ACCLAIMING THE AWARDS, HONORS, AND RECOGNITIONS THAT OUR FACULTY RECEIVED DURING THE PAST YEAR

WELCOMING THE START OF A NEW YEAR
“We are in a Renaissance period for Engineering—a period of great research, great creativity and invention, great innovation, and incredible translation of these innovations to solutions that impact every aspect of society.”

—MARY C. BOYCE
Today we celebrate the many achievements over the past year of our remarkable faculty, as we welcome new faculty who are joining our research and teaching community, and prepare for the start of an exciting and productive year.

We congratulate our colleagues on their outstanding research and scholarship, which have been rightly acknowledged by some of the world’s most prestigious institutions and organizations, as well as their excellence in teaching, recognized by Columbia University. Their research continues to break new ground in many fields and will have a huge impact on developing solutions for some of the biggest challenges facing humanity today—from sustainability to human health, from our increasing connectivity to ensuring our security and to empowering creativity. These breakthroughs in engineering and applied science are transforming society.

Columbia Engineering is truly a place where engineering advancements transcend disciplines, inspire leaders, and transform lives. For example, this year we are pleased to recognize Steven Bellovin, who has been named as the first technology scholar to serve on the bipartisan Privacy and Civil Liberties Oversight Board appointed by President Obama. Sunil Agrawal’s innovative research into rehabilitative robotics earned two prestigious awards from the American Society of Mechanical Engineers. And our junior faculty continue to astound us. Working in a broad range of disciplines, they have garnered numerous early career awards, including four National Science Foundation CAREER awards, three Sloan Foundation Research Fellowships, an Office of Naval Research Young Investigator Award, and a Presidential Early Career Award for Scientists and Engineers, recognizing their outstanding work.

As important as our faculty’s groundbreaking research is the energy and commitment they bring to teaching. By sharing their knowledge and enthusiasm and instilling a love of discovery in our students, they are shaping the next generation of Columbia Engineering scholars and leaders.

Congratulations to all of our distinguished faculty and much success to everyone in the upcoming year.

Mary C. Boyce
Dean of Engineering
Morris A. and Alma Schapiro Professor
Named Professors

PATRICIA J. CULLIGAN
Robert A. W. and Christine S. Carleton Professor of Civil Engineering
CIVIL ENGINEERING AND ENGINEERING MECHANICS

IRVING P. HERMAN
Edwin Howard Armstrong Professor of Applied Physics
APPLIED PHYSICS AND APPLIED MATHEMATICS

PETER KINGET
Bernard J. Lechner Professor of Electrical Engineering
ELECTRICAL ENGINEERING
Named Professors

ELISA E. KONOFAOU
Robert and Margaret Hariri Professor of Biomedical Engineering
Biomedical Engineering and Radiology

SANAT KUMAR
Bykhovsky Professor of Chemical Engineering
Chemical Engineering

XUNYU ZHOU
Liu Family Professor of Industrial Engineering and Operations Research
Industrial Engineering and Operations Research
Promotions—Full Professor

JOSE BLANCHET
Industrial Engineering and Operations Research

KARTIK CHANDRAN
Earth and Environmental Engineering

HENRY HESS
Biomedical Engineering

VISHAL MISRA
Computer Science
Promotions—Full Professor

BARCLAY MORRISON III
Biomedical Engineering

SAMUEL SIA
Biomedical Engineering

LATHA VENKATARAMAN
Applied Physics and Applied Mathematics
Promotions—Associate Professor with Tenure

KYLE BISHOP
Chemical Engineering

XI CHEN
Computer Science

HARISH KRISHNASWAMY
Electrical Engineering

HAIM WAISMAN
Civil Engineering and Engineering Mechanics
Promotions—Associate Professor on Tenure Track

PIERRE GENTINE
Earth and Environmental Engineering

JOHN WRIGHT
Electrical Engineering

Promotions—Senior Lecturer

JAE WOO LEE
Computer Science
SUNIL AGRAWAL

Professor of Mechanical Engineering

**Machine Design Award, American Society of Mechanical Engineers (ASME)**
for eminent achievement or distinguished service in the field of machine design, which includes application, research, development, or teaching of machine design—specifically, for his seminal contributions to the field of machine design through the innovative design of robotic exoskeletons for gait retraining of stroke patients and of mobility-assist robots for the training of developmentally delayed infants and toddlers

