Office of Academic Affairs

Research Newsletter

CUNY

February 2007 **Volume 3, Issue 1**

DEAN'S CORNER

Resources to Assist Your Research Endeavors

As we enter a new year, make our resolutions and embark on fulfilling them, it is perhaps timely to provide a reminder of some of the resources that the university makes available to assist you in your research endeavors. The Research Office maintains its commitment to supporting your research through a variety of internal grant programs.

A major strength at CUNY lies in its diverse body of faculty members across the campuses. The CUNY Collaborative Incentive Research Grants Program creates opportunities for faculty members to draw upon the expertise of their colleagues and collaborate on projects that will enhance their research program.

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IN THIS ISSUE

FACULTY SPOTLIGHT

Derrick Brazill

Dr. **Derrick Brazill**, Associate Professor of Biology at Hunter College, was awarded the **Presidential Early Career Award for Scientists and Engineers (PECASE)** in 2005. Considered to be the highest honor bestowed by the United States Government on young investigators beginning their independent careers, the PECASE award "recognizes outstanding scientists and engineers who, early in their careers, show exceptional potential for leadership at the frontiers of knowledge." Dr. Brazill was one of 20 PECASE winners selected by the National Science Foundation (NSF) from among the most recent and most promising NSF CAREER Development Program awardees.

What do wound healing, organ regeneration and cancer progression have in common?

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INTERNAL PROGRAMS

Postdoctoral Development Program's First Workshop

The CUNY Postdoctoral Development Program held its first Career Development Workshop and Networking Event on November 8th entitled **"Advancing Your Academic Career: How to Get the Job You Want."** The workshop was designed both to enhance the career advancement skills of postdoctoral fellows, such as C.V. writing and interviewing techniques, as well as to provide a cross-campus networking opportunity for postdoctoral fellows. Over 40 participants attended the event, mostly from scientific disciplines, with the largest crowd from chemistry and biology departments, but included postdoctoral fellows from Economics, Political Science as well as English, French and Psychology.

Introducing the Postdoctoral Program was University Dean for Research **Gillian Small**, Ph.D., who also announced the **Travel Awards Competition**[1], which will provide postdoctoral associates an opportunity to present their scholarly work at conferences. The workshop was led by the Gender Equity Project at Hunter College, directed by Dr. **Virginia Valian**, Ph.D. and coordinated by Dr. **Annmarie Nicols-Grinenko**, Ph.D.

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FACULTY SPOTLIGHT

Iban Ubarretxena

Dr. **Iban Ubarretxena-Belandia**, Assistant Professor of Chemistry at the City College of New York, has recently won the prestigious **NSF CAREER Award** for his project "*Biochemical and Structural Characterization of Intramembrane Proteases.*" This Faculty Career Development Program (CAREER) is the most prestigious award offered by the National Science Foundation to scientists at the beginning of their independent careers who "most effectively integrate research and education." Joining CUNY only two years ago, he set up a fully-operational laboratory and began obtaining results in his first year as a faculty member. His research is helping to piece together the puzzle of how membrane protein structure correlates to its function. *(Continued on page 5)*

Derrick Brazill *(Continued from page 1)*

These processes are all related to the regulation and dysregulation of cell density sensing. The ability of mammalian cells to sense the density of its cells surrounding them plays a fundamental role in cellular growth control and differentiation. Without such ability, a developing embryo would be unable to properly proportion its cells into different tissue types. Dysregulated cell density sensing often underlies progression of cancer. Dr. Brazill's interest lies in understanding this fundamental process that has significant implications for many processes in living organisms.

Dr. Brazill uses the simple social amoeba, *Dictyostelium discoideum,* as a model system for his investigation, as the complexity of the mammalian system introduces too many potentially confounding variables to the investigation that would prevent the systematic study of the phenomenon. *Dictyostelium* cells display many of the characteristics of mammalian cells, including mobility, differentiation, development and cellular communication making it an ideal candidate for the study of cell-signaling. Starvation leads Dictyostelium cells to undergo a period of differentiation and development leading to the formation of a multicellular organism. However, unless sufficient numbers of starving cells exist for the formation of a full-sized organism, this process does not commence, pointing to the existence of a mechanism for the cells to sense the density of the cells around them and to respond appropriately. This sensing is accomplished by secreting and responding to a protein called Conditioned Medium Factor (CMF). As more cells starve, the levels of CMF rise until they reach a threshold level, at which point the cells are able to initiate development.

