

Grove School of Engineering

The Future



Is Engineered

Here



10/11 ANNUAL REPORT



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 President of CCNY



As my own first year here at City draws to a close, I am pleased to commend to you this report about the wonderfully successful year at the Grove School of Engineering, one of the jewels in the crown of City College. In this report you have the chance to meet Grove's remarkable faculty and its equally remarkable students, and learn how truly unique and utterly central the GSOE is and will be to the College and to New York.

GSOE is the place that allows our students – strivers who don't take anything for granted – to make their impossible dreams real through their own hard work, mentored by a talented and dedicated faculty, and supported by visionary alumni. This is the story of the Kaylie Prize for Entrepreneurship that you will read on these pages, as well as the story of the engineering students competing in the prestigious Solar Decathlon.

It's also the story of research at the Grove School of Engineering, whether the research lab is headed by a senior professor with an international reputation and strong ties to national and international policy bodies, or a young professor recognized for his or her potential to grow and contribute. When you read about the work of NOAA CREST or the CUNY Environmental CrossRoads Initiative centered at GSOE, you will read about work that is as interdisciplinary as knowledge itself, about extraordinary leadership, and about the coming together of cutting-edge, policy-consequential research with the education of the next generation of scholars, engineers and leaders.

In short, you will read about a place of innovation and entrepreneurship, of ambitious and accomplished students, of extraordinary scholarship – and a place that inspires so many of its best and brightest to give back, to make a difference in the lives of others. The first public institution of its kind and the most diverse school of engineering in the country, the Grove School of Engineering at The City College of New York continues to grow and to take its place as a leader in engineering education.

Sincerely,

A handwritten signature in black ink that reads "Lisa S. Coico". The signature is written in a cursive, flowing style.

Lisa S. Coico
President



From the Dean

I'm delighted to report to you that the Grove School of Engineering has experienced another year of outstanding achievement. Two nationally recognized sources have validated our sense of forward momentum. In October 2010, the School's undergraduate programs came through the ABET accreditation review with flying colors, leading to the maximum possible accreditation of six years for all eight of our programs. Also in October, the National Research Council ranked GSOE doctoral programs highly in comparison with programs at local peer institutions. These positive assessments reflect a growing recognition of the accomplishments of our faculty and students.

For example, NOAA-CREST, which was established at CCNY in 2000 as a research center, became a CUNY-wide Institute of Excellence in Remote Sensing Science & Technology this year, the only one of its kind in our region. In further acknowledgement of the Grove School's excellence in environmental engineering and technology, the NSF awarded \$3 million to a multi-disciplinary, multi-institutional team led by GSOE's Charles Vörösmarty, which will develop a regional earth system model of the Northeast.

Thanks to the recruitment of top-notch faculty, we are increasingly successful in competing for significant grants. Over the past five years, the School's research funding has more than doubled, bringing this year's total to \$34 million. We plan to double that number again over the next five years, when we expect to be generating over \$60 million in annual support.

Our emphasis on student recruitment and retention is producing positive results. To attract a diverse and well-prepared student population, we have made our campus a hub for precollege events that introduce promising young people to the field of engineering in general and the benefits of an education at the Grove School in particular. We have begun to administer our own admissions process to ensure that the students we admit can meet the challenges of our demanding curriculum. Once here, students are strongly encouraged to augment their studies by participating in undergraduate research programs and joining one of over eighteen engineering student associations, organizations, clubs, and honor societies.



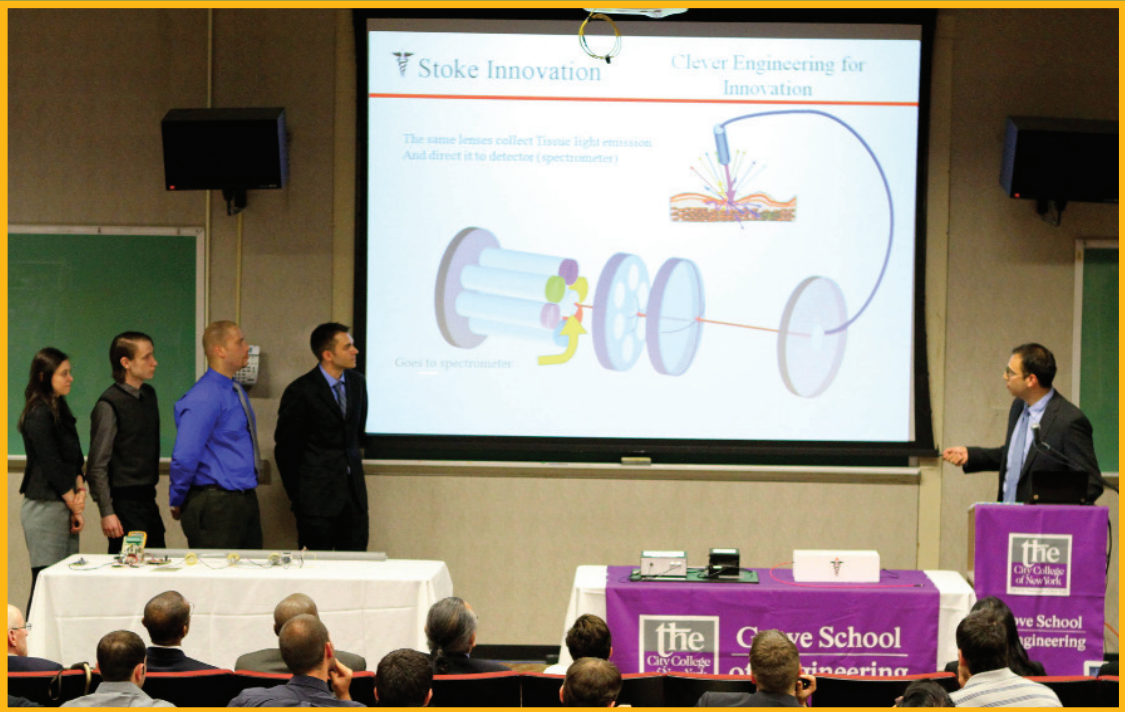
In addition to achieving on campus, our students are engaging in the national and international arenas. High on the list is our participation in the prestigious Solar Decathlon competition sponsored by the U.S. Department of Energy, in which the CCNY team is a finalist and the only one whose project is specific to the urban environment. And in April, a team of engineering students paddled their way to victory in a “green” concrete canoe they designed and built for the 2011 Metropolitan Region Concrete Canoe Competition.

Our focus on entrepreneurship has flourished, thanks primarily to the support of three alumni who embody entrepreneurial success. Harvey Kaylie '60 EE has established a \$3 million endowment to support the annual Kaylie Prize for Entrepreneurship at City College. Irwin Zahn '48 ME has funded a lab for entrepreneurial activities, and Aziz Ahmad '91 EE, '93 MEE has sponsored a lecture series on entrepreneurship.

In the following pages, you will see how much of our success is due to the engagement and support of our alumni, corporate sponsors, and other friends. We thank you, and ask you to continue your invaluable efforts on the Grove School's behalf.

Sincerely,

Joseph Barba, Dean



The Kaylie Prize: Inspiring Entrepreneurship at the Grove School

For generations, the School of Engineering has had a tradition of groundbreaking research. Today, as the Grove School, it bears the name of one of the country's most visionary entrepreneurs. With the inspiration of Andrew Grove and the crucial support of other alumni who have turned their ideas into real products and successful companies, entrepreneurship is becoming a cornerstone of engineering education at the School. From now on, students need not wait until they graduate to translate the technologies they are developing from the academy to the market place. They can start the process under Grove School auspices.

The prime mover in this new chapter in the School's history is Harvey Kaylie '60 EE, who, in 1969, founded Mini-Circuits, a Brooklyn-based RF and microwave electronic components design, manufacture and distribution enterprise. Today, the company is a global leader in RF, IF and microwave components for commercial, industrial, space, and military applications.

In November 2010, Mr. Kaylie established a \$3 million endowment to support the Kaylie Prize for Entrepreneurship at City

College. Competition for the prize generated great enthusiasm, and five finalist teams were chosen out of 35 entrants. The ideas proved so excellent, that a panel of entrepreneurs and intellectual property attorneys chose two winners. "Stoke Innovation" took top honors. The team, composed of four graduate physics students and an undergraduate electrical engineering major, is developing an affordable, non-invasive device for instant cancer detection through light analysis. "Dynamic Braille," an all-freshman team, captured second place with their low-cost electronic Braille interface. The other finalists were "Cable Inspecting Robots"; web-based virtual study group software called "InYourClass.com"; and "MedMobileBP," which uses the Android operating system to provide cell-phone medical diagnostics.

"Everyone who participated is a winner," said Mr. Kaylie. "My satisfaction is in seeing their ideas in front of me. The competition has added a new dimension to the students' education and elevated the School."



Both teams secured financial support and housing for the summer to further develop their products. They will work in CCNY's new InnoLab, a Silicon Valley garage-like workspace created to support such efforts. The lab was built with funding from Irwin Zahn '48 ME, the founder of Autosplice, Inc., an international electronics connector company, which began as the tiny General Staple Company which Mr. Zahn purchased in 1954.

Another facet of entrepreneurship at City has been a lecture series established by Aziz U. Ahmad '91 EE, '93 MEE. Mr. Ahmad is President and CEO of UTC Associates, Inc., a leading systems and network integration company focusing on all key aspects of complex network planning, design, testing and imple-

mentation. He is also co-founder of Vonair Inc., a software provider of video-enabled Softclient for the wireline and wireless markets.

According to Dr. Dan Steingart, Assistant Professor of Chemical Engineering, who is himself an entrepreneur and served as faculty advisor to the students, organizing and supervising the competition, "The quest for the Kaylie Prize entailed an integrated approach to engineering in which students confronted and solved problems you do not encounter in class, and that I had not internalized until my companies were going to sink or swim. They learned an important mode of analysis which it is impossible to teach in a course setting."

The Teams:

Stoke Innovation: James Scholtz, Denis Sharoukhov, Laura Sordillo, Giovanni Milione, and Wayne Parkinson.
Advisor: Dr. Robert Alfano, distinguished professor of science and engineering.

Dynamic Braille: Joseph Borrello, Jeremy Cortez, Sullivan Fleming, Sankha Ghatak, and Nick Macaluso.
Advisor: Dr. Ilona Kretschmar, associate professor of chemical engineering.

Cable Inspecting Robots: Denis Arce, Rachel M. Lovell, Shiraz Macuff, and Kenshin Ushiroda.
Advisor: Dr. John (Jizhong) Xiao, associate professor of electrical engineering.

InYourClass.com: Arber Ruci, Ariel Terefici, Arijon Xhelo, Edina Bektesevic, and Jonida Xhaferaj.

MedMobileBP: Satadru Pramanik, Mohammad Arafat, Fidaali Udawala, Khrisendat Persaud, Gerardo Sevilla, and Antonio Jou.



The Solar Decathlon:

Grove School Students Take on a World-Class Challenge

Students from the Grove School and CCNY's Spitzer School of Architecture spent the summer hard at work on their entry for the U.S. Department of Energy's prestigious competition, Solar Decathlon 2011. They call themselves Team New York, and they are one of 20 student teams from around the world who have been chosen to design and build aesthetic, cost-effective solar-powered houses, which will be open to the public on the National Mall in the fall of 2011.

Team New York's project, the Solar Roof Pod, addresses issues critical to New York's high density urban environment. The team's mantra, "Our most wasted resource is the sun and our most wasted space is our rooftops," sums up its goal: to find a way of maximizing some of New York's most desirable real estate, while meeting the 2030 sustainability targets set forth in the City's PlaNYC. The Pod is a 746 square foot modular, solar residence whose components can be transported by staircase or elevator and assembled on the roofs of New York City's many mid-rise buildings.

For the more than 25 engineering students from electrical, civil, mechanical, and computer engineering who are part of Team New York, the Solar Roof Pod has been a transformative experience. They are a dynamic group of young engineers who key off each other for ideas, and are having tremendous fun with their demanding, consuming work. As one student said, "The project empowers us to step into unknown domains and find something new. We are learning what we can do to effect positive change."

Among the many benefits of their project, they cite the challenge of working with architects who think differently from engineers and "finding the point where we have synergy"; acquiring business and team management skills, including "learning how to get the best out of people"; honing communication skills through presentations to professors, sponsors and other students; and interfacing with vendors, suppliers, and professional engineers. The project has more than 50 external partners, including Sciam Construction, Con Edison and General Electric. The students describe their dialogue with them as "a great welcome to the real world and a preview of what you can do in the workforce."

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Members of Team New York



“The Solar Roof Pod has generated so many new ideas, that if we get even half of them to work, it will have made a wonderful contribution to the world.”

Dr. Jorge Gonzalez

According to Dr. Jorge Gonzalez who, with Drs. Fred Moshary, Nicholas Madamopoulos and Ali Sadegh, is leading the engineering aspect of the project, “The Solar Decathlon is a prime vehicle for the DoE to promote sustainability and efficient buildings, and it has given the Grove School a lot of visibility.” He continues, “It is very well integrated into the curriculum, and has sparked students’ creativity and developed their confidence so that they can innovate. They have had to consider both the environmental and cost implications of an idea, and if it does not work, go back to the drawing board. They have tackled the energy issues of a visually open building, researching and using the appropriate smart materials and managing the energy information through an array of sensors. Every aspect of this building involves something new. In fact, the Solar Roof Pod has generated so many new ideas, that if we get even half of them to work, it will have made a wonderful contribution to the world.”

Last fall, Team New York shared the project and their commitment to creating energy efficient, affordable housing at the Urban Green Exposition in Manhattan and the Green Buildings Festival in Brooklyn. This summer, as the students donned hard hats for the construction phase, and the Solar Roof Pod began to rise on CCNY’s Marshak Terrace, it attracted considerable attention with articles in Metropolis magazine, The Architect’s Newspaper, Real Estate Weekly, and ProudGreenHome.com.

And true to CCNY, Team New York is as diverse as the College itself. A key aspect of that diversity is the strong presence of women engineers. They are conscious of being glass ceiling breakers and proud of being the new face of their profession.