**Mechanisms and Robotics Award, American Society of Mechanical Engineers (ASME)**
for a cumulative contribution to the field of mechanism design or theory, with continued distinction to be a primary requisite

KEREN BERGMAN

Charles Batchelor Professor of Electrical Engineering

**Engineering Achievement Award, Institute of Electrical and Electronics Engineers (IEEE), Photonics Society (IPS)**
for pioneering contributions to optical interconnection networks and photonic-enabled architectures that advance communications and computing systems
Singular Honors

JOHN (JACK) W. BERKERY
Research Scientist of Applied Physics and Applied Mathematics

STEVEN A. SABBAGH
Senior Research Scientist and Adjunct Professor of Applied Physics

Landau-Spitzer Award, presented jointly by the American Physical Society (APS) and the European Physical Society (EPS) presented every two years to an individual or group for outstanding theoretical, experimental, or technical contributions in plasma physics, and for advancing the collaboration and unity between the European Union and the United States

MARY C. BOYCE
Dean, The Fu Foundation School of Engineering and Applied Science; Morris A. and Alma Schapiro Professor, Mechanical Engineering

Honorary Professor, Zhejiang University in recognition of research leadership in mechanics of materials

SHIH-FU CHANG
Richard Dicker Professor of Telecommunications and Professor of Computer Science; Senior Executive Vice Dean, The Fu Foundation School of Engineering and Applied Science

Honorary Doctorate, Doctor of Sciences, University of Amsterdam
**Singular Honors**

**CHIA-KUN CHU**

*Fu Foundation Professor Emeritus of Applied Mathematics in the Faculty of Engineering and Applied Science; Special Lecturer in Applied Physics and Applied Mathematics*

*Columbia Impact Award, Asian Columbia Alumni Association for pioneering work in the fields of computational fluid dynamics and computational magnetohydrodynamics*

**KAM W. LEONG**

*Samuel Y. Sheng Professor of Biomedical Engineering*

*Einstein Professor, Chinese Academy of Sciences, President’s Fellowship for Distinguished Scientists, Chinese Academy of Sciences*

**RICHARD M. OSGOOD JR.**

*Higgins Professor Emeritus of Electrical Engineering and Professor Emeritus of Applied Physics and Applied Mathematics*

*National Academy of Inventors for demonstrating “a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and welfare of society”*

**FENIOSKY PEÑA-MORA**

*Edwin Armstrong Professor of Civil Engineering and Engineering Mechanics*

*Dominican Republic Academy of Sciences, National Academy of Construction*
Singular Honors

PETER SCHLOSSER
Maurice Ewing and J. Lamar Worzel Professor of Geophysics and Professor of Earth and Environmental Sciences
Leopoldina, German National Academy of Sciences

HENNING SCHULZRINNE
Julian Clarence Levi Professor of Mathematical Methods and Computer Science and Professor of Electrical Engineering
Internet Award, Institute of Electrical and Electronics Engineers (IEEE)

PONISSERIL SOMASUNDARAN
LaVon Duddleson Krumb Professor of Mineral Engineering in the Department of Earth and Environmental Engineering
Heritage Award, Asian Columbia Alumni Association
Faculty Early Career Awards

ALLISON BISHOP

Assistant Professor of Computer Science

NSF CAREER Award
to support “Unifying Provable Security Techniques for Advanced Cryptographer Systems”

MICHAEL P. BURKE

Assistant Professor of Mechanical Engineering

NEW INVESTIGATOR AWARD, AMERICAN CHEMICAL SOCIETY PETROLEUM RESEARCH FUND

MATEI CIOCARELIE

Assistant Professor of Mechanical Engineering

NSF CAREER Award
to support “From Grasp Quality to Hand Quality: Analysis and Optimization for Effective Robot Hands”

Sloan Research Fellow, Alfred P. Sloan Foundation
to support his research in the discovery of how artificial mechanisms can interact as skillfully with the world as biological organisms, and how dexterous robots will impact manufacturing, logistics, and health care and contribute to developing cognitively advanced computers and machines
Faculty Early Career Awards

