2014 FELLOWS

of the National Academy of Inventors

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS

Dear NAI Fellows:

On behalf of the United States Patent and Trademark Office (USPTO), I congratulate you, the National Academy of Inventors and the newly-elected class of 2014 Fellows of the NAI. The USPTO is privileged to participate in recognizing the 170 academic innovators in this distinguished group of prolific inventors.

Since its beginnings in 2010, the NAI has met an important need in our country and around the world by celebrating and honoring the remarkable achievements of some of the top minds in academic research and innovation, encouraging disclosures, mentoring young inventors, and promoting discoveries that have a significant impact on our society and quality of life. I am honored to serve on the NAI Fellows Selection Committee as the Fellows program provides a unique opportunity to shine a spotlight on our nation's top inventors. We congratulate the Fellows on their outstanding achievements!

The USPTO values our friendship and collaboration with the NAI as we discharge our own mission to advance and protect innovation. I look forward to a lasting relationship between the USPTO and NAI, one that will continue to benefit both of our organizations, the innovation community, our nation and its citizens.

Again, congratulations to the 2014 Fellows. I wish the NAI continued growth and success in future endeavors.

Warmest regards,

Peggy Focarino

Margaret (Peggy) Focarino
Commissioner for Patents
U.S. Patent and Trademark Office

ABOUT THE NAI FELLOWS PROGRAM

Election to NAI Fellow status is a high professional distinction accorded 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 may be nominated and selected at a future time.

HOW TO NOMINATE FOR NAI FELLOWSHIP

Nominees must be:

- A named inventor on at least one patent issued by the United States Patent and Trademark Office
- 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 – November 1 annually

Submit nominations online at: **www.academyofinventors.com/fellows.asp**

ABOUT OUR FELLOWS

With the induction of the 2014 class, there are now 61 presidents and senior leadership of research universities and non-profit research institutes, 212 members of the other National Academies (NAS, NAE, IOM), 23 inductees of the National Inventors Hall of Fame, 16 recipients of the U.S. National Medal of Technology and Innovation, 10 recipients of the U.S. National Medal of Science, 21 Nobel Laureates, 11 Lemelson-MIT prize recipients, 112 AAAS Fellows, and 62 IEEE Fellows, among other awards and distinctions. Collectively, the Fellows hold nearly 14,000 issued U.S. patents, representing more than 150 prestigious research universities and governmental and non-profit research institutes.

Host Remarks & Keynote Introduction By:

Mory Gharib, Ph.D.

Vice Provost for Research
California Institute of Technology

Mory Gharib, Ph.D., is Vice Provost for Research and Hans W. Liepmann Professor of Aeronautics and Bioinspired Engineering at the California Institute of Technology, specializing in hydro and aerodynamics, biological flows, bioinspired medical devices, and advanced flow visualization techniques. He co-founded the Bioengineering Option at Caltech. He holds more than 50 U.S. patents in areas of biomedical devices and imaging technology. He is a Fellow of the National Academy of Inventors and the American Association for the Advancement of Science and five other professional societies. He has received five new technology recognition awards from NASA in the fields of advanced laser imaging and nanotechnology and the R&D 100 Award for the design of a 3D imaging system.

Keynote Address By:

Andrew Faile

Deputy Commissioner for Patent Operations
United States Patent and Trademark Office

As the Deputy Commissioner for Patent Operations, Andrew Faile is responsible for all patent examining functions in the nine Patent Technology Centers, the Office of Patent Training and the Central Reexamination Unit. Faile was the Assistant Deputy Commissioner for Patent Operations for the Electrical Discipline and has over 20 years of experience in patent examining and operations management. He first joined the USPTO in 1989 as a patent examiner in the areas of cellular telephony, radio frequency communications, and cable television. In 1994, he earned an examiner master's rating in telecommunications. Recently, Faile served on a joint management/union task force in charge of modernizing the examiner production system. He was awarded the Department of Commerce Silver Medal for his work on the task force.