For further information, consult Team New York’s website: <http://ccnysolardecathlon.com/> and watch the video at <http://www.youtube.com/user/ccnysd11#p/a/u/1/fU0-nbgUilk>



Building on the Work of NOAA CREST, CUNY Becomes a Force in Remote Sensing and Environmental Science

New CUNY Institute Will Be Remote Sensing Center of Excellence for Northeast

Since 2001, when the NOAA Cooperative Remote Sensing Science and Technology Center (NOAA CREST) was first established on the CCNY campus, Dr. Reza Khanbilvardi has pursued his ambitious vision for environmental remote sensing at CUNY. He has worked tirelessly to build a multi-disciplinary network of top-flight faculty, as dedicated to research as to grooming the next generation of engineers and scientists. And, under his aegis, CREST has developed the state of the art infrastructure necessary to study the Earth's changing environment.

This November, Dr. Khanbilvardi, who is the NOAA Chair Professor of Civil Engineering in the Grove School, received high praise for his tenacity and the accomplishments of the steadily growing team he leads. Dr. Larry Robinson, Assistant US Secretary of Commerce for Coastal Conservation and Management, came to City College to join CCNY President Dr. Lisa S. Coico in inaugurating the CUNY Remote Sensing of the Earth Science and Technology (CUNY CREST) Institute, which will become the center of excellence for environmental remote sensing for the northeastern United States.

Dr. Robinson lauded the work done at CREST over the past decade. "NOAA has set very high standards of achievement, and CREST has exceeded those high expectations," he said. He also cited the pioneering role of CREST in expanding into a university-wide Institute. Dr. Coico echoed that sentiment when she said, "The CREST Institute will be like none other in the Northeast and will be an important component of CUNY's Decade of Science."

As to the future, according to Dr. Khanbilvardi, the Institute "will enable us to take our activities to the next level. Agencies such as the U.S. Department of Agriculture, NASA, U.S. Environmental Protection Agency, and U.S. Army Corp of Engineers need access to environmental data on a global or regional scale so they can develop long-range plans to address issues related to climate changes. CUNY CREST will be able to serve these agencies as well as NOAA."

Partnership with Northrop Grumman Yields High Praise for CCNY

Since 2007, Mr. Tony DiNardo '64EE, Chief Scientist SBIRS Payload at Northrop Grumman, has been returning to his alma mater to join Grove School colleagues in teaching an Earth Surveillance and Remote Sensing course developed with NOAA CREST. In 2010, this partnership with Northrup Grumman (NGC) was greatly expanded by launching scientific collaborations in the remote sensing area. These collaborations capitalize

on CREST's expertise in atmospheric propagation, its experimental remote sensing facilities and capabilities, and its access to satellite data and models. The work being done includes characterization of surveillance systems and studying details of the atmospheric effects on surveillance systems such as SBIRS, the Space Based Infrared System which is the US Air Force's next generation surveillance system.



The CCNY team is led by NOAA CREST Deputy Director, Dr. Fred Moshary, and includes faculty, staff, and students. One specific project has been mid-infrared characterization of scattering from a SBIRS hardware component. An apparent “ghosting” feature was observed on some SBIRS hardware and NGC has worked with CCNY to perform delicate scientific experiments to confirm its root-cause and evaluate mitigation approaches. A fresh design emerged, and newly manufactured hardware was successfully tested at CCNY in a recently established laboratory facility.

In March, 2011, Colonel Robert P Bongiovi, Chief of Payload and Sensors Development Branch, Infrared Space Systems Directorate, Space and Missile Systems Center (SMC), and Mr. Don Richards, GEO Payload Deputy Program Manager at NGC, presented CCNY President Dr. Lisa S. Coico with a certificate of appreciation recognizing CCNY for its “technical expertise resulting in successful testing of critical SBIRS flight hardware”.

NSF Grant Will Integrate Policy Making and Environmental Research

Dr. Charles Vörösmarty came to CUNY in 2008 as Professor of Civil Engineering at the Grove School, NOAA CREST Distinguished Scientist, and Founding Director of the CUNY Global Environmental CrossRoads Initiative. Under his leadership the CrossRoads Initiative has become an internationally recognized center for interdisciplinary environmental research that provides a forum where scientists, technology experts, engineers, and policymakers work to solve strategic environmental challenges facing the planet in the 21st Century. Its establishment signaled the university’s commitment to becoming a leader in environmental science.

This past year, an interdisciplinary team led by Dr. Vörösmarty was awarded \$3 million by the National Science Foundation to develop a regional earth system model of the Northeast. The effort involves partner institutions from around the region, including Rensselaer Polytechnic Institute and the Marine Biological Laboratory at Woods Hole, Mass.

The model will depict the atmosphere-land-water system of a 10-state region stretching from Maine to Pennsylvania and Delaware, and link this to an economic analysis and policy-formulating process. The object is to improve current capacity to forecast both the benefits and unintended consequences of planning decisions about the region’s environment, ecosystem services, energy systems, and economy through the 21st Century.

In studying the region’s atmosphere, land and aquatic systems, the project will be looking at how changes to any of them could impact the others. To accomplish this it will draw on the expertise developed at NOAA-CREST in remote sensing and other sophisticated tools for environmental analysis. “We want to create an accounting system for these ecosystems so we can anticipate what happens when they are coupled together,” Professor Vörösmarty explains. “No one has ever examined these multiple causes and effects together. We want to formally create a mechanism that will enable planners to do so. I am hoping we can achieve the end result, but, at a minimum, we will create a framework for finding the answers.”

Richard Felder '62 ChE:

A Passionate Educator Receives the Alumni Achievement Award

When asked about the impact of City College on his career, Dr. Richard M. Felder says, “There was no graduate school then, so my classmates and I were the faculty’s reason for existing. There was a real sense of family among the students and faculty, which had a lot to do with my decision that chemical engineering was right for me. My education at City has been a great basis for everything that I have done since.”

In the course of his distinguished career, Dr. Felder has focused his research on both chemical process engineering and, importantly, engineering education, which he describes as the domain that has given him the greatest amount of internal satisfaction.

After receiving his PhD from Princeton University, Dr. Felder worked for the Atomic Energy Research Establishment in Harwell, England and for Brookhaven National Laboratory. In 1969, he joined the faculty at North Carolina State University, where he is now Hoechst Celanese Professor Emeritus of Chemical Engineering. He is coauthor of *Elementary Principles of Chemical Processes*, which has been the introductory chemical engineering text used in most American chemical engineering departments and many international institutions for over three decades. He has over 300 papers to his credit and has presented hundreds of seminars, workshops, and short courses to industrial and research institutions and universities.

When Dr. Felder arrived at North Carolina State, he began by following the traditional path of writing grant proposals, mentoring graduate students and lecturing. After about a decade, he decided that the traditional lecture format was ineffective and sought a better way of engaging students. He began reading the literature of cognitive and educational psychology and trying alternative teaching methods. His classes were transformed into hubs of activity in which students kept journals, worked in groups on problems, and learned both in and out of the classroom.



“My education at City has been a great basis for everything that I have done since.”

Since 1991, Dr. Felder and his wife and colleague, Dr. Rebecca Brent, have co-directed the National Effective Teaching Institute (NETI) under the auspices of the American Society for Engineering Education (ASEE). At the NETI, Dr. Felder gives others the benefit of methods he has refined over decades in the classroom. “I certainly feel that those of us who have been working for educational reform have had an impact, both on students and other faculty members,” he says. “In the past 15 years, I have seen a major movement by many engineering professors toward more effective teaching and assessment.

Dr. Felder’s achievements in engineering education have been recognized with prestigious awards from the ASEE, AIChE, and the Chemical Manufacturers Association, among many others. In 2010, the list was capped by the International Federation of Engineering Education Societies, which honored him with its inaugural Global Award for Excellence in Engineering Education.

Seymour Moskowitz '54 ME and Irwin Zahn '48 ME Are Awarded the Townsend Harris Medal

Established in 1933 by a gift from the Class of 1906, Townsend Harris Medals recognize City College alumni for outstanding postgraduate achievement in their chosen fields.

Seymour Moskowitz and Irwin Zahn are brilliant engineers, high-powered businessmen, and generous philanthropists. Their steadfast support of engineering at CCNY has earned them both a place on the Wall of Honor in Steinman Hall.

During a career spanning the Cold War and 9/11, Mr. Moskowitz focused on technological solutions that addressed critical national issues. Following leading research positions at Curtiss-Wright Corporation and Vitro Corporation, Mr. Moskowitz was part of a group that acquired Anteon International Corp., a company providing mission-critical information technology services to federal agencies. It grew ten-fold during his ten-year tenure. Mr. Moskowitz then co-founded CoVant Management Inc., which acquires and manages portfolio companies specializing in counter-terrorism technology in support of the Department of Defense, Homeland Security, and intelligence agencies. Today, he is Executive Vice President and Board member of CoVant Technologies, LLC, a leading government services investment firm and a Board member of A-T Solutions Inc., a counter-terrorism solutions company. He holds seven patents and has authored numerous technical and peer-reviewed papers on turbine and combustion technologies.

Mr. Moskowitz is Trustee of the United Jewish Endowment Fund of Greater Washington. He has endowed the Seymour and Pearl Moskowitz Biomedical Engineering Scholarship and the Dave and Clara Moskowitz Memorial Mechanical Engineering Scholarships at City College.

Irwin Zahn turned a one-man company in Lower Manhattan into a global electronics enterprise with offices in Asia, Europe and Latin America. Mr. Zahn credits Stuyvesant High School and City College for the creative passion both instilled in him. Graduating from Stuyvesant in 1944, and after Army Air Force service, he was determined to attend CCNY even though the GI Bill provided a broad choice of colleges. Mr. Zahn put his CCNY engineering degree to great use, purchasing the tiny General Staple Company in 1954. He took the company from staples to zipper stops to what it is today – Autosplice, Inc., an international electronics connector company.

Mr. Zahn, who has over 20 domestic and international patents to his name, remains at the helm as Chairman. He is also Director and President of The Moxie Foundation, which he established. It is dedicated to his philanthropic interests in education and health. His generous gifts to CCNY include his recent funding of InnoLab, a Silicon Valley garage-like workspace created to support entrepreneurship at the Grove School.

In the words of the Townsend Harris citation, Seymour Moskowitz and Irwin Zahn are two alumni in whom City College “has particular reason to rejoice.”



“In you, your Alma Mater has particular reason to rejoice.”

The Townsend Harris Citation





The Wall of Honor Ceremony

Steinman Hall

October, 2010

In October 2010, CCNY President Lisa S.Coico (third from right) joined Dean Joseph Barba (fifth from left) and major donors to GSOE in honoring alumni and organizations whose names were newly inscribed on the Grove School of Engineering's Wall of Honor. The honorees were:

Simon Aconsky '52

Aziz Ahmad '91 '93

Paul DeLuca '55

Paul Fenster '60

Ralph Mednick '57

Mitsubishi Nuclear Energy Systems

Phoebus Optoelectronics

Edward S. Plotkin '53 '56 & Frances M. Plotkin

Arnold Stancell '58

Irwin Zahn '48

A Young Alumna Forges a Brilliant Career



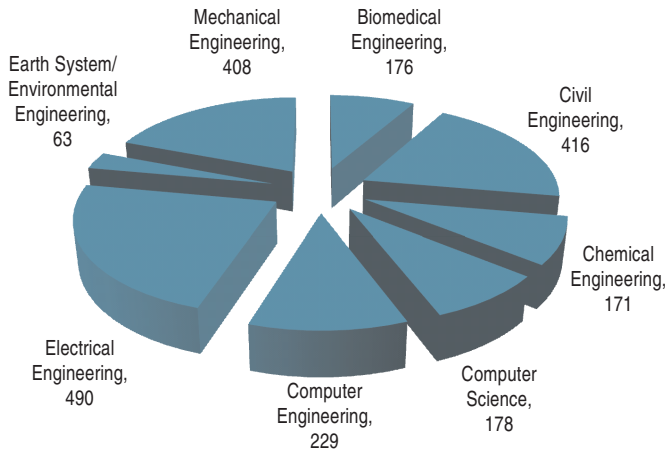
Leona Charles is a School of Engineering product through and through. She earned her bachelor's in computer science at the School and remained for graduate studies, receiving her master's and doctoral degrees in electrical engineering. At the School, Dr. Charles met one of GSOE's most devoted alumni, Tony DiNardo '64 EE, Chief Scientist, Space Based Infrared Systems (SBIRS) at Northrop Grumman. Mr. DiNardo snapped her up for his company, where she has been succeeding brilliantly ever since, and currently works as a payload systems engineer. "I believe," says Mr. Dinardo, "that Leona's academic preparation at CCNY cemented the solid foundation for her to build upon throughout her career."

