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Letter from the Dean

Greetings!



Reflecting upon the 2002-2003 academic year, we, at the School of Engineering (SOE) at the City College of New York, once again can be proud of our faculty and students and grateful to our alumni and friends. SOE students Silvia Arredondo '03 and Wanmei Ou '03, were, respectively, valedictorian and salutatorian of City College. Sponsored research continued to grow, with SOE faculty members securing over \$15M this year, compared with approximately \$11M in 2001-2002 and \$8M in 2000-2001. The SOE received a \$2.1M gift from the Wallace Coulter Foundation to benefit the new Biomedical Engineering Department, and Intel Chairman Andrew Grove '60BChE offered a \$1M challenge grant to SOE in support of the freshman engineering program. In April, 2003, the names of Michael Pope, '44BEE, JD and Joseph E. Robbins '44BME were added to the School of Engineering's Wall of Honor in recognition of their longstanding and generous support of their alma mater.

2002-2003 was a stellar year for the faculty. The SOE created the Outstanding Teacher Award, and Latif Jiji, Herbert Kayser Professor of Mechanical Engineering, was the first recipient. The current president of the National Biomedical Engineering Society, John Tarbell, was appointed as the first Wallace Coulter Distinguished Professor in Biomedical Engineering. Professor Yiannis Andreopoulos of Mechanical Engineering was named the next Michael Pope Chair for Energy Research. Between Fall 2002 and Fall 2003, 20 exceptionally qualified new instructors, many of whom are profiled in these pages, joined the ranks of SOE's distinguished faculty. CUNY central administration approved funding for four new faculty positions to bolster chemical engineering, two of which are at the distinguished professor level.

The SOE continues to expand its academic offerings to meet our society's increasingly complex engineering needs. The undergraduate program in biomedical engineering, the SOE's seventh baccalaureate program, enrolled its first class of freshman students in Fall 2002. In Spring 2003, the SOE faculty approved a letter of intent pertaining to an interdisciplinary bachelor of engineering degree in environmental and earth system engineering, with the final proposal slated for development in 2003-2004. The CUNY Board of Trustees approved a dual/joint electrical engineering degree program between Eugenio Maria de Hostos Community College and CCNY.

The upward trend in enrollment continued. Since Fall 2000 our student body has grown 12.9% at the undergraduate level and 16.6% at the graduate level. In 2002-2003, once again, engineering was the most popular undergraduate degree choice at CCNY. The SOE is home to 26.1% of CCNY juniors and seniors who declared a major, and it has the largest number of first-time, regular freshman with total SAT scores of 1000 or above.

The SOE will continue to enhance its commitments and strengths in areas supportive of CUNY flagship initiatives and other technology thrust areas. This will be accomplished in part by realigning the School's options with opportunities made available by CUNY's major initiatives as well as external funding sources.

Mohammad Karim, Dean

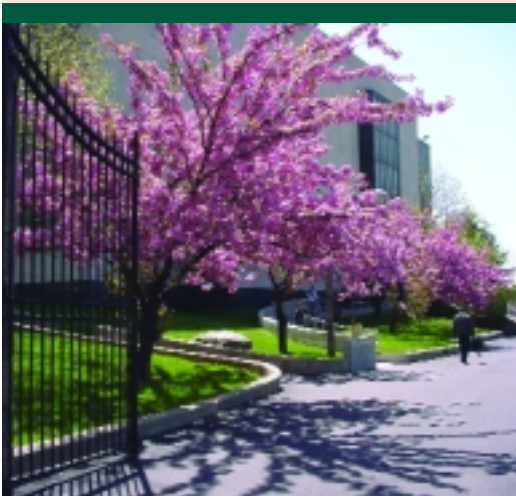
About the School of Engineering at City College

The School of Engineering at City College is home to an exceptional publicly supported engineering program in the heart of New York City. It is situated on a 35-acre campus in northern Manhattan, distinguished by some of the country's earliest University Gothic architecture.

The School benefits from a proud heritage and a high record of achievement. Founded in 1847, City College is America's first public institution of higher learning. It is the flagship campus of the City University of New York, which has an enrollment of nearly 200,000 degree-seeking students and over 150,000 continuing education students. Between 1920 and 1970 City College's graduates earned more Ph.D.s than graduates of any other university in the U.S. Even when City had no graduate programs of its own – and no research facilities – eight of its graduates went on to win the Nobel Prize.

Through its six academic departments, Biomedical, Chemical, Civil, Electrical and Mechanical Engineering, and Computer Science, the School of Engineering offers undergraduates and graduates a broad range of traditional and newly emerging multidisciplinary degree programs. The faculty is known for its outstanding commitment to teaching and learning, and professors are currently involved in more cutting-edge research than at any other time in New York City's history.

School of Engineering graduates demonstrate technical expertise as well as real-world skills appropriate for today's global workforce. And, since the School's demanding social and academic environment reflects today's multi-faceted world, its students are primed for the culturally diverse and technologically challenging world of work.



Mission and Goals

To be an institution of national preeminence among public schools of engineering and computer science, recognized for the excellence of its instructional and research programs.

To provide readily accessible, quality undergraduate and graduate education in a broad range of fields to a highly diverse student body, including traditionally underrepresented minorities and 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 region, and New York State.

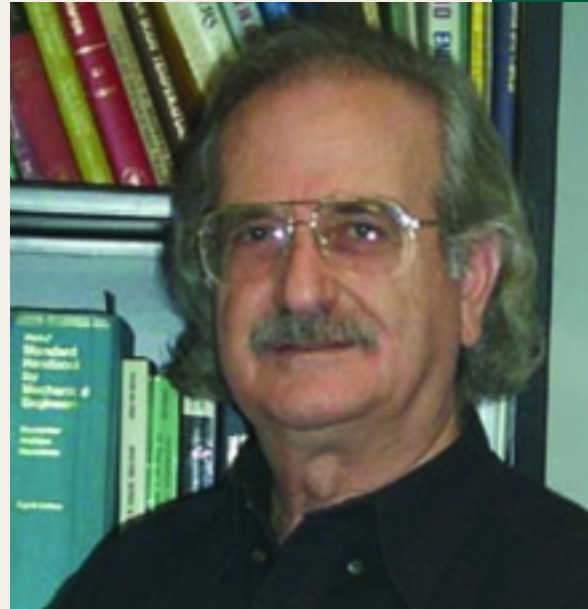
To provide public service and continuing professional education opportunities to New York City and State, the local community in which the institution resides, the engineering and computer science professions, and society at large.

City College Veteran Latif Jiji Is SOE's First Outstanding Teacher of the Year

Dr. Latif Jiji, who will soon celebrate fifty years of teaching (forty of them at City College), is the first faculty member to be honored with the School of Engineering's new Outstanding Teacher Award. "I am so pleased that, at the trailing end of my career, classroom teaching which I value so much is being recognized," says Professor Jiji. "In establishing this award, the School is sending a crucial message to young faculty. It is saying that excellent teaching is as important as top-flight research."

Dr. Jiji, who is the Herbert G. Kayser Professor of Mechanical Engineering, has excelled in both the classroom and research. The School of Engineering's chapter of Pi Tau Sigma, the mechanical engineering honors society, has chosen him five times to receive its Best Teacher Award, and, six times, the Mechanical Engineering Department's students have named him Teacher of the Year. In 1988, he was honored by City College with its Outstanding Teacher Award. "I really do consider teaching to be my most important academic responsibility," he says. "The satisfaction is enormous when one gets feedback that one is doing a good job."

Dr. Jiji cautions, however, that one cannot be a first-rate teacher without maintaining the highest standards when it comes to research and publications. In looking back on his career, he points to the ten years he spent collaborating with Dr. Sheldon Weinbaum on heat transfer in living tissue as a highlight of his research activities. The work combined his expertise in heat transfer with Dr. Weinbaum's command of biomedical engineering. In 2000, their 1985 paper, "A New Simplified Bioheat Equation for the Effect of Blood Flow on Local Average Tissue Temperature", received the Classic Paper Award of the Heat Transfer Division of ASME for the most cited publication in its field over a 15-year period. In the mid 1990s, Dr. Jiji began



writing textbooks. In 1999, his *Heat Transfer Essentials: a Textbook* was listed as an outstanding academic title in *Choice, Current Reviews for Academic Libraries*.