ANTONIUS (TON) DIEKER

Associate Professor of Industrial Engineering and Operations Research

Presidential Early Career Award for Scientists and Engineers (PECASE) Award

named by President Barack Obama as one of 105 recipients of the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers

ROXANA GEAMBASU

Assistant Professor of Computer Science

Sloan Research Fellow, Alfred P. Sloan Foundation to support her research in designing, building, and evaluating new transparency tools that increase user awareness and society’s oversight of web and mobile applications of personal data

PIERRE GENTINE

Associate Professor of Earth and Environmental Engineering

NSF CAREER Award
to support “Departure from Monin-Obukhov Similarity Theory (MOST) Using High-Resolution Turbulence Model”

DANIEL HSU

Assistant Professor of Computer Science

Sloan Research Fellow, Alfred P. Sloan Foundation to support his research in algorithms for latent variable models and interactive machine learning
Faculty Early Career Awards

MARTHA KIM
Associate Professor of Computer Science

**BORG EARLY CAREER AWARD**
given to a woman in computer science or engineering who has made early career research contributions and is also committed to encouraging young women to enter the computing field.

NIMA MESGARANI
Assistant Professor of Electrical Engineering

**NSF CAREER AWARD**
to support “Biologically Inspired Neural Network Models for Robust Speech Processing”

NANFANG YU
Assistant Professor of Applied Physics and Applied Mathematics

**YOUNG INVESTIGATOR AWARD, U.S. OFFICE OF NAVAL RESEARCH (ONR)**
for exceptionally creative research with far-reaching implications for technological needs of the Navy and the Department of Defense through his project, “Phase-Change Correlated Perovskites as a New Platform for Photonics”
Election to Professional Societies

SUNIL AGRAWAL

Professor of Mechanical Engineering

Fellow, American Institute of Medical and Biological Engineering (AIMBE)

SCOTT BANTA

Professor of Chemical Engineering

Fellow, American Institute of Medical and Biological Engineering (AIMBE)

DAVID BLEI

Professor of Computer Science and Statistics

Fellow, Association for Computing Machinery (ACM)

ELIZABETH M. HILLMAN

Associate Professor of Biomedical Engineering and Radiology

Fellow, Optical Society of America (OSA)
for “pioneering contributions to biomedical optical imaging, spectroscopy, and microscopy, particularly development of novel techniques to elucidate physiological function, and for outstanding services to the biomedical optics community”
Election to Professional Societies

JULIA HIRSCHBERG
Percy K. and Vida L. W. Hudson Professor of Computer Science
Fellow, Association for Computing Machinery (ACM)

VISHAL MISRA
Professor of Computer Science
Fellow, Institute of Electrical and Electronics Engineers (IEEE)
for contributions to “network traffic modeling, congestion control, and Internet economics”

SAMUEL SIA
Professor of Biomedical Engineering
Fellow, American Institute of Medical and Biological Engineering (AIMBE)

ALAN C. WEST
Samuel Ruben-Peter G. Viele Professor of Electrochemistry
Fellow, Electrochemical Society (ECS)
for advanced individual technological contributions in the field of electrochemical and solid-state science and technology, and for active membership and involvement in the affairs of the Electrochemical Society
Recognitions and Achievements

SCOTT BANTA
Professor of Chemical Engineering

Van Lanen Distinguished Service Award, Biomedical Technology Division of the American Chemical Society

ADAM ELMACHTOUB
Assistant Professor of Industrial Engineering and Operations Research

Named to Forbes “30 under 30 in Science”

HARISH KRISHNASWAMY
Associate Professor of Electrical Engineering

Global Initiative of Academic Networks (GIAN) Lectureship, Government of India, Ministry of Human Resource Development

JEFFREY KYSAR
Professor of Mechanical Engineering

Recognitions and Achievements

V. FAYE MCNEILL

Associate Professor of Chemical Engineering

Kenneth T. Whitby Award, American Association for Aerosol Research (AAAR) recognized for her influential research, “changing the way we think about atmospheric organic chemistry, its effect on aerosol properties, and its impact on clouds and climate”

AH-HYUNG (ALISSA) PARK

Lenfest Earth Institute Associate Professor of Climate Change in the Department of Earth and Environmental Engineering