In February, Dr. Charles was presented with the most recent in her string of honors. It is the Black Engineer of the Year Award for the Most Promising Engineer or Scientist (Industry), which recognized her unrelenting pursuit of excellence in the field of engineering. As Dr. Charles continues to

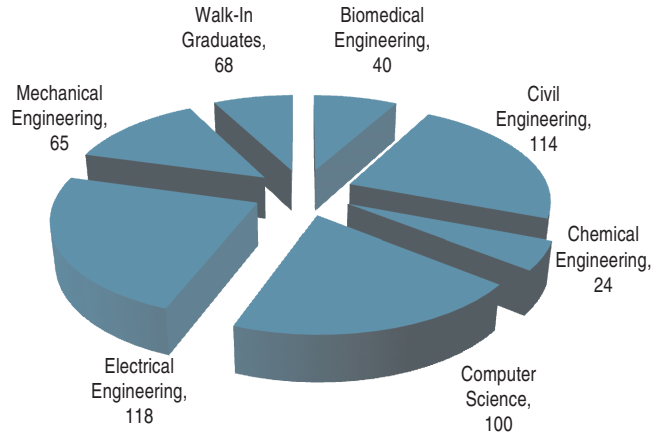
contribute to the success of Northrop Grumman and the SBIRS program in particular, she says, "The message which carried me through the Grove School is the same one which motivates me as an alumna: 'The sky is no longer the limit. There is simply no limit to one's potential.' "

Student Facts and Profiles

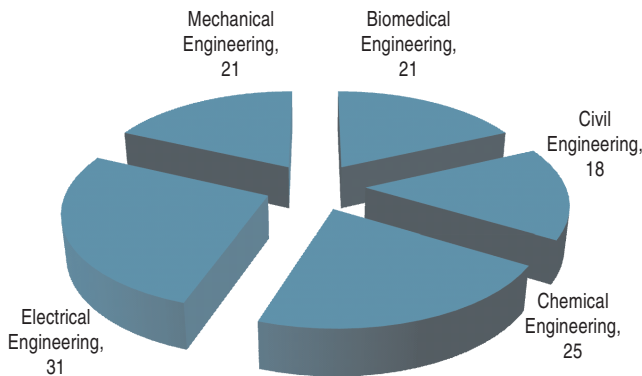
Undergraduate Enrollment, Fall 2010
Total: 2131



Master's Enrollment, Fall 2010
Total: 499



PhD Enrollment, Fall 2010
Total: 116



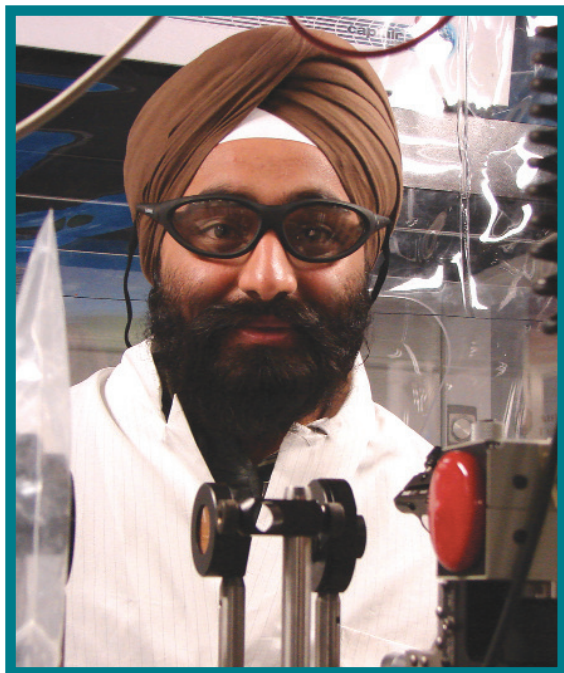
Degrees Granted 2010-2011

Bachelor's degrees	Master's degrees	PhD degrees
261	144	32

Tuition and Fee Schedule, Fall 2010		New York City & State Residents	Out-of-State Residents*
Undergraduate	Full-time	\$2,565 per semester	\$460 per credit
	Part-time	\$215 per credit	\$460 per credit
Master's	Full-time	\$4,810 per semester	\$710 per credit
	Part-time	\$405 per credit	\$710 per credit
Doctoral Level 1	Full-time	\$3,670 per semester	\$715 per credit
	Part-time	\$415 per credit	\$715 per credit
Doctoral Level 2 FT/PT		\$2,300 per semester	\$5,110 per semester
Doctoral Level 3 FT/PT		\$910 per semester	\$1,820 per semester

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

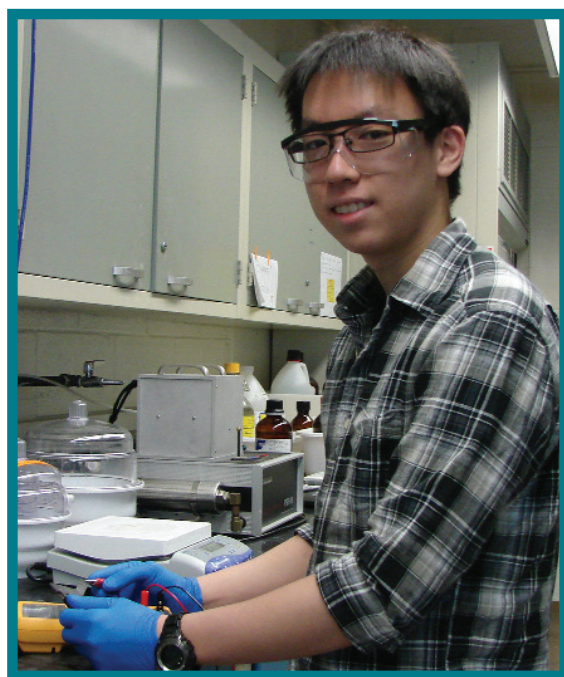
Undergraduates



Amandeep Chhabra
Electrical Engineering

“The phenomenal training at City College provided me with opportunities beyond imagination.”

From the beginning of his Grove School experience, Amandeep Chhabra wanted to do research. By sophomore year, he was participating in a joint CCNY-Princeton program developing a trace gas laser system for simultaneous detection of ambient ozone and ammonia. He co-authored a conference paper about this project, which was published in SPIE. Subsequently, Amandeep worked on modeling photonics devices in City’s Materials and Device Laboratory and on designing semiconductor characterization instrumentation at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD. He presented this work at the NIST Symposium as a keynote speaker. Amandeep has also found time to serve as president of CCNY IEEE, a commitment he hopes to continue upon graduation by starting a CCNY electrical engineering alumni panel, which would provide mentoring and professional advice to undergraduates. Amandeep has just finished a summer internship at the Pacific Northwest National Laboratory and is beginning his master’s studies in electrical engineering at Columbia.



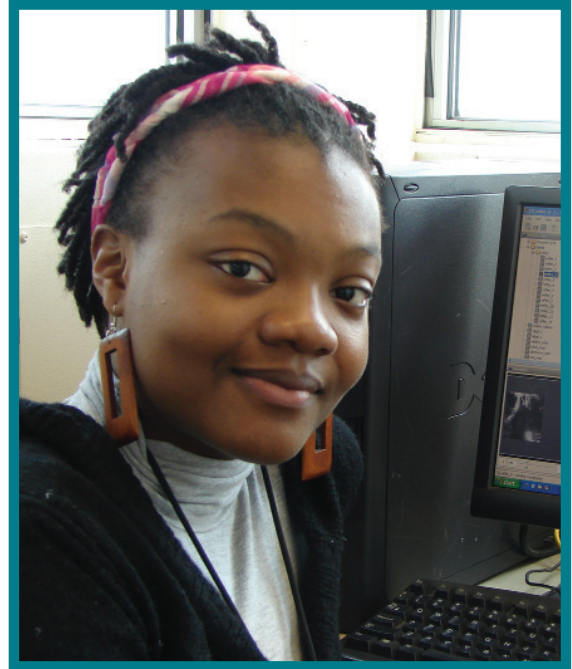
Stephen Ma
Chemical Engineering

“An engineer should apply technology and scientific findings to society.”

Stephen Ma’s role model is US Secretary of Energy Steven Chu, whom he calls “the prototype of the engaged scientist.” Stephen is bound for a PhD at the University of Delaware, where he will do research in the materials engineering area of chemical engineering, pursuing his interest in energy applications, such as solar cells and batteries. At GSOE, under Dr. Ilona Kretzschmar, he has worked on developing more efficient Dye-Sensitized Solar Cells. During an internship at the State Key Laboratory for Supramolecular Structure and Materials in Changchun, China, he worked to find suitable substrates for Surface-Enhanced Raman Spectroscopy. Stephen is a student in the Macaulay Honors College, and he has an avid interest in public policy. This led him to organize the Youth in Action Team, an internship program through which high school students learn about NYC’s political system, and won him the Edward I. Koch Scholarship for Public Service three years running.

“With the education I am getting, I will be able to make a difference.”

As a graduate of Brooklyn Tech, Nadia Makara came to the Grove School well prepared for engineering. Her focus on ESE developed when she visited her grandmother’s Jamaica farm, where she experienced a sustainable lifestyle in which nothing was wasted. “I love my classes,” she says, “and with the education I am getting, I will be able to make a difference.” Nadia plans to work to ensure a clean water supply in third world countries, and is already involved with the CCNY chapter of Engineers without Borders. Her research, in the lab of Drs. Samir Ahmed and Alex Gilerson, uses LIDAR and satellite images to identify areas with high levels of chlorophyll concentrations, which usually correlate to reduction in marine life populations. Nadia has earned the distinction of being named a NOAA Ernest F. Hollings Scholar. As part of the scholarship, she hopes to pursue an internship dealing with water quality in estuaries.



Nadia Makara
Environmental Engineering

“Sustainability should be built into all civil engineering designs.”

Diniece Peters’s interest in engineering began in high school when she took part in the ACE (Architecture, Construction and Engineering) mentor program. She was placed in an internship at the NYC School Construction Authority and later worked at Drawing Management, Inc., where the CEO, a civil engineer, became another mentor. At the Grove School, Diniece’s field is transportation engineering, with an emphasis on policy. “I want to do something that will affect people, and travel is central to our lives,” she says. Diniece, who is minoring in economics, is a Kaylie Scholar. Her research, under Dr. Allison Conway, entails examining policies for carbon reduction emission in urban freight delivery. They are comparing NYC and NYS DOT policies with those in Europe and examining the cost implications of policy decisions. Diniece is planning a master’s in transportation engineering or sustainability in the urban environment and then a PhD. “Sustainability,” she says, “should be built into all civil engineering designs.”



Diniece Peters
Civil Engineering



Alina Sabanska
Electrical Engineering

“The Grove School has given me a great knowledge base, and as I absorb the theory I will apply it all.”

Alina Sabanska began her Grove School career with a Kaylie Scholarship, which promotes undergraduate research. True to that mission, Alina has been working in the GSOE Robotics Laboratory, researching the manufacturing and programming process for an autonomous boat destined for the Autonomous Surface Vehicle Competition. As president of the CCNY Robotics Club, Alina has made it her mission to coordinate with IEEE, ASME and the Association of Computing Machinery. “So many senior design projects are interdisciplinary,” she says. “We can all learn by working together.” Another interest is the Tau Beta Pi Mindset Program at the High School for Math, Science and Engineering. There, she joins other GSOE undergraduates in guiding kids through hands-on engineering modules, motivating them towards engineering careers. In a validation of her talent and hard work, Alina was selected for the 2011 session at the MIT Materials Processing Center for Summer Research.



Ariel Teferici
Computer Engineering

“City College has prepared me for a wide range of jobs in business and technology.”

Following high school in his native Albania, Ariel Teferici came to the College of Staten Island and then transferred to City College to study computer engineering. A member of one of the finalist teams competing for the Kaylie Prize for Entrepreneurship, he took part in developing “InYourClass.com,” which is software for a web-based virtual study group. It builds on the social network concept by allowing students to find others in the same class and section. They can then communicate face to face over the web to engage in tutorial sessions, do homework together, and catch up on missed classes. Though the software is exclusive to CUNY, down the road, it could be licensed to other schools and universities, translating into a commercial success. “Through this project and my coursework,” says Ariel, “City College has prepared me for a wide range of jobs in business and technology.”

“Like me, other students are focused on getting the hard skills they need for industry.”

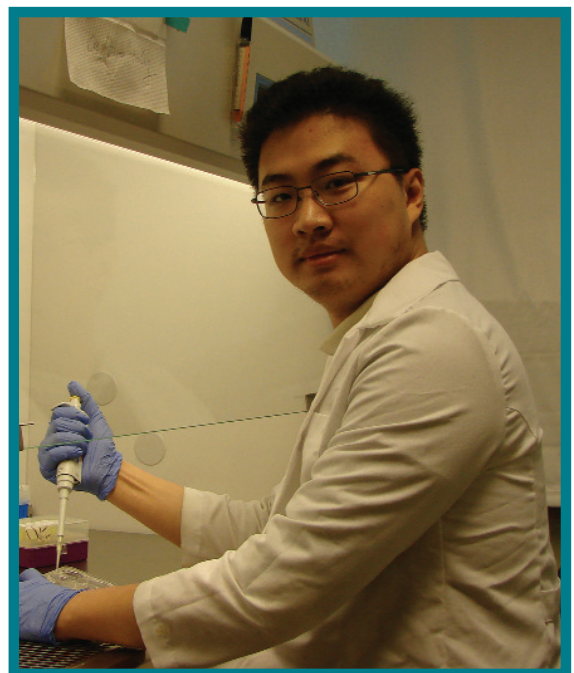
Eleyna Whittingham already had a BS in chemistry and human biology from the University of Toronto and had done research in molecular and cell biology, when she decided that it was time for a change of course. She worked in banking for two years, and became intrigued by the idea of a career in computational finance. At the Grove School, in addition to her major in computer science, Eleyna is minoring in economics and taking as many math classes as she can. “The tuition at City is reasonable, so I can take extra courses and explore all of the fields which interest me. In particular, I am able to build a stronger math background,” she says. “The professors at City are excellent,” she continues, “and my peer group is highly motivated. Like me, other students are focused on getting the hard skills they need for industry.”



Eleyna Whittingham
Computer Science

“Biomedical engineering at the Grove School is like a family.”

“As a new immigrant and the first in my family to receive a bachelor’s degree, I have pushed myself really hard,” says Jingwei Zhang. That determination has paid off. First, Jingwei was valedictorian of his high school class. Now, after amassing awards in biomedical engineering, math, and physics at the Grove School, Jingwei will pursue his doctorate in BME at Cornell. Under his mentor, Dr. Sihong Wang, Jingwei has done extensive research into the role of human mesenchymal stem cells (hMSCs) in tissue regeneration, an interest he also pursued during an internship at the Max Bergman Center of Biomaterials in Dresden, Germany. Work in the two labs has yielded his own hypothesis: that simultaneous application of cyclic hydrostatic pressure and thermal stimulation to hMSCs during initial osteogenesis could facilitate their proliferation and expedite tissue regeneration. Of his time at GSOE, Jingwei says, “Professors are excellent and easy to talk to, and students are very supportive. BME is like a family.”



Jingwei Zhang
Biomedical Engineering



GSOE Undergraduate Clubs Work to Recruit the Next Generation of Engineers

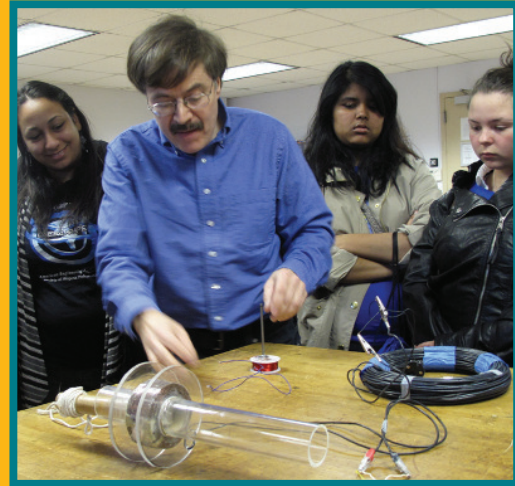
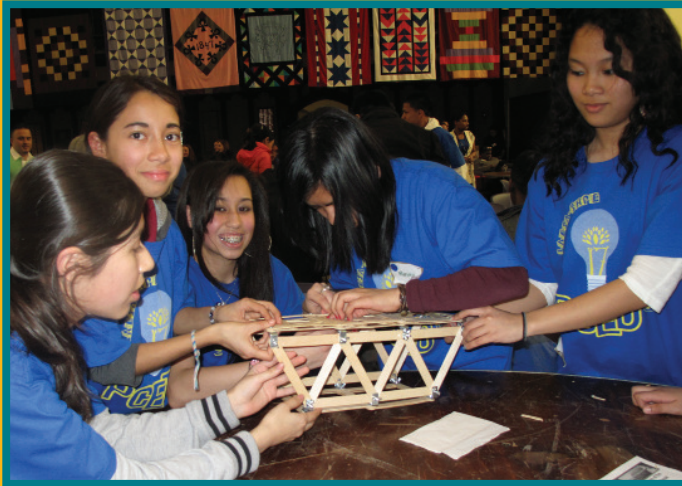
LAESA-SHPE Brings FIRST LEGO League to CCNY

On January 16, 2011, the Great Hall burst with energy, as over 300 middle and elementary school students engaged in the FIRST LEGO League (FLL) robotics competition. Students brimmed with motivation and excitement typically seen at sporting events, as approximately 400 spectators composed of high school and college students, as well as the professional engineers and teachers who coached them, cheered them on.

