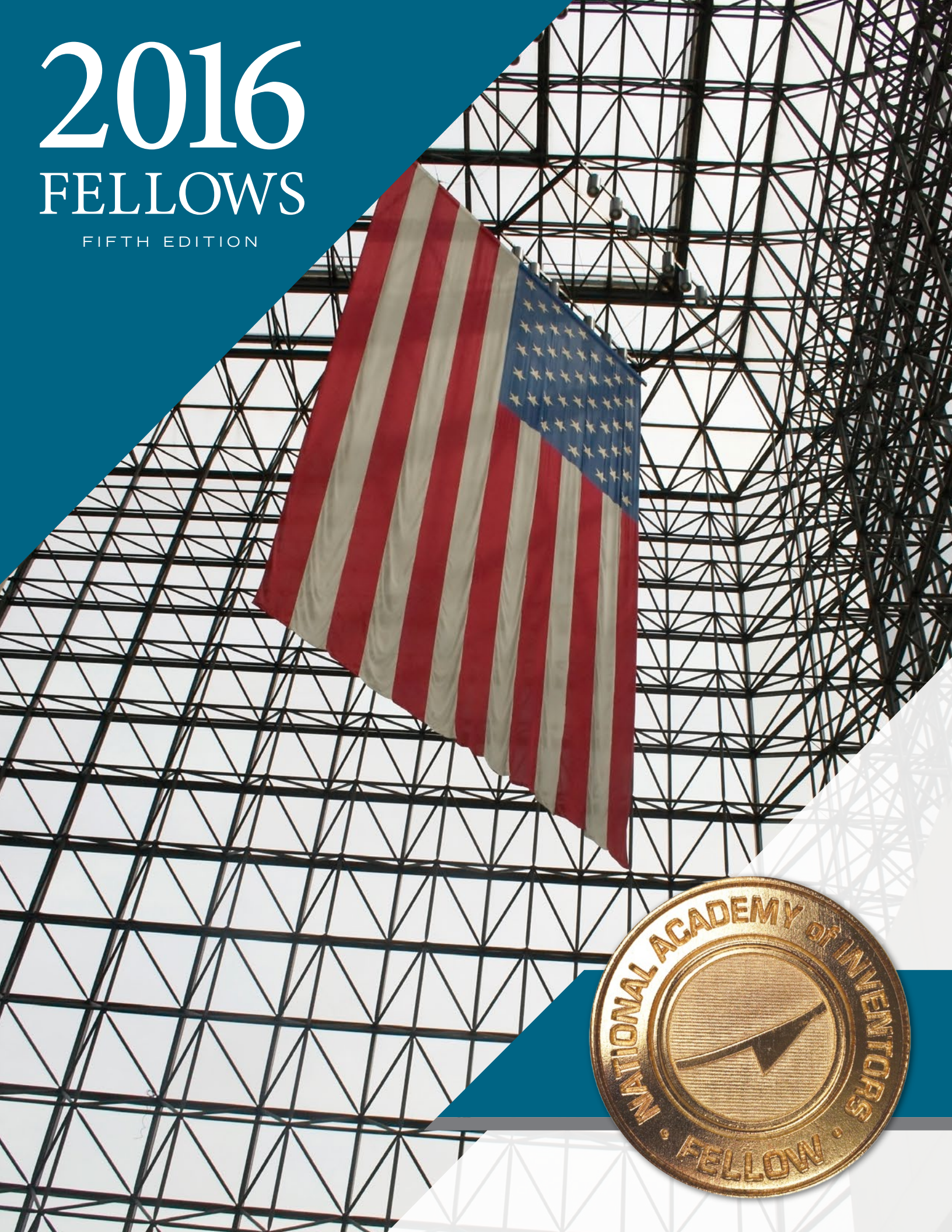
2016 FELLOWS

FIFTH EDITION



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ABOUT THE NAI FELLOWS PROGRAM

Election to NAI Fellow status is the highest professional distinction accorded solely to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society.

Academic inventors and innovators elected to the rank of NAI Fellow are nominated by their peers for outstanding contributions to innovation in areas such as patents and licensing, innovative discovery and technology, significant impact on society, and support and enhancement of innovation. The nomination packets are reviewed by the NAI Fellows Selection Committee. The number of Fellows elected each year is dependent on the quality of the nominations submitted. Committee members may not vote on a nominee from their institution. Decisions of the Selection Committee are final. If a nominee is not elected to Fellow status, he or she will remain on record for committee review for three consecutive years.

HOW TO NOMINATE FOR NAI FELLOWSHIP

Nominees must be:

- a named inventor on a patent(s) issued by the United States Patent and Trademark Office. The median for current Fellows is 20 patents.
- affiliated with a university, non-profit research institute, governmental agency or other academic entity.

The following information must be included with the online submission form:

- Nominee's CV
- A full list of nominee's U.S. patents
- Letter of nomination

Nominations open July 1 – October 1 annually

Submit nominations online at: **www.AcademyofInventors.com/Fellows.asp**

ABOUT OUR FELLOWS

The NAI Fellows Program has 757 Fellows worldwide representing nearly 230 prestigious universities and governmental and non-profit research institutions. Collectively, the Fellows hold more than 26,000 issued U.S. patents.

With the induction of the 2016 class, there are now 94 presidents and senior leaders of research universities and non-profit research institutes, 382 members of the National Academies of Sciences, Engineering, and Medicine; 28 inductees of the National Inventors Hall of Fame, 45 recipients of the U.S. National Medal of Technology and Innovation and U.S. National Medal of Science, 28 Nobel Laureates, 216 AAAS Fellows, 126 IEEE Fellows, 102 AIMBE and 116 Fellows of the American Academy of Arts & Sciences, among other awards and distinctions.

NAI Fellows' inventions have resulted in over **8,500** licensed technologies, created more than **1.1 million** jobs, and generated more than **$100 billion** in revenue.

United States Patent and Trademark Office

Office of the Commissioner for Patents

February 27, 2017

Dear Friends:

On behalf of the United States Patent and Trademark Office, I congratulate the NAI's newly elected 2016 class of Fellows. The USPTO is privileged to participate in recognizing these 175 academic luminaries of innovation and invention, who have been bestowed this high professional distinction.

I also want to congratulate the NAI, which continues to celebrate and honor the outstanding achievements of many of the top minds in academic research, both nationally and internationally. The USPTO recognizes the significant impact that NAI Fellows have made on our society and quality of life, and I am honored to serve on the Selection Committee for these distinguished individuals.

The USPTO values collaboration with the NAI and the friendship which has developed through our shared mission to advance and protect innovation. Our work together, now and in the future, will continue to benefit the innovation community worldwide.

Again, congratulations to the 2016 NAI Fellows. You are among the nation's top academic innovators and inventors and deserve much recognition for your outstanding achievements.

Warmest regards,

Andrew H. Hirshfeld
Commissioner for Patents
U.S. Patent and Trademark Office

P.O. Box 1450, Alexandria, VA 22313-1450 • ww.uspto.gov

2016 FELLOWS CEREMONY SPEAKERS

Welcome Remarks

Paul R. Sanberg

President, National Academy of Inventors

Paul R. Sanberg, Ph.D., D.Sc., FNAI, is founder and president of the National Academy of Inventors, and senior vice president for research, innovation, and economic development at the University of South Florida. He trained at York University, University of British Columbia, Australian National University and Johns Hopkins University School of Medicine, among others, and held academic positions at Ohio University, University of Cincinnati, and Brown University. He holds 43 U.S. and 110 foreign patents and has served on numerous scientific advisory boards for health-related foundations and companies. He is author of more than 600 scientific articles and 14 books, with over 27,000 citations to his work, co-editor-in-chief of *Technology and Innovation,* and serves on editorial boards for more than 30 scientific journals. He is a Charter Fellow of the NAI, and fellow of the American Association for the Advancement of Science and the American Institute for Medical and Biological Engineering, AAAS-Lemelson Invention Ambassador, Florida Inventors Hall of Fame inductee, Florida Academy of Sciences Medalist, and serves on the nomination evaluation committee of the United States National Medal of Technology and Innovation.

Introduction of the Keynote Speaker

Randy E. Berridge

Former President, Florida High Tech Corridor Council

Randy E. Berridge held the position of president of the Florida High Tech Corridor Council since its inception in 1996. He recently announced his retirement but will continue to serve in a leadership and planning support role until June 30th. Berridge also serves as president of the Berridge Consulting Group, Inc. Previously he held management positions with AT&T including chair of its Central Florida Management Council, district manager of public relations for the Florida division and manager in the legal, HR and manufacturing divisions. Berridge currently serves on the board of governors of the Florida Chamber of Commerce and chair of the 2017 Selection Committee for the Florida Inventors Hall of Fame. He is a past member of the Enterprise Florida Stakeholder Council, Florida Research Consortium, Foundation for Florida's State Colleges and the National Center for Simulation. He is an Emeritus Board Member of the Astronauts Memorial Foundation.

Keynote Speaker

Andrew H. Hirshfeld

Commissioner for Patents, United States Patent and Trademark Office
U.S. Department of Commerce

Andrew H. Hirshfeld, Esq., is commissioner for patents for the United States Patent and Trademark Office (USPTO). He was appointed to the position in July 2015. Hirshfeld leads and manages more than 10,000 employees as the patent organization's chief operating officer, and manages and directs all aspects of patent operations, examination policy, patent quality management, international patent cooperation, resources and planning, and budget administration. In his previous role as deputy commissioner for patent examination policy, he served as an authority on patent laws, rules, and examining practice and procedure, and provided oversight and direction for the Offices of Petitions, Patent Legal Administration, and the Manual of Patent Examining Procedure. Hirshfeld previously served as chief of staff to the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. He began his career at the USPTO in 1994 as a patent examiner, became a supervisory patent examiner in 2001, and was promoted to the Senior Executive Service in 2008 as a group director in Technology Center 2100, Computer Architecture and Software. Hirshfeld holds a bachelor's degree from The University of Vermont, and a juris doctorate degree from Western New England College School of Law. Hirshfeld served as a member of the NAI Fellows Selection Committee.

FELLOWS

David Akopian | *The University of Texas at San Antonio*

David Akopian, Ph.D., is university professor of electrical and computer engineering at The University of Texas at San Antonio (UTSA). Akopian is an innovator in human-machine interaction and guidance, including mobile applications, wireless sensing and location technologies. His first inventions were in the area of integration of GPS receivers and mobile devices. Akopian is the recipient of four inventor awards. He holds 25 U.S. and foreign patents and seven filed patent applications, which were applied in Nokia products and UTSA testbed systems serving several federal and state projects. He has published nearly 200 articles, three book chapters, edited eight proceedings and served on the editorial boards of five peer-reviewed journals. He has chaired 10 conferences on mobile technologies and the Central Texas Chapter of IEEE Systems, Man, and Cybernetics Society. Akopian is a senior member of IEEE and member of the U.S. Institute of Navigation and SPIE.

Kamal S. Ali | *Jackson State University*

Kamal S. Ali, Ph.D., is chair of the Industrial Systems and Technology Department and professor of electrical and computer engineering at Jackson State University. Ali has made important contributions to the invention of Hardware in the Loop Simulator for autopilots and his current research focuses on the educational STEM pipeline. He holds one U.S. patent and has two other patents pending. He has over 70 publications covering a wide range of subjects, including solid state physics, psychology, neural networks, artificial intelligence, unmanned aerial and ground systems, embedded systems and electronics. Ali is the recipient of several awards and fellowships and has served as a reviewer and panelist for a number of scientific journals and organizations such as NSF and ASEE.

A. Paul Alivisatos | *University of California, Berkeley*

A. Paul Alivisatos, Ph.D., is vice chancellor for research and Samsung Distinguished Professor of nanoscience and nanotechnology at the University of California, Berkeley. Alivisatos received the National Medal of Science for his contributions to the fundamental physical chemistry of nanocrystals. He is an inventor of Quantum Dot technology that is widely used in biomedical imaging and color displays and televisions. He holds 49 U.S. and 23 foreign patents and is founder of two prominent nanotechnology companies, Nanosys and Quantum Dot Corp, now a part of Thermo Fisher. He has published over 350 papers and is the founding editor of *Nano Letters,* a leading scientific publication of ACS in nanoscience. Alivisatos is a member of NAS, the American Academy and the American Philosophical Society.

Carl R. Alving | *Walter Reed Army Institute of Research*

Carl R. Alving, M.D., is chief of the Laboratory of Adjuvant and Antigen Research in the U.S. Military HIV Research Program at the Walter Reed Army Institute of Research. Alving is a pioneer and subject matter expert in the fields of liposomes, drug delivery systems, vaccine adjuvants and drug abuse vaccines. He co-invented liposomes as drug carriers for treatment of parasitic diseases; transcutaneous immunization by adjuvanted skin patch; and the Army Liposome Formulation adjuvant which is being developed by the Army, other government agencies and companies for vaccines to infectious diseases and a combination HIV-1 heroin vaccine. He received the Alec D. Bangham Lifetime Achievement Award from *Liposome Research Days.* Alving holds 31 U.S. patents and co-founded two startup companies. He has published more than 300 articles and book chapters and served on editorial boards of 10 peer-reviewed journals. Alving is a fellow of AAAS.

Hamid Arastoopour | *Illinois Institute of Technology*

Hamid Arastoopour, Ph.D., is Henry R. Linden Professor of engineering and director of the Wanger Institute for Sustainable Energy Research at Illinois Institute of Technology. Arastoopour has made significant contributions to innovation and invention in the areas of particle technology and computational fluid dynamics motivated by energy and sustainability applications. He is the recipient of the Thomas Baron Award in Fluid-Particle Systems, Donald Q. Kern Award in Heat Transfer and Energy Conversion, PTF Lectureship Award in Fluidization and Fluid-Particle Systems, Ernest W. Thiele Award, PTF Fluidization Process Recognition Award from AIChE, and University Excellence in Teaching Award. He holds 14 U.S. patents and has published two books, six book chapters and more than 130 articles. He served on the editorial boards of *Powder Technology* and *Fluid.* Arastoopour is a fellow of AIChE.

Peter Arsenault | *Tufts University*

Peter Arsenault, D.M.D., is division head and associate clinical professor of operative dentistry at Tufts University. He is a graduate of the University of Massachusetts where he received his bachelor's and master's degrees in plastics engineering, with a minor in chemistry. He earned his doctorate of dental medicine from Tufts School of Dental Medicine. He owns and operates a private practice and has great interest in product development and intellectual property law. He holds several U.S. patents and patent pending products relating to the dental field and is credited with numerous publications and presentations. Arsenault is a member of the ADA, Massachusetts Dental Society, Society of Plastics Engineers and Society of Materials Engineers, and a fellow of the American Dental Education Association and the American College of Dentists.

B. Jayant Baliga | *North Carolina State University*

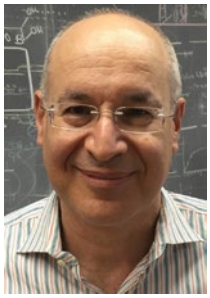
B. Jayant Baliga, Ph.D., is Distinguished University Professor of electrical engineering at North Carolina State University. A prolific inventor in the field of power semiconductor devices with many inventions commercialized globally, Baglia's work has reduced carbon dioxide emissions by 109 trillion pounds during the last 25 years. He has been called "the man with the largest negative carbon footprint in the world" by the *Wall Street Journal,* and was inducted into NIHF in May 2016 as the sole inventor of the Insulated Gate Bipolar Transistor. He is the recipient of the National Medal of Technology and Innovation, IEEE Medal of Honor and Global Energy Prize. He holds 120 U.S. patents and has founded four successful startup companies. He has published over 550 scientific articles, 19 books and 20 book chapters. Baliga is a life fellow of IEEE and member of NAE.

Zhenan Bao | *Stanford University*

Zhenan Bao, Ph.D., is professor of chemical engineering, chemistry, material science and engineering at Stanford University. Bao has made important contributions to invention and innovation in organic electronic materials for flexible and stretchable electronics, sensors, solar cells and battery applications. She is the recipient of the ACS Applied Polymer Science Award, L'Oréal-UNESCO For Women in Science Award in the Physical Sciences, AIChE Andreas Acrivos Award for Professional Progress in Chemical Engineering, ACS Carl Marvel Creative Polymer Chemistry Award, ACS Cope Scholar Award, RSC Beilby Medal and Prize, IUPAC Creativity in Applied Polymer Science Prize, ACS Team Innovation Award, and R&D 100 Award. She holds more than 60 U.S. patents and a number of foreign patents that have been licensed to various companies. She is co-founder of a transparent conductive material company, C3 Nano. She has published over 400 peer-reviewed journal articles. Bao is a member of NAE and fellow of ACS, MRS, AAAS, and ACS Divisions of Polymer Chemistry and Polymeric Materials: Science and Engineering.

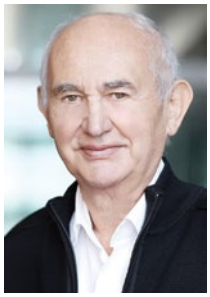
Richard G. Baraniuk | *Rice University*

Richard G. Baraniuk, Ph.D., is Victor E. Cameron Professor of electrical and computer engineering at Rice University and founder and director of OpenStax. Baraniuk has made fundamental contributions to signal processing and acquisition through his invention of numerous compressive sensing technologies, which radically reduce the number of digital samples required to represent high-resolution data. His work in open education resources and publishing with Connexions and OpenStax has impacted hundreds of millions of students worldwide. He is the recipient of the IEEE Signal Processing Society Technical Achievement Award, IEEE James Mulligan Education Medal and 40 other awards. He holds 27 U.S. and four foreign patents that have been licensed to two companies. Baraniuk is co-founder of the imaging company InView Technologies. He has published 450 technical papers and serves on the editorial board of *Applied and Computational Harmonic Analysis*. Baraniuk is a fellow of IEEE and AAAS.



Francis Barany | *Cornell University*

Francis Barany, Ph.D., is professor of microbiology in the Weill Medical College at Cornell University. Barany is best known for inventing the ligase chain reaction, ligase detection reaction, and Universal DNA arrays, which are the foundation of commercial tests to diagnose genetic diseases, detect infectious pathogens, identify cancer mutations, and identify diseases using DNA microarrays and targeted Next-Gen sequencing. He is the recipient of the Helen Hay Whitney Fellow, Hirschl/Monique Weill-Caulier Career Scientist Award, Mayent/Rothschild Visiting Professor from the Institut Curie, Medical Diagnostics Research leader from Scientific American 50, Ezra Innovation Award from Cornell University and IFCC Award for Significant Contributions in Molecular Diagnostics. He has published over 120 peer-reviewed articles and holds 53 U.S. and 105 foreign patents that are widely used by molecular diagnostic and sequencing companies. Barany founded Coferon Inc. and Acuamark Diagnostics Inc., the latter for detection of early cancer directly from blood.



Jean-Marie Basset | *King Abdullah University of Science and Technology*

Jean-Marie Basset, Ph.D., is Distinguished Professor of chemistry and director of Catalysis Research Center at King Abdullah University of Science and Technology. Basset discovered new catalytic reactions applied to energy and environment including metathesis of alkanes and non-oxidative coupling of methane. All were based on a discipline he invented known as surface organometallic chemistry. He has received several awards including the Grand Prix de la Société Française de Chimie, Academy of Sciences Award and Max Plank Award. He holds over 10 U.S. patents and more than 45 foreign patents that have been licensed to several companies. He is author of over 600 peer-reviewed articles, books and book chapters and has given over 350 plenary or invited lectures. He serves as a board member of five international symposia and congresses on catalysis. Basset is a member of five academies worldwide including the French Academy of Sciences, French Academy of Technologies and European Academy of Sciences, and is Chevalier dans l'Ordre National du Mérite or Knight of the National Order of Merit, France.

Paula J. Bates | *University of Louisville*

Paula J. Bates, Ph.D., is associate professor of medicine and biochemistry at the University of Louisville and associate scientist of the Brown Cancer Center. Bates has been involved in the discovery and development of nine distinct technologies focused on the detection and treatment of cancer. The best known of these is a nucleolin-binding aptamer, AS1411, that was the first anticancer aptamer to be tested in human clinical trials and is now being used by researchers around the world as an experimental tumor-targeting agent. She holds 13 U.S. patents and more than 30 foreign patents that have been licensed to five companies. She is principal investigator for the University of Louisville's ExCITE Hub, an NIH-funded program that teaches entrepreneurship, provides product development grants, and develops best practices for research commercialization. Bates was co-founder of a successful startup company, Aptamera, and has published 39 peer-reviewed articles and book chapters.

Craig C. Beeson | *Medical University of South Carolina*

Craig C. Beeson, Ph.D., is professor of medicinal chemistry and biophysics in the Department of Drug Discovery at the Medical University of South Carolina (MUSC). Beeson has made important contributions in the fields of mitochondrial physiology and bioenergetics metabolism, aspects of organ function involved in many diseases and pathologies. He is a co-founder of Mitohealth, Inc. and Mitochem Therapeutics, Inc., both of which develop small molecule drugs for the treatment of degenerative diseases. He is an NSF CAREER Awardee and received MUSC's Inventor of the Year award, recognizing his work which has resulted in three issued U.S. patents and 22 other applications in various stages of preparation and prosecution worldwide. His patent filings represent several technology families, six of which have been licensed to companies. Beeson has published 97 articles and is chair-elect for the drug discovery and development division of the American Society for Pharmacology and Experimental Therapeutics.

K. Darrell Berlin | *Oklahoma State University*

K. Darrell Berlin, Ph.D., is the first Regents Professor at Oklahoma State University. Berlin has made important contributions in organophosphorus chemistry and heterocyclic medicinal chemistry with one agent entering clinical trials in 2017 for the treatment of ovarian cancer. He is the recipient of the Gold Medallion for Excellence in Teaching at the state university level, Oklahoma Scientist of the Year Award, Oklahoma Chemist Award and a special citation from NCI for Developmental Therapeutics. He has given lectures in Japan, Kazakhstan, Poland, Russia and Yugoslavia. He holds 15 U.S. patents and 12 patents with colleagues in Kazakhstan. He has published 350 articles, co-authored an organic chemistry text and authored five major reviews and three book chapters. He is a founding member of the journal *Phosphorus, Sulfur, and Silicon and the Related Elements* and serves on the editorial board. Berlin is a fellow of ACS.

Sarit B. Bhaduri | *The University of Toledo*

Sarit B. Bhaduri, Ph.D., is professor of dentistry and mechanical, industrial and manufacturing engineering, and director of the Multifunctional Materials Laboratory at The University of Toledo. Bhaduri has contributed to the translation of fundamental research in structural and biomaterials with an emphasis on ceramics. Examples of his products include electrodes for aluminum extraction as well as next generation orthopedic cements. Previously, he was George Bishop III Endowed Chair at Clemson University. He is listed as an inventor on five issued U.S. patents and 35 foreign patents, with another 37 applications pending, and his patents are licensed to five companies. He is co-founder Regentiss, LLC and OsteoNovus, Inc., both of which develop orthobiologic products. He is author and co-author of 175 peer-reviewed papers and seven book chapters and is on the editorial board of the *Journal of Biomedical Materials Research.* Bhaduri is a fellow of ACerS and AIMBE.

