

08/09 ANNUAL REPORT



The future
is engineered here

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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The Dean's Message



I am pleased to report that during the 2008-2009 academic year, the Grove School continued on its upward trajectory.

This year we graduated the first cohort of doctoral students to receive their PhD's from City College. This is a privilege recently accorded by the University to engineering, while doctorates in most other fields are awarded by the CUNY Graduate Center.

We have continued to attract outstanding faculty members. Dr. Mitchell B. Schaffler, Wallace Coulter Professor and Presidential Professor of Biomedical Engineering, is a distinguished biologist, equally at home in medicine and engineering. He now heads the New York Center for Biomedical Engineering. Professor Charles Vörösmarty brings his vast expertise in environmental science to the Department of Civil Engineering, to NOAA-CREST, where he is Distinguished Scientist, and to the directorship of the CUNY Environmental Cross-Roads Initiative. Professor Masahiro Kawaji, a leader in the energy field, has joined the Departments of Chemical and Mechanical Engineering and will spearhead the establishment of nuclear engineering at the Grove School. Our eight new junior faculty members are an international group of researchers who hold doctorates from the finest institutions here and abroad.

Despite the challenging economic times our research funding continues to exceed \$20 million. This has allowed us to promote research among undergraduates, a key element in our program, which is making us attractive to the best students. Beginning in 2010, the Grove School will take over the processing of its student applications from CCNY. This will give us more flexibility in identifying the young men and women best suited to an engineering education.

Our alumni are inspired by our achievements and are playing a growing role in our pursuit of excellence. For example, Dr. Arnold Stancell '58 ChE has made a \$1 million gift to fund scholarships at CCNY. Mr. Tony DiNardo '64 EE has developed a relationship between Northrop Grumman and the Grove School which is an excellent model of corporate/academic interaction.

Our success poses a dilemma. As more students wish to come here, and as we attract more stellar faculty, research associates and visiting researchers, our need for greater space has become acute. Expanding our facilities is crucial to fulfilling our potential. CCNY and CUNY have been stalwart in their support. But, there is also an essential role for private and corporate help. Andrew Grove's historic gift was transformative. Other alumni such as Arnold Stancell are following suit. I urge you to join them in supporting your alma mater at this crucial point in its history. You will be making a meaningful investment in the future of the Grove School of Engineering.

Sincerely,

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

Joseph Barba, Dean



Robert E. Paaswell

of The Grove School Is CCNY's Interim President

One of the Grove School's own, Distinguished Professor of Civil Engineering Dr. Robert E. Paaswell, has taken the helm at CCNY. He will lead the College while the Board searches for a permanent successor to President Gregory H. Williams, who has resigned to become President of the University of Cincinnati.

Dr. Paaswell is an internationally recognized expert on transportation operations, management and planning and a national leader in public transportation and urban infrastructure. He came to City College in 1990 as Director of the federally supported University Transportation Research Center (UTRC), a consortium of 12 major academic institutions based at CCNY, which conducts research and projects on surface transportation. Under Dr. Paaswell's leadership it has become one of the nation's premier transportation centers. Dr. Paaswell also heads CUNY's Institute for Urban Systems, which he founded in 2000. As the Institute's Director, he led a major university-wide initiative to examine how contemporary infrastructure is impacted by new technology, finance and changing institutional structure.

In 1986, Dr. Paaswell was tapped to be Executive Director of the Chicago Transit Authority, the nation's second largest public transportation agency. He served for three years, managing a workforce of 13,000 and a budget of \$1 billion.

Dr. Paaswell's academic career began at SUNY Buffalo, where he taught civil engineering from 1964 to 1982, established the Center for Transportation Studies and Research and served as chair of the Urban Planning Department. From 1982 to 1986, he was a Professor of Civil Engineering and Director of the Urban Transportation Center at the University of Illinois, Chicago. In addition, he has been a Visiting Scholar at Tel Aviv University since 1994 and Honored Professor at Jilin University of Technology in Changchun, China, since 1985.

In the course of his career, Dr. Paaswell has served on Metropolitan Transportation Authority Blue Ribbon Commissions on Construction Excellence and Workforce



Development and on the National Academy of Sciences Transportation Research Board. He was a member of the New York State Higher Education Commission which, in 2008, issued a report calling for major policy changes to improve the state's higher education system.

Dr. Paaswell recently received the Lifetime Achievement Award from the Council on Transportation of NYU's Rudin Center for Transportation Policy. His other honors include the Rutgers University Outstanding Civil Engineering Alumnus award and the Secretary's Medal for Distinguished Service from the U.S. Department of Transportation.

Widely published in his field, Dr. Paaswell has written two books, 11 book chapters and more than 150 technical publications and reports. He holds a Ph.D. in Civil Engineering from Rutgers and an M.S. in Applied Mechanics, B.S. in Civil Engineering and B.A. in Liberal Arts from Columbia University.

“I embrace this stewardship with great humility, knowing that with the creative energies of our outstanding faculty and extraordinary students, the greatest days of opportunity and achievement are now within our reach in the 21st Century.”

Mitchell B. Schaffler: A Leader in Biomechanics Heads the New York Center for Biomedical Engineering



Mitch Schaffler speaks the languages of biology, engineering and medicine with equal fluency and sometimes thinks of himself as a simultaneous translator between the disciplines. For ten years, he was Professor of Orthopaedics, Anatomy and Functional Morphology and Director of Orthopaedic Research at Mount Sinai School of Medicine, where he remains an Adjunct Professor. Now, he has joined the Grove School as Wallace Coulter Professor and Presidential Professor of Biomedical Engineering and has assumed the directorship of the New York Center for Biomedical Engineering (NYCBE). Dr. Schaffler, whose PhD is in anatomy and orthopaedics, is the first biologist recruited into the Department of Biomedical Engineering. A leader in his field, he describes himself with great understatement as “a biologist who does biomechanics.”

“I have worked with the NYCBE for years through its partnership with Mount Sinai, a wonderful collaboration through which I trained numerous PhD students,” says Dr. Schaffler, who served as the Center’s Associate Director before joining the Grove School. He sees the growth of the NYCBE and of the Department of Biomedical Engineering marching in tan-

dem. “We already have strong and active partnerships with medical centers in musculoskeletal biomechanics, bioengineering and cancer research,” he says. “I would like us to embrace as many areas of biomedical engineering as we can facilitate with our partners and build on their strengths as well as our own. In particular, we are eager to build on strengths in the imaging and cardiovascular the areas.” According to Dr. Schaffler, CUNY is making the commitment to research necessary to sustain state-of-the-art work. He expects this investment to promote national visibility and to have a multiplier effect in terms of funding and recruitment of top notch faculty and students.

Dr. Schaffler was also attracted to the Grove School by the unique nature of the opportunity. The School is providing outstanding resources for his own research. He has supervised the construction of the Bone and Joint Laboratory, a new research lab in skeletal biomechanics, and has brought two distinguished scholars from Mount Sinai to join Grove School researchers eager for the opportunity to work with him. With the baby boomers aging, Dr. Schaffler’s work could not be more timely. “The issues of wear and tear or fatigue in skeletal tissues are what drive my research,” he says. This has led him to focus on the cellular and integrative processes that control the architectural features of bone and tendon and govern how they respond to physical challenges normally and in aging and in diseases such as osteoporosis, genetic defects and diabetes.

“CUNY is making the commitment to research necessary to sustain state-of-the-art work.”

Charles Vörösmarty Brings His Passion for the Environment to CUNY

“We have abused the planet, and it is buckling under the stress, as you can see with water. We need a mindset shift,” says Charles Vörösmarty. Dr. Vörösmarty has won international acclaim for his research in water resources and hydrology. He is one of the brilliant new faculty members who have come to CUNY to help spearhead the University’s Decade of Science, and he embodies the vision and passion of that challenge.

At the University of New Hampshire, where he was stationed for 31 years, Dr. Vörösmarty was the first person hired into what ultimately became the 250-person Institute for the Study of Earth, Oceans, and Space. His work focuses on the development of computer models and geospatial data sets used in synthesis studies of the interactions among the water cycle, climate, biogeochemistry and anthropogenic activities. His studies are built around local, regional, and continental to global-scale modeling of water balance, discharge, constituent fluxes in river systems, and the analysis of the impacts of large-scale water engineering on the terrestrial water cycle.

Dr. Vörösmarty’s research has broad implications for public policy, and he has been a major player in efforts of UNESCO and the UN to tackle water resource issues. He co-chairs the ICSU Global Water System Project, holds a presidential appointment to the United States Arctic Research Commission, chairs the National Research Council’s Committee on Hydrologic Science, and sits on the NASA Earth Science Subcommittee.

At CUNY, Dr. Vörösmarty is a professor in the Grove School’s Civil Engineering department, Distinguished Scientist at NOAA-CREST, and Founding Director of the CUNY Environmental Cross-Roads Initiative. “There is visionary leadership at City College and at CUNY, with tremendous forward momentum in science, technology and engineering,” he says. “We have the potential at this university to create solution sets to meet the environmental threats we face.”

Increasingly, Dr. Vörösmarty sees environmental science informing engineering decisions. “Sometimes well-intentioned engineering solutions address local objectives while being dysfunctional when viewed in the larger context. That is where environmental science and technology comes in,” he says. At NOAA-CREST, the state of the art facility in Earth systems remote sensing and analysis at the Grove School, Dr. Vörösmarty has found a vibrant research environment where he is working on maximizing the use of technology and remote sensing in his field. It is also a key resource in his directorship of the CUNY Environmental Cross-Roads Initiative. There, he is leading teams of scientists and engineers in cutting edge research which will ultimately result in timely, accurate and policy-actionable research results to identify and mitigate potentially destabilizing human-environment interactions.

“We have the potential at this university to create solution sets to meet the environmental threats we face.”



**“We are just starting.
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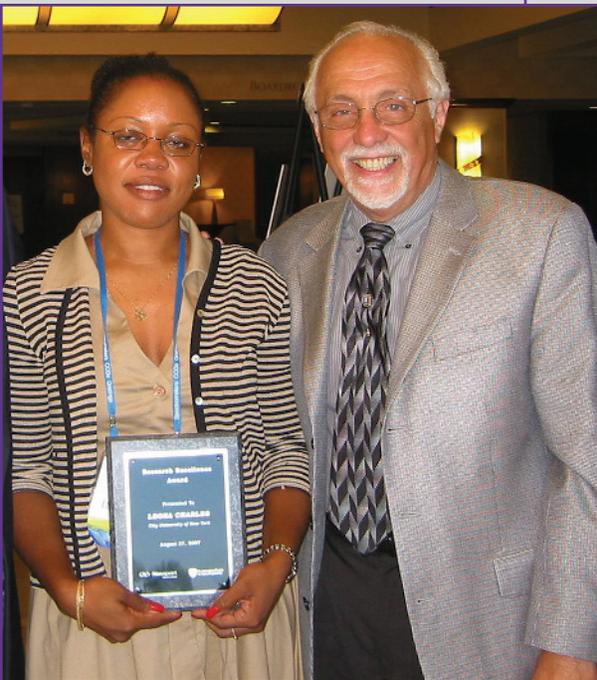
Tony DiNardo '64 EE: A Leader in Remote Sensing Forges a Model Academic/Corporate Partnership

Tony DiNardo is Chief Scientist, Space Based Infrared Systems (SBIRS) Payload at Northrop Grumman. Since 2007, he has been returning yearly to his alma mater to teach and to guide.