The event was organized by the LAESA-SHPE student organization on campus. When seeking a way to fulfill its mission of strengthening the science, technology, engineering, and math (STEM) pipeline, LAESA-SHPE partnered with FIRST (For Inspiration and Recognition of Science and Technology) and the LEGO Company and discovered the FLL competition to be a perfect vehicle. The robotics competition challenges students, ages 9-14, to use LEGO® MINDSTORMS™ to build robots that perform tasks based on an annual theme. This year's challenge, "Body Forward - Engineering Meets Medicine," sought to introduce students to the world of biomedical engineering. Students had to look at the human body, identify problems, conduct research, and work with coaches to develop innovative solutions to the problems they identified, in addition to building their robot.

LAESA-SHPE became involved with FLL in 2002. For six years, LAESA-SHPE brought eight FLL teams to a small classroom in Steinman Hall for a practice tournament which would prepare them for the New York City Borough Qualifiers. In 2008, FIRST asked LAESA-SHPE and City College to host the official FLL Qualifier Tournament for the Borough of Manhattan. This is the third year of the Qualifier at City College.

Bringing 35 FLL teams together and ensuring that the Qualifier followed the guidelines set by FIRST was an enormous challenge. For six months, LAESA-SHPE met regularly with students from CCNY's IEEE and SWE chapters and representatives from FIRST and CCNY to ensure the event was planned properly and in a timely fashion. According to LAESA-SHPE's Elizabeth Vilchis, who spearheaded the Qualifier with the club's president, Yanil Rosario, it represented a remarkable feat of engineering club cohesion. And, the effort paid off. The young women agreed that watching the highly diverse young participants as they competed with energy and focus was "overwhelming and inspiring" and that all Grove School students involved gained invaluable management experience.



National GRID Pre-College Engineering/Science Day: Tackling the Engineering Talent Gap

“We have a real problem in this country because too few people are taking on engineering as a discipline,” says Linda Johnson, Lead HR Business Partner at National GRID and a member of the GSOE Diversity in Engineering Advisory Board. “Our company is addressing this looming talent gap through the Engineering Our Future program, aimed at engaging students in STEM disciplines. We also provide mentoring, scholarships, and professional opportunities. We are committed to working with the Grove School to give as many people as we can the possibility to excel in engineering.”

This past April, Ms. Johnson played a leading role in the National GRID Pre-College Engineering/Science Day, a joint Grove School/CCNY Division of Science outreach event. LAESA-SHPE was the main student coordinating body, with assistance from the Society of Women Engineers chapter on campus. The event brought almost 500 pre-college students, teachers, guidance counselors and parents to CCNY, building on decades of pre-college outreach/recruitment initiatives by LAESA-SHPE and the Office of Student Development in the Grove School of Engineering.

The high school students, the majority of whom were female, were thoroughly engaged as they listened to a motivational address by Shelanda Clarke, Senior Engineer at National GRID, and a panel discussion which brought together Ms. Johnson,

Grove School alumna Rumana Haque (an engineer with the Port Authority of New York and New Jersey), GSOE professors Susannah Fritton and Ilona Kretzschmar, and Tanya Smith, a biochemistry PhD student. The panelists encouraged students to take advantage of the opportunities inherent in studying math and science and shared their perspectives on what it means to be a woman in both industry and academia. Breakout sessions led by four of National GRID’s recently-graduated female engineers then offered small group mentoring and an opportunity to discuss concerns, such as the work/family balance issues inherent in an engineering career.

The Grove School and the Division of Science invited participants into their laboratories, showing them what goes into cutting-edge research. Engineering clubs presented exhibits and demonstrations which these young people found fascinating. Finally, having listened, observed, and asked a huge number of questions, the students tried their hands at engineering. They broke into teams, were given materials, and challenged to design and build a bridge. The team whose bridge was able to hold the greatest weight before collapsing was declared the winner.

“This event,” says Ms. Johnson, “gave girls the opportunity to see what engineering requires. This is something the women who came before them did not have. Most of them became engineers accidentally.”

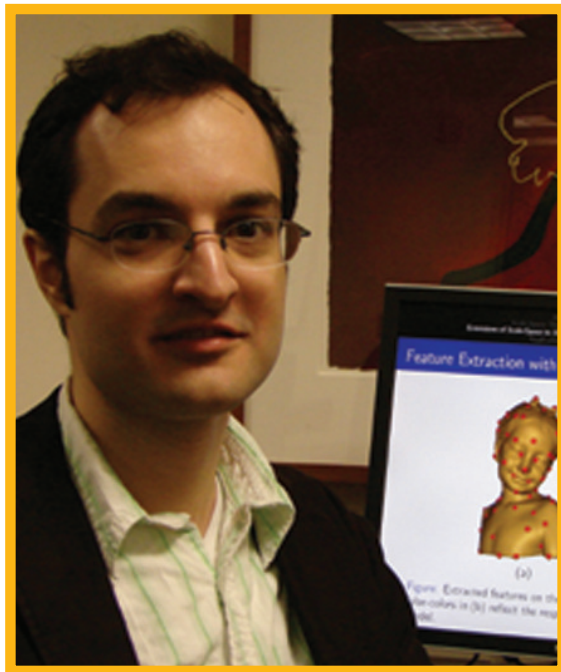
Graduate Students



Dogus Akaydin
Mechanical Engineering

“Seeing the results of our research is exciting and highly motivating.”

Dogus Akaydin is breaking new ground in fluid mechanics. Working on the project “Piezoelectric Energy Harvesting from Fluid Flow,” he and his mentors, Drs. Yiannis Andreopoulos and Niell Elvin, have developed the first aeroelectromechanical model to simulate the fluid flow, structural, and electrical domains at the same time. Their project’s goal is to convert the mechanical energy contained in fluid flow to electrical energy to power sensors measuring flowrate, temperature, and pressure. This self-powered technology would replace the batteries and/or wires currently powering hundreds of sensors in buildings and power plants. Dogus holds degrees in aeronautical engineering from Istanbul Technical University in Turkey. Upon arriving at GSOE, he worked with Dr. Andreopoulos and Dr. Sheldon Weinbaum on a new type of train which “snowboards” on fiber material along a paved track. Following his doctorate, he sees himself in academia or in a research-oriented position in aerospace or a company engaged in fluid mechanics.



Hadi Fadaifard
Computer Science

“At CUNY, I have had excellent professors and the facilities I needed to be successful.”

Hadi Fadaifard is a member of the CCNY Imaging Lab, which is under the direction of his mentor, Dr. George Wolberg. Hadi’s research interests include computer graphics, computer vision and pattern recognition. Work on his dissertation, “Multiscale Feature Extraction and Matching with Applications to 3D Face Recognition and 2D Shape Warping,” has yielded two remarkable pieces of software. He has developed a face recognition system, which employs a new scale-space based representation for 3D surfaces. The approach is motivated by the human visual system, and its performance has been shown to be superior to that of competing methods. The second piece of software is a new 2D deformation system for warping garments onto target mannequins of arbitrary poses. The motivation for the work is to enable an online shopper to drag and drop selected articles of clothing onto a single mannequin to configure and visualize outfits. The system has been used by a company to create various “virtual dressing rooms” for well-known retailers. Following his doctorate, Hadi plans a career in vision research.

“It is very rewarding to see a company use my research to make better decisions.”

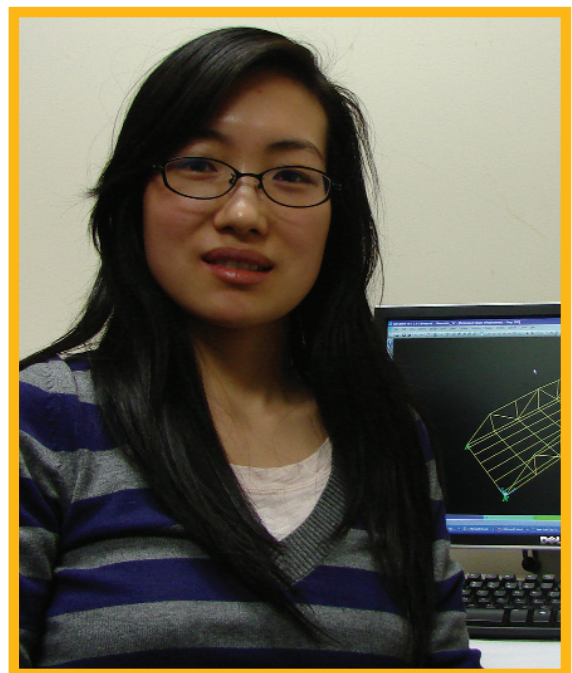
Prasad Karanjkar’s research addresses the blockage of sub-sea crude oil transport pipelines due to hydrate plug formation. He has coupled this work with experience as a flow assurance intern at Chevron Corporation. Prasad is studying the rheology and evolving structure of petroleum emulsions in order to better understand the phenomenon of agglomeration that ultimately leads to pipeline plugging. He is working with Dr. Jeffrey Morris of the Benjamin Levich Institute and Dr. Jae Lee of the GSOE Department of Chemical Engineering. His research has included innovative device development: he engineered a state-of-the-art flow rheometer to study the mechanical properties and morphological characteristics of dispersions and a high pressure flow rheometer, which was built in the machining workshop at CCNY. At Chevron, he developed a rheometer facility and was instrumental in improving flow assurance risk management strategies. “It is very rewarding,” he says, “to see a company use my research to make better decisions.”



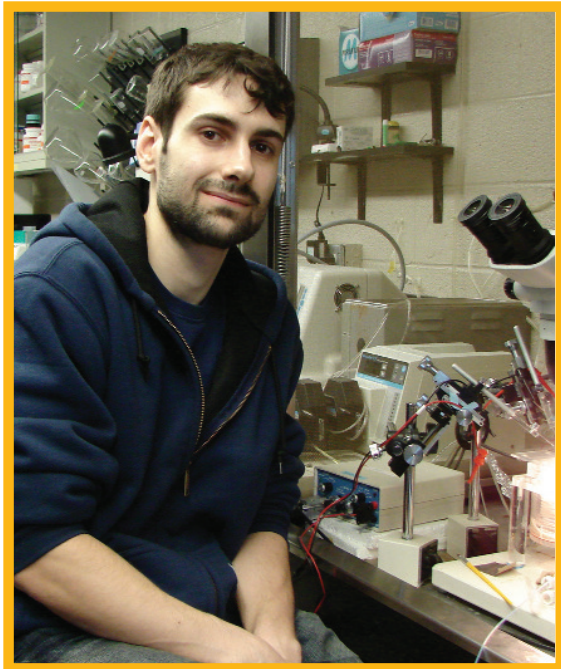
Prasad Karanjkar
Chemical Engineering

“My mentor’s work is what brought me to City College.”

While studying at Hunan University in China, Feng Miao read Dr. Michel Ghosn’s publications and decided that she wanted to do her graduate work with him. Now, she is a doctoral candidate at the Grove School. Her field, bridge reliability and redundancy, is of critical importance, given the United States’ aging infrastructure. “In our research,” she says, “we are developing complex models to simulate different types of bridges and the many variables which affect their safety.” These include structural design, load and resistance, seismic design, codes and specifications, and traffic. In addition to collaborating with Dr. Ghosn on journal publications and proceedings, Feng Miao has served as a research assistant on two projects for the National Cooperative Highway Research Program and one for NYSDOT. She has also garnered prestigious awards: the 2010 Intelligent Transportation Society of New York’s Best Essay Competition Award and the 2009 John W. Fisher Student Award from the Bridge Engineering Association.



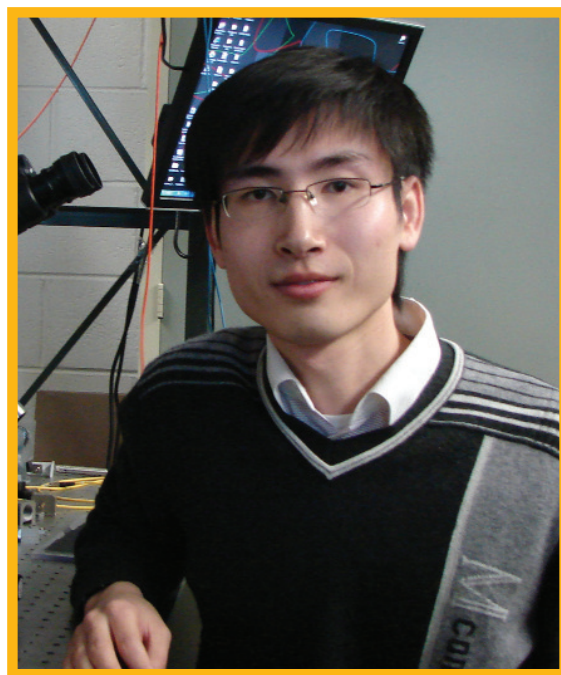
Feng Miao
Civil Engineering



Davide Reato
Biomedical Engineering

“The research atmosphere at the Grove School values initiative. I can propose my own ideas and give projects my own slant.”