Dr. Jiji holds an S.B. in Mechanical Engineering from MIT, an M.S. in Mechanical Engineering from Carnegie Institute of Technology, and an M.S. in Aerospace and a Ph.D. in Mechanical Engineering from the University of Michigan. He gave up a tenured position at the University of Toledo and another at NYU to come to City in 1964. "I was teaching graduate courses at NYU," he explains, "and I had terrific students in my classes who had gone to City College. They impressed me so much that I knew City was where I wanted to teach." The move, he says, was the best decision he ever made. "I connect and identify with my students," he says. "So many are political or economic refugees, as I was. They have financial problems or citizenship issues, as I did. They are the first in their families to go to college, as I was. And, they and their parents deeply respect education, as my parents and I did." When asked how the City College students of today compare with those he taught forty years ago, Dr. Jiji

answers, "They have the same drive, the same hope, the same dreams, and the same struggle. The difference is that they are poorer, and it is harder for them today. They have to pay tuition, and most are working at least one job to stay in school. It is inspiring to watch them struggle and succeed. When you see students working so hard, you feel that you have to match their efforts."

“When you see students working so hard, you feel that you have to match their efforts.”

At the Height of His Career, John M. Tarbell I Chooses to Come to City

In January, 2003, Dr. John M. Tarbell I joined the School of Engineering faculty as CUNY and Wallace Coulter Distinguished Professor of Biomedical Engineering. Dr. Tarbell was previously Distinguished Professor of Chemical Engineering and Biogengineering at Pennsylvania State University, where he had taught for twenty-six years and was a mainstay of the artificial heart and cardiovascular engineering programs. He is currently president of the national Biomedical Engineering Society.

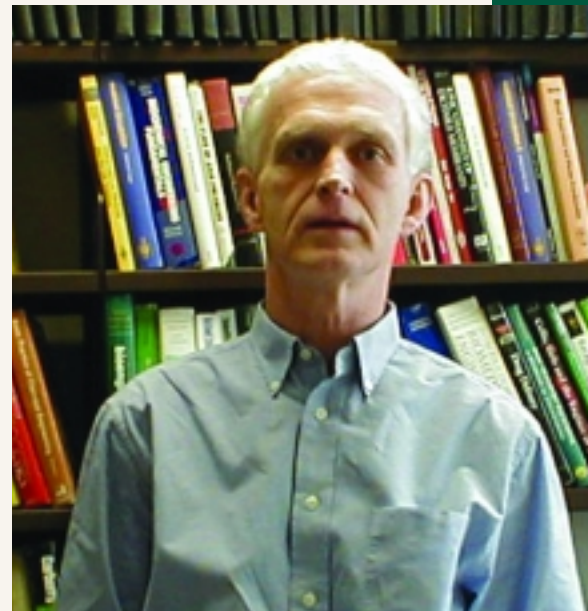
The New York Center for Biomedical Engineering, which is based at City College and was founded by Distinguished Professors Sheldon Weinbaum and Steven Cowin, was the lure which brought Dr. Tarbell to New York. "The NYCBE provides a great opportunity to become affiliated with many of the world's leading medical institutions," he says. "As I get further into my career, my research will become less fundamental and more clinical and applied, as I want to see the tangible results of my efforts. Coming to City allows me to be part of the medical environment of a great city." NYCBE is unique among biomedical engineering centers in the scope of its hospital and medical school affiliations. These include CUNY Medical School, the Hospital for Special Surgery/Weill Medical College of Cornell University, Mount Sinai School of Medicine, Columbia College of Physicians and Surgeons, Albert Einstein College of Medicine, and NYU Medical Center.

Dr. Tarbell holds a B.S. from Rutgers University and an M.S. and a Ph.D. from the University of Delaware, all in Chemical Engineering. He has made major discoveries in arterial fluid mechanics, arterial mass transport, mechanical and chemical effects on vascular cells, and artificial heart fluid mechanics and blood damage. He is the author of

130 refereed journal articles. Dr. Tarbell has been continuously funded by NIH since 1981, and is currently the principal investigator on major NIH and NASA grants and a Whitaker Special Opportunity Award.

In 2004, Dr. Tarbell will become chair of the School of Engineering's Biomedical Engineering Department. "The department is growing by leaps and bounds," he says, "and the young people are very promising." Several of his graduate students have followed him from Penn State, and his labs will greatly expand the department's experimental base. This is exciting at the graduate level and an outstanding opportunity for undergraduates, since it will provide experimental labs into which they can integrate to begin their research experience.

After many years in Central Pennsylvania, both Dr. Tarbell and Mrs. Tarbell are happy to be back in the New York metropolitan area from which they hale. The diversity of the City College student body and faculty was an important draw for Dr. Tarbell, and Mrs. Tarbell is teaching at PS 212 in the South Bronx.



“As I get further into my career, my research will become less fundamental and more clinical and applied, as I want to see the tangible results of my efforts. Coming to City allows me to be part of the medical environment of a great city.”

The names of

Michael Pope '44, JD and Joseph E. Robbins '44
Are Added to the School of Engineering's Wall of Honor
in Celebration of their Generous Gifts to
the School of Engineering
and The City College of New York



Joseph E. Robbins

**“I started what became Pope, Evans & Robbins just ten years after graduating from CCNY. I owe it all to CCNY.”
Michael Pope**



Michael Pope

Michael Pope '44 BEE, JD says that his proudest life achievement was pioneering the development of “clean” combustion of coal and other difficult fuels. In the 1970s, his atmospheric fluidized-bed combustion process was the cornerstone of the Department of Energy's plan to substitute coal for oil and gas fuels. For his work, Mr. Pope received the first Award of Honor of the Fellows of the American Consulting Engineers Council, established to recognize outstanding and innovative engineering accomplishments in the public interest.

Mr. Pope helped form Robbins, Pope & Griffis to advise on capital construction projects. He obtained a law degree, at age 76, as a member of the class of 2000, to provide mediation services.

He has served as chair of the City College Fund, as well as the first chair of the City College School of Engineering Advisory Board, and continues to serve on both boards. To show his gratitude, he endowed the Michael Pope Chair in Energy Research in 1982.

Joseph E. Robbins '44 BME is chairman of the board of Robbins, Pope & Griffis and was president of Pope, Evans & Robbins, an internationally known consulting engineering firm of which Mr. Pope was CEO. Mr. Robbins proudly served as U.S. Air Force Deputy for Engineering in the Kennedy Administration and supervised the construction of all ground facilities associated with the Minuteman Project. Under the direction of the U.S. Army Corps of Engineers, as part of the historic Camp David Accord, he managed the construction of the two most modern air bases in the world, located in Israel.

He is currently responsible for supervising the expansion of the Fort Lauderdale Airport and is managing, pro bono, a construction project at the Boca Raton Polo Club.

Mr. Robbins sits on the City College Fund Board. He supports the Milton Pikarsky Memorial Fund and has established the Joseph E. Robbins Loan Fund to help needy students.

An Alumnus with a Passion for Public Safety

Eric Adolphe '88EE

President and CEO of Optimus Corporation Addresses the Fifteenth Annual PRES Dinner

In 1992, a mere four years after graduating from SOE in Electrical Engineering, Eric Adolphe, a skilled inventor and entrepreneur whose passion is public safety, founded the OPTIMUS Corporation. Its mission is to provide information technology tools and services to enhance public safety and quality of life through innovative, customer-driven solutions.

Since then, OPTIMUS has helped protect our nation's vital infrastructure by providing tools and services in mission critical environments at the U.S. Coast Guard, Department of Defense, District of Columbia Government, Environmental Protection Agency, Federal Aviation Administration, Federal Highway Administration, National Highway Traffic Safety Administration, NASA, and others.

In addition to his BE from City College, Mr. Adolphe holds a J.D. from the Catholic University of America, Columbus School of Law. He has served as Special Projects Director for SENTEL Corporation, as Engineering Manager for NAVCOM System, Inc., and as an Electronics Engineer for the Federal Aviation Administration. He is the recipient of numerous awards and, in 2002, was selected as the Maryland High-Tech Council's Entrepreneur of the Year. He is currently on the board of directors of NACME (National Action Council for Minorities in Engineering) and was recently named to the CCNY SOE Advisory Board.



Center: Eric Adolphe addresses the PRES dinner; left: Dean Ramona Brown of the Office of Student Programs with SOE student organization presidents; right: the gala scene.



PRES (Program for Retention of Engineering Students), TRACC (Transfer, Recruitment, and Achievement at City College in Engineering), and other initiatives of the Office of Student Programs help students succeed at the School of Engineering. They offer academic and professional support services which improve students' performance in coursework, enhancing their opportunity to successfully complete engineering degree requirements. The programs' results are stellar. Students who have participated in PRES and TRACC regularly outperform cohort students in terms of overall grade point average, math, chemistry and physics pass rates, and retention rates.

