

The future is engineered here



09/10 ANNUAL REPORT  
GROVE SCHOOL OF ENGINEERING



# Mission

To be an institution of national pre-eminence among schools of engineering and computer science schools, recognized for the excellence of its research and instructional programs;

To provide readily accessible graduate and undergraduate education in a broad range of fields to a highly diverse student body, including traditionally underrepresented minorities, women, working adults and immigrants;

To maintain and expand a program of fundamental and applied research in areas of national interest, particularly in technologies with relevance to New York City, its metropolitan area and New York State;

To provide public service and continuing professional education to our local community, New York City and State, the engineering and computer science professions, and society at large.

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## From the Dean



*It is with great pride that I report on a year of continued achievement and innovation at the Grove School.*

*The strength of the work being done in our laboratories has been validated by a new record in outside funding. For the first time, grants to the Grove School have topped \$30 million. The fact that the doctorate in engineering is now awarded by City College has been a boon to all those involved in research, from faculty members to graduate students and undergraduates, and has increased our standing among schools of engineering. Undertaking our own admissions process is allowing us to use our expertise in selecting students with the potential of becoming first-class engineers. As a result, we continue to increase the quality of our student body and our ability to retain the students we admit.*

*Building on our heritage of cutting-edge engineering, we are developing interdisciplinary, career-oriented programs which prepare our students to take the lead in solving real-world, societal problems.*

*Two new master's degrees and a commitment to entrepreneurship exemplify our current thrust. Our master's in Sustainability in the Urban Environment integrates engineering, architecture, science and urban planning to prepare students for careers which respond to the needs of cities struggling to remain livable in the face of rapid growth, environmental degradation and climate change. Our master's in Information Science, geared to working professionals, equips students to excel in the business-critical areas of information technology. It is a highly appropriate initiative for an engineering school which is situated in the financial capital of the world.*

*Our new emphasis on entrepreneurship is an important corollary to the quality of our research. Breakthroughs being made on our campus are yielding practical solutions to pressing problems. To be effective, these need to be developed commercially. We want to take ownership of the knowledge being generated on this campus by providing incubator facilities which support entrepreneurship and facilitate the path of our researchers in translating their discoveries from the laboratory to the marketplace. To this end we are working on the establishment of a Grove School of Engineering Innovation and Entrepreneurship Center. An undergraduate Entrepreneurship Club was started this year.*

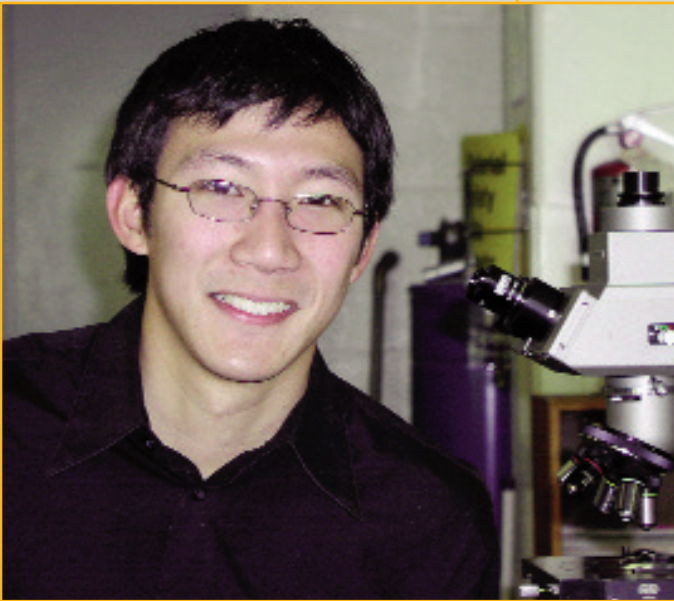
*Our new initiatives provide great scope for alumni participation. Many of you have been pioneers in the fields into which we are expanding. Your experience can be invaluable as our most recent graduates and our researchers attempt to follow in your footsteps. Please join us as the Grove School breaks new ground in improving the world around us through the work we are doing on the CCNY campus.*

*Sincerely,*

A handwritten signature in blue ink that reads "Joseph Barba". The signature is written in a cursive, flowing style.

*Joseph Barba, Dean*

## Raymond Tu is the Grove School's Teacher of the Year



When Raymond Tu talks about teaching, he explodes with enthusiasm. "City College is unique where teaching is concerned," he says. "Students here are inspirational. They succeed at the same level as at top institutions, while handling the real world complexities of jobs and families. They exemplify excellence at CCNY." In return, students laud Dr. Tu for teaching which is so clear and well organized that it arms them with tools for succeeding in other courses. They laud his friendliness, accessibility and willingness to help.

"I have been spoiled here," says Dr. Tu. "My colleagues, my department chair and the Dean all support educational initiatives. They encourage you to integrate teaching and research." A major focus for Dr. Tu has been directing the Peer Learning Program at CCNY's High School for Math, Science and Engineering, in which Grove School undergraduates teach engineering modules to high school students. "The Dean," he says, "was incredibly supportive in finding funding for this. Students prepare during the summer and then spend two weeks teaching the class. They grow

tremendously in their ability to communicate. They become more surefooted." Dr. Tu has also played a key part in implementing a laboratory component to introductory Chemical Engineering courses. "We are incorporating a lot more hands-on experience into students' first brush with Chemical Engineering. Labs cost money, and our chair found the money to incorporate prototype experiences into the curriculum," he says. "I enjoy teaching the core classes. I get the advantage of interacting with new students. They are blank slates, and I get to define Chemical Engineering for them. I am teaching them something completely new."

Dr. Tu, who holds a PhD from the University of California at Santa Barbara and was a post-doctoral fellow at Georgia Tech, marries his passion for teaching with a career as a top-flight researcher. At the Grove School, he maintains a group of three PhD students and numerous undergraduate researchers. His research program aspires to mimic biomolecular self-assembly using a set of rationally designed peptide-based building blocks. This methodology is proving to be an effective tool for engineering drug delivery vehicles, biosensing, and molecular medicines. Dr. Tu is widely published, frequently presents his work at prestigious conferences and is a reviewer for ten professional journals. "My colleagues at City College are leaders in their fields," he says, "It is a privilege to engage with fellow faculty members and parse through ideas. City College gives me tremendous latitude to explore any question that interests me."

**"City College is unique where teaching is concerned. Students here are inspirational."**

## New Master's Degree Puts CCNY on the Cutting Edge of Sustainability in the Urban Environment

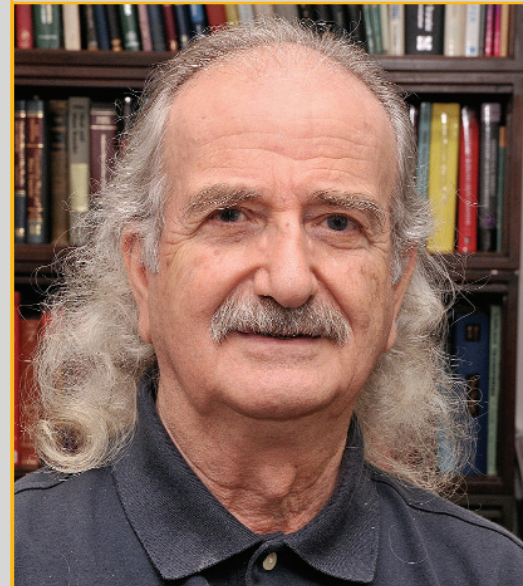
During 56 years of teaching, Dr. Latif Jiji, the Herbert G. Kayser Professor of Mechanical Engineering, has always been eager to expand the frontiers of knowledge and champion innovative curriculum. Most recently, he led a large group of colleagues from the Grove School of Engineering and CCNY's Bernard and Anne Spitzer School of Architecture and Division of Science in developing a new master's program, "Sustainability in the Urban Environment." The program incorporates emerging approaches from the disciplines of architecture, engineering, science and economics to tackle problems which increasingly define the 21st century. It is directed by Dr. Jiji, working with an executive committee consisting of Professors Hillary Brown from Architecture, Beth Wittig from Engineering and Karin Block from Science.

The new master's was designed following painstaking research and consultations with leaders from academia and industry. This confirmed that the time was right for CCNY to offer a sustainability degree that was truly interdisciplinary, would provide a professional qualification for which there was a growing demand, and would appeal to students from a wide variety of backgrounds. It also revealed that though there were sustainability programs at other universities, CCNY was uniquely positioned to focus on the urban environment. On that basis, Dr. Jiji and his colleagues shaped a curriculum which focuses on urban and natural systems, environmental economics and industrial ecology.

"The response from prospective students has been overwhelming," says Dr. Jiji. "In addition to students who are already in engineering, architecture or science, people from other backgrounds can get up to speed quickly with the prerequisites they need. This variety will provide fresh perspective and enrich the program."

At the core of the 30-credit program is a year-long capstone course, which Dr. Jiji and his seven co-PI's are developing under a \$290,000 grant from the US Department of Education. They are designing projects which pose real-world problems in sustainability. Students will approach these in interdisciplinary groups in which team work breaks down the barriers between individual disciplines, so that they learn from each other and emerge versed in the languages of architecture, engineering, science and urban planning.

Graduates will be prepared to adapt old and advance new generations of buildings, urban infrastructure and open spaces using approaches that take into account rapid urbanization, environmental degradation, and climate change. Jobs should be waiting for them. New firms with a sustainability focus are addressing issues in energy, water resources, air quality, land use, waste management, transportation, construction and urban planning. And, implementing initiatives such as PLANYC 2030: A Greener Greater New York, developed by the Mayor's Office of Long-Term Planning and Sustainability, will require many professionals with just the training being offered at CCNY.



**"The response from prospective students has been overwhelming."**

## **Karl J. Duvalsaint '82 EE: A Leader at IBM and a Consistent Booster of his Alma Mater**

When Karl Duvalsaint started his career at IBM in 1982, things were very different from today. "I have lived through a transformation in the computer industry," he says. "I came up through the ranks, and I have had great opportunities." Today, he directs integrated product development, with responsibility for IBM's higher end commercial servers, designed to meet the needs of banks, insurance companies, and governments. His team of 250 is all over the world.

In 2008, Mr. Duvalsaint led the team that broke the petaflop barrier. He oversaw the development of the Roadrunner System, the world's first "hybrid" supercomputer, powerful enough to operate at one petaflop (one thousand trillion calculations per second). Roadrunner was developed for Los Alamos National Laboratory to ensure the safety and reliability of the nation's nuclear weapons stockpile and to enable research into astronomy, energy, human genome science and climate change.

A lifelong learner, Mr. Duvalsaint, earned his MSEE from Syracuse University in 1984 and, in 2002, his MBA from Columbia University. "I felt that the MBA would give me a firmer grasp of contemporary business issues. Engineers, with their mathematical backgrounds, often rise to the top of major financial institutions," he says. "I think that the engineering curriculum should provide students with a tool kit which fits them to deal with the challenges facing businesses today."

For Mr. Duvalsaint, the City College emblem, with its three faces, looking backward, straight ahead and forward, is a metaphor for life. "You have to know your roots to understand where you are today and where you should be going tomorrow," he says. "My roots go back to City College, where an English professor taught me that luck is the intersection of preparedness and opportunity. You do not get any place without hard work. You have to take responsibility for yourself."

Mr. Duvalsaint is deeply committed to the Grove School. He recruits at the School for IBM and brings faculty members to IBM's research facilities, so that they can become familiar with the current trends in his industry. "I want to help the Grove School become one of the best engineering schools on the Eastern Seaboard," he says.

To today's engineering students, Mr. Duvalsaint advises, "Focus on liberal arts as well as math and physics. You should be well rounded in addition to being at the top of your game technically. We are all connected. It is important to understand different cultures. City College's international student body offers you a great opportunity. Take advantage of it and befriend people from other backgrounds."

**"I want to help the Grove School become one of the best engineering schools on the Eastern Seaboard."**

## Alumni Honor Dr. Kenneth M. Rosen '62 ME, a Leader in Aerospace, Helicopters and Propulsion

When Ken Rosen thinks of CCNY, he remembers evenings studying in the Great Hall, surrounded by young men who, like himself, were long on brains and determination and painfully short of material resources. Also present were older students, veterans of WW II and Korea, at City on the GI Bill. "We thought of those guys as supermen," says Dr. Rosen. "They seemed to absorb knowledge like sponges, and were always ready to help us with scientific and technical problems."