United States of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 114th CONGRESS, FIRST SESSION

House of Representatives

HON. DENNIS ROSS OF FLORIDA

Extension of Remarks

Honoring 2014 Fellows of the National Academy of Inventors

Friday, February 13, 2015

MR. ROSS. Mr. Speaker, I rise today to honor the 170 inventors who will soon be recognized at the California Institute of Technology and inducted as the 2014 Fellows of the National Academy of Inventors (NAI). In order to be named as a Fellow, these men and women were nominated by their peers and have undergone the scrutiny of the NAI Selection Committee, having had their innovations deemed as making significant impact on quality of life, economic development, and welfare of society. Collectively, among this elite group holds nearly 5,000 patents.

The individuals making up this year's class of Fellows include individuals from 114 research universities and non-profit research institutes spanning not just the United States but also the world. The now 414 member group of Fellows is comprised of 61 presidents and senior leadership of research universities and non-profit research institutes, 208 members of the other National Academies, 21 inductees of the National Inventors Hall of Fame, 16 recipients of the U.S. National Medal of Technology and Innovation, 10 recipients of the U.S. National Medal of Science, 21 Nobel Laureates, 11 Lemelson-MIT prize recipients, 112 AAAS Fellows, among other awards and distinctions.

The National Academy of Inventors was founded in 2010 by Paul R. Sanberg at the University of South Florida. Its mission is to recognize and encourage inventors with patents issued from the U.S. Patent and Trademark Office, enhance the visibility of academic technology and innovation, encourage the disclosure of intellectual property, educate and mentor innovative students, and translate the inventions of its members to benefit society.

The contributions made to society through innovation are immeasurable. I commend these individuals, and the organizations that support them, for the work that they do to revolutionize the world we live in. As the following inventors are inducted, may it encourage future innovators to strive to meet this high honor and continue the spirit of innovation.

The 2014 NAI Fellows include:

Ilhan A. Aksay, Princeton University; Nancy L. Allbritton, The University of North Carolina at Chapel Hill; Jan P. Allebach, Purdue University; Daniel W. Armstrong, The University of Texas at Arlington; Frances H. Arnold, California Institute of Technology; Kyriacos A. Athanasiou, University of California, Davis; Nadine N. Aubry, Northeastern University; David Baltimore, California Institute of Technology; Amit Bandyopadhyay, Washington State University; Joseph J. Beaman, Jr., The University of Texas at Austin; James A. Birchler, University of Missouri-Columbia; Donald R. Bobbitt, University of Arkansas; Jeffrey T. Borenstein, The Charles Stark Draper Laboratory; H. Kim Bottomly, Wellesley College; Scott A. Brandt, University of California, Santa Cruz; Steven P. Briggs, University of California, San Diego; Robert A. Brown, Boston University; Karen J.L. Burg, Kansas State University; Robert H. Byrne, University of South Florida; A. Robert Calderbank, Duke University; Emily A. Carter, Princeton University; Alexander N. Cartwright, The State University of New York; H. Jonathan Chao, New York University; Ching-Shih Chen, The Ohio State University; Ashutosh Chilkoti, Duke University; Arul M. Chinnaiyan, University of Michigan; Steven Chu, Stanford University; James J. Coleman, The University of Texas at Dallas; J. Edward Colgate, Northwestern University; Barry S. Coller, The Rockefeller University; R. Graham Cooks, Purdue University; Rory A. Cooper, University of Pittsburgh; Harold G. Craighead, Cornell University; Charles S. Craik, University of California, San Francisco; Alfred J. Crosby, University of Massachusetts Amherst; Marcos Dantus, Michigan State University; Huw M.L. Davies, Emory University; Mark R.D. Davies, University of Limerick; Mark E. Dean, The University of Tennessee, Knoxville; Richard D. DiMarchi, Indiana University; Michael A. Dirr The University of Georgia; Richard A. Dixon, University of North Texas; John P. Donoghue, Brown University; Jonathan S. Dordick, Rensselaer Polytechnic Institute; Jennifer A. Doudna,