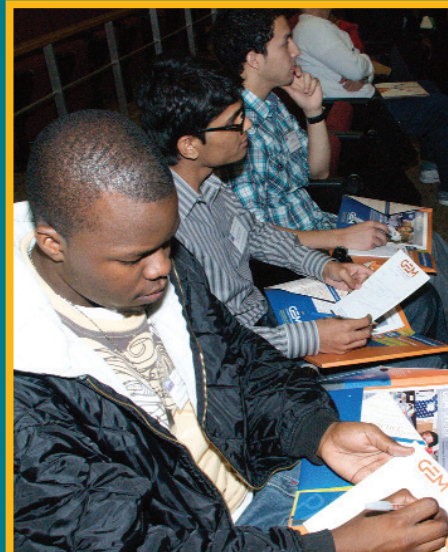
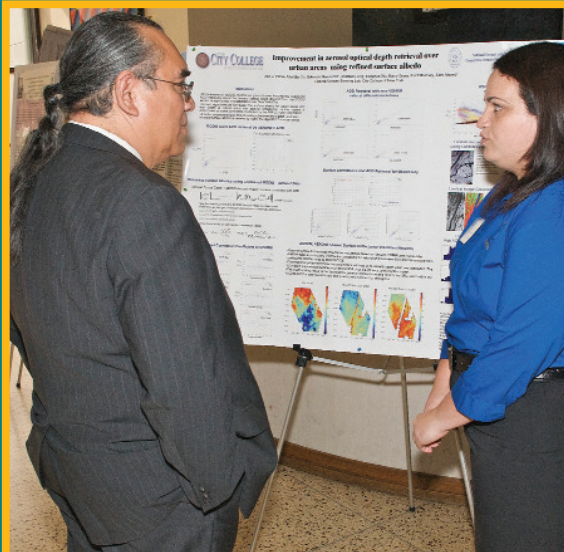
Davide Reato came to the Grove School with bachelor’s and master’s degrees in physics from the University of Padova in Italy. While at Padova, he developed an interest in neuroscience, which he is pursuing at GSOE with Drs. Lucas Parra and Marom Bikson. “Dr. Parra’s research is more theoretical, and Dr. Bikson is more focused on translational research. The combination is perfect for me,” he says. Together with his mentors, Davide is studying the basic mechanics by which electrical stimulation affects the brain, and more specifically how it is possible for very small electric fields applied extra-cranially (which is what clinicians actually do) to significantly affect neuronal network activity. Applications of this work could lead to strides in neurorehabilitation and the treatment of depression, epilepsy, and aphasia. “Ultimately,” says Davide, “we hope this research can make life better for a lot of people.”



Jing Xiao
Electrical Engineering

“Working with my mentor is very stimulating, and the atmosphere in our lab is extremely supportive.”

Jing Xiao came to the Grove School from undergraduate studies at Southeast University in China with a very strong background in mathematics and physics. He lauds the coursework at the Grove School, and is particularly enthused about research. Jing is working with his mentor, Dr. Sang-Woo Seo, on creating a promising method for integrating photonic devices with standard silicon electronic devices to realize advanced photonic integrated systems. The work he is doing in Dr. Seo’s lab could lead to a host of applications in computing and communications. Jing is also participating in Dr. Seo’s research into the use of photonics in biological applications, such as sensors which could monitor microfluidic channels. In the lab, Jing feels he has found a second family. “We all help each other,” he says, “we learn from each other, and we even spend holidays together. Dr. Seo has created a very supportive atmosphere.”



2010 CCNY GEM GRAD Lab: Easing the Path to Graduate School

For students who are often the first in their families to go to college, identifying appropriate graduate programs, navigating the application process, and funding additional years of study can be daunting. According to Jennifer Rico, a Grove School biomedical engineering major, “I thought that I would have to take my graduate studies in stages, working in industry to pay first for my master’s and then my PhD. GRAD Lab showed me that with a fellowship I could go straight to graduate school. It also gave me pointers on how to succeed in applying for fellowships and admission to graduate programs.”

GEM (The National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc.) connects future graduate students to a national network of universities and employers. GEM fellowships couple financial support for master’s and PhD students with internships at partner organizations. GRAD Lab (Getting Ready for Advanced Degrees Laboratory) is a GEM networking and informational program. Held at CCNY last fall, it drew over 150 aspiring graduate students, exhibitors, and external partners.

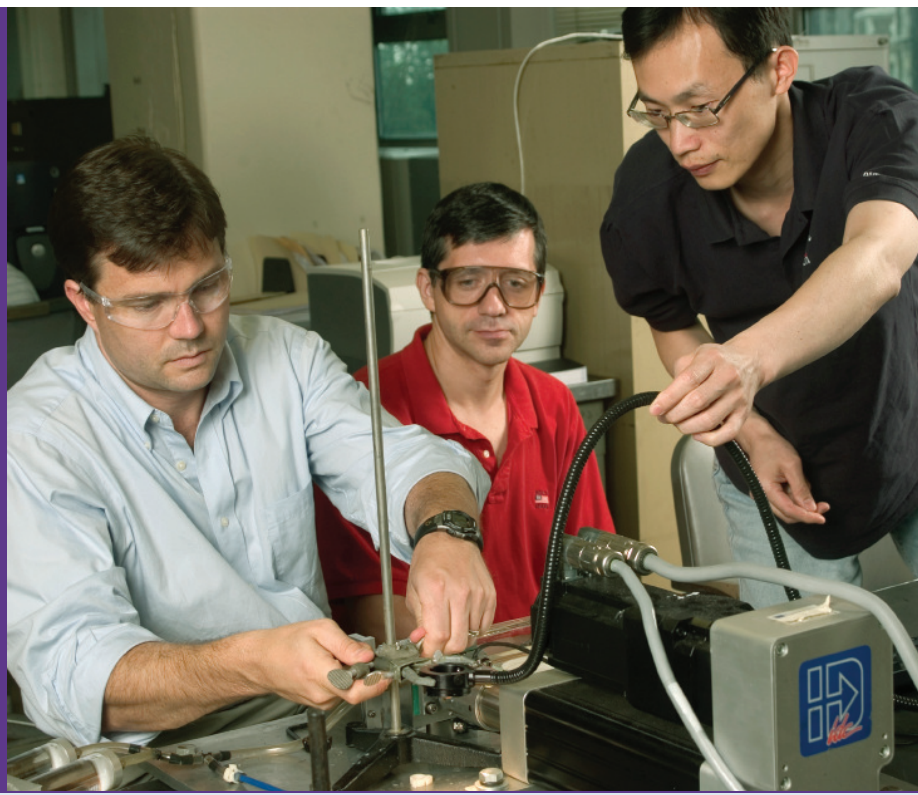
GRAD Lab brought undergraduates together with GEM personnel, Grove School and Division of Science faculty, representatives of other New York universities and research centers, and top graduate students. “We have wonderful young alumni who had a very positive GSOE experience. They are giving back in many

ways,” says Rawlins Beharry, Director of GSOE’s Office of Student Development. “It is affirming for students contemplating graduate school to meet alumni who are succeeding through graduate education.”

In a panel presentation, GSOE electrical engineering graduate Pierre Bouzi, now a doctoral student at Princeton University, cited his life story in assuring students that though the road to the PhD is not easy, it is attainable, no matter what your background. At the GRAD Lab, Dr. Maribel Vazquez of the Grove School’s Biomedical Engineering Department described her career path, which included a GEM fellowship. “It would have helped me a great deal as an undergraduate to have had the opportunity to talk to GEM alumni before I applied to the program, or even just to talk to SOMEONE about graduate school,” she says. “These types of programs were sorely lacking for me, and so I always participate if I can.”

For Jennifer Rico, the practical take-away from GRAD Lab was huge. The event impressed her with the importance of having a faculty mentor and engaging in undergraduate research, summer internships, and community service. She learned to start preparing for the GREs early and where to find Web resources for filling out applications and writing her personal statement. “I wish that GRAD Lab could be held at City every year,” she concluded. “It teaches invaluable things you don’t learn in class.”

Grove School Faculty



In 2010-2011, seven new additions to the Grove School faculty enhanced an already distinguished group of CCNY veterans and young instructors.

Civil engineer Lawrence Bank is an internationally recognized leader in structural design. Matthew Daus, Camille Kanga, and Alison Conway bring new talents to transportation, an area which has always been strong at the Grove School and is achieving even greater importance as the School focuses on the urban environment. Simon Kelly augments the impressive biomedical engineering faculty with his expertise in neuroscience. Mike Piasecki's expertise in hydroinformatics will further the School's growing prominence in environmental engineering. And, last but not least, Peyman Honarmandi brings a background in industrial engineering and mechanobiology to the mechanical engineering department.

Each of these highly qualified individuals will enrich the experience of Grove School students and contribute to the upward trajectory of GSOE as a research institution. CCNY is proud to welcome them.

Lawrence C. Bank: A Leading Civil Engineer is CCNY's New Associate Provost for Research

Dr. Larry Bank, a distinguished structural engineer, has taken on CCNY's top research job and has joined the Grove School as a professor of civil engineering. Dr. Bank's top-flight credentials include a BS from Technion in Israel and an MS, MPhil, and PhD from Columbia University. During an extensive research and teaching career, he served on the faculty at Rensselaer Polytechnic Institute, the Catholic University of America, and the University of Wisconsin-Madison. An expert in fiber composite materials applications, he is the author of the textbook, "Composites for Construction: Structural Design with FRP Materials." Dr. Bank is a registered professional engineer in Wisconsin and the District of Columbia and holds several patents. He is president of the International Institute for FRP Composites in Construction, and he has been honored with three of ASCE's most prestigious awards.



Prior to coming to CCNY, Dr. Bank was a program director at the National Science Foundation in the area of structural materials and mechanics. He therefore brings to his new post an understanding of the funding equation from the perspective of granting agencies as well as faculty researchers. One of his major goals is to encourage Grove School faculty to collaborate with other disciplines, institutions and industry on proposals for mega-grants. "CUNY is breaking through as a major research university," he says. As examples, he cites the new CUNY Remote Sensing of the Earth Science and Technology (CUNY CREST) Institute; the National Research Council ranking of the GSOE graduate program in biomedical engineering as fourth in the nation out of a field of 77; and the establishment, under an NSF Industry/University Cooperative Research Center award, of the Center for Metamaterials, in which CUNY heads a consortium of three other universities and 15 companies. "Over the next five years, I look forward to helping the Grove School replicate this model by pursuing similar large-scale grants from NSF's Science & Technology Centers and Engineering Research Centers programs," he says.

Dr. Bank will be a hands-on partner in these efforts. "The GSOE faculty is impressive," he says, "but we need to increase the visibility of its achievements in order to promote its success." He plans to be accessible to faculty at all levels, serving as a sounding board for senior faculty, assisting mid-level faculty in structuring their research to remain competitive, and guiding young instructors in starting their research careers. In administering his budget, Dr. Bank wants to develop policies and procedures which will use funds strategically to support CCNY's educational mission and research across the board. "We can use our resources," he says, "to encourage cross-disciplinary teams and a much more holistic approach to engineering and scientific education."

"CUNY is breaking through as a major research university."



Matthew Daus: From the Fray of New York City Government to the Classrooms of the Grove School

CCNY's School of Engineering has always excelled at training transportation engineers. Technical skills, however, are only part of the equation: transportation engineering is heavily enmeshed in policy and politics, and controversy often goes with the territory.

That is where Distinguished Lecturer Matthew Daus comes in. In 2001, Mr. Daus was appointed chairman of the New York City Taxi and Limousine Commission (TLC). He was one of the youngest commissioners in NYC history. Eight and a half years later, he left the TLC as its longest serving chief executive. Mr. Daus returned to practicing law, but, he says, "I wanted to show young people how government works and share my experience of real life transportation context and policy." That brought him to the University Transportation Research Center (UTRC) and the Grove School. It was also a way to give back to CUNY. A proud alumnus of Brooklyn College, he holds a JD from Touro School of Law and a Masters of Law from N.Y.U.

Mr. Daus is respected in the US and abroad as an expert in the for-hire ground transportation industry, which includes the taxi-cab, black car, livery limousine, paratransit and commuter van businesses. He serves as President of the International Association of Transportation Regulators, a group dedicated to best practices and positive change in the industry.

On 9/11, Mr. Daus had been TLC chair for barely three weeks. The crisis catapulted him into meetings with Mayor Giuliani and New York's governor and senators, who were striving to bring the city back to normal. He also undertook the tumultuous everyday work of running a 480 person agency which oversees some 100,000 drivers, over 50,000 vehicles, and over 900 businesses.

At the TLC, Mr. Daus designed and implemented unprecedented safety, technology, customer service, and environmental initiatives. "The public safety enhancements we fought for precipitated a taxi strike, but the rules we passed have been replicated in cities around the country. And, no TLC had ever gotten into sustainability," he says. "We created a movement." He also streamlined the agency and earned the city hundreds of millions of dollars through medallion sales.

At UTRC, Mr. Daus fills the need for expertise and research in the taxi industry, a long neglected part of the urban transportation equation. In his classes on transportation policy, sustainable transportation, and for hire ground transportation regulation, Mr. Daus replicates the policy debates which go on in government, instilling writing and speaking skills in his students and motivating them to go into public service.

Camille Kamga, Assistant Professor of Civil Engineering PhD, The City University of New York

Camille Kamga, the acting director of the Region 2 University Transportation Research Center (UTRC), has joined the Grove School Department of Civil Engineering. UTRC is one of ten national centers, established in 1987, in recognition that transportation plays a key role in the nation's economy and in the quality of people's lives. It includes major universities in New York, New Jersey, and Puerto Rico; CUNY is the lead institution. Dr. Kamga has been a member of UTRC since 1997. He works closely with federal, regional, and state transportation planning and policy organizations, implementing the Center's mission of education, research, and technology transfer. This gives him an unparalleled knowledge of issues which affect transportation in New York and New Jersey. He now brings that expertise to the Grove School's civil engineering classrooms.

Dr. Kamga has been involved in research projects for New Jersey, New York State, the New York Metropolitan

Transportation Council, the New York State Energy Research and Development Authority, and the New York City Department of Transportation, as well as for transit agencies such as the Metropolitan Transportation Authority. "These transportation entities use the Center to tap into the resources of academia," he says. "Our current projects emphasize transportation performance, informational infrastructure, and sustainability." Dr. Kamga's personal research interest is in Intelligent Transportation Systems (ITS). He studies how new technologies can be implemented to make all aspects of transportation smarter, safer, more efficient, sustainable, and user friendly. An acknowledged expert in his field, Dr. Kamga serves as a member of the Board of Directors of the Intelligent Transportation Society of NY. He is the 2006 recipient of the National Pikarsky Award for Outstanding Dissertation in Science and Technology from the Council of University Transportation Centers.