Originally, Mr. DiNardo, one of the country's leading authorities on remote sensing, approached Dean Barba suggesting a one or two session seminar on infrared surveillance of Earth. Ensuing discussions with Drs. Fred Moshary and Barry Gross of NOAA-CREST resulted in a 14-week graduate-level course. Public release approval and sponsorship of the course were granted by Northrop Grumman Corporation. Tony spends six weeks of each session at the Grove School of Engineering, commuting from California, while Grove School professors intersperse their lectures with his. “The course matter is remarkably in line with the way remote sensing is progressing at the Grove School. The result is an education in how scientific disciplines come together to forge the underpinnings of future sensor technology. We give students the tools to design complex sensor systems to look at the Earth. This training is helping to fill the need for sensor system architects and engineers in an ever-expanding field of science,” he says.

Mr. DiNardo considers himself “blessed” by his interactions with Grove School students. And, he has brought some of the best back to Northrop Grumman Electronic Systems, where they are launched on brilliant careers. He cites Dr. Leona Charles, a recent Grove School PhD who has been racking up awards since she joined the company. Morann Dagan and Ankur Agrawal, who interned with Tony and obtained their BS degrees in 2009, have been hired full-time. Reuven Huntley who has finished his first year of internship, shows great promise. “Young people such as these will drive our research into the next decades,” he says. “Northrop Grumman has a strong corporate commitment to mirror the diverse character of engineers graduating across the U.S., so partnering with the Grove School is a natural.”

While Northrop Grumman gets their talent, these young people get the unparalleled opportunity to work on a major space program, SBIRS, under Tony DiNardo's mentorship. Mr. DiNardo holds an MS in Electro-Physics from Brooklyn Polytechnic Institute and was in the PhD program at the University of Rochester's Institute of Optics. He has been in the defense industry for 45 years, the last 40 in space-based programs, first in the AIL Division of Eaton Corporation and for the past 23 years at Northrop Grumman. “I work on an \$11 billion program,” he says. “It is one of the most important in the U.S. We are building better, higher resolution sensors to meet the civilian and military space needs of our government. We are just starting. The next 100 years will be filled with remote sensing opportunities.”



A Grateful Alumnus Gives Back: Dr. Arnold Stancell '58 ChE Makes a \$1 Million Gift to City College

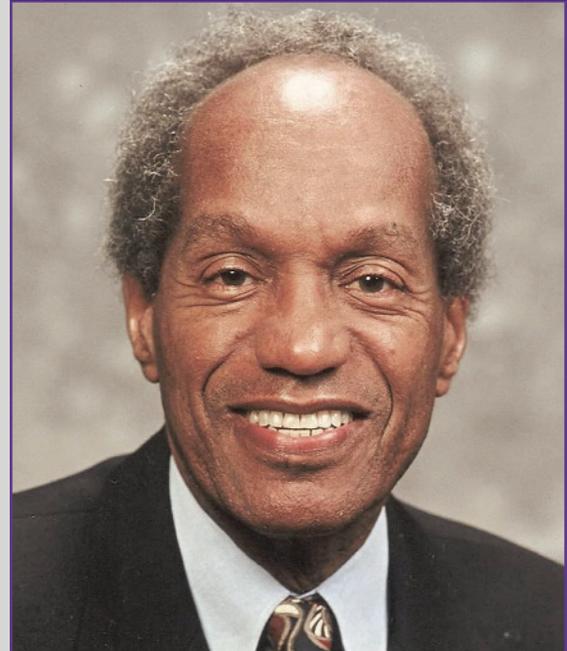
Dr. Arnold Stancell, an oil industry leader and distinguished academic, looks on the grounding in chemical engineering which he received at City College as the essential building block of his career. His \$1 million gift, made to coincide with his 50th class reunion, will fund scholarships in the field. "In my day," he says, "CCNY was free. My aim in providing scholarships is to make it possible for students to focus on their studies."

"When I was at CCNY, the standards were very high, and the teaching was excellent. That was true of the humanities as well as the technical subjects. I was very well prepared for my first job at Exxon and very comfortable using the knowledge and analytical skills I had acquired at City," says Dr. Stancell. "I grew up in Harlem," he continues, "the son of a single mother, with no relatives who were professionals. I walked from my home through St. Nicolas Park to CCNY and into the world of knowledge which I love. The basic American Dream, that you can strive and study and make something of yourself, was the hallmark of the College. It gave many of us the opportunity to transform ourselves."

And that is what Dr. Stancell did, beginning at New York's prestigious Stuyvesant High School, continuing at CCNY, from which he graduated magna cum laude, a member of the engineering honor society Tau Beta Pi who also tied for the Hamilton Award in Humanities. In 1962, Dr. Stancell earned his doctorate in chemical engineering from MIT and went back into the oil business, joining Mobil Oil. Ten years in research yielded ten patents, and then over the next 20 years, Dr. Stancell scaled the corporate heights, serving as Regional Executive of Europe Marketing and Refining, Vice-President for U.S. Oil and Natural Gas Exploration and Production and concluding his oil industry career as Vice-President for International Exploration and Production. Retirement, however, was short-lived, as academia beckoned, and Dr. Stancell spent 10 years at the Georgia Institute of Technology as Turner Professor of Chemical and Biomedical Engineering. In 2004, he was made Professor Emeritus.

Dr. Stancell's honors include election to the National Academy of Engineering, the City College School of Engineering Alumni Award, the Chemical Engineering Practice Award of AIChE, and selection by AIChE as One of the Top 100 chemical engineers since 1945. He was also honored as Professor of the Year at Georgia Tech.

"The Grove School is moving along very well," he says, "and I am pleased with its accomplishments. I want to help keep the education it offers affordable for today's students."



"The basic American Dream, that you can strive and study and make something of yourself, was the hallmark of the College. It gave many of us the opportunity to transform ourselves."

“Not only has the School regained the pinnacle which I remember as a student. I think that it is even better than it was.”

Jack Feinstein '65 EE: A Tireless Booster of his Alma Mater

“Without the opportunities which Brooklyn Technical High School and City College gave me, I would never have achieved what I have,” says Jack Feinstein. “The education I received was excellent, and it was free.”

Mr. Feinstein’s BS in Electrical Engineering from CCNY was the springboard for his distinguished career at Con Edison. He joined the company in 1967 as an assistant engineer and set himself the goal of becoming an officer. He achieved this in 1991, when he was elected vice-president.

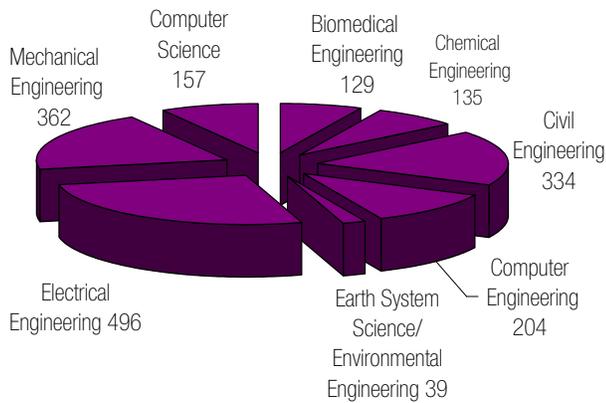
At that point, Mr. Feinstein, who became Chairman of the Grove School Leadership Advisory Council in November 2009, began to think seriously of giving back to his alma mater. “That is when I joined the School of Engineering’s Industry Advisory Board,” he says. “Those were pretty dark days when the School seemed more like a stepchild of the University than the flagship it had once been. I am happy to say that today, when I look at the School, things could not be more different. Thanks to Dean Barba, President Williams and Andy Grove’s gift, the School is transformed. Not only has it regained the pinnacle which I remember as a student. I think that it is even better than it was.”

Not long after joining the Advisory Board, Mr. Feinstein met Professor Ali Sadegh of the Mechanical Engineering Department. Dr. Sadegh ran a Senior Project program in which he wanted his ME students to tackle real-world problems, and he wondered if Con Edison could help. That was a partnership which Mr. Feinstein was happy to facilitate. “The students in this program are fantastic. I think that they are smarter than we were,” says Mr. Feinstein. “The staff at Con Edison is thrilled with the work they do.” Mr. Feinstein has been so gratified by the results, that he has worked with CCNY to set up an endowment for Dr. Sadegh’s program.

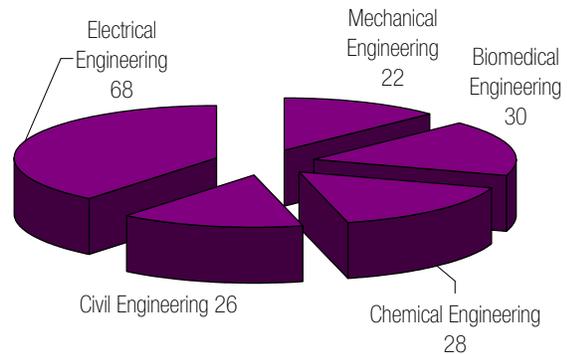
When Mr. Feinstein retired from Con Edison in 1998, he was in charge of System and Transmission Operations with responsibility for the integrity of the electric bulk power supply. At Con Edison, he made safety his focus, developing a program to change the organizational culture by emphasizing safety as an overarching theme for employee performance. During his tenure, he served on the New York Independent System Operator Transition Steering Committee, which was directing the implementation of the restructuring of the wholesale power and energy market in New York State. Today, he is putting his vast experience to use, providing consulting services to companies doing business in the electric power industry.



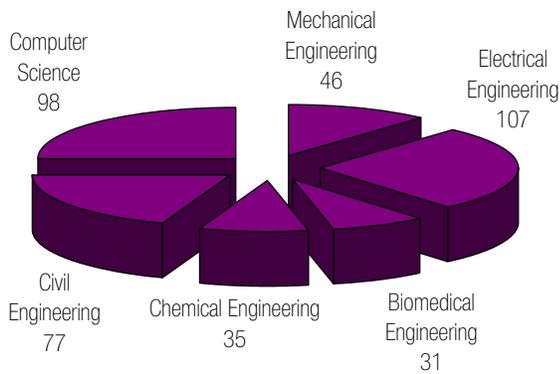
Undergraduate Enrollment Spring 2009
Total: 1856



PhD Enrollment Spring 2009
Total: 174



Master's Enrollment Spring 2009
Total: 388



Degrees Granted 2008–2009
(Excluding September 2009)

Bachelor's degrees	Master's degrees	Ph.D. degrees
281	168	23

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

graduates

“I chose the Grove School because of the high ratings of its BME program and its international student body.”



Laura Causey
Biomedical Engineering

As an undergraduate, Laura Causey majored in chemical engineering, but following a semester in Bolivia, where she worked with a volunteer medical doctor in a rural community, she decided that she wanted to integrate her interest in engineering with her interest in people. Biomedical engineering fit the bill, and she arrived at the Grove School with a master's in BME from Florida International University. Her main interest is fluid dynamics, and she chose the Grove School largely because it was her hope to work with Dr. Sheldon Weinbaum. Today, under Dr. Weinbaum's supervision, she is studying aspects of Starling's law, in particular the fluid dynamics that occur due to changes in pressure following hemorrhagic shock. At the Grove School, Laura has found both the academic excellence and the multicultural atmosphere she was seeking: her officemates hail from Turkey, Iran and the United States.