Dr. Brazill and his lab are working to understand how CMF is sensed by cells and controls development. He uses genetic modification techniques, such as creation of mutants by deletion and/or overexpression of a particular gene to study the signal transduction pathways activated by CMF and how they impact upon other developmental pathways. Dr. Brazill found that CMF regulates development by modulating the cell's ability to respond to an extracellular signal transduction molecule called cAMP, via the regulation of a G-protein that is associated with the cAMP receptor. Dr. Brazill and his team are extending their investigation to examine the roles of phospholipase D, cell adhesion and GTPase activating proteins in this process. Recently, Dr. Brazill's team characterized in detail the role of pldB, a gene that codes for a homologue of a phospholipase D (PLD) in cell-density sensing.

His project is supported by a **NSF CAREER Award** (Project title, "*Signal Transduction of Eukaryotic Quorum Sensing*") through 2009, as well as by the **SCORE** Program at Hunter College, awarded by the National Institutes of Health/NIGMS through 2008.

Dr. Brazill came to CUNY in 1999. He received his B.S. in Biological Sciences in 1989 from Stanford University where he received numerous awards and fellowships, including the Hertz Foundation Scholarship, the Bechtel Foundation Scholarship and the Ford Foundation Pre-Doctoral Fellowship. He then attained his Ph.D in Molecular and Cell Biology from the University of California at Berkeley in 1995. He was a Howard Hughes Medical Institute Post-doctoral Fellow at Rice University, Houston, Texas, prior to joining the Biology Department at Hunter College as an Assistant Professor. Dr. Brazill was promoted to Associate Professor in 2006.

Dr. Brazill was attracted to Hunter College for the support and resources that the college provided him so that he could establish and maintain an active research laboratory while also teaching and mentoring undergraduate and graduate students. His interest and commitment to mentoring and guiding the development of the next generation of scientists is reflected in his role as the Director of the Minority Access to Research Careers (MARC) Program at Hunter. The program is designed to increase the number of underrepresented minorities pursuing PhD degrees in the biomedical sciences. Mentioned in this issue, 4 Hunter College undergraduates from this program were awarded prizes at the Annual Biomedical Research Conference for Minority Students last year. Dr. Brazill is on the Doctoral Faculty in Biology and Biochemistry at the Graduate Center at CUNY. He regularly teaches the second-year cell biology sequence for undergraduates. His lab members include two postdoctoral fellows, three doctoral students, one research technician and four undergraduate students.

VISIT US ON THE WEB

Learn about our office, flagship initiatives, internal funding programs, faculty database, research highlights, human subject research and much more by visiting **www.cuny.edu/research**; Browse past issues of Research Newsletter at **www.cuny.edu/researchnews**

Postdoctoral Development Program's First Workshop *(Continued from page 1)*

Dr. Valian began by speaking about writing an effective cover letter and C.V. and noted how fine details such as font size and margin space were important points to which to pay attention. Following a Question & Answer session, Dr. Valian spoke about academic interviews and how best to prepare for and handle different scenarios during interviews. This included discussion of the fundamental importance of finding a "fit" of one's background and strengths with a particular department of interest. A current postdoctoral fellow at Hunter College, Dr. **Giulia Bencini**, Ph.D. added her perspective and summarized the lessons she learned from her experience with interviewing.

Participants had an opportunity to break into small groups to discuss how they would prepare for an on-campus job talk given a particular timeline, which encouraged them to think about everything from learning about the members of the search committee and the institution, preparing and practicing their talks, to preparing materials and their attire for the interview.

A networking opportunity with light food and refreshments concluded the workshop. The workshop received an overwhelmingly positive evaluation by the participants, who showed interest in similar future events. Encouraged by the success of this first event, preparations for the second event are now underway by the Postdoctoral Program Committee. The next workshop, to be held on February 26, 2007, will focus on career options outside of academia, and will feature speakers from various facets of industry.

The Postdoctoral Development Program Committee is administered through the Office of the University Dean for Research and overseen by a six-member postdoctoral planning committee comprised of three faculty and three postdoctoral research fellows. The Committee takes primary responsibility for developing the program guidelines, making award selections, designing events and initiatives to enhance the postdoctoral experience.

[1] http://www1.cuny.edu/academics/research-scholarship/postdoctoral-development-program.html

REMINDER:
The next deadline for the **Postdoctoral Travel Awards** is **April 15, 2007**. Visit the program website for details.

Resources to Assist Your Research Endeavors

(Continued from page 1)

With a one-year funding period, this program is intended to seed collaborative research projects, and lay the groundwork for successful grant applications to external funding agencies. As we encourage faculty to think in terms of major initiatives, budgets up to $40,000 a year can be requested. In its 13th Round in 2006-07, 13 proposals were selected for funding, involving 31 faculty from 9 CUNY campuses. Reflecting CUNY's vibrant and active community of researchers, the applicant pool had representations from all 18 campuses, with a total of 167 applicants. Represented subject areas reflected the diversity of expertise and included a number of submissions in the humanities and the creative arts, along with the social, physical and natural sciences.