University of California, Berkeley; Anatoly Dritschilo, Georgetown University; Robert V. Duncan, Texas Tech University; Russell D. Dupuis, Georgia Institute of Technology; Victor J. Dzau, Duke University; James H. Eberwine, University of Pennsylvania; Elazer R. Edelman, Massachusetts Institute of Technology; J. Gary Eden, University of Illinois at Urbana-Champaign; Jennifer H. Elisseeff Johns Hopkins University; Sir Martin J. Evans, Cardiff University; David A. Evans, Harvard University; Gregg B. Fields, Torrey Pines Institute for Molecular Studies; Stephen R. Forrest, University of Michigan; Michael W. Fountain, University of South Florida; Ingrid Fritsch, University of Arkansas; Cynthia M. Furse, The University of Utah; Elsa M. Garmire, Dartmouth College; Samuel H. Gellman, University of Wisconsin-Madison; Amit Goyal, Oak Ridge National Laboratory; Bruce D. Hammock, University of California, Davis; Justin Hanes, Johns Hopkins University; Frank W. Harris, The University of Akron; Vikki Hazelwood, Stevens Institute of Technology; Maurice P. Herlihy, Brown University; John C. Herr, University of Virginia; David R. Hillyard, The University of Utah; Jeffrey A. Hubbell, The University of Chicago; Suzanne T. Ildstad, University of Louisville; M. Saif Islam, University of California, Davis; Robert D. Ivarie, The University of Georgia; Allan J. Jacobson, University of Houston; Trevor O. Jones, Case Western Reserve University; Michael E. Jung, University of California, Los Angeles; Kattesh V. Katti, University of Missouri-Columbia; Jay D. Keasling, University of California, Berkeley; Behrokh Khoshnevis, University of Southern California; Marcia J. Kieliszewski, Ohio University; Michael N. Kozicki, Arizona State University; Juan C. Lasheras, University of California, San Diego; Wen-Hwa Lee, China Medical University; Chiang J. Li, Harvard University; James Linder, University of Nebraska-Lincoln; Stuart M. Lindsay, Arizona State University; Robert J. Linhardt, Rensselaer Polytechnic Institute; Philip S. Low, Purdue University; Yuri M. Lvov, Louisiana Tech University; Asad M. Madni, University of California, Los Angeles; Marc J. Madou, University of California, Irvine; Richard A. Mathies, University of California, Berkeley; Richard D. McCullough, Harvard University; Carver A. Mead, California Institute of Technology; Wen Jin Meng, Louisiana State University; Xiang-Jin Meng, Virginia Tech; Thomas O. Mensah, Florida State University; Antonios G. Mikos, Rice University; Richard K. Miller, Olin College of Engineering; Duane D. Miller, The University of Tennessee Health Science Center; Jan D. Miller, The University of Utah; Sergey B. Mirov, The University of Alabama at Birmingham; Jeffrey R. Morgan, Brown University; Brij M. Moudgil, University of Florida; José M.F. Moura, Carnegie Mellon University; Shuji Nakamura, University of California, Santa Barbara; Jagdish Narayan, North Carolina State University; Shree K. Nayar, Columbia University; Douglas F. Nixon, The George Washington University; Babatunde A. Ogunnaike, University of Delaware; Iwao Ojima, Stony Brook University; Nicholas A. Peppas, The University of Texas at Austin; Michael A. Peshkin, Northwestern University; Victor L. Poirier, University of South Florida; Mark R. Prausnitz, Georgia Institute of Technology; Darwin J. Prockop, Texas A&M University; Alain T. Rappaport, Institute for Human and Machine Cognition, Renee A. Reijo Pera, Montana State University; Daniel E. Resasco, The University of Oklahoma; Rebecca R. Richards-Kortum, Rice University; Yasuko Rikihisa, The Ohio State University; Pradeep K. Rohatgi, University of Wisconsin-Milwaukee; Bärbel M. Rohrer, Medical University of South Carolina; Erkki Ruoslahti, Sanford-Burnham Medical Research Institute; B. Don Russell, Jr., Texas A&M University; Ram Sasisekharan, Massachusetts Institute of Technology; W. Gregory Sawyer, University of Florida; Axel Scherer, California Institute of Technology; Joseph M. Schimmels, Marquette University; C. Richard Schlegel, Georgetown University; Saïd M. Sebti, H. Lee Moffitt Cancer & Research Institute; George E. Seidel, Jr., Colorado State University; Arup K. SenGupta, Lehigh University; Wan Y. Shih, Drexel University; Kevin M. Short, University of New Hampshire; Richard B. Silverman, Northwestern University; Marwan A. Simaan, University of Central Florida; Raj N. Singh, Oklahoma State University; Thomas C. Skalak, University of Virginia; Mohamed Y. Soliman, Texas Tech University; Bruce J. Tatarchuk, Auburn University; Gordon A. Thomas, New Jersey Institute of Technology; Mark E. Thompson, University of Southern California; Thomas G. Thundat, University of Alberta; Richard B. Timmons, The University of Texas at Arlington; Mark L. Tykocinski, Thomas Jefferson University; Kamil Ugurbil, University of Minnesota; Anthony J. Vizzini, Wichita State University; Horst Vogel, École Polytechnique Fédérale de Lausanne; Nicholi Vorsa, Rutgers, The State University of New Jersey; Gordana Vunjak-Novakovic, Columbia University; Kristiina Vuori, Sanford-Burnham Medical Research Institute; Kevin M. Walsh, University of Louisville; Christine A. Wang, Massachusetts Institute of Technology; Shaomeng Wang, University of Michigan; Paul H. Weigel, The University of Oklahoma; Jonathan A. Wickert, Iowa State University; Alan E. Willner, University of Southern California; Richard C. Willson, III, University of Houston; Chi-Huey Wong, Academia Sinica; John A. Woollam, University of Nebraska-Lincoln; Shelby D. Worley, Auburn University; Chris Xu, Cornell University; Ping Xu, Shanghai Jiao Tong University; Zhi Xu, University of Missouri-St. Louis; Janet K. Yamamoto, University of Florida; Shu Yang, University of Pennsylvania; Michael J. Yaszemski, Mayo Clinic; Phillip D. Zamore, University of Massachusetts Medical School.

