Celebrating Faculty Excellence

Acclaiming the awards, honors, and recognitions that our faculty received during the past year.
“In our classrooms and laboratories, our faculty, inspired by the scientific breakthroughs of their predecessors, provide the same inspiration for our students as we educate them to be future engineering and applied science leaders who will address some of the most challenging world problems, providing solutions for the betterment of the human condition.”

—FENIOSKY PEÑA-MORA

Columbia Engineering has a long tradition of excellence going back to the founding of King’s College in 1754 and renewed in the founding of the School in 1864. The faculty members whose accomplishments are highlighted in this booklet are joining the continuum of faculty excellence that has been and continues to be a hallmark of the School.

From the first dean, Charles F. Chandler, to Michael I. Pupin and Edwin H. Armstrong, to MPEG-2 patent-holder Dimitris Anastassiou and smart phone display screen guru James Im, our faculty has had a direct impact on how we live our lives today and how we will live them tomorrow.

Please join us in congratulating the newest members to the prestigious circle of outstanding faculty members who have made our School their academic home. We celebrate them as we also recognize the successes of other faculty in past years and anticipate honoring even more faculty in the future.

Feniosky Peña-Mora
Dean
Gertrude F. Neumark

Honorary Doctor of Science degree, Columbia University

for her pioneering work as one of the world’s foremost experts on doping wide band-gap semiconductors, creating blue and ultraviolet light-emitting diodes (LEDs) and lasers that have led to improved consumer products, including sharper laser printers, increased DVD storage capacity, advanced traffic lights, mobile-phone screens, and flat-screen televisions.
Presidential Early Career Award for Scientists and Engineers (PECASE)

Xi Chen
Associate Professor, Earth and Environmental Engineering

Presidential Early Career Award for Scientists and Engineers (PECASE) (National Science Foundation nominee)
in recognition of his outstanding research involving mismatch damages in thin-film and nano-scale self-assembly

Helen H. Lu
Associate Professor, Biomedical Engineering

Presidential Early Career Award for Scientists and Engineers (PECASE) (National Institutes of Health nominee)
in recognition of her use of biomimetic scaffolds to promote chondrocyte-mediated regeneration of the interface between soft tissue and bone

National Academy of Engineering Frontiers of Science Selectee
recognizing young engineers from industry, academia, and government who are performing exceptional engineering research and technical work

Faculty Early Career Development Awards (CAREER)

Latha Venkataraman
Assistant Professor, Applied Physics and Applied Mathematics

NSF Faculty Early Career Development (CAREER) Award
to support her research into understanding properties of single molecules attached to metal electrodes

Packard Fellowship
to support her research into understanding fundamental properties of single-molecule electronic devices

José Blanchet
Assistant Professor, Industrial Engineering and Operations Research

NSF Faculty Early Career Development (CAREER) Award
to support his research to investigate and develop a framework that exploits asymptotic analysis to systematically generate efficient rare-event simulation algorithms for complex stochastic systems

Marco Castaldi
Assistant Professor, Earth and Environmental Engineering

NSF Faculty Early Career Development (CAREER) Award
to support his research to investigate the chemical kinetics and mechanisms of catalytic reactions by combining a high pressure shock and adapting it to study heterogeneous reactions
**Faculty Early Career Development Awards (CAREER)**

**Kartik Chandran**  
**Assistant Professor, Earth and Environmental Engineering**  
NSF Faculty Early Career Development (CAREER) Award to support his research to characterize gaseous nitric oxide (NO) and nitrous oxide (N2O) emissions from wastewater treatment plants

**V. Faye McNeill**  
**Assistant Professor, Chemical Engineering**  
NSF Faculty Early Career Development (CAREER) Award to support her research to better understand and quantify interactions of trace gases with ice and snow

**Ah-Hyung (Alissa) Park**  
**Lenfest Earth Institute Assistant Professor of Climate Change, Earth and Environmental Engineering**  
NSF Faculty Early Career Development (CAREER) Award to support her in-depth research into sustainable energy-conversion systems and carbon sequestration

**Nabil Simaan**  
**Assistant Professor, Mechanical Engineering**  
NSF Faculty Early Career Development (CAREER) Award to support his research to provide the theoretical foundation for modeling and control of flexible robots for intelligent and safe interaction with the anatomy

**Recognition/Achievement Awards**

**Shih-Fu Chang**  
**Professor and Chair, Electrical Engineering**  
2009 Kiyo Tomiyasu Award for pioneering contributions to automated image classification and search

**Tony Heinz**  
**David M. Rickey Professor of Optical Communications, Electrical Engineering**  
Julius Springer Prize for Applied Physics for his pioneering work on the electrical and optical properties of nanoscale carbon materials, including carbon nanotubes

**Vladimir Vapnik**  
**Professor, Computer Science, and Senior Research Scientist at the Center for Computational Learning Systems (CCLS)**  
Paris Kanellakis Theory and Practice Award, Association of Computational Machinery for developing one of the most frequently used algorithms in machine learning, Support Vector Machines (SVM)

**Mischa Schwartz**  
**Charles Batchelor Professor Emeritus, Electrical Engineering**  
IEEE Educational Activities Board (EAB) Vice President’s Recognition Award to recognize significant and substantial effect on the practice of engineering and of engineering education
Recognition/Achievement Awards

MARIA CHUDNOVSKY
Associate Professor, Industrial Relations and Operations Research

Delbert Ray Fulkerson Prize
for an outstanding paper in the area of discrete mathematics given jointly by the Mathematical Programming Society (MPS) and the American Mathematical Society (AMS) to encourage mathematical excellence

ADAM SOBEL
Associate Professor, Applied Physics and Applied Mathematics

Clarence Leroy Meisinger Award of the American Meteorological Society Council
in recognition of research achievement by young, promising atmospheric scientists who have shown outstanding ability

Election to Professional Societies

VAN C. MOW
Stanley Dicker Professor of Biomedical Engineering and Chair, Biomedical Engineering

Associate Fellow of the Academy of Sciences for the Developing World
Associate Fellows status is granted to those who have made significant contributions to the advancement of science in the developing world.

