In a previous Newsletter, I commented on the wonderful response from our faculty to the opportunities at the various federal and state agencies that are being funded through stimulus dollars. Although awards continue to be made I would like to comment on the results to date because I believe our faculty have been very successful and I congratulate each and every one of you who submitted and have received grants this year. Thus far – and these numbers continue to increase – CUNY has received over $24 million in stimulus-funded grants. These grants include awards from the National Science Foundation, the Department of Energy and the National Institutes of Health among others. We will highlight some of these awards in future Newsletters.

I also want to comment on the 2009 Nobel Prizes. It was exciting to know that this year, the prizes were awarded in areas of science that CUNY has emphasized as “Flagship” areas at the University. The prize in physiology or medicine went to three researchers, Elizabeth H. Blackburn, Carol W. Greider and Jack W. Szostak, for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase – and the prize for chemistry went to Venkatraman Ramakrishnan, Thomas A. Steitz and Ada E. Yonath for studies of the structure and function of the ribosome. Both of these areas of science fit well into the macromolecular sciences/structural biology flagship area at CUNY; and this is also one of the five science areas that will be supported in the new CUNY Advanced Science Research Center (ASRC, below). We are delighted to have CUNY’s Decade of Science, and in particular, the ASRC, featured in a major New York Times article. This story, showcasing the University’s efforts in the sciences, will bring science at CUNY to the attention of both national and international audiences.


Continued on Page 19
In his first year as Provost of the Graduate Center, Dr. Chase Robinson has been delicately balancing the various aspects of his academic life—all of which advocate for a strong culture of research and graduate education. He's a scholar in Islamic History and previously served as Chairman of the Faculty of Oriental Studies at Oxford University, serving on the faculty for over 14 years.

Robinson is driven to ensure a high quality education for students at the Graduate Center, which is often difficult to do in the absence of many of the resources available to the Graduate Center's well-heeled competitors. But with his guidance, the Graduate Center has been bucking the trend.

“To the envy of others in these tough economic times, we’ll be hiring in the next year,” Robinson said. Unlike many institutions right now, CUNY has been able to expand their departments by hiring more faculty. The Graduate Center will be looking to fill as many as 18 faculty positions in three new interdisciplinary initiatives in globalization, religion and the sciences. That’s about a 12% increase in the overall size of the Graduate School’s faculty, and these new additions will enhance the already existing research programs. The new programs will also complement the core teaching of the established ones, but will be designed to reflect and enhance interdisciplinarity.

Robinson is responsible for curriculum, governance, and academic budgetary matters. He also oversees Institutional Research and Program Evaluation, the Mina Rees Library, the Office of Student Affairs, Research and Sponsored Programs, and Building Design and Exhibitions, as well as the offices of the Associate Provosts.

Continued on Page 18

MODERN WAYS TO FIND ALL THINGS CLASSIC

Reaching a global community is no easy task, even with the use of modern technology. Finding the right balance of both information and format is exactly with the Graduate Center’s Repertoire International de Littérature Musicale (RILM) and the Database of Classical Bibliography have been able to do.

RILM provides a comprehensive bibliography of writing on music, with over 700,000 records spanning traditional music, popular music, and classical music. Publications originating from 151 countries in 215 languages have been compiled though a collaborative effort between the International Center and over 60 committees across the globe.

The Database of Classical Bibliography allows scholars access to works which can be found in 40 modern languages on ancient Greek, Latin, and Sanskrit writing; capturing information on all available scholarly sources for the study of Greco-Roman antiquity. The database is a project of the American Philological Association in cooperation with the Société International pour Bibliographie Classique (SIBC) and the City University of New York. Its principal source is L’Année Philologique (APh), a database published by SIBC, with the support of the Centre National de la Recherche Scientifique (France) and the National Endowment for Humanities (USA).

What these comprehensive and integral collections have to offer are that both provide user friendly and user-definable environments to access these subjects, normally relegated to non-electronic sources, making each a vital resource for scholars, students, and researchers alike.
In her first year as chair of the biology department at City College, Dr. Christine Li has been causing quite a stir. Her mission is to steer the department into a more research-focused direction. Though change is never easy, Li has remained upbeat while trying to restructure faculty and staff responsibilities, as well as sustain momentum for her own research endeavors.

“I became chair because I wanted to change the negativity and upgrade the department,” said Li.

Li knows that she’s inherited a strong biology department. She’s been at City College since 2004, as the department was trying to move into a more research-based direction. She’s fought to strengthen the program in every way possible. Her first stop: faculty. “You can only improve research by hiring quality faculty,” said Li.

In her eyes, it takes someone who believes in the mission of the department. She wants faculty members who are able to combine being good teachers as well as good researchers. She helped reorganize the core Biology courses and added more project-based electives into the curriculum, and she has pushed through a combined BS-MA program and is looking to expand the types of biology degrees. Though City College has been fortunate enough to hire more junior faculty this year, part of Li’s restructuring efforts have been geared toward working with her faculty of 23 as a creative team to craft a vision for moving the department into the 21st century.

Before things started to change under Li’s direction, one faculty member used to be in charge of advising 300 students. Now, Li has asked the entire faculty to chip in. As faculty members share the workload, students are not only being tracked better, they are also interacting more with faculty outside of the classroom.

In exchange, Li has reorganized the departmental office towards the dual goals of achieving greater efficiencies and providing more support to the faculty so they can focus on their teaching and research. And she’s been fortunate that the faculty have been so successful in obtaining federal and private funding for their research projects, even during these tight economic times.

Continued on Page 18

EXISTENCE OF NEW LIGHT-MATTER QUASIPARTICLE FEATURED IN NATURE PHOTONICS

Physicists at Queens College have recently demonstrated the existence of a new type of light-matter quasiparticle. These quasiparticles are formed by coherent interaction between periodically arranged material particles mediated by optical waves propagating in photonic crystals - periodic structures that affect the flow of light. Dr. Vinod Menon, Assistant Professor of Physics (Queens College), and his group demonstrated the first experimental observation of coherent interaction between two excitonic lattices and a photonic crystal. "These quasiparticle states can be used to slow down light and to study collective phenomena at the macroscopic scale," notes Dr. Menon. This work was done collaboratively with the theory groups of Drs. Alexander Lisyansky and Lev Deych (Queens College) and researchers at the University at Albany, SUNY. David Goldberg, the lead author of the paper, is a CUNY Grad Center doctoral student in Dr. Menon's group. Their paper was recently published in Nature Photonics, currently the highest ranked journal in optics and applied physics.