Pallab K. Bhattacharya | *University of Michigan*

Pallab K. Bhattacharya, Ph.D., is Charles M. Vest Distinguished University Professor and the James R. Mellor Professor of engineering at the University of Michigan. Bhattacharya is recognized for his contributions to molecular beam epitaxy of III-V and III-nitride compounds, quantum dot and nanowire optoelectronic devices and, in particular, lasers emitting in the visible and near-infrared, and integrated photoreceivers for optical communication. He is the recipient of numerous awards including the IEEE David Sarnoff Award, OSA Nick Holonyak, Jr. Award, TMS John Bardeen Award and Heinrich Welker Medal. He is the author on over 700 archival journal articles and of the textbook *Semiconductor Optoelectronic Devices.* Bhattacharya is a member of NAE and has been awarded a doctorate (honoris causa) degree from the University of Sheffield, U.K.

Dieter H. Bimberg | *Technical University of Berlin*

Dieter H. Bimberg, Ph.D., Sc.D., D.Sc.h.c., is founding director of the Center of NanoPhotonics and the department of applied physics at Technical University of Berlin and Distinguished Adjunct Professor at King Abdul-Aziz University. Bimberg's research interests include the growth and physics of nanostructures and nanophotonic devices, measurement techniques for nanostructures, ultrahigh speed and energy efficient photonic devices for datacom systems, single/entangled photon emitters for quantum cryptography, and nanomemories based on quantum dots. He holds an honorary doctorate from the University of Lancaster and his scientific work has led to 1,600 publications, more than 25 patents and six books resulting in more than 50,000 citations worldwide, with an h-index of 99. Honors include the Russian State Prize in Science and Technology, Max-Born-Award and Medal, William Streifer Award of IEEE, UNESCO Nanoscience Medal and Heinrich-Welker Award and Medal. Bimberg is elected to the German Academy of Sciences Leopoldina, Russian Academy of Sciences, NAE, and is a fellow of APS and IEEE.

Christopher N. Bowman | *University of Colorado Boulder*

Christopher N. Bowman, Ph.D., is the Patten Endowed Chair of the department of chemical and biological engineering, director of the Materials Science and Engineering Program, and Distinguished Professor at the University of Colorado Boulder. Bowman has built a program focused on the fundamentals and applications of crosslinked polymers formed via photopolymerizations and click reactions. He has been recognized with awards from ACS, AIChE, MRS and SFB. He holds 20 issued U.S. patents and one foreign patent that have been licensed to multiple major companies and has more than 15 additional applications pending. He is the founder of Click Nucleic Acids, Inc., Mosaic Biosciences and Colorado Photopolymer Solutions. He has published more than 350 peer-reviewed papers and has served on the editorial board of numerous journals. Bowman is a member of the International Association for Dental Research, ACS, MRS, AIChE, AIMBE, SFB and ASEE.

Barbara D. Boyan | *Virginia Commonwealth University*

Barbara D. Boyan, Ph.D., is Alice T. and William H. Goodwin, Jr. Chair in biomedical engineering and dean of the School of Engineering at Virginia Commonwealth University. Boyan is also professor emerita at the Georgia Institute of Technology and directs the Virginia branch of the FDA-sponsored Atlantic Pediatric Device Consortium. Her laboratory researches all aspects of bone and cartilage biology, from basic science studies on steroid hormone signaling to the use of cells for regenerative medicine strategies, focusing on how cells interact with biomaterial surfaces. She was appointed to the national materials advisory board of the National Academies and chaired their Roundtable on Biomedical Engineering Materials and Applications. Boyan has founded numerous biomedical technology companies and served on the boards of public and private companies. She is author of more than 460 peer-reviewed papers, reviews, and book chapters and holds 22 U.S. patents. Boyan is a member of NAE and fellow of AAAS, AIMBE and World Congress of Biomaterials.

Mindy M. Brashears | *Texas Tech University*

Mindy M. Brashears, Ph.D., is professor and director of the International Center for Food Industry Excellence at Texas Tech University. Brashears' research program focuses on improving food safety to make an impact on public health, specifically on interventions in pre- and post-harvest environments and on the emergence of antimicrobial drug resistance. She also leads international research teams to improve food security and set up sustainable agriculture systems in impoverished areas, and teaches courses in food safety and offers industry training opportunities. She has received numerous honors including the International Association for Food Protection Laboratorian Award, Big 12 "Rising Star" Award for excellence in technology transfer, and was named a "Future Icon" in the meat industry by the *National Provisioner.* She holds 7 patents, founded two startup companies and commercialized a pre-harvest feed additive that reduces pathogens in cattle prior to slaughter. Brashears is involved in multiple professional groups.

Donald J. Buchsbaum | *The University of Alabama at Birmingham*

Donald J. Buchsbaum, Ph.D., is professor of radiation oncology at The University of Alabama at Birmingham. Buchsbaum is an internationally recognized leader in the field of monoclonal antibodies and their use for cancer therapy alone or in combination with chemotherapy or radiation. He is the recipient of numerous awards and honors including the Radiology Centennial Award of Hope, Avon Foundation Investigator, John Durant Award for Excellence in Cancer Research and John Hanephin Award of Research Excellence. He holds 18 U.S. and 143 foreign patents and patent applications licensed to two companies. He has published 750 peer-reviewed journal articles, book chapters, and abstracts. He serves as editor of *Cancer Biotherapy and Radiopharmaceuticals* and on the editorial board of seven other journals. Buchsbaum is a member of AACR Bristol-Myers Squibb Fellowships in Translational Immuno-oncology Scientific Review Committee and the NIH review committee for comprehensive cancer centers in the U.S.

Ruben G. Carbonell | *North Carolina State University*

Ruben G. Carbonell, Ph.D., is professor of chemical and biomolecular engineering at North Carolina State University. Carbonell has made significant contributions in the areas of isolation and purification of biological molecules, thin film coatings using high-pressure fluids, and transport processes in chemically reacting systems. He holds more than 30 patents and is co-founder of Pathogen Removal and Detection Technologies (PRDT), Inc., Oryx Bio, and Green Clean LLC. He and his colleagues founded PRDT, Inc., to commercialize affinity ligand resins to remove the infectious prion protein (responsible for Mad Cow Disease) from blood and blood products. Octapharma AG adopted resins with these prion-capture-ligands for their antibody production process. The new prion-safe product has been approved in over 11 different countries, including the U.S. He has published over 250 peer-reviewed articles. Carbonell is a member of NAE and fellow of AIChE and ACS.

John F. Carpenter | *University of Colorado Anschutz Medical Campus*

John F. Carpenter, Ph.D., is professor of pharmaceutical sciences at the University of Colorado (CU) Anschutz Medical Campus and co-founder and co-director of CU's Center for Pharmaceutical Biotechnology. Carpenter's research interests include mechanisms for protein degradation and stabilization in pharmaceutical formulations during bioprocessing and in delivery systems. He has defined rational strategies for stabilizing proteins and vaccines during freeze drying and storage in the dried solid. He has received several awards, including the Ebert Prize and AAPS Research Achievement Award in Biotechnology. He also organizes the annual Colorado Protein Stability Conference. He has 30 issued U.S. patents and over 250 peer-reviewed papers. He is editor for *Journal of Pharmaceutical Sciences* and serves on the editorial advisory boards for *Pharmaceutical Research, The AAPS Journal, Journal of Pharmaceutical Sciences, Current Pharmaceutical Biotechnology, Molecular Pharmaceutics* and *BioPharm International.* Carpenter is a fellow of AAAS and AAPS.

Raghunath V. Chaudhari | *The University of Kansas*

Raghunath V. Chaudhari, Ph.D., is Deane E. Ackers Distinguished Professor in the chemical and petroleum engineering department of The University of Kansas. Chaudhari has made important contributions to catalysis and multiphase reactor engineering for applications in biomass conversion and fine/specialty chemicals. He holds 39 U.S. patents and 32 foreign patents and has published 282 publications in peer-reviewed journals including 3 books and review papers. He has extensively collaborated with companies such as DuPont, Invista, General Electric, Huntsmann Polyurethanes and ADM for contract research and process development. Chaudhari is a member of AIChE and ACS and fellow of the Indian National Science Academy, Indian National Academy of Engineering and Indian Academy of Sciences.

Junhong Chen | *University of Wisconsin-Milwaukee*

Junhong Chen, Ph.D., is Distinguished Professor of mechanical engineering and materials science and engineering at the University of Wisconsin-Milwaukee (UWM) and director of NSF Industry–University Cooperative Research Centers Program on water equipment and policy. Chen is known for nanomaterials innovation for sustainable energy and environment and is a pioneer in technology commercialization through exemplary industrial partnership. He is recipient of the International Association of Advanced Materials Medal and the Inaugural Regent Scholar of UW System. Chen holds 12 U.S. patents and nine licensing agreements with various companies. He is the founder of NanoAffix Science LLC. He has published over 200 journal papers, including 21 highly cited papers and one "hot paper" defined by Thomson Reuters. Chen serves as specialty chief editor of *Nanoenergy Technologies* and *Materials Section of Frontiers in Energy Research* and is an editorial board member of *Scientific Reports.* Chen is a fellow of ASME.

Liang-Gee Chen | *National Taiwan University*

Liang-Gee Chen, Ph.D., is chair professor at National Taiwan University and Minister of Ministry of Science and Technology in Taiwan. Chen's major contributions are leading video compression research and the implementation of VLSI architecture for video coding. He is the recipient of the Engineering Prize from The World Academy of Sciences, Foundation for the Advancement of Outstanding Scholarship, Outstanding Research Award, and Academic Award from the Ministry of Education in Taiwan. He holds 31 U.S. patents and several foreign patents that have been licensed to more than 20 companies. He has published over 550 publications and served as editor, associate editor, guest editor or editorial board member for *Proceedings of IEEE, IEEE Transactions on CSVT, VLSI Systems, Signal Processing, CAS-I, CAS-II, Journal of Signal Processing Systems* and many others. Chen is a fellow of IEEE.

Simon R. Cherry | *University of California, Davis*

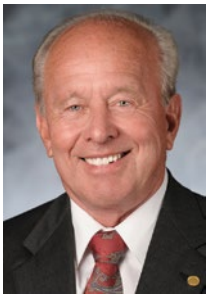
Simon R. Cherry, Ph.D., is distinguished professor of biomedical engineering and radiology at the University of California, Davis. Cherry has made important contributions to biomedical imaging, specifically to positron emission tomography (PET) scanning where he invented and developed the microPET technology which was subsequently used worldwide for preclinical research. He developed the first practical system capable of demonstrating simultaneous PET and magnetic resonance imaging and has been at the forefront of developing biomedical applications of Cerenkov radiation. He is the recipient of the IEEE Marie Sklodowska Curie Award and Gold Medal from the World Molecular Imaging Society. He has published over 200 peer-reviewed papers, 22 review articles, 20 book chapters, is lead author of the textbook *Physics in Nuclear Medicine* and serves as editor-in-chief for the journal *Physics in Medicine and Biology.* Cherry is a member of NAE and fellow of AAAS.

Michael J. Cima | *Massachusetts Institute of Technology*

Michael J. Cima, Ph.D., is professor of materials science and engineering at the Massachusetts Institute of Technology. Cima is developing engineered systems for improvement in human health such as treatments for cancer, metabolic diseases, trauma, urological disorders and hydration status assessment. He is a recognized expert in the fields of drug delivery, medical devices, materials processing and drug formulation. Cima holds 70 U.S. patents which have been licensed to over 14 companies for such diverse applications as 3D printing, high temperature superconductors, electronic drug delivery and devices for drug delivery to the bladder. He is a founder of Taris Biomedical Inc., MicroChips Biotech Inc. and T2 Biosystems Inc. He is author or co-author of over 275 peer-reviewed scientific publications. Cima is a fellow of ACS and member of NAE.

Adrienne E. Clarke | *La Trobe University*

Adrienne E. Clarke, Ph.D., AC, is chancellor of La Trobe University. Her contributions have been in the field of self-incompatibility in plants, chemistry of complex carbohydrates and protection of plants from attack by insects and fungal pathogens. She was appointed Companion of the Order of Australia in 2004 and has served as chairman of the Commonwealth Scientific and Industrial Research Organisation board and Lieutenant Governor of Victoria. She has 19 patents and is a founder of Hexima Ltd, an Australian company focused on the control of fungal disease and agricultural biotechnology and of Biosupplies Australia Pty, Ltd., a specialty chemical company. Clarke is a fellow of both the Australian Academy of Science and Australian Academy of Technological Sciences and Engineering, foreign associate of NAS, and foreign member of AAAS.



Larry A. Coldren | *University of California, Santa Barbara*

Larry A. Coldren, Ph.D., is Fred Kavli Professor of optoelectronics and sensors at the University of California, Santa Barbara, where he also served as director of several multi-university optoelectronics research centers. Previously at Bell Labs, Coldren worked on Surface-Acoustic-Wave filters and tunable coupled-cavity lasers using novel RIE technology that he was first to develop for InP-based materials. He invented the widely-tunable multi-element mirror concept, now used in numerous commercial products. He is co-founder of Optical Concepts, acquired as Gore Photonics, which develops Vertical-Cavity Surface-Emitting Laser technology now used in high-speed data links and Agility Communications, acquired by JDS-Uniphase, which develops widely-tunable integrated optical transmitters. Coldren is the recipient of the John Tyndall, Aron Kressel, David Sarnoff and IPRM awards and has authored or co-authored more than 1,000 papers. He has co-authored eight book chapters and two textbooks, including today's most used text on diode lasers and photonic ICs. Coldren has 61 issued patents and is a life fellow of IEEE, fellow of OSA and IEEE, and member of NAE.

Photo courtesy of NIST

Rita R. Colwell | *University of Maryland*

Rita R. Colwell, Ph.D., is Distinguished University Professor of microbiology and biotechnology at University of Maryland, College Park and Johns Hopkins Bloomberg School of Public Health. Colwell also served as 11th director of NSF from 1998 to 2004. Her innovations focus on global infectious diseases, water, and health. She holds 61 honorary degrees from institutions of higher education, including her alma mater, Purdue University. She is the recipient of the 2006 National Medal of Science, and was bestowed the Order of the Rising Sun, Gold and Silver Star, from the Emperor of Japan, and Stockholm Water Prize by the King of Sweden. She holds six U.S. patents and is the founder of CosmosID, Inc. She has published over 800 peer-reviewed articles and 19 books and serves as founding editor for *GeoHealth.* Colwell is a member of NAS, honorary member of the microbiological societies of the U.S., UK, Australia, France, India, Israel, Bangladesh, and Czechoslovakia, and fellow of AAAS.

Diane J. Cook | *Washington State University*

Diane J. Cook, Ph.D., is Huie-Rogers Chair Professor of computer science, artificial intelligence, and machine learning at Washington State University. Cook has made significant contributions in the areas of smart home design for health assessment, energy-efficient automation, and behavioral intervention. She is the recipient of an Anjan Bose Outstanding Researcher Award, Sahlin Excellence Award, University of Illinois Distinguished Alumni Award, and 30 other awards and lectureships. She holds five U.S. patents and is co-founder of Adaptelligence. She has published 520 papers, chaired 25 international conferences, and serves on the editorial board for 16 scientific journals. Cook is a member of the Association for the Advancement of Artificial Intelligence and is a fellow of Future Technology Research Association International and IEEE.

Peter A. Crooks | *University of Arkansas for Medical Sciences*

Peter A. Crooks, Ph.D., D.Sc., is professor and chairman of the department of pharmaceutical sciences at University of Arkansas for Medical Sciences. Crooks has made important innovations in drug discovery, particularly in cancer, drug addiction, and pain modulation research. He is an Arkansas Research Alliance Scholar, the recipient of AAPS Research Achievement Award in Drug Design and Discovery, and was awarded a doctorate of science degree from the University of Manchester for his work on central nervous system drug discovery. He currently holds 74 U.S. patents and 112 foreign patent filings that have been licensed to over a dozen companies. He is the founder of seven startup companies. He has published 620 articles and book chapters and serves on the editorial board of several medicinal chemistry journals. Crooks is a fellow of RSC, the Royal Pharmaceutical Society of Great Britain and AAPS.

Riccardo Dalla-Favera | *Columbia University*

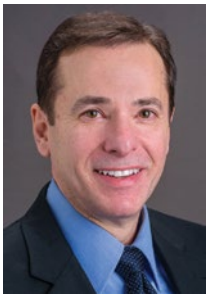
Riccardo Dalla-Favera, M.D., is professor of pathology and cell biology, genetics and development, and microbiology and immunology at Columbia University. Dalla-Favera is also director of the Institute for Cancer Genetics. His research focuses on the molecular genetics of cancer, in particular, the pathogenesis of B cell lymphomas. His laboratory has identified a number of genetic lesions that contribute to the pathogenesis of these tumors, resulting in new diagnostic approaches to the classification of these malignancies and exploration for therapeutic targeting. He is the recipient of the William Dameshek Prize from the American Society of Hematology, Alfred Knudson Award, Giants of Cancer Care Award, and Burkitt Medal Award from Trinity College. He has 14 patents and published over 320 peer-reviewed, book chapters, editorials, reviews and articles. He serves as consulting editor for the *Journal of Clinical Investigation* and is on the editorial board of *Cancer Cell.* Dalla-Favera is a member of NAM and NAS.

Suman Datta | *University of Notre Dame*

Suman Datta, Ph.D., is Chang Family Chair Professor of engineering innovation at the University of Notre Dame and director of the NSF and the Semiconductor Research Corporation Center on Extremely Energy Efficient Collective Electronics. Datta's research interests span from high performance complementary metal-oxide-semiconductor (CMOS) transistors to beyond CMOS computing architectures. At Intel Corporation he developed several generations of logic transistor technologies including high-k/metal gate, Tri-gate and non-silicon channel transistor technologies, which are used in Intel microprocessors. He is the recipient of the Intel Achievement Award, SEMI Award for North America by Semiconductor Industry Association, Penn State Engineering Alumni Association Outstanding Research Award and Premier Research Award. He holds 174 U.S. patents related to advanced devices. He has published 225 articles, five book chapters and serves as associate editor of *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits.* Datta is a fellow of IEEE.

Delbert E. Day | *Missouri University of Science and Technology*

Delbert E. Day, Ph.D., is Curators' Distinguished Professor Emeritus of materials science and engineering at Missouri University of Science and Technology. Day is the recipient of 45 awards recognizing his many contributions to materials science, including the International Phoenix Award. He holds 32 U.S. patents and 16 foreign patents, several of which have been licensed to four companies. He is co-founder, former chairman and president of MO-SCI Corp., a company launched in 1985 to commercialize technology he developed to manufacture special purpose glasses currently used in the healthcare, electronics, aerospace, transportation and chemical industries. He has published 405 peer-reviewed publications and edited three books. Day is a member of NAE, a fellow of the Society of Glass Technology (UK) and National Institute for Health and Care Excellence (NICE), and distinguished life member and past president of ACerS.



Roger A. de la Torre | *University of Missouri-Columbia*

Roger A. de la Torre, M.D., is John A. Growden Endowed Professor of surgery in the University of Missouri-Columbia School of Medicine. De la Torre is a surgeon, who has developed different operative procedures and surgical devices which have contributed significantly to the changing landscape of surgery. One of these led to a new way of performing minimally invasive surgery, which allows a surgeon to use a hand intra-abdominally to assist in a variety of procedures. He holds over 65 U.S. and foreign patents that have been licensed to eight companies. He has published 29 peer-reviewed journal articles and four book chapters. De la Torre is a fellow of the American College of Surgeons, the International College of Surgeons, and American Society of Metabolic and Bariatric Surgeons.

Stephen W. Director | *Northeastern University*

Stephen W. Director, Ph.D., is provost and University Distinguished Professor Emeritus at Northeastern University and honorary professor at Shanghai Jiao Tong University. Director's prior academic positions include professor of electrical engineering at University of Florida; professor, department head and dean at Carnegie Mellon University; dean at University of Michigan and provost at Drexel University. He is a pioneer in the field of electronic design automation and has received numerous awards for his research and educational contributions including the ASEE Benjamin Garver Lamme Award, IEEE's Millennium and Education Medals and Aristotle Award from the Semiconductor Research Corporation. He has published over 150 papers, authored or co-authored six texts and holds one U.S. patent. He is a member of NAE and fellow of IEEE and ASEE.

Jeffrey L. Duerk | *Case Western Reserve University*

Jeffrey L. Duerk, Ph.D., is dean of engineering at Case Western Reserve University. Duerk is recognized for important contributions to magnetic resonance imaging (MRI), most notably the development of system hardware and software leading to MRI's expanded role in real-time image-guided procedures. He is the recipient of the IEEE Silver Medal and holds 40 U.S. patents and three foreign patents that have been licensed to major biomedical imaging companies. He is the founder of Interventional Imaging, Inc. He has published over 185 scientific articles and twelve book chapters and serves on the editorial boards of *Magnetic Resonance in Medicine* and *Journal of MRI*. Duerk is a fellow of IEEE, AIMBE, the International Society for Medical Resonance in Medicine and member of the inaugural class of Distinguished Radiology Researchers of the Academy of Radiology Research.

James L. Dye | *Michigan State University*

James L. Dye, Ph.D., is Distinguished Professor Emeritus in the department of chemistry at Michigan State University. Dye and his group were the first to synthesize two unconventional classes of alkali metal compounds: alkalides, which contain alkali metal anions, and electrides, which are salts that contain electrons as anions. This has led to new research and hundreds of publications by many others. He and Michael Lefenfeld co-founded SiGNa Chemistry, Inc. to exploit the strong reducing power of sodium silicide and of alkali metals in the pores of silica and alumina gels. These materials permit enhanced oil recovery from "spent" wells, as well as stable, safe, ecologically sound reducing agents for academic and industrial use. SiGNa received the Presidential Green Chemistry Challenge Award in 2008 and Dye received Guggenheim and Fulbright Fellowships and the ACS Award in Inorganic Chemistry. Dye holds 18 U.S. patents and is a member of NAS, AAAS and the American Academy.

Richard L. Ehman | *Mayo Clinic*

Richard L. Ehman, M.D., is professor of radiology and the Blanche R. & Richard J. Erlanger Professor of Medical Research at Mayo Clinic. Ehman's inventions in the field of magnetic resonance imaging are widely used in patient care worldwide. He has been awarded the Gold Medal of the International Society for Magnetic Resonance in Medicine, Outstanding Researcher Award of the Radiological Society of North America, Gold Medal of the Asian Oceanian Society of Radiology, Distinguished Investigator designation from Mayo Clinic, and NIH MERIT award. He holds 35 U.S. patents and more than 40 foreign patents that have been licensed to many major companies. He is founder, president, and CEO of Resoundant, Inc., a company based on imaging technology he invented. He has published over 300 peer-reviewed scientific articles. Ehman is an elected member of NAM.

Gary A. Eiceman | *New Mexico State University*

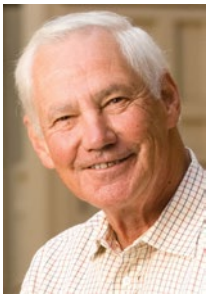
Gary A. Eiceman, Ph.D., is Distinguished Achievement Professor in the department of chemistry and biochemistry at New Mexico State University (NMSU) and professor in the chemistry department at University of Loughborough, England. Eiceman is known for his discovery and developments in ion mobility spectrometry, chemical separations, and the reaction chemistry of gas phase ions at ambient pressure. He is the recipient of the Westhafer Award at NMSU and holds 21 U.S. patents supporting several companies. He has served as a consultant to six companies in chemical instrumentation in the U.S. and abroad and has served in advisory capacity to several governmental organizations. He has published 205 journal articles, is co-author of Ion *Mobility Spectrometry, 3rd ed.,* serves as co-editor of the *International Journal for Ion Mobility Spectrometry* and has been on the editorial board of four peer-reviewed journals in analytical chemistry.