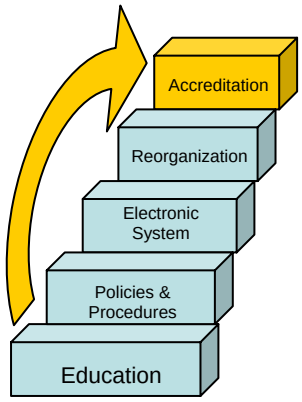
To support the research efforts of faculty, especially junior faculty, at the Community Colleges, we administer the CUNY Community College Collaborative Incentive Research Grant Program. We encourage faculty from Community Colleges to establish collaborations with faculty within and across the CUNY campuses in order to further develop their research. Budgets of up to $30,000 are considered in order to encourage faculty to think in terms of major initiatives. In Round 3, 12 awards were selected, representing collaborations by faculty within and across 4 community colleges, 2 senior colleges and the Graduate Center.

Often, research equipment must be updated or newly purchased in order to collect data necessary for a successful grant. The Research Equipment Grant Program has helped faculty members to collaboratively acquire a piece of equipment that would aid in the collection of data towards applications for external research funding. In the fourth round (deadline - 11/17/06), we received 51 applications from 12 campuses. We received proposals from faculty spanning 22 departments, primarily in the scientific disciplines, but also in the social sciences as well as in the performing arts. Awards will be announced in the early spring.

Mentioned in this issue, the Postdoctoral Development Program successfully launched its first workshop and website last November, where we announced our first Postdoctoral Travel Awards Competition. The travel award covers the cost of travel for postdoctoral associates to present their work at major national conferences. We urge you to let postdoctoral associates know of this excellent opportunity. Downloadable application guidelines can be found under the website for the Postdoctoral Development Program by clicking on the above link. Our next deadline for receipt of applications is April 15, 2007.

We will be announcing the deadlines for applications for this year's Collaborative Incentive Research Grant Program and the Community College Collaborative Incentive Grant Program shortly. I look forward to seeing your applications and wish you much success in your research.

Gillian Small, Ph.D
University Dean for Research



Human Subjects Protection Program: Steps to Accreditation

OFFICE OF RESEARCH CONDUCT

Human Research Subjects Protections Program at CUNY: Steps to Accreditation

CUNY and the Research Foundation have made a substantial commitment to enhance the Human Research Subjects Protections Programs across the University. During the last 2 ½ years, we have moved from the creation of a mission and vision to implementation.

One of the first and fundamental steps in the Human Research Subjects Protections Program is **education**. It is essential that researchers, key research personnel, institutional administration, and IRB members and staff are well-versed in the principles and regulations governing the ethical conduct of research. In July 2005, CUNY subscribed to CITI, providing access to an online human subjects protections training program. By July 2007, all CUNY human subjects researchers will have completed the CITI. Currently all IRB members are required to complete the CITI in order to serve on the IRB.

We are currently in the final phase of revising the Human Research Subjects Protections Program **Policies and Procedures**. The new document will better clarify ethical principles, CUNY and RF policies, IRB functions and procedures. As soon as the new Policies and Procedures are adopted, the **"PI Manual"** will be revised to reflect the new policies, new forms, and electronic capabilities.

The federal oversight agency, Office of Human Research Protections (OHRP) requires a **continuous, comprehensive training program** for all IRB members and staff. To meet this mandate, CUNY and RF sponsor a full-day IRB Symposium for all IRB members and staff to supplement the CITI and to keep current. The Symposium addresses issues of interest identified over the past year.

This year we subscribed to IRBManager, an **electronic** IRB tracking, submission and review system. Six campus IRBs and the CUNY-Wide IRB are currently training to use the system and preparing for electronic submission. All IRB forms have been revised and a few new forms have been designed. The goal is a faster turn-around for researchers and a better tracking system for the University.

The step following the revision of the Policies and Procedures is a **reorganization** of the CUNY IRB system to better serve our research volunteers and research investigators. We currently have 21 IRBs, 20 of which are campus-based. The Office of Research Conduct is working with the CUNY–Wide IRB and the RF to devise a new system with fewer, more efficient IRBs. The new IRBs will not be campus-based, but will have sufficient campus representation to maintain the opportunity to provide individualized assistance on each campus and to represent individual campus concerns.

The implementation of the education component, the tracking/submission system and the revision of the policies and procedures will greatly facilitate the process of reorganization. CUNY will then move forward to Human Research Subjects Protections Program **Accreditation**. Accreditation is a major undertaking for any institution. The pre-application preparation takes about one year. We are currently laying the groundwork and are working to achieve the goal of having CUNY accredited in the next three years.

If you have any questions about the CUNY Human Research Subjects Protections Program goals, please contact Ms. Patricia MacCubbin, Director of Research Conduct, at (212) 794-5476.