FELLOWS

Ilhan A. Aksay, Princeton University

Ilhan A. Aksay, Ph.D., is a Professor in the Department of Chemical and Biological Engineering at Princeton University. He earned his Ph.D. (1973) in materials science and engineering at the University of California, Berkeley. His research activities include the processing science of ceramic matrix composites, thermodynamics and phase equilibria in materials systems, diffusion and structural studies in ionic systems, interfacial reactions and capillarity phenomena, and the utilization of self-assembly techniques in materials processing. He is a member of the U.S. National Academy of Engineering (2010) and the Science Academy, Turkey (2012) and a Fellow of the American Association for the Advancement of Science (AAAS). He holds 49 U.S. patents which are being utilized either by the companies he has consulted with or the companies that he has helped to start.

Nancy L. Allbritton, The University of North Carolina at Chapel Hill

Nancy L. Allbritton, M.D., Ph.D., is the Debreczeny Distinguished Professor of Chemistry at The University of North Carolina at Chapel Hill. She obtained her B.S. in physics from Louisiana State University, her Ph.D. in Medical Physics/Medical Engineering from the Massachusetts Institute of Technology, and her M.D. from Johns Hopkins University. After a postdoctoral fellowship in cell biology at Stanford University, she joined the faculty of the University of California, Irvine in 1994. In 2009, she became Chair of the Department of Biomedical Engineering, a joint department between North Carolina State University and UNC. She is a Fellow in the AIMBE and AAAS. Her research focuses on the development of new technologies to address biomedical problems. Allbritton is the scientific founder of three companies, Protein Simple (acquired by Bio-Techne), Intellego, and Cell Microsystems, and has 11 issued patents with more than 10 patents pending.

Jan P. Allebach, Purdue University

Jan P. Allebach, Ph.D., is the Hewlett-Packard Distinguished Professor of Electrical and Computer Engineering at Purdue University. His current research interests include image rendering, image quality, 2.5D printing, content creation, and metadata embedding and manufacturing based on printing technologies. Allebach is a Fellow of IEEE, the Society for Imaging Science and Technology (IS&T), and SPIE. He was named Electronic Imaging Scientist of the Year by IS&T and SPIE, and was named Honorary Member of IS&T, the highest award that IS&T bestows. He was the recipient of the 2013 IEEE Daniel E. Noble Award and elected to membership in the National Academy of Engineering in 2014, both on the basis of his work on digital halftoning. He is a co-inventor on 28 issued patents. The results of his research have been licensed to major vendors of imaging hardware and can be found in products that have sold millions of units worldwide.