Ali Emadi | *McMaster University*

Ali Emadi, Ph.D., is Canada Excellence Research Chair in Hybrid Powertrain and professor of electrical and computer engineering and mechanical engineering at McMaster University. Previously, Emadi was Harris Perlstein Endowed Chair Professor of engineering and director of the Electric Power and Power Electronics Center and Grainger Laboratories at Illinois Institute of Technology. He is internationally recognized for his expertise in transportation electrification and has been the recipient of numerous awards and recognitions including the Chrysler Innovation Award. He has 40 U.S. patents and patents pending and has successfully transferred technology from university research to industry. He is the founder of several university startups including Hybrid Electric Vehicle Technologies, Inc. and Enedym, Inc. He is the principal author/coauthor of over 400 publications including seven books. Emadi is the founding editor-in-chief of *IEEE Transactions on Transportation Electrification* and fellow of IEEE.

Ronald M. Evans | *Salk Institute for Biological Studies*

Ronald M. Evans, Ph.D., is professor and director of the Gene Expression Laboratory at the Salk Institute for Biological Studies and HHMI Investigator. Evans is known for his discovery of nuclear hormone receptors which respond to steroids, bile acids, vitamins A & D and thyroid hormones. Nuclear receptors are primary targets in breast, prostate and pancreatic cancers and have therapeutic roles in chronic inflammation, osteoporosis and asthma. He recently discovered drugs termed "exercise mimetics," which promote the benefits of fitness without training. These drugs will help battle the obesity epidemic, diabetes, heart disease and cancer. Evans is the recipient of the Lasker Award and Wolf Prize. He holds 145 patents, 44 of which are licensed, and is a founder of Metacrine, Mitobridge, Ligand, Syndax, Reset and X-Ceptor. Evans has authored over 400 scientific publications and reviews, and is a member of NAS and NAM.



Stanley Falkow | *Stanford University*

Stanley Falkow, Ph.D., is Robert W. and Vivian K. Cahill Professor Emeritus of microbiology and immunology and of medicine at Stanford University. Falkow has made important contributions to infectious disease research through his recognition of the role of plasmids in antibiotic resistance and by laying the foundation for the field of molecular bacterial pathogenesis. He is the recipient of the U.S. National Medal of Science, Albert Lasker Special Achievement Award, Robert Koch Award, and numerous other honors. He holds 14 U.S. patents and has published 456 peer-reviewed articles, books and book chapters, and previously served on the editorial boards of 11 scientific journals. Falkow is a member of NAS, NAM, ASM, AAAS and AAM, and is a foreign member of The Royal Society.

Hany Farid | *Dartmouth College*

Hany Farid, Ph.D., is Albert Bradley 1915 Third Century Professor of computer science at Dartmouth College. Farid is a pioneer of the field of photo forensics. He is the recipient of an Alfred P. Sloan Fellowship and a John Simon Guggenheim Fellowship. He holds six U.S. patents, two of which have been licensed to one company. He is the co-founder and chief technology officer of Fourandsix Technologies. He has published one book, two book chapters and over 100 peer-reviewed papers. He has served as a founding associate editor for *IEEE Transactions on Information Forensics and Security.* Farid is a senior member of IEEE.

Shane M. Farritor | *University of Nebraska-Lincoln*

Shane M. Farritor, Ph.D., is David & Nancy Lederer Professor of mechanical and materials engineering at the University of Nebraska-Lincoln. Farritor is leading an effort to develop the next generation of surgical robots where the robots are inserted into the body to perform the procedure. These robots were used for the first time in humans in 2016, resulting in the first ever use of robots functioning inside living humans. He has also developed a sensor system that uses lasers and cameras to find soft sections of railroad track from a service rail car. He is the recipient of the Game Changer Award from *Robotics Business Review.* He holds 29 U.S. and 19 foreign patents that have been licensed to three companies. He is the founder of two privately funded startup companies, Virtual Incision and MRail. Farritor has published over 150 peer-reviewed publications and book chapters.

Philippe M. Fauchet | *Vanderbilt University*

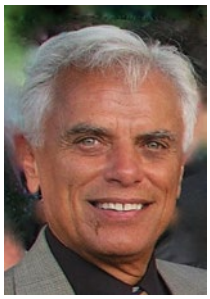
Philippe M. Fauchet, Ph.D., is dean of the School of Engineering at Vanderbilt University and professor of electrical engineering. Fauchet has made important contributions to nanoscience and nanotechnology using silicon, with applications in various domains such as health and medicine, sensing and energy. He is the recipients of a number of awards and holds 12 U.S. patents. He has founded and directed several multidisciplinary centers including the startup company Simpore. Fauchet is a widely published author, with more than 400 scientific publications, and a frequent speaker at scientific and technology meetings, with more than 100 invited or plenary presentations. He has served as an adviser to a number of governmental and non-governmental organizations in the U.S. and Europe. Fauchet is a fellow of AAAS, APS, IEEE, MRS, OSA and SPIE.

Denise L. Faustman | *Massachusetts General Hospital*

Denise L. Faustman, M.D., Ph.D., is director of the Immunobiology Laboratory at Massachusetts General Hospital (MGH) and associate professor at Harvard Medical School. Faustman has contributed to innovations in autoimmunity, transplantation and cancer. Her discoveries include dendritic cells as the elusive passenger lymphocytes that hampers allograft acceptance, a discovery translated by Genzyme; TNFR2 as an oncogene and potent Treg marker targetable for cancer; the role of self-peptides in HLA-class-I for tolerance and interruption in diverse autoimmunity diseases, a finding in clinical testing by multiple pharmaceutical companies; and the ability of TNF or surrogate BCG to reverse end-stage murine diabetes unleashing pancreas regeneration, which is in translational Phase II trials at MGH in advanced type 1 diabetes, a discovery likely to cut health care costs. She has 31 patents, chairs the International Working Consortium on BCG, is the recipient of many awards, peer-reviewed papers, and inventions. Faustman is a member of numerous editorial and national boards including a long-standing NAS committee.

David R. Fischell | *Cornell University*

David R. Fischell, Ph.D., is trustee emeritus, an overseer of Weill Cornell Medicine, and holds an appointment in the Cornell Meinig School of Biomedical Engineering at Cornell University. Fischell is also CEO of Angel Medical Systems, a medical device company seeking FDA approval for its implantable heart attack alerting system. He is a serial entrepreneur who has founded 14 medical device companies in the last 20 years in the areas of cardiology, neurology, hypertension and diabetes. He was the primary designer of J&J's BX Velocity™ and Cypher™ Stents, now implanted in more than seven million patients. He was a regional EY Entrepreneur of the Year in 2013. He currently has 156 issued U.S. patents and has published numerous papers in the fields of telecommunications, cardiology, radiobiology and radiation dosimetry. Fischell is a member of IEEE, BMES, AES and fellow of AIMBE.



Vincent A. Fischetti | *The Rockefeller University*

Vincent A. Fischetti, Ph.D., is professor and head of the Laboratory of Bacterial Pathogenesis and Immunology at The Rockefeller University. Fischetti is the first to use phage lysins as a therapeutic agent, one of which is currently in phase II human trials. He is the recipient of two prestigious NIH MERIT awards. He holds 32 U.S. and foreign patents, eight of which have been licensed to four companies and is the scientific founder of SIGA Technologies and Avacyn Pharmaceuticals. He has published 223 primary articles, is a coeditor of three books and has written 89 book chapters. He was editor-in-chief of *Infection and Immunity,* section editor of the *Journal of Immunology* and currently serves on the editorial board of the *Journal of Experimental Medicine, Microbiological Reviews and Microbiology Spectrum.* Fischetti is a fellow of AAM.

David P. Fries | *Florida Institute for Human & Machine Cognition*

David P. Fries, M.S., is research scientist at the Florida Institute for Human & Machine Cognition. Fries' previous appointments include Sandia National laboratories/Lockheed Martin in the nuclear weapons and defense aerospace programs, and University of South Florida's Center for Ocean Technology where he began the field of underwater mass spectrometry. He explores the underlying thread of technology as an amplifier for exploration and discovery of the natural world and the human condition, specifically researching the ocean world, or "inner space", development of microsystems and robotics/automation for sensing applications; chemical, physical and biological probes technologies; and mobile robotic systems for field applications. He has 35 issued U.S. patents and licensed more than 12 technologies. He is co-founder and CTO of Spyglass Technologies, an ocean sensor technology corporation, founder of Intelligent Micro Patterning, a precision electro-optics company, and founder and president of non-profit SciFlies, the original crowdsourced science funding organization. Fries has over 60 publications spanning oceanography, analytical chemistry, ocean technology, biotechnology, chemistry, microtechnology, electronics and robotics and was an original author of *National Forensic Science and Technology Center.*

Kenneth G. Furton | *Florida International University*

Kenneth G. Furton, Ph.D., is professor of chemistry and biochemistry at Florida International University (FIU) where he also serves as provost, executive vice president and chief operating officer. Furton has made important innovations in detection technologies including human scent identification. He holds several U.S. patents and patents pending and is a founder of an FIU startup company, Innovative Detection Concepts, Inc. He has also been a strong advocate for the inventor community nationally and during his tenure as provost at FIU he has created a culture of invention and innovation with patent disclosures and startups on a rapid rise and issued patents increasing from two in 2013 to 16 in 2016. He has more than 800 articles, books, book chapters and conference presentations. Furton is an elected fellow of American Academy of Forensic Science, ACS member and chairs Scientific Working Group on Dog and Orthogonal Detection Guidelines and the Dogs and Sensors subcommittee of Overseas Security Advisory Council.

Kanad Ghose | *Binghamton University, The State University of New York*

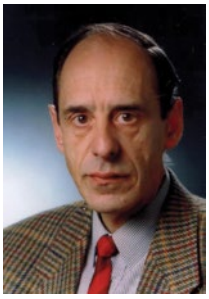
Kanad Ghose, Ph.D., is professor of computer science at Binghamton University, SUNY and serves as the site director of the Center for Energy-Smart Electronics Systems at Binghamton, a multi-university NSF Industry-University Collaborative Research Center. Ghose has made significant technical contributions in the area of energy-aware microprocessor architectures and systems. He has published over 200 peer-reviewed technical papers in his research areas and has directed 20 successful doctoral dissertations to date. He holds 21 U.S. patents, 16 of which as sole inventor. Four of his patents have been licensed. Ghose is a member of IEEE and ACM.

Juan E. Gilbert | *University of Florida*

Juan E. Gilbert, Ph.D., is Andrew Banks Family Preeminence Endowed Professor and chairman of the department of computer & information science & engineering at the University of Florida. Gilbert's research focuses on human-centered computing, database and data analytics, information security and machine learning. He is the recipient of the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring and AAAS Mentor Award. He holds one U.S. patent that has been licensed. He has published more than 180 articles and given more than 250 invited talks. Gilbert is a fellow of AAAS, ACM Distinguished Scientist, AAAS-Lemelson Invention Ambassador, national associate of the National Research Council of the National Academies, and senior member of IEEE.

Linda C. Giudice | *University of California, San Francisco*

Linda C. Giudice, M.D., Ph.D., is Distinguished Professor of obstetrics, gynecology and reproductive sciences at the University of California, San Francisco. A biochemist and reproductive endocrinologist specializing in endometriosis and infertility evaluation and treatment, Guidice's research focuses on endometrial (uterine lining) function, abnormalities, and tissue regeneration. Using their own endometrial transcriptomic data, the Giudice team developed classifiers to diagnose and stage endometriosis, a disorder affecting 50% of women with pelvic pain and infertility, currently diagnosed surgically. This is expected to pre-empt unnecessary surgery to diagnose new or recurrent disease. She has mentored over 250 students and faculty, published over 300 papers, co-edited six textbooks and holds three U.S. patents. Guidice is past-president of the American Society for Reproductive Medicine and Society for Gynecologic Investigation, president of the World Endometriosis Society, member of the March of Dimes Scientific Advisory Council and an elected member of NAM.



Herbert D. Gleiter | *Karlsruhe Institute of Technology*

Herbert D. Gleiter, Ph.D., D.Sc., is professor of physics and director of the Herbert Gleiter Institute of Nanoscience of Nanjing University and Distinguished Fellow of the Karlsruhe Institute of Technology (KIT). He founded the fields of nanocrystalline materials and nano-glasses. The Institute of New Materials he founded resulted in 34 startup companies and over 1,800 new jobs in Germany. He served as president of research of Germany's largest national laboratory and as one of the founding directors of the Institute of Nanotechnology of KIT. He has received 44 prestigious national and international prizes and awards, seven fellowships and honorary memberships in societies and seven honorary doctorate degrees. He has 330 publications that are cited over 22,000 times and eight issued patents (three in the U.S.). Gleiter is a member of NAE, the American Academy, NAS of Germany, European Academy of Sciences, Academia Europaea, European Academy of Sciences and Arts, Indian NAS, Indian NAE and Indian Academy of Sciences.

Dan M. Goebel | *NASA Jet Propulsion Laboratory*

Dan M. Goebel, Ph.D., is senior research scientist at NASA Jet Propulsion Laboratory and an adjunct professor of electrical engineering at the University of California, Los Angeles and the University of Southern California. Goebel has made significant contributions to the invention and development of high efficiency electric thrusters, advanced spacecraft technologies, satellite communications and high power microwave sources, and invented several plasma sources used for materials processing and optical coating systems. He is the recipient of a NASA Engineering Achievement Medal and holds 26 U.S. and 26 foreign patents. He is the co-founder of the plasma-coatings company PMT Inc., previously listed on NASDAQ, and is the author of over 125 peer-reviewed journal papers, 150 conference papers, one textbook and 11 book chapters. Goebel is a member of NAE and a fellow of AIAA, IEEE and APS.

Forouzan Golshani | *California State University, Long Beach*

Forouzan Golshani, Ph.D., is dean of the College of Engineering at California State University, Long Beach. Golshani has worked as a technical consultant for Bull Worldwide Systems, Honeywell, Intel, McDonnell Douglas Helicopter, and Motorola. He has made important contributions to invention and innovation in computer systems and digital imaging. He was named 2010 Distinguished Dean by the Los Angeles Council of Scientists and Engineers, and 2009 Distinguished Engineering Educator by the Orange County Engineering Council. The IEEE Computer Society honored him with an Award of Excellence and Meritorious Service Award. The holder of 10 U.S. patents, he is founder of several successful startups, including Corporate Enhancement Group, Roz Software Systems and RFID Integrated Solutions. An IEEE Fellow and author of more than 200 articles, Golshani served as editor in chief and editorial board member of *IEEE MultiMedia, IEEE Transactions on Multimedia* and other publications.

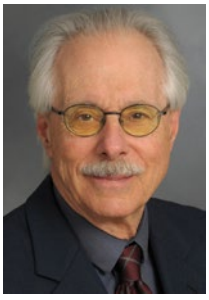


Photo: Jeanne Neville

Lorne M. Golub | *Stony Brook University, State University of New York*

Lorne M. Golub, D.M.D., is SUNY Distinguished Professor of oral biology & pathology at Stony Brook University. Golub has generated innovations on matrix-metalloproteinases and their therapeutic inhibition by inventing FDA approved novel non-antibiotic tetracycline formulations as inhibitors of collagenolysis during a variety of oral and systemic diseases. He has received both U.S. and Canadian federal research grants including an NIH-MERIT award, an honorary doctorate from the University of Helsinki, Medical School, the ADA Gold Medal for Research and other international awards. He holds 55 U.S. and 104 foreign patents, licensed to and marketed by several corporations and is scientific co-founder of two startup companies. He has published over 300 scientific articles and has guest-edited several issues of *Annals of the New York Academy of Sciences* and *Pharmacological Research* dedicated to his innovations in drug development in medicine and dentistry.

John B. Goodenough | *The University of Texas at Austin*

John B. Goodenough, Ph.D., is Virginia H. Cockrell Centennial Chair of engineering at The University of Texas at Austin. His early work on the d-electron properties of transition-metal oxides enabled the first RAM memory of the digital computer; this work required his articulation of what controls the shape of a B-H hysteresis loop in a ferrimagnetic ceramic, cooperative d-orbital ordering, the rules for the sign of interatomic spin-spin interactions, and exploitation of dynamic cooperative orbital order. His work on the crossover between localized and itinerant behavior is fundamental for understanding charge-density waves and high-temperature superconductivity. He patented the fabrication of a discharged rechargeable battery with an oxide cathode that enabled the Li-ion batteries of the wireless revolution, and he has recently patented safe rechargeable batteries having an alkali-metal anode plated reversibly dendrite-free from a glass solid electrolyte with little interfacial impedance. Goodenough is a member of NAS, NAE and AAAS.

Michael Graetzel | *École Polytechnique Fédérale de Lausanne*

Michael Graetzel, Ph.D., is professor of physical chemistry at the École Polytechnique Fédérale de Lausanne. Graetzel pioneered investigations of electron transfer reactions in mesoscopic systems and their application for electricity and fuel generation from sunlight and energy storage in lithium batteries. He invented the dye-sensitized solar cell that engendered perovskite photovoltaics the most exciting break-through in solar cell history. He received the Millennium Technology Prize, Balzan Prize, King Faisal International Science Prize, Einstein World Award of Science and 133 other awards including named lectures and honorary doctorate degrees. He holds 88 U.S. and foreign patents and is the founder of several startup companies. He has published 1,400 peer-reviewed articles that received 200,000 citations as well as books and book chapters. He serves as editor or editorial board member of 12 peer-reviewed journals. Graetzel is an elected member and fellow of RSC, German and Bulgarian Academies of Science and Royal Spanish Academy of Engineering.

Robert J. Greenberg | *Alfred E. Mann Foundation for Scientific Research*

Robert J. Greenberg, M.D., Ph.D., is chairman of Second Sight Medical Products, Inc. and serves on the scientific advisory board for the Alfred E. Mann Foundation for Scientific Research. Greenberg is a leader in the field of neural prosthetics, having brought to market the world's most advanced neural stimulator, the Argus II, to treat one form of blindness. He is currently developing a brain interface, which has the potential to eliminate nearly all forms of blindness. He is the recipient of several honors and awards including Foundation Fighting Blindness Visionary and Ophthalmology Innovation Summit Awards, Edison Gold Honor in the Science/Medical Category and World Technology Award for Health and Medicine. He holds 248 U.S. patents and 100 foreign patents. He is a founder of Campus Security and Sight Medical Products, Inc., and has published 64 articles. Greenberg is a member of the New York Academy of Sciences, fellow of AIMBE and senior member of IEEE.

Richard M. Greenwald | *Dartmouth College*

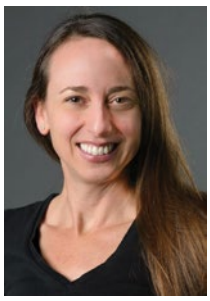
Richard M. Greenwald, Ph.D., is adjunct professor at Thayer School of Engineering at Dartmouth College, president and CEO of Simbex, and co-director of the NIH-funded Center for Translation of Rehabilitation Engineering Advances and Technology and the FDA-funded New England Pediatric Device Consortium. His inventions related to on-field monitoring of head impacts in helmeted sports have led to advancements in the understanding of and protection against traumatic brain injuries, including concussions, and novel helmet technologies, for both sports and military applications. Additional inventions include technologies for fall prevention in the elderly, wrist protection in snowboarding, and medical devices to reduce knee ligament injuries. He is the founder of three startups, including Simbex, iWalk (now BionX), and the non-profit National Institute for Sports Science and Safety. Greenwald holds 15 U.S. patents, with four patents pending and has 83 peer-reviewed publications.

Patrick G. Halbur | *Iowa State University*

Patrick G. Halbur, D.V.M., Ph.D., is professor and chair of veterinary diagnostic and production animal medicine at Iowa State University (ISU). Halbur is also executive director of the Veterinary Diagnostic Laboratory which handles over 75,000 case submissions from livestock and poultry producers each year. He and his collaborators have advanced diagnostic technologies and developed new vaccines for prevention and control of several emerging animal diseases leading to improved animal and public health and food security. He is the recipient of several awards including the Howard Dunne Memorial Award from the American Association of Swine Veterinarians, ISU Award for Achievement in Intellectual Property and has been named "Master of the Pork Industry" by *National Hog Farmer.* He holds 14 U.S. patents that have been licensed to several companies. Halbur has published over 200 manuscripts in peer-reviewed journals and currently serves as president of the American Association of Veterinary Laboratory Diagnosticians.

Henry R. Halperin | *Johns Hopkins University*

Henry R. Halperin, M.D., M.A., is David J. Carver Professor of medicine and professor of radiology and biomedical engineering at Johns Hopkins University. Halperin has made important contributions to improved image guided interventions for treating cardiac arrhythmias as well as the understanding and treatment of cardiac arrest. A number of his inventions are used in clinical practice. He is Distinguished Scientist of the AHA, and McClure fellow of the Johns Hopkins University Applied Physics Laboratory. He holds over 60 U.S. patents that have been licensed to three companies. He is founder of the MRI guided interventions companies MRInterventions and Imricor. He has published over 200 articles, books, and book chapters. Seven of his students have won internationally recognized young investigator awards. Halperin is a member of IEEE and a fellow of AHA and the Heart Rhythm Society.



Amy E. Herr | *University of California, Berkeley*

Amy E. Herr, Ph.D., is Lester John and Lynne Dewar Lloyd Distinguished Professor of bioengineering at the University of California, Berkeley and faculty director of the Bakar Fellows Program, which encourages and supports PI-driven entrepreneurship. Herr has contributed to fundamental knowledge and innovation at the intersection of engineering and analytical chemistry, focusing on invention of next-generation analytical tools for the biosciences and biomedicine. She is the recipient of the NIH New Innovator Award, NSF CAREER Award, DARPA Young Faculty Award, Alfred P. Sloan Research Fellowship, George Guiochon Faculty Fellowship, Mary Shepard B. Upson Faculty Fellowship at Cornell University and American Electrophoresis Society's Mid-Career Achievement Award. She holds eight patents and has over 60 peer-reviewed publications. She is co-founder of the cytometry startup company Zephyrus Biosciences, acquired by Bio-Techne. She has been recognized for her contributions to mentoring and advising and sits on the advisory board of ACS's *Sensors, Analytical Chemistry* and the Rosenman Institute. Herr is a fellow of AIMBE.

D. Craig Hooper | *Thomas Jefferson University*

D. Craig Hooper, Ph.D., is professor of cancer biology and neurological surgery at Thomas Jefferson University. Hooper has made important contributions to the understanding of neuroimmunity, particularly with respect to therapeutic and pathological mechanisms acting at the blood-brain barrier and in central nervous system tissues leading to novel therapies for rabies infection, neuroinflammation and cancer. He holds 10 issued U.S. patents and 19 foreign patents that have been licensed to five companies in the U.S. and abroad. He is co-founder of Imvax Inc., a startup company that has licensed Jefferson systemic cancer immunotherapy technology invented by Hooper. He has published 139 peer-reviewed, articles and book chapters and serves on the editorial board of a number of journals, including the *Journal of Immunology and Scientific Reports.* Hooper is the founding president and inventor member of the Jefferson Chapter of NAI.