Plant pathogens (viruses, fungi, etc.) affect a significant number of important food crops worldwide and the impact is considerable and far-reaching. Many plants employ ribosome inactivation proteins (RIPs) as a defense to counter these pathogens. RIPs act by modifying (depurinating) the large subunit of ribosomal RNA (rRNA) of infected cells, resulting in the cessation of protein synthesis.

Dr. Diana Friedland (Chemistry & Biochemistry) has received a $415K NSF grant as part of the America Recovery and Reinvestment Act (ARRA) to examine the antiviral properties of Pokeweed Antiviral Protein, or PAP. PAP is a type 1 ribosome inactivating protein with broad-spectrum activity against both plant and animal viruses. Unlike other RIPs, Pokeweed Antiviral Protein possesses unique messenger RNA (mRNA) recognition and inactivation activities, providing a second mechanism to halt protein synthesis in infected cells. In this project, Dr. Friedland hopes to identify the specific structural elements of mRNA that affect PAP recognition and enzymatic activity. This study will increase our understanding of viral infections and how they affect protein synthesis, potentially leading to new antiviral techniques and new practical applications to reduce crop loss due to pathogen infection.
Fall 2009 sees the CUNY High Performance Computing (HPC) Center in an upgraded facility, with more computers, and expanded support for the CUNY research community. The newly renovated facility provides the infrastructure needed for significant new computational resources. It now houses four computer systems with an aggregate of eight times the compute power of ATHENA – CUNY’s first HPC system, installed in May 2007.

In addition to ATHENA, systems now installed include ‘BOB’ which has twice the computing power of ATHENA, and ‘ANDY’ which has three times the computing power of BOB. The fourth system, ‘ZEUS’ is now reserved for computational chemists who use the Gaussian03 application.

**FASTER:** ANDY, which is the fastest of the systems, uses the new Intel Core i7-960 chipset and has a total of 45 nodes, each with 8 cores (or “processors”) and 24 gigabytes (GB) of memory (RAM). These processors are among the fastest currently available. ANDY is architected with a dual-rail infiniband interconnect to support parallel applications. This interconnect is 20 times faster than ATHENA’s one gigabit interconnect. ANDY uses a parallel file system (Lustre) to provide very fast data transfer to and from its 36 terabyte disk system (1 terabyte = 1,000 gigabytes). Researchers will find ANDY to be a significant improvement over ATHENA.

Additionally, the network connection to CUNYNet was upgraded to one-gigabit per second, providing CUNY researchers with the ability to move larger amounts of data to and from the HPC Center.

**GROWING:** But we are not done with ANDY. The CUNY HPC has just received funding from NSF to expand ANDY. In 2010, ANDY will become a unique heterogeneous computing system with an additional 48 nodes (384 Core i7 processors) and 24 of the latest NVIDIA graphics processing units (GPU). This NSF-funded enhancement will allow researchers to develop applications that are parallel (using the message passing interface or MPI library) and computationally dense (using the GPUs).

The HPC Center, with the addition of two new staff members, is in the process of scheduling training courses in the use of these new computational resources. Planned courses include parallel and GPU programming, and the use of parallel Mathematica, parallel Matlab, and the Weather and Research Forecasting Model already installed.

**MEDGAR EVERS SCIENCE DEAN RECEIVES FULBRIGHT SPECIALISTS AWARD**

**Dr. Mohsin Patwary,** Professor of Biology and Dean of the School of Science, Health and Technology at Medgar Evers College, has been selected for a Fulbright Specialists project in Uganda at Gulu University. Dr. Patwary will present seminar lectures and assist in the development of undergraduate and graduate degree curricula in Molecular Biology and Biotechnology.

“I am honored to receive this opportunity to further the pursuit of scientific knowledge,” said Dr. Patwary. “I have dedicated my career to educating the next generation of educators and hope to do so for years to come.”

Dr. Patwary received his PhD in Biology with a specialization in Genetics from Dalhousie University, Canada and he conducted postdoctoral research at the National Research Council, Canada. He has taught undergraduate and graduate level Biology for over 34 years and has supervised several graduate and many undergraduate students, guest scientists, and technical officers. He has authored or coauthored 43 research publications in peer-reviewed journals, and several books and book chapters. Dr. Patwary has also served as a grant and research article reviewer and an editorial board member for several journals.

“We are extremely proud of Dean Patwary’s achievement,” said former Medgar Evers President William Pollard. “He is exemplary of the high caliber of faculty and administration whose scholarship, innovation and leadership have made the College a beacon of academic excellence in Central Brooklyn.”

Dean Patwary is one of over 400 U.S. faculty and professionals who will travel abroad this year through the Fulbright Specialists Program—which provides short-term academic opportunities to prominent U.S. faculty and professionals to support curricular and faculty development and institutional planning at post-secondary, academic institutions around the world. The 60-year old Fulbright Program, America’s flagship international educational exchange activity, is sponsored by the U.S. Department of State.
Bigfoot study serves as warning for landscape ecologists

Dr. Mike Hickerson, Assistant Professor of Biology (Queens College and Grad Center), along with researchers from University of Illinois and ERSI Database Services (distributor of GIS software applications) has used ecological niche modeling (ENM) to predict the species distribution of the North American Sasquatch, or Bigfoot.

Ecological niche modeling is a computer-based method that uses algorithms, such as maximum entropy, incorporating environmental variables, such as annual mean temperature, annual precipitation, etc., and geo-referenced locality data, to predict the spatial distribution of a species or group of species.

With publicly available biodiversity databases that include locality data for numbers of species, researchers are increasingly applying user-friendly software to predict the distributions of said species. Without verifying the accuracy and validity of locality data, some of these studies have come under fire for the predicted distributions they present. Verification of locality data is particularly important for databases that include indirect observations, rather than data referenced to vouchered specimens.

