

New Faculty



Dr. Pinhas Ben-Tzvi

Pinhas Ben-Tzvi is an assistant professor in the Department of Mechanical and Aerospace Engineering. He received his Ph.D. in mechanical engineering from the University of Toronto and previously worked on medical

diagnostic robotic systems at General Electric Medical Systems. His research interests are focused on the advanced mechanics and control of mechatronic and robotic systems, the design of intelligent autonomous systems, and the application of smart materials for the development of novel sensors and actuators for biomedical and miniature mechatronic and microrobotic systems.



Dr. Stephen Hsu

Stephen Hsu is a professor in the Department of Mechanical Engineering. He has a wide range of experience and expertise dealing with energy efficiency, materials, energy, and manufacturing, and he leads SEAS efforts

in the broader field of energy. Hsu began his career at Amoco Research Center, then joined NIST as a research scientist. At NIST, he conducted research on materials, measurements, and metrology, and he interfaced extensively with U.S. industries on materials metrology issues. He also led international cooperative research programs on advanced materials for more than 20 years.

Hsu has published more than 250 papers, books, and articles, and holds seven U.S. patents. He is a Fellow of the American Society of Mechanical Engineers and the Society of Tribologists and Lubrication Engineers and has received many awards. He has served in various academic positions at Northwestern University, Pennsylvania State University, the University of Maryland, and the City University of Hong Kong, and has graduated more than 70 students and post-docs over the years. Hsu earned his Ph.D. in chemical engineering from Pennsylvania State University.



Dr. Samer Hamdar

Samer Hani Hamdar comes to GW from Northwestern University Transportation Center, where he earned his Ph.D. in civil and environmental engineering and was a research assistant. He is an assistant professor in the

Department of Civil and Environmental Engineering, and his primary research interests include driver and pedestrian behavior modeling, traffic flow theory, intelligent transportation systems, transportation planning and evaluation, transportation safety, evacuation modeling, and disaster management.



Dr. Yongsheng Leng

Yongsheng Leng earned his Ph.D. in mechanics and tribology (the science of friction, lubrication, and wear between two solid surfaces) from Tsinghua University (China). Before joining SEAS, he was a research assistant

professor of chemical engineering at Vanderbilt University. His research interests include computational nanotribology, molecular modeling of self-assembly at organo-metallic interfaces, nanomechanics, mechanical property of metal nanowires, and the development of computational methodology. He is an assistant professor in the Department of Mechanical and Aerospace Engineering.



Dr. Howie Huang

Howie Huang comes to GW from the University of Virginia, where he received a Ph.D. in computer science. He is an assistant professor in the Department of Electrical and Computer Engineering, and his research interests include

computer architecture, operating systems, data-intensive computing, power-aware systems, and high-performance computing.



Dr. Baoxia Mi

Baoxia Mi is an assistant professor in the Department of Civil and Environmental Engineering. Before joining SEAS, she was a postdoctoral research associate in the Department of Chemical Engineering at Yale University. Her research

has focused on physicochemical processes emphasizing novel membrane technologies and nanomaterials for water-related applications. Mi earned her Ph.D. in environmental engineering from the University of Illinois at Urbana-Champaign.



Dr. Nan Zhang

Nan Zhang received his Ph.D. in computer science from Texas A&M University and is a National Science Foundation Career Award winner whose research interests include security and privacy issues in databases, data mining,

and computer networks. He has joined SEAS as an assistant professor in the Department of Computer Science; prior to that, he was an assistant professor of computer science and engineering at the University of Texas at Arlington.

Michael Plesniak Joins SEAS as Department Chairman

SEAS is pleased to introduce our new Department of Mechanical and Aerospace Engineering chairman, Professor Michael W. Plesniak.

Professor Plesniak joined the SEAS faculty on August 1, 2008. He was formerly a professor of mechanical engineering at Purdue University, the Eugene Kleiner Professor for Innovation in Mechanical Engineering at Polytechnic University of New York, and the director of the Fluid Dynamics and Hydraulics Program at the National Science Foundation (NSF).

Plesniak has made significant contributions to education and research in the discipline of fluid dynamics. His specific contributions are in the field of turbulent flow physics for applications ranging from gas turbine cooling to biological flows. He has authored over one hundred refereed archival publications and conference papers, over fifty non-refereed publications and presentations, and has presented numerous invited seminars and keynote addresses.

Among his distinctions, Plesniak is a Fellow of the American Society of

Mechanical Engineers and of the American Physical Society. He is an Associate Fellow of the American Institute for Aeronautics and Astronautics (AIAA), and a member of Sigma Xi, the Scientific Research Society.