Though a graduate of Brooklyn Technical High School, Dr. Rosen still found CCNY competitive, rigorous and demanding. Nonetheless, during the school year he worked at his father's shoe store. In the summer he acquired hands-on engineering experience at Con Edison and as a cadet engineer at the Hudson Avenue Power Plant. After City, Dr. Rosen landed a job at Pratt Whitney as a design engineer and commuted to Rensselaer Polytechnic Institute, earning his MS and PhD in mechanical engineering.

Pratt Whitney was a part of United Technologies Corporation (UTC), and what started as a three-month transfer to UTC's Sikorsky division to work on helicopters led Dr. Rosen to a brilliant career at Sikorsky Aircraft Corporation. Dr. Rosen was part of the last group of engineers to work under Igor Sikorsky, just as the Viet Nam War was proving the helicopter to be an essential part of the US arsenal. Over almost 40 years, Dr. Rosen directed such advanced helicopter projects as the Comanche, S-92 (which won the 2003 Collier trophy), Cypher (UAV), Black Hawk, S-76 and X-Wing. Dr. Rosen rose to be Sikorsky's Vice President for Research, Engineering and Advanced Programs. He was a member of the Sikorsky Executive Board and Chairman of the UTC Engineering Coordination Steering Committee.

A member of the National Academy of Engineering and a fellow of AIAA, Dr. Rosen has been honored by NASA and DOD and has chaired many of the most prestigious associations and committees in the aerospace and helicopter industries. He is widely published and holds five US patents. Though he was a top executive and is a graduate of the Harvard Business School's Advanced Management Program, Dr. Rosen says, "I have never stopped being an engineer. I firmly believe that to maintain its edge, the US must continue to innovate and manufacture, and I am proud that Sikorsky is still developing new helicopters." Now retired from UTC, Dr. Rosen is a founding Principal Partner of Aero-Science Technology Associates and supports DARPA in many advanced technology helicopter programs.

As Dr. Rosen has seen CCNY recommit itself to the excellence of his youth, he has re-engaged in the Grove School. "I cannot overestimate the importance of math, physics and science if we are going to create real jobs and real wealth," he says. "The Grove School must meet the challenge of turning out first class engineers, and City College must never stop educating the poor."



**“The Grove School must meet the challenge of turning out first class engineers, and City College must never stop educating the poor.”**



**“A key to our success is that the Levich Institute is truly interdisciplinary.”**

**Dr. Morton Denn**



# The Levich Institute for Physico-Chemical Hydrodynamics

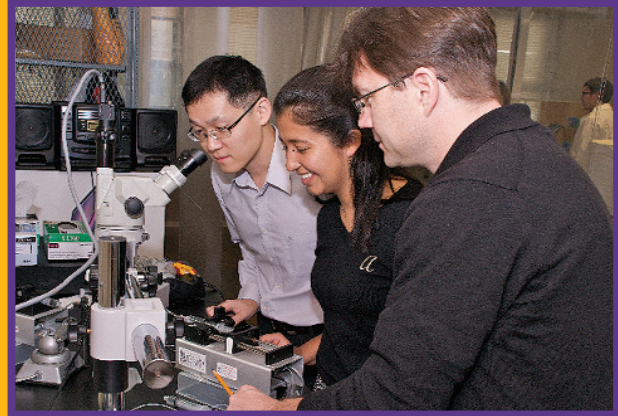
The Benjamin Levich Institute for Physico-Chemical Hydrodynamics is one of the gems of City College. It is an internationally renowned research institute for the study of fundamental problems of flow and transport in complex fluids, fluid-like media and interface systems. Housed in the Grove School, it is home to brilliant faculty members and a magnet for top notch doctoral students. Faculty hold appointments in the Grove School, and CCNY's Division of Science, currently in GSOE's chemical engineering department and CCNY's physics department. Graduate students come primarily from chemical and mechanical engineering and physics.

Current Director and Albert Einstein Professor of Science and Engineering Morton Denn came to the Levich following a distinguished career at the University of Delaware and UC Berkeley. Dr. Denn has appointments in both the Departments of Chemical

Engineering and Physics. His work is concerned with the use of rheology, non-Newtonian fluid mechanics, and polymer physics to solve problems in materials processing. He is a member of the National Academy of Engineering and the American Academy of Arts and Sciences. His honors include the American Institute of Chemical Engineers Founders Award for Outstanding Contributions to Chemical Engineering, the Bingham Medal of the Society of Rheology, and a Festschrift published by Chemical Engineering Science on the occasion of his 70<sup>th</sup> birthday. Dr. Denn is the third in a line of remarkable directors.

In 1979, Benjamin Levich, a physicist of international renown, who had struggled for years to leave the Soviet Union, became the Albert Einstein Professor of Science at City College and established the Institute of Applied Chemical Physics. Professor Levich coined the





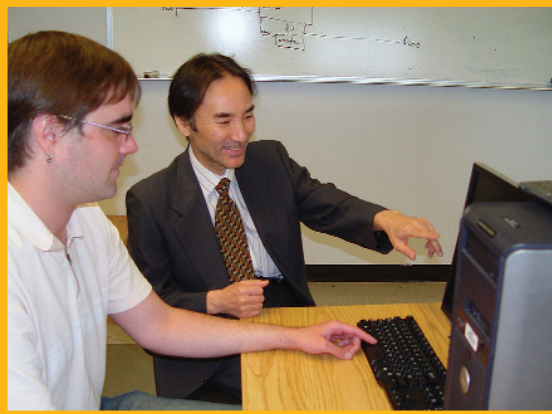
## A Renowned Institute with a Tradition of Remarkable Directors

term *physico-chemical hydrodynamics*, referring to phenomena governed by the interaction of fluid mechanics, heat and mass transfer, and chemical reactions. The English translation of his book of the same name, though authored by a physicist, was an early publication in a major series of chemical engineering texts, reflecting an interdisciplinary thrust that is still evident at CCNY. The Institute was dedicated to research in physico-chemical hydrodynamics. When Professor Levich died, it was renamed in his honor.

Andreas Acrivos succeeded Professor Levich. Under his leadership, the Institute strengthened its interactions with the academic programs while becoming a first-class research center in fluid mechanics. Dr. Acrivos is a member of the National Academy of Sciences, the National Academy of Engineering, and the American Academy of Arts and Sciences. The

American Physical Society established of the Andreas Acrivos Dissertation Award in Fluid Dynamics in his honor, and in 2001 he was awarded the National Medal of Science.

“Over the past decade,” says Dr. Denn, “we have hired young faculty who are worthy of the tradition of Levich and Acrivos. We are continuing our groundbreaking work in heterogeneous complex fluids, learning more about their mechanics from the molecular to the continuum level. And, we are at the forefront of research to establish a fundamental understanding of the flow of granular materials. Our discoveries have implications for a vast array of industries from consumer products to petroleum exploration. A key to our success is that the institute is truly interdisciplinary. It has a coherent view, and everybody can and does talk to everybody else.”



## At Computer Science, a New Master's in Information Systems

The Grove School's Computer Science Department has taken a major step designed to serve the information technology needs of the business community in New York City and beyond. It has developed a master's in Information Systems (MIS), primarily intended for working professionals with backgrounds in engineering or science who wish to develop their careers in information management.

Those who manage the computer and information systems in the modern workplace play a vital role in the implementation of technology within their organizations. Technology must work effectively and reliably from both the operational and strategic perspectives. The MIS program emphasizes practical lessons that enhance the ability to analyze computer and information needs as well as to develop immediate and long-range business plans.

The new master's was designed by four of the GSOE computer science department's most experienced professors: Drs. Douglas Troeger, Abbe Mowshowitz, Izidor Gertner and Akira Kawaguchi, who is the program's director. The program's state of the art coursework in business-critical areas teaches concepts of business software and systems management, economics and finance, and quantitative management skills. At a time when we see large numbers of information-related jobs going abroad, the degree will give working professionals the edge they need to take responsibility for the next generation of business

information technology and to remain competitive in today's global marketplace.

Students will graduate with expertise in managing information systems, with specialized technical knowledge, with management skills and an understanding of business practices and principles, and with strong communications skills. The 30-credit program is offered in the evening and culminates in an intensive independent project in the final semester. Initial areas of specialization for this project include Medical Informatics, Business Process Engineering and Financial Computing, all of which have immediate relevance to the students' lives at work. Throughout, the MIS curriculum emphasizes the teamwork which is essential for success in the workplace. Working closely with fellow students also promotes career-long professional relationships which will continue to serve participants once they graduate.

According to Dr. Kawaguchi, "We believe MIS will provide students with a powerful career enhancing experience, furnishing the intellectual tools needed for professional advancement, and at the same time forming a social network based on interaction with a select peer group. The first cohort of MIS graduates will complete the program this coming June. Enrollment has now reached steady state, and MIS is on the way to achieving the status of a program of excellence within GSOE."



## At Biomedical Engineering, an Important New Laboratory

The new Bone and Joint Laboratory on the fifth floor of Steinman Hall is the latest stride in GSOE's surefooted progress towards becoming a national leader in biomedical engineering research and teaching. It is an important resource for the rest of the New York Center for Biomedical Engineering (NYCBE), which CCNY leads, enhancing the College's position as a major player in New York City's high-powered biomedical engineering community.

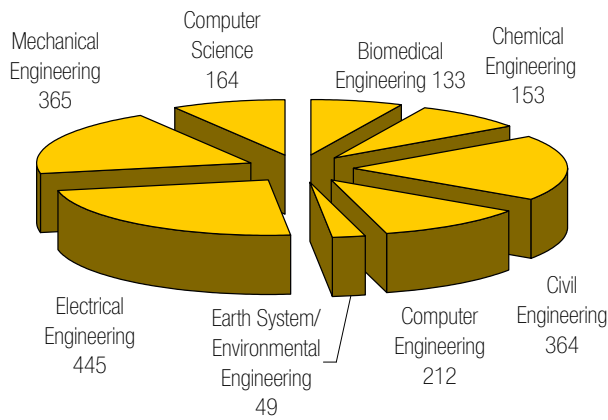
The state-of-the-art facility, which covers 4,500 square feet, is the brainchild of Dr. Mitchell B. Schaffer, director of the NYCBE and Wallace Coulter Professor and Presidential Professor of Biomedical Engineering at the Grove School. According to BME department chair, Dr. John Tarbell, "Mitch Schaffer's extensive experience at Mount Sinai School of Medicine gives him a unique perspective on how the Grove School can work with the medical community to ultimately develop new products and procedures which help patients. The Bone and Joint Lab is central to that effort."

In the lab, Dr. Schaffler and his team will continue the research, which he has been pursuing for fifteen years, on how skeletal tissues (bone, ligament, tendon and cartilage) develop, maintain and repair themselves in order to meet mechanical demands throughout life. "Every system in the body is subject to chemical wear and tear," says Dr. Schaffler. "In addition, the skeleton suffers from wear and tear at the mechanical level. Fortunately,

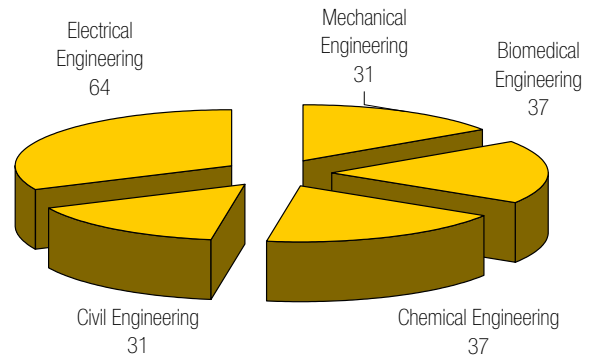
biological materials are capable of self-repair. We study the intrinsic mechanisms which make that possible." This work has major implications for aging and bone fragility, which manifest themselves in osteoporosis and osteoarthritis, so prevalent in baby boomers, as well as the effects of diabetes. Over the years, Dr. Schaffler's research has attracted over \$6 million in NIH funding as well as major grants from NASA and the US Department of Defense, which are interested in related issues.

The lab's new imaging equipment for micro X-ray computed tomography and its facility for long-term loading of bone are also important resources for the rest of the Grove School's distinguished musculoskeletal engineering faculty, including Drs. Stephen Cowin, Shelly Weinbaum, Susannah Fritton, Luis Cardoso and Steven Nicoll. "Musculoskeletal biomechanics is one of our areas of great strength, and it has brought our department a lot of recognition," says Dr. Tarbell. "Each month, our faculty organizes a Bone Seminar, held at the CUNY Graduate Center, which brings together researchers from across New York City. The equipment in the new lab is an asset for our own faculty. It also brings researchers from other institutions such as Columbia University, the Hospital for Special Surgery and Mount Sinai to our campus. And, the lab's value is not limited to biomechanics. Its satellite animal facility has been crucial in recruiting a neural engineer to our faculty. Adding neural engineering to our areas of expertise will round out our Department and complement our other strengths."