Edward A. Hoover | *Colorado State University*

Edward A. Hoover, D.V.M., Ph.D., is University Distinguished Professor in the department of microbiology, immunology, and pathology in the College of Veterinary Medicine and Biomedical Sciences at Colorado State University. For over four decades, Hoover's laboratory has focused on the pathogenesis and prevention of AIDS-like viruses and prion infections in animals. This work has included the development of the first successful vaccine to prevent feline leukemia that is now used to protect millions of cats worldwide, for which he holds a U.S. and several foreign patents. His technology has been licensed by seven companies. He has published over 250 peer-reviewed scientific articles, served as a reviewer or editorial board member for major peer-reviewed journals, and has been a member of multiple scientific advisory or review boards. Hoover is recipient of multiple awards for research excellence and is an elected member of NAS.

Oliver Yoa-Pu Hu | *National Defense Medical Center*

Oliver Yoa-Pu Hu, Ph.D., is Distinguished Professor at National Defense Medical Center, Taiwan. Hu is an excellent inventor in the medical and pharmaceutical fields. He was the Director-General of the Bureau, Pharmaceutical Affairs and Minister without portfolio, in Taiwan. During his term, Hu successfully implemented over 132 new regulations and established two government support foundations, the Center for Drug Evaluation and Taiwan Drug Relief Foundation, to facilitate drug approval and drug injury relief systems. His patents have been transferred to pharmaceutical companies in Taiwan, U.S., China and Japan. His invention, the Galactose Single Point method of liver function diagnosis, has been recommended in FDA guidance and international textbooks. He has 60 patents and published over 250 peer-reviewed articles and book chapters. Hu is a fellow of AAPS.

David Huang | *Oregon Health & Science University*

David Huang, M.D., Ph.D., is Peterson Professor of ophthalmology, professor of biomedical engineering, and director of the Center for Ophthalmic Optics and Lasers at Oregon Health & Science University. Huang is co-inventor of optical coherence tomography (OCT), the most common imaging procedure in ophthalmology, with an estimated 30 million patients imaged per year. He leads an active NIH-supported research program on the ophthalmic applications of OCT and OCT angiography. He has received the Champalimaud Vision, ARVO Friedenwald, American Academy of Ophthalmology Senior Achievement, and NAE Russ Awards. He holds multiple patents in the areas of OCT, OCT angiography, laser therapeutic devices, and mobile diagnostic tests. His seminal article on OCT, published in *Science* in 1991, has been cited more than 10,000 times. Huang is a founder of Gobiquity Mobile Health, Inc., a maker of mobile diagnostic apps for professional and home use.

Mark S. Humayun | *University of Southern California*

Mark S. Humayun, M.D., Ph.D., is Cornelius J. Pings Professor of biomedical sciences at the University of Southern California (USC) with joint appointments at the Keck School of Medicine and the Viterbi School of Engineering. He is also director of the Institute for Biomedical Therapeutics and co-director of the USC Roski Eye Institute. Humayun is recognized worldwide as a pioneer in restoring sight to the blind. For his accomplishments in bioelectronics in medicine, he received the 2015 National Medal of Technology and Innovation, the nation's highest award for technological achievement. He has more than 100 patents and patent applications and more than 200 peer-reviewed publications. He is co-inventor of the first FDA approved retinal prosthesis, Argus II, which restores functional sight to those with complete retinal blindness. Humayun is a member of NAM and NAE.

Joseph P. Iannotti | *Cleveland Clinic*

Joseph P. Iannotti, M.D., Ph.D., is Maynard Madden Professor and Chair of the Orthopaedic and Rheumatologic Institute at the Cleveland Clinic. Iannotti has innovatively contributed to shoulder biomechanics and prosthetic design, surgical planning and patient specific instrumentation, devices for soft tissue graft augmentation, and our understanding of tendon healing and repair. He is a three time recipient of the Charles Neer Research Award and 2011 Sones Award for Innovation. He holds 46 U.S. patents and 67 foreign patents that have been licensed to six companies. He is founder and chief scientific officer for Custom Orthopaedic Solutions. He has published over 350 articles, book chapters and reviews and edited three textbooks, and served on editorial boards for over a dozen peer-reviewed journals. Iannotti has served on the board of directors of the American Academy of Orthopaedic Surgery and American Shoulder and Elbow Surgeons.

Enrique Iglesia | *University of California, Berkeley*

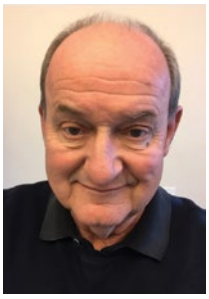
Enrique Iglesia, Ph.D., is Theodore Vermeulen Chair in chemical engineering at the University of California, Berkeley and faculty senior scientist at the Lawrence Berkeley Laboratory. Iglesia researches the synthesis of novel catalytic solids, their in-situ structural and mechanistic characterization, and the detailed modeling of kinetic and transport processes in catalytic processes relevant to oil refining and petrochemical synthesis. He has received the Eni and Tanabe Prizes, Olah and Somorjai ACS awards, Wilhelm and Alpha Chi Sigma awards of AIChE, and Emmett and Burwell awards of the North American Catalysis Society, for which he serves as president. He holds 35 issued U.S. patents in the fields of catalytic processes and materials, practiced or licensed in the energy, petroleum, chemicals and environmental fields. He has co-authored 325 scholarly publications and served as editor-in-chief of *Journal of Catalysis,* as board member for several companies and leading journals, and as consultant to the energy, fuels, petrochemicals and nanotechnology industries. Iglesia is a member of NAE and the American Academy.

Sungho Jin | *University of California, San Diego*

Sungho Jin, Ph.D., is professor emeritus at University of California, San Diego. Prior to joining UC San Diego, Jin conducted materials and devices research at Bell labs, Murray Hill. He has made innovative contributions in the fields of nanomaterials, magnetic materials, electronic materials and devices, biomaterials and medical implants, and energy materials. He received various awards including the John Bardeen Award, Nano 50 Award, Ho-Am Engineering Prize, Albert-Sauveur Achievement Award, and Acta Gold Medal. He holds more than 200 U.S. and 360 foreign patents, some of which have been licensed to several companies and is co-founder of a startup company on energy technologies. He has published over 400 articles, including 10 in *Nature, Science* and *Nature Materials*, and serves as an editor for *Acta Materialia.* Jin is a member of NAE and fellow of APS, TMS, ASM and MRS.

Barry W. Johnson | *University of Virginia*

Barry W. Johnson, Ph.D., is L.A. Lacy Distinguished Professor of engineering at the University of Virginia. Johnson has made important innovations in computer system safety and security including biometric-based identity verification. He is the recipient of the Frederick Emmons Terman Award from ASEE, C. Holmes MacDonald Award from Eta Kappa Nu, and Alan Berman Research Publication Award from the Department of the Navy, among many other state and national awards. He holds 24 U.S. and 10 foreign patents that have been acquired by multiple major corporations. He is founder of one startup company and served as its president and CEO for four years and chairman of the board for 14 years. He has published two books, eight chapters and more than 150 journal and conference articles. Johnson is a fellow of IEEE.



William L. Johnson | *California Institute of Technology*

William L. Johnson, Ph.D., is Mettler Professor of materials science and applied physics at California Institute of Technology. Johnson has contributed to innovation through the discovery and development of new metallic materials, particularly metallic glasses. He has pioneered novel materials processing technologies and manufacturing methods. Johnson has received many notable awards including the MRS Gold Medal and APS McGroddy Prize for New Materials. He is an inventor on over 90 issued and another 40 pending U.S. patents dealing with various compositions of matter, processing methods and engineering applications of metals. He co-founded Liquidmetal Technologies, Inc., and Glassimetal Technology Inc., both of which are dedicated to the commercialization of metallic glasses. He has published over 500 papers, review articles and numerous book chapters. Johnson is an elected member of NAS and NAE.

John L. Junkins | *Texas A&M University*

John L. Junkins, Ph.D., is Distinguished Professor of aerospace engineering and director of the Institute for Advanced Study at Texas A&M University. Junkins has made contributions to the guidance, navigation and control of space vehicles, and several inventions in optical sensing. His inventions enable rendezvous and docking of spacecraft and also autonomous aerial refueling of aircraft, and his research on modeling the earth's gravity field enables precision motion computation for spacecraft. He is the recipient of over a dozen international honors, including the Frank Malina Medal by the International Academy of Astronautics and Tycho Brahe Award by the Institute of Navigation. He has four issued U.S. patents and over 400 publications including 10 books. Junkins is a member of NAE.

Michelle Khine | *University of California, Irvine*

Michelle Khine, Ph.D., is professor of biomedical engineering at University of California, Irvine. Khine has developed low cost manufacturable approaches to micro and nanotechnologies for point of care diagnostics, drug discovery and wearable technologies. She was the scientific founder of Fluxion Biosciences, Shrink Nanotechnologies, Novoheart, and most recently, TinyKicks. She is the recipient of the TR35 Award and NIH New Innovator's Award. She has been named one of Forbes '10 Revolutionaries', one of the '100 Most Creative People in Business' by *Fast Company Magazine,* a 'Women on Top: Top Scientist' by *Marie Claire,* and was a finalist in the World Technology Awards for Materials. She holds numerous U.S. patents and over 45 peer-reviewed journal publications. Khine is a fellow of AIMBE.

John Klier | *University of Massachusetts Amherst*

John Klier, Ph.D., is professor and head of chemical engineering at the University of Massachusetts Amherst. Klier is currently focused on growing the department, building new research and teaching programs, and developing external relationships. Formerly with Dow Chemical Company, he has directly contributed to developing breakthrough coating materials for greatly improved and sustainable water based paints (including exceptional performance and hiding power, sustainability and premium stain blocking), novel low VOC thermoset technologies, and new families of metal coatings. Klier's individual inventions led to at least $150 million per year of new product revenue and organizations under his direct supervision delivered over $1.1 billion of annual new product revenue, from up to 30 new product launches per year. He received his bachelor's degree in chemical engineering from Massachusetts Institute of Technology and master's degree and doctorate degrees from Purdue University. Klier holds numerous patents and is a member of NAE.

Thomas J. Kodadek | *The Scripps Research Institute*

Thomas J. Kodadek, Ph.D., is professor of chemistry at The Scripps Research Institute. Kodadek is a pioneer in the area of chemical biology. He has developed new methods for the discovery of antibody biomarkers, invented novel hyper-rapid protein cross-linking reagents, and uncovered previously unrecognized aspects of the role of the proteasome in eukaryotic gene transcription. He is the recipient of the NIH Pioneer and ACS Cope Scholar Awards. He holds more than a dozen patents and is the author of over 200 peer-reviewed research publications. Kodadek was the founding editor of the RSC journal in *Molecular Biosystems* and is a member of several other editorial boards. Kodadek was involved in two now public companies, Opko and Ra Pharmaceuticals, and founded Deluge Biotechnologies. He is a fellow of AAAS.

Harold L. Kohn | *The University of North Carolina at Chapel Hill*

Harold L. Kohn, Ph.D., is Kenan Distinguished Emeritus Professor at The University of North Carolina at Chapel Hill where he was also faculty in the division of chemical biology and medicinal chemistry at the Eshelman School of Pharmacy and in the department of chemistry. Kohn's studies on the mode of action of clinical agents and in drug discovery have made major contributions to human health care. He is credited with the discovery of lacosamide (Vimpat®), a first-in-class antiepileptic drug that is marketed worldwide. The Sloan Foundation, Dreyfus Foundation, American Association of Colleges of Pharmacy, and the University of Houston have recognized and honored his research contributions. He has more than 175 peer-reviewed publications, 10 U.S. and more than 25 foreign patents. Kohn is a member of ACS and RSC.

Steven M. Kuznicki | *University of Alberta*

Steven M. Kuznicki, Ph.D., is a professor in the department of chemical and materials engineering at the University of Alberta. Kuznicki has made fundamental contributions in water and gas purification and oxygen generation through discoveries in new microporous crystals, and his current work is advancing renewable fuel generation and nuclear detection and decontamination. He has received the New Jersey Inventor of the Year, Thomas Edison Award of New Jersey Research Council, Distinguished Chemistry Alumni Award of The University of Utah, among other awards. Kuznicki holds 52 U.S. patents and more than 10 foreign patents that have been licensed to or commercialized by over a dozen companies. He is the founder of Extraordinary Adsorbents, Inc., dedicated to commercializing advances in microporous materials and Alberta Adsorbents, Inc., serving as a consultant to the water, air and gas purification and nuclear decontamination industries. Kuznicki has published well over 100 articles and serves on several editorial boards.

Enrique J. Lavernia | *University of California, Irvine*

Enrique J. Lavernia, Ph.D., is provost and executive vice chancellor and Distinguished Professor of chemical engineering and materials sciences at the University of California, Irvine. Lavernia's research interests include the synthesis and behavior of nanostructured and multi-scale materials with particular emphasis on processing fundamentals and physical behavior. He earned his doctorate degree in materials engineering from the Massachusetts Institute of Technology. He is the recipient of the Alexander von Humboldt Foundation Research Award, TMS's Leadership Award and Fellows Award, Edward DeMille Campbell Memorial Lectureship, ASM International Gold Medal Award, and was inducted into the Hispanic Hall of Fame by the HEENAC Great Minds in STEM. Lavernia has been awarded 12 patents (two pending) and has published more than 500 journal and 200 conference publications. Lavernia is a member of NAE and fellow of TMS, MRS, ASME, AAAS and ASM.

Nicholas J. Lawrence | *H. Lee Moffitt Cancer & Research Institute*

Nicholas J. Lawrence, Ph.D., is senior research faculty member at the H. Lee Moffitt Cancer & Research Institute and senior member of the Cancer Center in the drug discovery department and professor in the department of oncologic sciences at the University of South Florida. Lawrence has made important contributions to the fields of chemical biology and medicinal chemistry. His laboratory focuses on the design and synthesis of new anticancer agents. Lawrence holds 10 awarded U.S. patents. These include patents protecting anticancer small molecule technology licensed to GLG Pharma (STAT3 inhibitors) and Debiopharm (disruptors of the Rb-Raf protein-protein interaction). Most recently, a series of multi-targeting dual bromodomain-kinase inhibitors was licensed to Aptose Biosciences. Lawrence has published over 100 peer-reviewed papers and 15 review articles in the areas of organic and medicinal chemistry and anticancer drug design. Lawrence is a member of AACR.

Leslie A. Leinwand | *University of Colorado Boulder*

Leslie A. Leinwand, Ph.D., is chief scientific officer of the University of Colorado Boulder's BioFrontiers Institute and Distinguished Professor of Molecular, Cellular and Developmental Biology (MCDB). Leinwand was recruited to be chair of MCDB in 1995 from Albert Einstein College of Medicine. She holds four U.S. patents and co-founded three biotechnology companies: Myogen, Inc., a publicly traded company that was acquired by Gilead Pharmaceuticals, Hiberna, Inc., and MyoKardia, Inc., a publicly traded company founded to develop therapeutics for inherited cardiomyopathies. She also has published 296 peer-reviewed articles. Leinwand is a fellow of AAAS, an Established Investigator of AHA, an HHMI professor, and was recently elected to the American Academy.

Frances S. Ligler | *North Carolina State University*

Frances S. Ligler, D.Phil., D.Sc., is Lampe Distinguished Professor in the Joint Department of Biomedical Engineering of North Carolina State University and The University of North Carolina at Chapel Hill. Previously, she served as U.S. Navy senior scientist for biosensors and biomaterials at the Naval Research Laboratory. Ligler has made seminal contributions to optical biosensors and microfluidics. She was recognized with the Presidential Rank Awards of Distinguished Senior Professional and of Meritorious Senior Professional in 2003 and 2012, respectively, and inducted into NIHF in 2017. She is the recipient of the Christopher Columbus Foundation Homeland Security Award, Navy Superior Civilian Service Medal, five NRL Edison Patent Awards, and an honorary doctorate from the Agricultural University of Athens, among other honors. She holds 28 U.S. and 14 foreign patents, which have been licensed to multiple corporations. She has published 368 articles, books, and book chapters, and serves on the editorial boards of five scientific journals. Ligler is a member of NAE and fellow of AAAS, AIMBE and SPIE.

Yilu Liu | *The University of Tennessee, Knoxville*

Yilu Liu, Ph.D., is Governor's Chair Professor at The University of Tennessee, Knoxville and Oak Ridge National Laboratory. Liu led the effort to create the North American Power Grid Monitoring Network (FNET/GridEye), which is still the only monitoring network that covers the entire North America and major grids worldwide. She is the recipient of Presidential Faculty Fellow Award, NSF Young Investigator's Award, and several university awards for research and teaching excellence. She holds five U.S. patents and one foreign patent that have been licensed to companies. Liu and her students' work has appeared in over 300 journal and conference papers. Liu is a fellow of IEEE and member of NAE.

Jennifer K. Lodge | *Washington University in St. Louis*

Jennifer K. Lodge, Ph.D., is vice chancellor and associate dean for research as well as professor of molecular microbiology at Washington University in St. Louis. Her laboratory has been at the forefront of molecular genetic, genetic, biochemical and genomic advances in medical mycology. Lodge is a major contributor to the understanding of oxidative and nitrosative stress, signal transduction, cell wall biogenesis and vaccine development in the fungal pathogen Cryptococcus neoformans, as well as genomics and development of molecular tools. As the University's senior research official she encourages innovation and entrepreneurship that will translate into benefits for society. Lodge has been honored as an Outstanding St. Louis Scientist. She has one patent and published 68 peer-reviewed articles and book chapters and has served on multiple editorial boards. She is a fellow of AAAS and AAM.

Gabriel P. López | *The University of New Mexico*

Gabriel P. López, Ph.D., is vice president for research, professor of chemical and biological engineering, and founding director and member of the Center for Biomedical Engineering at The University of New Mexico (UNM). López's advances in micro/nanomaterials and devices have led to innovations in biointerface engineering, biosensing for diagnostics and drug discovery, flow cytometry, bioseparations, drug delivery and antimicrobial coatings to disinfect medical devices, naval equipment and filtration systems. He is the recipient of the W. Moulton Distinguished Alumni Award from the University of Washington, Stansell Family Distinguished Research Award from Duke University, NSF Faculty Early Career Development Award, and an Outstanding University Inventor Award from the Semiconductor Research Corporation. López holds 42 U.S. patents for his work at UNM, Harvard, and the University of Washington. He is a fellow of AIMBE and an STC.UNM Innovation Fellow.

Mandi J. Lopez | *Louisiana State University*

Mandi J. Lopez, D.V.M., Ph.D., is professor of veterinary surgery at Louisiana State University. Lopez is a leader in device design and implementation for orthopedic surgery and diagnostics. She is the recipient of the Zoetis Award for Veterinary Research Excellence and is a Southeastern Conference Academic Leadership Development fellow. She holds four U.S. patents and two foreign patents that have been licensed to several companies. She is co-founder and chief research officer of the medical startup company Tesa Medical. She has authored over 100 abstracts, 75 manuscripts, eight book chapters, and a book, and she serves as an associate editor for *Veterinary Surgery.* Lopez is a member of Sigma Xi, American College of Veterinary Surgeons, American Veterinary Medical Association and the Orthopaedic Research Society.

Surya K. Mallapragada | *Iowa State University*

Surya K. Mallapragada, Ph.D., is Anson Marston Distinguished Professor and Carol Vohs Johnson Chair in the department of chemical and biological engineering at Iowa State University. She is also a senior scientist in the division of materials science and engineering at Ames Laboratory, a U.S. DOE Laboratory. Mallapragada has made important contributions to the development of polymeric nanobiomaterials for drug/gene and vaccine delivery and for neural tissue engineering. She is the recipient of an NSF Career award, Big 12 Rising Star award, and was named one of the top 100 young innovators by MIT's *Technology Review* magazine. She holds seven U.S. patents, has over 150 peer-reviewed articles and book chapters and serves as an editor for *Materials Science and Engineering: R: Reports.* Mallapragada is an elected fellow of AIMBE and AAAS.

Seth R. Marder | *Georgia Institute of Technology*

Seth R. Marder, Ph.D., is Georgia Power Chair of Energy Efficiency and Regents Professor of chemistry, and materials science and engineering at the Georgia Institute of Technology. Known for his ability to communicate complex concepts in an approachable manner to broad audiences, Marder has made important contributions to invention and innovation in the development of organic materials for photonics, two-photon microfabrication and organic electronics. He is a recipient of ACS Cope Scholar MRS Mid-Career Awards and has been guest or visiting professors at universities in Asia and Europe. He holds 39 patents, many of which have been licensed to corporations. He is co-founder of three startup companies and has published over 450 peer-reviewed articles, books and book chapters. He is the founding chair of the editorial board of *Materials Horizons.* Marder is a fellow of AAAS, APS, SPIE, OSA, MRS and RSC.

Alan G. Marshall | *Florida State University*

Alan G. Marshall, Ph.D., is Robert O. Lawton Professor of chemistry and biochemistry at Florida State University and founding director of the Ion Cyclotron Resonance Program at the National High Magnetic Field Laboratory. Marshall co-invented and leads the continuing development of fourier transform ion cyclotron resonance mass spectrometry (FT-ICR MS), the world's highest resolution mass analyzer. More than 800 FT-ICR MS instruments have been installed worldwide. He is the recipient of the Eni Hydrocarbons Award, three ACS National Awards, three PittCon Awards, and 73 other awards and lectureships. He holds seven U.S. patents and three foreign patents that have been licensed to three companies. He has published 611 peer-reviewed articles and five books cited more than 35,000 times, and serves on three journal editorial boards. Marshall is a past president of the American Society for Mass Spectrometry and is a fellow of the American Academy, AAAS, ACS and APS.

Raghunath A. Mashelkar | *National Innovation Foundation - India*

Raghunath A. Mashelkar, Ph.D., is national research professor and chairman of India's National Innovation Foundation. Mashelkar established India's first polymer science and engineering school, making important contributions to inventions in stimuli responsive and drag reducing polymers. He is well known for starting U.S. patenting culture in 40 laboratories of Council of Scientific & Industrial Research, making it the number one organization in securing U.S. patents in India. He made a major contribution to intellectual property rights issues in traditional knowledge systems. He has received over 75 national and international awards as well as 37 honorary doctorates, and has 10 U.S. and 19 foreign patents. He is the chairman of startups Invictus Ltd., Vyome Biosciences Ltd., and GenNext Ventures. He has published 306 peer-reviewed articles, books and book chapters. Mashelkar was president of Indian National Science Academy and is a fellow of Royal Society and a foreign member of NAS, NAE and the American Academy.

Kouki Matsuse | *Meiji University*

Kouki Matsuse, Ph.D., is professor emeritus at Meiji University in Japan. Matsuse is an inventor of "Current Type GTO Inverter with Surge Energy Restoration" in power electronics and drives its industry application. He is the recipient of a paper award, the IEEE Industry Applications Society's outstanding achievement award and two book awards from the Institute of Energy Economics, Japan (IEEJ). He holds four U.S. and 13 foreign patents that have been licensed to three companies. He has published 96 papers for transactions and magazines, 226 proceedings for international conferences and 17 books, and given 34 invited lectures. Matsuse is a fellow of IEEE, IEEJ and the Japan Federation of Engineering Societies.