Daniel W. Armstrong, The University of Texas at Arlington

Daniel W. Armstrong, Ph.D., is the Welch Professor of Chemistry at The University of Texas at Arlington (B.S., Washington & Lee University; M.S., Ph.D., Texas A&M University), and is on the Scientific Advisory Board of three companies and one university. He has more than 600 publications, 29 book chapters, 30 patents, has given more than 515 invited lectures and trained more than 170 graduates and post-graduates. His work received approximately 30,000 citations (h-index 86). He started two companies and is President of AZYP, LLC. He received over 35 awards and honors for his work. Over 30 LC and GC columns he developed have been commercialized. His work, in part, provided impetus for the FDA's regulatory changes regarding chiral drugs. He developed the most comprehensive characterization models for room temperature ionic liquids (ILs) and pioneered their use in analytical chemistry, which led to the commercialization of IL GC phases. He also developed ILs as versatile additives for MALDI-MS and PIESI-MS.

Frances H. Arnold, California Institute of Technology

Frances H. Arnold, Ph.D., is the Dickinson Professor of Chemical Engineering, Bioengineering, and Biochemistry at the California Institute of Technology. Arnold pioneered the 'directed evolution' of proteins, mimicking Darwinian evolution in the laboratory to create new biological molecules. Her laboratory has developed methods of laboratory evolution and structure-guided recombination that are used widely in industry and basic science to engineer proteins with new and useful properties. Arnold has been inducted into the National Inventors Hall of Fame (2014) and has received the National Medal of Technology and Innovation (2011) and the Draper Prize (2011). She has been elected to membership in all three U.S. National Academies, of Science, Medicine, and Engineering. Arnold holds more than 40 U.S. patents and has served on the science advisory boards of numerous companies. She co-founded Gevo, Inc. in 2005 to make fuels and chemicals from renewable resources and Provivi in 2013 to develop biological crop protection.

Kyriacos A. Athanasiou, University of California, Davis

Kyriacos A. Athanasiou, Ph.D., is a Distinguished Professor of Biomedical Engineering and Orthopaedic Surgery, Child Family Professor of Engineering, and Chair of Biomedical Engineering at the University of California, Davis. He obtained his Ph.D. in Bioengineering (Mechanical Engineering) from Columbia University in 1989. He has published over 300 peer-reviewed papers, 20 books, and 30 patents. He has served as president of the Biomedical Engineering Society and editor-in-chief of the *Annals of Biomedical Engineering*. His list of awards includes the Nemitsas Prize (Cyprus' largest award presented by the Cyprus President), Lissner Medal, Distinguished Service Award from BMES, Wall Street Journal's 2008 Innovation Award, Thomas A. Edison Patent Award, Hershel Rich Outstanding Invention Award, Marshal Urist Award for Excellence in Tissue Regeneration Research, and the Van Mow Medal. In addition to his academic interests, he has been involved with affecting the translation of devices and instruments into clinical use and commercialization.

Nadine N. Aubry, Northeastern University

Nadine N. Aubry, Ph.D., is a University Distinguished Professor and the Dean of the College of Engineering at Northeastern University. She is known for her contributions to low-dimensional modeling of turbulent flows and her work on microfluidics, including judicious micromixers and innovative particle manipulation techniques. She is a member of the National Academy of Engineering, and a Fellow of the American Physical Society, the American Society of Mechanical Engineers, the American Association for the Advancement of Science and the American Institute of Aeronautics and Astronautics. She is a former chair of the National Academies' U.S. National Committee on Theoretical and Applied Mechanics and past chair of the American Physical Society's Division of Fluid Dynamics. Prior to joining Northeastern, she was Head of Mechanical Engineering at Carnegie Mellon University where she had been appointed the Lane Distinguished Professor and University Professor. She received her Ph.D. in Mechanical and Aerospace Engineering in 1987 from Cornell University.

David Baltimore, California Institute of Technology

David Baltimore, Ph.D., is President Emeritus and Robert Andrews Millikan Professor of Biology at the California Institute of Technology in Pasadena, California. He received his B.A. in Chemistry from Swarthmore College in 1960 and a Ph.D. in 1964 from the Rockefeller University. Awarded the Nobel Prize in 1975 in Physiology or Medicine for his research into viral replication that provided the key to understanding the life cycle of retroviruses, Baltimore has profoundly influenced national science policy on such issues as recombinant DNA research and the AIDS epidemic. He is an accomplished researcher, educator, administrator and public advocate for science and engineering and is considered one of the world's most influential biologists. Baltimore's numerous honors include the 1999 National Medal of Science and 2000 Warren Alpert Foundation Prize and he is past-President and Chair of the American Association for the Advancement of Science and has published more than 680 peer-reviewed articles.