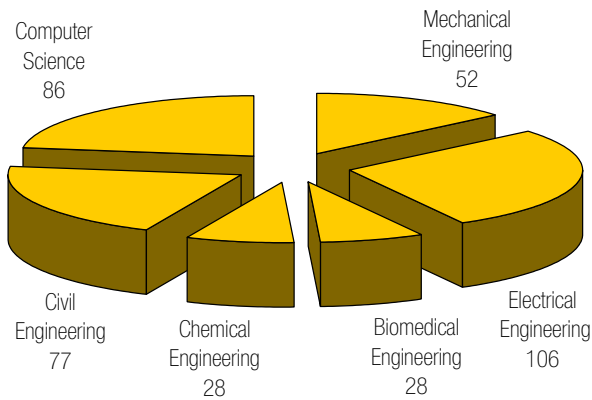
Undergraduate Enrollment Spring 2010  
Total: 1885



PhD Enrollment Spring 2010  
Total: 200



Master's Enrollment Spring 2010  
Total: 376



Degrees Granted 2009–2010  
(Excluding September 2010)

Bachelor's degrees	Master's degrees	Ph.D. degrees
282	155	27

Tuition and Fee Schedule Fall 2008		New York City & State Residents	Out-of-State Residents*
Undergraduate	Full-time	\$2,300 per semester	\$415 per credit
	Part-time	\$195 per credit	\$415 per credit
Graduate	Full-time	\$4,315 per semester	\$640 per credit
	Part-time	\$360 per credit	\$640 per credit

\*Includes international students who have lived in New York State for less than one year

# Graduate Students

**“The Grove School has broadened my engineering horizons, and the opportunities have been excellent.”**

Selen Bayar came to the Grove School with bachelor's degrees from Istanbul Technical University in Astronautical and Aeronautical Engineering. She was pursuing her master's and working as a research assistant when she received a fellowship from the CUNY Graduate Center. This brought her to the U.S. to pursue her doctoral studies under the mentorship Dr. Feridun Delale, chair of the Grove School's mechanical engineering department. Selen is now working on her dissertation. Her topic is part of a large project, funded by the US Army, which deals with the development of light weight multifunctional composite armor technology. She is focusing on nanoclay reinforced polymeric materials with the aim of reducing their weight and improving their mechanical and fire retardation properties. Her research also entails creating theoretical models to predict these properties. In April, 2010, Selen presented a poster on her work at the Junior Scientist Conference at the Technical University of Vienna in Austria.



**Selen Bayar**  
**Mechanical Engineering**

**“The Grove School gave me the confidence to go into the workforce and get the job I wanted.”**

While Erika Garofalo pursues her master's in electrical engineering at the Grove School, she is working full time at ITT Electronic and Strategic Defense Systems in the RF and Microelectronics Department. “My studies at the Grove School have been directly applicable to the position I now hold,” she says. “My time at NOAA-CREST, taught me how to work independently, which is very important in the workforce. It also developed my analytical skills and familiarized me with the type of lab equipment and the computer programs I have been using at ITT.” Erika's research at NOAA-CREST and NASA-COSI was based on investigating and measuring the optical dynamics of light distortion from various sources for use in optical diagnostic instrumentation for research. Of her mentor, Dr. Fred Moshary, she says, “He has supported me and has helped me continue my studies when it became necessary for me to enter the workforce.”



**Erika Garofalo**  
**Electrical Engineering**



**Andrew Nagel**  
**Computer Science**

**“City College has been beyond my expectations. Professors are very willing to engage, and the value is excellent.”**

“I went to a very small college,” says Andrew Nagel, “and I thought that I might be swept under the carpet at City. On the contrary, professors are very willing to engage, and the value is excellent.” Prior to the Grove School, Andrew spent three years as a research technician in the Nuclear Research Lab at Sloan Kettering, where he collaborated on four papers. At GSOE he has completed a prototype system for demonstrating earthquake simulations over the web, and he has published a book chapter with his mentor, Dr. Akira Kawaguchi. It is *Linear Programming in Database* in “*New Developments in Robotics, Automation and Control*.” It reflects his current focus in computer science: databases. “There is so much data,” he says, “and it has to be effectively managed. Though research started in the 1970s, and this is a mature field, there are many new contexts in which to work.”

**“It is important to me that my research benefit society.”**

When Jayant Rane was at the Institute of Chemical Technology in Mumbai, India, he heard that the internationally-known energy expert, Dr. Sanjoy Banerjee, had joined the Grove School to head its Energy Institute. He knew then that he wanted to do his PhD at CCNY. Jayant’s research could ultimately change the process for recovering petroleum. He is studying water-oil emulsion separation, focusing on fluid dynamic forcing and gravity separation. His aim is to improve understanding of the coalescence mechanism causing emulsion separation. The project, which is funded by a consortium of City College and partners in Norway, will give him an opportunity to do research in Trondheim. At the Grove School, Jayant is fulfilling his dream of working under Dr. Banerjee. “Dr. Banerjee,” he says, “is very involved in our research. It is important to me that my work have practical implications. Dr. Banerjee conveys problems to us from industry, so that we can do research which benefits society.”



**Jayant Rane**  
**Chemical Engineering**

**“You see the best of New York at City College.”**

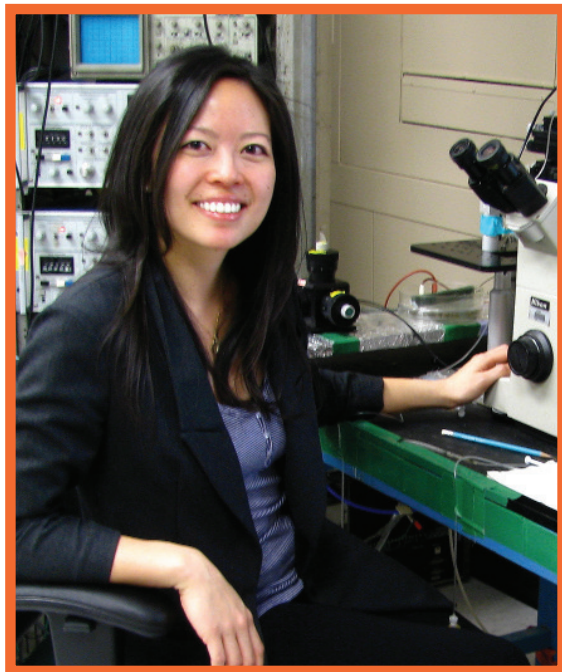
Alex Rosenthal came to his graduate studies in civil engineering with a BS in biochemistry and molecular biology. His research aims to characterize and optimize the growth kinetics of bacteria which catalyze anammox (anaerobic ammonium oxidation), a biological nitrogen removal process which turns ammonium into nitrogen gas. The process is key to tackling the global issue of nitrogen pollution, caused by agricultural discharge and municipal waste water. “I want to work at the intersection of science, public health and social justice,” says Alex. “My mentor, Dr. John Fillos, is teaching me how to communicate our work effectively. Our research is funded by NYC DEP, and each month, we present our latest findings to New York City officials. It is great training.” Alex lauds GSOE as more cooperative than any other place he has studied. “You see the best of New York at City College,” he says, “and working with people from all over the world is enriching my life.”



**Alex Rosenthal  
Civil Engineering**

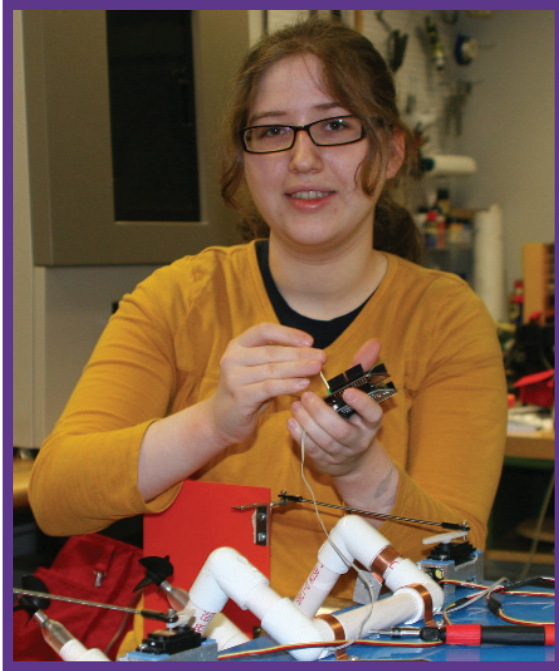
**“The PhD program tests you to your limit. City College has really pushed me.”**

“The Grove School has provided me with unlimited research opportunities and inspirational mentoring,” says Danielle Wu. Danielle cites the New York Center for Biomedical Engineering as a major reason she came to City. Thanks to the consortium, she has conducted research at Albert Einstein College of Medicine, investigating mechanisms of mechanotransduction and junctional protein interactions in bone, under Einstein’s Dr. David Spray and City’s legendary Dr. Sheldon Weinbaum. “I have been given so much here. There is no way I can pay back the people who have mentored me, so I try to ‘pay forward’ by helping other students.” To this end, Danielle has served as lead mentor and teaching assistant in City’s NIH Scholars Program. Despite her rigorous academic schedule, she commits time to the New York Junior League, where she was honored with the Woman to Watch Award, and Ronald McDonald House, where she earned the Outstanding Volunteering Award.



**Danielle Wu  
Biomedical Engineering**

# Undergraduates



**Hannah Aizenman**  
**Computer Engineering**

**“I am doing my doctorate at CUNY so that I can continue to work with my Grove School professors.”**

Hannah Aizenman will graduate with a BE in computer engineering and is bound for a PhD in computer science, but she has also completed the course requirements for a BS in psychology. Her honors research in that field compares a computational model of a theory of attention to a neural network model. Hannah’s first love, however, is robotics. As president of the CCNY Robotics Club, she started workshops to familiarize students with micro-controller programming and programming frameworks and train a team for the International Autonomous Surface Vehicle Competition. She also analyzes images from NASA satellites and global climate variables from the NCEP data set under NOAA-ISET auspices and works as a tutor at the CCNY writing center. “My professors respect undergraduates,” she says. “They have given me the independence to pursue my interests.”

**“I hope to become an entrepreneur within mechanical engineering”**

Engineering is in Joanna Bonfiglio’s blood: her mother, a systems engineer, was one of the first women to graduate from Polytechnic University. Joanna’s first BA, however, was in communication and media studies. Now, she is poised to use her communications skills to enhance a career in mechanical engineering. While at the Grove School, Joanna interned in the Department of Design and Construction of the NYS Office of General Services. She was a student designer at Watermark, designing bathroom fixtures to be aesthetically pleasing and meet ADA codes. As part of the CCNY chapter of Engineers without Borders, she created a chimney system to retrofit adobe-mud brick stoves in Honduras and presented the chapter’s work at the United Nations. Joanna’s senior design project was a device, operable by a lay person, to lift an individual in and out of a wheelchair. “Ultimately,” she says “I hope to become an entrepreneur within mechanical engineering, taking a product from design through marketing.”

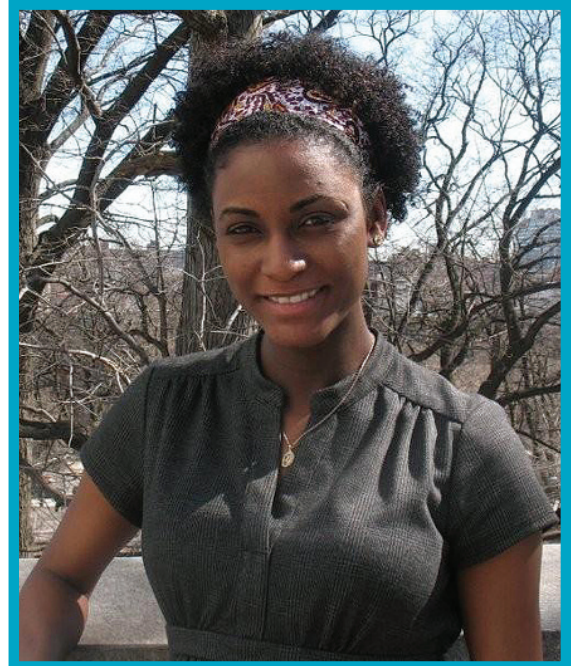


**Joanna Bonfiglio**  
**Mechanical Engineering**



**“As a returning student, the Grove School gave me everything I needed.”**

Vanessa Clarke had a successful career, acting in commercials, when she decided that her future lay in environmental engineering. “As a returning student, the Grove School gave me everything I needed,” she says. “It has a strong and broad curriculum, it is affordable, and the support from professors and fellow students is outstanding.” Vanessa has been a research fellow at NOAA-CREST, where she learned to analyze satellite data that monitors subtle changes in climate systems and served as president of the CREST student organization. As a member of the CCNY Engineers without Borders team, she traveled to a village in Honduras and performed site assessments of the water distribution pipelines. She worked with Skanska Construction Company in project procurement and interned with the New York State Department of Environmental Conservation, where she inspected petroleum tank spills. “The Grove School,” she says, “has given me a solid foundation in environmental engineering and prepared me well for a new career.”