Students

Women comprised 19.6% of undergraduate engineering majors and 18.7% of graduate engineering majors. Among undergraduate engineering

students in Fall 2002, 30.34% were Asian, 29.48% were Hispanic, 29.15% were Black, and 10.79% were White. The demographic breakdown percentages for graduate engineering students included 55.22% Asians, 15.22% White, 15% Hispanic, and 14.13% Black.

Degrees Granted

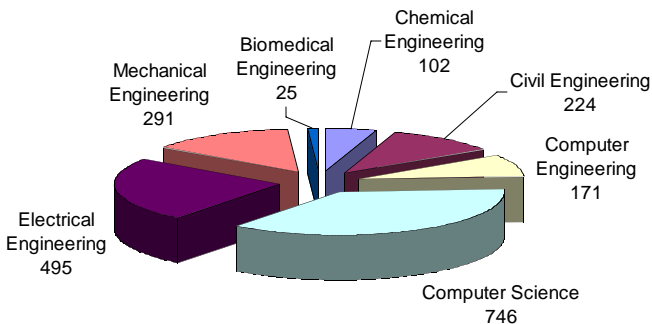
Bachelor's Degrees	Master's Degrees	Ph.D.
199	135	11

There are over 20 student groups and chapters – professional and otherwise at SOE - providing the students with an opportunity for networking, support, and the development of leadership skills. Under the guidance of faculty advisors, many of the student groups participate in regional and national competitions.

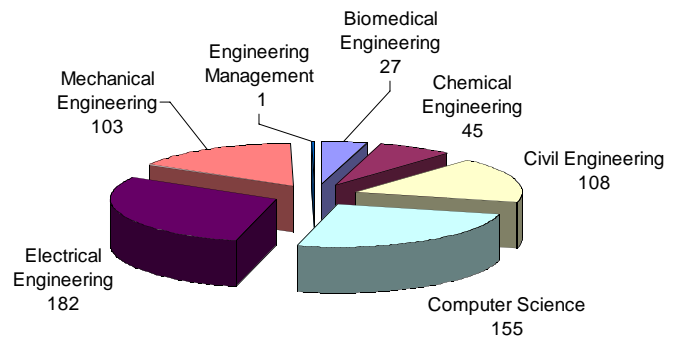
Bachelor's, master's and Ph.D. candidates are only part of the story. In its quest to groom the engineers of tomorrow, the School of Engineering reaches deep into New York City's school system, bringing elementary, middle, and high school students onto its campus.

Enrollment*

Undergraduate Enrollment Spring 2003
Total: 2054



Graduate Enrollment Spring 2003
Total: 621



* Note that Ph.D. students working on dissertations in the area of biomedical engineering are registered in chemical, electrical, and mechanical engineering programs and are included within those programs. Also, computer science Ph.D. students are registered at the CUNY Graduate School and University Center and are not included in the numbers above.

Tuition and Fee Schedule Fall 2003		New York City and State Residents	Out of State Residents (including international students who have lived in New York State for less than one year)
Undergraduate	Full-time	\$2,000 per semester	\$360 per credit
	Part-time	\$170 per credit	\$360 per credit
Master's in Engineering	Full-time	\$2,970 per semester	\$440 per credit
	Part-time	\$250 per credit	\$440 per credit
Doctorate	Level I full-time	\$2,435 per semester	\$475 per credit
	Level I per credit	\$275 per credit	\$475 per credit
	Level II	\$1,525 per semester	\$3,390 per semester
	Level III	\$605 per semester	\$1,210 per semester

Student Accomplishments

Silvia A. Arredondo, of chemical engineering, and **Wanmei Ou**, of electrical engineering, respectively were the valedictorian and salutatorian of CCNY this year.

Two NACME (National Action Council of Minorities in Engineering) scholars, **Oluwatosin Ogunwuyi** (Tosin) and **Kurt James**, both of electrical engineering, appeared on the NACME segment of the PBS series "Voices of Vision". It highlights their research experiences at NASA and was aired on Sunday, November 24th, 2002.

Yao Abotsi, **Itamar Frankenthal**, and **Tamara Herrera**, were selected as Belle Zeller Scholars and, as such, are receiving CUNY-wide full scholarships.

Richard Balcarran, **Willie Caraballo**, **Alexander Torres**, and **Paula Washington** are working at the Johns Hopkins Advanced Physics Laboratory on projects that are slated to be on board NASA's Mercury Space Flight Mission.

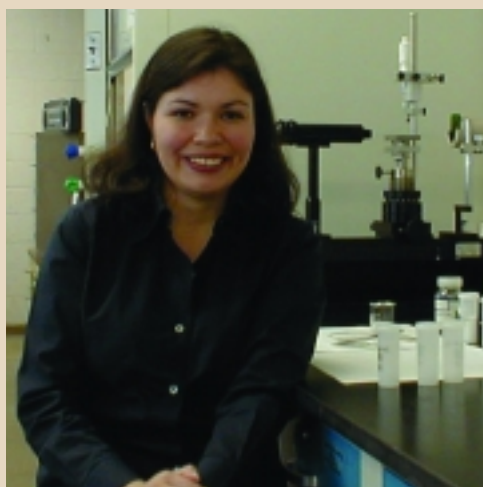
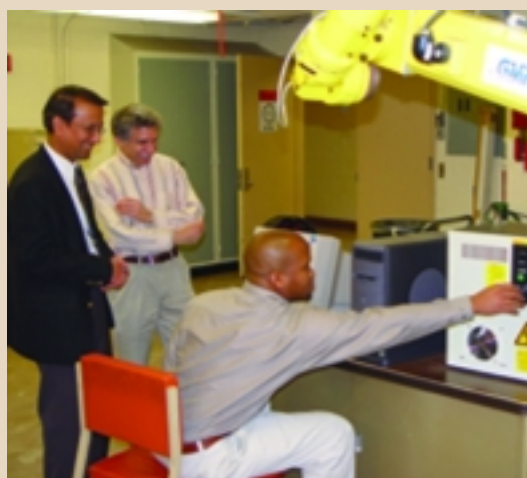
Anna Biney won the 2003 NSBE Fulfilling the Legacy Scholarship and the 2003 Ford Junior of the Year Citation from the Golden Key Honor Society.

Amancio Gonzalez, an electrical engineering senior, received an award from the German Academic Exchange Service to study in Munich, Germany.

Kurt James, an electrical engineering senior, co-authored the paper, "In-plane magnetoconductivity of Si MOSFETs: A quantitative comparison of theory and experiment", which appeared in *Physical Review* in 2003.

American Society of Mechanical Engineering students from CCNY won 1st and 3rd place in the ASME Region II design competition. The ASME advisors are Professors Sadegh and Jiji.

The Latin American Engineering Students Association student chapter received the 2002 Eastern Technical Career Conference (ETCC) "Chapter Pioneer" award, the 2002 ETCC "Chapter with Most Attendees" award, and the 2003 SHPE National Region IV "Outstanding Chapter" award.



Silvia Arredondo '03
Chemical Engineering

“City College is very diverse, and the students are all struggling. They have the responsibility of succeeding not just in school, but also in life, because they have to deal with so many things at a time.”

The valedictorian of City College, Silvia Arredondo is bound for a Ph.D. in chemical engineering at the University of Texas at Austin. Her research project at SOE, *Toothpaste Whitening Additives Effect on Dental Surfaces*, was sponsored by GlaxoSmithKline. She excelled at her studies and served as vice-president of the AIChE chapter on campus, despite having to work 20 to 25 hours a week to put herself through school. “I found a mentor who cared, realized that I had potential, and helped me strive to express that potential. I would like to combine research and teaching at an institution where I can find students with potential who need a helping hand as I did.”

“The professors here are absolute masters in their fields.”