In this study, the researchers used a large database of indirect observations (putative sightings and footprints) and a set of nine environmental variables (from the WORLDCLIM database) to model the predicted species distribution of Sasquatch. Their resulting model is consistent with other large mammals living in western North America, including the American black bear, *Ursus americanus*, often suggested as the actual species encountered as Bigfoot.

The team then modeled the black bear for the same U.S. states that included records for Bigfoot and the degree of model overlap was not statistically significant. While this result alone may demonstrate remarkable ecological niche overlap between black bear and Bigfoot, the researchers suspect that the majority of Sasquatch sightings are indeed bears. While tongue-in-cheek, the study does demonstrate the importance of accurate and verified databases examined using this currently popular analytical method.


---

CUNY ALUMNI NEUROSCIENCE RESEARCH HIGHLIGHTED BY PNAS

CUNY Alumni and Adjunct Professors of PhD Program in Biology, Drs. Song-Yu Yang and Xue-Ying He (New York State Institute for Basic Research), along with Dr. Manfred Philipp (Lehman College & the PhD Programs in Biochemistry & Chemistry) and researchers from Baylor School of Medicine, Sheffield Children’s Hospital (UK), and Our Lady’s Hospital for Sick Children (Dublin, IRE) have published a study describing mutations in the *HSD17B10* gene, which codes for hydroxysteroid (17-beta) dehydrogenase-10 (*HSD10*). *HSD10* is an enzyme required for normal brain development. These mutations were isolated in two previously diagnosed mentally retarded male patients. The levels of *HSD10* activity in both patients were less than half of levels found in people who do not have this mutation. These results support the theory that an imbalance in neurosteroid metabolism could be a major cause of the neurological handicap associated with *HSD10* deficiency.

The paper has been highlighted by the *Proceedings of the National Academy of Sciences* in "Story Ideas from the PNAS."

CUNY faculty **Drs. Shermane Austin** (Medgar Evers College - Computer Sciences) and **Charles Watkins** (City College - Mechanical Engineering), together with co-PI Dr. Mason Peck (Cornell University - Mechanical & Aerospace Engineering) were awarded a NASA National Space Grant to supervise a student team in designing, building, and launching a CubeSat low earth orbit satellite, dubbed CUNYSAT.

CubeSats, developed by Stanford University and California Polytechnic University, are small (10 cm square) pico-satellites used by companies and universities as a launch platform for a number of experiments or environmental monitoring. NSF currently has an RFP for CubeSATS for Atmospheric Science and Space Weather, and NASA Ames lab is using the CubeSAT vehicle for astrobiology research and experimentation.

The scientific objective of the CUNYSAT project is the investigation of ionospheric disturbances. Using GPS signals, scintillation measurements obtain signals from GPS satellites and are widely used for measuring rapid disturbances of the ionospheric charge densities (ionospheric scintillations). The ionospheric scintillation experiment will include a GPS module developed by faculty researchers at Cornell University.

On the way to this objective, the CUNYSAT project is providing the initial steps to train CUNY students with highly marketable skill sets related to satellite design and communications and to develop an infrastructure within CUNY for future aerospace projects with science and engineering applications.

On August 3, 2009, the CUNYSAT team presented their Preliminary Design Review at the NASA Goddard Institute in Manhattan, just six months after the initiation of the project. External reviewers, that included Carl Person (NASA Program Manager) and engineers from Honeybee Robotics and Goodrich ISR (Intelligence, Surveillance, and Reconnaissance) Systems, were notably impressed by the timeframe in which these undergraduate students reached the PDR phase, as well as their through and professional presentation of the project. Goodrich has extended an invitation to their New York City facility for the use of testing facilities. Since the PDR, an official from Lockheed Martin has contacted Dr. Austin to serve as an additional external reviewer for the next milestone, the Critical Design Review, or CDR scheduled for February 2010.

Other faculty mentors on the CUNYSAT project include **Drs. Michele Vittadello** (Medgar Evers) and **Vazgen Shekoyan** (Queensborough Community College). A faculty team headed by **Dr. Armando Howard** (Medgar Evers) is developing research applications for future CubeSATS. The 17-member CUNYSAT team, divided into six project teams (System Engineering; Science/Payload; Structural & Mechanics; Electrical Power Systems; Command & Data Handling; and Communications) includes students from City College, Medgar Evers College, and Queensborough Community College. Additional CUNY colleges interesting in participating include the College of Staten Island and New York City Technical College.

---

**The CubeSat Program**

CubeSat launches began in 2003, and 38 have been launched so far. They are mostly designed and assembled by universities in Japan, Europe and the US. NASA Ames, Aerospace Corporation and Boeing have also launched CubeSATS. University CubeSats are primarily launched on rockets outside of the U.S.

Fourteen were destroyed in 2006 when a Russian rocket exploded on launch. Of the other 24 CubeSats, 15 maintained full contact, 5 had nominal or intermittent contact, and only 4 were complete failures. NASA is proceeding with plans to launch university CubeSats as secondary payloads. The first set of university CubeSats launched by a NASA rocket is scheduled for April 2010.

---

**The CUNYSAT student team at the Preliminary Design Review**

---
In a series of recent publications in the *Journal of The American Chemical Society* and *The Journal of Organic Chemistry*, Dr. Mahesh Lakshman and his coworkers (City College, Chemistry) have developed a new class of ‘reactive’ nucleosides, from which a diverse array of modified analogues of the naturally occurring inosine and adenosine can be prepared in a simple manner. Nucleosides are the fundamental building blocks of genetic material in cells, namely DNA and RNA. Due to this, analogues of nucleosides are of high importance in the fields of biochemistry and biology as probes of cell function. In addition, nucleoside analogues occupy a niche area in medicine, for the treatment of viral diseases.