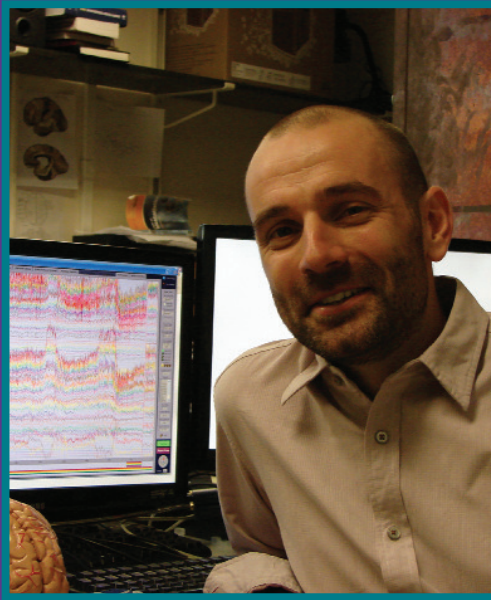
Alison Conway, Assistant Professor of Civil Engineering PhD, the University of Texas at Austin

Alison Conway is an expert in commercial freight policy and logistics with a strong commitment to building more sustainable cities. When asked what brought her to CCNY, she responds, "The most interesting transportation problems are in urban areas, and New York is the nation's most complex transportation hub. Also, having the University Transportation Research Center (UTRC) on campus was a prime draw. It is a great source of mentors and collaborators."

Currently, Dr. Conway is studying the impact of creating more bike lanes in Manhattan. Her research, in collaboration with colleagues at UConn and Auburn University, is funded by the US DOT through the Center for Transportation and Livable Systems at the University of Connecticut. It emphasizes resolving the safety issues which arise when bicycles share curbside space with trucks loading and unloading freight. Dr. Conway has pur-

sued research with a faculty member at the University of Westminster in England, and she is hosting an exchange student from the French National School for Public Works, who has been studying the use of bicycle-type vehicles to deliver freight. "In the last ten years," she says, "Europe has done a huge amount of research in urban freight practices."

Dr. Conway is an enthusiastic teacher, who thoroughly enjoys her courses in transportation engineering and planning. "The students are very lively," she says. "They are working with me on independent study and contributing to my research." She is very active in professional organizations as a member of the Transportation Research Board (TRB), the Institute of Transportation Engineers (ITE), and the Women's Transportation Seminar (WTS). She also serves as a Young Member on TRB's Freight Data and Truck Size and Weight Standing Committees.



Michael Piasecki, Associate Professor of Civil and Environmental Engineering PhD, University of Michigan at Ann Arbor

Dr. Michael Piasecki was drawn to the Grove School by the CUNY Environmental CrossRoads Initiative. One of the flagships of CUNY's Decade of Science, the Initiative is dedicated to interdisciplinary research in which scientists, technology experts, engineers, and policymakers work to solve strategic environmental challenges facing the planet in the 21st Century. Needless to say, hydrology is a major focus. Dr. Piasecki, who taught for over a decade at Drexel University and is an Associate Editor of the *Journal of Hydroinformatics*, *Earth Science Informatics*, and *Computers and Geosciences*, is a perfect fit.

"The Environmental CrossRoads Initiative," says Dr. Piasecki, "is evolving a research program in which hydroinformatics, my area of interest, has a good home. It offers me the prospect of further development and of expanding into more exciting research opportunities. And, I like the challenge of participating in something that has to be built. CUNY also offered me a slate of col-

leagues across the system with whom I was able to link up immediately. This provides the opportunity to think bigger in larger research teams."

According to the Environmental CrossRoads Initiative, hydrology now requires "a major reformulation of our thinking and a purposeful move toward synthesis and systematic observation." This synthesis is where Dr. Piasecki will prove invaluable. "To understand hydrology," he says, "we have to be able to bring all data sources together. Data management and synthesis are the infrastructure of new science. Without them, we cannot formulate the right questions." Dr. Piasecki's work on knowledge representation and key-word ontologies as applied to the hydrologic sciences will help colleagues access and interpret the vast quantity of data flowing in from multiple sources. Down the road he hopes to establish an environmental data node for the CrossRoads Initiative and, ultimately, the whole of CUNY.

Simon Kelly, Assistant Professor of Biomedical Engineering PhD, University College Dublin

In his research, Dr. Simon Kelly measures and characterizes perceptual and cognitive brain signals that relate to behavior. In neuroscience, Dr. Kelly studies the “details” of attention and the origin of the brain’s “system failures.” In neural engineering, he focuses on brain computer interfacing and cognitive training through neurofeedback. His tools are psychophysics and electrophysiological (EEG) recordings in humans.

Dr. Kelly holds a BE in electronic engineering and a PhD in BME from University College Dublin. His interest in brain disorders and helping people who have them led to two post-docs, the first in cognitive neurophysiology at the Nathan Kline Institute for Psychiatric Research and the second at the Mahoney-Keck Center for Brain & Behavior Research at Columbia University. “Once engineers and psychologists become comfortable talking to each other, it leads to a great collaboration,” he says.

The practical ramifications of Dr. Kelly’s research are numerous. In the area of attention, his work applies to the drift affecting

people in jobs such as air traffic control. “Scalp signals that predict lapses of attention can potentially be used to head them off before a catastrophic event,” he says. Another pertinent area is ADHD and evaluating the changes in behavioral performance due to Ritalin. “Engineers,” he says, “are very useful in neuroscience. For instance, scalp-recorded brain potentials are covered in noise. Engineers have ways to extract the underlying brain signals.” Dr. Kelly’s research into brain computer interfacing could bring new hope to people who are “locked in” by allowing them to communicate through brain signals.

“I have joined the Grove School at the perfect time in my research,” he says. “The next stage will require a more quantitative approach involving modeling. The neural engineering faculty here is very strong, and it is exciting to partner with Drs. Lucas Parra and Marom Bikson who are experts in this area. They, in turn, are pleased to have a colleague from cognitive neuroscience.”

Peyman Honarmandi, Lecturer in Mechanical Engineering PhD, University of Toronto

Though he knew that he wanted to go into academia, Peyman Honarmandi decided to spend some time in industry after his bachelor’s and master’s studies. “As an undergraduate,” he says, “I enjoyed the professors who could relate the coursework to hands-on experience. I think that this is particularly important in mechanical engineering.” He spent four years in R&D in the auto industry, first in his native Iran and then in Canada. He then returned to his studies, pursuing his doctorate at the University of Toronto in mechanical and industrial engineering. There followed a post-doc in the Mechanobiology Laboratory at MIT, where Dr. Honarmandi applied the expertise in MEMS he had acquired in the University of Toronto’s Vibration and Computational Dynamics Laboratory to his growing interest in the computational, theoretical, and experimental aspects of biomedical engineering.

After years of intensive research, Dr. Honarmandi missed the classroom, and the post of lecturer in the Grove School’s mechanical engineering department appealed to his passion for teaching. “The Grove School students are mature and motivated. They persevere and work hard,” he says. “Those are the first requirements for success.” Dr. Honarmandi teaches Engineering Mechanics and Mechanics of Materials to over 160 students in each semester and works with Dr. Charles Watkins on the Senior Design Project seminar. “As a teacher,” he says, “I like to be accessible to my students. They are always free to stop by, and in addition to e-mail, I have created a forum on my course websites where they can ask questions.”

Faculty Achievements

ABET Accreditation Makes 2010-2011 a Banner Year for GSOE Faculty

Below, you will read of some of the GSOE faculty's individual achievements. In addition, this year, our faculty members can lay claim to a tremendous collective accomplishment: the most successful ABET accreditation cycle in the School's history. All eight of our programs have been accredited for the maximum of six years. Dean Barba wishes to acknowledge the hard work and leadership provided by Associate Dean Ardie Walser and the department chairs and program directors:

John Tarbell, Biomedical Engineering

Claire McKnight, Civil Engineering

Alexander Couzis, Chemical Engineering

Douglas Troeger, Computer Science

Sam Fenster, Computer Engineering

Roger Dorsinville, Electrical Engineering

Fred Moshary, Earth System Science

and Environmental Engineering

Feridun Delale, Mechanical Engineering

News From the Departments

Biomedical Engineering

Luis Cardoso

Herbert Castillo Award, Mexican Institute of Science, for outstanding achievements of a young scientist of Mexican heritage.

Mitchell B. Schaffler

Fellow, American Institute of Medical and Biological Engineers (AIMBE).

Remodeling in Bone Award, International Bone and Mineral Society (IBMS).

Sihong Wang

NSF CAREER award.

Chemical Engineering

Dan Steingart

Implemented and supervised the first Kaylie Prize in Entrepreneurship competition.

Computer Science

Gilbert Baumslag

Organizer (with Sean Cleary) conference funded by the National Science Foundation. Finitely Presented Solvable Groups: Joining the Geometric with the Combinatorial,

The City College of New York. Professor Baumslag spoke on finitely generated metabelian groups and commutative algebra.

Invited talk, Reflections on One-relator Groups, CRM Montreal, September 2010.

Invited talk, Finitely Generated Metabelian and Free Metabelian Groups, University of Paris 7.

Invited talk, Random Thoughts About One-relator Groups, University of Orsay.

Invited lecture series, University of Cape Town: Games, Groups, Knots and Cryptography; Solving Equations, Cryptography and Hilbert's Tenth Problem; Groups Given by Finite Presentations.

Peter Brass

Founding member of editorial board of the e-Journal, *Journal of Computational Geometry*

Invited talk, Geometric Problems for Sensor Networks and Mobile Robots, Bernoulli Conference on Discrete and Computational Geometry, Lausanne.

Nelly Fazio

General Co-chair, 14th International Conference on Practice and Theory in Public Key Cryptography, Taormina, Italy.
Co-Editor, Public Key Cryptography - PKC 2011, Proceedings LNCS 6571.

Organizer (with William Skeith), Security and Privacy Day, Conference at The City College of New York, CUNY.

Izidor Gertner

Editorial Board Member, ISRN Signal Processing, Hindawi Publishing Corporation.

Program Committee Member, Automatic Target Recognition Conference, SPIE Defense, Security+Sensing.

Session Chair, ATR Performance Evaluations, Automatic Target Recognition Conference, SPIE Defense, Security+Sensing.

Abbe Mowshowitz

Co-chairman, 2010 Annual Conference of the International Technology Alliance (sponsored by the US Army Research Lab and the UK Ministry of Defense), Imperial College London, UK.

Invited speaker, Roundtable on Cognition-Centric Enterprises Research (sponsored by Lockheed-Martin), Stevens Institute of Technology, Hoboken, NJ.

Editorial Boards, AI and Society and Axioms.

Kaliappa Ravindran

Senior Faculty Fellow, Naval Research Lab (ONR).

Visiting Scientist, General Motors Research Lab.

Organizer, IEEE International Workshop on Intelligent Networking for Communications and Reconfigurations (IAM-COM), Bangalore, India (jointly with Dr. K.A. Kwiat of Air Force Research Lab and Dr. R. Bharadwaj of Naval Research Lab, USA).

Patent for a Method and Apparatus for Timing of Information Flow in a Distributed System (with Dr. K. A. Kwiat and Dr. A. Sabbir).

William Skeith

Invited talk, Seminar on Symbolic Computations and Post-Quantum Cryptography (SCPQ), Stevens Institute of Technology, Hoboken NJ. Talk title: A New Learning Problem with Applications to Cryptography.

<http://www.stevens.edu/algebraic/SCPQ/>

Organizer (with Nelly Fazio), Security and Privacy Day, Conference at The City College of New York, CUNY.

Zhigang Zhu

Seminar, Multi-View and Multi-Modal Sensing: Representation, Exploitation and Integration, Air Force Research Laboratory, Wright Patterson.

Invited talk, Video Mosaicing and Multimodal Sensing, Hofstra University.

Faculty Fellow, 2011 Air Force Summer Faculty

Fellowship Program (SFFP), bringing two PhD students (Edgardo Molina and Tao Wang) to work with him at the Air Force Research Laboratory.

Editorial Board Member, ISRN Machine Vision, Hindawi Publishing Corporation.

Technical Editor, IEEE/ASME Transactions on Mechatronics.

Electrical Engineering**Nicholas Madamopoulos**

General Chair, 2010 Sarnoff Symposium.

Member, Technical Program Committee, Broadband Access Communication Technologies IV, SPIE-OPTO 2010.

Tarek Saadawi

Editor, May 2011 issue of *Cyber Infrastructure Protection*, Strategic Studies Institute.

Guest co-editor, July 2011 issue of the *Journal of Applied Research*, Special on Mobile Ad-Hoc Wireless Networks.

Organizer and General Co-Chair, Conference on Cyber Infrastructure Protection, CCNY.

Jizhong Xiao

Mentor, CCNY robotics team (EE students William Morris, Igor Labutov, Carlos Jaramillo) that won first place in the design competition at the 18th Annual Intelligent Ground Vehicle Competition (IGVC).

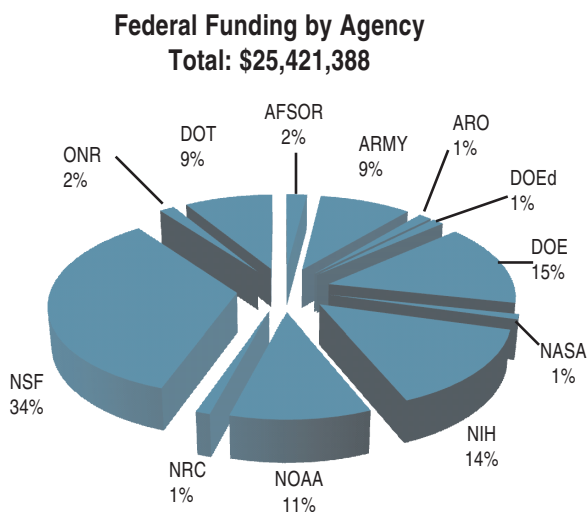
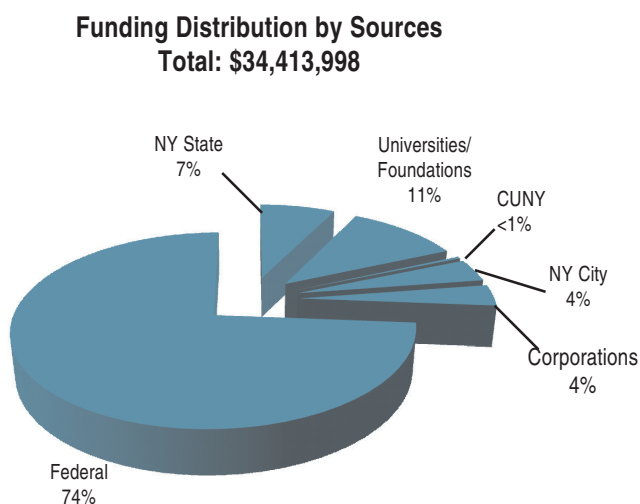
2011 CCNY Mentoring Award.