VISIT THE HUMAN SUBJECTS RESEARCH WEBSITE

To learn more about

- the CUNY Office of Research Conduct,
- the current Institutional Review Board (IRB) Chairs and Administrators at the campuses, and links to campus IRB websites,
- the Human Research Protections Training Program (CITI)

and to download IRB forms,

Go to http://www1.cuny.edu/humansubjects.html

Iban Ubarretxena *(Continued from page 1)*

Most of the therapeutic drugs in use today target membrane proteins. Membrane proteins constitute about 30% of all proteins encoded in a cell's genome, yet little is known about their detailed biochemical and structural makeup. Dr. Ubarretxena-Belandia studies intramembrane proteases, which are enzymes embedded in cellularmembranes that play a role in cell signaling and regulation of cell physiology. Intramembrane proteases operate by cleaving substrate proteins located within the cell membrane and releasing water soluble fragments that in turn act as regulators of cell physiology. For example, one such intramembrane protease termed γ-secretase is known to cleave the amyloid precursor protein, and produce the β-amyloid peptides that form the senile "plaques" implicated in Alzheimer's disease. Most of the work addressing this intramembrane signaling mechanism has been carried out at the level of cell biology, rather than that of structural biology. This is due in part to the technical difficulties inherent in studying intramembrane proteins: isolating the proteins from their membranes without altering their behavior poses a challenge. At the biochemical level, the 3D geometry of a molecule reflects the intra- and inter-molecular chemical interactions. Therefore, understanding the structure of membrane proteins provides critical insight into their function. Moreover, knowledge of the structure of proteins involved in disease will inform the structure-specific design of therapeutic drugs.

Dr. Ubarretxena-Belandia investigates two intramembrane proteases; the γ-secretase complex, responsible for the activation of several developmental signaling cascades in humans as well as for producing the β-amyloid peptides involved in Alzheimer's disease pathology. The fruit fly *Drosophila,* rhomboid intramembrane protease functions by activating (through cleaving and releasing of) Epidermal Growth Factors (EGF), which play a role in the development of various structures and organs. Bacteria cells also use Rhos to release intercellular signaling molecules, analogous to the activation of EGF ligands by rhomboid in *Drosophila*.

In early November, 2006, a research group at Yale determined the crystal structure of the core domain of the Rho intramembrane protease, GlpG in bacteria using X-ray crystallography. In parallel, Dr. Ubarretxena and his team in close collaboration with the group of Dr. Ghose at CCNY, independently solved the structure of the N-terminus domain, another component of the GlpG in bacteria, using NMR. Together, these data answer long-standing questions related to the mechanism of action of Rhos. The success at characterizing intramembrane proteins at this level of detail opens a wide door towards a molecular explanation of numerous other processes that rely on intramembrane proteins and much exciting work lay ahead.

As an undergraduate student at the University of Basque Country, Donostia, Spain, Dr. Ubarretxena found that he enjoyed understanding processes in biology at the level of their biochemical mechanisms, leading him to study chemistry. He won an ERASMUS Award to study at the University of Kent, U.K., from which he received a MSc. in biochemistry. Dr. Ubarretxena received his Ph.D. in biochemistry from Utrecht University, in Utrecht, the Netherlands in 1998. Following his doctoral degree, Dr. Ubarretxena continued his research as a Postdoctoral Fellow at Yale University. Perhaps one of the strengths that underlie Dr. Ubarretxena's success is his flexibility in the choice of techniques he uses in order to address his questions. When it became necessary to use cryo-electron Microscopy (cryoEM) in his work, he went to the MRC-LMB, in Cambridge, U.K. as a Postdoctoral Fellow to acquire the technique. He joined the Chemistry Department at City College in 2004.

One of the major factors that drew Dr. Ubarretxena to CUNY is the university's participation in the New York Structural Biology Center (NYSBC), which gives him access to the equipment and expertise that his research requires, such as NMR, X-ray crystallography and cryoEM. These costly pieces of equipment and the support by staff technicians who maintain them would otherwise not be available to him. The NYSBC is a hub of activity, offering not only access to equipment but also a forum for scientific interaction among colleagues spanning 10 institutions around New York. Such interactions often turn into collaborations. Dr. Ubarretxena himself has developed productive collaborations with several faculty members in and outside of his department.

The Ubarretxena lab has three graduate students (two in the Biochemistry Program and one in the Physics Program), two research technicians and a forthcoming Postdoctoral researcher. Dr. Ubarretxena is a member of the Graduate Faculty in Chemistry, Biochemistry & Physics at the CUNY Graduate Center and is the CUNY representative at the cryo-electron Microscopy Executive Committee in the NYSBC. He teaches courses in biochemistry and a graduate course in cryoEM of macromolecular assemblies.