Martin M. Matzuk | *Baylor College of Medicine*

Martin M. Matzuk, M.D., Ph.D., is director of the Center for Drug Discovery and holds the Stuart A. Wallace Chair and Robert L. Moody, Sr. Chair in pathology at Baylor College of Medicine. Matzuk is recognized for his contributions to reproductive medicine and therapeutics. He has chaired the NIH Cellular, Molecular and Integrative Reproduction Study Section [CMIR] and the Burroughs Wellcome Fund CABS and CAMS review panels. He is a recipient of an NIH MERIT award, Trainee Mentoring Award and Research Award from the Society for the Study of Reproduction, Richard Weitzman Award and Roy Greep Award from the Endocrine Society, HypoCCS Award from Eli Lilly, Pfizer Outstanding Investigator Award from ASIP, and International Fundacion IVI Award in Reproductive Medicine. He holds 13 U.S. patents, has published over 325 papers, has generated more than 100 genetically-engineered mouse lines, and has been funded continuously by National Institute of Child Health and Human Development since 1991. Matzuk is a member of NAS and the Academy of Medicine, Engineering and Science of Texas.

T. Dwayne McCay | *Florida Institute of Technology*

T. Dwayne McCay, Ph.D., became president of Florida Institute of Technology (Florida Tech) on July 1, 2016. McCay is also a professor in physics and space sciences and mechanical and aerospace engineering and was previously provost, chief academic officer, executive vice president and chief operating officer. Prior to joining Florida Tech, he was vice president for research and information technology for The University of Tennessee System. His early career included engineer positions at NASA Marshall Space Flight Center, Air Force Rocket Propulsion Laboratory, and ARO, Inc. He is the recipient of many honors including the American Museum of Science and Energy Technical Achievement Award. He holds 16 patents in the field of laser induced surface improvement, several of which have been licensed and two have resulted in startups. McCay was associate editor for the *Journal of Propulsion and Power* has authored over 100 technical publications including two books.

James W. McGinity | *The University of Texas at Austin*

James W. McGinity, Ph.D., is Johnson & Johnson Centennial Chair Emeritus of pharmacy at The University of Texas at Austin. McGinity joined the UT Austin faculty in 1976 and was a professor for 37 years before retiring in 2013. Born in Brisbane, Australia, McGinity earned his bachelor's degree in pharmacy from the University of Queensland and Ph.D. from the University of Iowa. His research is focused on drug delivery through thermal processing technologies. He has received several prestigious awards including the AAPS Research Achievement Award in Pharmaceutical Technologies, the University of Iowa's Distinguished Alumni Award and in 2014, U.T. Austin Inventor of the Year. He has supervised 81 Ph.D. students and post-doctoral fellows, published 208 research articles, 30 book chapters, and has edited three books. McGinity is a named inventor on 27 issued U.S. patents and is a fellow of AAPS.

Thomas J. Meade | *Northwestern University*

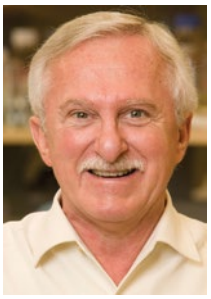
Thomas J. Meade, Ph.D., is Eileen M. Foell Professor of cancer research and professor of chemistry, molecular biosciences, neurobiology, biomedical engineering and radiology at Northwestern University. Meade has made significant contributions in the field of coordination chemistry and its application in bioinorganic problems that include biological molecular imaging, electron transfer processes and the development of electronic biosensors for the detection of DNA and proteins. He is the recipient of numerous awards including the World Molecular Imaging Society (WMIS) Exceptional Achievement Award and the Illinois Biotechnology Organization Innovator Award. He holds 81 issued U.S. patents that have been licensed to the four companies he has founded: Clinical Micro Sensors, Metaprobe, PreDx and Ohmx. He has published more than 200 peer-reviewed articles and book chapters, and serves as an associated editor of *Chemical Science* and on the editorial boards of seven scientific journals. Meade is a fellow of AAAS, ACS, RSC and WMIS.

Katrina L. Mealey | *Washington State University*

Katrina L. Mealey, Ph.D., D.V.M., is Richard L. Ott Professor of small animal medicine and research and founding director of the program in individualized medicine at Washington State University. Mealey is recognized as a global expert in veterinary pharmacogenetics because her research has changed the standard of care in veterinary medicine and influenced veterinary drug development and regulation. She is the recipient of the Eli Lilly Award, Pfizer Award for Veterinary Research Excellence, Life Sciences Northwest Women-to-Watch Award, and named a founding Entrepreneurial Faculty Ambassador at Washington State University. She holds two U.S. patents and eight foreign patents that have been licensed to nine different companies. She has published over 100 peer-reviewed articles and book chapters and served on the editorial board for two veterinary journals. Mealey is a diplomate of American College of Veterinary Internal Medicine, American College of Veterinary Clinical Pharmacology, and the American Veterinary Medical Association.

Edward W. Merrill | *Massachusetts Institute of Technology*

Edward W. Merrill, Sc.D., is C.P. Dubbs Professor Emeritus of chemical engineering at Massachusetts Institute of Technology. Merrill's innovations in biomedical engineering include blood viscosity measurement, artificial kidney design and membrane blood oxygenator design. His biomaterial inventions include anticlotting surfaces for blood contact, wettable silicone contact lenses, and artificial hip and knee non-wearing sliding components. He is recipient of the Founders, Stine, and Alpha Chi Sigma Awards from AIChE, and the Founders and Clemson Awards from SFB. He holds 57 U.S. patents, has 195 peer-reviewed articles, and is co-author of a text on polymer synthesis. Merrill is a fellow of the American Academy and member of NAE and NAM.



Paul L. Modrich | *Duke University*

Paul L. Modrich, Ph.D., is James B. Duke Professor of biochemistry at Duke University and an HHMI Investigator. He clarified the mechanisms of DNA mismatch repair in bacteria and human cells, and showed that certain human cancers are defective in the pathway. He is the recipient of the Nobel Prize in Chemistry, ACS Medal of Honor, Feodor Lynen Medal, Pasarow Foundation Award in Cancer Research, General Motors Mott Prize in Cancer Research, and Pfizer Award in Enzyme Chemistry. He holds eight U.S. patents that have been licensed to several biotech companies. He has published 182 peer-reviewed articles and book chapters and has served on the editorial boards of five scientific journals. Modrich is a member of NAS, NAM and the American Academy.

H. Keith Moo-Young | *Washington State University Tri-Cities*

H. Keith Moo-Young, Ph.D., P.E., is chancellor of Washington State University Tri-Cities. A licensed professional engineer, Moo-Young's research interests include solid and hazardous waste management, environmental containment and remediation technologies. He led an industrial consortium with 15 utilities which resulted in a patented device to determine environmental contamination. He has received numerous awards and honors, including U.S. Black Engineer of the Year, National Defense Science and Engineering Graduate Fellowship, and General Electric Faculty Fellowship. He has more than 200 peer-reviewed papers and invited talks. Moo-Young has developed innovation communities to increase entrepreneurship and small business partnered with universities in Pennsylvania, California and Washington. As a result of his research and public policy work, Moo-Young was named a fellow of AAAS, ASCE, and the American Academy of Environmental Engineers and Scientists.

David J. Mooney | *Harvard University*

David J. Mooney, Ph.D., is Robert P. Pinkas Family Professor of bioengineering and core faculty member of the Wyss Institute at Harvard University. Mooney is making cell and macromolecular therapies effective and practical approaches to treat disease. He has served as the chair of AIMBE and is a NIH MERIT awardee. He has also received the NSF CAREER award, SFB Clemson Award, International Association for Dental Research's Distinguished Scientist Award, and Senior Scientist Award from TERMIS, among others. Mooney holds 28 issued and 38 pending U.S. patents, and has licensed these patents to twelve companies. He has published over 350 papers and served on the scientific advisory board of a number of corporations. Mooney is a member of NAE and NAM.

Israel J. Morejon | *University of South Florida*

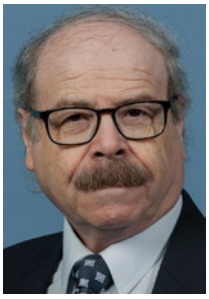
Israel J. Morejon is chief technology officer at enVerid Systems and alumnus of the University of South Florida (USF). He is a prolific inventor and manufacturer of an array of technologies encompassing state-of-the-art LED lighting technology and guided missiles. After starting his career in the defense industry designing missile guidance and control systems, Morejon founded engineering design and consulting company, Integrated Engineering Technology (IET). IET designs technology for lighting, kidney dialysis systems, hearing aids, robots and the core waveguide technology used in speed guns. He is a named inventor on 27 issued U.S. patents in various fields of technology and his achievements include the design of an award-winning medical user interface system that decodes an optical encoder, keypad, and controls LCD display intensity. He serves as a member of USF's research foundation board.

Harold L. Moses | *Vanderbilt University*

Harold L. Moses, M.D., is Ingram Professor of cancer research, professor and chair of cancer biology, professor of medicine, and professor of pathology, microbiology and immunology at Vanderbilt University. Moses has devoted much of his career to basic research on growth factors and tumor suppressor genes. He has received many awards for his research, including the AACR Lifetime Achievement in Cancer Research Award. He holds a U.S. patent, and has over 300 peer-reviewed publications. He has served on the editorial board of 13 journals, as founding chair of NAM's national cancer policy forum, and president of the Association of American Cancer Institutes. Moses is a member of NAM and fellow of AACR, for which he has served as president.

Joseph R. Moskal | *Northwestern University*

Joseph R. Moskal, Ph.D., is distinguished research professor of biomedical engineering and psychiatry at the Feinberg School of Medicine at Northwestern University. He has made important contributions to the understanding of synaptic plasticity mechanisms associated with learning and memory, and recently created compounds that are now in a Phase III clinical trials program for treatment of resistant depression. He holds 18 patents and authored over 120 peer-reviewed papers. He is also the co-founder and chief scientific officer of Aptinyx, Inc., which focuses on drug discovery for neuropathic pain, PTSD and traumatic brain injury. He is a member of the Greater Chicago Entrepreneurs Hall of Fame, trustee of Dominican University, and serves on the editorial board of the *Journal of Molecular Neuroscience.*

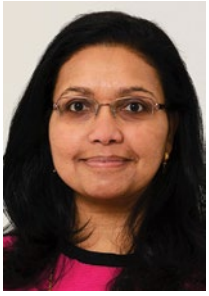


Nazim Z. Muradov | *University of Central Florida*

Nazim Z. Muradov, Ph.D., D.Sc., is research professor at the University of Central Florida (UCF). Muradov has made important contributions to invention and innovation in the field of hydrogen energy and alternative fuels technology. He is the recipient of a R&D 100 Award, Research Incentive Award, Distinguished Researcher of the Year Award, Excellence in Research Award, and other awards. He holds 44 U.S. patents and 6 foreign patents that have been licensed to several companies and successfully commercialized. He is founder and president of the H2Litmus LLC hi-tech startup company. He has published two books, six book chapters and encyclopedia articles, and close to 200 research articles in journals, conference proceedings and edited books. He currently serves as associate editor for *International Journal of Hydrogen Energy.* Muradov is a member of the board of directors and fellow of the International Association for Hydrogen Energy.

Nicholas Muzyczka | *University of Florida*

Nicholas Muzyczka, Ph.D., is Koger Chair for Cancer Research in the department of molecular genetics and microbiology at the University of Florida. Muzyczka distinguished himself by developing adeno-associated virus (AAV) vectors used by gene therapy companies. He was the founding director of the Powell Gene Therapy Center at the University of Florida, where many techniques used today to make AAV vectors, research and clinical grade, were developed. He was also the founder and CEO of Applied Genetic Technologies Corporation, a biotechnology company conducting clinical trials of AAV-based gene therapies for treatment of rare eye diseases, and recently founded and is CEO of Lacerta Therapeutics, a biotechnology company that focuses on therapies for central nervous system disorders. Muzyczka holds 16 U.S. patents, has published 174 peer-reviewed articles and was elected into the Florida Inventors Hall of Fame.



Lakshmi S. Nair | *University of Connecticut*

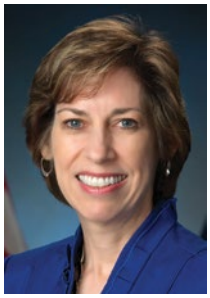
Lakshmi S. Nair, Ph.D., is associate professor of orthopaedic surgery, biomedical engineering and material science and engineering at the University of Connecticut. Nair has made important contributions in the area of injectable hydrogels and biodegradable scaffolds. She holds five U.S. patents in the area of biomaterials, many of which are owned or licensed by biomedical companies, demonstrating the potential of developing promising translational technologies in the near future. She has published 116 peer-reviewed journal articles, 23 book chapters, four edited books, and two special editions of journals. Nair also currently serves in the roles of associate editor and managing editor of peer-reviewed scientific journals.

Shrikanth Narayanan | *University of Southern California*

Shrikanth (Shri) Narayanan, Ph.D., is Niki and C. L. Max Nikias Chair of engineering and professor of electrical engineering, computer science, linguistics, neuroscience, psychology and pediatrics at the University of Southern California. He has made groundbreaking contributions in human-centered signal and information processing and has pioneered the fields of behavioral signal processing and behavioral informatics with noteworthy applications in mental health. His contributions have enabled proliferation of voice recognition technologies on the cloud and mobile devices and enabled emotion-aware technologies. His inventions have led to 18 U.S. patents and three startups. He has published over 700 papers and received numerous research and education awards and is editor-in-chief for *IEEE Journal on Selected Topics in Signal Processing* and editor for *Computer, Speech and Language Journal.* Narayanan is a fellow of the Acoustical Society of America, IEEE, AAAS and the International Speech Communication Association.

Erin K. O'Shea | *Howard Hughes Medical Institute*

Erin K. O'Shea, Ph.D., is president of Howard Hughes Medical Institute and Paul C. Mangelsdorf Professor of molecular and cellular biology and of chemistry and chemical biology at Harvard University. O'Shea is a leader in the fields of gene regulation, signal transduction, and systems biology. She is the recipient of numerous awards, including a David and Lucile Packard Fellowship, a Presidential Faculty Fellow Award, and the 2001 NAS Award in Molecular Biology. She holds one issued U.S. patent and has published over 70 papers. O'Shea is a member of NAS and the American Academy.



Ellen Ochoa | *NASA Johnson Space Center*

Ellen Ochoa, Ph.D., is director of NASA's Lyndon B. Johnson Space Center. As an astronaut and government executive, Ochoa has encouraged and invested in innovation and technology. She is the recipient of numerous awards including OSA Leadership Award/New Focus Prize, Hispanic Engineer National Achievement Awards Engineer of the Year, George Washington Carver Award, Harvard Foundation Science Award, James Smithson Bicentennial Medal and honorary degrees from the University of Pennsylvania, The Johns Hopkins University, and Worcester Polytechnic Institute. She also has five schools named after her. She is co-inventor on three U.S. patents and one foreign patent, and has published two dozen articles in the area of optical information processing. Ochoa is a fellow of AAAS and AIAA, and chairs the Nomination Evaluation Committee for the National Medal of Technology and Innovation.

Francis A. Papay | *Cleveland Clinic*

Francis A. Papay, M.D., is professor of surgery at the Lerner College of Medicine at Case Western Reserve University and chairman of the Dermatology and Plastic Surgery Institute at the Cleveland Clinic. Papay has made important innovations in surgery and medicine including face allograft transplantation, instrumentation for neuromodulation of skull base nerve bundles for migraine headaches and obstructive sleep apnea, in addition to drug delivery systems for chronic wound treatment. He is the recipient of the Medal of Merit from Ohio University, WebMD Health Hero Award in Science, George and Grace Crile Surgical Award, and 56 other awards and lectureships. He holds 12 U.S. patents, which have been licensed to several biotech companies, and is co-founder of several biotech startup companies including IonVac, X.D.I. and Advanced Patient Systems. He has published 214 peer-reviewed articles, books and book chapters, and serves on editorial boards of several medical journals. Papay is a member of AAPS, and fellow of the American College of Surgeons and the American Academy of Pediatrics.

Kevin J. Parker | *University of Rochester*

Kevin J. Parker, Ph.D., is the William F. May Professor of engineering and dean emeritus of the Hajim School of Engineering and Applied Sciences at the University of Rochester. Parker is a pioneer in a number of enterprises, including the field of sonoelastography and the international conference series in that area, and the Blue Noise Mask. He is the recipient of the Eastman Medal, the American Institute of Ultrasound in Medicine Joseph Holmes Pioneer Award for Contributions to Medical Ultrasound, the Eastman Kodak Outstanding Innovation Award, and the Ultrasound in Medicine and Biology World Federation Prize. He holds 25 U.S. patents and 13 foreign patents that have been licensed to 25 companies. He is a founder of VirtualScopics, Inc. He has published 200 journal articles and numerous book chapters and serves as a peer-reviewer for a number of journals, book publishers and grantors. Parker is a fellow of IEEE, American Institute of Ultrasound in Medicine, ASA and AIMBE.

Yvonne J. Paterson | *University of Pennsylvania*

Yvonne J. Paterson, Ph.D., is professor of microbiology and nursing at the University of Pennsylvania. Paterson is the inventor of a vaccine approach that harnesses the abilities of an intracellular bacterium, Listeria monocytogenes, and its products, to induce potent innate and adaptive immunity. This approach has won many awards including the World Vaccine Congress' Best Therapeutic Vaccine in 2012, Medical Visionary Award from the Farrah Fawcett Foundation in 2015, and Vision of Hope award from the Sarcoma Foundation of America in 2016. She was selected in 2014 for inclusion in *PharmaVoice's* "100 Most Inspiring People in the Life-Sciences Industry". Paterson has 32 U.S. patents and numerous foreign patents licensed to Advaxis Immunotherapies Inc., which she founded in 2002. She has 185 research publications and edited two books. Paterson is a fellow of AAM and the American Academy.

George N. Pavlakis | *National Institutes of Health*

George N. Pavlakis, M.D., Ph.D., is section chief at the National Cancer Institute, National Institutes of Health. Pavlakis is credited with the production of the first mature human hormone in mammalian cells by genetic engineering techniques, work that led to the development and licensing of one of the first mammalian cell-produced biotechnology products, growth hormone. He has developed several licensed technologies in gene expression optimization, recombinant protein production, DNA vaccines, liposome formulations and factors enhancing immunotherapy that have progressed to clinical trials and many research applications. He holds 25 issued U.S. and more than 50 foreign patents, which are licensed to more than 30 pharmaceutical and biotechnology companies, including Novartis, Wyeth, Merck, Pfizer and Sigma. He has co-founded two startup companies. He has published more than 200 peer-reviewed articles, serves on editorial boards and is a highly cited researcher. Pavlakis is a member of AAP, ASCI and several other scientific societies.

Kenneth H. Perlin | *New York University*

Kenneth H. Perlin, Ph.D., is professor of computer science in the Courant Institute of Mathematical Sciences, and directs the media research lab at New York University. He serves as chief scientist at Tactonic Technologies and Holojam Inc. and is an advisor for High Fidelity. His research interests include future reality, graphics and animation, user interfaces, and education. Perlin's work on computer generated imaging (CGI), human computer interaction (HCI), 3D imaging and displays, and multi-touch and pressure sensing devices led to a foundational image processing technique for CGI, called Perlin Noise. He received an Academy Award for Technical Achievement from the Academy of Motion Picture Arts and Sciences for his noise and turbulence procedural texturing techniques, which are widely used in feature films and television, and was a featured artist at the Whitney Museum of American Art. He is the recipient of many other awards including the Association for Computing Machinery SIGGRAPH Computer Graphics Achievement Award, TrapCode Award, NYC Mayor's Award, NYU Sokol Award, and NSF's Presidential Young Investigator Award. He holds 36 U.S. patents and has served on the advisory board for the Centre for Digital Media at Great Northern Way Campus, as external examiner for the Interactive Digital Media program at Trinity College, and on the program committee of AAAS.

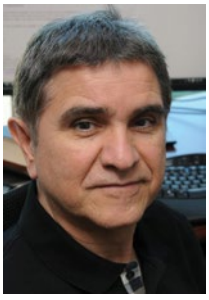


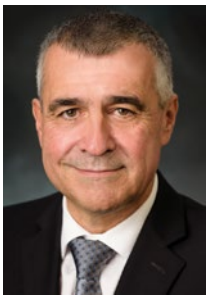
Photo: GARGASZPHOTOS

Nasser Peyghambarian | *The University of Arizona*

Nasser Peyghambarian, Ph.D., is professor in the College of Optical Sciences and the department of materials science & engineering at The University of Arizona (UA). Peyghambarian is also director of the NSF Engineering Research Center for Integrated Access Networks and UA chair of photonics and lasers. He has made significant contributions in the areas of photonics and optoelectronics. He has 35 patents and has founded two startup companies, TIPD, LLC and NP Photonics, Inc., both of which are commercializing technology developed at UA. He has over 600 scientific publications in peer-reviewed journals, authored or co-authored 28 books and book chapters, and given more than 700 invited talks, published conference proceedings and contributed presentations. Peyghambarian is a fellow of AAAS, OSA, APS and SPIE.

Gary A. Piazza | *University of South Alabama*

Gary A. Piazza, Ph.D., is professor of pharmacology and oncologic sciences at the University of South Alabama at the Mitchell Cancer Institute. Piazza has contributed to innovation in the area of anticancer therapeutics. He has received numerous grant awards from NCI that have funded his research since 2004. He holds 66 patents that have been licensed or assigned to multiple companies and universities and is a co-founder of ADT Pharmaceuticals Inc., a startup company developing a novel class of RAS inhibitors for cancer. He has published over 100 peer-reviewed articles and served on the editorial board for *Molecular Cancer Therapeutics.* He has also served as a reviewer in multiple study sections for the U.S. DoD, VA Administration and NCI, including the review of small business grant applications. Piazza is a member of AACR.



Christophe Pierre | *Stevens Institute of Technology*

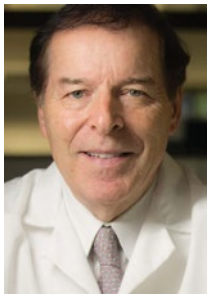
Christophe Pierre, Ph.D., is professor of mechanical engineering and provost and vice president for academic affairs at Stevens Institute of Technology. Pierre is a leader in the fields of vibrations, structural dynamics and nonlinear dynamics. He has made seminal research contributions in numerous areas of mechanical and aerospace engineering and received ASME's N.O. Myklestad Award. He holds one U.S. patent and co-developed software that has been licensed to five companies. He is co-founder of MKP Structural Design Associates, Inc., and has published 134 articles, books and book chapters. He serves as an editor or advisory board member for seven journals. Pierre is a member or fellow of the American Academy of Mechanics, AIAA, ASEE, ASME and Ordre des Ingénieurs du Québec.

Michael C. Pirrung | *University of California, Riverside*

Michael C. Pirrung, Ph. D., is Distinguished Professor of chemistry at the University of California, Riverside and professor of pharmaceutical sciences at the University of California, Irvine. Pirrung is known for his research in synthetic and bioorganic chemistry, especially as a pioneer in the development of microarray technology and co-inventor of photolithographic DNA microarray fabrication methods. He is the recipient of a dozen prizes and awards for innovation, including the American Institute of Chemists' Chemical Pioneer Award and European Patent Office's European Inventor of the Year. He is an inventor on over 50 U.S. and foreign patents and co-founder of Hibiscus Bioscience, a development-stage pharmaceutical company. Pirrung serves on scientific advisory boards of many development-stage genomics companies and on the editorial board for *Cell Chemical Biology.* He has over 170 peer-reviewed publications and authored six books. Pirrung is a fellow of AAAS and the American Institute of Chemists.

