CELEBRATING FACULTY EXCELLENCE 2017

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

WELCOMING NEW FACULTY AND 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
As we begin the semester and welcome new faculty to our community, we also take a moment to recognize the distinctive honors and awards of our faculty over the past year.

Last spring we unveiled our vision for the School—Columbia Engineering for Humanity—a vision that reflects our past and guides our future. This initiative is focused on the areas where our faculty and students strive to advance fundamental and translational research to impact humanity: a sustainable, healthy, secure, connected, and creative humanity. This year’s recognitions represent Columbia Engineering for Humanity in action. From seasoned scholars to junior faculty, they are making pathbreaking discoveries that will make the world better for us all.

As a small sampling, in the area of sustainability, Pierre Gentine was honored by the American Meteorological Society for contributing to our knowledge of atmospheric convection and the interactions between land and atmosphere and water and ecosystems. For her lifelong scholarship as a force for healthy humanity, Gordana Vunjak-Novakovic, a leader in the engineering of functional tissue, was appointed a University Professor, our University’s highest academic honor. Javad Ghaderi’s research in creating a more connected world through better algorithms for large-scale wireless and cloud networks and data centers was acknowledged by the National Science Foundation with an NSF CAREER Award. Julia Hirschberg, whose pioneering use of machine learning to detect deception in speech could help make societies safer and more secure, was elected to the National Academy of Engineering. And Nanfang Yu’s creativity in developing actively tunable “flat optics” has been recognized with the DARPA Director’s Fellowship, awarded to only a few top recipients of the DARPA Young Faculty Award.

We are particularly pleased to observe the success of our junior faculty. For the third year in a row, four junior faculty were recognized with a National Science Foundation CAREER Award. And, for her innovative work in medical imaging, Christine Hendon was selected as a Presidential Early Career Award winner.

Please join me in congratulating these outstanding faculty and all the others commended in the following pages. Their remarkable achievements point to the amazing work happening all around us at Columbia Engineering.

Mary C. Boyce
Dean of Engineering
Morris A. and Alma Schapiro Professor
Julia Hirschberg
Percy K. and Vida L. W. Hudson Professor of Computer Science

National Academy of Engineering
Elected to the National Academy of Engineering for “contributions to the use of prosody in text-to-speech and spoken dialogue systems, and to audio browsing and retrieval”
GORDANA VUNJAK-NOVAKOVIC

*Mikati Foundation Professor of Biomedical Engineering and Professor of Medical Sciences*

**University Professor**

Appointed to Columbia University’s highest academic honor and the first professor from Columbia Engineering to receive this honor, Vunjak-Novakovic is a pioneer in the engineering of functional human tissue for use in regenerative medicine. Her research has led to the development of novel biomaterials and scaffold architectures for growing bone grafts for facial reconstruction, the creation of electromechanically functional cardiac tissue, the recovery of donor lungs for transplant, the design and use of “organs on a chip” for precision medicine, and other innovations.
Named Professors

CHRISTOS PAPADIMITRIOU
The Donovan Family Professor of Computer Science
Computer Science

JEANNETTE WING
Avanessians Director of Columbia Data Science Institute and Professor of Computer Science
Computer Science
Promotions—Full Professor

LUCA CARLONI
Computer Science

XI CHEN
Earth and Environmental Engineering

ELIZABETH M. C. HILLMAN
Biomedical Engineering and Radiology

ROCCO SERVEDIO
Computer Science
Promotions—Associate Professor with Tenure

PIERRE GENTINE
Earth and Environmental Engineering

VINEET GOYAL
Industrial Engineering and Operations Research

MARTHA KIM
Computer Science

JOHN WRIGHT
Electrical Engineering
Promotions—Associate Professor on Tenure Track

ROXANA GEAMBASU

Computer Science

NIMA MESGARANI

Electrical Engineering

CHANGXI ZHENG

Computer Science
New Faculty

CHRISTOS PAPADIMITRIOU
The Donovan Family Professor of Computer Science

RENATA M. M. WENTZCOVITCH
Professor, Material Science and Applied Physics, and Earth and Environmental Science

JEANNETTE WING
Avanessians Director of Columbia Data Science Institute; Professor, Computer Science

ETHAN KATZ-BASSETT
Associate Professor, Electrical Engineering
New Faculty

HENRY LAM
Associate Professor, Industrial Engineering and Operations Research

P. JAMES SCHUCK
Associate Professor, Mechanical Engineering

LYDIA CHILTON
Assistant Professor, Computer Science

DION KHODAGHOLY
Assistant Professor, Electrical Engineering
New Faculty

DANIEL LACKER
Assistant Professor, Industrial Engineering and Operations Research