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News & Events

OFFICE OF ENVIRONMENTAL HEALTH & SAFETY

CUNY Sustainability Conference: Energy and Environmental Sustainability – Science, Engineering and Public Policy

Dr. Howard N. Apsan

An all-day CUNY-wide conference on sustainability entitled "Energy and Environmental Sustainability - Science, Engineering and Public Policy" was held on Friday, December 8th, 2006 at the Graduate Center. The conference was convened by Dr. **Howard N. Apsan**, Ph.D., University Director of Environmental Health and Safety and organized by a committee composed of seven faculty members: Dr. **Harry Gafney** (Queens), Dr. **Todd Goldman** (City), Dr. **Steven G. Greenbaum** (Hunter), Dr. **Mumtaz Kassir** (City), Dr. **Robert Paaswell** (City), Dr. **Michael Seliger** (Bronx Community College) and Dr. **William Solecki** (Hunter). The conference reflected the recognition of the critical importance of the issues that grow out of the relationship between energy and environmental sustainability and CUNY's emerging role as a leader in addressing these issues.

Organized thematically into 3 sessions, speakers from eight CUNY campuses addressed the cutting-edge scientific and engineering innovations that will lead to breakthroughs in alternative energy sources, energy efficiency and increasing energy supply, and the policy questions to be defined and resolved to bring these innovations forward to the wider society. Particular emphasis was placed on how sustainability issues affect the nation, New York State, and New York City, including the impacts of rapidly rising global energy use and fossil fuel demand, the connection between fossil fuel-based energy production and potentially devastating climate change and the social, political and economic effects of rapid urbanization and its influence on energy use.

Dr. Rohit T. Aggarwala

Opening remarks were made by Executive Vice Chancellor and Chief Operating Officer **Allan Dobrin** and University Dean for Research **Gillian Small**. The first session, entitled "Oil Dependency: How much longer?" was moderated by Professor of Chemistry, Dr. **Harry Gafney** (Queens), followed by a session "Alternative Energy Sources: From Wishful Thinking to Reality" moderated by Professor of Chemistry, Dr. **Lynn Francesconi** (Hunter). One of the speakers in this session, Professor of Physics, Dr. **Steven Greenbaum** (Hunter) presented the current state of research on energy materials in the Physics Department at Hunter College. The keynote speaker was Dr. **Rohit T. Aggarwala**, Director of The Office of Long Term Planning and Sustainability, Mayor's Office of Operations, The City of New York. The third session "Energy Management: Sustainability and You", was moderated by Professor of Advertising Design & Graphics Arts, **Don Carli** (NY City College of Technology). Closing remarks were made by Deputy Chief Operating Officer **Ronald Spalter** and Distinguished Professor of Civil Engineering, Dr. **Robert Paaswell** (City). A Poster Session followed, where professors as well as doctoral students presented their research that investigated issues in sustainability from multiple directions, from those of chemical and physical engineering to geography, environmental science and technology. Together, the oral and poster presentations represented the multifaceted efforts to address sustainability issues across CUNY campuses and created a forum for fruitful discussion and debate.

ENVIRONMENTAL SCIENCE

CUNY joins the North Atlantic Coast - Cooperative Ecosystem Studies Unit

The North Atlantic coastal region faces numerous and ongoing environmental problems such as sea level rise and shoreline erosion, salt marsh losses, nutrient and contaminant inputs, and conflicts among resource users. Federal land management, environmental, and research agencies require assistance with these complex and often interdisciplinary issues, which has led to a new model of partnership between government and academia—the Cooperative Ecosystem Studies Units, with the North Atlantic unit forming 1 of 16 regional programs in the U.S.

The geographic scope of the North East Coast- Cooperative Ecosystem Studies Units (NAC - CESU) includes the North Atlantic coastal zone from Maine to the Chesapeake Bay in Virginia. NAC-CESU activities encompass all ecosystems of coastal watersheds, including barrier islands, estuaries, near-shore oceanic environments, salt and freshwater wetlands, coastal ponds, plus terrestrial watersheds and processes that affect the coastal environments.

NAC - CESU was established in June 1999 by cooperative agreement between the National Park Service and USGS Biological Resources Division and the University of Rhode Island, with its partner institution, University of Maryland Eastern Shore. Based on the success of initial CESU efforts, additional institutions and federal agencies joined the North Atlantic Coast CESU as partners: the University of Massachusetts - Amherst, University of Maine – Orono, Rutgers University, Stony Brook University, the Maryland Coastal Bays Program, and the Department of Agriculture's Natural Resources Conservation Service. During the Spring of 2006, Queens College professor Dr. **John Waldman**, currently the CUNY representative to NAC-CESU, petitioned the NAC – CESU membership for CUNY to join this partnership, which was unanimously approved. Its members value CUNY as their partner, as it contributes a strong urban knowledge base.