Michael V. Pishko | *University of Wyoming*

Michael V. Pishko, Ph.D., is dean of engineering and applied science and professor of chemical and biomedical engineering at the University of Wyoming. Pishko is recognized for his contributions to diabetes management, drug delivery, and pollution remediation. He is the recipient of numerous awards including AIChE's Bioengineering Plenary Lecture Award, Mary Jane Kugel Award from the Juvenile Diabetes Research Foundation International, Alfred P. Sloan Research Fellowship, and NSF CAREER Award. He has worked extensively with private industry and holds 24 U.S. patents that have been licensed to two companies. He has published 110 peer-reviewed publications and serves on the editorial board for three journals. Pishko is a fellow of AIMBE.



Garth Powis | *Sanford Burnham Prebys Medical Discovery Institute*

Garth Powis, D.Phil., is professor, director of the NCI-designated Cancer Center, and the Jeanne and Gary Herberger Leadership Chair in cancer research at the Sanford Burnham Prebys Medical Discovery Institute. Powis previously worked at Mayo Clinic, University of Arizona Cancer Center, and MD Anderson Cancer Center. His field of research is molecular pharmacology of cancer drugs. He has identified and validated novel cancer driving targets and developed first-in class cancer drugs, three of which have been in clinical trial in patients. He holds 12 U.S. and 25 foreign patents, and six pending, which have been licensed to three companies, and is founder of two startup companies. Powis has served on the editorial boards of 14 scientific journals, published over 350 peer-reviewed scientific papers and 31 book chapters, edited four books, and consulted and reviewed for NCI.

Paras N. Prasad | *University at Buffalo, The State University of New York*

Paras N. Prasad, Ph.D., is SUNY Distinguished Professor of chemistry, physics, electrical engineering and medicine, Samuel Capan Chair, and executive director of the Institute for Lasers, Photonics and Biophotonics at the University at Buffalo, SUNY. Prasad received honorary doctorates from Royal Institute of Technology in Sweden, Aix-Marseille University in France and National Nuclear Research University MEPHI in Russia. His honors include listing among 2005 *Scientific American's* "top 50 sciences and technology leaders", Morley Medal, Schoellkopf Medal, Guggenheim Fellowship, Sloan Fellowship, Western New York Health Industries Technology-Discovery Award, SPIE Gold medal, and University at Buffalo's First Innovation Impact award and President's Medal. Prasad holds 14 U.S patents and created nine startup companies globally. The most successful is Nanobiotix, located in Paris, which is valued at over 300 million dollars and is publically traded. He has published over 770 papers and four monographs on organic nonlinear optics, biophotonics, nanophotonics, nanomedicine and nanobioengineering. Prasad is a fellow of APS, OSA and SPIE.

Ronald T. Raines | *University of Wisconsin-Madison*

Ronald T. Raines, Ph.D., is professor of biochemistry and chemistry at the University of Wisconsin–Madison. He discovered that unappreciated forces (the n-to-pi* interaction and C5 hydrogen bond) stabilize all proteins, created hyperstable and human-scale synthetic collagens, developed an RNA-cleaving enzyme that is in a multi-site human clinical trial as an anti-cancer agent, and established chemical processes to synthesize and modify proteins and to convert crude biomass into useful fuels and chemicals. Raines has received awards from ACS, RSC, Humboldt Foundation, Protein Society and American Peptide Society. He holds 51 issued U.S. patents, most of which are licensed to corporations. Raines is a founder of Quintessence Biosciences and Hyrax Energy. He has published over 300 peer-reviewed journal articles and serves on the advisory boards of four journals and the Keystone Symposia. Raines is a fellow of AAAS, RSC and Guggenheim Foundation.

Ragunathan (Raj) Rajkumar | *Carnegie Mellon University*

Ragunathan (Raj) Rajkumar, Ph.D., is George Westinghouse Professor of electrical and computer engineering and director of the U. S. Department of Transportation's National University Transportation Center on Safety at Carnegie Mellon University. Rajkumar also directs the Real-Time and Multimedia Systems Laboratory, and co-directs the General Motors-Carnegie Mellon Connected and Autonomous Driving Collaborative Research Laboratory. His research includes all aspects of cyber-physical systems with a particular emphasis on self-driving vehicles. Rajkumar is the recipient of numerous awards including IEEE's Simon Ramo Medal and Outstanding Technical Achievement and Leadership Award, and ACM's Distinguished Engineer recognition. He has authored one book, edited two books, holds three U.S. patents, and has more than 160 publications in peer-reviewed forums, eight of which received Best Paper Awards. He is founder of TimeSys Corporation and Ottomatika Inc., that delivered the software intelligence for self-driving vehicles and was recently acquired by Delphi. Rajkumar has served as program chair and general chair of six international ACM/IEEE conferences and is a fellow of IEEE.

Michael P. Rastatter | *East Carolina University*

Michael P. Rastatter, Ph.D., is former chair and professor of communication sciences and disorders at East Carolina University. Rastatter's research focuses on hemispheric processes related to stuttering, other fluency disorders, and learning challenges, and his contributions in the field have effectively improved the fluency of stutterers. He is recipient of the ECU Lifetime Achievement Award for Research and Creative Activity. He has been instrumental in several startups including Reading Comprehension Solutions, Inc., and served as technical advisor to Janus Development Group when SpeechEasy® was first launched. His most recent startup company is developing tools effective at improving reading comprehension of individuals with reading challenges. He has eight U.S. patents, published more than 100 peer-reviewed articles and professional presentations, and serves on the board of advisors for the Preston Robert Tisch Brain Tumor Center at Duke University Medical Center. Rastatter is a member of American Speech-Language-Hearing Association and the North Carolina Speech and Hearing Association.

Jacob (Kobi) Richter | *Technion-Israel Institute of Technology*

Jacob (Kobi) Richter, Ph.D., is adjunct professor of biomedical engineering and medicine at Technion-Israel Institute of Technology and chief technology officer of Medinol Ltd. Richter's diverse work improves the human condition in the fields of medicine, music, aeronautics and education. He invented the most widely utilized machine vision tool, Orbotech, Ltd., the most acclaimed flute mouthpiece sought by concert musicians, and a device for analyzing and directing the cutting of precious gems. As director of R&D for the Israeli Air Force, he created next generation aircraft and collaborated with NASA on future space travel. He also holds the greatest single inventor portfolio of vascular stent and valve designs which led the way for a revolution in cardiology. He holds more than 100 issued U.S. patents and 400 patents globally, all of which have been licensed. He co-founded Medinol, Ltd., which set guidelines for FDA and regulatory agencies around the world for automated manufacturing and error detection. Richter has founded schools to reach underrepresented and underprivileged including the Israeli-Palestinian-Jordanian NIR schools and serves as a member of the cardiac council of Columbia University and on the advisory board for MIT's Center for Brains, Minds and Machines.

Richard E. Riman | *Rutgers, The State University of New Jersey*

Richard E. Riman, Ph.D., is Distinguished Professor in the department of materials science and engineering at Rutgers University. Riman's current research focuses on the discovery and development of sustainable materials manufacturing methods in a wide range of fields of use. He holds leadership roles in several professional societies and advises federal research organizations on emerging materials technologies, including DARPA, the Advanced Research Projects Agency-Energy agency, and others. Early in his career, he received research recognition awards from the NIH, NSF, Office of Naval Research, Alcoa Inc., DuPont, Johnson & Johnson, and R&D 100. He holds 27 U.S. patents and recently founded Solidia Technologies Inc., a company providing green manufacturing methods and construction materials for building. He has authored about 200 publications and delivered more than 500 presentations. Riman is a member of the New Jersey Inventors Hall of Fame and fellow of ACerS.

Andrew G. Rinzler | *University of Florida*

Andrew G. Rinzler, Ph.D., is professor of physics at the University of Florida. Soon after their discovery, Rinzler made seminal contributions to the synthesis, purification and characterization of carbon nanotubes. As the field grew from a handful of publications to thousands per year, his focus switched to their high value applications. His group initiated a flurry of research in carbon nanotube (and related material) based transparent conductors. They invented a new architecture transistor exhibiting a new mechanism for transconductance, avoiding the need to eliminate the metallic nanotubes, and further elaborated that device into a light emitting transistor. In another direction, they demonstrated precious metal free catalysis for reactions important in chemical energy storage and production. He holds 40 U.S. patents and is co-founder of two companies, nVerpix, LLC and nHydrogen, LLC. Rinzler holds a University of Florida Research Foundation Professorship and is a fellow of APS.

Bruce E. Rittmann | *Arizona State University*

Bruce E. Rittmann, Ph.D., is Regents' Professor of environmental engineering and director of the Biodesign Swette Center for Environmental Biotechnology at Arizona State University. Rittmann's research focuses on the science and engineering needed to "manage microbial communities to provide services to society." Services include generating renewable energy, cleaning water and soil, and improving human health. He was awarded the first Clarke Prize for Outstanding Achievements in Water Science and Technology from the National Water Research Institute, the Walter Huber Research Prize and the Simon Freese Award from ASCE, and the G.M. Fair Award from the American Academy of Environmental Engineers and Scientists. He holds 14 U.S. patents and has published over 600 journal articles, books, and book chapters, and co-authored the textbook *Environmental Biotechnology: Principles and Applications.* Rittmann is a member of NAE, fellow of AAAS, Water Environment Federation, and International Water Association, and a distinguished member of ASCE.

Nabeel A. Riza | *University College Cork*

Nabeel A. Riza, Ph.D., is chair professor of electrical and electronic engineering at University College Cork (UCC), Ireland, and former dean of engineering. Riza has made pioneering innovations in the field of photonics with several of his inventions deployed worldwide. His inventions include the CAOS camera, fault-tolerant digital MEMS fiber-optics, agile optical wireless, electronic lens-based vision testing and imaging, self-imaging fiber coupling model, liquid crystal and analog-digital fiber-optic RF antenna control, agile pixel MEMS laser beam profiler and 3-D analyzer, and hybrid design Silicon Carbide extreme thermometry. He is the recipient of the International Optics Commission ICO Prize, Carl Zeiss Foundation Abbe Medal, GE Gold Patent Medal and Ireland Walton Award. Riza holds 46 U.S. patents and is founder of Nuonics, Inc. He has published 327 international journal and conference papers and authored the textbook *Photonic Signals and Systems: An Introduction.* Riza is a fellow of IEEE, IET, European Optical Society, OSA, SPIE and honorary fellow of Engineers Ireland Society and member of RIA Engineering Committee.

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Kenneth J. Rothschild, Ph.D., is professor of physics, director of the Molecular Biophysics Laboratory and faculty member at the Photonics Center at Boston University. Rothschild has contributed innovations in diverse fields including molecular spectroscopy, nanostructure engineering, biophotonics, proteomics, medical diagnostic and optogenetics. He has received distinctions from General Motors, the Netherlands Foundation for Molecular and Cellular Biophysics, Sloan Foundation, National Research Council, NIH and AHA. Rothschild has over 56 U.S. and 40 foreign patents, including two of the earliest U.S. patents issued in the field of nanostructure device fabrication. He founded and currently serves as chairman of the biotechnology company, AmberGen. He has published over 150 peer-reviewed articles, book chapters and reviews, which have been cited over 8,000 times. Rothschild is a fellow of APS and the Biophysical Society.

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Stuart H. Rubin, Ph.D., is senior scientist at the Space and Naval Warfare Systems Center Pacific. Rubin pioneered randomization theory and its application to intelligent systems. He is the inventor of the Knowledge Amplification by Structured Expert Randomization (KASER), which won him an Air Force Research Laboratory Award. He also received the Navy Award of Merit for Group Achievement , USAF Deployment and Sustainment Award, and IEEE Outstanding Contribution Award. He received the U.S. Government Certificate of Merit for his work in applying artificial intelligence to VLSI (very-large-scale integration) design. He holds 35 U.S. patents that have been licensed to three companies and is founder of four startup companies. He published over 300 articles, four books, 12 book chapters and serves on the editorial boards of six peer-reviewed journals. Rubin founded IEEE's Information Reuse and Integration Conference, is a senior member of IEEE and fellow of the Society for Information Reuse and Integration.

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Linda J. Saif, Ph.D., is Distinguished University Professor at The Ohio State University and heads the Reference Lab for Animal Coronaviruses for the World Health Organization and OIE-World Organization for Animal Health. Saif is a virologist and immunologist who discovered new viruses of critical importance to farm animals, food safety and human health, and defined their zoonotic potential. She pioneered novel cultivation methods, gnotobiotic animal models and diagnostic assays, and her innovative research on maternal and neonatal immunity and immunoenhancers has led to viral vaccines to protect neonates. Among her awards, Saif received a Fulbright Scholarship, an honorary doctorate from the University of Ghent, Wolf Prize in Agriculture, Distinguished Alumni Award from the College of Wooster and Distinguished Veterinary Immunologist Award from the American Association of Veterinary Immunologists. She holds five U.S. and foreign patents and has published over 350 scientific articles and 62 book chapters. She serves on PNAS and other editorial boards. Saif is a member of NAS and a fellow of AAM and American College of Veterinary Microbiologists.

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Sudeep Sarkar, Ph.D., is professor and chair of computer science and engineering, and associate vice president of I-Corps programs at the University of South Florida (USF). Sarkar is a world leader and innovator in the fields of computer vision and image processing, particularly related to gait biometrics, burn scars, and skin cancer. He has been instrumental in advancing the local and national innovation ecosystem as a national board member of NAI as well as current president of the executive committee and member of the USF chapter since its inception. His leadership in the NSF I-Corps™ Site program has transformed USF into a national leader for the program. He holds four U.S. patents and two published patent applications. He has published more than 200 articles, books, and book chapters, and serves as co-editor-in-chief, associate editor or editorial board member for 10 journals. Sarkar is a fellow of AIMBE, AAAS, IEEE and IAPR.

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John T. Schiller, Ph.D., is NIH Distinguished Investigator at the Center for Cancer Research of the National Institutes of Health. Schiller led in the discovery, characterization, and clinical testing of vaccines to prevent the HPV infections that cause cervical and other cancers. He has received numerous awards for this work including the 2007 Service to America Medal-Federal Employee of the year and 2014 National Medal of Technology and Innovation from President Obama. He holds 22 U.S. patents that have been licensed to numerous pharmaceutical companies, including Merck, GlaxoSmithKline and Sanofi Pasteur. He has published more than 250 peer-reviewed research articles and has served as associate editor or on the editorial boards of several virology and vaccinology journals. Schiller also serves on the NCI Technology Review Group and the Public Health Service Technology Transfer Policy Board.

Diane G. Schmidt | *University of Cincinnati*

Diane G. Schmidt, Ph.D., is adjunct research professor in the department of chemistry at the University of Cincinnati. Schmidt has made important contributions to invention and innovation in chemistry and materials in the development of commercial products, including Pert Plus shampoo and conditioner, which was the first product for color treated hair. She has received numerous awards including the Henry Hill Award, Distinguished Scientist of Cincinnati, Distinguished Alum of the University of Cincinnati and Distinguished Alum of the University of Tennessee-Chattanooga. She is the inventor or co-inventor on 10 U.S. and several foreign patents and author or co-author on many chemistry publications in peer-reviewed journals, books and book chapters. She served as the 2015 president of ACS and on the editorial boards of *Chemical & Engineering News, Journal of the Society of Cosmetic Chemists* and *Journal of Chemical Health & Safety.* Schmidt is a fellow of ACS and AAAS.

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Wayne S. Seames, Ph.D., is Chester Fritz Distinguished Professor of chemical engineering and director of a sustainable energy research and commercialization center at the University of North Dakota (UND). Seames has expertise in renewable energy and chemicals technologies, the environmental impacts of coal utilization, and the remediation of contaminated building materials, and is a lead inventor of technologies to convert fatty acid-based oils into renewable fuels and chemicals. His career also includes 16 years of industrial experience as a process engineer, supervisor, and project manager. He has received numerous honors including UND's Faculty Scholar, Award for Interdisciplinary Collaboration in Research, and Faculty Achievement Award for Individual Excellence in Research. He was the 2014-2015 Fulbright Distinguished Chair Scholar at the University of Leeds in the UK. Seames is named on eight U.S. and numerous foreign patents and has authored two book chapters, 50 peer-reviewed papers and one textbook.

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Michael S. Shur, Sc.D., is Patricia W. and C. Sheldon Roberts '48 Professor in solid state electronics at Rensselaer Polytechnic Institute. Shur has made important contributions to invention and innovation of light emitting diodes and terahertz electronic devices. He holds honorary doctorates from Vilnius University and St. Petersburg State Technical University and is the recipient of several IEEE and other awards, including the Tibbetts Award for Technology Commercialization. He holds over 150 U.S. patents and over 10 foreign patents that have been licensed to several companies. He is the founder or co-founder of Sensor Electronic Technology, Inc., Biomedical and Information Technology, Inc., and Advanced Device Technology, Inc. He has published over 1,000 articles, books, and book chapters and serves as editor-in-chief for *International Journal of High-Speed Electronics and Systems* and member of editorial boards of several other journals. Shur is a fellow of AAAS, IEEE, OSA, MRS, IET, APS and SPIE.

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David Sidransky, M.D., is professor of oncology and otolaryngology at John Hopkins University and Hospital. Sidransky is a leader in molecular diagnostics and has made important contributions in the field of DNA detection. He pioneered work on the detection of DNA mutations and promoter methylation in various bodily fluids. He has been the recipient of several awards including the Sarstedt International prize (GSCC), AACP's Alton Ochsner Award and AACR's Hinda Rosenthal Award. He holds over 40 U.S. and foreign patents that have been licensed to four companies. He is the founder of several startup companies including Champions Oncology and MDxHealth. He has published over 500 articles, 65 book chapters and serves/served as editor of more than 10 peer-reviewed journals including *Cancer Prevention Research, JAMA Oncology, Clinical Cancer Research,* and *International Journal of Cancer.* Sidransky is a member of AACR and American Society of Clinical Oncology.

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Mrityunjay Singh, Ph.D., is chief scientist at the Ohio Aerospace Institute. Singh is globally recognized for his seminal contributions and leadership in the science, engineering and applications of ceramic and composite materials, alternative and renewable energy systems, and additive manufacturing. He is recipient of four R&D 100 awards and more than 65 awards worldwide including International Barkhausen Prize from Germany, Ishikawa Foundation Carbon Prize from Japan, Einstein Professorship from CAS, Sir Richard Brooks Award from the European Ceramic Society, John Jeppson Medal, President Award, ACerS's Richard M. Fulrath Award, and NASA Public Service Medal and Silver Snoopy Awards. Singh is recipient of two U.S. patents and several foreign patents and has published 275 papers, edited 59 books and journal volumes, 14 book chapters and serves on the boards of fourteen international journals. Singh is a fellow of ASM, ACerS, AAAS, Academician of WAC and is honorary and distinguished life member or fellow of six international societies.

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Kamalesh K. Sirkar, Ph.D., is Distinguished Professor of chemical engineering and Foundation Professor of membrane separations at New Jersey Institute of Technology. Sirkar has made pioneering contributions to novel membrane-based separation and purification technologies including membrane contactors, membrane distillation-based desalination, novel gas-permeation membranes and contained-liquid membrane. He received the AIChE Institute Award for Excellence in Industrial Gases Technology, Clarence Gerhold Award from AIChE's Separations Division, honorary master's degree of engineering from Stevens Institute, and a number of other awards. He holds 29 U.S. and three Canadian patents, a few of which have been licensed and commercialized. Sirkar published 189 peer-reviewed articles, 21 book chapters, and a comprehensive introductory book on separations, and is co-editor of *Membrane Handbook.* He has served on the editorial boards of four scientific journals and is founding editor-in-chief of *Current Opinion in Chemical Engineering.* Sirkar is a fellow of AAAS and honorary fellow of the Indian Institute of Chemical Engineers.

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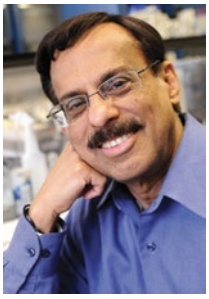
David R. Smith, Ph.D., is department chair and James B. Duke Professor of electrical and computer engineering at Duke University. Smith has made important contributions to innovation in metamaterials, having developed the first metamaterial implementations of negative refraction materials and invisibility cloaks. He is a co-recipient of the European Union's Descartes Prize for Research and APS's McGroddy Prize for New Materials. Smith is co-inventor on more than 20 U.S. and foreign patents that have been licensed to many companies and is co-founder of several metamaterials-based companies, including SensorMetrix, Evolv Technology, Echodyne Corporation, and Pivotal Communications, and senior advisor to Kymeta Corporation and Intellectual Ventures. He has published over 300 peer-reviewed articles and book chapters and is an ISI-Reuters Citation Laureate, for having among the most cited papers in the field of physics.

James E. Smith | *West Virginia University*

James E. Smith, Ph.D., is professor of mechanical and aerospace engineering at West Virginia University (WVU). Smith's forty-year career has been focused in the areas of health, communications and energy, and his inventions have been used as training tools for students who often share in his inventions and the startups that have resulted. He conducts leadership conferences to help others reach their innovative potential. Smith is the recipient of the ASME Frank Kreith Energy Award, WVU Presidential Innovation Service Award, NAE Champion of Free Enterprise Eagle Award, and 2016 National Association of Entrepreneurship Hall of Fame inductee. He served as the 2009 president and chairman of the Society of Automotive Engineers International (SAE). He holds 36 U.S. patents and several foreign patents, and is the co-founder of five startup companies. Smith has published over 270 peer-reviewed articles and is a fellow of the SAE, ASME and Institution of Mechanical Engineers.

Terrance P. Snutch | *The University of British Columbia*

Terrance P. Snutch, Ph.D., is professor and Canada Research Chair in biotechnology and genomics-neurobiology at The University of British Columbia. Snutch has made pioneering contributions to molecular neurobiology, as an inventor designing and developing novel chemical entities, screening methods, and oral formulations aimed at treating human brain disorders. He is recipient of many awards including the International Albrecht Fleckenstein Award, Steacie Prize, Howard Hughes International Research Scholar, Sarrazin Award, BC Biotech Researcher of the Year, and an honorary doctorate from Simon Fraser University. He holds 28 U.S. patents and 87 foreign patents licensed to biotech and pharma companies. Snutch is founder and chief scientific officer of both NeuroMed/Zalicus Pharmaceuticals and Zerevita. He has published 167 peer-reviewed articles and book chapters and served on the editorial boards of seven scientific journals. Snutch is a fellow of the Royal Society of Canada and Canadian Academy of Health Sciences.



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Ponisseril Somasundaran, Ph.D., is Lavon Duddleson Krumb Professor of mineral engineering at Columbia University. Somasundaran is also the first director of the Langmuir Center for Colloids & Interfaces and founding director of the NSF Industry/University Cooperative Center. He serves on the U.S. Environmental Protection Agency board of scientific councilors as chairman of its chemical safety and sustainability committee, and on the Dow Technical advisory board. He is the recipient of many awards including the Society of Manufacturing Engineers Antoine M. Gaudin and Mineral Industry Education Awards, Ellis Island Medal of Honor, Padma Shri from the President of India, NSF Alex Schwarzkopf Award for Technical Innovation, and Columbia University's World-class Scholarly Achievement Award from the Raj Center at School of International and Public Affairs. He holds 9 U.S. patents. Somasundaran is a member of NAE, the Indian and Chinese NAE, the Russian Academy of Natural Sciences, and is the sole 2012 foreign fellow of Royal Society of Canada.