For example, AZT is used in the treatment of HIV and acyclovir is used in the treatment of herpes simplex infections. Thus, the ability to chemically modify nucleosides has major significance, as it can impact issues of human health. Recently, Lakshman and his masters student Josh Frank developed ‘reactive’ nucleosides from which modified guanine and the pharmacologically important 2-amino purine nucleoside analogues can now be prepared easily. The importance of this discovery led to a feature on the cover of *Organic & Biomolecular Chemistry*, a publication by the Royal Society of Chemistry (UK). The cover design for the issue was created by Dr. Lakshman’s brother, Satish Lakshman.


### WATER DRINKERS - BETTER EATERS?

A new study headed by Dr. Ashima Kant (Queens College) has found a connection between water consumption and diet quality. The study, published in the American Journal of Clinical Nutrition, suggests that people who get most of their daily liquids from regular water drinking as opposed to other beverages have generally better diets.

“The findings do not prove that drinking water makes for healthier eaters,” said Dr. Kant, professor of Family, Nutrition and Exercise Sciences and lead author of the study. But “they do suggest a connection – and a reason to encourage people to choose water over [other] beverages.”

The study examined data from over 12,000 Americans over 20 years of age who took part in the National Health and Nutrition Examination Surveys between 1999 and 2006. Based on the analysis of these surveys, the researchers determined that those who drank more plain water tended to consume more dietary fiber and less sugar. They were also more likely to ingest more foods with low calorie density, such as fruits and vegetables.

The Nobel Prizes in Physiology or Medicine, Physics, Chemistry, and Economics are among the world's most prestigious awards for humanity's most complex and far-reaching ideas. Now, CUNY undergraduates are invited to submit an essay of 1000-1500 words that describes the science behind one of this year's Nobel Prizes, describing how these concepts are influencing our world today, and to predict the future significance of this research to humanity.

Three prizes will be awarded in each category (Physiology or Medicine; Physics; Chemistry; and Economics).

• **First Prize**: Apple iMac Computer with MS Office & Adobe Photoshop software
• **Second Prize**: Dell Mini 10 Netbook with MS Office & wireless printer
• **Third Prize**: Amazon Kindle wireless reading device

First Prize winners from each category will be forwarded to a second faculty committee that will select the Grand Prize winner for the best essay submitted overall. The winner will receive a **Grand Prize of $5,000**.

---

**Nobel Prizes for 2009**

**Physiology or Medicine**

Discovery of how chromosomes are protected by telomeres and the enzyme telomerase
Elizabeth H. Blackburn, Carol W. Greider, Jack W. Szostak

**Physics**

(Shared prize - choose either)

Groundbreaking achievements concerning the transmission of light in fibers for optical communication
Charles K. Kao (half prize)
and
Invention of an imaging semiconductor circuit - the CCD sensor
Willard S. Boyle, George E. Smith

**Chemistry**

Studies of the structure and function of the ribosome
Venkatraman Ramakrishnan, Thomas A. Steitz, Ada E. Yonath

**Economics**

(Shared prize - choose either)

Analysis of economic governance, especially the commons
Elinor Ostrom
and
Analysis of economic governance, especially the boundaries of the firm
Oliver E. Williamson

---

**Essays must be submitted by Dec. 7, 2009.**

**Winners will be announced in Feb. 2010.**

For more information, visit the Nobel Science Challenge homepage:

COMMUNITY COLLEGE INCENTIVE RESEARCH GRANT
ROUND 6 (2009-2010)

For 2009, twenty-two proposals were submitted from investigators at all CUNY community colleges. This year, eight projects were selected based on technical merit and their potential to attract external funding opportunities. Collaborative research efforts made by our faculty are rich and varied in discipline and subject, the projects below are representative of the unique opportunity CUNY faculty have to create innovative projects that link investigators together in ways which yield vital data, important advances, and community building across the CUNY campuses.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron Hayduk (BMCC)</td>
<td>Pathways to Multiracial Alliances: The Case of Immigrants and African Americans in New York City</td>
</tr>
<tr>
<td>Marcella Bencivenni (Hostos CC)</td>
<td></td>
</tr>
<tr>
<td>Nikolaos Kalogeropoulos (Bronx CC)</td>
<td>Metrics and Measures In Field Theory and Gravity</td>
</tr>
<tr>
<td>Anthony Creaco (Bronx CC)</td>
<td></td>
</tr>
<tr>
<td>Iván Rivera-Torres (LaGuardia CC)</td>
<td>Structural and Mechanistic Studies of Inactivation in the Potassium Channel KcsA via a Channel-Opener Toxin</td>
</tr>
<tr>
<td>Sébastien Poget (CSI)</td>
<td></td>
</tr>
<tr>
<td>Andrew Van Nguyen (QCC)</td>
<td>Analysis of Inflammation Induced Osteoclast Activation and Development in Bone Formation</td>
</tr>
<tr>
<td>Terry Dowd (Brooklyn College)</td>
<td></td>
</tr>
<tr>
<td>Dmitriy Chebanov (LaGuardia CC)</td>
<td>New Dynamical Properties of a System of Coupled Rigid Bodies</td>
</tr>
<tr>
<td>Frank Wang (LaGuardia CC)</td>
<td></td>
</tr>
<tr>
<td>Aleksandr Davydov (KCC)</td>
<td></td>
</tr>
<tr>
<td>LeHaishen Yao (QCC)</td>
<td>Study of Light Scattered by Gold Nanoparticles</td>
</tr>
<tr>
<td>Dehipawalage Sunil (QCC)</td>
<td></td>
</tr>
<tr>
<td>Karen Denard Goldman (KCC)</td>
<td>Tri-Borough Community Health Worker Training Needs Assessment</td>
</tr>
<tr>
<td>Iris Mercado (Hostos CC)</td>
<td></td>
</tr>
<tr>
<td>Barry McKernan (BMCC)</td>
<td>Understanding Accretion Flows around Black Holes</td>
</tr>
<tr>
<td>K.E. Saavik-Ford (BMCC)</td>
<td></td>
</tr>
</tbody>
</table>
Second year of NYCSEF Summer Research Internship Program a big success

CUNY College Now, partnering with the Office of the Vice Chancellor for Research, has stepped up the six-week summer research internship program designed for high school juniors and seniors interested in pursuing college degrees in science and engineering. College Now hoped to expand the program this year, with success, receiving over 120 applications and placing 12 student interns in 11 labs on three CUNY campuses. And this year, NYCSEF Coordinator Nathalie Zarisfi structured intensive weekly seminars, designed to enhance the interns' research experience by discussing experimental design, research ethics, and scientific presentation and writing skills. On August 12th, the students presented their research at the Macaulay Honors College.

