College  
Brooklyn, NY 11219

Dr. Jennifer Basil  
Professor and Chair, Biology  
Brooklyn College  
Brooklyn, NY 11219

Dear Prof.s Contel and Basil,

We are writing to express our enthusiastic support in establishing a potential partnership between Memorial Sloan Kettering Cancer Center (MSK) and Brooklyn College (BC) around select educational experiences.

After our discussions, we believe that MSK and BC can work together toward designing provocative and educational experiences that will benefit faculty and student/postdoc training toward the overarching goal of increasing the participation of underrepresented minority students in the NYC research enterprise. This laudable goal aligns very strongly with Memorial Sloan Kettering’s efforts to diversify our research workforce. We would be delighted to establish a strong partnership with BC toward accomplishing this objective. Given that BC (and CUNY) as a whole is one of the most diverse educational systems in the US, this collaboration will assist us in developing better recruitment mechanisms for minority investigators pursuing careers at the intersection of basic and applied research.

MSK’s strong research portfolio includes over 125 faculty-led laboratories. We furthermore have increased our academic reach by fostering inter-institutional collaborations with The Rockefeller University and Weill Cornell Medical College, both of which are also at the corner of 68th Street and York Avenue. Specifically, for this partnership with BC, MSK will enthusiastically invite students from BC to participate, according to eligibility, in our research-intensive summer programs. These 10-week programs are designed to provide undergraduate freshmen, sophomores, and juniors hands-on research experience in laboratories and help them further their careers and professional training outside the laboratory by participating in journal clubs, scientific lectures, and professional development seminars. BC students will be invited to apply to the following summer programs:

- The Chemical Biology Summer Program (ChBSP) brings outstanding chemistry, biochemistry, and chemical biology undergraduates interested in pursuing a research at the interface of chemistry and biomedicine for a summer research experience on the Weill Cornell, Memorial Sloan Kettering, and Rockefeller University campuses.
- The Computational Biology Summer Program (CBS) is designed for undergraduates in computer science/applied math to engage in research at the interface of computer science and biomedicine on the MSK and Weill Cornell campuses.
- The MSK Engineering Summer Program (MESP) provides research experience for engineering undergraduates interested in engineering and biomedicine.
- The Molecular Imaging Summer Program- MSK has established a vibrant and state-of-the-art laboratory-based translational molecular imaging research program, in addition to a world-class clinical research and care operation. This program brings undergraduates to further develop their training in probe development, imaging modalities, and targeted diagnostic techniques.
Our hope is that this educational partnership will establish and cultivate rich research collaborations with the goal of creating a pipeline of BC undergraduate students for MSK graduate programs (Gerstener Sloan Kettering Graduate School of Biomedical Sciences, our jointly run Graduate School of Medical Sciences with Weill Cornell Medicine, the Tri-Institutional PhD Program in Chemical Biology, and the Tri-Institutional PhD Program in Computational Biology & Medicine). We would also welcome a pipeline of BC graduate students into postdoctoral positions at MSK and furthermore, it would be our pleasure to help advertise and recruit postdoctoral fellows at MSK for potential faculty positions at BC. We look forward to the expansion of already existing research collaborations, including the potential participation on doctoral committees by amenable faculty at both institutions. We will be happy to grant provisional access to MSK seminars and symposia for BC doctoral and graduate students. We’ll also be happy to encourage MSK faculty to participate in BC courses & seminars as well as annual BC research retreats.

As we further discussed, you may be asked to participate in NIH initiatives such as the U54 partnership by our colleagues in the Immigrant Health and Cancer Disparities Service. They may seek your help in building outreach programs with the community including medical translation or to serve as a “hub” for patient education and resources for patients. We leave this to our colleague, Dr. Francesca Gany, to address more specifically, but we are eager to note that this partnership can expand in many directions that would be beneficial to both sides.

On behalf of the education and training administration (U Neill) at MSK, and a significant research sector (J Lewis) we give this MSK-BC educational partnership our full endorsement and pledge our cooperation. We hope to enhance the undergraduate experience for many of the BC trainees by giving them structured and mentored access to cutting-edge approaches that will be important for their future careers, and in return we hope to expose a diverse set of scholars to educational opportunities at MSK. Furthermore, our hope is that these gifted undergraduates will enroll in MSK based graduate programs and that postdoctoral trainees will be a pipeline for future faculty positions within BC and CUNY.

We look forward to a successful partnership.

Sincerely,

Ushma S. Neill, PhD  
Vice President, Scientific Education & Training

Jason S. Lewis, PhD  
Emily Tow Jackson Chair
The Center for Trading and Financial Markets Research at Baruch College

Overview, Mission and Statement of Need for the Center

Baruch College is the home of the nation’s largest, and CUNY’s only, AACSB accredited business school. It has a long and distinguished history of teaching, research and public service related to Wall Street and the global financial markets. The proposed center will refine and enhance its mission in both teaching and research and extend its public service to educational institutions in New York and beyond, filling a gap in education and research related to trading as a financial activity and driver of global capital markets.