“The Grove School has prepared me well for the challenges which await me after my doctorate.”



Cecilia Hernández-Aldarondo
Civil Engineering

For Cecilia Hernández-Aldarondo, the Grove School's NOAA-CREST center has provided a rich environment in which to study water resources and environmental engineering. Her current research focuses on snowfall estimation using microwave satellite data. Cecilia holds bachelor's and master's degrees from the University of Puerto Rico at Mayagüez. She wanted to work in remote sensing, and the interdisciplinary nature of NOAA-CREST allowed her to apply her expertise in civil engineering. In addition, by being part of the center, she has been exposed to the broad spectrum of work being done at NOAA. She has traveled across the United States to facilities associated with NOAA's different research thrusts and has had ample opportunity to present her research at professional conferences. Her aim is to secure a NOAA Fellowship upon completion of her doctorate. The Grove School, she says, has prepared her for well for that challenge.

“The CUNY system is fantastic. I would love to be a professor here.”



Joel Kemp
Computer Science

Joel Kemp was a stellar student in the Grove School's undergraduate computer science program, when his advisor, Dr. Jie Wei, inspired him to remain at CUNY for his doctorate. Joel's area of interest is image indexing, and he is working on ways to search for images and videos through visual cues rather than key words. Of his first year in graduate school, he says, “The doctoral course work is incredibly challenging, especially the theoretical part. But, the program presents great opportunities. I will be taking a course at NYU, so being at CUNY allows me to take advantage of New York City's educational resources.” And, Joel has found his vocation in teaching. As a lecturer in the lab sessions of Dr. Wei's software engineering course, he reorganized the structure of the lab, resulting in the best attendance in the last four years and a significant increase in student productivity.

“As an academic, I hope to show my students that with dedication, hard work and patience they can achieve so many things in life.”

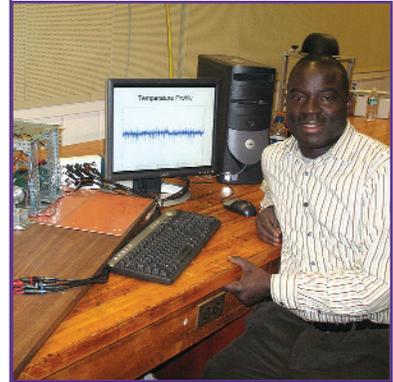
Moise Koffi came to the United States with a BS in electro-mechanical engineering from the University of Ivory Coast, ten years experience as a plant maintenance manager in the oil industry, and a young family. He plunged into teaching mathematics and physics at the IBM French School in Poughkeepsie, NY and within three years had resumed his studies as a graduate student in mechanical engineering at the Grove School. Today, he maintains a daily balance between family life, work and research. He works full-time at Hostos Community College as director of a pre-engineering program for economically disadvantaged, highly motivated secondary school students. And, he is wrapping up his doctorate, doing research in fluid mechanics and heat transfer. Moise plans to stay in academia and hopes to contribute to solving world energy issues through his research in mechanical engineering.

“My mentor has inspired me to develop a passion for discovering new things.”

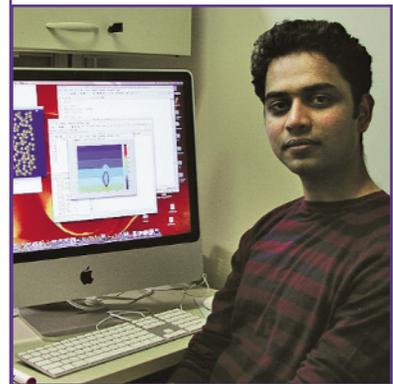
“I always wanted a career in R & D,” says Pandurang Kulkarni, who is pursuing his doctorate at the Grove School’s prestigious Levich Institute. Pandurang holds a BE in chemical engineering from Mumbai’s University Institute of Chemical Technology. His field is fluid mechanics and the rheology of suspensions. At Levich, he is an Acrivos Fellow doing research on inertial effects in particulate suspension flows, work which has applications in the oil industry, medicine and biology. Of his advisor, Dr. Jeffrey Morris, Pandurang says, “He is a passionate researcher who has inspired me to develop a passion for discovering new things. Dr. Morris has a large network of collaborations with scientists at Harvard, Yale and universities abroad, and he has taught me how to work in a collaborative environment.” While at Levich, Pandurang has interned at the Commonwealth Scientific and Industrial Research Organization in Melbourne Australia. “The Levich Institute,” he says, “has been a wonderful experience.”

“The Grove School has given me new insight into melding science and engineering to solve today’s complex problems.”

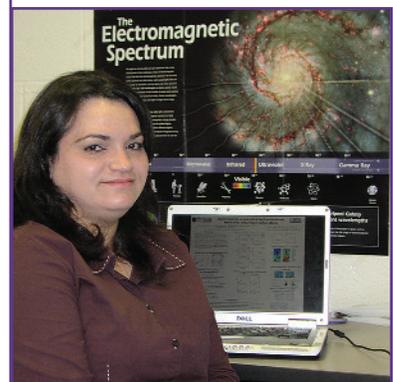
Ana J. Picón holds a BS and an MS in computer engineering from the University of Puerto Rico at Mayagüez (UPRM). Thanks to the joint PhD program established between UPRM and the Grove School, she is in New York, pursuing a PhD in electrical engineering. Ana has one book chapter, two journal papers and numerous conference papers to her credit. She has worked as a researcher on the Advanced Satellite Product Team in Madison, Wisconsin, a remote sensing coordinator on the ATLAS Mission at NSSTC’s Global Hydrology and Climate Center in Huntsville, Alabama, and has done research into the land-surface energy processes of tropical cities under the supervision Dr. Jeffrey Luvall of the NASA Marshall Space Flight Center. At the Grove School where she is a member of NOAA CREST and NASA COSI, she is working on the improvement and assessment of MODIS aerosol retrieval over urban scenes under Drs. Barry Gross and Fred Moshary.



**Moise Koffi
Mechanical Engineering**



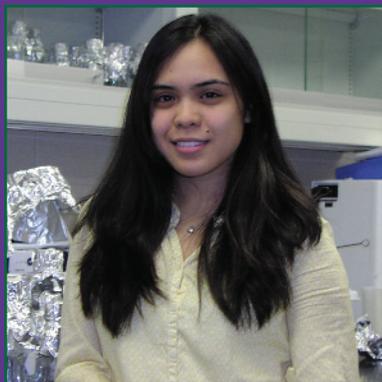
**Pandurang Kulkarni
Chemical Engineering**



**Ana J. Picón
Electrical Engineering**

undergraduates

“Both the Macaulay Honors College and the Department of Biomedical Engineering are like families.”



**Adrienne Alimasa
Biomedical Engineering**

Macaulay Honors College student Adrienne Alimasa is a biomedical engineering major with a passion for music. Her research experience at the Grove School has entailed creating Perl scripts to analyze protein databases with the goal of designing a de novo protein which can be used in cancer treatment. In the Research Engineering Lab at Memorial Sloan-Kettering, she designed and created customized enclosures for specific instruments and built a precision lens-cutting apparatus. Adrienne has her sights on medical school, is interested in ophthalmology, and hopes to develop contact lenses which can be used for drug delivery. She is also a student of music history and theory and plans a double major. Adrienne's extra-curricular activities include being a School of Engineering senator, serving as president of the Honor Students Activities Council and as co-chair of the Relay for Life, a fundraiser for the American Cancer Society.

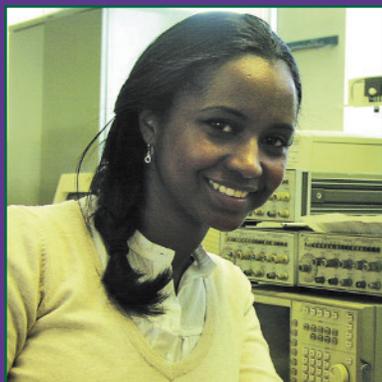
“The faculty has taught me much more than academics.”



**Codanda Appachu
Computer Science**

Originally from Southern India, Codanda Appachu came to City College via a community college in California. His diverse interests include art and sculpture, and he values the ability he has at City to take a variety of courses while majoring in computer science. “People think that art and science are disparate,” he says, “but there is a similarity in the intuition you use. After the beginning math and science courses, you have to be creative, and there is an aesthetic aspect to a well-written proof or algorithm.” Of the Grove School faculty, Codanda says “They have taught me much more than academics. I feel deep humility before a professor such as Dr. McCracken who is always willing to help even if the issue is not related to his class.” Codanda is currently working for a company which builds software for optical character recognition. After graduation, he will continue with this work or pursue his doctorate.

“I would like to do something that makes a difference.”



**Leena El-Karib
Electrical Engineering**

For Leena El-Karib, City College has meant an excellent engineering education. And, beyond the classroom, it has meant a rich life participating in the clubs which make up the fabric of extracurricular life. As president of the engineering honors society, Tau Beta Pi, Leena has worked to raise the society's profile on campus and enhance its activities. She is also active in Eta Kappa Nu and IEEE. “The clubs have really added to my experience,” she says. “I have interacted with many administrators and faculty members and have developed leadership and management skills.” For her senior exam project, Leena served as team leader of a group which worked on a robot to participate in the Intelligent Ground Vehicle Competition in Michigan. She recently took a course in sustainable energy and hopes to get a job in that field. “I would like to do something that makes a difference,” she says.

“At the Grove School, students take engineering very seriously. They are engaged in what they are doing.”

Sara Elzeftawy is a major in the Grove School's newest program, Earth System Science and Environmental Engineering. “This is a collaboration of all the engineering disciplines, and I can sample from each department,” she says. “Originally, I was interested in civil engineering, then after taking chemical engineering courses, I became interested in petroleum and renewable energy.” Sara has done a project on hybrid cars, and she has studied solar energy turbines. She has also worked on water quality in the NOAA-CREST remote sensing lab with Dr. Gilerson, researching optical properties of different types of algae. “I like problem solving and seeing ideas get applied and used,” she says. “I am getting a lot of support and attention from different advisors. When faculty members see potential, they give you a lot of help. The Grove School has all the resources I need.”



Sara Elzeftawy
Earth System Science and
Environmental Engineering

“As a returning student, I know why I am in school. The creative opportunity in engineering is huge.”

As a sculptor and welder, Doug Jahnke found his creations getting so big that he had to figure out how to stop them from falling over. That got him interested in structural engineering. “Now,” he says, “I sculpt for fun, but engineering is my profession. I chose mechanical because it is the broadest form of engineering and best suited to someone with Renaissance interests like mine. I want to build on the theoretical breakthroughs of scientists and research engineers to develop revolutionary applications.” Doug’s current passion is MEMS. “The creative opportunity in engineering is huge,” he says, “and in mechanical engineering, the potential for miniaturization is wide-open.” Since coming to the Grove School, Doug has racked up honors and a prestigious internship in Pratt & Whitney’s Next Generation Product Group Systems Design and Component Integration department. He also serves as president of ASME on campus.