Plesniak has been active in the American Society of Mechanical Engineers as a member of the Fluid Mechanics Technical Committee and the Honors and Awards Committee, and as associate editor of the *Journal of Fluids Engineering*. He is also a member of AIAA's Public Policy Committee and Fluid Dynamics Technical Committee, and he serves on the Infrastructure Issues Team of the Center for the Study of the Presidency and Congress (CSPC). The CSPC is a public policy advocacy group that advised President Obama's transition team and is making recommendations to the president on policy issues.

Plesniak received his Ph.D. in mechanical engineering from Stanford University, and B.S. and M.S. degrees from the Illinois Institute of Technology.



Retiring Faculty

SEAS salutes our recently retired faculty member, **JOSEPH PELTON, RESEARCH PROFESSOR OF ENGINEERING.**

Professor Joseph Pelton was a member of the GW faculty from 1999 to 2008 and a research professor of engineering in the Department of Electrical and Computer Engineering.

After 30 years in the satellite communications field, Pelton joined GW in 1999, working initially with the Institute for Applied Space Research (IASR) and then serving as director of the master of science program in telecommunications and computers, located at GW's Virginia Campus. He later consolidated the research projects he had at the Virginia Campus and the activities of the IASR to create the Space & Advanced Communications Research Institute (SACRI).

Pelton's research work at GW included advanced satellite design concepts for the Communications Research Lab of Japan and the National Institute of Information and Communications Technology, three major studies on space safety related to the Space Shuttle, research for Northrop Grumman, setting up a communications research lab at the Virginia Campus under sponsorship from the State of Virginia's Center for Innovative Technology, and organizing three major space related conferences. Also while at GW, he was appointed by the Diet of Japan to be an external evaluator of the Japanese Space Program and by NASA and the National Science Foundation to be a co-chairman of a global review of satellite communications technology.

SEAS Establishes Faculty Excellence Awards

SEAS established its own teaching and research awards this year to recognize faculty who are making outstanding contributions to the school as teachers or researchers, and the school celebrated the four winners at an awards reception on April 16.

Professor Rahul Simha of the Department of Computer Science was selected as the 2009 SEAS Distinguished Teacher. Throughout his career, he has made significant contributions to course and program development, particularly interdisciplinary programs, and he has developed innovative teaching practices and an impressive set of course materials. He also has a particularly impressive record of engaging undergraduates in research projects. As one of his nominators testified, "By enabling us to uncover theories with our own minds, [Professor Simha] built our foundation to become better learners. We became passionate about our studies and we became hungry to come back to class for next week's adventure."

Professor Jason Zara of the Department of Electrical and Computer Science was chosen as the 2009 SEAS Outstanding Young Teacher, because of his excellent teaching record over a broad range of classes and his significant contributions to program development. He has a passion for teaching, student advising, innovative teaching practices, and student mentoring and service to the student community. "Professor Zara ensures students understand his material and allows students to continually question him about material until he sees that you understand the concept," noted one of his nominators.

Professor James Lee of the Department of Mechanical and Aerospace Engineering received the 2009 SEAS Distinguished Researcher Award because of his truly distinguished record as a scholar and researcher. Of particular note is his prolific record

of publication in top-quality journals, and the impact of his work in a number of areas, including continuum mechanics, fracture mechanics, structural control, and more recently, micro-continuum mechanics, multiscale modeling, and meshless methods. His recent work on the development of a multiscale field theory that unifies molecular and continuum mechanics is a landmark achievement in the mechanics of materials.

Finally, **Professor Michael Keidar, also of the Department of Mechanical and Aerospace Engineering**, received the 2009 SEAS Outstanding Young Researcher Award. Professor Keidar has built an outstanding scholarly record that includes a prolific history of publishing in top quality journals. He is on his way to building a world-class research program in plasma physics and applications at GW and has initiated new and promising work here in biomedical engineering.

These award winners were recommended by two committees of their peers selected by Dean David Dolling. The teaching awards committee was chaired by Professor Jonathan Deason, and included Professors Rumana Riffat, Roger Kaufman, Nicholas Kyriakopoulos, and Bhagirath Narahari. The research awards committee was chaired by Professor Rajat Mittal, and included Professors Hyeong-Ah Choi, Branimir Vojcic, Majid Manzari, and Johan Rene van Dorp.

Left to right: Professors Jason Zara, James Lee, and Rahul Simha. Professor Michael Keidar is not pictured.



Faculty Accomplishments

SEAS congratulates our faculty for their various notable achievements this year. The accomplishments below represent a sampling of the successes of faculty across our five departments: Civil and Environmental Engineering (CEE), Computer Science (CS), Electrical and Computer Engineering (ECE), Engineering Management and Systems Engineering (EMSE), and Mechanical and Aerospace Engineering (MAE).