The CESU provides great opportunities for CUNY faculty and students with interests in natural and cultural resources. The federal agencies submit an RFI (Request for Statements of Interest and Qualifications) to partner institutions; those selected develop the proposal with agency guidance. Because this is a cooperative agreement —not a grant—there is significant partnership and involvement from the agency in all supported projects; furthermore, the limited number of universities in the Unit makes the probability of success high. Faculty members at Queens College have already won two NAC – CESU contracts from the National Park Service involving Jamaica Bay: to develop a catalog of research opportunities and to hold a 24-hour intensive biological survey, termed a *BioBlitz*.

To learn more about NAC – CESU, including current and past projects funded please refer to its website, at: http://www.ci.uri.edu/naccesu.html

BARUCH COLLEGE

Talking Tactile Tablet Awarded U.S. Patent

Dr. **Karen Gourgey**, Ed.D., Director of Baruch's Computer Center for Visually Impaired People (CCVIP), always knew that the Talking Tactile Tablet was breakthrough technology, but it was a triumph to have it confirmed by the U.S. Government Patent Office.

"The patent adds value to your device and protects your innovation," Gourgey stated. The patent process took five "arduous" years, but on Sept. 12, 2006, she and Steve Landau of Touch Graphics were jointly awarded a patent for the TTT, an interactive computer peripheral device that visually impaired people can use for learning, for example, the geography of African countries, the geometry of Euclid, and many mathematical concepts.

The TTT features standard controls, conceptually analogous to the toolbar on Microsoft Windows. This makes it versatile and simple to use. Moreover, its "touch-and-talk" technology is easily learned—no knowledge of Braille is required and neither is computer knowledge necessary. The device is priced at $699, with the hopes that it will be widely used by schools for the visually handicapped and potentially, by others, such as ESL students, who could benefit from its audio-tactile teaching methods.

Most importantly, the TTT's applications as a teaching tool can be almost infinitely expanded through the use of an "authoring device" that permits teachers to create their own diagrams and add their own audio narratives. Gourgey reports that the TTT with this customizing feature is already in use in Norway, Spain, England, Germany, France, and Japan as well as locally—for instance, in the Smithsonian and New York's Lower East Side Tenement Museum.

One of the first applications of the TTT has been in the area of applied statistics. Using this new technology, students learned basic statistical concepts and applications, including statistical graphs and charts, measures of center and variation, correlation, regression, probability, normal distribution, and inference testing. (Courtesy of Baruch College).

UNDERGRADUATE RESEARCH

MARC and MBRS Scholars Win Awards

Undergraduate students at **Brooklyn, City, Hunter and Queens** Colleges received awards for their poster presentations at the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Anaheim, California held on November 8th – 11th, 2006. Each year, nearly 1400 students from around the country present posters and oral presentations on scientific research conducted under the mentorship of professors. A total of 10 CUNY students (Brooklyn (1), City (4), Hunter (4), Queens (1)) won prizes for their poster presentations and one City College student won a travel award, out of around 120 prizes given.

The Minority Access to Research Careers (MARC) and Minority Biomedical Research Support (MBRS) programs are funded by the National Institute of General Medical Sciences of the National Institutes of Health. Through the provision of funds as well as research to improve the infrastructure of institutions across the U.S., the programs support mentoring, research and training in the biomedical sciences to increase the number of minority biomedical scientists.

Mr. Kerron Gilford
Brooklyn College

Ms. Patty Sherin
Queens College

Queens College Student Presenters with Faculty (Award Winner Ms. Onyewuenyi, front right)