For half of them, however, the experience is not over as they continue working in their mentor's lab. For one intern, Y-Lan Nguyen, this internship will culminate with a lead author presentation at the upcoming annual Geological Society of America (GSA) to be held in Portland, OR in November. Ms. Nyugen will be presenting her work with York College Professor Ratan Dhar on Spatial Variability of Nutrient Concentrations in Jamaica Bay.

College Now is hoping to diversify the program internship locations to other CUNY colleges for summer 2010. For more details about serving as a faculty mentor in next summer's program, contact Nathalie Zarisfi at CUNY College Now/ NYCSEF, nathalie.zarisfi@mail.cuny.edu.

www.collegenow.cuny.edu/sciencefair

Dr. Nazrul Khandaker discusses samples of sedimentary shale and other rock collected in the Hudson River Valley with interns Lys Joseph and Y-Lan Nguyen, and lab student, Malek Shami.

HUNTER SOLAR PROJECT WINS CLINTON GLOBAL INITIATIVE AWARD

Our office’s own Catherine Garcia (B.A., Environmental Studies - 2009) and Hunter Solar Project co-Founder Noah Ginsburg were recently awarded one of 78 CGI U Outstanding Commitment awards to student projects across the nation. In this second year of the program, the CGI U awards were made possible from financial contributions of the Pat Tillman Foundation and the Wal-Mart Foundation.

Hunter Solar Project, a team of undergraduates, commits to the installation of a solar energy system at Hunter College, offsetting a portion of the school’s non-renewable energy demand, reducing Hunter’s greenhouse gas emissions, and aligning the school with Mayor Bloomberg’s PLANYC 2030 energy initiatives. Hunter Solar Project is also working to integrate the solar installation into interdisciplinary course curriculum by the Geography department, facilitate student research opportunities, and educate the greater community through a Solar Tour Program. As part of their pilot program, this team will invite classes from affiliated New York City public schools, to visit the solar array on campus for educational tours and hands-on labs.

The project promises to expose thousands of New York City’s young adults and youth to the rapidly advancing field of solar energy. Providing young people with these exciting interactive learning opportunities will increase their participation in the sciences, enrich their academic experiences, and encourage them to pursue higher education in vital disciplines such as engineering, physics, chemistry and environmental studies.

Sophia Leung
LONG ISLAND OFFICIALS USE CUNY MAPS TO IMPROVE 2010 CENSUS

During the 2000 census, many census workers encountered communities in which residents either were reluctant to complete their census questionnaires or were unfamiliar with census instructions and did not mail them back. For the 2010 census, the Port Washington-based Hagedorn Foundation commissioned the Center for Urban Research at the Graduate Center to develop maps based on the Census Bureau’s analysis of 2000 census data to pinpoint these 'hard to count' areas.

Census tracts in 34 communities in Nassau and Suffolk Counties were deemed 'hard to count' from a censusing standpoint, based on factors such as high immigrant population, use of non-English as a first language, low household income, and/or a high proportion of renters. Non-profit groups and others who want to ensure an accurate census count will use these maps to target their outreach efforts in these communities and in other metropolitan areas nationwide. Many officials from identified communities have responded by ensuring increased participation including establishing special outreach task forces.

"It’s not the same Long Island you used to think of,” said Tony Farthing, Director of the New York Regional Census Office, who has worked on the census for twenty years, speaking with Newsday’s Olivia Winslow. "There are cities that have completely changed—the language and culture are totally different. So you can’t approach the census the way you might have done decades back.”

QC STUDY TO USE INTERACTIVE GAMES TO TREAT ADHD

Dr. Jeffrey Halperin, Director of Training Executive, Attention, and Motor Skills (TEAMS – Queens College), and his team are looking into skills-based interactive games to help young children with attention-deficit/hyperactivity disorder (ADHD). The program seeks to improve brain function among children by exposing them to games that require memory and motor control. TEAMS is funded by the National Institute of Mental Health, and in partnership with The Developmental Neuropsychology Laboratory at Queens College, will receive use results from the initial study to acquire additional funding.

"Currently available treatments provide short-term, symptomatic relief for AD/HD, but limited, if any, long-term benefits," notes Halperin. "We are hopeful that the TEAMS treatment, which relies on games, an enriched environment and physical exercises, will yield lasting cognitive and behavioral improvements."
A study of cyclist behavior in midtown Manhattan, led by Drs. Peter S. Tuckel (Sociology) and William Milczarski (Urban Affairs and Planning) at Hunter College, found that 37% of cyclists ride through red lights without looking, while approximately 29% pause to look before running the light. More than 10% rode against traffic, and fully two-thirds were riding without a helmet. Furthermore, roughly three-quarters of the cyclists used neither a headlight nor a taillight during evening hours. Commercial cyclists (e.g., messengers, food delivery workers, etc.) flouted the traffic laws far more frequently than either recreational or commuter cyclists.

The study was based on 5,275 observations by Hunter College students of riders at 45 randomly selected intersections across midtown from 1st to 10th Avenues and 14th to 59th Streets. The students, from the sociology and urban planning departments, recorded helmet use, rider behavior at lights, traffic direction, and the use of an iPod, cell phone, or other electronic device, among other variables.

The study found that 91% of all riders in the study were male, and the few women who were observed were found to be more law-abiding. About 10% of riders had an electronic device of some sort. The researchers aimed this study at highlighting and promoting public safety, recommending greater enforcement of existing traffic laws, and to introduce the idea that commercial bikes be required to bear license plates.

**CUNY HPC Center**

**BIGGER:** The NSF-funded heterogeneous computing system alone will use 45 kilowatts of electricity and will require 13 tons of cooling. Future systems will require even more power and cooling. The newly completed renovation (Figure 2) now has enough electrical power and air conditioning to support planned new computer acquisitions over the next 12 to 18 months. It represents the completion of the first phase of a $3 million facility upgrade to provide the infrastructure to support growth in 2010 and beyond.