Awards & Honors

Jonathan Deason (EMSE): appointed as a member of the International Scientific Committee of the Urbenviron International Association for Planning and Environmental Management. Professor Deason was also appointed a member of the editorial advisory board of *Urbenviron Journal* in November.

Azim Eskandarian (CEE): invited to serve on the IEEE-USA Committee on Transportation and Aerospace Policy, which is one of the IEEE legislation committees that advise the U.S. Congress on policy issues representing the IEEE's positions.

Howie Huang (ECE): selected as the recipient of a 2008 IBM Real Time Innovation Award for his proposal "Hippo: High-Performance POver-aware System - Building Green Computers with IBM Real-time Java Technology."

Michael Keidar (MAE): elected an associate fellow of the American Institute of Aeronautics and Astronautics. In addition, Professor Keidar's paper, "Plasma flow and plasma-wall transition in Hall thruster channel," was selected by the *Physics of Plasmas* Journal as one of the most highly-cited papers from 50 years of plasma physics.

Michael Plesniak (MAE): elected a Fellow of the American Physical Society and invited to become a member of the American Institute of Aeronautics and Astronautics' Fluid Dynamics Technical Committee. Professor Plesniak was also invited to serve on the Infrastructure Issues Team of the Center for the Study of the Presidency and Congress (CSPC). The CSPC is a public policy

advocacy group that advised President Obama's transition team and will be making recommendations to him on policy issues.

Rajat Mittal (MAE): invited to join the *Journal of Computational Physics* as associate editor and the National Science Foundation Tera-Grid Resource Allocation Committee as a member.

Michael Stankosky (EMSE): named editor emeritus of *VINE*, the journal of information and knowledge management systems.

Media Mentions

Rajat Mittal (MAE): received plenty of media attention for his swimming research last summer during the approaching, and later ongoing, Olympics. National Public Radio, *Popular Science*, and *Popular Mechanics*, among other media, interviewed him for radio news programs and print articles.

Julie Ryan (EMSE): participated in a National Public Radio show on cybersecurity along with fellow guests John Arquilla and Scot Borg. The show was the December 8, 2008, episode of "On Point" with Tom Ashbrook.

Poorvi Vora (CS): interviewed in October 2008 by WMAL, WAMU, *The Washington Times*, Voice of America (radio, broadcast, and Web), and Medill News Services for her voting research. (See page 20 for details).

Books

Howard Eisner (EMSE): the 3rd edition of his book, *Essentials of Project and Systems Engineering Management*, from John Wiley, came out this year.

Louis Ippolito (ECE): wrote *Satellite Communications Systems Engineering: Atmospheric Effects, Satellite Link Design and System Performance*, which is published by John Wiley.

Rhys Price Jones (CS): co-authored *BioInformatics: A Computing Perspective* with Shuba Gopal, Anne Haake, and Paul Tymann. The book was published by McGraw-Hill.

Joseph Pelton (ECE): co-authored *Space Safety Standards and Regulation* with Ram Jakhu. It will be published later this year by Elsevier. His book, *License to Orbit: The Future of Commercial Spaceflight*, was published by Apogee Book in early 2009.

Conference Keynote Lectures

Jonathan Deason (EMSE): delivered "Ethics and Socio-Environmental Responsibility" in October 2008, in São Paulo, Brazil.

Tarek El-Ghazawi (ECE): delivered the keynote lecture at the International Conference on New Technology, Mobility, and Security in November 2008, in Tangier, Morocco. He also served as the program chair for the International Conference on Field Programmable Technology held in December 2008, in Taipei, Taiwan.

Shelly Heller (CS): delivered "Online Learning 2.0" in February 2009, in Taipei, Taiwan.

Steve Kan (CEE): delivered "Research Update on Vehicle Compatibility, Child Occupant Safety Research, and IIHS Frontal Center Pole Impact" in October 2008, in Tokyo, Japan.

Nicholas Kyriakopoulos (ECE): delivered "Quality of Service as a Measure of System Performance" in February 2009, in Vienna, Austria.

Majid Manzari (CEE): delivered "Predictive Tools for Evaluation of Effectiveness of Geotechnical Retrofitting" in October 2008, in Tabriz, Iran.

Joseph Pelton (ECE): chaired the opening keynote session of the International Association for the Advancement of Space Safety in October 2008, in Rome, Italy.

Michael Stankosky (EMSE): delivered "Knowledge Management" in September 2008, in Alexandria, VA. In October 2008, he delivered "Can You Name Your Knowledge Assets?" in New York City.