ALLIE OBERMEYER
Assistant Professor, Chemical Engineering

DYLАН POSSAMAI
Assistant Professor, Industrial Engineering and Operations Research

DONSUB RIM
Chu Assistant Professor, Applied Physics and Applied Mathematics
New Faculty

OMRI WEINSTEIN
Assistant Professor, Computer Science

ANDREAS MÜLLER
Lecturer in Discipline, Computer Science

NAKUL VERMA
Lecturer in Discipline, Computer Science

DREW YOUNGREN
Lecturer in Discipline, Applied Physics and Applied Mathematics
Faculty Early Career Awards

CHRISTINE HENDON
Assistant Professor of Electrical Engineering

Presidential Early Career Award for Scientists and Engineers (PECASE)
One of 105 researchers named by President Obama as recipients of the Presidential Early Career Award for Scientists and Engineers (PECASE), the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers.

NANFANG YU
Assistant Professor of Applied Physics

DARPA Director’s Fellowship
With funding, to continue his research on special light modulators. The fellowship is awarded to four or five of the best performers from among the 25 DARPA Young Faculty Award recipients.

JAVAD GHADERI
Assistant Professor of Electrical Engineering

NSF CAREER Award
For his proposal, “Adaptive Algorithms for Combinatorial Optimization in Stochastic Networks,” which lays the foundation for a new era of algorithms for large-scale stochastic networks including wireless, cloud, and data centers.

SHIHO KAWASHIMA
Assistant Professor of Civil Engineering and Engineering Mechanics

NSF CAREER Award
For her work developing concrete systems for use in 3D printing, a technology that could revolutionize the construction and repair of infrastructure. The award will support her project, “Tailoring Rheological Behavior and Interlayer Properties of 3D Printing Concrete.”
Faculty Early Career Awards

MATTHIAS PREINDL

Assistant Professor of Electrical Engineering

NSF CAREER AWARD
To support his work on Virtual Modular Power (VMP) conversion that applies the computer-science concept of virtualization to electric power conversion.
In addition, he was honored with the Career Award of the Futura Foundation in South Tyrol, Italy.

VAN-ANH TRUONG

Assistant Professor of Industrial Engineering and Operations Research

NSF CAREER AWARD
For her proposal, “Optimization Methods to Support Real-time Personalized Consumer Transactions.” She will use her award to create a framework and methodology for investigating and solving a large class of real-time optimization problems involving personalization in e-commerce and e-service.

YANIV ERLICH

Assistant Professor of Computer Science

DARPA Young Faculty Award

STEVE WAICHING SUN

Assistant Professor, Civil Engineering and Engineering Mechanics

Young Investigator Program Award, United States Air Force Office of Scientific Research
Honors, Recognition, and Achievements

PONISSERIL SOMASUNDARAN
LaVon Duddleson Krumb Professor of Mineral Engineering
Fellow, National Academy of Inventors
2016 Lifetime Achievement Award from the International Mineral Processing Council
2017 Presidential Citation from the American Institute of Mining, Metallurgical, and Petroleum Engineers

GERARD ATESHIAN
Andrew Walz Professor of Mechanical Engineering and Professor of Biomedical Engineering
2017 H.R. Lissner Medal, American Society of Mechanical Engineers (ASME)
For his “outstanding contributions to theoretical formulations and experimental investigations of cartilage mechanics and tissue engineering, and for pivotal contributions to the implementation and dissemination of open-source finite element computational tools for the biomechanical analysis of living tissues”

KEREN BERGMAN
Charles Batchelor Professor of Electrical Engineering
2016 IEEE Photonics Engineering Award
2016 – 10 Women in Networking/Communications That You Should Know
Honors, Recognition, and Achievements

DAVID BLEI
Professor of Statistics and Computer Science

Guggenheim Fellowship
Awarded to a diverse group of 173 scholars, artists, and scientists chosen from 3,000 applicants based on their prior achievement and exceptional promise

JINGGUANG CHEN
Thayer Lindsley Professor of Chemical Engineering

2017 Robert Burwell Lectureship in Catalysis from the North American Catalysis Society

JACOB FISH
Robert A. W. and Christine S. Carleton Professor of Civil Engineering

Invited to the White House by President Obama to celebrate the fifth anniversary of the President’s Materials Genome Initiative

TAL DANINO
Assistant Professor of Biomedical Engineering

Era of Hope Scholar Award, U.S. Department of Defense
given to young investigators who are doing innovative breast cancer research
Honors, Recognition, and Achievements

PETER KINGET
Bernard J. Lechner Professor of Electrical Engineering
Distinguished Lecturer for the IEEE Solid-State Circuits Society