**NAMES:** Why ‘BOB’ and ‘ANDY’? ‘BOB’ was named in honor of Dr. Robert Kahn, a CCNY alumnus and a co-developer of the TCP/IP protocol, which was key to the development of the Internet. ‘ANDY’ was named in honor of Dr. Andrew Grove, also a CCNY alumnus, a founder of Intel, and pioneer in the development of microprocessor technology. Their innovations are fundamental to today’s networked world and changed the way billions of people communicate and work.

Additional information on the CUNY HPC Center is available at [http://www.csi.cuny.edu/cunyhpc](http://www.csi.cuny.edu/cunyhpc)

Top: Athena, originally installed in converted warehouse space, was quickly at full utilization

Bottom: Now with raised floor, additional electrical power and cooling, and four HPC systems, the HPC Center is poised for continued growth to better serve CUNY researchers
This year, sixty-five proposals were submitted from researchers at twelve CUNY colleges. Among these, eleven projects were selected for funding this round.

The research supported this round ranges from Nanotechnology to Evolutionary Biology, Urban Studies to Biochemistry, and Linguistics to Physical Chemistry. New for 2009, awards now fund 2-year research projects.

For details: [http://web.cuny.edu/research/faculty-resources/internal-funding-programs/collaborative-incentive-grant.html](http://web.cuny.edu/research/faculty-resources/internal-funding-programs/collaborative-incentive-grant.html)

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfredo Morabia (Queens)</td>
<td>Commuting Mode and Inflammatory Response (COMIR)</td>
</tr>
<tr>
<td>Frank Mirer (Hunter)</td>
<td></td>
</tr>
<tr>
<td>Daniel Steingart (City)</td>
<td>Combined Experimental and Theoretical Investigation of Electrodeposition in Room-Temperature Ionic Liquids</td>
</tr>
<tr>
<td>Sanjoy Banerjee (City)</td>
<td></td>
</tr>
<tr>
<td>Mark Kobrak (Brooklyn)</td>
<td></td>
</tr>
<tr>
<td>James Gordon (Hunter)</td>
<td></td>
</tr>
<tr>
<td>Alejandra Alonso (CSI)</td>
<td>Tau Structure and Function and Its Implication in Neurodegeneration</td>
</tr>
<tr>
<td>Joseph Dannenberg (Hunter)</td>
<td></td>
</tr>
<tr>
<td>Krishnaswami Raja (CSI)</td>
<td>Living Copolymer-Antibody Conjugates for Imaging Applications</td>
</tr>
<tr>
<td>William L'Amoreaux (CSI)</td>
<td></td>
</tr>
<tr>
<td>Frank Burbrink (CSI)</td>
<td>A North American Biodiversity Hotspot: How the Mississippi River Functions as an Engine of Species Diversification</td>
</tr>
<tr>
<td>Michael Hickerson (Queens)</td>
<td></td>
</tr>
<tr>
<td>Paul Gottlieb (Sophie Davis)</td>
<td>Influenza: Optical Technologies to Identify Candidates for Rapid Vaccine Production</td>
</tr>
<tr>
<td>Swapan Gayen (City)</td>
<td></td>
</tr>
<tr>
<td>Emmanuel Chang (York)</td>
<td>Using Proteomic Methods to Investigate the Function of Nup211, an Essential Nucleoporin</td>
</tr>
<tr>
<td>Hualin Zhong (Hunter)</td>
<td></td>
</tr>
<tr>
<td>Susan Epstein (Hunter)</td>
<td>Shared Decision Making for Collaborative Exploration</td>
</tr>
<tr>
<td>Elizabeth Sklar (Brooklyn)</td>
<td></td>
</tr>
<tr>
<td>Vadim Oganesyan (CSI)</td>
<td>Spin Diffusion: Quantum Coherence, Disorder, Reduced Dimensionality</td>
</tr>
<tr>
<td>Gregory Boutis (Brooklyn)</td>
<td></td>
</tr>
<tr>
<td>Gita Martohardjono (Grad Center)</td>
<td>Mastery of Specific Syntactic Structures as Predictors of Developing Literacy in Bilinguals</td>
</tr>
<tr>
<td>Ricardo Otheguy (Grad Center)</td>
<td></td>
</tr>
</tbody>
</table>
With an audience of over 500 attendees, the Third Annual New York City Solar Summit took place on September 25th, 2009 at John Jay College’s Gerald W. Lynch Theatre. New York City was designated as a Solar America City under the Department of Energy's Solar America Initiative in 2007, with a goal of installing 8.1 megawatts of solar-generated energy by 2015. CUNY, as the lead implementer of this partnership with the Department of Energy, collaborates with several institutions to bring this project to fruition including the National Renewable Energy Lab, the New York Power Authority, Con Edison, the New York State Energy Research and Development Authority (NYSERDA), the NYC Economic Development Corporation, and the Mayor’s Office of Long Term Planning and Sustainability.

The summit covered topics such as net metering, policy both at the local and global level, mapping, emerging technologies and solar thermal to name a few. Alison Kling, newly appointed New York City Solar Coordinator, explained the goals of creating a smart “solar city” by collaborating with Con Edison on smart grid projects and engaging New Yorkers in a long-term solar strategy. John Mucci, Vice President of Engineering and Planning at ConEd, provided insight on integrating renewable energy sources into the existing grid system and interconnecting network challenges. Other speakers included Dr. Charles Korman, Chief Technologist for GE's Global Research Center, Daniel Gorodnick, New York City Council Member, Sheila Hayter, Senior Engineer at the National Renewable Energy Lab, and NYSERDA President Frank Murray, who provided the morning’s keynote address.

For more information on the Summit, and to access presentations, please visit: http://web.cuny.edu/about/sustainable/solar-summit.html

Merely seeing a healthier choice option on a menu may push consumers to choose unhealthy food options according to a study conducted by Dr. Lauren Block (Professor of Marketing, Baruch College), Keith Wilcox (doctoral candidate in Marketing, CUNY Grad Center), Dr. Beth Vallen (now at Loyola College), and Dr. Gavan Fitzsimons (Duke University).