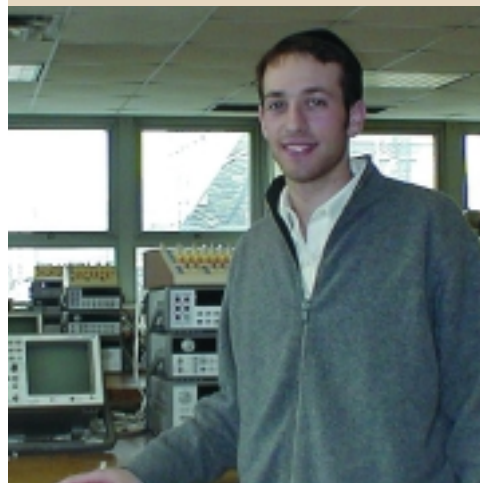
Jacob Baldinger came to the SOE to study computer engineering following an AS degree in Mathematics and Science at SUNY-Rockland. “The professors here are absolute masters in their fields,” he says. “Their command of the material is such that they are able to explain it very clearly.” Mr. Baldinger has been nominated to the Tau Beta Pi and Eta Kappa Nu honors societies. While at City, he has devoted his summers to working in the computer field. At DataBit Inc, he assembled PCs and peripheral devices to meet customers’ needs in terms of hardware and software customization and was part of a team which identified and solved hardware and software problems at Montefiore Medical Center in the Bronx.

“Without my mentors at SOE I would never have made it. They have given me the confidence to think of what I want to achieve, not what anyone else wants from me.”

“My aim is to get a doctorate, and to combine teaching with research in industry.” says Leona Charles, and she is preparing herself very well. She spent eight months in a co-op at GE Power System, as a manufacturing engineering/quality documentation specialist; under NASA/RISE, she analyzed data from the spacecraft Cassini at the University of Michigan at Ann Arbor; she was an intern at the NASA John H. Glenn Research Center; and under NASA Pair at SOE, she conducted research on the classification of weather events and is currently doing work in optical remote sensing. Outside of the laboratory, she is secretary of the Association of Computing Machinery on campus and has been a PRES tutor since she came to City College.

“The civil engineering program is tough, and it has made me determined not to give up. My ultimate ambition is to own one of the largest construction companies in the world.”

Devanand Deonarine began working in construction as a laborer while in high school. While at SOE, he served as a transportation construction inspector in the Materials Bureau of the New York State Department of Transportation and a construction inspector on an emergency generator upgrade for Sea Crest Health Care. He also conducted terra cotta/masonry and window installation inspections for URS Corporation. On campus, he was vice-president of the Concrete Canoe Club and president of the Steel Bridge Club. In June, 2003, he started at Turner Construction as a field engineer. His future plans include a master’s in civil engineering, an MBA, and owning one of the largest construction companies in the world.



Jacob Baldinger '03
Computer Engineering



Leona Charles '03
Computer Science



Devanand Deonarine '03
Civil Engineering

Undergraduates



Eustace Edwards '02
Mechanical Engineering

“Over time, I would like to use my Ph.D. to investigate new scientific principles.”

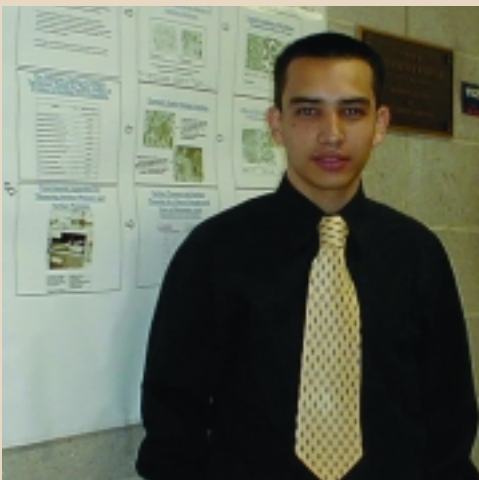
Eustace Edwards has known that he wanted to be an engineer since he was a child. Today, armed with bachelor's and master's degrees in mechanical engineering from SOE, he is on the road to a doctorate in engineering sciences at Harvard University. While at SOE, he did research in biomedical engineering at the Whitaker Institute of Biomedical Engineering at the University of California at San Diego and in robotics and fluid mechanics under CUNY auspices. “Over time,” he says, “I would like to use my Ph.D. to investigate new scientific principles. The Mechanical Engineering Department at SOE taught me that knowing how to think is more important than having specialized skills, that there is usually more than one way to find a solution, and that spending a lot of time defining the problem is as important as finding the solution.”



Wanmei Ou '03
Electrical Engineering

“I wanted to study electrical engineering. The School of Engineering provided me with an education I could afford as a new immigrant.”

Wanmei Ou, who came to New York five years ago as an immigrant from mainland China, graduated from City College as salutatorian with a grade point average of 4.0. She was accepted into graduate programs at Princeton and Berkeley, but has chosen to pursue her graduate work in electrical engineering at MIT. While at SOE, Ms. Ou worked as a programmer analyst/researcher in the Population Genetics Department of the New York Blood Center, and she conducted research in digital signal processing at City. She also served as a math and chemistry tutor in City's Student Support Group Center and was vice president of Eta Kappa Nu. Following graduate school, her sights are set on the professoriate.



Francisco Saenz '06
Biomedical Engineering

“I hope some day to combine the practice of medicine with research. City College is the perfect bridge to help me make that dream a reality.”

“The biomedical engineering program gives me options by allowing me to become a biomedical engineer while completing my medical school requirements,” says Francisco Saenz. A graduate of the High School of Art and Design who majored in medical illustration, he has found biomedical engineering at SOE to be both stimulating and supportive. “The classes are small, we get a lot of personal attention, and leaders in the field come to speak to us about the different areas we can go into after graduation,” he says. Mr. Saenz, who received the Biomedical Engineering and Peter Vallone Scholarships for academic excellence, jumped right into research his freshman year. He is investigating microemulsions in the physical chemistry lab.

“I want to be part of the global drive to transmit clean, safe drinking water to every living human being.”

Yvette Beckles had already worked as a chemical engineer in her native Trinidad when she came to the School of Engineering to pursue a master’s in civil engineering. “At that time, my interest was in bringing waste water treatment in Trinidad’s oil and gas industry up to world environmental standards,” she says. She is now pursuing her doctorate, and her research focus has become global. Her goal is to contribute significantly to the development of safe drinking water treatment systems, particularly in the areas of disinfection, advanced oxidation processes, and process optimization. Ms. Beckles currently lectures in the New York City Department of Environmental Protection Bureau of Water and Sewer Operation Training Project.

“My objective in life is to help people, society, and our environment. I feel that becoming an engineer is the best way for me to do that.”

A graduate of the Bronx High School of Science, James Chin came to SOE as an undergraduate and stayed for graduate studies. “Throughout my time here I have enjoyed interacting with my fellow students and my professors,” he says. Mr. Chin’s field is chemical process design. He and his mentor are working on a general design method for reactive distillation columns. He plans to present their research at AIChE shortly. “Once we have developed a general design method,” he says, “it will be possible to use these columns in a wide range of applications to produce and separate chemicals more efficiently. This will save energy, and that is good for the environment.” Following his doctorate, Mr. Chin is considering a career with a governmental agency such as the EPA.

“Through its network, the New York Center for Biomedical Engineering has provided me with tremendous opportunities in terms of research facilities, and the faculty at City is doing incredible things.”

For Kelly Emerton, pursuing biomedical engineering at the School of Engineering has meant the opportunity to collaborate with medical doctors and Ph.D.s at New York’s Hospital for Special Surgery, as well as professors at City College. Ms. Emerton has already published articles in *Health Physics* and *ASME-Advances in Biomedical Engineering*. Her current research centers on microfluidic devices for discovery of fibroblast activity and behavior during avascular tissue repair. She plans a career in industry in which she will apply the expertise which she is acquiring in microelectrical mechanical systems and microscale and nanoscale technology.



Yvette Beckles
Civil Engineering



James Chin
Chemical Engineering



Kelly B. Emerton,
Biomedical Engineering

graduate Students



Nancy Yongle Li
Electrical Engineering

“When I got my master’s from the School of Engineering in 1994, the economy was not good. But, when I went job hunting, people knew the School, and they trusted me. The first job I landed was a very good one with IBM.”

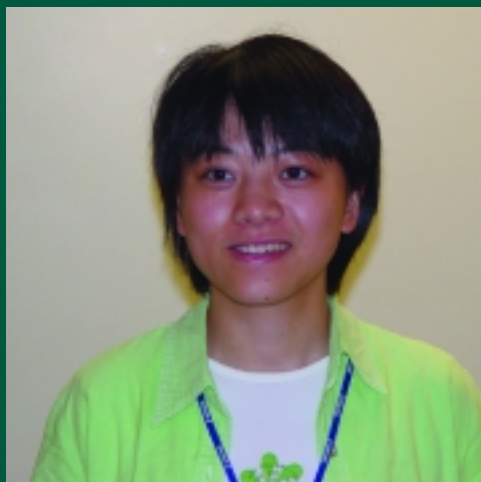
Following that first job with IBM and further employment with Advanced Technology Solutions and as a design engineer with Alcatel, Nancy Li is back at the School of Engineering pursuing her Ph.D. Ms. Li, who also has a master’s from Beijing University of Post and Telecommunications, is interested in telecommunications, remote sensing, and remote control. “When I came back,” she says, “everyone still remembered me. It is a great feeling to be here, combining learning and research. My professor knows my level and knows exactly how to challenge me. I trust City College to give me the most up to date knowledge of new technologies.”