U.S.-China EcoPartnerships program, U.S. Department of State
a partnership between Columbia University and Baotou Steel Group to capture iron and steel slag waste and recycle it for use in other industrial processes, preventing dangerous emissions

STEVE W. SUN

Assistant Professor of Civil Engineering and Engineering Mechanics

Fellowship of Dresden, Technische Universität Dresden
Recognitions and Achievements

VENKAT VENKATASUBRAMANIAN

Samuel Ruben-Peter G. Viele Professor of Chemical Engineering

22nd Annual Professor Roger Sargent Lecture, Imperial College, London

delivered a lecture in honor of Professor Roger W. H. Sargent, the “Father” of Process Systems Engineering, entitled, “Process Systems Engineering at a Crossroads: Challenges and Opportunities in the Era of Watson”

GORDANA VUNJAK-NOVAKOVIC

Mikati Foundation Professor of Biomedical Engineering and Professor of Medical Sciences (in Medicine)

Robert A. Pritzker Distinguished Lecture Award, Biomedical Engineering Society

for outstanding achievement and leadership in the practice of Biomedical Engineering

NGAI YIN YIP

Assistant Professor of Earth and Environmental Engineering

Outstanding Doctoral Dissertation Award, CH2M/Association of Environmental Engineering and Science Professors (AEESP)

for his dissertation, “Sustainable Production of Water and Energy with Osmotically Driven Membrane Processes and Ion-Exchange Membrane Processes”
Scholarly Leadership

STEVEN BELLOVIN

Percy K. and Vida L. W. Hudson Professor of Computer Science

Appointed first Technology Scholar for the Privacy and Civil Liberties Oversight Board (PCLOB)

The PCLOB is an independent agency within the executive branch of the United States government. The bipartisan, five-member Board is appointed by the President and confirmed by the Senate. The PCLOB’s mission is to ensure that the federal government’s efforts to prevent terrorism are balanced with the need to protect privacy and civil liberties.

KEREN BERGMAN

Charles Batchelor Professor of Electrical Engineering

Advanced Scientific Computing Advisory Committee (ASCAC), U.S. Department of Energy

ROXANA GEAMBASU

Assistant Professor of Computer Science

Member, DARPA’s Information Science and Technology (ISAT) study group

a select group of cross-discipline experts that provides advice to DARPA on long-range research directions in information sciences and technology
Scholarly Leadership

MICHAL LIPSON

Eugene Higgins Professor of Electrical Engineering (Joint appointment with Applied Physics and Applied Mathematics)

Member, Board of Directors, Optical Society of America (OSA)

MICHAEL MAUEL

Professor of Applied Physics

Editor-in-chief, Physics of Plasmas, American Institute of Physics

GORDANA VUNJAK-NOVAKOVIC

Mikati Foundation Professor of Biomedical Engineering and Professor of Medical Sciences (in Medicine)

Board of Directors, American Institute for Medical and Biological Engineering (AIMBE)

Council Member, Tissue Engineering and Regenerative Medicine Society (TERMIS)
ADAM CANNON
Senior Lecturer in Discipline in the Department of Computer Science

Presidential Award for Excellence in Teaching, Columbia University

Great Teacher Award, Society of Columbia Graduates

ROBERT FARRAUTO
Professor of Professional Practice in the Department of Earth and Environmental Engineering

Distinguished Faculty Teaching Award, Columbia Engineering Alumni Association

JEFFREY KOBERSTEIN
Percy K. and Vida L. W. Hudson Professor of Chemical Engineering

Edward and Carole Kim Award for Faculty Involvement
honors a faculty member who is not only an excellent teacher, but who also shows a special, personal commitment to students

JAE WOO LEE
Senior Lecturer in Discipline in the Department of Computer Science

Distinguished Faculty Teaching Award, Columbia Engineering Alumni Association
MISSION STATEMENT

The mission of The Fu Foundation School of Engineering and Applied Science is to expand knowledge and advance technology through research, while educating students to become leaders informed by an engineering foundation. Enriched with the intellectual resources of a global university in the City of New York, we push disciplinary frontiers, confront complex issues, and engineer innovative solutions to address the grand challenges of our time. We create a collaborative environment that embraces interdisciplinary thought, integrated entrepreneurship, cultural awareness, and social responsibility, and advances the translation of ideas into practical innovations.