Amit Bandyopadhyay, Washington State University

Amit Bandyopadhyay, Ph.D., is the Herman and Brita Lindholm Endowed Chair Professor in the School of Mechanical and Materials Engineering at Washington State University. He received his Ph.D. in Materials Science and Engineering from The University of Texas at Arlington in 1995 and then joined Rutgers University for his post-doctoral training. In 1997, Bandyopadhyay joined WSU as an assistant professor, promoted to an associate level in 2001 and to the full professor level in 2006. His research expertise lies with additive manufacturing of hard materials towards structural and biomedical applications. He has communicated over 250 technical articles. He holds 10 U.S. patents and edited 8 books. He has supervised over 35 graduate students for their degrees in physics, materials and mechanical engineering. Bandyopadhyay is a Fellow of the American Ceramic Society, American Society for Materials, American Institute for Medical and Biological Engineering and American Association for the Advancement of Science.

Joseph J. Beaman, Jr., The University of Texas at Austin

Joseph J. Beaman, Jr., Sc.D., is the Earnest F. Gloyna Chair in Engineering and Professor of Mechanical Engineering at The University of Texas at Austin. His career work has been manufacturing and control. His specific manufacturing research interest is in Solid Freeform Fabrication (3D Printing), a manufacturing technology that produces freeform solid objects directly from a computer model of the object without part-specific tooling or knowledge. Beaman initiated research in the area in 1985 and was the first academic researcher in the field. One of the most successful approaches, Selective Laser Sintering, was a process that was developed in his laboratory. Beaman has been both an inventor and a mentor to inventors during the development of this technology. In particular, he has worked with graduate students, faculty, and industrial concerns on the fundamental technology that span materials, laser scanning techniques, thermal control, mold making techniques, direct metal fabrication, and biomedical applications. He was one of the founders of DTM Corporation (now merged with 3D Systems). He was elected to the National Academy of Engineering in 2013.

James A. Birchler, University of Missouri-Columbia

James A. Birchler, Ph.D., is a Curators' Professor of Biological Sciences at the University of Missouri. Birchler has made experimental and theoretical contributions to genetic studies of both maize and Drosophila systems. His studies have provided insight into gene silencing, centromere epigenetics, heterosis, dosage compensation, aneuploid syndromes, and the evolutionary fate of gene duplications. He is also recognized for developing the first engineered synthetic plant chromosomes as well as for the invention of various chromosome painting and single gene localization protocols. He holds two U.S. patents and four foreign patents for his plant chromosome technology. He has authored over 250 scientific articles, invited reviews and chapters and is associate editor of *The Plant Cell, GENETICS* and *G3.* Birchler is a Fellow of the American Association for the Advancement of Science, an Einstein Professor of the Chinese Academy of Sciences, and a member of the National Academy of Sciences.

Donald R. Bobbitt, University of Arkansas System

Donald R. Bobbitt, Ph.D., currently serves as President of the University of Arkansas System and is a member of the faculty of the Department of Chemistry and Biochemistry. Bobbitt was a member of the team that developed the first laser-based polarimeter suitable for use as a detector in High Performance Liquid Chromatography; it is now commercially marketed by PDR Chiral, Inc. Working with Gary Yanik of PDR Chiral, Bobbitt and his students developed methodology which exploited the bimodal polarimetric signal to characterize partially resolved distributions in process-scale enantio-selective separations. Bobbitt is a recipient of a Camille and Henry Dreyfus Foundation Teacher-Scholar Fellowship. He holds two U.S. patents and has published over 200 peer-reviewed publications, book chapters and presentations. He previously served on the editorial boards of *The Microchemical Journal* and *Talanta,* and now chairs an NIH study section.