KEREN BERGMAN
Professor, Electrical Engineering

Fellow, Institute of Electrical and Electronics Engineers (IEEE)
elected to the world’s leading professional association for the advancement of technology

STEVEN NOWICK
Professor, Computer Science

Fellow, Institute of Electrical and Electronics Engineers (IEEE)
elected to the world’s leading professional association for the advancement of technology
**Columbia Engineering Faculty Excellence Celebration**

**Julia Hirschberg**  
Professor, Computer Science  
FELLOW, INTERNATIONAL SPEECH COMMUNICATIONS ASSOCIATION (ISCA)  
elected to this organization that promotes, in an international worldwide context, activities and exchanges in all fields related to speech communication science and technology, in recognition of her contributions to speech synthesis and prosody research and her contributions to ISCA as board member and president.

**Aron Pinczuk**  
Professor, Applied Physics and Applied Mathematics  
FELLOW, AMERICAN ACADEMY OF ARTS AND SCIENCES  
for his research at the interface of fundamental physics and novel applications, using optical methods to investigate nanostructures and their fabrication, specializing in the unique properties of semiconductors, and for being a leading experimentalist of inelastic light.

**Clark Hung**  
Professor, Biomedical Engineering  
FELLOW, AMERICAN INSTITUTE OF MEDICAL AND BIOLOGICAL ENGINEERING (AIMBE)  
outstanding bioengineers in academia, industry, and government who are leaders in the field and have distinguished themselves through their contributions in research, industrial practice, and/or education.

**Paul Sajda**  
Associate Professor, Biomedical Engineering  
FELLOW, AMERICAN INSTITUTE OF MEDICAL AND BIOLOGICAL ENGINEERING (AIMBE)  
ounstanding bioengineers in academia, industry, and government who are leaders in the field and have distinguished themselves through their contributions in research, industrial practice, and/or education.

**Y. Lawrence Yao**  
Professor and Chair, Mechanical Engineering  
FELLOW, SOCIETY OF MANUFACTURING ENGINEERS (SME), AND PRESIDENT, NORTH AMERICAN MANUFACTURING RESEARCH INSTITUTION OF SME (NAMRI/SME)  
elected a Fellow in the world’s leading professional society serving the manufacturing industry.

**Siu-Wai Chan**  
Professor, Applied Physics and Applied Mathematics  
FELLOW, AMERICAN CERAMIC SOCIETY BOARD OF DIRECTORS  
elected a Fellow in the society that is the leading provider of technical information, meetings, and publications on ceramic science in the world.

**Gordana Vunjak-Novakovic**  
Professor, Biomedical Engineering  
ELECTED MEMBER, WOMEN IN TECHNOLOGY INTERNATIONAL (WITI) HALL OF FAME  
to recognize, honor, and promote the outstanding contributions women make to the scientific and technological communities that improve and evolve our society.

**ELECTED MEMBER, NEW YORK ACADEMY OF SCIENCES**  
Membership includes leaders in science, business, academia, and government.
Notable Professional Recognitions

**JOHN TAYLOR**  
*Assistant Professor, Civil Engineering and Engineering Mechanics*  
*Sloan Industry Studies Fellowship*  
to support his ground-breaking investigational work, which is increasing the knowledge of complex influences shaping today’s industries

**CHEE-WEI WONG**  
*Associate Professor, Mechanical Engineering*  
*2009 3M Young Faculty Award*  
to support his research into sub-wavelength nanostructures

**GIL ZUSSMAN**  
*Assistant Professor, Electrical Engineering*  
*Young Investigator Award, Defense Threat Reduction Agency*  
given to researchers from science and engineering fields to combat the threat posed by weapons of mass destruction; to support his research on the resilience of networks to geographically correlated failures and attacks

**DAN ELLIS**  
*Associate Professor, Electrical Engineering*  
*NSF Frontiers of Engineering Selectee 2009*  
*NSF Frontiers of Engineering Symposium Organizer 2010*  
recognizing young engineers from industry, academia, and government who are performing exceptional engineering research and technical work

**GEORGE DEODATIS**  
*Santiago and Robertina Calatrava Family Professor, Civil Engineering and Engineering Mechanics*  
*Elected President, International Association for Structural Safety and Reliability (IASSAR)*  
head of an organization of engineers and scientists with specialized expertise and interest in structural reliability, safety, and risk analysis and responsible for organizing the International Conferences on Structural Safety and Reliability (ICOSSAR)
Theodore Zoli
Adjunct Professor, Civil Engineering
and Engineering Mechanics

MacArthur Foundation Award

given to talented individuals with exceptional creativity,
promise for important future advances based on a track record of
significant accomplishment, and potential for the fellowship to
facilitate subsequent creative work; for leading the design of el-
egant and enduring bridges around the world and making major
technological advances to protect transportation infrastructure in
the event of natural and man-made disasters
“Columbia University’s Fu Foundation School of Engineering and Applied Science seeks to educate socially responsible engineering and applied science leaders whose work results in the betterment of the human condition, locally, nationally, and globally.”

—MISSION STATEMENT