Ali Shihab Sabbir
Computer Science

“My mentor has one of the most advanced laboratories at City College, giving me access to cutting edge equipment. The other students working with him are excellent, and I have benefited from that peer group.”

Ali Sabbir came to City College from Bangladesh intending to be a physicist. However, after his first semester at the School of Engineering, he changed his focus to computer science and earned his master’s in the subject. Mr. Sabbir recently defended his dissertation proposal entitled “Concurrency Control Mechanism for Realtime Distributed Collaboration”. He is the co-author of papers which have been published in the proceedings of INFOCOM 2001 and SPECTS 2002. Since 1998, he has been an adjunct faculty member in the City College Computer Science Department. He intends to continue in the professoriate after he receives his doctorate.



Xiaobing Zhang
Mechanical Engineering

“The faculty members at SOE are very exacting when it comes to research, but the way they teach is so great, and they are so nice and supportive, that they have made me love every aspect of my work.”

In her quest for the Ph.D. in mechanical engineering, Xiaobing Zhang is being mentored by three leaders in her field, Drs. Sheldon Weinbaum and Stephen Cowin, with whom she has already published a paper, and Dr. Fitz-Roy E. Curry. Ms. Zhang’s area of interest is mechanotransduction and flow across the endothelial glycocalyx. In her research, she is applying traditional mechanics to biology. The data she is working on comes from the University of California at Davis, one of the partners in the New York Center for Biomedical Engineering. She intends to stay in academia and foresees a future in teaching and research.

Faculty

In 2002-2003, twenty new instructors of exceptional quality have added their talents to an established faculty which combines excellence in the classroom, accomplishment in research, and leadership in professional organizations.

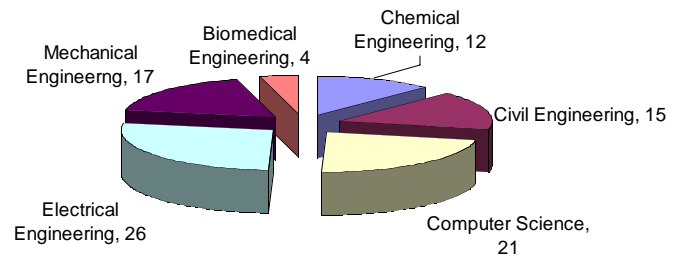
The CCNY School of Engineering faculty includes four members of the National Academy of Engineering, two of whom are also members of the National Academy of Sciences. In addition, one or more members of the engineering faculty are elected fellows of the following professional societies:

American Academy of Arts and Sciences
American Association for the Advancement of Science
American Institute of Chemical Engineers
American Physical Society
American Society of Mechanical Engineers
Association of Computing Machinery
Institute of Combinatorics and its Applications
Institute of Electrical and Electronics Engineers
Institute of Medicine
New York Academy of Sciences
Optical Society of America
Society of Photo-Instrumentation Engineers
Society of Rheology

Ten faculty members currently serve in an editorial capacity on 24 archival journals, which cover a wide range of topics in engineering and computer science research. In 2002-2003, engineering faculty at CCNY produced 7 journal special issues, 9 books, 18 book chapters, 110 journal articles, 109 conference papers, and 4 patents; delivered 25 keynote/plenary speeches; and served on 32 national and international technical committees.

Faculty Distribution 2002-2003

Total Faculty: 95



Faculty Honors

Acivos, A., Honorary Doctor of Science, University of Patras, May 29, 2003.

Chen, X., IEEE Computer Society Certificate of Appreciation, October 2002.

Habib, I., Who is Who in America, 2003.

Jiji, L., School of Engineering Outstanding Teacher Award, 2002-2003.

Mylonakis, G., Shamsheer Prakash International Research Award, 2002.

Ravindran, K., Summer Faculty Fellow, Air Force Research Lab, 2003.

Tarbell, J., National Biomedical Engineering Society, Elected President for 2002–2003.

Tarbell, J., Calgary Award for Outstanding Paper in Cardiovascular System, World Congress on Biomechanics, Calgary, August 2002.

Weinbaum, S., Institute of Medicine, Elected, 2002.



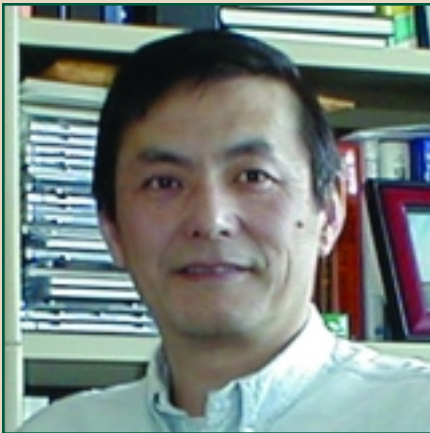
Mark Arend, Assistant Professor of Electrical Engineering, Ph.D. in Applied Physics, Columbia University.

“The photonics program at City College is known for its strength, and I hope to enhance it even further by teaching optical communications from the experimental point of view,” says Dr. Mark Arend. Dr. Arend’s research experience encompasses Princeton and Columbia Universities, The Naval Research Laboratories and TyCom Laboratories. At SOE, he is setting up a laboratory dedicated to the experimental characterization of light-wave and high speed electronic devices from an optical communications systems point of view. In the fall, he will teach the optical communications component of a newly created design course which will be required of all seniors.



Peter Braß, Associate Professor of Computer Science, Ph.D. in Mathematics and Computer Science, Technical University of Braunschweig (Germany).

Dr. Peter Brass comes to SOE from the Theoretical Computer Science Group at the Free University Berlin, where he was a Heisenberg research fellow. His current interests are computational geometry, discrete geometry, data structures, and geometric pattern matching. A major factor in Dr. Brass’s move to New York was the presence at SOE of Professor Janos Pach. Dr. Brass wrote his doctoral thesis on a facet of Dr. Pach’s work, and the two are currently collaborating on a book. “I am a theory person,” says Dr. Brass, “and I hope to strengthen to the theoretical side of the Computer Science Department.”



Xinghao Chen, Associate Professor of Electrical and Computer Engineering, Ph.D. in Electrical and Computer Engineering, Rutgers University

“I am very excited to be back in a student-oriented place,” says Dr. Xinghao Chen who has returned to academia following seven years as an advisory engineer/scientist at IBM. “I am trying to integrate more design-oriented projects into the courses I teach,” he continues. “I assigned design projects to my entry-level engineering students. They did very well and found higher level courses easier as a result.” VLSI design automation is one of Dr. Chen’s prime research interests, and he is setting up a VLSI design lab at SOE. He currently serves as the General Chair for the IEEE North Atlantic Test Workshop.



David Crouse, Assistant Professor of Electrical Engineering, Ph.D. in Electrical Engineering, Cornell University.

A Phi Beta Kappa graduate of Purdue University who has been a senior process engineer at Intel, Dr. David Crouse is interested in optoelectronic device design and fabrication. “At SOE I am working with people in physics, optical engineering and biomedical engineering,” he says. “There is a sense of excitement here. The students are hard working, and they ask difficult questions that make you look at things differently. I’ve been using the Web to organize my classes to help them learn efficiently. I would like to set up some new courses which would expand the Electrical Engineering syllabus. In particular, I’m thinking of one in semiconductor device fabrication.”

Georgios N. Ellinas, Associate Professor of Electrical Engineering, Ph.D. in Electrical Engineering, Columbia University.

While Dr. Georgios Ellinas was a senior research scientist at Telcordia Technologies (formerly Bellcore) and a senior network architect at Tellium, Inc., he never left academia. He continued to teach in the Electrical Engineering Department of Columbia University and to publish. “I have high expectations of my students. I want them to do well,” he says. Dr. Ellinas’s work on the protection and restoration of optical networks has earned him many patents and is especially important in the post 9/11 environment. At SOE, he is collaborating with faculty colleagues on multiple grants from NSF and the Defense Advanced Research Projects Agency (DARPA).



Hosni Ghedira, Assistant Professor of Civil Engineering, Ph. D. in Water Sciences (Remote Sensing), INRS-Eau, University of Quebec (Canada).