ELISA KONOFAGOU
Robert and Margaret Hariri Professor of Biomedical Engineering (Joint appointment in Radiology)
Bodossaki Foundation Scientific Prize in the field of applied science
Recognizing her academic accomplishments and the significant impact of her research, especially in developing new therapeutic pathways to improve patient outcomes in Parkinson's and other diseases; the Bodossaki Prize is awarded to Greek scientists under the age of 45

MICHAL LIPSON
Eugene Higgins Professor of Electrical Engineering (Joint appointment in Applied Physics and Applied Mathematics)
R. W. Wood Prize, Optical Society of America, 2017
“For pioneering research contributions in silicon photonics”; the award recognizes contributions that open a new era of research or significantly expand an established one

VISHAL MISRA
Professor of Computer Science
Google Faculty Research Award
Honors, Recognition, and Achievements

BJARNE STROUSTRUP

Professor of Computer Science (visiting)

Honorary Fellow, Churchill College, University of Cambridge

ALEXANDR ANDONI

Associate Professor of Computer Science

Selected by Google Scholar for “top-cited paper that has stood the test of time,” a list that is released 10 years after publication—“Near-optimal Hashing Algorithms for Approximate Nearest Neighbor in High Dimensions” is listed as the top paper in the 2006 Theoretical Computer Science category with more than 1,700 citations

PIERRE GENTINE

Associate Professor of Earth and Environmental Engineering

2017 Clarence Meisinger Award from the American Meteorological Society

For “fundamental and diverse contributions to the understanding of land-atmosphere interactions, atmospheric convection, and ecohydrology”

Global Environmental Change Early Career Award from the American Geophysical Union

MARTHA KIM

Associate Professor of Computer Science

Google Faculty Research Award
Honors, Recognition, and Achievements

HARISH KRISHNASWAMY

Associate Professor of Electrical Engineering

IEEE Solid-State Circuits, Distinguished Lecturer 2017–2018

DARPA Council Award

KRISTIN MYERS

Associate Professor of Mechanical Engineering

Y.C. Fung Young Investigator Award from the American Society of Mechanical Engineers (ASME)
For her “pioneering efforts in maternal and fetal health, resulting in a body of experimental and modeling work that drives the area of reproductive biomechanics and the larger field of soft tissues biomechanics”

AH-HYUNG (ALISSA) PARK

Lenfest Earth Institute Associate Professor of Applied Climate Science of Earth and Environmental Engineering and Chemical Engineering; Director, Lenfest Center for Sustainable Energy

Rising Star Award from the American Chemical Society
Park’s research focuses on sustainable energy conversion pathways with an emphasis on integrated carbon capture, utilization, and storage; the award recognizes women scientists who have demonstrated outstanding contributions in their fields
Honors, Recognition, and Achievements

SIMHA SETHUMADHAVAN
Associate Professor of Computer Science

IEEE Micro Top Picks Award in Computer Architecture Conferences Award
For “Evaluation of an Analog Linear Algebra Accelerator”

“Best of Computer Architecture Letters” Honor for “Hardware Enforced Statistical Privacy” (also selected as spotlight for IEEE Computer magazine)

SHIPRA AGRAWAL
Assistant Professor of Industrial Engineering and Operations Research

Selected as a member of the inaugural class of ACM Future of Computing Academy

SUMAN JANA
Assistant Professor of Computer Science

Google Faculty Research Award
Honors, Recognition, and Achievements

YUAN YANG
Assistant Professor of Materials Science and Engineering
Scialog Fellow on Advanced Energy Storage

IBRAHIM ODEH
Lecturer in Discipline, Civil Engineering and Engineering Mechanics
Invited to join the World Economic Forum (WEF) Expert Network
Published Books

HOD LIPSON
Professor of Mechanical Engineering

Driverless: Intelligent Cars and the Road Ahead, with Melba Kurman (MIT Press)

MICHAEL MASSIMINO
Professor of Professional Practice, Mechanical Engineering


VENKAT VENKATASUBRAMANIAN
Samuel Ruben-Peter G. Viele Professor of Chemical Engineering

Election to Professional Societies

DAVID BLEI

Professor of Statistics and Computer Science

Fellow, Institute of Mathematical Statistics (IMS)

JULIA HIRSCHBERG

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

Fellow, Institute of Electrical and Electronics Engineers (IEEE)

For her contributions to text-to-speech synthesis and spoken language understanding

LUCA CARLONI

Professor of Computer Science

Fellow, Institute of Electrical and Electronics Engineers (IEEE)

For his “contributions to system-on-chip design automation and latency-insensitive design”
Election to Professional Societies