**Vanessa Clarke  
Environmental Engineering**



**Edwin Guzman  
Computer Science**

**“Both the Macaulay Honors College and the Grove School Computer Science Department are close communities.”**

Edwin Guzman chose the Grove School because of the strength of the Computer Science Department and the opportunity to study in the Macaulay Honors College. “Both the Honors College and the Computer Science Department are close communities, and I have had great academic opportunities,” he says. The Honors College is funding Edwin for five years, so that he can graduate with bachelor’s degrees in computer science and psychology. His academic fields overlap. He did independent study on face recognition using artificial neural network, and, in psychology, he is interested in cognitive science and the brain/mind experience. Edwin’s senior design project is taking him into computer security and cryptography under the mentorship of Dr. Nelly Fazio. Off campus, Edwin interned for a startup company, creating a website for Jewish education. This dovetailed with his love of teaching: for a year after graduation, he returned to his old high school to tutor.



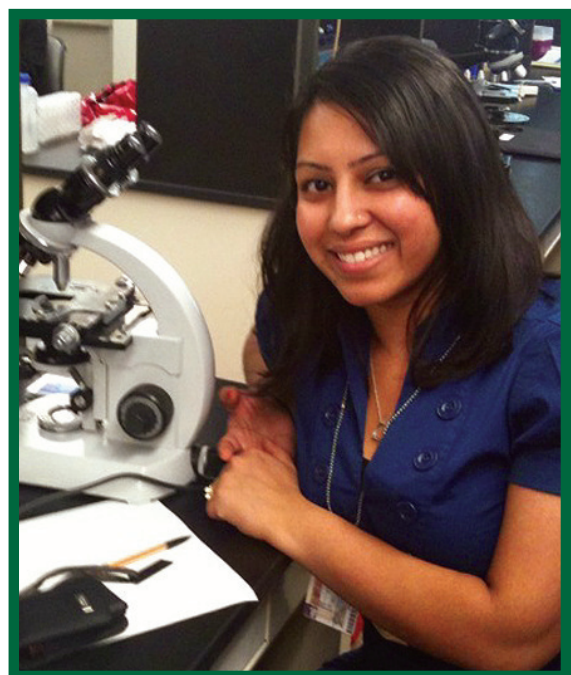
**Jafar Haider**  
**Civil Engineering**

**“At City, if you work hard and are serious, there are many scholarship opportunities. My tuition has been paid in full.”**

“I always knew that I was going to be an engineer,” says Jafar Haider. “My father is a contractor, and I grew up playing with bricks and mixing concrete.” Jafar’s experience while at GSOE includes studying the effects of overweight vehicles on New York State’s highways and bridges for NYSDOT, working in seismic design for NJDOT, and interning at Wexler Associates, where he reviewed shop drawings of steel connections and performed concrete designs. With the CCNY chapter of Engineers without Borders, he went to Honduras, where his team assessed latrine and dam projects. Jafar also traveled to New Orleans with members of the American Society of Civil Engineers, volunteering to clean up and install siding on houses destroyed by Hurricane Katrina. “City College has a lot to offer,” he says, “and, if you work hard and are serious, there are many scholarship opportunities. My tuition has been paid in full.”

**“The preparation I received at the Grove School is very relevant to the work I will be doing.”**

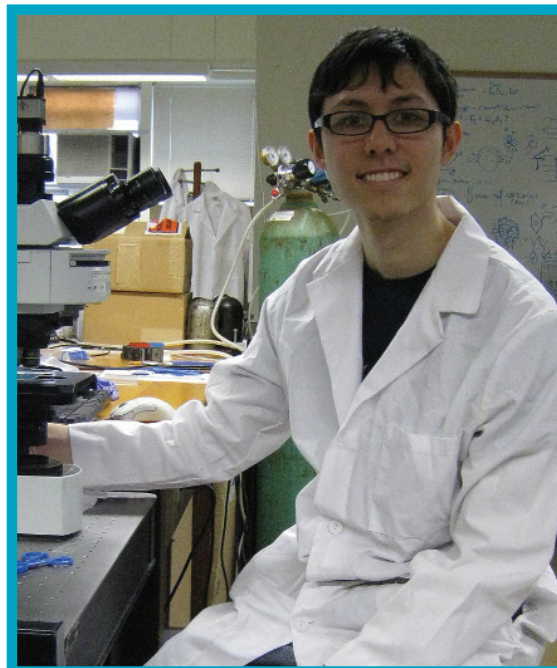
Tanjila Khanam is bound for Johnson and Johnson’s R & D leadership program, which will take her through the research, marketing and sales phases of the company’s operations. “I want to get industrial experience and then decide between an MBA and a PhD in biomedical engineering,” she says. For her senior design project, Tanjila worked at Sloan Kettering studying polymers which could lead to substances which mimic components of the human body. She has also done research in the neural engineering lab at the Grove School, studying the effects of Deep Brain Stimulation (DBS) induced electric fields on endothelial cell barrier function. Tanjila lauds the preparation she has received at the Grove School. “In the Ethics in Biomedical Engineering course,” she says, “the topics were related to the real world. They were situations we will find ourselves in and were very relevant to the work I will be doing.”



**Tanjila Khanam**  
**Biomedical Engineering**

**“The research I am part of at the Grove School could lead to cheaper, better, smaller microchips.”**

David Liu’s academic distinctions include an honorable mention in the national competition for the prestigious Barry M. Goldwater Scholarship. A student in CCNY’s Macaulay Honors College, he was drawn to chemical engineering by his fascination with expressing chemical and physical phenomena through equations. His research, under Dr. Ilona Kretzschmar, entails analyzing the effect of Janus particles on the phase stabilization of diblock copolymer PS-PMMA. Its applications in the development of microchip and semiconductor components on the nanometer scale mean that it could lead to cheaper, better, smaller microchips. David has participated in the CPIMA (NSF Center on Polymer Interfaces and Macromolecular Assemblies) Summer Undergraduate Research Experience Program at IBM Almaden Research Center and Stanford University, learning about synthetic chemistry and continuing his study of microchips. He has also taken part in a CUNY study abroad program in the Galapagos. “I would not have had these experiences any place but City College,” he says.



**David Liu**  
**Chemical Engineering**

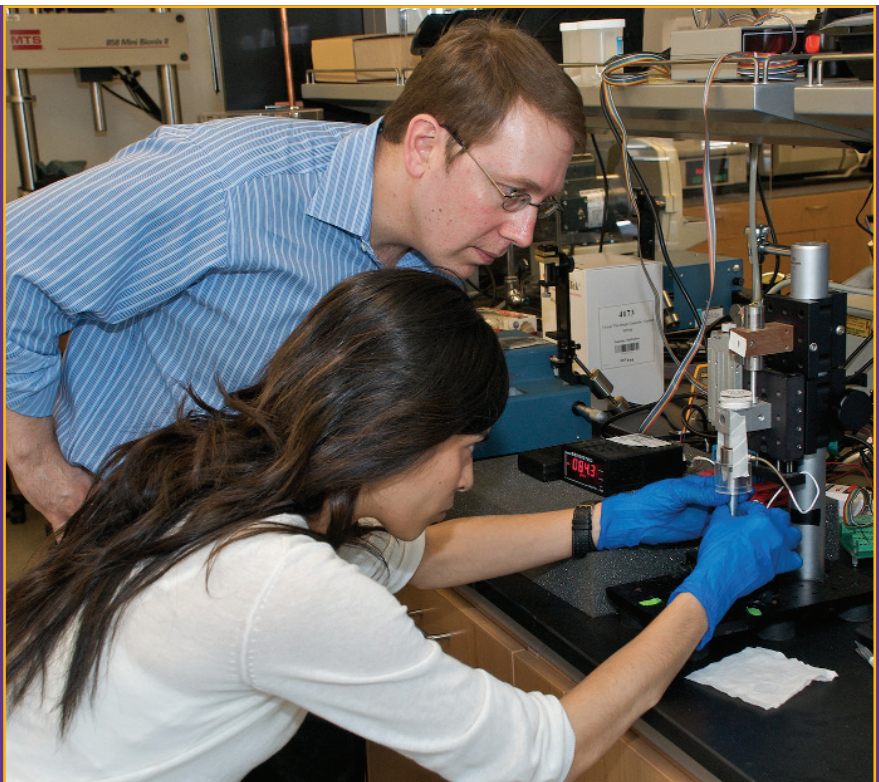
**“I intend to start my own business building optical or green devices.”**

Rupert Wilmot-Dunbar plans to use his foundation in electrical engineering as a springboard into entrepreneurship. Rupert’s first internship was at Lockheed Martin, Missiles and Fire Control in the Test Engineering Department. He then served as a co-op engineer at Brookhaven National Laboratory in the Collider-Accelerator Department. At the Grove School, he worked with other mechanical engineering students to design and build an autonomous waste sorter (AWS) that can sort a wide selection of recyclable material. Under the auspices of NOAA-ISET, he tested weather instruments for installation in New York City, designed algorithms to control the collection and storage of their data, and set up the units. His senior design project was a novel fault detection and protection system, to be implemented with a ring-structured passive optical network. When not in the lab, Rupert works to promote entrepreneurship at the Grove School. As president of CCNY’s new Entrepreneurship Club, he has been deeply involved in starting the college’s entrepreneurship incubator.



**Rupert Wilmot-Dunbar, Jr.**  
**Mechanical Engineering**

## new faculty



### The Appointment of Dr. Steven B. Nicoll Expands the Range of Biomedical Engineering at the Grove School

Associate Professor Steven Nicoll is the most recent addition to a department which is attracting some of the most promising young biomedical engineers in the country. Dr. Nicoll's research program incorporates the principles of cell and molecular biology, materials science, and mechanical engineering toward the development of living tissue surrogates for connective tissue restoration. "I think," he says, "that my skill sets will be complementary to the biomedical engineering department's well established strengths in biomechanics." Dr. Nicoll's work has far reaching implications for orthopaedic surgery, plastic surgery and restorative dentistry as well as near term practical applications. The University of Pennsylvania, where Dr. Nicoll was a faculty member prior to the Grove School, has founded a company which will use his research to develop cellulose-based materials for soft tissue augmentation and cartilaginous tissue repair.

Dr. Nicoll already has an Early Career Translational Research Award from the Wallace H. Coulter Foundation and an NSF CAREER Award to his credit, as well as substantial funding

from the NIH and the US Department of Veterans Affairs. He was drawn to the Grove School by the excellence of the biomedical engineering faculty, the resources of the New York Center for Biomedical Engineering, and what he terms "the visionary support" for biomedical engineering at City College. "It was a unique opportunity," he says, "to join a vibrant department which includes three Lissner Award winners and two members of the National Academy of Engineering."

Though new to City College, Dr. Nicoll is thoroughly invested in its mission. He is as committed to teaching as he is to research, and won an award for undergraduate advising at the University of Pennsylvania, where he graduated five PhD students in seven years. Since arriving at City, in addition to mentoring graduate students, he has welcomed undergraduates and high school students to his lab, and he is representing biomedical engineering on the Grove School admissions committee. "I take tremendous pride in seeing students succeed," he says, "and the students here appreciate everything you do for them."



The Grove School's remarkable faculty never stops. They are devoted teachers whose mastery of their disciplines and ability to communicate is a constant boon to their students. In addition, they are known for their willingness to go the extra mile, mentoring and taking a hands-on interest in their students' projects. Dr. Jizhong Xiao, director of the CCNY Robotics and Intelligent Systems Lab (first on the left in the above photo) is the perfect example. He is pictured with his students, whose stealthy robot "City Alien" took top prize at the 18th Annual Intelligent Ground Vehicle Competition.