During his first year at SOE, Dr. Hosni Ghedira has taught Civil Engineering Data Analysis and Environmental Engineering. In addition, he has been pursuing research, funded by NOAA CREST, in which he is applying microwave data to study vegetation effects on soil moisture estimates and snowmelt and runoff prediction in hydrological models. His hope is to build a new research group which will apply remote sensing to water resources. He already has GRTI and NASA funding to start a new remote sensing lab and is engaging his students in his research.



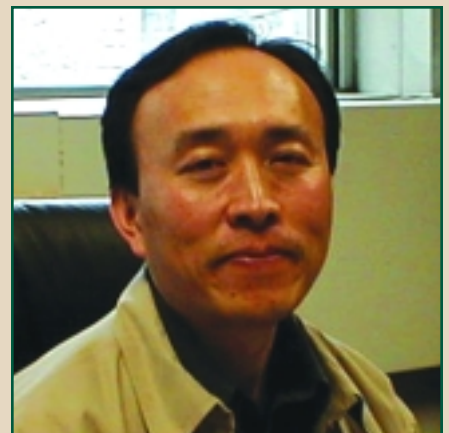
Jacqueline Jie Li, Associate Professor of Mechanical Engineering, Ph. D. in Mechanical and Aerospace Engineering, Rutgers University.

Dr. Jacqueline Li has come to SOE following four years on the faculty at Cooper Union. “I wanted to teach some place with a Ph.D. program so that I could focus more on research,” she says. She has two undergraduates working in her lab. They will be joined soon by Ph.D. students and a postdoctoral fellow. Dr. Li’s interests include micromechanics, nanomaterials and smart materials. She is doing fundamental research on ferroelectric ceramics and composites. “These have wide applications in electromechanical transducers, such as ultrasonic generators, filters, sensors, and actuators,” she explains.



Feng-Bao Lin, Associate Professor of Civil Engineering, Ph.D. in Structural Mechanics, Northwestern University.

“I came to SOE because the structural engineering program is so strong, both in terms of faculty and course offerings,” says Dr. Feng-Bao Lin. Dr. Lin taught at Polytechnic University for fifteen years. He has published more than fifty journal and conference papers, and his prolific research has been funded by NSF, NASA, the Air Force, AISC and Argonne National Laboratory. A consulting engineer with PE licenses in New York, Connecticut and Taiwan, his practice covers the analysis and design of reinforced concrete, prestressed concrete and steel structures as well as seismic analysis of high-rise buildings.





Megan B. Wiley, Assistant Professor of Civil Engineering, Ph.D. in Civil and Environmental Engineering, Stanford University.

“The students at SOE resonate with me. They really want to be here, which makes a huge difference in the classroom,” says Dr. Meg Wiley. Her field is environmental fluid mechanics, and she would like to move into remote sensing, which made the SOE’s NOAA CREST center a powerful draw in bringing her to City. “I work collaboratively with biologists,” she continues, “and the CUNY system allows me to have connections with other researchers. I would like my research to be rooted in local problems, and people at CUNY are consulting and getting grants locally. I also hope to pursue my interest in science education, a field where City College is at the cutting edge.”



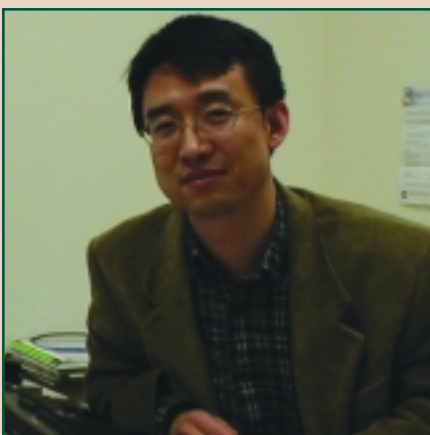
Jizhong Xiao, Assistant Professor of Electrical Engineering, Ph.D. Michigan State University.

“SOE offered me the opportunity to create a new research program in robotics and intelligent systems,” says Dr. Jizhong Xiao. “Robotics is multidisciplinary. It is a platform which can bring people from different research areas together. I have contacted faculty from Electrical Engineering, Mechanical Engineering, and Computer Science and hope that we can team up to write proposals and conduct collaborative research in robotics and related fields.” For Dr. Xiao, research and teaching go hand-in-hand. “Teaching is a fundamental duty for faculty members, and I put a lot of energy into my classes. The research I do improves my teaching,” he says.



Honghui Yu, Assistant Professor of Mechanical Engineering, Ph. D. Mechanical and Aerospace Engineering, Princeton University.

“‘Students here are different. They are determined.’ That’s what Dean Karim said when he interviewed me,” recalls Dr. Honghui Yu, who was then a postdoctoral fellow at Harvard. “Students at SOE have very little time outside of class, so I feel that I have to make every moment in class count for them.” Dr. Yu’s research is in the general area of solid mechanics and materials science, focusing on the mechanical failure of small and large structures. “People are very important to me, and the professors here are terrific,” he continues. “There is tremendous support for my research.”



Zhigang Zhu, Associate Professor of Computer Science, Ph. D. in Computer Science and Technology, Tsinghua University (Beijing, China).

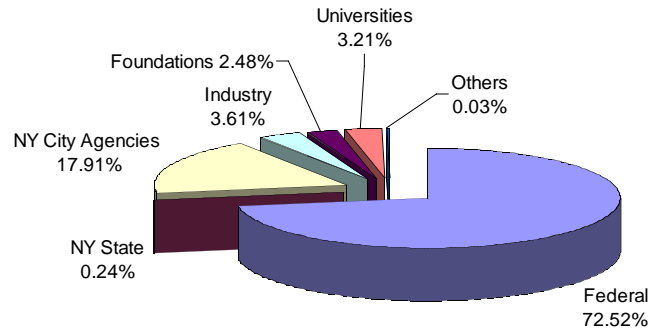
“Being at City gives me the opportunity to connect with world-renowned scholars and important applications in many different fields,” says Dr. Zhigang Zhu. Dr. Zhu was a senior research scientist in the Computer Vision Laboratory at the University of Massachusetts at Amherst prior to coming to SOE. The innovative projects he is working on include a 3D virtual classroom and a traffic sensor network for New York City. His research has attracted undergraduates and graduate students to his laboratory. “It is very encouraging when students select you to be their mentor,” he says.

Research

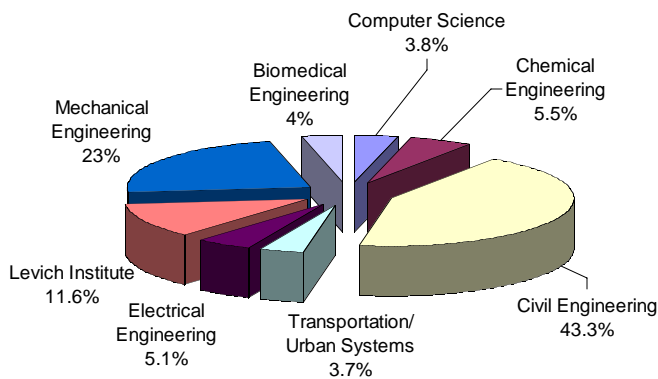
Sponsored research continued to grow, with SOE faculty members securing over \$15M this year, compared with approximately \$11M in 2001-2002 and \$8M in 2000-2001.

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.

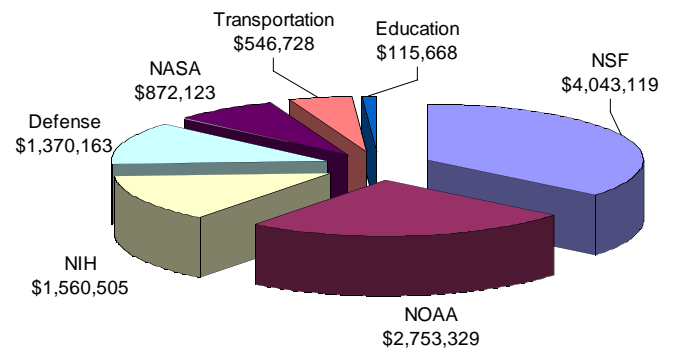
Funded Research Distribution by Sources
Total: \$15,563,838



Funded Research Distribution by SOE Units
Total: \$15,563,838



Federal Research Funding by Agency
Total \$11,261,637



Centers and Institutes

The Benjamin Levich Institute for Physicochemical Hydrodynamics

New York Center for Biomedical Engineering

Center for Information Networking and Telecommunications

CUNY Institute for Urban Systems

Institute for Transportation Systems

Center for Water Resources and Environmental Research

Municipal Waste Center

Center for Advanced Engineering Design and Development



Acrivos, A., "Particle segregation in a flowing concentrated suspension subject to high-gradient strong electric fields," NASA, 10/01-09/02, \$81.6K.