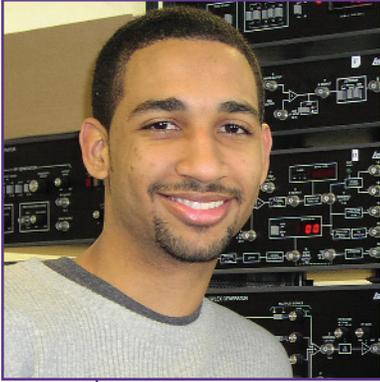
Doug Jahnke
Mechanical Engineering

Professors at the Grove School were interested in my success. The School was a great networking environment, and it was affordable.

Dan O’Reilly came to the Grove School with a BA from Rutgers University, where he had studied sociology and math. He began his working life teaching high school math, but he soon yearned for a hands-on profession which called on his love of math and physics. A BE in civil engineering fit the bill, and Dan enrolled at the Grove School. When he arrived, he found professors who were interested in their students and small classes which encouraged teacher-student interactions. He also found a networking environment which gave him, his skills and ideas exposure to engineers working in the field. Dan’s senior project entailed making design recommendations for the new Goethals Bridge. His particular challenge was to look at what kinds of structural systems would be appropriate. Today, Dan is a design engineer with Skanska USA Civil in Whitestone, New York.



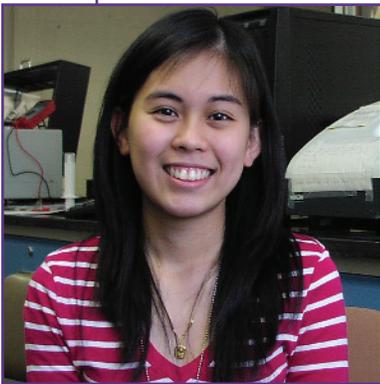
Daniel O’Reilly
Civil Engineering



Carlos Padilla
Computer Engineering

“I came to City College and fell in love with the place. When I had an opportunity to transfer out of state, I turned it down.”

Carlos Padilla says of the Grove School, “People here are determined to succeed and want to help others succeed too.” Carlos, who came to New York from the Dominican Republic, has excelled in his computer engineering studies. He has been a software intern in dynamic controls-engine and control systems at Hamilton Sundstrand (a United Technologies company) and a computer aide in transmission planning at Consolidated Edison. On campus, he has led a team of four students in designing a stand-alone stock trading system application using JAVA and XML. He has played a leadership role in LAESA-SHPE, which helped him grow academically and professionally, and was instrumental in creating the first Grove School of Engineering T-shirt. Following his BE, Carlos will return to the workforce to refine his interests and will eventually pursue a masters in computer or mechanical engineering.



Jo Anne Salera
Chemical Engineering

“At the Grove School the opportunities to do research have been amazing.”

When Jo Anne Salera came to City College she had already begun her chemical engineering studies at the University of the Philippines, having graduated from the country’s most competitive science high school. At the Grove School, she has thrown herself into research. First, she investigated the effect of various concentrations of different surfactants on the surface tension of water, working with PhD students and post-docs. Then, in a project conducted at the Grove School and Columbia University, she assisted in surfactant adsorption experiments of cyclopentane hydrates using fluorescence spectroscopy. And most recently, she has been working with Dr. Jae Lee, investigating the effect of different salts on the adsorption of sodium dodecyl sulfate in cyclopentane hydrates by zeta potential measurement. “The opportunities for research have been amazing,” she says, “and professors are very approachable.” Jo Anne has also become engaged in student organizations. She is active in Tau Beta Pi and AIChE.





The Grove School's faculty continues to go from strength to strength. Once again, in 2008-2009, senior faculty who are leaders in their fields have chosen the Grove School for their teaching and research. This year, Dr. Michell B. Schaffler, an internationally-known biologist, has joined the school as Wallace Coulter Professor and Presidential Professor of Biomedical Engineering; Dr. Charles Vörösmarty, a pioneer in environmental science, has come to the school as Professor of Civil Engineering and NOAA-CREST Distinguished Scientist; and Dr. Masahiro Kawaji, an expert in nuclear energy, has joined the faculty as Professor of Mechanical and Chemical Engineering. There has also been a record intake of eight new junior faculty members.

The Grove School's full-time faculty has grown to 113 members. During 2008-2009, they:

Delivered 24 invited lectures

Authored 3 books, edited one book and contributed 8 book chapters

Published 177 journal articles of which 156 were peer-reviewed

Made 178 conference presentations of which 97 were published as proceedings

And, were awarded four patents.



Yiannis Andreopoulos

Yiannis Andreopoulos, Professor of Mechanical Engineering and Michael Pope Professor of Engineering Research

Institution of Mechanical Engineers in Great Britain's Charles Sharpe Beecher Prize for the best paper in Aerospace, along with coworkers and former PhD students, Drs. Juan Agui, Savvas Xanthos, and Minwei Gong.

Gilbert Baumslag, Distinguished Professor of Mathematics and Computer Science

CUNY Salute to Scholars Award, along with Professors Douglas Troeger (CSc), Zhigang Zhu (CSc), and Jizhong Xiao (EE).

Marom Bikson, Associate Professor of Biomedical Engineering

Coulter Foundation Early Career Translational Award.

Morton M. Denn, Albert Einstein Professor of Science and Engineering and Director, Benjamin LeVich Institute for Physico-Chemical Hydrodynamics

2008 American Institute of Chemical Engineers (AIChE) Founders Award for Outstanding Contributions to the Field of Chemical Engineering.

On the occasion of his 70th birthday, Dr. Denn was honored with a 350-page Festschrift published as the November 16, 2009 issue of Chemical Engineering Science. Dr. Denn is a CUNY Distinguished Professor of Chemical Engineering with a joint appointment as



Gilbert Baumslag



Morton M. Denn

Professor of Physics. He is a member of the National Academy of Engineering and the American Academy of Arts and Sciences.

Bingmei Fu, Associate Professor of Biomedical Engineering

Editorial Board, Journal of Biomedical Engineering and International Journal of Applied Mechanics;

Keynote Speaker, WACBE World Congress on Bioengineering 2009;

CUNY Certificate of Recognition for outstanding scholarly achievements;
CUNY Certificate of Recognition for securing major institutional grant funds.

Barry Gross, Associate Professor of Computer Science, was invited to serve on the NASA Earth Science Senior Review Panel on current NASA Missions.

Ibrahim Habib, Professor of Electrical Engineering

Editor of IEEE transactions on wireless communications; guest editor of the IEEE journal on selected areas in communications special issue on applications of wireless networks in the healthcare industry; member, editorial advisory board, John Wiley journal on security and communication networks;

Invited speaker, NYU Polytechnic workshop on wireless



Robert E. Paaswell



Neville A. Parker



Sheldon Weinbaum

hospitals; University of Ghent, Belgium; University of Bologna; University of Catania Sicily, Italy;

Member, technical program committee, IEEE GLOBECOM and ICC and WCMC 2008, 2009 and 2010 conferences.

Masahiro Kawaji, Professor of Chemical and Mechanical Engineering

Fellow of the Canadian Academy of Engineering.

Myung J. Lee, Professor of Electrical Engineering, chaired an Institute of Electrical and Electronic Engineers (IEEE) standard task group which was first to publish the wireless mesh standard.

Fred Moshary, Professor of Electrical Engineering, served on the selection committee for the New York Academy of Science's Blavatnik Award for Young Scientists.

Steven Nicoll, Associate Professor of Biomedical Engineering

National Science Foundation Career Award.

Robert E. Paaswell, Distinguished Professor of Civil Engineering, Director Emeritus, University Transportation Research Center

Lifetime Achievement Award of the Council on Transportation of the NYU Rudin Center for Transportation Policy.

Neville A. Parker, Herbert G. Kayser Professor of Civil Engineering

Honored for work addressing environmental justice issues in East Harlem at a Black History Month commemoration hosted by U.S. Rep. José E. Serrano and State Sen. José M. Serrano. The CUNY Institute for Transportation Systems, which Professor Parker directs, is developing a dynamic traffic assignment model for East Harlem that will analyze and assess the environmental impact and development of responses to various planning and operating strategies. The anticipated outcomes will mitigate traffic congestion and improve air quality.

Sheldon Weinbaum, Distinguished Professor Emeritus of Mechanical and Biomedical Engineering

First Diversity Award granted by the national Biomedical Engineering Society for his career achievements in promoting diversity in the engineering profession.

Dr. Weinbaum will chair the Selection Committee for the First Annual Sloan Awards for Excellence in Teaching in the New York City Public High Schools. He and Dr. Luis Cardoso have been awarded a NIH Challenge Grant for their proposal to study the mechanisms of vulnerable plaque rupture. Only 2% of applications were funded.

Dr. Weinbaum is a member of the National Academy of Engineering, The National Academy of Sciences and the Institute of Medicine.

new faculty



“The United States has a massive need for clean energy. The Energy Institute is committed to this quest.”

Masahiro Kawaji Joins the CUNY Energy Institute and Spearheads Nuclear Engineering at the Grove School

Following a distinguished 20-year career at the University of Toronto in Canada, Masahiro Kawaji has chosen to come to CUNY, where he is now Professor of Mechanical and Chemical Engineering at the Grove School and a member of the CUNY Energy Institute.

Dr. Kawaji holds a doctorate in Nuclear Engineering from UC Berkeley and is a Fellow of the Chemical Institute of Canada, the American Society of Mechanical Engineers, and the Canadian Academy of Engineering. When asked what prompted him to make the move, he cites the extraordinary support at CUNY for energy research in the New York area. “In Canada,” he says, “energy research is mainly targeted at oil and gas. In the United States, there is a greater emphasis on renewable and nuclear energy. The US Department of Energy and the Nuclear Regulatory Commission are actively funding this research.” He continues, “The United States has a massive need for clean energy. The Energy Institute is committed to the quest for effective energy storage and to the development of CO₂-free energy which must come about. Universities need to start training young engineers to tackle these challenges, and CUNY will be in the forefront.” Dr. Kawaji points out that CUNY has already provided \$5.5 million to establish and operate the Energy Institute lab in Steinman Hall. “This sends a strong message of commitment to funding agencies,” he says.

Upon his arrival at the Grove School, Dr. Kawaji became part of a team working to set up a Nuclear Engineering program. “We have already attracted \$450,000 for the program,” he says, “and we plan to start offering courses for undergraduate and graduate students in the spring of 2010. We will also be supporting between 10 and 20 students in the field.” He has also won a \$200,000 Research Scholarship Grant from the Nuclear Regulatory Commission to attract undergraduates to the Grove School and a further \$200,000 from the Department of Energy to set up a thermal hydraulics research lab.

Dr. Kawaji has also plunged right into teaching. “City College has some very attractive features,” he says, “I have 20 to 30 in a class allowing close interaction with the students.” He also values the collegiality of his two departments, and is thrilled to be in New York. “It is a one of a kind city,” he says.

In addition to attracting world-class senior faculty, the Grove School prides itself on being the choice of junior faculty with credentials from the world's best institutions. They come to the School for its supportive and collaborative research environment and for the opportunity to teach a highly motivated and diverse student body. Portrayed in these pages are eight new instructors who are enriching the CCNY community with their talent and dedication.