Teaching and mentoring, however, go on in tandem with world class research. Grove School faculty members are widely published in their fields' most prestigious journals, greatly in demand to speak at conferences in the US and abroad, and highly respected by colleagues who choose them to play leadership roles in professional organizations. The next few pages present a representative but by no means exhaustive account of their achievements.

***There are 113 full-time faculty at The Grove School. During 2009-2010, they:***

***Delivered 39 invited lectures***

***Authored 5 books, edited 4 books and contributed 6 book chapters and one book preface***

***Published 117 peer-reviewed journal articles***

***Made 142 conference presentations of which 72 were published as proceedings***

***And, were awarded four patents.***

**Robert Alfano**

Patent for detecting human cancer through spectral optical imaging using key water absorption wavelengths (with Ali Jamal, Wubao Wang, Manuel Zevallos).

Address to U.S. DOD on potential application of his work to improve under water navigation systems for the U.S. Navy Trident class submarine.

**Peter Brass**

Editorial board member, Journal of Computational Geometry.

Invited Speaker, Opening Conference of the special semester on Discrete and Computational Geometry of the Bernoulli Center at the EPFL.

**Luis Cardoso**

Member of the following Review Panels:

At NIH: Shared Instrumentation Grant; Special Emphasis Review Panel (competitive supplements); Clinical Molecular Imaging and Probe Development Study Section; National Institute of Biomedical Imaging and Bioengineering

At NSF: Biophotonics, Advanced Imaging and Sensing for Human Health; Major Research Instrumentation Panel.

**Morton Denn**

Editorial Board Member, Journal of Non-Newtonian Fluid Mechanics;

Member, Governing Board and Executive Committee, American Institute of Physics;

Committee Member, Israel Council on Higher Education, National Research Council.

Plenary Lecture, 3<sup>rd</sup> Workshop on Viscoplastic Liquids; Keynote Lecture, Israel Physics Society; Invited Lecture, Conference on Jamming and Rheology.

Chemical Engineering Science, Special Issue, Morton Denn Festschrift.

**Roger Dorsinville**

Editorial Board Member, Journal of Nonlinear Optical

Physics and Materials.

**Bingmei Fu**

Editorial Board Member: Journal of Biomedical Engineering; Journal of Applied Mechanics.

Invited Keynote Speaker, 4<sup>th</sup> Sino-US Biomechanics Workshop.

Invited Symposium Presentation, 6<sup>th</sup> World Congress of Biomechanics.

**Michel Ghosn**

2010 IABMAS (International Association of Bridge Management and Safety) Prize for his contributions to bridge redundancy.

**Ibrahim Habib**

Editor, IEEE Transactions on Wireless Communications; Elsevier Computer Networks Journal; Elsevier Journal on Wireless Communications and Mobile Computing.

Distinguished Lecturer, IEEE Communications Society.

**Masahiro Kawaji**

Chair, AIChE's Transport and Energy Processes Division.

Plenary lecture with S. Banerjee, 1st International Symposium of the Kyoto University Global COE Program.

Invited talk, 2nd International Symposium of the Kyoto University Global COE Program.

**Jae Lee**

Co-editor, Journal of Thermodynamics for Advances in Gas Hydrate Thermodynamics and Transport Properties.

Editorial Board Member, Chemical Product and Process Modeling.

Keynote Speaker, Process Intensification for CO2 Summit: Technology and Opportunity.

**Jackie Li**

Organizer, Symposium on Self-Sensing, Self-Healing, Self-Powering and Multifunctional Materials, 3rd International

Conference on Integrity, Reliability & Failure;  
Invited Lecture, School of Civil Engineering and  
Transportation, South China University of Technology;  
Invited Seminar, Chinese Academy of Science, Institute of  
Mechanics.

Best paper award in Disciplinary Research and  
Development Session, 3rd International Multi-Conference  
on Engineering and Technological Innovation.

**Nicholas Madamopoulos**

Organizer and General Conference Chair, 33<sup>rd</sup> IEEE  
Sarnoff Symposium.

**Jeff Morris**

Member, Bingham Medal Selection Committee 2010  
Society of Rheology.

Keynote Speaker, International Conference on Multiphase  
Flow, ICMF-2010.

**Lucas Parra**

Associate Editor, IEEE Transactions of Signal Processing;  
IEEE Transactions of Biomedical Engineering.

**Robert Paaswell**

Chair, ASCE Committee on Peer Review of Public  
Agencies Peer Review of Minnesota DOT.

Chair, National Cooperative Highway Research Panel on  
Evaluating Risk in Construction of the NRC.

**Ali Sadegh**

US Patent (with Jizhong Xiao), "Modular Wall Climbing  
Robot With Transition Capability."

**Mitch Schaffler**

Editorial Board Member, Bone and Anatomical Record.

Vice chair, Advocacy Committee, Orthopaedic Research  
Society.

Keynote Speaker, NYC Metropolitan Bone Club.

Elected Fellow, American Association of Anatomists.

Received Frost-Remodeling in Bone Award, International  
Bone & Mineral Society.

**Aidong Shen**

Editor, Papers from the 26th North American Molecular  
Beam Epitaxy Conference.

**Kolluru Subramanian**

Elected Fellow of the American Concrete Institute.

**John Tarbell**

Associate Editor, Cardiovascular Engineering and  
Technology.

Chair, Van C. Mow Medal Committee, Bioengineering  
Division of ASME.

Plenary Lecture, Northeast Bioengineering Conference.

Rutgers University Medal of Excellence for Alumni  
Achievement in Academia.

Featured in cover story on mechanotransduction in The  
Scientist.

**Yingli Tian**

Keynote speaker, International Conference on Computer  
Graphics, Image and Visualization.

**Raymond Tu**

Plenary Talk, AIChE Annual Meeting.

Grove School of Engineering, Teacher of the Year 2009.

**Uyar Umit**

Organizer, Invited Session "Biologically Inspired  
Techniques in Communications," 33rd IEEE Sarnoff  
Symposium.

**Sihong Wang**

Invited Speaker, Annual Convention, Chinese Association of  
Science & Technology USA , Greater New York Chapter.

**Zhigang Zhu**

Associate Editor, Machine Vision and Application Journal.

In 2009-2010 research at City College's Grove School of Engineering attracted a record \$31,401,675 in external funding, almost \$10,000,000 over the prior year's total. In the current economic climate, this is an extraordinary vote of confidence in the quality and importance of the work being done by our faculty and students.

**Centers and Institutes**

The School of Engineering hosts a number of organized Centers and Institutes. Each of these serves as a focal point for concerted research efforts and competes for external research funding. In addition, GSOE faculty participate in the administration and research activities of two research centers housed in the CCNY Division of Science, the Institute for Ultrafast Spectroscopy and Lasers and the Center for the Analysis of Structures and Interfaces.

*Benjamin Levich Institute for Physicochemical Hydrodynamics*

*New York Center for Biomedical Engineering*

*Center for Algorithms and Interactive Scientific Software*

*Center for Information Networking and Telecommunications*

*CUNY Institute for Urban Systems*

*CUNY Institute for Transportation Systems*

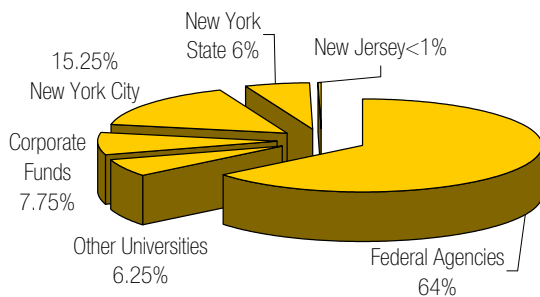
*Center for Water Resources and Environmental Research*

*CUNY Energy Institute*

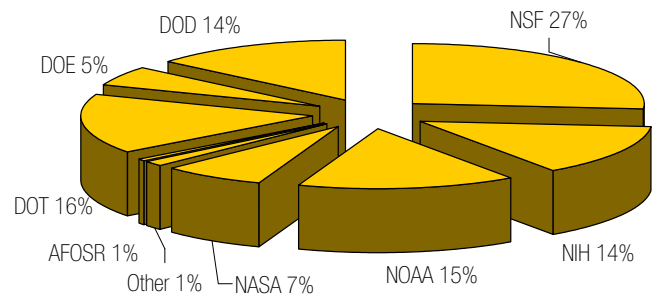
*Institute for Environmental Science and Engineering*

*Center for Advanced Engineering Design and Development*

**Funded Research Distribution by Sources**  
Total: \$31,401,675



**Federal Research Funding Distribution by Agencies**  
Total: \$19,721,555







**Agrawal, Anil**, CORNELL UNIV, \$8,000, Bridge Element Deterioration Rates, 6/10/2003 - 6/30/2009

**Agrawal, Anil**, NYS DEPT OF TRANS, \$200,000, Verification/Development of Seismic Design Specifications for Downstate Zone, 3/1/2009 - 2/28/2011

**Agrawal, Anil**, PURDUE, \$99,373, NEESR-SG: Performance-Based Design and Real-time Large-scale to Enable Implementation of Smart Damping Systems, 9/15/2009 - 8/31/2012

**Ahmed, Samir**, ONR, \$300,000, Exploring Techniques for Improving Retrievals of Bio-Optical Properties of Coastal Waters, 1/24/2009 - 11/15/2012

**Ahmed, Samir**, NO. CAROLINA A&T, \$549,950, NOAA Interdisciplinary Scientific Environmental Technology (ISET) Cooperative Research Education Center, 9/1/2006 - 8/31/2010

**Ali, Mohammed**, PSC-CUNY, \$2,427.48, On the Vision of Implementing A Truly Native Ethernet-Based Global Multi-Service Infrastructure, 7/1/2010 - 6/30/2011

**Andreopoulos, Yiannis**, NRC, \$145,000, Introducing a Nuclear Engineering Concentration Into the Mechanical and Chemical Engineering Programs at The City College of New York, 7/13/2009 - 7/12/2010

**Banerjee, Sanjoy**, NRC, \$5,000, Support for Administrative Assistant for Advisory Committee, 8/18/2008 - 8/17/2010

**Banerjee, Sanjoy**, NRC, \$5,000, Support for Administrative Assistant for Advisory Committee, 8/18/2008 - 8/17/2011

**Banerjee, Sanjoy**, NRC, \$11,143, Support for Administrative Assistant for Advisory Committee, 8/18/2008 - 8/17/2010

**Banerjee, Sanjoy**, NRC, \$11,144, Support for Administrative Assistant for Advisory Committee, 8/18/2008 - 8/17/2010

**Barba, Joseph**, AMNH, \$25,000, Science, Technology, Engineering and Mathematics (STEM) Institute, 7/1/2009 - 6/30/2010