Jeffrey T. Borenstein, The Charles Stark Draper Laboratory

Jeffrey T. Borenstein, Ph.D., is Laboratory Technical Staff, the highest distinction among engineers and scientists, at The Charles Stark Draper Laboratory, in Cambridge, Massachusetts. He is a principal investigator for projects involving application of microsystems technology towards engineered tissue constructs, organ assist devices and organ models for drug efficacy and safety testing, as well as implantable drug delivery systems for hearing loss and other diseases. These programs are funded by DARPA, NIH, and several commercial sponsors. Prior to joining Draper in 1994, Borenstein held positions as a research scientist for North American Philips Corporation and Mobil Corporation. He has a Ph.D. in Physics from the University at Albany, SUNY, and holds 35 issued patents, over 60 published patent applications, and has over 100 peer-reviewed journal articles and conference proceedings. His inventions have been licensed to several companies commercializing technologies for applications ranging from automotives and military hardware to medical diagnostics and interventional devices.

H. Kim Bottomly, Wellesley College

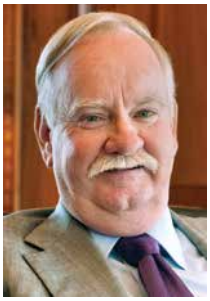
H. Kim Bottomly, Ph.D., is Wellesley College's 13th president and the first scientist to lead the college. Credited with leading Wellesley into a global era, she has received recognition for her work as a strong proponent of women's leadership in higher education, in particular, STEM education (science, technology, engineering, and mathematics), and is frequently quoted as an expert in—and defender of—the benefits of a liberal arts education. A renowned immunobiologist, she served on the Yale University faculty for 27 years before moving to Wellesley. She has received many awards and honors, including induction into the American Academy of Arts and Sciences. She was named one of the University of Washington's 100 most remarkable alumni of the century.

Scott A. Brandt, University of California, Santa Cruz

Scott A. Brandt, Ph.D., is Vice Chancellor for Research and Professor of Computer Science at the University of California, Santa Cruz. His research focuses on computer systems, including storage systems, real-time systems, and system performance management. He has published approximately 140 peer-reviewed papers and articles and has received research grants and gifts totaling over $18 million. Brandt also holds nine patents. Four startup companies have been created based on his research, and many other companies have incorporated his research into their products and projects. His storage system research led to development of the Ceph storage system, now standard in the Linux operating system and supported by Red Hat. Brandt spent 10 years doing research and development in industry before joining the UC Santa Cruz faculty in 1999.

Steven P. Briggs, University of California, San Diego

Steven P. Briggs, Ph.D., is Distinguished Professor of Cell and Developmental Biology at the University of California, San Diego and a member of the National Academy of Sciences. He received his Ph.D. from Michigan State University and spent the first half of his career in industry working as Director/Fellow at Pioneer/DuPont, President of Torrey Mesa Research Institute and Head of Genomics at Syngenta, and Sr. Vice President for Corporate Research at Diversa. Briggs is a plant biologist. He has invented gene technology for plant transformation, reverse genetics, and traits. Briggs is co-founder of the algae biomass production company, Sapphire Energy, Inc. and of the proteomics services company, JadeBio, Inc. His current research is focused on statistical models of genome-wide protein regulation.

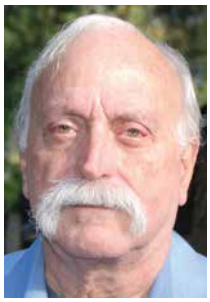


Robert A. Brown, Boston University

Robert A. Brown, Ph.D., has been President of Boston University since 2005. Under his leadership, Boston University was invited to join the Association of American Universities and was ranked 37th in *U.S. News & World Report's* inaugural Best Global Universities in 2014. Brown is a member of the American Academy of Arts & Sciences, the National Academy of Engineering, and the National Academy of Sciences. He is chairman of the Academic Research Council of the Ministry of Education of the Republic of Singapore, and also serves on the Research Innovation and Enterprise Council chaired by the Prime Minister of Singapore. The National Academy of Engineering awarded Brown the Simon Ramo Founders Award in 2014. Previously, Brown was Provost at MIT. He earned B.S. and M.S. degrees in chemical engineering at The University of Texas at Austin, and a Ph.D. from the University of Minnesota.