Niell Elvin's research focuses on small scale energy generation. "I am looking at converting mechanical energy into electrical energy in a very effective way," he says. "The idea is to power small wireless sensors. This has huge implications for biomedical devices where battery power is not appropriate." After his doctorate at MIT, Dr. Elvin did a post-doc at Harvard Medical School, was chief engineer in two entrepreneurial ventures and taught at Michigan State University. Prior to coming to the Grove School he was a research scientist at Columbia. In 2008, he won the American Orthopaedic Society of Sports Medicine Edward Cabaud Award. Of the Grove School he says, "In my field, faculty members such as Drs. Stephen Cowin and Mitchell Schaffler have international reputations. This is an inherently modest institution whose work is known throughout the world." In the Department of Mechanical Engineering, Dr. Elvin has found a tremendous spirit of collaboration. He is teaching Engineering Mechanics and says of his students, "We set the expectations very high, and they meet them."



Niell Elvin

Assistant Professor of Mechanical Engineering
PhD Massachusetts Institute of Technology

Dr. Nelly Fazio's research interests are in cryptography and information security, with a focus on digital content protection. Dr. Fazio, who has done research at Stanford University and in France and Denmark, came to the Grove School from the Content Protection Group at IBM's Almaden Research Center. One strong draw was CAISS, the Center for Algorithms and Interactive Scientific Software, based in the Grove School, which works on the interface between computer science and mathematics. "It is a wonderful opportunity," she says, "to bring these two disciplines together." Dr. Fazio is doing this in her research on zero-knowledge protocols. In cryptography, these are methods of proving that a mathematical statement is true without revealing anything about the statement. "Cryptography at the Grove School is expanding," she says. Under CAISS auspices, the September '09 conference, Modern Faces of Cryptography, featured talks by leading international experts on various aspects of modern cryptography. Dr. Fazio is also excited about the possibility of collaborating with other New York universities on research in her growing field.



Nelly Fazio

Assistant Professor of Computer Science
PhD New York University



Alexander Gilerson

Associate Professor of Electrical Engineering
PhD Technical University, Kazan, Russia

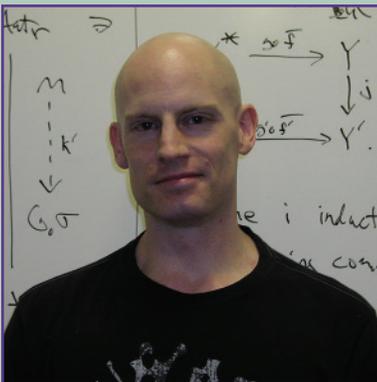
Following a career as a faculty member and laboratory director at the Technical University in Kazan, Dr. Alexander Gilerson joined CCNY's Institute for Ultrafast Spectroscopy and Lasers. He later served as a senior scientist in the Optical Remote Sensing Laboratory. A member of NOAA-CREST, he has led a CCNY team in multi-university field campaigns up and down the East coast, using state-of-the-art instrumentation and specially designed sensors to measure the optical properties of coastal zone waters. In 2008, Dr. Gilerson joined the electrical engineering faculty. He is including undergraduate and graduate students in work which analyzes satellite images for the development, improvement and testing of bio-optical models and algorithms for future satellite missions. His recent research on the parameterization of chlorophyll fluorescence represents an important contribution to the study of ocean color, and will help coastal managers detect potentially toxic red tides. Dr. Gilerson's work is supported by NOAA, the Office of Naval Research, and the DOD MURI program. He currently teaches Introduction to Remote Sensing and Satellite Imagery.



Nir Y. Krakauer

Assistant Professor of Civil Engineering
PhD California Institute of Technology

Prior to coming to CCNY, Nir Krakauer was a NOAA postdoctoral fellow at UC Berkeley. His master's and doctorate are in geochemistry, and, as an undergraduate, he studied engineering physics at the University of Michigan at Ann Arbor. So, the Grove School, where NOAA-CREST has a strong presence and climate study is increasingly important, was a natural fit. Dr. Krakauer's research interests cover the connections between climate and water availability, in particular the interaction between water, climate, plants and social problems. "In many parts of the world," he says, "uses of water are vulnerable. We need to design sustainable water systems and to understand the impact of water storage and land use on climate." These are issues which Dr. Krakauer has addressed in journal articles and conference presentations, and has pursued from the US Great Lakes Basin and Point Barrow, Alaska to the Mediterranean and Bangladesh. Working with NOAA-CREST colleagues, he plans to combine computer climate simulations with satellite and field observations to tackle real-world water and vegetation problems.



William E. Skeith III

Assistant Professor of Computer Science
PhD UCLA

William Skeith's doctorate is in mathematics, and his presence on the Grove School's Computer Science faculty and in CAISS reinforces the department's commitment to integrating the two disciplines. Dr. Skeith's research interests encompass cryptography, communication complexity, discrete mathematics, and homological algebra. "Computer science," he says, "allows me to make theory useful. Mathematics can be very esoteric, and sometimes I feel almost selfish studying it. Cryptography has a clear value to society. Through it I can make mathematical thought useful." Dr. Skeith is also an entrepreneur. In 2007 he was awarded a NSF SBIR Grant for Small Business Development under which he has developed a very high performance library for cryptography, number theory and other secure protocols, including patented research on privacy preserving data mining. "At the Grove School," he says, "I can work with Gilbert Baumslag, a giant in group theory with a passion for both computers and mathematics, I have the freedom to pursue pure research, and I can teach. I love leading my students on a voyage of discovery."

“For me, effectively using aluminum in easily rechargeable batteries is the Holy Grail of energy research,” says Daniel Steingart. “Aluminum is plentiful in the earth’s crust and easy to recycle as a metal but hard to recharge from an oxide. That is where the fundamental science needs to be done.” And, that is why Dr. Steingart was drawn to the Grove School. It offered him the opportunity to be a founding member of the CUNY Energy Institute and to join Dr. Sanjoy Banerjee on the cutting edge of battery technology. Dr. Steingart’s career has spanned teaching at Berkeley, research in nanotechnology in Japan, and a leading role in two entrepreneurial ventures, exploring wireless sensor networks for energy saving applications in commercial and industrial environments. In 2007 he was awarded an NSF Phase 1 SBIR for wireless sensing in industrial primary metals production. “Though I enjoyed being an entrepreneur, I knew that ultimately I wanted to teach and do more long-term research. I liked the size of the Grove School, its resources, and the fact that it provides a practical, well-grounded research environment.”

Dr. Ying-Li Tian was an award-winning researcher at the prestigious IBM T. J. Watson Research Center when she decided to make the move to the Grove School. “I wanted a longer horizon for my research,” she says. She is now director of the CCNY Media Lab, and she is applying her vast expertise in image processing techniques to two distinct areas. The first is the development of computer vision technology which will help the visually impaired access unfamiliar environments independently. The second is remote sensing. Dr. Tian is working with NOAA-CREST on processing LIDAR and satellite images. “I really appreciate the variety which being at the Grove School brings to my research,” she says. Teaching was another draw for Dr. Tian, and her students have given her very high marks for her work in the classroom. She has taught undergraduate and graduate students and is developing a course on digital image processing. “I have received tremendous support from the dean, my department chair, and my new colleagues. This is an excellent teaching and research environment,” she says.

In his research, Dr. Jianting Zhang integrates the command of the geosciences, which he acquired at Nanjing University in China, with the expertise in computer science which he has developed in the United States. His interests include spatial databases and geographical information system (GIS); multispectral and hyperspectral remote sensing data processing; environmental cyberinfrastructure; and geospatial visual analytics. Before coming to the Grove School, Dr. Zhang was a post-doc at the University of New Mexico, where he was part of the Long Term Ecological Research Network Office, and a researcher at UC Davis. His skill sets fit perfectly into the Grove School, which is known for its expertise in remote sensing and its focus on the environmental challenges facing our planet. At GSOE, Dr. Zhang has already co-authored several important research proposals in these areas, and he is preparing courses in GIS programming and spatial databases. “I am thrilled to be in a place which is as hospitable to interdisciplinary research as City College,” he says. “My approach is highly applicational. I enjoy bridging the gap between theory and applications.”



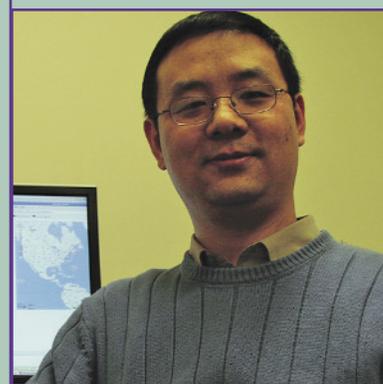
Daniel Steingart

Assistant Professor of Chemical Engineering
PhD UC Berkeley



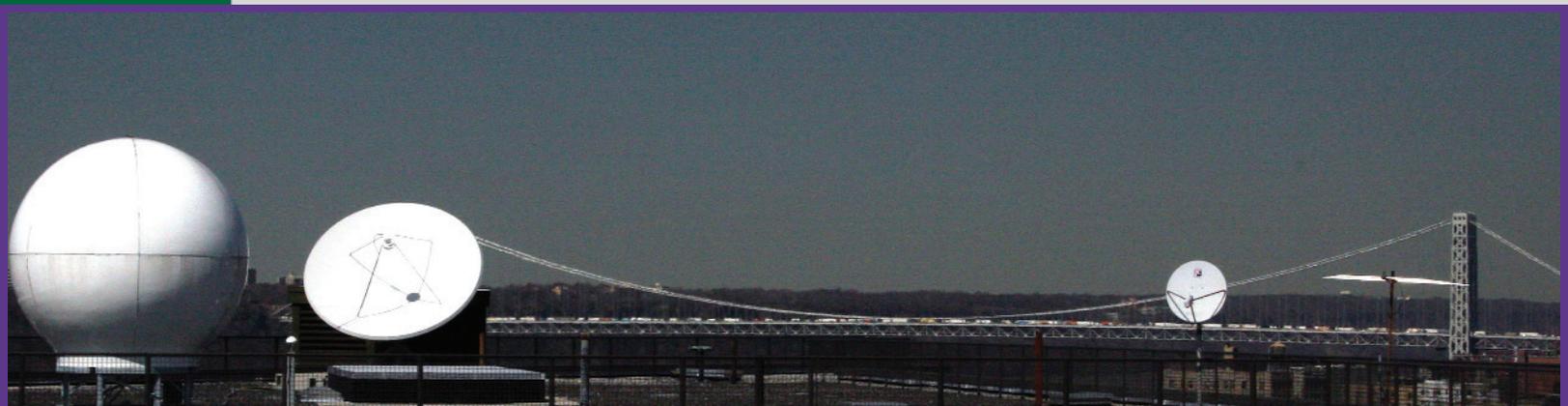
Ying-Li Tian

Associate Professor of Electrical Engineering
PhD Chinese University of Hong Kong



Jianting Zhang

Assistant Professor of Computer Science
PhD University of Oklahoma



NOAA-CREST @ The Grove School

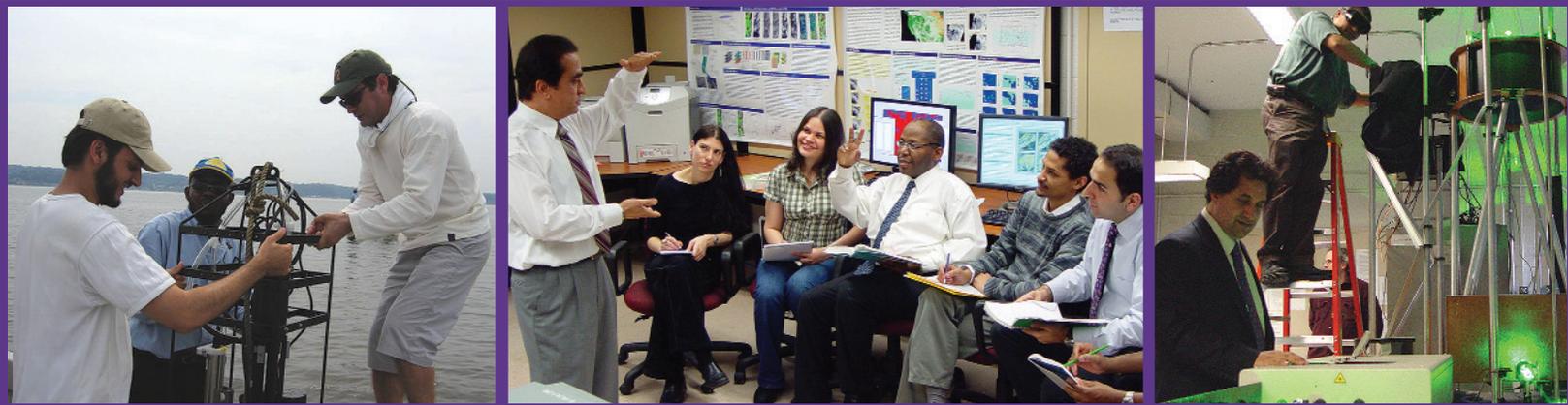
As CUNY devotes itself to a Decade of Science, NOAA-CREST (Cooperative Remote Sensing Science and Technology Center) has become a magnet which brings the best and the brightest to CUNY and attracts impressive funding to support its dual mission of research and education.