Hunter College Award Winners

City College Award Winners with Faculty and an Executive from ABRCMS

Awards won by MARC, MBRS scholars: Annual Biomedical Research Conference			
College	**Student, Major**	**Project Title**	**Mentor(s)**
Brooklyn (Honors Academy)	Kerron Gilford, Biology	The role of the MY01 gene within the non-pathogenic, free-living protozoa organism *Tetrahymena thermophila*	Dr. Ray Gavin, Dr. Edward Thorp (Columbia University)
City	Colleen Achong, Chemistry	Novel Urea Amphiphiles for Self-AssembledSmall Molecular Gels	Dr. George John
	Oluwaseun Adeosun, Biology	The Microenvironmental Niche Provided by Thymic Nurse Cells Facilitates the Attraction of Thymocytes and Macrophages	Dr. Jerry Guyden
	Zacharia Olushoga, Biology	Microscopic Analysis Of Thymic Nurse Cell Complexes *In Vivo* And *In Vitro*	Dr. Jerry Guyden
	Beicer Tapia, Physics	Calculation of Proton Uptake in Paracoccus Denitrificans Cytochrome C Oxidase	Dr. Marilyn Gunner
	Rosa E. Mino, Biology	The Role of Glia in the Drosophila Visual System Function	Dr. Tadmiri Venkatesh
Hunter	Ann Alexis, Biochemistry	Cysteine Residues are Important for the Interaction of the Potential Biosensor scFv1 with the Dye Thiazole Orange	Dr. Michael Drain, Dr. Derrick Brazill, Dr. Peter Berget (Carnegie Mellon University)
	Mazin Babiker, Biochemistry	Expression of a a-synuclein Modulates the Vulnerability of BE-M17 Cells to Parkinson-Inducing Toxin Rotenone.	Dr. Michael Drain, Dr. Serge Przedborski (Columbia University)
	Silvia Caballero, Biology	Gene Targeting of the 1p36 Tumor Suppressor in Mouse Embryonic Stem Cells.	Dr. Laurel Eckhardt
	Luz Sanchez, Physics	Investigation of the Degradation Modes of Li-Ion Batteries at High Temperatures.	Dr. Steve Greenbaum, Dr. Marshall Smart (Jet Propulsion Lab, CalTech)
Queens	Sylvia Onyewuenyi, Biology	Characterization and mechanism of the role of Bax and Bak in Influenza A infection.	Dr. Zahra Zakeri
American Anthropological Association Annual Meeting: BAS Student Prize Winner			
Queens	Patty Sherin, Antrhopology	Radiography of the pubic symphysis: aging human skeletal remains.	Dr. Ekaterina Pechenkina

YORK COLLEGE

MBRS SCORE - York College continues its 30-year funding history

The NIH Minority Biomedical Research Awards (MBRS) - Support of Continuous Research Excellence Award (SCORE) is awarded to increase the research competitiveness of investigators at institutions with 50% or more enrollment from students from groups that are underrepresented in biomedical or behavioral research. In our April, 2006 issue, we mentioned Brooklyn College's first SCORE Award along with that awarded to City, Hunter and Lehman Colleges, without mentioning York College's 30-year history of successful renewal of this award.

In 1976, York College was the first CUNY college (followed by City College, since 1979, Hunter College, since 1980, Lehman College, since 1985 and Brooklyn College, since April, 2006) to receive the MBRS SCORE award. The college has received funding from the program continuously over the past 30 years and has supported research of 25 faculty members. Currently, research projects of 12 faculty members (4 in Chemistry, 5 in Biology, 1 in Physics, 1 in Environmental Health Sciences and 1 in Social Science) are supported by the award, averaging around $1.4 million each year.

CITY COLLEGE

Nanomaterials research highlighted in *Nature* and *Chemical Engineering News*

Dr. **George John**, Professor of Chemistry, and his postdoctoral associate Dr. **Praveen Kumar**, have found that apricot and cashew nut by-products can be used as renewable feedstocks from which a variety of soft nanomaterials can be made. Soft nanomaterials have a wide variety of applications, from smart gels for sensing, electro-optical displays, lubrication industry, cosmetic formulations, biomedical applications and oil recovery. Drs. John and Kumar used amygdalin, a by-product from the apricot industry to produce hydrogels, whose effective gelation properties were used as a successful drug delivery vehicle.

In another experiment, using a cashew nut liquid that is obtained when cashew nuts are roasted, another industry by-product, the researchers synthesized a form of glycolipids, whose self-assembly generates a variety of soft nanomaterials, such as helical fibres and tubes, gels and liquid crystals. The development of nanomaterials from economically viable sources such apricots and cashew nut industry by-products opens possibilities for finding other plant resources as precursors to nanomaterials. Featured in *Nature* as a Journal Club article in the Research Highlights section (*Vol 445*, 4 January, 2007), and in *Chemical Engineering News* (Nov 27, 2006), their paper was chosen to be the cover page article in the Royal Society of Chemistry journal and has been the most accessed article for the last three months.

HUNTER COLLEGE

$1.6 Million Grant to Study Factors Related to Drug Abuse

Hunter College was recently awarded a five-year $1.6 Million grant from the National Institute on Drug Abuse of the National Institutes of Health to support three research projects that examine aspects of drug abuse. Dr. **Gordon A. Barr** is the Principal Investigator for the new grant, which funds Hunter's MIDARP (Minority Instruction's Drug Abuse Research Program) and supports the research projects of Drs. **Rebecca Huselid**, **Shirzad Jenab** and **Vanya Quinones-Jenab**, with Professor Parsons acting as a consultant/advisor to the grant. The five professors are all faculty members in the Department of Psychology.

Dr. Huselid is studying how perceptions of personal and group-level race discrimination are related to substance use, psychological distress and academic achievement; she will also test the effects of racism on coping responses to stress. Dr. Jenab uses molecular biological methods to determine novel mechanisms that mediate cocaine's effects; he also seeks to devise new strategies to prevent cocaine addiction. Dr. Quinones-Jenab is testing the hypothesis that the rewarding effects of cocaine are modulated by the female hormones estrogen and progesterone, based on the greater susceptibility of women to the addictive properties of cocaine and other stimulant drugs than that of men.