The behavior is called vicarious goal fulfillment, and explains why consumers’ food choices differ when healthy items are included in a choice set compared with when they are not available. A person may feel as if they have achieved a goal if they have taken some small action. To illustrate this, the researchers had a group of college students look at a menu and select a lunch side order. The students were provided with images of a baked potato, chicken nuggets, and french fries. A second group of students saw a fourth alternative: a salad.

Having the salad as an option, however, did not improve the students’ choice for a healthier side order— they chose fewer salads or baked potatoes.

In fact, students who saw salad as an option were more likely to choose fries. The effect on item selection was not restricted to side orders – students with the choice of a veggie burger, a bacon cheeseburger, and a chicken sandwich, were inclined to order the bacon cheeseburger. The researchers conducted a similar experiment with snack foods, such as Oreos with similar results.

The findings suggest that encouraging people to make better choices may require significant effort on the part of both food service providers and customers, and raises the question of whether this behavior is present in other situations.

On October 18, 2009, the ribbon cutting ceremony for the Harriet and Kenneth Kupferberg Holocaust Resource Center and Archives at Queensborough Community College (QCC) took place. The Center’s 9,000 ft² facility houses over 5,000 volumes dealing with the Holocaust and genocide that includes primary sources, as well as a unique and detailed index of New York Times articles on the Holocaust spanning the years 1933 to 1948, which will provide scholars with a rich and comprehensive array of historical material.

The Center also includes a permanent interactive exhibit that merges personal accounts with historical data, and is home to a program (a collaboration between the New York State Division of Human Rights, the New York City Department of Education, and the New York City Police Department) that trains teachers and students about hate crimes and how to address them.

In remembering the past, the Center is able to provide a powerful and profound mix of art, oral history, literature and documentation. “We don’t address the Holocaust as simply a lesson in history. We address it as a way of presenting our students with real-life skills that have to do with understanding who they are, the society they’re in, and what their rights are,” says Executive Director Arthur Flug. “The survivors’ stories have an amazing impact on them. They really don’t think something like that could happen. That becomes a powerful way of creating lessons of social responsibility.”

The Systems Biology Center of New York (SBCNY) is a consortium funded by a grant from the National Institute of General Medical Sciences (NIGMS) of NIH, and housed at the Mount Sinai School of Medicine. As a SBCNY partner, a portion of CUNY's award specifically provides funding for undergraduate research opportunities for students to examine how the effects of molecular interactions are propagated across scales of organization from cells to tissues and organs, and how these interactions affect physiology and pathophysiology.

In its second year, the Summer Undergraduate Research program awarded the 10-week fellowships to six undergraduates from three CUNY Colleges. These students were selected for their strong mathematics skills and their expressed interest in research careers. Among the six fellows for 2009 was an Art History major from Queens College.

The 2009 SBCNY Summer Fellows are:

- Alisa Agafonova (Physics, City College)
- Johnson Ho (Biomedical Engineering, City College)
- Kathleen McGovern (Biophysics, Hunter College)
- Pamela Sanchez (Mathematics, Queens College)
- Mariola Szenk (Bioinformatics/Economics, Hunter College)
- Sara Wildstein (Art History, Queens College)

Dr. Sheldon Weinbaum, Distinguished Professor Emeritus of Biomedical and Mechanical Engineering (City College), has received the National Biomedical Engineering Society’s Inaugural Diversity Award. The award honors exceptional contributions to improving gender and racial diversity within biomedical engineering. Dr. Weinbaum was chosen for his long-standing efforts to integrate women and under-represented minorities (URM) into engineering and, more recently, into biomedical engineering as co-founder of CCNY’s Biomedical Engineering Department.

Engineering Society Honors Sheldon Weinbaum as Diversity Pioneer

“I have worked towards equality for all my 42 years at CCNY, so this award signifies recognition of how much I have been able to change the social fabric of the College and the Grove School of Engineering since I became an activist,” Weinbaum declared.

In his early years at CCNY, he often acted as an intermediary between minority students, anti-war protestors and the College administration. Later, he was the lead plaintiff and initiator of a civil rights lawsuit, “Weinbaum vs. Cuomo,” which sought to end disparities in state funding for the senior colleges of CUNY and SUNY. He charged that the formula was discriminatory since CUNY’s student body was two-thirds minority, while SUNY students were predominantly white.

Creation of CCNY’s Biomedical Engineering Program, in partnership with colleagues Distinguished Professor Stephen Cowin and Professor Susannah Fritton, gave Professor Weinbaum the opportunity to build a program focused equally on excellence and diversity. He fulfilled this dream with support from three Whitaker ‘Special Opportunity’ Awards, two Sloan grants, a challenge grant from the Wallace H. Coulter Foundation and a diversity grant for minority undergraduate education in the life sciences from the National Institutes of Health. Most recently, Dr. Weinbaum received CUNY’s first NIH Challenge Grant (as part of President Obama’s Recovery Act) for his research in predicting cardiovascular risk in vulnerable arterial plaques.
FACULTY SPOTLIGHT
CHASE ROBINSON

Continued from Page 2

But Robinson is much more than just an administrator. He’s a dedicated researcher on his own. And as chief academic officer, he says he must remain committed to scholarship. Occasionally, this means stepping away from his role as Provost.

“I make a point of attending two to three academic conferences a year—as a researcher and not an administrator,” said Robinson.

In order to prioritize his own research as well as fulfill his duties as Provost, Robinson said he has to be much more disciplined than he would otherwise wish, declining many opportunities for the sake of his own research. He’s just completed writing the first volume of a book on 7th through 13th century Islamic history, and just finished editing the 1,100-page The New Cambridge History of Islam. Over the next year and a half, he plans to complete the second volume in the series of three, while also teaching a course on early Islamic history in the spring.

FACULTY SPOTLIGHT
CHRISTINE LI

Continued from Page 3

As an active researcher, Li has her hands full. She’s keeping up with all the regular faculty and chair duties—mentoring, running her research lab, and teaching two courses at City College, as well as lecturing down at the Graduate Center.