CREST's success is grounded in its ability to meet the needs of federal agencies for environmental remote sensing data and analyses. These are essential to understanding, predicting and protecting the earth's environment as it faces the challenge of climate change. How can we manage water resources to support the Earth's growing population? How are storm patterns evolving? How can we identify and control the algal blooms which affect our coastal waters and the aerosols which pollute our air? How can we increase the accuracy of snowfall estimation? How can we

establish a flash flood warning system? CREST is providing crucial input to these questions and many more.

Established in 2001 with an initial \$7.5 million, three-year grant from NOAA, CREST has been awarded a total of \$31 million in NOAA funding and \$8.5 million from other agencies and CUNY. The Center has grown into a powerhouse of 66 faculty members and research scientists, including 45 from CUNY, of whom 32 are at the Grove School. And, CREST supports over 50 students a year, mainly at the graduate level.

CREST was founded as a consortium of US academic and industrial partners, in which CUNY is the lead institution. Now, says its director, Reza Khanbilvardi, that partnership is going international. "Satellite remote sensing is global," he says, "and we are working with scientists and engineers on other continents to collect information and manage and reanalyze the data.



A Catalyst for Excellence in Research and Education

Unifying the usage of information is where the role of scientists and engineers becomes critical.” The best minds are coming to the Grove School to join in that effort. “The breadth and depth of our research makes CREST a leader in its field. We are attracting internationally renowned scientists and engineers, as well as top students. And, we are a partner of choice for other universities seeking to work in environmental remote sensing,” says Dr. Khanbilvardi.

State-of-the-art research facilities include the Satellite Earth Observing Center at City College, mobile radiometers for field campaigns, the CREST Long Island Sound Coastal Observation Platform (LISCOP), and many other laboratories at the College. Facilities such as CREST’s LIDAR Network, which stretches from CCNY to Puerto Rico, have made the Center a catalyst for international cooperation. The World

Meteorological Organisation cites the CREST network as the potential cornerstone of a network which could cover the world.

Grooming the next generation of scientists and engineers is also front and center at CREST. The Center’s educational activities begin in kindergarten and go through the PhD. CREST was instrumental in the creation at City College of the BS in Environmental Earth System Science and the BE in Earth System Science and Environmental Engineering. It hopes that master’s and doctoral programs in these disciplines will follow, but it also takes its commitment to after-school programs in the South Bronx and a weather camp on Long Island as seriously. While expanding globally, NOAA-CREST remains true to City College’s commitment to reach out into the New York community.

In 2008-2009 awards for sponsored research at City College's Grove School of Engineering totalled \$21,714,030. Despite the challenging economic climate, funding has stayed above the \$20,000,000 mark which was surpassed in 2008-2007.

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

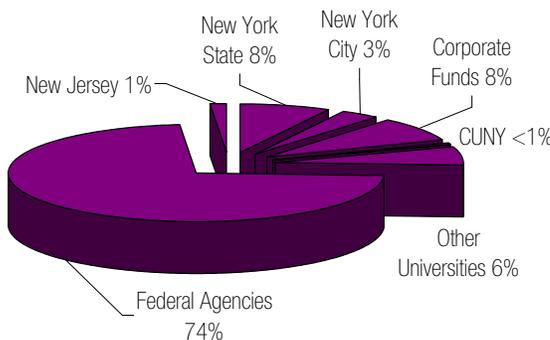
Center for Water Resources and Environmental Research

CUNY Energy Institute

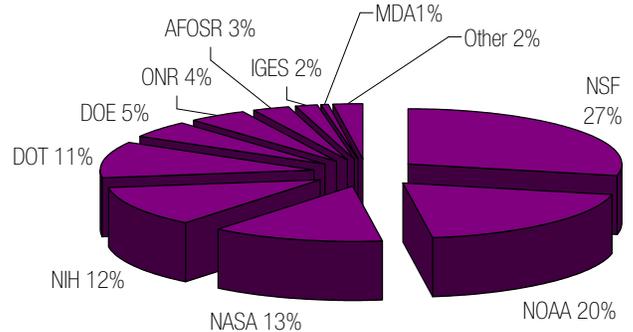
Institute for Environmental Science and Engineering

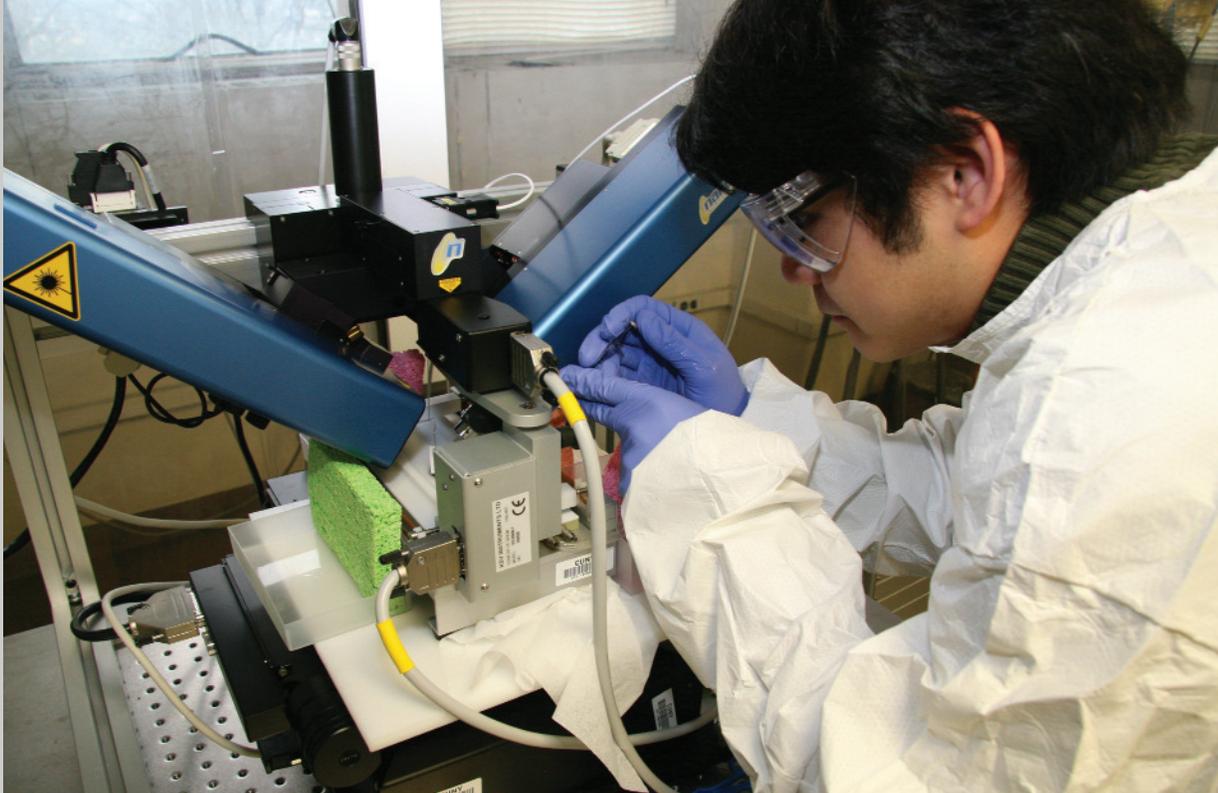
Center for Advanced Engineering Design and Development

Funded Research Distribution by Sources
Total: \$21,714,030



Federal Research Funding Distribution by Agencies
Total: \$15,802,190





Agrawal, Anil, "Multi Hazard Inspection, Vulnerability Ratings and Maintenance, Repair and Rehabilitation Procedures for New York State Bridges," NYS ERDA, 1/15/2009-1/14/2010, \$119,866

Agrawal, Anil, "NEESR-SD: Framework for Development of Hybrid Simulation in an Earthquake Impact Assessment Context," U OF ILLINOIS, 9/1/2007-8/31/2009, \$15,000

Agrawal, Anil, "NEESR-SG: Performance-Based Design and Real-time Large-scale to Enable Implementaiton of Smart Damping Systems," WASHINGTON UNIV ST LOUIS, 9/1/2008-8/31/2009, \$25,000

Ahmed, Samir, "Exploring Techniques for Improving Retrievals of Bio-Optical Properties of Coastal Waters," ONR, 10/12/2007-11/15/2010, \$399,519

Ahmed, Samir, "NOAA Interdisciplinary Scientific Environmental Technology (ISET) Cooperative Research Education Center," NO. CAROLINA A&T, \$522,035

Ahmed, Samir, "University Research Center for Center for Optical Sensing and Imaging of the Earth and Environment (COSI)," NASA, 5/1/2007-4/30/2009, \$111,189

Azar, Amir, "Estimation of Snow Grain Size and Snow Characteristics: Variations and Distribution Using Microwave Data," NOAA, 7/1/2008-6/30/2010, \$75,000

Banerjee, Sanjoy, "Support for Administrative Assistant for Advisory Committee," US DEPT OF INTERIOR, 8/18/2008-8/17/2009, \$26,492

Benenson, Gary, "Middle and High School Materials Based on Mathematically-rich Experiences, Professional Development and community Involvement," ALGEBRA PROJECT INC, 10/1/2007-9/30/2008, \$32,334

Benenson, Gary, "Physical Science Comes Alive: Exploring Things that Go," NSF, 9/1/2007-8/31/2010, \$554,091

Cardoso, Luis, "Age Related Bone Loss Assessed by Ultrasound Tomography: Bone Quality Beyond BMD," NIH, 2/1/2009-1/31/2009, \$140,500

Chen, Cynthia, "A Residential Location Analysis," PSC-CUNY, 7/1/2009-6/30/2010, \$2,700

Couzis, Alexander, "CAT: Manufacturing Approach for Micron," NYSTAR, 7/1/2007-12/31/2008, \$12,000