Acrivos, A., "The rheology of concentrated suspensions," DOE, 01/02-12/02. \$110K.

Acrivos, A., and **Khusid, B.**, "Transport and segregation of suspensions in traveling electric fields", NSF, 07/03-06/06, \$450,715.

Acrivos, A., **Koplik, J.**, and **Khusid, B.**, "A fundamental study of dispersed multiphase flows at small scales," DOE, 08/03-07/04, \$236,144.

Agrawal, A., "Development of an electromagnetic shape memory alloy friction damper for civil infrastructures," NSF, 08/01-07/04, \$100K.

Agrawal, A., and **Subramaniam, K.**, "Development of smart bridge bearings system," NYSDOT, 07/02-06/03, \$60K.

Agrawal, A., and **Mylonakis, G.**, "Integrated research and education on engineering effects of blasts and other man-made hazards," NSF, 10/02-03/04, \$71K.

Andreopoulos, Y., and **Parker, N.**, "Hybrid-electric transit buses: challenges and implications for full implementation," FTA, 01/02-12/02, \$144,866.

Andreopolous, Y., and **Khanbilvardi, R.**, "Hydrodynamic interaction of the near-bottom wave current and submerged pipeline," US Civilian Research Defense Fund, 06/02-12/03, \$60K.

Andreopoulos, Y., "Further development and testing of the CCNY BOP probe," US ARMY, TARCOM/ARDEC, 11/02-03/03, \$63.2K.

Andreopoulos, Y., and **Khanbilvardi, R.**, "Development of a regional flow and contaminant transport model for the marine area impacted by Kuwait oil well spills," UN grant from InterTech Intl, 10/02-09/30, \$114,784.

Baumslag, G., **John, K.**, **Rouson, D.**, and **Cleary, S.**, "MRI parallel computing environment for computational math," 08/02-07/05, \$173,673.

Baumslag, G., and **Cleary, S.**, "Grant for the New York group theory seminar," NSF, 05/02-04/04, \$10K.

Benenson, G., **Neujhar, J.**, **Bennett, D.**, and **Gordon, W.**, "Teaching technology from everyday stuff; sustaining professional development online," NSF, 2001-2004, \$1,577,323.

Couzis, A., **Gilchrist, M.**, **Rumschitzki, D.**, and **Maldarelli, C.**, "Acquisition of an imaging ellipsometer scanning probe microscope," US Army, 09/01-09/02, \$200K.

Couzis, A., and **Maldarelli, C.**, "Controlled crystallization at molecularly engineered surfaces," EI Dupont, 09/97-09/02, \$25K.

Couzis, A., "A study to identify the mechanism of stain prevention of oral care additives and subsequent development," GlaxoSmith Kline, 01/02-12/02, \$29,453.

Couzis, A., "Development of a micro/nano fabrication laboratory," DOD, 09/02-08/03, \$180K.

Couzis, A., "Development of hydrocarbon based surfactant wetting agents to enable superspreading of water on hydrophobic surfaces", NASA, 01/03-12/05, \$300K.

Cowin, S., "Communications media for mineralized tissue research," NSF, 03/01-03/06, \$473,670.

Cowin, S., "GAANN: Mathematical modeling of biological systems," US Department of Education, 08/01-08/04, \$366,284.

Cowin, S., "A textbook on Tissue Mechanics," Whitaker Foundation, 01/03-12/04, \$134,889.

Cowin, S., "Acquisition of real-time 3D and conformal microscopy for bone microstructure and life history studies of human and non-human primates," NSF, 09/00-08/03, \$99,507.

Cowin, S., and **Weinbaum, S.**, "Cytoskeletal stain amplification due to bone fluid flow," NIH, 04/02-03/05, \$2,053,368.

Cowin, S., and **Weinbaum, S.**, "A national urban model for minority undergraduate biomedical education," NIH, 09/01-08/06, \$2.24M.

Delale, F., **Jiji, L.**, **Liaw, B.**, **Benenson, G.**, and **Watkins, C.**, "Curriculum reform of the mechanical engineering program at City College," NSF, 10/02-09/03, \$99,999.

- Denn, M.**, Koberstein, J., et. al., "IGERT: multiscale phenomena in soft materials," NSF, 11/02-11/07, \$2.91M.
- Denn, M.**, and **Acrivos, A.**, "Research equipment: rheometer," NSF, 07/02-06/03, \$81,667.
- Denn, M.**, "Size-scale sensitivity in multiphase systems with a crystalline phase," NSF, 09/01-08/03. \$203K.
- Denn, M.**, "The interface between a liquid crystalline polymer and a flexible polymer," ACS Petroleum Research Fund, 06/01-08/03. \$60K.
- Feng, J.**, "Orientation coupling between solid particles and liquid crystalline matrix", NSF, 10/02-09/03, \$91,368.
- Feng, J.**, "A fluid mechanical study of self-reinforced polymer composites," NSF, 03/00-02/03, \$80.4K.
- Feng, J.**, "Rheological study of foaming of thermoplastics", ATOFINA Chemicals, Inc., 03/03-02/04, \$56.8K.
- Fillos, J.** "Long term monitoring and process optimization of step-feed BNR facilities at NYC water pollution control plants", NYC Department of Environmental Protection, 10/02-09/05, \$2,850,241.
- Fillos, J.**, "Characterization of primary settling tank effluent in NYC water pollution control plants," NYCDEP, 1.5 years. \$507,885.
- Fillos, J.**, "Technical advisory committee: DEP's nitrogen control plan," NYCDEP, 3 years. \$395,178.
- Fritton, S.**, "Quantifying tracer transport in cyclically loaded bone," NIH, 09/01 -08/02 \$67,639.
- Fritton, S.**, "Determining the contribution of blood flow to interstitial bone fluid flow," PSC-CUNY, 07/02-06/03, \$2,908.
- Fritton, S.**, "Delineating the pathways of bone interstitial fluid flow," Whitaker Foundation, 05/03-04/04, \$79,266.
- Gertner, I.**, and **Wei, J.**, "Moving object detection and identification," US Navy, 10/01-09/03, \$261K.
- Ghosn, M.**, **Subramaniam, K.**, and **Diyamandoglu, V.**, "Application of FRP technology for repair of transportation infrastructure," NYSERDA, 06/01-05/03, \$125K.
- Gilchrist, L.**, "Biologically-based self assembled monolayers: multifunctional nanostructured surfaces from proteins," DoD, 3 years, \$360,565.
- Gross, B.**, "Combining active and passive optical remote sensing techniques to measure tropospheric aerosol profiles," NASA, 03/02-03/03, \$98,059.
- Alfano, R., **Ho, P.**, and **Kassir, M.**, "Subsurface imaging of corrosion beneath paints using early light imaging," AFOSR, 06/00-06/03. \$272K.
- Isaacs, L.** "Nucleation and crystallization of optically active Cr⁴⁺-doped crystallites in glass ceramic matrixes," PSC-CUNY, 07/03-06/04, \$2.5K.
- Isaacs, L.**, "Preparation of sub-micron and micron size optical composites", PSC-CUNY, 07/01-06/03, \$6K.
- Jiji, L.**, Modeling heat transfer in micro heat exchangers, PSC-CUNY, 07/02-06/03, \$2,908.
- Kawaguchi, A.**, "Bayer wireless blood glucose monitor joint research project," Bayer, 09/01-08/02, \$42,241.
- Khanbilvardi, R.**, **Ahmed, S.**, and **Moshary, F.**, "Integration of research and education in remote sensing and environmental climate", NASA, 07/98-06/02, \$500K.
- Khanbilvardi, R.**, **Ahmed, S.**, **Steiner, C.**, and **Moshary, F.**, "NOAA cooperative center for remote sensing in science and technology", NOAA, 10/01-09/02, \$2.5M.
- Koplik, J.**, "Fluid and particulate transport in self-affine fractures," DOE, 03/02-02/03, \$95K.
- Koplik, J.**, "Molecular dynamics of fluid solid systems," NASA, 02/0-11/03, \$45K.
- Lee, J.**, "Feasibility of multiple functions in reactive separation systems, ACS-PRF, 09/02-08/04, \$35K.
- Lee, J.**, "Shortcut design method for reactive distillation," PSC-CUNY, 07/02-06/04, \$10K.
- M. Lee**, "C3 Systems modeling and simulation," US Army, 01/01-04/05. \$23,228.
- Li, J.**, "CAREER: An integration of research and education on ferroelectric composites," NSF, 10/02-08/06, \$342,815.
- Li, J.**, "Interphase effect on elastic properties of some extreme heterogeneous materials," PSC-CUNY, 04/03-06/4, \$5K.
- Liaw, B.**, and **Delale, F.**, "Hybrid carbon-glass fiber/toughened epoxy thick composite joints subject to drop-weight and ballistic impacts at various temperatures," U.S. Army, 05/03-05/06, \$400K.
- Liaw, B.**, "Ultrasonic assessment of impact-induced damage and microcracking in polymer matrix composites," NASA, 01/99-

External Funding

01/03, \$100K.