Gerald Sonnenfeld | *University of Rhode Island*

Gerald Sonnenfeld, Ph.D., is vice president for research and economic development at the University of Rhode Island. Previously, he was program director for the national life sciences postdoctoral program of NASA and the postdoctoral fellowship program for the National Space Biomedical Research Institute, and was a member of NAE's committee on Space Biology and Medicine. Sonnenfeld has carried out multiple experiments on the U.S. Space Shuttle and on Russian space program satellites. He is a member of the program steering committee of the Morehouse School of Medicine-Tuskegee University-University of Alabama Birmingham Comprehensive Cancer Center Cancer Research Partnership, and of the University of California, Davis' external advisory committee for the medical scientist training program of the Clinical and Translational Science Initiative. Sonnenfeld received the Career Distinguished Service Award of the American Association of Immunologists for dedication and exemplary service to the minority affairs committee, Distinguished Service Award from APLU, and Orr T. Reynolds Distinguished Service Award, among others. Sonnenfeld holds two U.S. and foreign patents, and published over 140 peer-reviewed scientific articles, numerous review articles and edited two books.

James S. Speck | *University of California, Santa Barbara*

James S. Speck, Sc.D., is professor in the materials department at the University of California, Santa Barbara (USCB). Speck's work has focused on epitaxial oxide films on semiconductors, ferroelectric thin films, strain relaxation in highly misfitting epitaxial systems, and on the materials science of GaN and related alloys. Major aspects of his work on nitrides include elucidating basic growth modes and defect generation, the development of MBE growth of GaN, and the development of nonpolar and semipolar GaN. Speck received the Quantum Device Award with Umesh Mishra from the International Symposium on Compound Semiconductors, Best Paper Award from the *Japanese Journal of Applied Physics,* and IEEE Photonics Society's Aron Kressel Award with Steve DenBaars. He holds 111 U.S. patents and has over 700 publications in peer-reviewed referred archival literature. Speck and his longtime collaborators Steve DenBaars and Shuji Nakamura founded Santa Barbara based startup companies Kaai and Soraa to commercialize their work on nonpolar and semipolar nitrides. Speck is a fellow of MRS and APS.

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Sidlgata V. Sreenivasan, Ph.D., is Joe C. Walter Endowed Chair Professor of mechanical engineering and electrical & computer engineering at The University of Texas at Austin (UT Austin) and co-director of NSF-funded NASCENT Nanomanufacturing Systems Center. Sreenivasan, a pioneer in scalable nanofabrication, has led the creation of nanoimprint lithography systems and processes resulting in commercial fabrication equipment for advanced semiconductor memory and display nanophotonics. He is recipient of numerous awards including the Technology Pioneer Award from The World Economic Forum-Davos, ASME Leonardo Da Vinci and William Ennor Awards, O'Donnell Award from the Academy of Medicine, Engineering and Science of Texas, and UT Austin Inventor of the Year Award. He has published 144 articles and book chapters. Sreenivasan holds 135 U.S. patents and more than 150 foreign patents that have been licensed to numerous companies. He founded Molecular Imprints, Inc., a UT Austin startup, whose semiconductor division was acquired by Canon Corporation.

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Bruce W. Stillman, Ph.D., is president and CEO of Cold Spring Harbor Laboratory (CSHL) and has served as director for CSHL Cancer Center. He originally came to CSHL in 1979 as a postdoctoral fellow and has been there ever since. Stillman's research focuses on the mechanism and regulation of duplication of DNA and chromatin in cells. He is an advisor to universities, foundations, corporations and government agencies. He received the Alfred P. Sloan Prize from the General Motors Cancer Research Foundation, Louisa Gross Horwitz Prize from Columbia University, and Herbert Tabor Research Award from ASBMB. Stillman holds six U.S. patents and is a member of The Royal Society, NAS, the American Academy, and Australian Academy of Sciences.

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Daniele C. Struppa, Ph.D., is president of Chapman University. Struppa has made important contributions in the area of applications of Fourier analysis to a variety of problems in signal processing, including issues of denoising, classification of airborne contaminants, classification of retinal images, and reconstruction of protein signaling networks. He has also provided significant contributions to the theory of superoscillations and their applications. He is the recipient of the Bartolozzi Prize from the Italian Mathematical Union and the Matsumae Medal from the Matsumae International Foundation. He holds three U.S. patents and has published more than 200 peer-reviewed publications, including 10 books. Struppa is managing editor of *Quantum Studies: Mathematics and Foundations* and an editor of the *Higher Dimensional Geometric Function Theory and Hypercomplex Analysis* section of *Complex Analysis and Operator Theory.*

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Kenneth S. Suslick, Ph.D., is Schmidt Research Professor of chemistry at the University of Illinois at Urbana-Champaign. Suslick the world's leading expert on the chemical effects of ultrasound and separately invented and developed the optoelectronic nose for chemical sensing. He was the lead consultant for the first sonography contrast agent, Albunex™, founding consultant for VivoRx, and co-inventor of Abraxane™, the predominant delivery system for taxol chemotherapy for breast cancer. He is the recipient of the RSC Centenary Prize, RSC Sir George Stokes Medal, MRS Medal, ACS Nobel Laureate Signature and Senior Cope Scholar Awards, and Sloan and Guggenheim Fellowships. He holds 46 U.S. and foreign patents and patent applications, which have been licensed to five companies, and published more than 360 scientific papers and edited four books. Suslick is a fellow of AAAS, ACS, APS, MRS, RSC and ASA.

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Mark J. Suto, Ph.D., is vice president of the drug discovery division at Southern Research Institute. Suto also holds an adjunct faculty appointment in chemistry at The University of Alabama at Birmingham (UAB) and is a senior scientist in the UAB Comprehensive Cancer Center and the Gregory Fleming James Cystic Fibrosis Research Center. He has more than 35 years of experience in the discovery of new therapeutics as well as the development of new technologies related to high-throughput screening and combinatorial chemistry. Currently, he is principle or co-principle investigator on multiple research grants spanning oncology, cystic fibrosis and neurodegenerative diseases. He is the recipient of the Warner-Lambert 1987 Meritorious Scientific Award. He is an inventor on 45 U.S. patents and has numerous publications and presentations. Suto is on the board of directors of the Alabama School of Math and Science and the executive committee and board of directors for BioAlabama.

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Yu-Chong Tai, Ph.D., is Anna L. Rosen Professor of electrical engineering and mechanical engineering, and executive officer and professor of medical engineering at California Institute of Technology. Tai has made innovative contributions in microelectromechanical systems (MEMS), micro biomedical implant devices and labs-on-a-chip. He is the recipient of the Presidential Young Investigator Award, Packard Award and 2015 inaugural IEEE Robert Bosch MEMS/NEMS Award. He holds more than 200 U.S. and foreign patents and about 80 of them have been licensed to several companies. He is also a founder of six startup companies and has published more than 500 technical articles. Tai is a fellow of IEEE and member of Academia Sinica.

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Nelson Tansu, Ph.D., is Daniel E. '39 and Patricia M. Smith Endowed Chair Professor in the department of electrical and computer engineering, and director for the Center for Photonics and Nanoelectronics at Lehigh University. Tansu has made seminal advances to the invention and innovation, fundamental sciences and device technologies of III-V and III-Nitride semiconductors. Specifically, his innovations have impacted areas of dilute-nitride diode lasers and III-nitride semiconductor technologies for energy efficiency. He has more than 16 U.S. patents and his work is integrated in today's state-of-the-art solid state lighting technology. Tansu has authored more than 114 peer-reviewed journal and 230 conference publications. His life story as a professor was published in the form of children's book *Nelson the Boy who Loved to Read* in his native country Indonesia. He serves as the editor-in-chief for *Photonics* and editorial board member for eight other leading journals in applied physics and nanotechnology.

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Fleur T. Tehrani, Ph.D., P.E., is professor of electrical engineering at California State University, Fullerton. Tehrani has made important contributions to invention and innovation in medical monitors and respiratory assist devices. She has received awards from NASA, AAMI and IMIA among many others. She is the sole inventor on 13 U.S. and foreign patents and two of her patents have been licensed to industry. One of her inventions marketed as Adaptive Support Ventilation is considered as one of the most advanced ICU mechanical ventilation systems. Tehrani has founded one company, published 45 peer-reviewed publications, three book chapters, two books and numerous technical reports, and serves on the editorial boards of three scientific journals. She has served as a panel reviewer for the NSF, NIH and AAAS. Tehrani is a fellow of IET, the Institute for the Advancement of Engineering and a national life member of Graduate Women In Science.

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Marc T. Tessier-Lavigne, Ph.D., is president and professor of biology at Stanford University. He is a pioneering neuroscientist for the identification of molecules that direct the formation of connection among nerve cells to establish circuits in the developing brain and spinal cord. Previously, he served as president of The Rockefeller University and was HHMI Investigator as a faculty member at UCSF and Stanford. At a national and international level, he is an active spokesperson for societal support of science, through editorials, advocacy and congressional testimony and serves on several scientific advisory, non-profit, and corporate boards. He holds 24 U.S. patents with many pending and has co-founded two startup companies targeting neurological disease (Renovis) and neurodegenerative disease (Denali). Tessier-Lavigne is a member of NAS, NAM and fellow of AAAS, the American Academy and the Royal Society.

Madhukar L. Thakur | *Thomas Jefferson University*

Madhukar (Mathew) L. Thakur, Ph.D., is professor of radiology and radiation oncology at Thomas Jefferson University. Thakur has enjoyed a distinguished career through sustained innovations and achievements in radiochemistry applied to the practice of nuclear medicine and molecular imaging. He has received 10 prestigious national and international awards including the Cassen Award of the Society of Nuclear Medicine and Molecular Imaging. A co-founder of Greenseen, LLC, Thakur holds 26 active and pending patents, many of which are licensed for commercialization. He has made more than 500 invited, plenary and proffered presentations worldwide and has organized 37 scientific national and international conferences. He has published more than 520 original articles, book chapters, editorials, abstracts and four books. He serves on the editorial board of 12 scientific journals. Thakur is a fellow of four and a member of 10 medical organizations, was elected president of three international societies, and is a founder of the International Society of Radiolabeled Blood Elements in Vienna, Austria.

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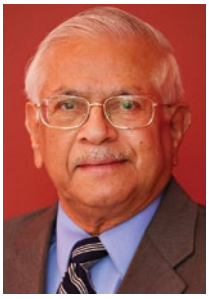
Mehmet Toner, Ph.D., is founding co-director of The Institute for Bioengineering and Biotechnology, and director of the BioMicroElectroMechanical Systems Resource Center at the Massachusetts General Hospital (MGH). He also serves as Helen Andrus Benedict Professor of biomedical engineering at Harvard University and director of research at Shriners Hospitals for Children in Boston. Toner is internationally recognized as a pioneer in bioengineering for his contributions to low temperature biology, tissue engineering and regenerative medicine, nanotechnology and microfluidics. He is the recipient of many awards including the Luyet Medal from the Society for Cryobiology and H.R. Lissner Medal from ASME. Toner holds over 50 U.S. patents and is a co-founder of multiple biotechnology startups. He has more than 350 publications and serves on the editorial board of several journals. Toner is a member of NAE and fellow of AIMBE, ASME, and the Society for Cryobiology.

Jan T. Vilcek | *New York University*

Jan T. Vilcek, M.D., Ph.D., is professor emeritus and research professor of microbiology at New York University (NYU) and co-founder, chairman and CEO of The Vilcek Foundation. Vilcek's studies of proteins that control the body's defenses were instrumental in the development of Remicade or infliximab, the first approved drug of a new class of therapeutics called TNF blockers. Vilcek's honors include the Albert Gallatin Medal from NYU, Gold Medal from Charles University and Outstanding American by Choice Award from the U.S. Citizenship and Immigration Services. In 2013 he received the National Medal of Technology and Innovation from President Barack Obama. Vilcek is a named inventor of 44 U.S. patents and has published more than 350 papers in scholarly journals. Vilcek is a fellow of AAAS and received honorary degrees from Comenius University, CUNY Graduate Center, NYU and Slovak Academy of Sciences.



Anil V. Virkar | *The University of Utah*

Anil V. Virkar, PhD., is Distinguished Professor and H. Kent Bowen Endowed Chair in materials science and engineering at The University of Utah. Virkar has made significant inventions in the fabrication of high strength structural ceramics, the sodium-sulfur battery, solid oxide fuel cells and proton exchange membrane fuel cells. He is the recipient of the John Jeppson Award and Ross Coffin Purdy Award of ACS, and High Temperature Division Award of the Electrochemical Society. He holds 35 U.S. patents and two foreign patents, and is a co-founder or founding member of Ceramatec, Inc., Materials and Systems Research, Inc., and Versa Power. He has published over 250 peer-reviewed papers. Virkar is a member of NAE and a fellow of ACS, the Electrochemical Society and ASM.

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John F. Wager, Ph.D., is Michael and Judith Gaulke Endowed Chair Professor of electrical engineering in the School of Electrical Engineering and Computer Science at Oregon State University (OSU). Wager is a pioneer in the area of transparent electronics and is lead author of *Transparent Electronics*, the first book published on the subject. Transparent electronics technology developed in his group at OSU was licensed to Hewlett-Packard Company, who continued advanced joint-development with his group. This technology is now being licensed to major display manufacturers for flat-panel display thin-film transistor backplane applications. Wager holds 13 U.S. and eight foreign patents, is a co-founder of Inpria, Inc., and advisor to Amorphyx, Inc., a startup company working to commercialize amorphous metal tunnel diode technology developed in his lab. He has published 235 articles, four review articles, three book chapters, and one book. Wager is a fellow of IEEE and the Society for Information Display.

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William R. Wagner, Ph.D., is director of the McGowan Institute for Regenerative Medicine and professor of surgery & bioengineering at the University of Pittsburgh. Wagner is chairman for TERMIS and past-president of the American Society for Artificial Internal Organs. For his work in cardiovascular biomaterials and device development, he has received the SFB Clemson Award for Applied Research, TERMIS Senior Scientist Award and five University Innovator Awards. Wagner holds 17 issued U.S. patents with an additional 25 patent filings that have been licensed to five companies. He co-founded Neograft Technologies with technology that is currently in clinical trials. Wagner has published over 200 manuscripts and is a fellow of AIMBE, BMES, the International Union of Societies for Biomaterials Science and Engineering, TERMIS and AHA.

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Isiah M. Warner, Ph.D., is Philip West Professor of Chemistry and Boyd Professor of the Louisiana State University, and HHMI Professor. Warner's research expertise, of more than 35 years, is in the area of fluorescence spectroscopy. Most recently, his research has focused in the area of ionic liquid chemistry applied to solid phase materials for applications in materials chemistry and nanomaterials. He is involved in numerous research projects that focus in the general areas of analytical and materials chemistry. Warner has received many awards including the Southeastern Conference Professor of the Year Award, Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences, ACS Award in Analytical Chemistry, and Presidential Award for Excellence in STEM Mentoring. He has published more than 350 peer-reviewed publications and holds eight issued U.S. patents. Warner is a member of the American Academy.

John D. Weete | *Auburn University*

John D. Weete, Ph.D., is emeritus professor of biology and executive director of the Auburn Research and Technology Foundation at Auburn University, and retired vice president for research and economic development at West Virginia University (WVU). A strong supporter of technology transfer, commercialization and the university role in economic development, Weete established infrastructure for assisting faculty and students in protecting and commercializing their discoveries. At WVU, he established an office of technology transfer, business incubator, and initiated development of the WVU Research Park. He holds four issued U.S. patents for developing a novel emulsifier for emulsion explosives and recovery of phosphatidylcholine from a complex mixture of phosphatides and other substances. He has over 100 peer-reviewed publications, book chapters, and books. Weete provided leadership for Auburn to become one of the first five NAI member institutions and local chapters.

Andrew M. Weiner | *Purdue University*

Andrew M. Weiner, Ph.D., is Scifres Family Distinguished Professor of electrical and computer engineering at Purdue University. Weiner has made seminal contributions to ultrafast optics. He is especially well known for his pioneering work on programmable generation of arbitrary ultrashort pulse waveforms, which has been deployed both in fiber optic networks and in ultrafast optical science laboratories. Weiner is the recipient of the IEEE Photonics Society's William Streifer Scientific Achievement Award and Quantum Electronics Prize, OSA's Adolph Lomb Medal and Wood Prize, and the International Commission on Optics Prize. He holds 18 U.S. patents. He has published over 300 journal articles, authored a well-known textbook and serves as editor-in-chief of *Optics Express,* the largest journal in the field of optics and photonics. Weiner is a member of NAE and U.S. DoD National Security Science and Engineering Faculty Fellow.

Ralph Weissleder | *Massachusetts General Hospital*

Ralph Weissleder, M.D., Ph.D., is director of the Center for Systems Biology at Massachusetts General Hospital and the Thrall Professor of radiology and systems biology at Harvard Medical School. Weissleder is best known for his research in molecular imaging and diagnostics while his more recent research is focused on new approaches for precision medicine and global health. He is the recipient of numerous awards including the Taylor International Prize in Medicine and Millennium Pharmaceuticals Innovator Award. Weissleder holds 27 U.S. patents that have been licensed to numerous companies. He is co-founder of T2Biosystems, VisEn Medical and Lumicell, among others. He has published over 800 peer-reviewed papers and serves as on the editorial board of *Science Translational Medicine, Angewandte Chemie* and nine others. Weissleder is a member of NAM, the American Academy and the German NAS.

Thomas M. Weller | *University of South Florida*

Thomas M. Weller, Ph.D., is professor and chair of electrical engineering at the University of South Florida (USF). Weller previously served as associate dean for research in USF's College of Engineering and as principal or co-principal investigator on more than 110 externally funded research projects. Weller has made important contributions to reconfigurable microwave circuits, microwave applications of additive manufacturing and 3D printing, electromagnetic sensors, and equivalent circuit modeling. He is a co-recipient of the Microwave Prize and the Outstanding Young Engineer Award from the IEEE Microwave Theory and Techniques Society, and CAREER Award from NSF. He holds 30 U.S. patents and is a co-founder of Modelithics, Inc., which provides custom microwave modeling services and CAE model libraries. Weller has published over 280 peer-reviewed articles and book chapters, and is a member of IEEE.

Jennifer L. West | *Duke University*

Jennifer L. West, Ph.D., is Fitzpatrick Family University Professor of engineering at Duke University and HHMI Professor. West is a leader in the development and application of novel biomaterials. She is the recipient of numerous awards including the SFB Clemson Award, the O'Donnell Prize from the Academy of Medicine, Engineering and Science of Texas, the McDonald Award and the Columbus Scholar Award. She was also named Texas Inventor of the Year and an Admiral in the Texas Navy, the highest honor the governor of Texas can bestow on a civilian. She holds 15 U.S. patents that have been licensed to 10 companies, and is the founder of Nanospectra Biosciences, Inc. She has over 190 publications. West is a member of NAE and a fellow of BMES and AIMBE.

Amnon Yariv | *California Institute of Technology*

Amnon Yariv, Ph.D., is Martin and Eileen Summerfield Professor of applied physics and electrical engineering at the California Institute of Technology. Yariv took part in the discovery of early solid state laser systems, in proposing and demonstrating the field of semiconductor integrated optics, the grating design and demonstration of the semiconductor distributed feedback laser, the main light source carrying internet traffic, and in co-pioneering the field of phase conjugate optics, worldwide. Presently, Yariv researches nonlinear optics, semiconductor lasers and integrated optics with emphasis on communication "Slow Light" optics, Phase-Lock optoelectronics, and a new type of semiconductor lasers with ultra-high coherence. Yariv is the recipient of many awards including IEEE's Photonics and Quantum Electronics awards and the National Medal of Science in 2010. He holds 73 U.S. patents and is founder and board member of a number of startup companies, including ORTEL Corporation, acquired by Lucent Technologies in 1998. Yariv is a member of APS, Phi Beta Kappa, the American Academy, NAE, NAS, and life fellow of IEEE and OSA.

Yun Yen | *Taipei Medical University*

Yun Yen, M.D., Ph.D., is president of Taipei Medical University in Taiwan. Yen is widely regarded as a renowned expert in ribonucleotide reductase, a critical target in cancer therapy and diagnostics. His discoveries led to advances in tumor marker development, RR structure and function and personalized drug design. He conducted the first clinical trial involving nanoparticles for patients with solid cancers. Yen is the recipient of distinctions from NIH, NCI and Taiwan Ministry of Health, and is founder of philanthropic organizations aimed at serving the cancer community. Yen holds 20 patents in cancer research and nanotechnology and commercialized methodologies involving nanoparticles, small and large molecule drugs, biomarkers, stem cells, and medical devices. He has published more than 250 peer-reviewed articles and serves as editor for 30 journals and committees. Yen is a fellow of AAAS, American College of Physicians and academy member of Russia's International Academy of Engineering.

Warren M. Zapol | *Massachusetts General Hospital*

Warren M. Zapol, M.D., is emeritus anesthetist-in-chief at Massachusetts General Hospital and the Reginald Jenney Professor of anaesthesia at Harvard Medical School. Zapol is a graduate of MIT and the University of Rochester School of Medicine. He is currently the director of the MGH Anesthesia Center for Critical Care Research, and also serves on the scientific advisory board of Third Pole Inc., an electric plasma nitric oxide generation company. In 2003, he was awarded the Intellectual Property Owners Association's Inventor of the Year Award for the treatment of hypoxic human newborns with inhaled nitric oxide and he was also designated as a Distinguished Scientist by the American Heart Association. MGH and Zapol have been granted 15 U.S. patents on nitric oxide generation and delivery which has saved approximately 500,000 U.S. patients. Zapol is a member of NAM.

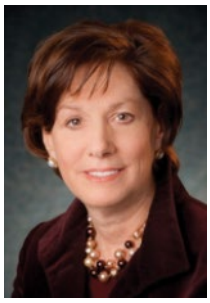
2016 FELLOWS SELECTION COMMITTEE

Norman R. Augustine | *Lockheed Martin Corporation*

Norman R. Augustine is retired chairman and CEO of the board of the Lockheed Martin Corporation. Prior to joining Martin Marietta, Augustine served as Assistant Secretary of the Army (R&D) from 1973-75 and Undersecretary from 1975-77. He was also a professor at Princeton, his alma mater. Augustine has been presented the National Medal of Technology by the President of the United States and received the Joint Chiefs of Staff Distinguished Public Service Award. He has five times received DoD's highest civilian decoration, the Distinguished Service Medal. Augustine has been elected to membership in the American Philosophical Society, NAS, the American Academy, the Explorers Club, Tau Beta Pi, Phi Beta Kappa and Sigma Xi.

Karen J.L. Burg | *University of Georgia*

Karen J.L. Burg, Ph.D., is professor and Harbor Lights Endowed Chair in the department of small animal medicine and surgery at the University of Georgia (UGA). Previously, she served as vice president for research and a professor of chemical engineering at Kansas State University. Honors to Burg include a Presidential Early Career Award for Scientists and Engineers, inaugural Swiss AO Research Prize, recognition as a MIT's TR100 Young Innovator, a DoD Era of Hope Scholar, and an AAAS-Lemelson Invention Ambassador. She has seven patents issued, 13 disclosures and/or provisional patent applications recorded, with one patent serving as the basis for a diagnostics startup company. She has given over 200 invited presentations and authored over 140 peer-reviewed publications on the subject of engineered tissues. A Burg invention was one of 10 technologies featured in the inaugural Avon Foundation for Women - NIH - Center for Advancing Innovation Breast Cancer Start-Up Challenge. She is a Fellow and board member of NAI, and fellow of AIMBE and American Council on Education.