- Couzis, Alexander**, "CAT: NanoNylon," NYSTAR, 11/23/2008-6/30/2009, \$4,522
- Couzis, Alexander**, "NYU/CCNY REU Site for Science and Engineering of Soft Materials and Interfaces," NYU, 4/1/2008-3/31/2009, \$31,000
- Crouse, David**, "CAT: Center For Advanced Technology," NYSTAR, 11/23/2008-6/30/2009, \$921,199
- Crouse, David**, "CAT: Polarimetric and Nonpolarimetric Multiwave," NYSTAR, 11/23/2008-6/30/2009, \$10,000
- Crouse, David**, "CAT: Quantum Wire Focal Plane Array," NYSTAR, 7/1/2007-12/31/2008, \$1,795
- Crouse, David**, "Center For Advanced Technology," NYSTAR, 11/23/2008-12/31/2008, \$255,723
- Crouse, David**, "Development of Light Controlling Techniques in Optoelectronic Devices," CORNELL UNIV, 1/1/2007-9/30/2009, \$62,245
- Crouse, David**, "Development of Tandem Solar Cells Using Metamaterials," PSC-CUNY, 7/1/2009-6/30/2010, \$2,100
- Delale, Feridun**, "Effect of Temperature on Impact Damage of Hybrid Composites," PSC-CUNY, 7/1/2009-6/30/2010, \$2,700
- Delale, Feridun**, "Multiscale Modeling of Nanoclay Reinforced Polymer Nanocomposites," BATTELLE, 6/19/2008-6/18/2010, \$95,059
- Diyamandoglu, Vasil**, "Development of a Bilingual Materials Exchange System for Puerto Rico," TECHLAW, 10/3/2008-9/30/2010, \$34,804
- Diyamandoglu, Vasil**, "Identification of Products during Decomposition of Glycolic Acid in Water under UV Irradiation," PSC-CUNY, 7/1/2009-6/30/2010, \$2,750
- Diyamandoglu, Vasil**, "Materials Exchange, Reuse and Sustainability in New York City," NYC DEPT OF SANITATION, 7/1/2008-6/30/2009, \$191,866
- Diyamandoglu, Vasil**, "NY Wastematch Program," NYC DEPT OF SANITATION, 7/1/2008-6/30/2009, \$311,430
- Dorsinville, Roger**, "Antireflective Conductive Plasmonic Crystal Films for Solar Cells," PHOEBUS OPTOELECTRONICS, 4/1/2009-6/30/2009, \$30,060
- Dorsinville, Roger**, "CAT: Communications and Quantum Measurements," NYSTAR, 7/1/2008-6/30/2009, \$10,000
- Dorsinville, Roger**, "CAT: Equipment Purchase," NYSTAR, 7/1/2007-12/31/2008, \$13,000
- Dorsinville, Roger**, "CAT: Nonlinear Optical Characterization," NYSTAR, 7/1/2007-12/31/2008, \$2,500
- Dorsinville, Roger**, "Characterization of Carbon Composites," CORNING INC, 8/1/2004-7/31/2009, \$25,000
- Dorsinville, Roger**, "Science and Application of Metamaterials to Interceptor Sensors," PHOEBUS OPTOELECTRONICS, 2/24/2009-8/17/2009, \$18,000
- Dorsinville, Roger**, "The Development of Polarimetric and Nonpolarimetric Multiwavelength Focal Plane Arrays," PHOEBUS OPTOELECTRONICS, 2/14/2009-7/14/2009, \$30,000
- Fritton, Susannah**, "NYS/NASA Space Grant College and Fellowship Program," CORNELL UNIV, 4/1/2007-8/14/2009, \$51,500
- Fu, Bingmei**, "Effects of Hydrodynamic Factors on Tumor Cell Arrest and Adhesion in the Microcirculation," NSF, 6/1/2008-5/31/2010, \$87,500

- Fu, Bingmei**, "Permeability of the Blood-Brain Barrier in Brain Diseases and Drug Delivery," PSC-CUNY, 7/1/2009-6/30/2010, \$2,700
- Gertner, Izidor**, "Time-Frequency Analysis for Detection, Track, and Discrimination of Threat Objects in a Dense Object Environment (TFA/ DOE)," MDA, 1/30/2008-1/29/2010, \$111,913
- Grossberg, Michael**, "Teaming Game Technology with NOAA HPC Resources for Collaborative Data Exploration and Research Prototyping," NOAA, 7/1/2008-6/30/2010, \$65,000
- Jiji, Latif**, "Design of a Heat Exchanger for Modification of a Stirling Engine 161," ENEA, 7/1/2008-7/31/2009, \$8,385
- Jiji, Latif**, "Microscale Flow and Heat Transfer Between Rotating Discs.," PSC-CUNY, 7/1/2009-6/30/2010, \$2,970
- Khanbilvardi, Reza M.**, "CREST: Improved Soil Moisture Retrieval and Assimilation Using NASA-GISS Emissivity Product with Combined Observations from AMSR-E and MODIS," NOAA, 9/21/2008-9/22/2009, \$72,000
- Khanbilvardi, Reza M.**, "CREST: Snow Study for GOES Sattellite Receiving Stating for Unban Nowcasting and Snow Gran Size," NOAA, 9/21/2007-9/20/2009, \$50,000
- Khanbilvardi, Reza M.**, "NOAA Cooperative Remote Sensing Science & Technology Center (CREST)," NOAA, 9/1/2008-8/31/2011, \$2,430,000
- Koplik, Joel**, "Complex Fluids in Self-affine Fractures," DOE, 8/15/2008-8/14/2009, \$109,891
- Koplik, Joel**, "Morpheus: Multiphysics Object-Oriented Reconfigurable Fluid Environment for Unified Simulations," ONR, 2/20/2008-2/19/2010, \$291,000
- Kretschmar, Ilona**, "Columbia Center for Electron Transport in Molecular Nanostructures," COLUMBIA UNIV, 10/1/2006-9/30/2011, \$15,300
- Kretschmar, Ilona**, "Large surface-area electrodes for battery applications," PSC-CUNY, 7/1/2009-6/30/2010, \$2,700
- Lee, Jae**, "Multi-scale Investigation of the Role of Surface- Active Agents in Gas Hydrate Formation Kinetics," NSF, 2/1/2009-1/31/2010, \$204,120
- Lee, Jae**, "Process Intensification by Integrating of Reaction and Separation," STX SHIPBUILDING CO, LTD, 9/1/2007-8/31/2009, \$101,637 (award date 4/3/2009)
- Lee, Jae**, "Process Intensification by Integrating of Reaction and Separation," STX SHIPBUILDING CO, LTD, 9/1/2007-8/31/2012, \$101,637 (award date 8/14/2008)
- Lee, Myung**, "Application Oriented Technologies for Wireless Sensor Networks," ETRI, 7/1/2008-1/31/2009, \$60,092 (award date 9/15/2008)
- Lee, Myung**, "Application Oriented Technologies for Wireless Sensor Networks," ETRI, 7/1/2008-3/31/2010, \$60,092 (award date 3/12/2009)
- Lee, Taehun**, "Impact of Surfactant-Laden Drop on Hydrophic Surfaces," PSC-CUNY, 7/1/2009-6/30/2010, \$5,159
- Lee, Taehun**, "Modeling the Effect of Air Pressure on Drop Impacts on Dry Surfaces," AM CHEM SOCIETY, 9/1/2008-8/31/2010, \$25,000
- Li, Jackie**, "Micromechanics Approach for Temperature Effects on Ferroelectrics," PSC-CUNY, 7/1/2009-6/30/2010, \$2,750
- Liaw, Benjamin**, "Interlaminar Fracture Damage Assessment in Composites via Electrical Resistance Measurement," PSC-CUNY, 7/1/2009-6/30/2010, \$2,800
- Lin, Feng - Bao**, "Numerical Simulation of Crack Initiation and Propagation in Concrete Material," PSC-CUNY, 7/1/2009-

- Pach, Janos**, "Geometric Arrangement and Application," US-ISRAEL BINAT'L SCI FDT, 10/1/2008-9/30/2009, \$9,697
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- Parker, Neville**, "New York City Louis Stokes Alliance - Phase IV," NSF, 5/1/2007-4/30/2012, \$1,167,000
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- Maldarelli, Charles**, "An Experimental Study of Marangoni Driven Flow on the Surface of a Water Layer Due to a Surfactant Gel Placed on the Surface," SC JOHNSON AND SON, INC, 6/1/2008-12/31/2009, \$34,650
- Maldarelli, Charles**, "ATransport Theory, Molecular Dynamic Simulations and Experiments on the Adsorption of Surfactant From Micellar Solutions," AM CHEM SOCIETY, 5/1/2007-8/31/2009, \$41,858
- Morris, Jeffrey**, "Academic-Industrial Workshop on Complex and Evolving Multiphase Flows," NSF, 11/15/2008-10/31/2009, \$30,000
- Morris, Jeffrey**, "Boundary Wear Induced by Flow of concentrated suspensions," AM CHEM SOCIETY, 2/1/2009-8/31/2011, \$50,000
- Morris, Jeffrey**, "Continuum Modeling of Colloidal Suspension Rheology and Bulk flow," DOE, 7/16/2008-9/30/2008, \$25,000
- Morris, Jeffrey**, "Microstructures and Rheology of Oilfield Emulsions: Flow Assurance Tools," CHEVRON ENERGY TECHNOLOGY, 8/1/2007-8/1/2008, \$198,183
- Morris, Jeffrey**, "Pigment Ink Flow Optimization Through Analysis of Particle Laden Flow in Microchannel," TEXAS A&M, 6/20/2008-6/19/2009, \$25,350
- Morris, Jeffrey**, "Suspension Dynamics With Inertia: Combined Discrete- Particle Simulation and Constitutive Modeling Investigations," NSF, 4/1/2009-3/31/2012, \$300,000
- Moshary, Fred**, "Mid-Infrared Technologies for Health and Environment (MIRTH)," PRINCETON UNIVERSITY, 5/1/2008-4/30/2009, \$300,000
- Paaswell, Robert E.**, "UNIVERSITY TRANSPORTATION RESEARCH," NYS DEPT OF TRANS, 6/1/2008-12/31/2009, \$100,000
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- Paaswell, Robert**, "UTRC: Seismic Design Recommendations," NJ DOT, 1/1/2008-6/30/2009, \$289,016
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- Romanov, Peter**, "Development of Land Surface Climate Datasets for NASA NEESPI Giovanni System," U OF MARYLAND, 7/1/2008-6/30/2009, \$41,638
- Rossow, William**, "CloudSat and Calipso Science Team and Modeling/Analysis of A-Train Related Data," NASA, 8/15/2007-8/14/2010, \$436,136
- Rossow, William**, "Converting the ISCCP Cloud Product System into an Operational System to Continue a Cloud Climate Data Record," NASA, 4/30/2008-4/29/2010, \$217,810
- Rossow, William**, "Development and Application of Diagnostic Analysis Tools for Investigation Differences between Observed and Modeled Cloud Behavior," COLORADO STATE UNIV, 7/1/2006-6/30/2011, \$65,000
- Rossow, William**, "Global Cloud Process Studies in the Context of Decadal Climate Variability: Enhancement and Continuation of Data Analysis for the ISCCP," NASA, 4/10/2008-4/9/2013, \$317,387
- Rossow, William**, "Multi-Variate Analyses of Cloud-Climate Feedbacks: Observations Compared to Climate Model Behavior," NASA, 6/7/2007-6/6/2010, \$240,000
- Rossow, William**, "NASA - Cloudsat Mission," JPL, 10/5/2006-9/30/2009, \$186,875
- Rossow, William**, "NEWS Science Integration Team," NASA, 7/23/2007-7/22/2009, \$158,856
- Roytman, Leonid**, "CREST: Algorithm Developments for GOES R: Vegetation Health Index," NOAA, 9/1/2008-8/31/2009, \$100,000
- Rumschitzki, David**, "BRIDGE FUNDS: ATHEROGENESIS," CUNY- BRIDGE, 4/3/2009-4/30/2010, \$25,000
- Saadawi, Tarek**, "Academic Exchanges and Colloquium Support," ARMY RSH OFFICE, 9/19/2008-9/18/2009, \$66,403
- Saadawi, Tarek**, "Delay-Tolerant Mobile Ad Hoc Routing Protocol for Airborne Networking," AFRL, 3/31/2009-12/30/2009, \$75,000
- Saadawi, Tarek**, "Telcordia Consortium: Collaborative Technology Alliance for Communications and Networking (CTAC&N)," TELCORDIA TECHNOLOGY, 6/1/2001-10/31/2009, \$413,000
- Sadegh, Ali**, "A Parametric Study of the Effect of Meningeal Properties on Cerebral Blood Vessel Rupture," PSC-CUNY, 7/1/2009-6/30/2010, \$2,650
- Sadegh, Ali**, "Composite Laminate Separator," ALCOA, 1/9/2008-8/3/2009, \$14,000
- Sadegh, Ali**, "Steam Trap Design," CON EDISON, 9/1/2008-8/30/2009, \$8,525
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- Scheinberg, Norman**, "Research Support," ANADIGIC CORP, 6/24/2006-6/30/2009, \$20,000 (award date 12/1/2008)
- Scheinberg, Norman**, "Research Support," ANADIGIC CORP, 6/24/2006-6/30/2009, \$20,000 (award date 1/26/2009)
- Seo, Sang-Woo**, "BRIDGE: Fluidic Assisted Heterogeneous Integration of Thin Film Devices for Advanced Photonic