The activity of trading in financial markets is the execution of an investment decision. This Center will study the process, outcomes and implications of alternatives in this execution. Baruch College students, for example, can choose their finance courses without understanding the importance, complexities, and challenges of trading in financial markets. This center and its programs will provide appropriate opportunities for students to explore these topics:

- Trading costs, and the significant impact these costs can have on portfolio performance. These costs include transaction costs, coordination costs and agency costs.
- How professional investors implement their investment strategies within the marketplace.
- The interaction between portfolio managers and traders.
- The complexities of price discovery in the marketplace, and strategies to set and reveal prices.
- How financial markets are structured, and the impact of technological and regulatory changes on these structures.

In the financial transaction industry, trading is recognized as a professional activity. Because there has been very limited knowledge creation about trading, it has not been the focus of academic research and instruction. For example, courses in the theory of investment focus on estimators of risk and the resulting expected value of returns. This approach is based upon significant research models of risk in various financial instruments, with some attention to the regulatory environment. To fully understand the implementation of an investment strategy, the approach to trading and the impact of that approach on liquidity must also be considered. For this reason, this Center on Trading also seeks to:

- Understand trade execution, not only from the perspective of people on a trading desk, but for portfolio managers, corporate executives, government regulators, and IT departments designing the infrastructure to support trading desks.

The Center’s Activities and Scope

The Center for Trading and Financial Markets Research will support the development of courses, programs, and research that are designed to bridge this gap between theoretical investment models and models that incorporate the activity of trading in determining financial investment performance. The Center will also enhance the role that the Wasserman Trading Floor at Baruch College can play as a driver of this critical component of finance education. In so doing, the center will:

- Develop instructional modules that incorporate experiential learning in the form of trading activity that can be included in courses and programs in portfolio management;
The Center for Trading and Financial Markets Research at Baruch College

- Support the College in the development of educational programs on trading for industry participants.
- Conduct research on the impact of trading behaviors on portfolio management.

• **Uniqueness:**
The proposed center is unique in both purpose and operations. As stated, its primary mission will be to develop a new subject for inclusion in business school education – trading in financial markets (which can also be viewed as the implementation of an investment decision).

Inclusion of this material will additionally:

- Strengthen the interface between academic education and real world application.
- Expand the opportunities for experiential learning.

• **Target audience:** Initially, the target audience will be Baruch College and then business schools in the US and Canada. Many business schools have invested in simulated trading desk facilities, and these same schools may be well positioned to implement the educational modules developed by the Center. It is anticipated that an expanded outreach to countries in Europe and Asia will naturally follow. An education gap exists in the industry as well, and an outreach in this direction is also anticipated.

**Scope**
Center operations are expected to encompass an array of activities and facilities that can include:

- Support academic research relating to the Center’s mission
- Produce and disseminate educational materials and tools relating to the Center’s mission
- Run academic and professional events related to the Center’s mission (e.g. a Financial Markets Conference)
- Develop and launch executive education programs on trading relating to the Center’s mission for industry professionals
- Develop experiential learning opportunities (such as student competitions) to enhance understanding of the complexity and the role of trading
- Interface with the finance department and other relevant, internal and external entities to pursue the study of financial markets

**Structure, Governance and Succession Plan**

**Structure**
- The Center will be run and operated by a director. The employment of one or more associate or assistant level personnel as co-director will be determined as operational needs become apparent.

**Director and Co-Director Requirements:**

- These include extensive knowledge of the subject (generally referred to as “Security Market Microstructure”), an ability to reach out to professors and industry people, and an ability to make solid presentations in various settings, including site visits and conferences. We anticipate that the
The Center for Trading and Financial Markets Research at Baruch College

founding Director of the Center will be a current member of the faculty and will be appointed by the Dean of the Zicklin School of Business.

Funds Management:
- The funds will be held in a restricted Baruch College Fund account solely for expenses related to the Center and subject to the budget policies and procedures established by the Baruch College Fund and the budget policies and procedures of the Zicklin School.

Mission Review and Succession
- The Center Director will report annually to the Dean on the Center’s activities. A review of its mission will be conducted by the Dean at the end of a three-year period, dating from September 2018 to determine if the Center’s functions should be altered in any way and then again tri-annually thereafter. Should a vacancy occur in the Directorship, this will trigger an automatic review by the Dean, regardless of the timing of any prior or subsequent tri-annual review. Following such review, any decision to dissolve the Center and redirect its funds will remain the sole discretion of the Dean of the Zicklin School. The Dean will consult with the Baruch director before exercising such authority.

Benefits to Baruch College and CUNY
Many universities in the US and globally have invested in simulated trading rooms that should be deployed to provide students with the richest possible experiences in portfolio management, including the activity of trading. Business Schools who have made this investment are one of several pathways through which the Center hopes to introduce the activity of trading into investment management education. All of these materials will emanate from the Center for Trading and Financial Markets Research, Zicklin School of Business, Baruch College/CUNY. Baruch will be in a lead or sponsor position for student competitions that emerge from these educational materials.

Funding
The Center will be financially self-sufficient from the date of its founding and funded through a $5 million gift already received by the Baruch College Fund to establish and support the Center. As of July 2018 the Center will have approximately $250,000 annually to support its activities. The incoming Center Director(s) will be expected to take the lead in any supplemental writing of grants, pursuing partnerships and securing of funds to support the Center’s activities as necessary.
# Budget

Please see the projected 5-year budget below.

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<td><strong>TOTAL</strong></td>
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*Paid from $5 million gift supporting the Center