Mechanical Engineering**Jorge Gonzalez**

Elected Fellow, American Society of Mechanical Engineers (ASME)

external funding

During the 2010-2011 academic year, external funding at the Grove School reached a new high of \$34,413,998. This is a huge vote of confidence in the work being done in GSOE laboratories. The School is making an immense contribution to CUNY's Decade of Science. And, in true CCNY tradition, undergraduates are integrated into cutting-edge research, alongside graduate students and world-class professors, and the teaching mission is never forgotten.



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

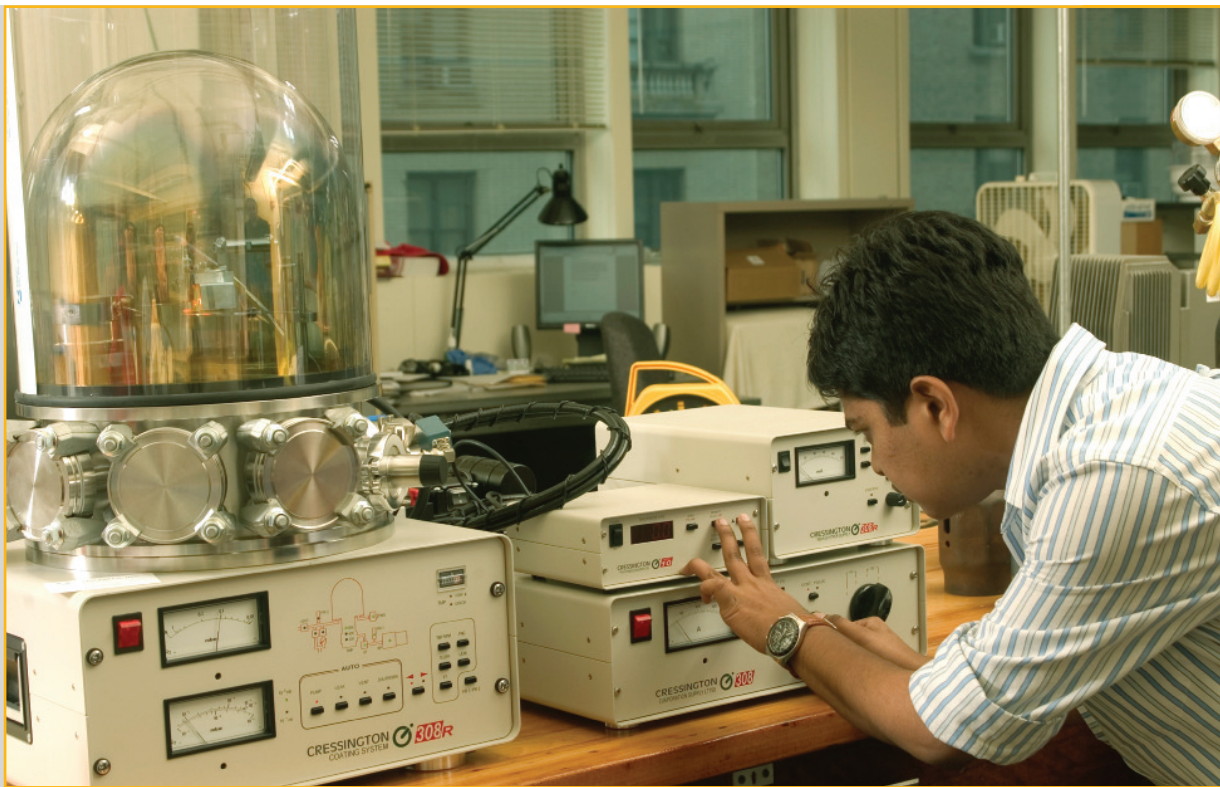
CUNY Institute for Transportation Systems

Center for Water Resources and Environmental Research

CUNY Energy Institute

Institute for Environmental Science and Engineering

Center for Advanced Engineering Design and Development



Agrawal, Anil and Kamga, Camille, US DEPT OF TRANS, \$50,000, Finite Element Simulation of Truck Impacts on Highway Bridge Piers

Agrawal, Anil and Liu, Huabei, NYS DEPT OF TRANS, \$44,880, Verification/Development of Seismic Design Specifications for Downstate Zone

Agrawal, Anil, NYS DEPT OF TRANS, \$194,620, University Transportation Research

Agrawal, Anil, NYC DOT, \$122,827, Steinway Street Bridge Investigation

Ahmed, Samir; Gilerson, Alex; Gross, Barry; and Moshary, Fred, ONR, \$300,000, Exploring Techniques for Improving Retrievals of Bio-Optical Properties of Coastal Waters

Ahmed, Samir, ONR, \$70,000, Development of a Near-Real Time Monitoring Tool of Satellite Ocean Color Data Quality Based on AERONET-OC Data

Ahmed, Samir; Gross, Barry; Grossberg Michael; Khanbilvardi, Reza M.; and Moshary, Fred, NO. CAROLINA A&T, \$526,040, NOAA Interdisciplinary Scientific Environmental Technology (ISET) Cooperative Research Education Center

Andreopoulos, Yiannis and Elvin, Niell, NSF, \$364,684, Fluidic Energy Harvester: Aero ElectroMechanical Interaction in Piezoelectric

Andreopoulos, Yiannis and Lee, Taehun, NRC, \$150,000, Introducing a Nuclear Engineering Concentration Into the Mechanical and Chemical Engineering Programs at The City College of New York

Banerjee, Sanjoy, DOE, \$2,997,133, Low Cost GRID-Scale Electrical Storage Using a Flow- Assisted Rechargeable Zinc-Manganese Oxide Battery

Banerjee, Sanjoy, NRC, \$7,000, Support for Administrative Assistant for Advisory Committee

Banerjee, Sanjoy and Steingart, Daniel, NYS ERDA, \$1,000,000, Flow Assisted Nickel- Zinc Battery for Stationary Applications Development and Demonstration

Barba, Joseph, NYS ED DEPT, \$110,870, CCNY/SCRIP STEP Program

Barba, Joseph, AMNH, \$25,000, Science, Technology, Engineering and Mathematics (STEM) Institute

- Bikson, Marom**, WALLACE RESEARCH FDT, \$145,000, Early Career Translational Research
- Bobker, Michael**, DOE, \$160,610, Commercial Building Operator Certification Program
- Bobker, Michael**, NYS ERDA, \$95,000, CUNY Benchmarking Help Center
- Bobker, Michael**, NEEC, \$120,811, US DOE Curriculum Development, Sub-award from the Building Operator Certification Program (BOC)
- Bobker, Michael**, PNNL, \$98,274, Building Returning Curriculum
- Brass, Peter**, NSF, \$299,039, Strategy Problems for Robots and Sensor Networks
- Cardoso, Luis**, NIH, \$147,114, Age Related Bone Loss Assessed by Ultrasound Tomography: Bone Quality Beyond BMD
- Chen, Cynthia and Kamga, Camille**, NYC DOT, \$147,918, Effectiveness of Traffic Calming Measures
- Conway, Alison**, US DEPT OF TRANS, \$20,500, The Dwight David Eisenhower Transportation Fellowship Program
- Conway, Alison**, PSC-CUNY, \$5,622, Characterizing Curbside Truck-Bicycle Interactions in New York City
- Couzis, Alexander**, DOE, \$5,000, Colloid Assistance for Alkaline MnO₂ Nanoparticles
- 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
- Couzis, Alexander**, CON EDISON, \$22,500, Colloid Assistance for Alkaline MnO₂ Nanoparticles
- Crouse, David**, NSF, \$93,000, NSF IUCRC Metamaterials
- Crouse, David**, US NAVY, \$2,500, The Navy Project
- Crouse, David**, NYSTAR, \$921,200, CAT: Center For Advanced Technology
- Crouse, David**, CORNELL UNIV, \$62,245, Development of Light Controlling Techniques in Optoelectronic Devices
- Crouse, David**, NORTHROP GRUMMAN, \$40,000, Industry/University Cooperative Research Center
- Crouse, David**, CORNING INC, \$10,000, Industry/University Cooperative Research Center
- Crouse, David**, GOODRICH ISR SYSTEMS, \$40,000, Industry/University Cooperative Research Center
- Delale, Feridun**, ARMY, \$2,220,840, Advanced Lightweight Multi-Threat Composite Armor Technology
- Delale, Feridun**, ARMY, \$24,531, Survivability and Protection for Armored Vehicles and Personnel
- Delale, Feridun**, GREATER SYRACUSE-COMMERCE, \$2,000, Nanoscale Nylon RTA 3445
- Diyamandoglu, Vasil**, NYC DEPT OF SANITATION, \$323,510, Materials Exchange, Reuse and Sustainability in New York City
- Diyamandoglu, Vasil**, NYC DEPT OF SANITATION, \$140,953, NY Wastematch Program
- Diyamandoglu, Vasil**, PSC-CUNY, \$5,999, Application of UV Irradiation in Water Purification - Decomposition of Organic Carbon and Chlorine Residual
- Diyamandoglu, Vasil**, TECHLAW, \$6,046, Development of a Bilingual Materials Exchange System for Puerto Rico
- Dorsinville, Roger**, CORNING INC, \$25,000, Characterization of Carbon Composites
- Dorsinville, Roger**, PHOEBUS OPTOELECTRONICS, \$90,500, Polarimetric Multiwavelength Focal Plane Arrays for ACE and CLARREO
- Dorsinville, Roger**, PHOEBUS OPTOELECTRONICS, \$260,000, Science and Application of Metamaterials to Interceptor Sensors

Elvin, Niell, MICHIGAN TECH UNIV, \$17,800, Self Powered Fatigue Sensor

Fazio, Nelly, PSC-CUNY, \$5,999, Steganography for the Multi-Recipient Setting

Fekete, Balazs, UNEP, \$12,500, Global Environment Monitoring System

Fillos, John and Wittig, Ann, NYC DEP, \$531,858, Mixing and Odor Abatement

Fillos, John, PASSAIC VALLEY SEWERAGE, \$46,997, Passaic Valley Sewerage Comissioners

Fillos, John, PASSAIC VALLEY SEWERAGE, \$37,515, Passaic Valley Sewerage Comissioners

Fritton, Susannah, PSC-CUNY, \$5,995, 3D Visualization and Quantification of Bone Blood Vessels

Fritton, Susannah, and Payton, Phillip, CORNELL UNIV, \$24,500, NY State NASA Space Grant College and Fellowship Program

Fu, Bingmei, NIH, \$152,460, Tumor Cell Arrest and Adhesion in the Microcirculation

Ghosn, Michel, NCHRP, \$200,000, NCHRP 12-86: Bridge System Safety and Redundancy

Gilerson, Alex, U OF TEXAS, \$204,647, Biological Response to Polarized Underwater Light Field

Gladkova, Irina ; Grossberg, Michael; and Khanbilvardi, Reza M., NOAA, \$80,000, Using Graphyte to Create a Platform for NOAA Collaborative Scientific Computing

Gonzalez, Jorge, NSF, \$144,490.00, Understanding Impacts of Climate Change on Energy Infrastructure in Urbanized Coastal Area

Gonzalez, Jorge, US DEPT OF ED, \$290,930, Promoting Postbaccalaureate Opportunities for Hispanic Americans (PPOHA)

Gosser, Yuying, NIST, \$14,960, Fiscal Year 2011Summer Undergraduate Research Fellowship (SURF) NIST Gaithersburg

Grossberg, Michael; Gladkova, Irina; and Roytman, Leonid, NOAA, \$60,000, Teaming Game Technology with NOAA HPC Resources for Collaborative Data Exploration and Research Prototyping

Grossberg, Michael; Gladkova, Irina; Khanbilvardi, Reza M.; and Roytman Leonid, NOAA, \$40,000, Graphyte Toolkit as Online Lab for NOAA Distance Learning

Grossberg, Michael, MEM SLOAN KETTERING, \$6,334, Semi-Automatic Segmentation of Anatomical Structures from CT Images for Radiation Treatment Planning

Jiji, Latif, PSC-CUNY, \$2,999, Passive Cooling of Outdoor Electronic Enclosures Using PCM

Kamga, Camille, US DEPT OF TRANS, \$2,082,800, UTRC- Admin Yr 23

Kamga, Camille and Agrawal, Anil, NYS DEPT OF TRANS, \$57,800, Bridge-Vehicle Impact Assesment

Kamga, Camille, NYS DEPT OF TRANS, \$29,901, UTRC: Long Island 2035: Building Public Consensus Around a Sustainable Future, Phase 1

Kamga, Camille, NYS ERDA, \$74,913, Underground Pneumatic Transport of Municipal Solid Waste and Recyclabes Using New York City Subway Infrastructure

Kamga, Camille, CTR CLIMATE STRATEGIES, \$1,135, Residential-Commercial-Industrial Sector

Kamga, Camille, COLLEGE OF NEW JERSEY, \$74,168, Innovative and Effective Techniques for Locating Underground Conduits

Kawaguchi, Akira, PSC-CUNY, \$3,497, Extending Community Support System for Disabled Bus Riders

Kawaji, Masahiro, NRC, \$110,000, New York-Nuclear Research Opportunities Program (NY-NROP)

Khanbilvardi, Reza M., NOAA, \$2,221,860, NOAA Cooperative Remote Sensing Science & Technology Center (CREST)