In addition to the research projects above, the grant will support a research seminar, to be given in the Spring, featuring outside speakers who are experts in research on drug abuse.

FEBRUARY 26, 2007

Postdoctoral Development Program Career Development Workshop: Career Opportunities in Industry

The CUNY Postdoctoral program is organizing the 2nd Career Development workshop to be held on February 26th, 2007 at the Graduate Center, Room C201-C203 from 4-6pm. Three panelists from the pharmaceutical and biotechnological industry as well as patent law will speak at the event. A panel session will follow each lecture to provide an interactive forum for exploring career paths outside of academia. Please visit the postdoctoral development program website (mentioned on p.3 of this issue) for more information.

FEBRUARY 1, 2007

NSF Grant Funding Opportunities Workshop

A grant-writing workshop run by officials from the National Science Foundation will be held at the CUNY Graduate Center on February 1st, 2007, from 10am-2pm. The featured panelists from the NSF, represent the biological, mathematical and physical sciences, computer and information sciences & engineering, as well as educational and human resources as listed below:

Biological Sciences (BIO) –

1) **Dr. Dona Boggs**, Cluster Leader of the Physiological and Structural Systems Cluster within the Division of Integrative Organismal Systems
2) **Dr. Michael Mishkind**, Program Director in the Physiological and Structural Systems Cluster within the Division of Integrative Organismal Systems.

Mathematical and Physical Sciences (MPS) –
Dr. Al Thaler Program Officer, Division of Mathematical Sciences

Educational and Human Resources (HER) –
Dr. Diane Burley, Program Director at the National Science Foundation (NSF) in the Division of Undergraduate Education (DUE)

Computer and Information Sciences & Engineering (CISE) –
Dr. Mel Ciment, Founder and Managing Member of The CS Cubed Group (CSCG)

There will be opportunity to have lunch with the NSF representatives, and to break into small groups for informal discussions with the representatives in the afternoon.

From: 10 A.M. – 2 P.M.
At: The CUNY Graduate Center
365 Fifth Avenue, New York
Room 9206-9207

EMAIL US AT oaaresearch@mail.cuny.edu to submit news items, to subscribe to our mailing list, and for questions and comments about the newsletter.

FEBRUARY 16, 2007

The Community College Caucus of the University Faculty Senate
In Collaboration with
The University Dean for Research Presents

Grant Writing Strategies for Success: A Workshop for Community College Faculty

Organized for CUNY community college faculty, this workshop is targeted to assist junior faculty at community colleges in their grant writing and application process. The workshop will be introduced by Dr. Gillian Small, University Dean for Research, who will address available funding opportunities for community college faculty. In the morning session, Dr. John Shean, Professor of Social Sciences at LaGuardia Community College, will speak about components that funders look for. In the afternoon, breakout sessions will be organized around various disciplines. Scheduled speakers in the afternoon break-out sessions include: Dr. Gordon Barr, Professor of Psychology at Hunter College, Dr. Roberta Cavendish, Professor of Nursing at the College of Staten Island, Dr. Terrie Epstein, Professor of Education at Hunter College, Dr. Susan Farrell, Professor of Behavioral Science at Kingsborough Community College, and Dr. Zoe Sheehan Saldana, Professor of Visual Arts, Baruch College.

From: 10 A.M. – 1 P.M.
At: The CUNY Graduate Center
365 Fifth Avenue, New York
Room C201-C204

COMMUNITY COLLEGE COLLABORATIVE GRANT

Round 4 Proposals Due: March 30, 2007

The Office of the University Dean for Research is now accepting proposal submissions for the 4th Round of the **CUNY Community College Collaborative Incentive Research Grant program**. The purpose of this program is to support the research efforts of faculty, especially junior faculty, at the Community Colleges, and to encourage collaborations with faculty within and across the CUNY campuses. The program is open to research projects in the disciplines that constitute the traditional academic divisions of the physical sciences, biological sciences, mathematical sciences, social sciences, and the humanities.

In order to encourage faculty to think in terms of major initiatives, budgets of up to $30,000 will be considered. The funding period for this year will be September 1, 2007 – June 30, 2008. Funding levels for successful proposals will depend on the budget request, the faculty review committee's view of budgetary need, and the ranking of the proposal. The University expects to fund up to 10 awards.

A total of 21 collaborative research proposals were submitted in the last round, of which 11 were funded.

To be considered for an award, proposals must arrive at the Central Office no later than 5:00 PM on Friday, March 30, 2007. For further information please visit www.cuny.edu/research or email Ms. Nina Conroy at nina.conroy@mail.cuny.edu