Anne H. Chasser | *United States Patent and Trademark Office*

Anne H. Chasser is an author and intellectual property strategist and expert. Previously, Chasser served as the commissioner for trademarks at the USPTO, appointed by the Clinton administration and confirmed by the U.S. Senate. She served in both the Clinton and Bush administrations, where she oversaw the trademark operations at the USPTO. During her term, the trademark operations implemented full electronic processing of trademark applications and examination and implemented the Madrid Protocol. She was recognized by *Managing Intellectual Property Magazine* as one of the Fifty Most Influential People in Global Intellectual Property. She has co-authored two books: *Brand Rewired* and *Domain Rewired,* published by John Wiley. In 2014, Chasser was awarded the Distinguished Career Award by The Ohio State University, John Glenn School of Public Affairs.

Edward G. Derrick | *American Association for the Advancement of Science*

Edward G. Derrick, Ph.D., is chief program director of the AAAS Center of Science, Policy, and Society Programs. The programs in the Center connect the science and engineering community with policy makers and the interested public on an array of topics. These include the interplay of science with religion, law and human rights; they connect scientists and policy makers through programs in science and government, including the S&T Policy Fellowship program; and they address improvement in the conduct of science through activities promoting responsible conduct of science and through a peer review service. Derrick holds a doctorate degree from the University of Texas at Austin, with a dissertation in theoretical particle physics, and a bachelor's degree in biophysics from MIT.

Elizabeth L. Dougherty | *United States Patent and Trademark Office*

Elizabeth L. Dougherty, J.D., is director of Inventor Education, Outreach, and Recognition in the Office of Innovation Development at the USPTO. In this capacity she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs and the intellectual property interests of colleges and universities. She also supervises the development of outreach programs to women, minority and other underserved communities. Dougherty is currently on a special assignment to the USPTO's Office of Government Affairs where she builds and maintains relationships with members of Congress, their staffs and constituents. In particular, Dougherty is developing programs that support invention and innovation in the U.S. aimed at Congressional Caucuses and their target audiences. She has spearheaded a number of special projects with organizations such as the Smithsonian Institution and oversees a portfolio of ongoing and future initiatives designed to assist diverse USPTO stakeholders. Dougherty is a member of the NAI board of directors.

Eric R. Fossum | *Dartmouth College*

Eric R. Fossum, Ph.D., is professor at the Thayer School of Engineering at Dartmouth and director of the Ph.D. Innovation Program. Previously, while at JPL/Caltech, he invented the CMOS image sensor used in billions of camera phones, webcams, DSLRs, swallowable pill cameras, dental x-ray sensors, and many other applications. He co-founded and led Photobit to further develop and commercialize the technology which was eventually acquired by Micron. He holds over 150 U.S. patents and was inducted into NIHF and the Space Technology Hall of Fame, and awarded the 2017 Queen Elizabeth Prize. He has published over 270 papers, and received the IEEE Andrew Grove Award and the NASA Exceptional Achievement Medal. He is a founder and past-president of the International Image Sensor Society, serves on several boards, and is a Trustee of Trinity College. Fossum is a member of NAE, fellow of IEEE, and board member and Charter Fellow of NAI.

Florence P. Haseltine | *National Institutes of Health and Center for Population Research*

Florence P. Haseltine, Ph.D., M.D., is an NIH Emerita Scientist and director of the Center for Population Research. Haseltine is a molecular biologist and an Obstetrician Gynecologist. She has been cited for her work in medical advocacy, notably as founder of the Society for Women's Health Research (SWHR). Her patents include one for protective wheelchair containers and another for secure internet commerce. In 1995, she founded Haseltine Systems, which manufactures and sells the containers. As a pioneer in women's health research, she was the founding editor of the *Journal of Women's Health.* Her scholarly publications are in the area of sex differentiation, and she also wrote *Woman Doctor,* a best-selling novel about her medical training published in 1977. Since achieving Emerita status, Haseltine works with scientific organizations developing databases and digital applications to disseminate their important work. She is a member of NAM, and a Fellow of NAI and AAAS.

Andrew H. Hirshfeld | *United States Patent and Trademark Office*

Andrew H. Hirshfeld, Esq., is commissioner for patents for the United States Patent and Trademark Office (USPTO). He was appointed to the position in July 2015. Hirshfeld leads and manages more than 10,000 employees as the patent organization's chief operating officer, and manages and directs all aspects of patent operations, examination policy, patent quality management, international patent cooperation, resources and planning, and budget administration. In his previous role as deputy commissioner for patent examination policy, he served as an authority on patent laws, rules, and examining practice and procedure, and provided oversight and direction for the Offices of Petitions, Patent Legal Administration, and the Manual of Patent Examining Procedure. Hirshfeld previously served as Chief of Staff to the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. He began his career at the USPTO in 1994 as a Patent Examiner, became a Supervisory Patent Examiner in 2001, and was promoted to the Senior Executive Service in 2008 as a Group Director in Technology Center 2100, Computer Architecture and Software. Hirshfeld holds a bachelor's degree from The University of Vermont, and a juris doctor degree from Western New England College School of Law.

Robert S. Langer | *Massachusetts Institute of Technology*

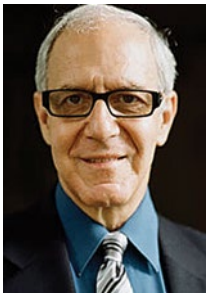
Robert S. Langer, Sc.D., is David H. Koch Institute Professor at MIT. There are 11 Institute Professors at MIT; being an Institute Professor is the highest honor that can be awarded to a faculty member. He has written more than 1,300 articles and has 1,100 issued and pending patents worldwide. His many awards include the U.S. National Medal of Science, the U.S, National Medal of Technology and Innovation, Charles Stark Draper Prize (considered the engineering Nobel Prize), Albany Medical Center Prize (largest U.S. medical prize), and Wolf Prize for Chemistry and Lemelson-MIT prize, for being "one of history's most prolific inventors in medicine." Langer is one of the very few individuals ever elected to all NAM, NAE NAS and NAI, and is an NIHF Inductee.

Cato T. Laurencin | *University of Connecticut*

Cato T. Laurencin, M.D., Ph.D., is Albert and Wilda Van Dusen Distinguished Professor of orthopaedic surgery and professor of chemical engineering, professor of materials science and engineering, and professor of biomedical engineering at the University of Connecticut (UConn). Laurencin serves as director of the Institute for Regenerative Engineering, and director of the Raymond and Beverly Sackler Center for Biomedical, Biological, Physical and Engineering Sciences at the UConn Health Center. He also serves as CEO of the Connecticut Institute for Clinical and Translational Science at UConn. Laurencin earned a bachelor's degree in chemical engineering from Princeton, his medical degree magna cum laude from Harvard Medical School and his doctorate in biochemical engineering/biotechnology from MIT. Laurencin is an elected member of NAM, NAS and NAE and is a Fellow of NAI.

Willie E. May | *National Institute of Standards and Technology*

Willie E. May, Ph.D. was confirmed by Congress on May 4, 2015 as the 15th Director of the National Institute of Standards and Technology (NIST) and the 2nd Under Secretary of Commerce for Standards and Technology. Previously, he was associate director for laboratory programs, and led NIST's chemical research portfolio for more than 20 years. Currently, May also leads the technical infrastructure of the International System of Units as the vice president of the international committee on weights and measures, serves on the external advisory boards for the UK's National Physical Laboratory and Japan's National Institute of Advanced Industrial Science and Technology, and co-chairs the U.S. National Commission of Forensic Science with the Deputy U.S. Attorney General. His awards include the Department of Commerce's Bronze, Silver and Gold Medals, the Presidential Rank Award of Meritorious Federal Executive and an honorary doctorate degree in from Wake Forest University. May is a fellow of NAI and ACS.



Arthur Molella | *Smithsonian Lemelson Center for The Study of Invention & Innovation*

Arthur Molella, Ph.D., is director emeritus of the Smithsonian Institution's Lemelson Center for the Study of Invention and Innovation at the National Museum of American History. He was the Center's founding director. He received his master's and doctorate degrees in the history of science from Cornell University and was awarded a doctor of science, honoris causa, from Westminster University, U.K. At the National Museum of American History, he has served as curator of electricity, chairman of the department of history of science and technology, and assistant director for history. He is also senior lecturer in the department history of science and technology at Johns Hopkins University. He was head curator of the Smithsonian's *Science in American Life* exhibition, co-curator of the international exhibition, *Nobel Voices,* and curator of *Making a Modern Museum: Celebrating the 50th Anniversary of the National Museum of American History.* With colleagues at Westminster and Johns Hopkins Universities, he is co-sponsor of the International Eco-City Initiative. He has published and lectured widely on the history of science, invention, technology, and modern technological culture. His recent publications include such books as *Inventing for the Environment* (MIT, 2003), *Cultures of Innovation* (Comparative Technology Transfer and Society, special vol. 5, 2007), *Invented Edens: Techno-Cities of the 20th Century* (MIT, 2008), *Places of Invention* (Smithsonian, 2015). In addition to the NAI, Molella serves on the boards of NIHF and the MIT Museum.

Alexander Nicholas | *The Bill & Melinda Gates Foundation*

Alexander Nicholas, Ph.D., is program officer for The Bill & Melinda Gates Foundation. He leads the development of the Foundation's work in higher education and believes in the power of education and invention to change lives and solve important societal changes. As such, he supports the development of a pipeline of inventors and invention-based businesses in the U.S. and seeds the development of education ecosystems in developing countries to alleviate the burdens of people living in poverty. Previously, he worked as a program manager at the Lemelson Foundation and as senior policy advisor at the U.S. Department of Commerce and as AAAS Policy Fellow at NSF. Currently, he serves on the Advisory Committee for Commission on Innovation, Competitiveness, and Economic Prosperity at APLU where he advises on challenges and opportunities at the intersection of higher education and innovation. Alexander received a doctorate degree in neuroscience from Florida State University before performing postdoctoral research at Harvard Medical School and Beth Israel Deaconess Medical Center.

Rini Paiva | *National Inventors Hall of Fame*

Rini Paiva is executive director of the National Inventors Hall of Fame (NIHF). She oversees the annual Inductee Selection process for NIHF, working with a wide-ranging group of experts in science, technology, engineering, intellectual property, and history to ultimately recognize the world's foremost patented inventors for their life-changing and innovative work. Paiva also facilitates NHF Inductee involvement with the Collegiate Inventors Competition (CIC), which brings recognition to the country's outstanding college students who create the technologies that shape the future. Both NIHF and CIC are a part of Invent Now, Inc., a non-profit dedicated to recognizing and fostering invention, creativity, and entrepreneurship. Paiva actively encourages NIHF Inductees to be involved in Invent Now's education programs so that they may serve as inspiration, encouragement, and examples to younger generations.

John P. Palafoutas | *United States Patent and Trademark Office*

John P. Palafoutas is program manager for the National Medal of Technology and Innovation (NMTI) within the Department of Commerce and United States Patent and Trademark Office. The NMTI is the nation's highest honor for technological achievement, bestowed by the President of the United States on America's leading innovators. His other duties include oversight of the USPTO's relationship with the National Inventors Hall of Fame and its intellectual property education programs, Camp Invention and the Collegiate Inventors Competition. Previously, he was the executive director of the Task Force on American Innovation, a non-partisan alliance of U.S. industry, academia, and science, supporting federally-funded scientific research and promoting its benefits to America's economy, security, and quality of life. Palafoutas is an Army veteran, who served two tours of duty in Vietnam.

Jessica A. Sebeok | *Association of American Universities*

Jessica A. Sebeok, J.D., is associate vice president and counsel for policy at the Association of American Universities. Her portfolio includes intellectual property, tax, and a range of legal issues. She previously served as counsel for policy and international affairs in the U.S. Copyright Office, special assistant to the Assistant Secretary of State for Educational and Cultural Affairs, and as assistant general counsel of Yale University. Sebeok received her juris doctor degree from Yale Law School and her master's degree from the University of Oxford, where she was a Marshall Scholar. Sebeok also has a bachelor's degree in History from the University of Chicago.

David Winwood | *Pennington Biomedical Research Center and Association of University Technology Managers*

David Winwood, Ph.D., RTTP, is associate executive director at Pennington Biomedical Research Center and president of the Association of University Technology Managers (AUTM), a 3,200 member nonprofit organization dedicated to supporting and enhancing the global academic technology transfer profession through education, professional development, partnering and advocacy. He previously served for three years as AUTM's vice president for Advocacy. Before starting his university technology transfer career he worked in research, business development and company leadership roles in three startup businesses, with responsibilities including fund raising and corporate partnership development. He is designated a Registered Technology Transfer Professional (RTTP) by The Alliance of Technology Transfer Professionals (ATTP), the international body for professionals engaged in technology transfer, and holds bachelor's, master's and doctorate degrees in chemistry and a master's degree in liberal studies. A frequent speaker on technology transfer issues, Winwood recently testified on patent reform in the United States Senate.

James K. Woodell | *Association of Public and Land-grant Universities*

James K. Woodell, Ph.D., is assistant vice president for innovation and technology policy at the Association of Public and Land-grant Universities (APLU). He works closely with member institutions to develop tools and resources to enhance their regional engagement and economic development efforts. Serving as lead staff member for APLU's Commission on Innovation, Competitiveness and Economic Prosperity (CICEP), Jim advances APLU's economic engagement agenda, and the public university role in innovation and economic development. Woodell holds a master's degree in education degree from Harvard University, and a doctorate degree in higher education from the Pennsylvania State University.

IN MEMORIAM

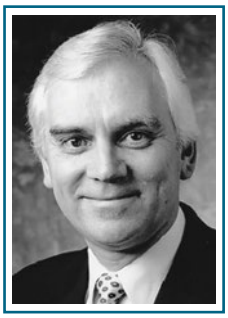
Honoring the lives of the prolific NAI Fellows we lost during the past year

Christodoulos A. Floudas

1959-2016
Texas A&M University
NAI Fellow Inductee, 2015

John C. Herr

1948-2016
University of Virginia
NAI Fellow Inductee, 2014

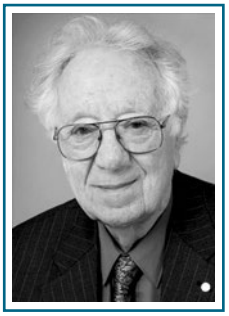


Stephen C. Jacobsen

1940-2016
The University of Utah
NAI Charter Fellow

Prem S. Paul

1947-2016
University of Nebraska-Lincoln
NAI Charter Fellow
NAI Board of Directors



Oliver Smithies

1925-2016
The University of North Carolina
at Chapel Hill
NAI Charter Fellow

Roger Y. Tsien

1953-2016
University of California, San Diego
NAI Charter Fellow

COMPLETE LIST OF CURRENT NAI FELLOWS

Patrick Aebischer, École Polytechnique Fédérale de Lausanne
C. Mauli Agrawal, The University of Texas at San Antonio
Dharma P. Agrawal, University of Cincinnati
Rakesh Agrawal, Purdue University
David Akopian, The University of Texas at San Antonio
Ilhan A. Aksay, Princeton University
Dean P. Alderucci, The University of Chicago
Kamal S. Ali, Jackson State University
A. Paul Alivisatos, University of California, Berkeley
Nancy L. Allbritton, The University of North Carolina at Chapel Hill
Jan P. Allebach, Purdue University
Carl R. Alving, Walter Reed Army Institute of Research
Jayakrishna Ambati, University of Virginia
Dimitris Anastassiou, Columbia University
Iver E. Anderson, Iowa State University
Kristi S. Anseth, University of Colorado Boulder
Allen W. Apblett, Oklahoma State University
Hamid Arastoopour, Illinois Institute of Technology
Daniel W. Armstrong, The University of Texas at Arlington
Frances H. Arnold, California Institute of Technology
Charles J. Arntzen, Arizona State University
Peter Arsenault, Tufts University
David E. Aspnes, North Carolina State University
Anthony Atala, Wake Forest University
Kyriacos A. Athanasiou, University of California, Davis
Harry A. Atwater, Jr., California Institute of Technology
Nadine N. Aubry, Northeastern University
Lorne A. Babiuk, University of Alberta
B. Jayant Baliga, North Carolina State University
John M. Ballato, Clemson University
David Baltimore, California Institute of Technology
Amit Bandyopadhyay, Washington State University
Zhenan Bao, Stanford University
Richard G. Baraniuk, Rice University
Francis Barany, Cornell University
John S. Baras, University of Maryland
Michael Bass, University of Central Florida
Jean-Marie Basset, King Abdullah University of Science and Technology
Issa Batarseh, University of Central Florida
Paula J. Bates, University of Louisville
Benton F. Baugh, University of Houston
Ray H. Baughman, The University of Texas at Dallas
David J. Bayless, Ohio University
Joseph J. Beaman, Jr., The University of Texas at Austin
Kurt H. Becker, New York University
Craig C. Beeson, Medical University of South Carolina
Khosrow Behbehani, The University of Texas at Arlington
Angela M. Belcher, Massachusetts Institute of Technology
Stephen J. Benkovic, The Pennsylvania State University
Raymond J. Bergeron, University of Florida
K. Darrell Berlin, Oklahoma State University
Carolyn R. Bertozzi, Stanford University
Sarit B. Bhaduri, The University of Toledo
Shekhar Bhansali, Florida International University
Sangeeta N. Bhatia, Massachusetts Institute of Technology
Pallab K. Bhattacharya, University of Michigan
Dieter H. Bimberg, Technical University of Berlin
James A. Birchler, University of Missouri-Columbia
John D. Birdwell, The University of Tennessee, Knoxville
Kenneth J. Blank, Rowan University
Donald R. Bobbitt, University of Arkansas
Dale L. Boger, The Scripps Research Institute
Jeffrey T. Borenstein, The Charles Stark Draper Laboratory
Rathindra N. Bose, University of Houston*
Gerardine G. Botte, Ohio University
H. Kim Bottomly, Wellesley College
Charles A. Bouman, Purdue University
John E. Bowers, University of California, Santa Barbara
Gary L. Bowlin, University of Memphis
Christopher N. Bowman, University of Colorado Boulder
Barbara D. Boyan, Virginia Commonwealth University
Scott A. Brandt, University of California, Santa Cruz
Mindy M. Brashears, Texas Tech University
Steven P. Briggs, University of California, San Diego
David E. Briles, The University of Alabama at Birmingham
C. Jeffrey Brinker, The University of New Mexico
Emery N. Brown, Massachusetts Institute of Technology
Milton L. Brown, Inova Schar Cancer Institute
Richard B. Brown, The University of Utah
Robert A. Brown, Boston University
Robert H. Brown, Jr., University of Massachusetts Medical School
Steven R.J. Brueck, The University of New Mexico
Richard D. Bucholz, Saint Louis University
Donald J. Buchsbaum, The University of Alabama at Birmingham
Karen J.L. Burg, University of Georgia
Mark A. Burns, University of Michigan
Robert L. Byer, Stanford University
Robert H. Byrne, University of South Florida
A. Robert Calderbank, Duke University
Sir Roy Calne, University of Cambridge
Joe C. Campbell, University of Virginia
Anne K. Camper, Montana State University
Lisa A. Cannon-Albright, The University of Utah
Charles R. Cantor, Boston University
Ruben G. Carbonell, North Carolina State University
Curtis R. Carlson, SRI International
John F. Carpenter, University of Colorado Anschutz Medical Campus
Dennis A. Carson, University of California, San Diego
Emily A. Carter, Princeton University
Alexander N. Cartwright, The State University of New York
Carolyn L. Cason, The University of Texas at Arlington
David M. Center, Boston University
Vinton G. Cerf, National Science Foundation
Selim A. Chacour, University of South Florida
Mau-Chung Frank Chang, National Chiao Tung University
H. Jonathan Chao, New York University

* Indicates deceased

Raghunath V. Chaudhari, The University of Kansas
Ching-Shih Chen, The Ohio State University
Junhong Chen, University of Wisconsin-Milwaukee
Liang-Gee Chen, National Taiwan University
Nai Yuen Chen, The University of Texas at Arlington
Stephen Z. D. Cheng, The University of Akron
Simon R. Cherry, University of California, Davis
Shu Chien, University of California, San Diego
Ashutosh Chilkoti, Duke University
Mary-Dell Chilton, Washington University in St. Louis
Arul M. Chinnaiyan, University of Michigan
Stephen Y. Chou, Princeton University
Diana S. Chow, University of Houston
Christos Christodoulatos, Stevens Institute of Technology
Benjamin Chu, Stony Brook University
Chung K. (David) Chu, University of Georgia
Paul C. W. Chu, University of Houston
Steven Chu, Stanford University
Yoginder P. Chugh, Southern Illinois University
Aaron J. Ciechanover, Technion-Israel Institute of Technology
Michael J. Cima, Massachusetts Institute of Technology
William J. Clancey, Florida Institute for Human & Machine Cognition
Graeme M. Clark, The University of Melbourne
Adrienne E. Clarke, La Trobe University
Larry A. Coldren, University of California, Santa Barbara
James J. Coleman, The University of Texas at Dallas
J. Edward Colgate, Northwestern University
Barry S. Coller, The Rockefeller University
James J. Collins, Massachusetts Institute of Technology
Rita R. Colwell, University of Maryland
James G. Conley, Northwestern University
Diane J. Cook, Washington State University
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COMMON ABBREVIATIONS

American Academy. ..... American Academy of Arts and Sciences
AAAS ..... American Association for the Advancement of Science
AACR ..... American Association for Cancer Research
AAM ..... American Academy of Microbiology
AAP ..... Association of American Physicians
AAPS ..... American Association of Pharmaceutical Scientists
ACerS ..... American Ceramic Society
ACM ..... Association for Computing Machinery
ACS ..... American Chemical Society
ADA ..... American Dental Association
AHA ..... American Heart Association
AIAA ..... American Institute of Aeronautics and Astronautics
AIChE ..... American Institute of Chemical Engineers
AIMBE ..... American Institute for Medical and Biological Engineering
APS ..... American Physical Society
ARVO ..... Association for Research in Vision and Ophthalmology
ASCE ..... American Society of Civil Engineers
ASBMB ..... American Society for Biochemistry and Molecular Biology
ASCI ..... American Society for Clinical Investigation
ASEE ..... American Society for Engineering Education
ASM ..... American Society for Microbiology
ASM International ..... American Society for Metals International
ASME ..... American Society of Mechanical Engineers
BMES ..... Biomedical Engineering Society
DARPA ..... Defense Advanced Research Projects Agency
FDA ..... U.S. Food and Drug Administration
HHMI ..... Howard Hughes Medical Institute
IAPR ..... International Association of Pattern Recognition
IEEE ..... Institute of Electrical and Electronics Engineers
IET ..... Institution of Engineering and Technology
MRS ..... Materials Research Society
NAE ..... National Academy of Engineering
NAM ..... National Academy of Medicine
NAS ..... National Academy of Sciences
NCI ..... National Cancer Institute
NIH ..... National Institutes of Health
NIHF ..... National Inventors Hall of Fame
NSF ..... National Science Foundation
OSA ..... Optical Society of America
PNAS ..... Proceedings of the National Academy of Sciences
RSC ..... Royal Society of Chemistry
SFB ..... Society for Biomaterials
SPIE ..... International Society for Optics and Photonics
TERMIS ..... Tissue Engineering and Regenerative Medicine International Society
TMS ..... The Minerals, Metals and Materials Society
U.S. DoD ..... United States Department of Defense
U.S. DOE ..... United States Department of Energy
WAC ..... World Academy of Ceramics

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