**Barba, Joseph**, NSF, \$300,000, Bridges to Engineering Success for Transfers, 10/1/2005 - 9/30/2010

- Benenson, Gary**, NSF, \$565,210, Supplemental Funding: Physical Science Comes Alive: Exploring Things That Go, 9/1/2007 - 8/31/2011
- Benenson, Gary**, NSF, \$158,815, Supplemental Funding: Physical Science Comes Alive: Exploring Things That Go, 9/1/2007 - 8/31/2010
- Bikson, Marom**, WALLACE RESEARCH FDT, \$120,000, Early Career Translational Research, 9/1/2009 - 8/31/2010
- Bikson, Marom**, SLOAN KETTERING, \$10,000, Intellectual Property for Transfer, 12/1/2008 - 2/28/2010
- Bikson, Marom**, PSC-CUNY, \$2,100.00, HD-tES Device Prototype: Towards Safe Non-Invasive Electrotherapy, 7/1/2010 - 6/30/2011
- Brass, Peter**, PSC-CUNY, \$3,990, Planning Near-Optimal Patrol Paths for Systems of Mobile Guards, 7/1/2010 - 6/30/2011
- Brown, Ramona**, NYS ED DEPT, \$116,643, CCNY/SCRIP STEP Program, 7/1/2009 - 6/30/2010
- Cardoso, Luis**, NIH, \$145,900, Age Related Bone Loss Assessed by Ultrasound Tomography: Bone Quality Beyond BMD, 2/1/2010 - 1/31/2011
- Cardoso, Luis**, PSC-CUNY, \$2,500, Fast and Slow Wave Propagation in Bone, 7/1/2010 - 6/30/2011
- Chen, Cynthia**, STV INC, \$1,347, Pilot Person-Based GPS Household Travel Survey, 6/20/2007 - 12/31/2008
- Couzis, Alexander**, NYU, \$31,000, NYU/CCNY REU Site for Science and Engineering of Soft Materials and Interfaces, 4/1/2009 - 3/31/2010
- Couzis, Alexander**, MICRON POWDER IND, \$19,086, Designing a Manufacturing Approach for Micron and Submicron Nylon 12 and Nylon 6 Particle with Tight Particle Size Distribution, 2/15/2010 - 2/14/2011
- Cowin, Stephen**, PSC-CUNY, \$2,455.10, The Permeability of the Lacunar-Canalicular Porosity of Bone Tissue, 7/1/2010 - 6/30/2011
- Cowin, Stephen**, NSF, \$250,000, Feeding and Exciting Bone Cells With Interstitial Fluid Movement, 9/1/2009 - 8/31/2011
- Crouse, David**, NYSTAR, \$921,200, CAT: Center For Advanced Technology, 7/1/2009 - 6/30/2010
- Crouse, David**, GREATER SYRACUSE-COMMERCE, \$25,000, Nanoscale Nylon, 1/1/2010 - 12/31/2010
- Crouse, David**, NSF, \$10,000, Collaborative Research: Planning Grant: I/UCRC for Metamaterials, 8/1/2009 - 7/31/2010
- Crouse, David**, CORNELL UNIV, \$62,245, Development of Light Controlling Techniques in Optoelectronic Devices, 1/1/2007 - 9/30/2010
- Delale, Feridun**, PSC-CUNY, \$2,455.10, Multiscale Modeling of Nanoclay Reinforced Nanocomposites, 7/1/2010 - 6/30/2011
- Delale, Feridun**, ARMY, \$2,162,250, Advanced Lightweight Multi-Threat Composite Armor Technology, 9/24/2009 - 9/30/2011
- Diyamandoglu, Vasil**, NYC DEPT OF SANITATION, \$16,875, NY Wastematch Program, 7/1/2009 - 6/30/2010
- Diyamandoglu, Vasil**, NYC DEPT OF SANITATION, \$208,376, Materials Exchange, Reuse and Sustainability in New York City, 7/1/2009 - 6/30/2010
- Diyamandoglu, Vasil**, TECHLAW, \$3,420, Development of a Bilingual Materials Exchange System for Puerto Rico, 10/3/2008 - 9/30/2010

**Gilerson, Alex**, U OF TEXAS, \$200,598, Biological Response to Polarized Underwater Light Field, 6/1/2009 - 5/31/2012

**Gonzalez, Jorge**, NSF, \$7,500, Understanding Impacts of Climate Change on Energy Infrastructure in Urbanized Coastal Area, 8/1/2009 - 7/31/2010

**Gonzalez, Jorge**, NSF, \$121,996, Understanding Impacts of Climate Change on Energy Infrastructure in Urbanized Coastal Area, 8/1/2009 - 7/31/2010

**Gosser, Yu Ying**, NIST, \$15,910, FY 2010 SURF-NIST-G, 5/1/2010 - 9/30/2010

**Jiji, Latif**, US DEPT OF ED, \$290,600, Educational Material for an Interdisciplinary Program: Master of Science in Sustainability, 10/1/2009 - 9/30/2011

**Kamga, Camille**, US DEPT OF TRANS, \$2,085,000, University Transportation Research Center, 10/1/2009 - 12/31/2010

**Kamga, Camille**, CTR CLIMATE STRATEGIES, \$23,458, Residential-Commercial-Industrial Sector, 9/10/2008 - 6/30/2009

**Kamga, Camille**, NJ DOT, \$50,001.00, UTRC: Seismic Design Recommendations, 1/1/2008 - 7/31/2010

**Kamga, Camille**, CTR CLIMATE STRATEGIES, \$1,471.00, Residential-Commercial-Industrial Sector, 9/10/2008 - 6/30/2009

**Kamga, Camille**, NYS DEPT OF TRANS, \$300,000, University Transportation Research, 11/1/2009 - 10/30/2011

**Kamga, Camille**, NJ DOT, \$110,984, UTRC: Seismic Design Recommendations, 1/1/2008 - 7/31/2010

**Kamga, Camille**, NYC DOT, \$108,178, Effectiveness of Traffic Calming Measures, 11/24/2008 - 12/31/2010

**Kamga, Camille**, NYC DOT, \$74,528, Effectiveness of Traffic Calming Measures, 11/24/2008 - 7/7/2010

**Kawaji, Masahiro**, NRC, \$200,000, CCNY Nuclear Education and Research Scholarship Program, 8/1/2009 - 7/31/2011

**Kawaji, Masahiro**, DOE, \$197,500, Enhancing the Capability of CCNY's Reactor Thermal-hydraulics and Safety Research Laboratory, 7/15/2009 - 7/14/2010

**Kawaji, Masahiro**, PSC-CUNY, \$2,155.10, Enhanced Heat Transfer with Self-Rewetting Fluids, 7/1/2010 - 6/30/2011

**Khanbilvardi, Reza M.**, NASA, \$122,405, Establishing the Application of Satellite Imagery to Improve Coastal and Estuarine Models, 9/15/2009 - 9/14/2011

**Khanbilvardi, Reza M.**, NOAA, \$50,000, CREST: Satellite Earth Science Sensor Compression and Product Algorithm Research, 9/21/2009 - 9/20/2010

**Khanbilvardi, Reza M.**, NOAA, \$82,000, CREST: Satellite Earth Science Sensor - Task VII, 9/21/2009 - 9/20/2010

**Khanbilvardi, Reza M.**, NOAA, \$2,365,000, NOAA Cooperative Remote Sensing Science & Technology Center (CREST), 9/1/2006 - 8/31/2011

**Khanbilvardi, Reza M.**, NOAA, \$105,000, River Ice Monitoring Over the Susquehanna River Basin Using Remote Sensing Data, 1/1/2010 - 8/31/2011

**Kim, Hongjoon**, PSC-CUNY, \$2,400, Development of Enhanced RADAR and Anti-RADAR System with a Novel Ultra-Compact, Linear Phase Shifter, 7/1/2010 - 6/30/2011

**Kretzschmar, Ilona**, NSF, \$150,000, Summer Research Experience for CCNY Students at the Royal Institute of Technology (KTH) in Stockholm, Sweden, 3/15/2010 - 9/30/2010

**Kretzschmar, Ilona**, COLUMBIA UNIV, \$15,300, Columbia Center for Electron Transport in Molecular Nanostructures, 10/1/2009 - 9/30/2011

**Kretzschmar, Ilona**, PSC-CUNY, \$2,500, Janus-Particles as Emulsion Stabilizers, 7/1/2010 - 6/30/2011

**Lee, Jae**, STX SHIP BUILDING CO, LTD, \$103,710, Process Intensification by Integrating of Reaction and Separation, 9/1/2007 - 8/31/2012

**Lee, Jae**, NSF, \$50,000, Multi-scale Investigation of the Role of Surface- Active Agents in Gas Hydrate Formation Kinetics, 2/1/2009 - 1/31/2011

**Lee, Jae**, STX SHIP BUILDING CO, LTD, \$103,706, Process Intensification by Integrating of Reaction and Separation, 9/1/2007 - 8/31/2012

**Lee, Myung**, ETRI, \$43,227, Reliable Communication Technologies for Wireless Sensor Networks, 7/1/2009 - 6/30/2011

**Lee, Myung**, ETRI, \$39,838, Reliable Communication Technologies for Wireless Sensor Networks, 7/1/2009 - 1/31/2010

**Lee, Taehun**, AM CHEM SOCIETY, \$25,000, Modeling the Effect of Air Pressure on Drop Impacts on Dry Surfaces, 9/1/2009 - 8/31/2010

**Lee, Taehun**, NRC, \$448,978.00, Development of Nuclear Thermal-Hydraulics and Safety Research, 8/11/2009 - 7/31/2012

**Lee, Taehun**, PSC-CUNY, \$2,500, Spectral Element Discontinuous Galerkin Lattice Boltzmann Method, 7/1/2010-6/30/2011

**Lee, Taehun**, UNIV OF TORONTO, \$15,000, Using a 3-D Lattice Boltzmann Code, 3/1/2010 - 6/30/2010

**Li, Jackie**, PSC-CUNY, \$2,506.80, Damage Self-Sensing of Composites via Electrical Resistance Measurement, 7/1/2010 - 6/30/2011

**Liaw, Benjamin**, PSC-CUNY, \$2,455.10, Self-Sensing Interlaminar Fatigue Damage Assessment in Composites via Electrical Resistance Measurement, 7/1/2010 - 6/30/2011

**Lin, Feng - Bao**, PSC-CUNY, \$2,455.10, Characterization of Stress Separation Relation for Concrete Materials, 7/1/2010 - 6/30/2011

**Liu, Huabei**, PSC-CUNY, \$2,506.80, Estimating Acceleration Change in Mechanically Stabilized Earth Walls, 7/1/2010 - 6/30/2011

**Madamopoulos, Nicholas**, NSF, \$114,522, A Cost Effective Migration Path to a Fully Packet Based Hybrid Fixed/Mobile Backhaul Infrastructure, 8/15/2009 - 7/31/2011

**Madamopoulos, Nicholas**, NSF, \$118,179, A Cost Effective Migration Path to a Fully Packet Based Hybrid Fixed/Mobile Backhaul Infrastructure, 8/15/2009 - 7/31/2010

**Madamopoulos, Nicholas**, PSC-CUNY, \$2,486.12, Radio-Over-Fiber Technologies for Broadband Access Networks, 7/1/2010 - 6/30/2011

**Mahani, Shayesteh**, NOAA, \$133,000, CREST: Transitioning GOES-Based Nowcasting Capability Into the GOES-R Era, 9/21/2008 - 9/20/2010

**Mahani, Shayesteh**, NOAA, \$3,200, CREST: Transitioning GOES-Based Nowcasting Capability Into the GOES-R Era, 9/21/2010 - 9/20/2010

**Merchant, Shakila**, NOAA, \$37,000, Annual Colloquium and Early Career Exchange Programs, 6/1/2009 - 5/31/2010

**Moshary, Fred**, PRINCETON UNIV, \$300,000, Mid-Infrared Technologies for Health and Environment (MIRTH), 5/1/2009 - 4/30/2010

**Paaswell, Robert**, NJ DOT, \$23,797, UTRC: Technology Transfer, 1/1/2009 - 12/31/2010

**Paaswell, Robert E.**, NYS ERDA, \$210,000, CUNY Building Performance Laboratory, 5/4/2006 - 12/31/2011

**Paaswell, Robert**, NYS DEPT OF TRANS, \$47,600, Bridge-Vehicle Impact Assesment, 4/1/2008 - 9/30/2010

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**Pach, Janos**, PSC-CUNY, \$3,990, Intersection Patterns of Geometric Objects, 7/1/2010 - 6/30/2011

**Pach, Janos**, US-ISRAEL BINAT'L SCI FDT, \$5,793, Geometric Arrangement and Application, 10/1/2009 - 9/30/2010

**Pach, Janos**, US-ISRAEL BINAT'L SCI FDT, \$1,855, Geometric Arrangement and Application, 10/1/2009 - 9/30/2010

**Pach, Janos**, NSA, \$56,578, Geometric Graph Theory, 5/20/2009 - 5/19/2011

**Parker, Neville**, NSF, \$1,125,000, New York City Louis Stokes Alliance - Phase IV, 5/1/2007 - 4/30/2012

**Parker, Neville**, NSF, \$987,000, LSAMP Bridge to the Doctorate, 9/1/2009 - 8/31/2011

**Parker, Neville**, NJ INST OF TECHNOLOGY, \$50,000, Evaluating the Location of Variable Message Signs Using a Dynamic Traffic Assignment Model, 3/1/2010 - 8/31/2010

**Parker, Neville**, NSF, \$31,500, New York City Louis Stokes Alliance - Phase IV, 5/1/2007 - 4/30/2012

**Parra, Lucas**, DARPA, \$12,038, System For Focal Cranial Electrical Stimulation, 6/30/2009 - 12/29/2010

**Parra, Lucas**, COLUMBIA UNIV, \$10,000, Cortically-Coupled Computer Vision: C3-Vision, 12/18/2007 - 4/17/2010

**Parra, Lucas**, DARPA, \$88,005, System For Focal Cranial Electrical Stimulation, 6/30/2009 - 12/29/2010

**Parra, Lucas**, COLUMBIA UNIV, \$10,000, Cortically-Coupled Computer Vision: C3-Vision, 12/18/2007 - 4/17/2010

**Parra, Lucas**, DARPA, \$337,344, System for Focal Cranial Electrical Stimulation-Safety and Efficacy Evaluation, 4/1/2010 - 11/9/2011