UPMANU LALL

Alan and Carol Silberstein Professor of Earth and Environmental Engineering (Joint appointment in Civil Engineering and Engineering Mechanics)

Fellow, American Geophysical Union (AGU)

PAUL SAJDA

Professor of Biomedical Engineering, Radiology (Physics), and Electrical Engineering

Fellow, American Association for the Advancement of Science (AAAS)
Scholarly Leadership

KEREN BERGMAN

Charles Batchelor Professor of Electrical Engineering

DOE Advanced Scientific Computing Advisory Committee (ASCAC), selected for 2016–19 term

GEORGE DEODATIS

Santiago and Robertina Calatrava Family Professor of Civil Engineering

Elected to serve as president of the Engineering Mechanics Institute of the American Society of Civil Engineers, starting October 2017

ADAM SOBEL

Professor of Applied Physics and Applied Mathematics and of Earth and Environmental Sciences

Named to the American Meteorological Society Council, the organization’s principal governing body
Scholarly Leadership

PONISSERIL SOMASUNDARAN
LaVon Duddleson Krumb Professor of Mineral Engineering

American Chemical Society, Unilever award committee chair

EPA Board of Scientific Councilors, executive committee and chair of Chemical Safety and Sustainability committee

RENATA M. M. WENTZCOVITCH
Professor of Material Science and Applied Physics and of Earth and Environmental Science

Elected to a four-year term as vice chair of the division of computational physics of the American Physical Society
Research Translation

SHIH-FU CHANG

Richard Dicker Professor of Electrical Engineering and Professor of Computer Science

Automatic video recognition and search technologies licensed to VidRovr, founded by PhD students Joseph Ellis and Daniel Morozoff. VidRovr was among the top winners of the Publicis90 international competition and selected for Verizon Media Tech Venture Studio.

ELIZABETH M. C. HILLMAN

Professor of Biomedical Engineering and Radiology

Licensed SCAPE microscopy to Leica Microsystems.

AH-HYUNG (ALISSA) PARK

Lenfest Earth Institute Associate Professor of Applied Climate Science of Earth and Environmental Engineering and Chemical Engineering; Director, Lenfest Center for Sustainable Energy

Using Park’s patented carbon mineralization technology for carbon storage, startup GreenOre CleanTech LLC launched a pilot study at the Baotou Steel factory in Inner Mongolia, China, which aims to start treating slag by summer 2018.

SALVATORE STOLFO

Professor of Computer Science

2016 Popular Science award, “Best of What’s New,” named symbiote technology, which protects printers, phones, routers, and other peripherals from malware attacks as one of its top 100. The technology is being commercialized through Red Balloon Security, a company founded by Stolfo with Ang Cui, a former PhD student.
Teaching Awards

AARON KYLE  
*Senior Lecturer in Biomedical Engineering*

2017 **Presidential Award for Outstanding Teaching**
Recognized at the highest level of Columbia University for his methods and commitment to excellence in teaching.

JAY SETHURAMAN  
*Professor of Industrial Engineering and Operations Research*

**Society of Columbia Graduates Great Teacher Award**
Recognizes the ability to stimulate, challenge, and inspire students and to make effective oral presentations; a demonstrated interest in students and the ability to relate positively to students outside the classroom; and a recognized standing in academic discipline.

JULIUS CHANG  
*Lecturer in Discipline in Construction Engineering and Management*

2017 **Distinguished Faculty Teaching Award, given by the Columbia Engineering Alumni Association**

JOHN PAISLEY  
*Assistant Professor of Electrical Engineering*

2017 **Distinguished Faculty Teaching Award, given by the Columbia Engineering Alumni Association**
Teaching Awards

KATAYUN BARMAK
Philips Electronics Professor of Applied Physics and Applied Mathematics

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

AH-HYUNG (ALISSA) PARK
Lenfest Associate Professor of Applied Climate Science in the Department of Earth and Environmental Engineering and Chemical Engineering; Director, Lenfest Center for Sustainable Energy

Janette and Armen Avanessians Diversity Award
Honors faculty members whose actions encourage women and men from diverse backgrounds

ANSAF SALLEB-AOUSSI
Lecturer in Discipline in Computer Science

Provost Spring 2017 Hybrid Learning Award to “Adding a Chatbot to Answer FAQs in Massive Open Online Courses”
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, creativity, integrated entrepreneurship, cultural awareness, and social responsibility, and advances the translation of ideas into innovations that impact humanity.
The Columbia Engineering for Humanity vision builds on our legacy of pursuing engineering frontiers to confront the pressing challenges facing our world. As part of this vision, we as a School are focused on five key areas where we aspire to have the greatest impact: sustainability, health, security, connectivity, and creativity.