Systems: A Manufacturable and Scalable Integration," NSF, 9/1/2008-8/31/2010, \$170,158

Seo, Sang-Woo, "Linear Filter Array For Microchip Raman Spectrometer," PSC-CUNY, 7/1/2009-6/30/2010, \$2,500

Shen, Aidong, "MBE Growth and Characterization of ZnO-based semiconductors for Intersubband Devices," PSC-CUNY, 7/1/2009-6/30/2010, \$2,500

Shinnar, Reuel, "A novel Storage Method for Concentrating Solar Power Plant Allowing Operation at High Temperature," DOE, 9/30/2008-12/31/2009, \$445,263

Subramanian, Kolluru, "Concrete Deck Materials Properties," CORNELL UNIV, 4/1/2003-9/30/2008, \$69,752

Subramanian, Kolluru, "Investigation of 15th and 17th Avenue Bridges in Brooklyn," NYC DOT, 9/1/2008-8/31/2009, \$200,159

Sun, Yi, "Robotic Swarm and Network via Multiple Antennas," PSC-CUNY, 7/1/2009-6/30/2010, \$2,300

Tang, Hansong, "High-Resolution Scheme and Mechanism Study for Interactions of Wave, Current, and Seabed Morphology," PSC-CUNY, 7/1/2009-6/30/2010, \$5,850

Tarbell, John, "Hemodynamic Forces Affect Endothelial Cell Phenotype in Arterial Disease," NIH, 4/1/2009-3/31/2010, \$376,112

Tarbell, John, "Shear Stress Effects on Endothelial Transport (R. Mathura)," NIH, 12/1/2008-11/30/2009, \$416,795

Tardos, Gabriel, "Granular Flows," PROCTOR & GAMBLE, 2/1/2009-1/31/2010, \$10,000

Tardos, Gabriel, "Rheological Behavior of Dense Assemblies of Granular Materials," PRINCETON UNIVERSITY, 4/1/2007-3/31/2010, \$61,303

Temimi, Marouane, "CREST:Development of an Advanced Technique for Mapping and Monitoring Sea and Lake Ice for the Future GOES-R Advanced Baseline Manager," NOAA, 7/1/2008-6/30/2009, \$125,000

Tian, YingLi, "Intelligent Radio and Sensor Fusion," Microsoft, 3/26/2009-3/25/2010, \$10,000

Tu, Raymond, "Epitaxial Nucleation on Rationally Designed Peptide Functionalized Interface," AFOSR, 2/1/2008-11/30/2009, \$100,000

Tu, Raymond, "Model for addressable amyloidal self-assembly: Hysteresis in 2D organic films," PSC-CUNY, 7/1/2009-6/30/2010, \$2,678

Uyar, M. Umit, "Knowledge Sharing Agents Using Genetic Algorithms in Mobile Ad Hoc Networks," ARMY, 2/10/2009-4/16/2010, \$60,000

Vazquez, Maribel, "Role of EGFR in Medulloblastoma Dispersal," PSC-CUNY, 7/1/2009-6/30/2010, \$2,500

Voiculescu, Ioana, "Novel MEMS biosensor for real time study of the adhesion and stiffness of cell protrusions," PSC-CUNY, 7/1/2009-6/30/2010, \$2,300

Vorosmarty, Charles, "Arctic-Champ Project Office: The Arctic Community- Wide Hydrological Analysis and Monitoring Program," NSF, 6/30/2008-5/31/2009, \$460,043

Vorosmarty, Charles, "Collaborative Research: Understanding Change in the Climate and Hydrology of the Arctic Land Region: Synthesizing the Results of the ARCSS," NSF, 6/30/2008-8/31/2009, \$211,628

Vorosmarty, Charles, "Further Test on a Modeling Framework to Detect and Analyse Changes in Land-to-coastal Fluxes of Freshwater and Constituents," NASA, 7/1/2008-8/31/2010, \$543,059

Vorosmarty, Charles, "Humans Transforming the Water Cycle: Community Based Activities in Hydrologic Synthesis,"

NSF, 6/30/2009-5/31/2009, \$511,353

Vorosmarty, Charles, "New Approaches to Adaptive Water Management," Wageningen University, 9/17/2008-12/31/2008, \$7,074

Vorosmarty, Charles, "Nonlinear and Threshold Responses to Environmental Stresses Inland-River Networks at Regional to Continental Scales," Marine Biological Lab., 9/1/2008-8/31/2009, \$90,760

Vorosmarty, Charles, "Start-Up Funds," CAB-Gen. Res. Initiative, 9/19/2008-8/31/2010, \$50,000

Vorosmarty, Charles, "Water Net: The NASA Water Cycle Solution Network," IGES, 7/1/2008-9/30/2009, \$268,851

Wang, Sihong, "Development of Microfluidic 3D Apoptotic Cell Arrays for Anti-cancer Drug Screening and Apoptotic Signaling Profiling," NIH/NCI, 39717-40056, \$152,098

Wang, Sihong, "Mild Heat Shock Effects on Mesenchymal Stem Cell Differentiation in Peptide Hydrogel," PSC-CUNY, 7/1/2009-6/30/2010, \$2,200

Watkins, Charles, "DSMC/NEMD Hybrid Method for Mesoscale Simulations with Nanoscale Interfacial Physics," PSC-CUNY, 7/1/2009-6/30/2010, \$2,860

Wei, Jie, "extraction, indexing and matching visual object for CBIR applications," PSC-CUNY, 7/1/2009-6/30/2010, \$2,100

Weinbaum, S, "A National Urban Model for Minority Undergraduate Biomedical Education," NIH, 9/1/2008-8/31/2009, \$475,970

Wolberg, George, "A Unified Framework for Range Segmentation," PSC-CUNY, 7/1/2009-6/30/2010, \$4,300

Xiao, Jizhong, "CAREER: Advancing Mobile Robots to 3D," NSF, 2/15/2007-1/31/2010, \$96,000

Xiao, Jizhong, "DURIP: Equipment for Networked Autonomous Mobile Systems," ARMY RSH OFFICE, 9/26/2008-9/25/2009, \$150,000

Yu, Honghui, "Modeling the effects of non-uniform stress distribution on heterogeneous electron transfer," PSC-CUNY, 7/1/2009-6/30/2010, \$2,750

Yu, Honghui, "Near Surface Plasticity and its Implications in Surface Treatment," DOE, 8/15/2008-8/14/2009, \$71,443

Zahrn, Mohamed, "Off-Chip Bandwidth Management for Multicore Processors," PSC-CUNY, 7/1/2009-6/30/2010, \$2,700

Zhu, Zhigang, "A System Approach to Adaptive Multi-modal Sensor Designs," AFOSR, 1/1/2009-12/31/2009, \$330,000



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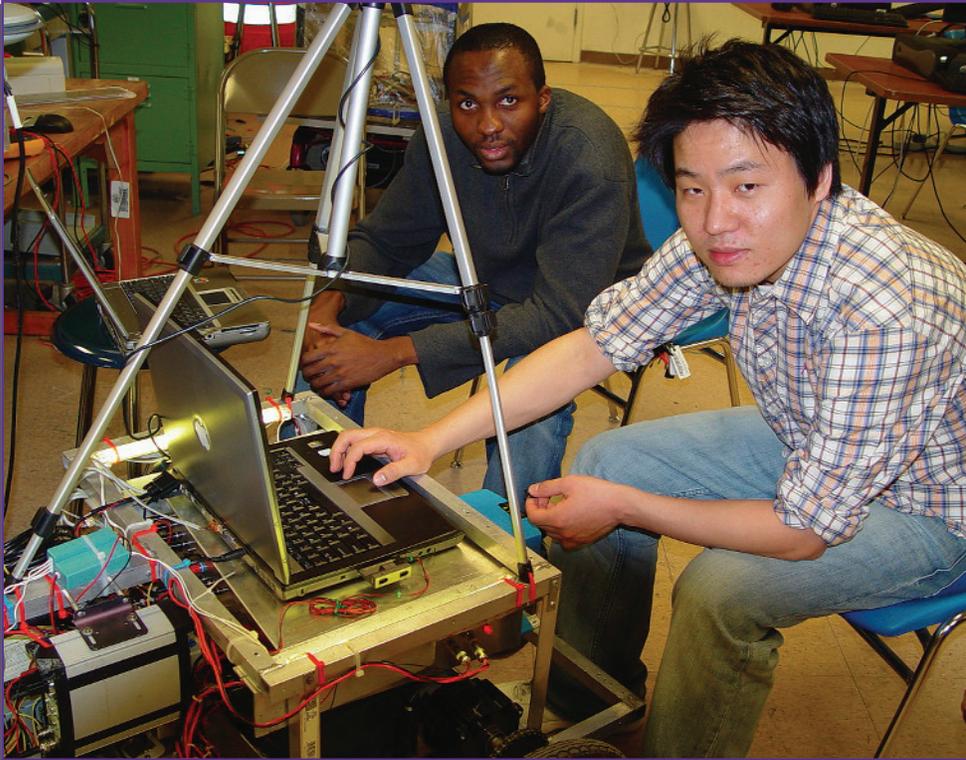
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