**Parra, Lucas**, COLUMBIA UNIV, \$350,000, Cortically-Coupled Computer Vision-phase III, 1/27/2010 - 5/19/2010

**Ravindran, Kaliappa**, ITT, \$20,000, Incorporating QOS of Data Delivery in Distributed Voting Algorithms, 10/1/2002 - 9/15/2010

**Rossow, William**, COLORADO STATE UNIV, \$60,000, Development and Application of Diagnostic Analysis Tools for Investigation Differences between Observed and Modeled Cloud Behavior, 7/1/2006 - 6/30/2011

**Rossow, William**, NASA, \$189,817, Global Cloud Process Studies in the Context of Decadal Climate Variability: Enhancement and Continuation of Data Analysis for the ISCCP, 4/10/2008 - 4/9/2013

**Rossow, William**, NASA, \$174,079, CloudSat and Calipso Science Team and Modeling/Analysis of A-Train Related Data, 8/15/2007 - 8/14/2011

**Rossow, William**, NASA, \$157,587, NEWS Science Integration Team, 7/23/2007 - 7/22/2011

**Rossow, William**, A & E RESEARCH INC, \$21,885, Toward Assimilation of Satellite Data in Modeling Water Vapor Fluxes Over Land, 11/1/2009 - 5/11/2013

**Rossow, William**, A & E RESEARCH INC, \$13,797, Toward Assimilation of Satellite Data in Modeling Water Vapor Fluxes Over Land, 11/1/2009 - 5/11/2013

**Rossow, William**, JPL, \$50,000, NASA - Cloudsat Mission, 10/5/2006 - 12/31/2010

**Roytman, Leonid**, NOAA, \$125,000, Inter-Calibration and Scaling-Up Algorithm for SEVIRI and NOAA-18 Data( Development, Validation and Application), 9/1/2009 - 8/31/2010

**Rumschitzki, David**, NASA, \$300,000, How Important is the Contact Line in Nucleate Boiling Heat Transfer, 6/1/2009 - 5/31/2012

**Rumschitzki, David**, NSF, \$6,000, What is Aquaporin-1's Role in Transport Across Large Vessel Walls?, 7/1/2009 - 6/30/2010

**Rumschitzki, David**, NSF, \$25,000, What is Aquaporin-1's Role in Transport Across Large Vessel Walls?, 7/1/2009 - 6/30/2010

**Rumschitzki, David**, NSF, \$163,500, What is Aquaporin-1's Role in Transport Across Large Vessels Walls, 7/1/2009 - 6/30/2010

**Saadawi, Tarek**, TELCORDIA TECHNOLOGY, \$15,000, Telcordia Consortium: Collaborative Technology Alliance for Communications and Networking (CTAC&N), 6/1/2001 - 9/30/2011

**Saadawi, Tarek**, TELCORDIA TECHNOLOGY, \$25,051, Telcordia Consortium: Collaborative Technology Alliance for Communications and Networking (CTAC&N), 6/1/2001 - 9/30/2011

**Sadegh, Ali**, ALCATEL-LUCENT, \$6,000, Storage Device for Batteries in Telecom Stations, 10/1/2009 - 10/1/2010

**Sadegh, Ali**, ALCOA, \$14,000, Lightweight Chair For Transporting a Disabled, 5/1/2010 - 4/30/2011

**Sadegh, Ali**, PSC-CUNY, \$2,206.80, The Effect of Mechanical Properties of SAS Trabeculae in Transferring Loads to the Brain, 7/1/2010 - 6/30/2011

**Schaffler, Mitchell**, NIH, \$335,412, Osteocyte Integrity and Bone Remodiling, 3/1/2010 - 2/28/2011

**Schaffler, Mitchell**, NIH, \$62,111, Osteocyte Integrity and Bone Remodiling, 6/1/2009 - 2/28/2010

**Seo, Sang-Woo**, NSF, \$234,400, MRI: Acquisition of a Multi-Pocket E-Beam Evaporator for Nano/Micro Facility at CCNY, 9/15/2009 - 8/31/2011

**Seo, Sang-Woo**, PSC-CUNY, \$2,500, Multilayer Nanowire Structure for Piezoelectric Energy Harvesting System, 7/1/2010 - 6/30/2011

**Shen, Aidong**, PHYSICAL OPTICS CORP, \$5,000, Phase II: II-IV Semiconductor Multilayer Optical Limiter, 7/22/2009 - 4/24/2010

**Shen, Aidong**, PHYSICAL OPTICS CORP, \$15,000, Phase II: II-IV Semiconductor Multilayer Optical Limiter, 7/22/2009 - 4/24/2010

**Shen, Aidong**, PSC-CUNY, \$2,500, Study of Intersubband Absorption in ZnO-Based Quantum Structures for Intersubband Devices - 7/1/2010, 6/30/2011

**Steingart, Daniel**, PSC-CUNY, \$2,400, CabLab, 7/1/2010 - 6/30/2011

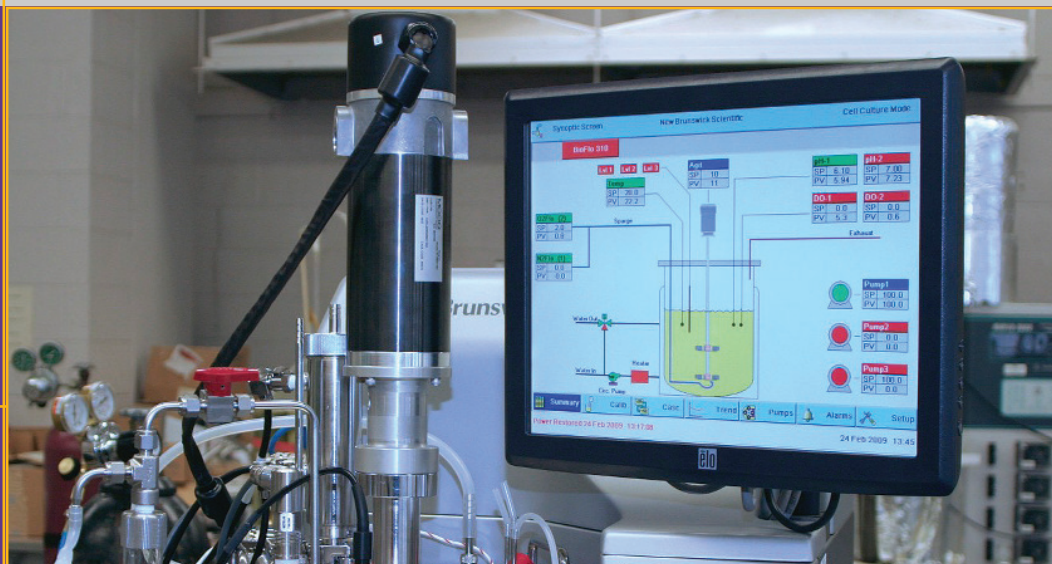
**Sun, Yi**, PSC-CUNY, \$2,427.48, Multiple Antennas Approach to Robotic Source Localization and Swarm: Application to Practical Data, 7/1/2010 - 6/30/2011

**Tang, Hansong**, NJ DOT, \$30,000, Potential Tidal Power for New Jersey, 5/1/2010 - 12/31/2011

**Tang, Hansong**, PSC-CUNY, \$2,355.10, Numerical Simulation of Sediment Transport and River Bedform Evolution Induced by Flood Surge with Sharp Front, 7/1/2010 - 6/30/2011

- Tarbell, John**, NIH, \$578,002, The Endothelial Glycocalyx: Its Structure and Function and as a Mechanotransducer, 4/15/2010 - 3/31/2011
- Tarbell, John**, NIH, \$376,127, Hemodynamic Forces Affect Endothelial Cell Phenotype in Arterial Disease, 4/1/2010 - 3/31/2011
- Tarbell, John**, NIH, \$63,707, Shear Stress Effects on Endothelial Transport, 12/1/2009, -11/30/2010
- Tardos, Gabriel**, PROCTER & GAMBLE, \$25,000, Granular Flows, 2/1/2009 - 1/31/2010
- Temimi, Marouane**, NOAA, \$125,000, Development of an Advanced Technique for Mapping and Monitoring Sea and Lake Ice for the Future GOES-R Advanced Baseline Imager, 7/1/2009 - 6/30/2010
- Tu, Raymond**, NSF, \$131,917, Pattern Formation in Self-Organized Surface Confined Peptides, 5/15/2010 - 4/30/2011
- Tu, Raymond**, NSF, \$50,000, EAGER: Rapid DNA Detection With a Fluctuating Surface-Active Peptide, 9/1/2009 - 8/31/2010
- Tu, Raymond**, AFOSR, \$100,000, Epitaxial Nucleation on Rationally Designed Peptide Functionalized Interface, 2/1/2008, 11/30/2010
- Tu, Raymond**, PSC-CUNY, \$2,500, Measuring the Kinetics of Cellulosic Degradation with Surface Modified Microrheological Probes, 7/1/2010 - 6/30/2011
- Vazquez, Maribel**, SLOAN KETTERING, \$121,346, ARRA: Evolutionary Dynamics of Brain, Lung and Hematopoietic Tumors, 9/30/2009 - 8/31/2010
- Voiculescu, Ioana**, PSC-CUNY, \$2,500, Photothermal Resonant Microcantilever Beam for Trace Detection of Hazardous Materials, 7/1/2010 - 6/30/2011
- Voiculescu, Ioana**, IUM, \$4,074, Novel Theoretical Model of a MEMS Biosensor for Real Time Study of the Cell Adhesion Process, 5/1/2008 - 5/1/2010
- Voiculescu, Ioana**, NSF, \$150,000, Novel MEMS Biosensor for Real Time Study of the Attachment of Cancer Cells, 8/15/2009 - 7/31/2011
- Vorismarty, Charles**, EPA, \$278,472, Impact of Climate Change and Variability on the Nation's Water Quality and Ecosystem State, 10/1/2009 - 9/30/2012
- Vorismarty, Charles**, NASA, \$392,547, Further Test on a Modeling Framework to Detect and Analyse Changes in Land-to-Coastal Fluxes of Freshwater and Constituents, 7/1/2008 - 1/22/2011
- Vorismarty, Charles**, MARINE BIOLOGICAL LAB, \$135,000, Nonlinear and Threshold Responses to Environmental Stresses Inland-River Networks at Regional to Continental Scales, 9/1/2008 - 8/31/2010
- Vorismarty, Charles**, INTERNAT'L WATER CENTER, \$34,692, ABD-AWDO Project with Partners at International Water Center (IWC) and Australian Rivers Institute- Griffith University, 11/1/2009 - 10/31/2010
- Vorismarty, Charles**, NSF, \$250,000, Humans Transforming the Water Cycle: Community Based Activities in Hydrologic Synthesis, 6/30/2008 - 5/31/2011
- Wang, Sihong**, NIH, \$143,200, Heat Shock Effects on Human Mesenchymal Stem Cell Differentiation in Hydrogel, 9/1/2009 - 8/31/2010
- Watkins, Charles**, PSC-CUNY, \$2,427.48, DSMC/NEMD Hybrid Method for Mesoscale Simulations with Nanoscale Interfacial Physics, 7/1/2010 - 6/30/2011
- Wei, Jie**, PSC-CUNY, \$2,860, Statistical Content-Based Indexing and Recognition of Visual Objects, 7/1/2010 - 6/30/2011