Liaw, B., "Analysis and design of composite Sabot subjected to loading imparted by rifling during launching," PSC-CUNY, 07/02-06/04, \$5,419.

Lucci, S., "Some insights into the learning capability of neural networks" PSC-CUNY, 07/03-06/04, \$3,297.

McCracken, D., and Wolfe, R., "User-centered web site design," NSF, 01/01-03/03. \$251,575.

McKnight, C., and **Paaswell, R.**, "UTRC - impact of congestion on bus operations and costs," USDOT, 01/02-12/02, \$127,715.

Mouskos, K., "Transportation information and decision engineering center," NJIT, 01/02-12/02, \$49,949.

Mouskos, K., "UTRC – technology solutions to overcrowded park and ride facilities," USDOT, 01/01/02-12/31/02, \$87,831.

Mylonakis, G., "Analysis of pile-soil dynamic interaction with application to vibration isolation," CUNY Software Institute Program. 12/02–08/03, \$8K.

Paaswell, R., "UTRC administration," USDOT, 10/02-12/03, \$556,999.

Paaswell, R., "Technology transfer – Year 15," USDOT and NJDOT, 01/03-12/03, \$199,350.

Paaswell, R., "A new approach to New York City car congestion," Kaplan Fund, 01/03-12/03, \$239,991.

Paaswell, R., "Work zone accidents," NYSDOT, 02/03-09/03, \$86,375.

Paaswell, R., "Regional exchange of scheduling data for New York State transit operators," NYSDOT, 2003, \$1.3M.

Paaswell, R., "Cost benefit analysis, transit projects," NYC, 02/03-06/03, \$25K.

Paaswell, R., "Estuary watershed plan," NYCDEP, 2003, \$95K.

Paaswell, R., "NY in the new world economy," NYSDOT, 01/02-09/02, \$250K.

Paaswell, R., and **Brodzinski, F.**, "Benefits value package", NYSDOT, 03/02-06/02, \$10,999.

Holguin-Veras, J., and **Paaswell, R.**, "New Jersey's links to the 21st century," NJDOT/USDOT, 07/99-09/02, \$650K.

Holguin-Veras, J., and **Paaswell, R.**, "Impacts of extreme events on passenger travel behavior," NSF, 04/02–03/03, \$50K.

Parker, N., **Agrawal, A.**, **Subramaniam, K.**, **Mylonakis, G.**, and **Kawaguchi, A.**, "Great Cities University Transportation Initiative: maintenance and management of transit infrastructure," FTA, 10/01-09/02, \$65K.

Parker, N., "UTRC – NJDOT technology transfer," USDOT, 01/02-12/02, \$77,364.

Parker, N., "Great Cities University Transportation Initiative: hybrid electric transit buses: challenges and implication," FTA, 10/01-09/02, \$121,028.

Price, T., "Micromechanical model of undrained soil behavior," NSF, 07/01-05/03, \$160,328

Ravindran, K., "Design and validation of secure voting algorithms for distribution," ITT Industries, 10/01-10/02, \$20K.

Ravindran, K., "Voting algorithms for secure distributed systems", ITT Industries, 09/01-08/03, \$42.2K.

Ravindran, K., "Incorporating QoS of data delivery in distributed voting algorithms", ITT Industries, 06/03-05/04, \$49.7K.

Rouson, D., "A novel model for boundary layer scalar transport," NIST, 04/02-03/03, \$51,122.

Rumschitzki, D., "Vessel structure and pressure: transport and atherogenesis," NIH, 04/02-03/03, \$290,100.

Saadawi, T., **Sun, Y.**, and **Uyar, U.**, "US ARL Program: efficient reliable end-to-end communications," Collaborative Scientific Alliance in Communications and Networks, 2001-2006, \$3.0M.

Sadegh, A., "Automated lifting and transportation device for breakers", Con-Edison, Inc., 2002-2003, \$7.5K.

Sadegh, A., "Short term creep test of aluminum," ALCOA, 2002-2003, \$14K.

Sadegh, A. and **Watkins, C.**, "Development of a high-biofidelity simulation for stand-up rider operator motion during extreme dynamic events," Crown Equipment, 2001-2003, \$52,263.

Sadegh, A. and **T. Saadawi**, "Industrial Association Program," Northrop Grumman, 2002-2003, \$10K.

Shinnar, R., "Coalescence and phase separation during spinodal decomposition of solvent mixture far from critical point," NSF, 12/01-11/02, \$106,623.

Shuttuck, M., "Granular media: experimental kinetic theory," NSF, 01/02-12/02, \$86K.

Subramaniam, K., and Agrawal, A., "Acquisition of instrumentation for material characterization and damage quantification of materials and systems laboratory at the CCNY," AFOSR, 10/01-10/02, \$100,270.

Sun, Y., "Retransmission diversity in ad hoc networks," ARL CTA Program, 10/02-09/03, \$70K.

Tarbell, J., "Shear stress effects on endothelial transport," NIH, 12/00-12/05, \$1,221,882.

Tarbell, J., "Wall shear stress in the cardiovascular system," NIH, 07/00-06/05. \$1,381,355.

Tarbell, J., "Prosthetic heart valve fluid mechanics and blood damage," NIH, 07/01-06/06, \$1,228,944.

Tarbell, J., "Microgravity effects on transvascular transport and vascular control", NASA, 03/02-02/06, \$460K.

Tardos, G., "A study of agglomerate growth in granulation", NSF, 07/99-06/03, \$280K.

Walser, A., "Two photon absorption imaging of KDP crystals," LLNL, 02/02-01/03, \$34,162.

Watkins, C., "Computer science, engineering and mathematics scholarships," NSF, 03/00-02/04, \$275K.

Watkins, C., Gumbs, G., and Koplik, J., Denn, M., et. al., "CREST Center for Mesoscopic Modeling and Simulation," NSF, 09/02-08/07, \$2.0M.

Wei, J., PSC-CUNY, 07/02-06/03, \$4.2K; 07/03-06/04, \$3.5K.

Wei, J., CUNY-CISDD, 2003, \$8K.

Weinbaum, S., "New York State NASA space grant college & fellowship program," NASA, 02/02-01/03, \$34K.

Weinbaum, S., "To increase the number of minority Ph.D.'s in biomedical engineering," Sloan, 09/01-08/04, \$200K.

Weinbaum, S., "Creation of a new department and undergraduate degree program in BME using the resources of an urban consortium," Whitaker, 09/02-08/03, \$445,733.

Weinbaum, S., Sloan Foundation, 09/01-08/05, \$148,250.

Weinbaum, S., Whitaker Foundation, 09/02-08/05, \$999,853.

Weinbaum, S., The Wallace H. Coulter Foundation, 04/03-03/05, \$2.2M.

Weinbaum, S., "Axial flow effects in proximal tubule," NIH, 07/03-07/07, \$445,394.

Weinbaum, S., "Cytoskeletal strain amplification due to bone fluid flow," NIH, 04/02-03/07, \$1,456,000.

Weinbaum, S., "A national urban model for minority undergraduate biomedical education," NIH, 09/01-08/02, \$396,519.

Wolberg, G., "Log-polar transforms for optical image processing and target recognition," ONR, 03/03-09/06, \$600K.

Wolberg, G., and Chaikin, G., "Novel algorithms for image registration," CUNY Collaborative, 11/01-11/03, \$15,840/yr.

Wolberg, G., "Omnidirectional imaging," PSC-CUNY, 07/02-07/03, \$3,352.

Zhu, Z., "3D virtual classroom: the next generation learning environment," CUNY CISDD, 06/03-05/04, \$8K.



Advisory Boards

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