“I became chair because I wanted to change the negativity and upgrade the department”
– Dr. Chris Li

Her strides can also be seen in how she’s advocating for new and improved facilities for the biology department at City College. She’s overseeing a department move to a new science center that’s expected to be completed in 2013, and tackling the renovation of two research floors in the current Marshak Science Building. New and improved space will go far in boosting the department’s reputation and attracting students to the department.

Li has been reaching out to nearby schools in Harlem to draw more locals to the college. She started a science club at the Kipp Infinity Charter School, so that middle school students can come to City College to do experiments in the biology labs once a month. It not only introduces the students to City College, but it also piques their interest in science. Additionally, the department has begun hosting more open houses to showcase current research to potential graduate students.

As a scientist, Li must also keep up with her own research. “I plan my year around grant deadlines,” she said. Li specializes in neurobiology—specifically examining the function of genes implicated in Alzheimer’s disease. She writes five to six grants per year—for herself and for her department—and serves on NIH study panels to stay current with what grant agencies are looking for.

The only drawback for Li as chairwoman can be summed up in two words: less experiments.

As well as conducting his own research as an independent investigator, Robinson also likes to collaborate. The concerted effort and interaction has certainly helped him get through a rigorous schedule and a busy year.

“One of the great pleasures of this job is that one gets to interact with scholars from a great variety of disciplines. It’s a great privilege to walk with the Graduate Center’s extraordinary faculty”
– Dr. Chase Robinson

“One of the great pleasures of this job is that one gets to interact with scholars from a great variety of disciplines. It’s a great privilege to walk with the Graduate Center’s extraordinary faculty,” he said.
The 2009 Nobel in physics was split - half of the prize went to Charles K. Kao for groundbreaking achievements concerning the transmission of light in fibers for optical communication and the other half of the prize went to Willard S. Boyle and George E. Smith for the invention of an imaging semiconductor circuit – the CCD sensor. Both of these fall into the broad category of photonics, another flagship area at CUNY that will also be supported in the ASRC.

To draw upon the excitement of the Nobel awards this year, and to encourage our students to think about the science that led to these prizes, we are launching a challenge to CUNY undergraduate students across the University. The CUNY Nobel Science Challenge calls for CUNY undergraduate students to write an essay on the scientific concepts behind one of the 2009 prizes in physiology/medicine, chemistry, physics or economics.

For more information on the Science Challenge, please see details in this Newsletter or on our website:

<http://web.cuny.edu/research/CUNY-Nobel-Science-Challenge.html>

Gillian Small
Vice Chancellor for Research

GUATEMALA’S HISTORY – COLLISIONS MARKED IN JADE

Research recently published in Earth and Planetary Science Letters regarding jade and associated rocks found along the Motagua fault in Guatemala sheds light on the country’s complex geologic history. Jade is found on both sides of the fault, which marks the plate boundary between the North American and Caribbean plates. Radiometric dates from associated eclogites, which form at high pressure, suggest that the plates did not just slip past one another, but also moved towards each at least twice 125-144 and 70 million years ago (Right).

Dr. Hannes Brueckner (Geology, Queens College), along with researchers from Rice, Columbia, Stanford, and Okayama Universities, The American Museum of Natural History, and the National Museum of Natural History, Washington, D.C., suggest that the North American and Caribbean plates underwent a more complicated history than thought previously. Jade, or jadeite as it is technically known, is generated during compression caused by collisions between ocean and continental plates. Fluids flow up the subduction channel into the chilled, overlying mantle, generating both serpentinite and, within the serpentinite, jadeite.

“There are two collision events recorded in the rocks observed today, one event on the southern side and two on the northern,” explains co-author George Harlow, Curator of Earth and Planetary Sciences at AMNH. “Motion between plates is usually not a single motion—it is a series of motions.” Dr. Brueckner adds, “boundaries where plates seem to just slide by each other should be re-examined to see if they also converged from time to time.”


Source: AMNH
CALENDAR

NOVEMBER
November 2, 2009
Serving Science: the CUNY Science Café
Dr. John Waldman (Queens College)
Life in New York Harbor: Death and Resurrection

November 13-14, 2009
What Can You Be With A PhD?
NYC Science/Tech Career Symposium
NYU Langone Medical Center
http://www.whatcanyoubewithaphd.net/

DECEMBER
December 7, 2009
Serving Science: the CUNY Science Café
Dr. Lawrence Kobilinsky (John Jay College)
Genes in the Courtroom: Science and Justice for All
http://web.cuny.edu/research/Serving-Science-CUNY-Science-Cafe.html

December 7, 2009
Submission Deadline
CUNY Nobel Science Challenge
http://web.cuny.edu/research/CUNY-Nobel-Science-Challenge.html

JANUARY
January 8, 2010
Community College Grant Writing Workshop
9AM – 3PM

RESEARCH OFFICE

Gillian Small, PhD
Vice Chancellor for Research

Avrom Caplan, PhD
Associate University Dean for Research

Laurence Frabotta, PhD
Director, Special Research Programs

Luz Jimenez
Executive Assistant to the Vice Chancellor

Nina Conroy, MPA
Internal Grants Coordinator

Catherine Garcia, BA
Research Programs Coordinator

LaToya Jackson
Administrative Assistant

Nadia Prokofieva, MA
Assistant Project Administrator

Office of Research Conduct
Patricia MacCubbin, MS
Executive Director of Research Conduct and Special
Advisor to the Vice Chancellor for Research

Arita Winter, BA
Research Conduct Associate

Tara Smith, BA
Sr. Administrative Assistant

Technology Commercialization Office
Jake Maslow, Esq.
Director of the Technology Commercialization Office

Elaine Lu, PhD
Technology Commercialization Associate

Nitin Virmalwar, MIP, SM
Technology Commercialization Associate

Wei Chen, MS
Technology Commercialization Business Assistant

Keith Whiteman
Office Manager

Loren Bonner, MA
Newsletter Contributor

Do you know someone on your campus who does not receive the CUNY Research Newsletter?

CUNY RESEARCH NEWSLETTER

Subscription and Suggestions
Via email at caaresearch@mail.cuny.edu

The City University of New York
Research Office

www.cuny.edu/research