- Weinbaum, S**, U CAL/DAVIS, \$27,720, A New Approach to Endothelial Cleft Structure, 4/1/2009 - 3/31/2011
- Weinbaum, S**, NIH, \$408,078.00, ARRA: Predicting Cardiovascular Risk in Vulnerable Plaque Rupture, 9/30/2009 - 7/31/2010
- Weinbaum, S**, NIH, \$485,68, A National Urban Model for Minority Undergraduate Biomedical Education, 9/1/2009 - 8/31/2010
- Weinbaum, S**, YALE UNIVERSITY, \$45,128, Axial Flow in Proximal Tubule, 8/1/2009 - 7/31/2010
- Wolberg, George**, DOE, \$525,000, Feature-Based Data Fusion for 3D Photography, 8/1/2009 - 9/14/2010
- Wolberg, George**, PSC-CUNY, \$2,860.01, Lightweight 3D Modeling of Urban Buildings From Range Data, 7/1/2010 - 6/30/2011
- Wolberg, George**, SECURICS INC, \$104,119, STTR Phase II: Improving Privacy and Security in Biometrics, 10/1/2009 - 12/31/2010
- Xiao, Jizhong**, ARMY RSH OFFICE, \$6,000, Towards Autonomous Miniature Rotorcrafts in Cluttered Environments for Scene Understanding, 10/1/2009 - 9/30/2013
- Xiao, Jizhong**, ARMY RSH OFFICE, \$142,215, Towards Autonomous Miniature Rotorcrafts in Cluttered Environments for Scene Understanding, 10/1/2009 - 9/30/2013
- Xiao, Jizhong**, NSF, \$80,000, CAREER: Advancing Mobile Robots to 3D, 2/15/2007 - 1/31/2011
- YingLi, Tian**, NSF, \$101,671, Context Based Indoor Object Detection, 9/15/2009 - 8/31/2010
- Zhang, Jianting**, PSC-CUNY, \$2,860.01, Building a Web-Based Workflow Composition System for Geospatial Modeling in Support of Environmental Cyberinfrastructure Research, 7/1/2010 - 6/30/2011
- Zhu, Zhigang**, DCM RESEARCH LLC, \$2,000, Dynamic Stereo Mosaic Approach for Automatic Object Detection for Large-View Urban Environment, 7/3/2009 - 7/31/2010
- Zhu, Zhigang**, DCM RESEARCH LLC, \$10,000, Dynamic Stereo Mosaic Approach for Automatic Object Detection for Large-View Urban Environment, 7/3/2009 - 1/30/2010
- Zhu, Zhigang**, DCM RESEARCH LLC, \$11,000, Dynamic Stereo Mosaic Approach for Automatic Object Detection for Large-View Urban Environment, 7/3/2009 - 1/30/2010
- Zhu, Zhigang**, NCIIA, \$18,144, Automating Long-Range Vibrometry Through Vision and Web Technologies, 9/1/2009 - 1/31/2011
- Zhu, Zhigang**, PSC-CUNY, \$2,860.01, Automating Long-Range Vibrometry through 3D Computer Vision, 7/1/2010 -6/30/2011





## Ending the Year on a Proud Note: Atin Saha of BME is the 2010 CCNY Valedictorian

Students like Atin Saha are the stuff of dreams. His interests span engineering, medicine and public policy in healthcare and education. At CCNY, he brought talent, energy and determination to his studies and excelled at every endeavor.

Atin is a second generation CCNY graduate: his father, an electrical engineer who immigrated to the US, holds a master's from the College. From him, Atin learned that CCNY was academically rigorous and that it had a history of graduating individuals who would become trailblazers in their fields. That was important to Atin, for he intends to be trailblazer himself.

It was, says Atin, "the integration of science, mathematics, medicine, and ethics" which led him to biomedical engineering. He cites the role of the department's demanding course work and cutting edge research in honing his engineering skills. But experience as a fellow at CCNY's Colin Powell Center for Public Policy was just as important. There, he says, "I broadened my understanding of how engineering and medicine are shaped by economic, cultural and political factors. The fellowship has made me a more socially aware engineer, and only at CCNY was this possible."

Atin's senior design project took him to Children's Hospital Boston, a teaching hospital of Harvard Medical School, where he led three other engineers in designing and fabricating a non-invasive monitoring system for patients suffering from drug-resistant epilepsy. In a different vein, he spent a summer as a financial analyst at JPMorgan Chase. The very successful research project is on-going, and so is Atin's interest in finance. He is joining JPMorgan Chase full-time to develop the high level business skills necessary in hospital management and healthcare policy. Within the next few years, Atin intends to complement his engineering and business skills with a doctorate in medicine.

This high-powered trifecta of qualifications will prepare Atin to play a leadership role in today's globally connected society and economy. He intends to live his life by Mahatma Gandhi's dictum that "You must be the change you want to see in the world." As valedictorian of CCNY's class of 2010, Atin enjoined his classmates to do the same. CCNY's immense diversity makes it, he said, "a microcosm of the world." And building on that experience, he said that he and they, many either children of immigrants or immigrants themselves, had a responsibility to exceed expectations and participate in social and political issues. They were uniquely qualified, he said, to "leave our city no less but greater than we have found it."



**"You must be the  
change you want to  
see in the world."**

**Atin Saha quoting  
Mahatma Gandhi**

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*This list does not include the many thoughtful gifts to the Alumni Association and engineering departments and clubs, for which we are also very grateful. We thank all of our kind donors who have supported the Grove School of Engineering during this challenging period in our nation's history.*

# Wall of Honor

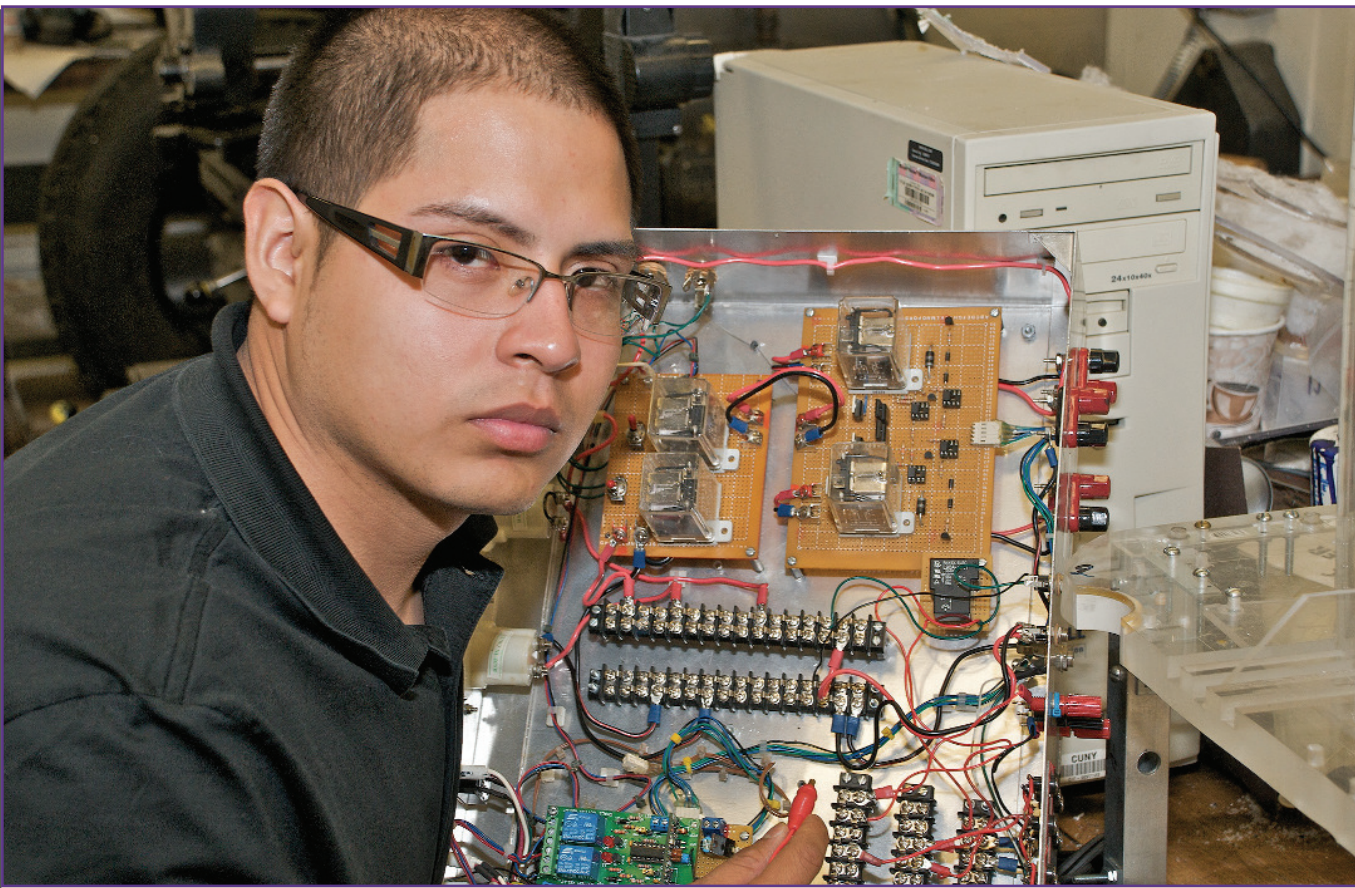
Located in the lobby of Steinman Hall, the beautifully handcrafted Wall of Honor plaque is CCNY's grateful acknowledgment of donors whose support of Engineering has exceeded \$100,000. The following eight generous donors have made gifts of \$1 million and above.

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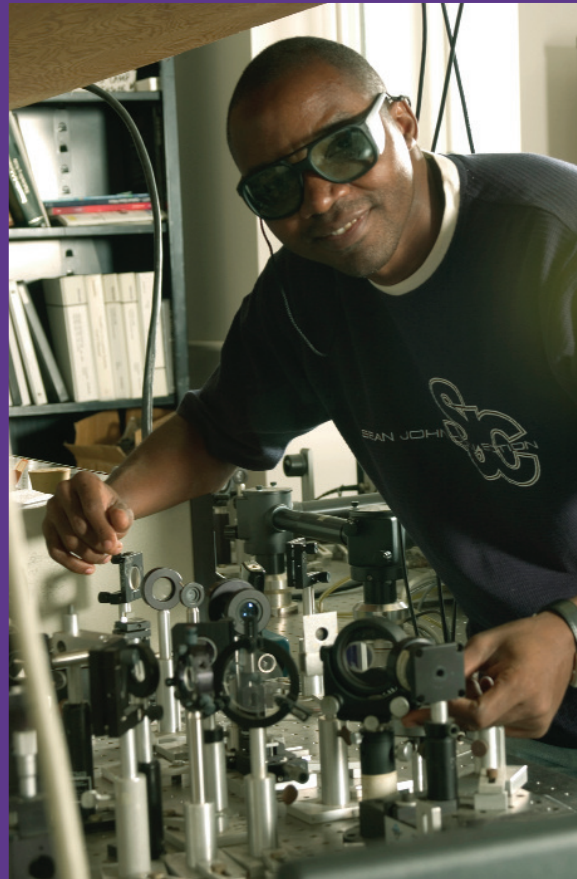
The Grove School of Engineering at The City College of New York is home to an exceptional publicly supported engineering program in the heart of New York City.

Situated on a 36-acre campus in northern Manhattan, distinguished by some of the country's earliest and still most beautiful university gothic architecture, the Grove School benefits from the proud heritage and high record of achievement of The City College - one of the single most powerful avenues of access to the American Dream in our nation.

CCNY's School of Engineering was one of the first public institutions of its kind, and is still the only public school of engineering in New York City. The School's ties to engineering go back to 1853, when City College was known as the Free Academy of New York, and a course in civil

engineering was required for all students. In 1919, the College's Board of Trustees approved the creation of a separate School of Technology with its own dean and faculty, and in 1962 it formally became the School of Engineering and moved to its current home in Steinman Hall.

The Grove School of Engineering holds a position of national standing among public schools of engineering, and is recognized for the excellence of its instructional and research programs, particularly in technologies with relevance to New York City and New York State. It also leads in the breadth of its offerings, with bachelor's, master's, and doctoral degree programs in eight engineering fields - biomedical, chemical, civil, computer, electrical, environmental and mechanical engineering, and computer science.



Continuing in the tradition of the City College mission, access and excellence, the Grove School proudly takes its place as one of the most diverse schools in the nation, consistently graduating high numbers of women and other underrepresented populations, working adults, and immigrants.

Mirroring the renaissance that has spread across City College in recent years, the Grove School has experienced a period of dynamic growth. Over 40% of the students who are admitted to the CCNY Honors Programs plan to choose engineering as their major field of study. In addition, large numbers of graduates from the New York City special high schools, including Stuyvesant, Bronx Science, Brooklyn Tech, and City College's own High School for Math, Science, and Engineering, now make City College their first choice.

### Did you know?

Engineering consistently remains the choice of more freshmen than any other major at City.

Over 45% of Honors College applicants at City intend to major in engineering, and 37% of current Honors College students are engineering majors.

Since 2001, four of City College's valedictorians have been engineering majors.

The School of Engineering is the second most popular area for graduate study at City College.

Women account for over 28% of undergraduates in engineering courses, putting the Grove School's female enrollment in the top 15% of engineering schools nationwide.

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