- Khanbilvardi, Reza M. and Temimi, Marouane**, NOAA, \$118,938, River Ice Monitoring Over the Susquehanna River Basin Using Remote Sensing Data
- Khanbilvardi, Reza M. and Ahmed, Samir**, NOAA, \$28,000, Developing the AERONET-SeaPRISM Data Product for NPOESS Cal/Val and Generation of Ocean EDR
- Khanbilvardi, Reza M. and Mahani, Shayesteh**, NOAA, \$100,000, Development of a Multi-sensor Precipitation Algorithm
- Khanbilvardi, Reza M., NOAA**, \$50,000, Research and Development to Identify a Snow Prediction Algorithm from Satellite Data
- Khanbilvardi, Reza M. and Romanov, Peter**, U OF MARYLAND, \$150,000, CICS: Development of an Upgraded Southern Hemisphere Automated Snow/Ice Product
- Khanbilvardi, Reza M. and Merchant, Shakila**, U OF MARYLAND, \$12,000, CREST Support to the NESDIS Cooperative Research Exchange Program
- Khanbilvardi, Reza M. and Gross, Barry**, NOAA, \$36,000, Development of Validation tools and Proxy Data for Goes-R ABL Air Quality proving Ground for the Northeast (NY Metro Region)
- Khanbilvardi, Reza M. and Mahani, Shayesteh**, NOAA, \$119,300, Transitioning GOES-based Nowcasting Capability into the GOES-R Era
- Khanbilvardi, Reza M. and Temimi, Marouane**, U OF MARYLAND, \$3,200, Applications to the GOES-R Program to Support Scientific Visits to NOAA Centers
- Khanbilvardi, Reza M. and Vant-Hull, Brian**, U OF MARYLAND, \$1,600, Visiting Scientists: Using volume Growth Rates of Clouds for Precipitation Estimation
- Khanbilvardi, Reza M.**, ALFRED P. SLOAN FDT, \$4,000, Development of PSM Programs
- Khanbilvardi, Reza M.**, COLUMBIA UNIV, \$108,000, NE Consortium on Climate Risks (NECCR)
- Kretzschmar, Ilona**, NSF, \$147,034, NUE: Nanotechnology Education for CUNY Community Colleges
- Kretzschmar, Ilona**, NSF, \$330,000, Janus Particles at tunable emulsion stabilizers
- Kretzschmar, Ilona**, DOE, \$8,056, Large Surface Electrodes
- Kretzschmar, Ilona**, COLUMBIA UNIV, \$53,570, Columbia Center for Electron Transport in Molecular Nanostructures
- Kretzschmar, Ilona**, CON EDISON, \$15,972, Large Surface Electrodes
- Lee, Jae and Couzis, Alexander**, NSF, \$50,000, Multi-scale Investigation of the Role of Surface- Active Agents in Gas Hydrate Formation Kinetics
- Lee, Taehun**, PSC-CUNY, \$3,500, High-order Lattice Boltzmann Large-eddy Simulation of Fully Inhomogeneous Turbulent Flows
- Lee, Jae**, STX SHIPBUILDING CO, LTD, \$204,108, Process Intensification by Integrating of Reaction and Separation
- Lee, Myung**, ETRI, \$49,967, IEEE-802.15.4E Standardization
- Lee, Myung**, ETRI, \$74,982, Research on Standardization Technology for Wireless Transmission Platform
- Li, Jackie**, NSF, \$500,000, IDR: Optimization of Nanodielectric Composites for Energy Storage Applications
- Li, Jackie**, PSC-CUNY, \$3,500, Effective Magnetoelectric (ME) Properties of Multiferroic Composites
- Liaw, Benjamin**, PSC-CUNY, \$6,000, Further Assessment of Self-Sensing Interlaminar Fatigue Damage in Composites via Electrical Resistance

Lin, Feng-Bao, PSC-CUNY, \$6,000, Structural Integrity Monitoring System for Detecting Structure Collapse Caused by Fire

Liu, Huabei, DEPT. HOMELAND SECURITY, \$246,838, Preparing Homeland Security Professionals for Transportation Infrastructure Protection in a Multi-Hazard Environment

Madamopoulos, Nicholas; Ali, Mohammed; and Dorsinville, Roger, NSF, \$116,827, A Cost Effective Migration Path to a Fully Packet Based Hybrid Fixed/Mobile Backhaul Infrastructure

Madamopoulos, Nicholas, PSC-CUNY, \$5,995.00, Daylight Reuse for Improving Energy Efficiency in Existing Buildings

Madamopoulos, Nicholas, NASFINE PHOTONICS INC, \$16,103, Nanometrology Using Low-cost, High Performance and Long working Range Super-Homodyne Interferometer

Mahani, Shayesteh and Khanbilvardi, Reza M., U CAL/IRVINE, \$50,000, Understanding and Improving California's river and water resource Predictions Using in-Situ and Remote Sensing Data

Maldarelli, Charles, AFOSR, \$499,225, Hypersonic Transition Along Curved Surfaces in the Presence of Vortices and their Control by Using Microtextured Surfaces

Morris, Jeffrey, AM CHEM SOCIETY, \$50,000, Boundary Wear Induced by Flow of Concentrated Suspensions

Morris, Jeffrey, HALLIBURTON ENERGY, \$79,430, Particle Motions in Viscoelastic Fluids Phase 1: Experimental Studies to Support Complex Fracture Modeling

Moshary, Fred; Ahmed, Samir; Gross, Barry; and Wittig, Ann, PRINCETON UNIV, \$310,000, Mid-Infrared Technologies for Health and Environment (MIRTH)

Nicoll, Steven, PROCTER & GAMBLE, \$100,000, Injectable Cellulose Hydrogels for the Localized Delivery of Mineralizing Agents to the Oral Cavity

Nicoll, Steven, HOSPITAL SPECIAL SURGERY, \$13,860, Resurfacing Damaged Articular Cartilage to Regain Functional Properties

Pach, Janos, US-ISRAEL BINAT'L SCI FDT, \$7,491, Geometric Arrangement and Application

Parker, Neville, NSF, \$1,222,500, New York City Louis Stokes Alliance - Phase IV

Parker, Neville, NSF, \$987,000, NYC Alliance BRIDGE TO THE DOCTORATE

Parker, Neville, NJ INST OF TECHNOLOGY, \$50,000, Evaluating the Location of Variable Message Signs Using a Dynamic Traffic Assignment Model

Parker, Neville, MEMPHIS-TENNESSEE, \$112,229, Development of an Integrated Transportation Planning and Operations Model for Memphis-Tennessee

Parra, Lucas and Bikson, Marom, NIH, \$125,618, US-German Collaboration: Effects of Weak Applied Currents on Memory Consolidation During Sleep

Piasecki, Michael, CUAHSI, \$88,1460, Geoinformatics: Development of Community-Based Ontology and Standards for Hydrologic Data Discovery

Ravindran, Kaliappa, ITT, \$12,500, Group Communication Algorithms for Event Dissemination over Wireless Networks

Romanov, Peter and Khanbilvardi, Reza M., NOAA, \$30,000, Development Of An Upgraded Southern Hemisphere Automated Snow/Ice Product

Romanov, Peter and Khanbilvardi, Reza M., NOAA, \$60,000, Development Of Operational Algorithms and Software to Derive and Validate NDVI and Green Vegetation

Rossow, William, NASA, \$195,585, Global Cloud Process Studies in the Context of Decadal Climate Variability: Enhancement and Continuation of Data Analysis for the ISCCP

- Rossow, William**, COLORADO STATE UNIV, \$60,000, Development and Application of Diagnostic Analysis Tools for Investigation Differences between Observed and Modeled Cloud Behavior
- Rossow, William**, JPL, \$50,000, NASA - Cloudsat Mission
- Rossow, William**, A & E RESEARCH INC, \$23,487, Toward Assimilation of Satellite Data in Modeling Water Vapor Fluxes Over Land
- Rossow, William**, U OF MARYLAND, \$18,000, Prototype Development of a Microwave Radiometer Simulator for Land Surface and Precipitation Characterization
- Roytman, Leonid and Khanbilvardi, Reza M.**, NOAA, \$125,000, Inter-Calibration and Scaling-Up Algorithm for SEVIRI and NOAA-18 data - Year 2
- Rumschitzki, David**, NSF, \$360,000, What is Aquaporin-1's Role in Transport Across Large Vessels Walls
- Saadawi, Tarek**, ARMY RSH OFFICE, \$37,000, Academic Exchanges and Colloquium Support
- Sadegh, Ali**, PSC-CUNY, \$6,000, Effect of Trabecular Architecture on Transferring Load/Impact to the Brain: A Local Model of Single Trabecula
- Sadegh, Ali**, GREATER SYRACUSE-COMMERCE, \$6,500, Nanoscale Nylon RTA 3445
- Sadegh, Ali**, ALCOA, \$14,000, Lightweight Chair For Transporting the Disabled
- Sadegh, Ali**, CON EDISON, \$9,842, Motorized Hogo Operator and SF6 Container Carrier
- Sadegh, Ali**, ROANWELL CORP, \$4,500, Automatic Glue Dispensing System
- Schaffler, Mitchell**, NIH, \$321,996, Osteocyte Integrity and Bone Remodeling
- Schaffler, Mitchell and Weinbaum, Sheldon**, NIH, \$529,250, Structural, Molecular and Functional Specialization in Osteocyte Mechanosensing
- Schaffler, Mitchell**, NIH, \$202,496, Diffuse Microdamage in Bone: Direct Repair without Remodeling
- Seo, Sang-Woo**, PSC-CUNY, \$5,993, Scalable, High-power, Compact, Terahertz (THz) Emitters for THz Imaging Systems
- Shen, Aidong**, NSF, \$91,448, Intersubband Ultrafast All-Optical Switches from Wide Band Gap II-VI Semiconductors
- Shen, Aidong**, PHYSICAL OPTICS CORP, \$20,000, Phase II: II-IV Semiconductor Multilayer Optical Limiter
- Shinnar, Reuel; Citro, Francesco; and Morris, Jeffrey**, DOE, \$445,285, A Novel Storage Method for Concentrating Solar Power Plant Allowing Operation at High Temperature
- Steingart, Daniel**, NSF, \$299,506, GOALI: A Comparative Study of Electrochemical Codeposition with In-Situ Electron Microscopy
- Sun, Yi**, PSC-CUNY, \$5,967, Neovascularization Assessment of Atherosclerotic Plaques in DCE-MRI by DIEEF and Semiquantitative Parameters
- Tang, Hansong**, NJ DOT, \$212,163, Evaluation of Potential Tidal Energy and Power Generation Sites along New Jersey Coast Using Computer Modeling and Field Measurement
- Tarbell, John**, NIH, \$376,090, The Endothelial Glycocalyx: Its Structure and Function and as a Mechanotransducer
- Tarbell, John**, NIH, \$516,310, The Endothelial Glycocalyx: Its Structure and Function and as a Mechanotransducer
- Tardos, Gabriel**, PROCTER & GAMBLE, \$20,000, Granular Flows
- Tardos, Gabriel**, INT'L FINE PARTICLE RSCH, \$15,000, Particulate Flow
- Temimi, Marouane and Khanbilvardi, Reza M.**, NOAA, \$125,000, Development of an Advanced Technique for Mapping Sea Ice with ABI

Tian, YingLi, NSF, \$16,000, Context-Based Indoor Object Detection

Tian, YingLi, NIH, \$190,000, Camera-Based Text Recognition from Complex Background for the Blind or Visually Impaired

Tian, YingLi, DEPT. HOMELAND SECURITY, \$45,764, Affect Detection, Segmentation, and Recognition by Fusion of Facial Features and Body Gestures

Tian, YingLi, PSC-CUNY, \$11,998, Component-based Pose Invariant Human Detection from Images

Tian, YingLi, CUNY-COLLABORATIVE, \$30,000, Privacy Preserving Video Surveillance in Complex Environments

Tu, Raymond, NSF, \$91,279, Pattern Formation in Self-Organized Surface Confined Peptides

Tu, Raymond, NSF, \$158,452, Patterning Interfaces with High Molecular Weight Periodically Sequenced Sheet-forming Polypeptides

Tu, Raymond and Steingart, Daniel, DOE, \$12,000, Organic Electrolytes

Tu, Raymond and Steingart, Daniel, CON EDISON, \$14,000, Organic Electrolytes

Vant-Hull, Brian and Khanbilvardi, Reza M., NOAA, \$60,000, Mesoscale Convective System Climatology Using Geostationary Infrared Imagery

Vazquez, Maribel, DANA-FARBER CANCER INST., \$121,346, Evolutionary Dynamics of Brain, Lung, and Hematopoietic Tumors

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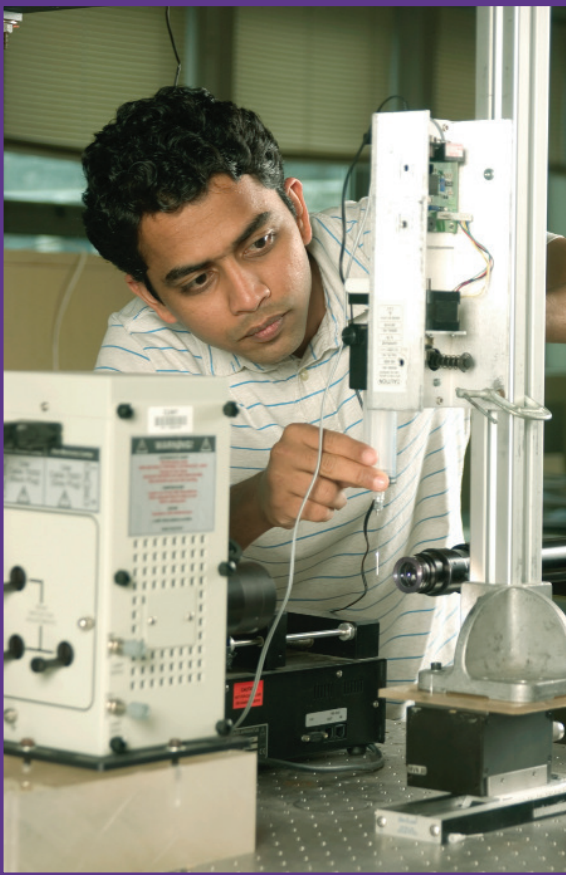
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CCNY's School of Engineering was one of the first public institutions of its kind, and is still the only public school of engineering in New York City. The School's ties to engineering go back to 1853, when City College was known as the Free Academy 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. In 2004, the name was again changed to the Grove School in recognition of Andrew Grove '60 ChE, co-founder of the Intel Corporation, and his \$26 million gift to his alma mater.

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.



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And, once students arrive on campus, they make the Grove School proud, piling up honors and awards and gaining admission to some of the country's most competitive graduate programs.

Here are some recent instances of student excellence: Nadia Makara '13 ESE, Crae Sosa '13 ChE, and Phillip Kim '13 EE have all received the NOAA Hollings Scholarship. Johnson Ho '12 BME won a 2011 Goldwater Fellowship, one of the most prestigious national scholarships for engineering students. And, Anthony Pang '11 ME was awarded an NSF Graduate Research Fellowship. He has enrolled in the PhD program at MIT.

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