Karen J.L. Burg, Kansas State University

Karen J.L. Burg, Ph.D., is Vice President for Research at Kansas State University. Honors to Burg include a Presidential Early Career Award for Scientists and Engineers, the inaugural Swiss AO Research Prize, recognition as a Massachusetts Institute of Technology's TR100 Young Innovator, an American Institute for Medical and Biological Engineering Fellow, an American Council on Education Fellow, a U.S. Department of Defense Era of Hope Scholar, and an American Association for the Advancement of Science-Lemelson Invention Ambassador. She has seven patents issued, thirteen disclosures and/or provisional patent applications recorded, with one patent serving as the basis for a diagnostics startup company. Burg 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 ten technologies featured in the inaugural Avon Foundation for Women - National Institutes of Health - Center for Advancing Innovation Breast Cancer Start-Up Challenge.



Robert H. Byrne, University of South Florida

Robert H. Byrne, Ph.D., is a Distinguished University Professor in the College of Marine Science at the University of South Florida. He has made important contributions in the field of marine physical chemistry, developing not only new procedures for characterizing the carbon dioxide (CO_2) system in aqueous environments, but also new instrumentation for measuring nutrients, trace elements, and CO_2 system parameters in freshwater and seawater. He holds 13 U.S. and foreign patents and is one of the co-founders of Ocean Optics, Inc. He has 193 peer-reviewed publications and has served as an associate editor for *Geochemica et Cosmochimica Acta* for more than 20 years. Byrne is a Fellow of the American Geophysical Union and the American Association for the Advancement of Science.

A. Robert Calderbank, Duke University

A. Robert Calderbank, Ph.D., is the Director of the Information Initiative at Duke University, where he is Professor of Electrical Engineering, Computer Science and Mathematics. Before joining Duke in 2010, he directed the Program in Applied and Computational Mathematics at Princeton University. Before joining Princeton University, Calderbank was Vice President for Research at AT&T, where he also managed AT&T intellectual property and was responsible for licensing revenue. At the start of his career at Bell Labs, Calderbank was responsible for research innovations in a progression of voiceband modem standards, starting with V.32, which moved communications practice close to the Shannon limit. With colleagues at AT&T, he developed the idea of correlating signals across different transmit antennas to improve the reliability of wireless communication. Since publication in 1997, this form of coding has progressed to incorporation in a broad range of wireless standards including UMTS, IEEE 802.11n, IEEE 802.16, and IEEE 802.20.

Emily A. Carter, Princeton University

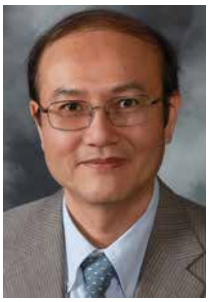
Emily A. Carter, Ph.D., is the Founding Director of the Andlinger Center for Energy and the Environment, the Gerhard R. Andlinger Professor in Energy and the Environment, and Professor of Mechanical and Aerospace Engineering and Applied and Computational Mathematics at Princeton University. She invents and applies quantum mechanics methods to enable design of materials for sustainable energy, holding patents for catalysts with improved thermal stability and more robust coatings for turbine engines. She received her B.S. in Chemistry from UC Berkeley in 1982 (Phi Beta Kappa) and her Ph.D. in Chemistry from Caltech in 1987. The author of over 300 publications, she has delivered more than 470 invited lectures worldwide and serves on numerous advisory boards spanning a wide range of disciplines. Her scholarly work has been recognized by a number of national and international awards and honors, including election to the National Academy of Sciences in 2008.

Alexander N. Cartwright, The State University of New York

Alexander N. Cartwright, Ph.D., is Professor of Electrical Engineering and Biomedical Engineering at the University at Buffalo (UB) and Provost and Executive Vice Chancellor of the State University of New York (SUNY) System. As SUNY's chief academic officer, he supports the SUNY Chancellor and Board of Trustees in oversight of the 64-campus system. He previously served as UB's Vice President for Research and Economic Development. An internationally recognized scholar in optical spectroscopy and sensors, his one-step, low-cost holographic technology for fabricating a rainbow-colored polymer was one of five inventions worldwide named to the Society of Manufacturing Engineer's 2013 list of Innovations that Could Change the Way You Manufacture. He has produced over 150 peer reviewed articles and conference proceedings. He holds six patents and his work has been licensed by three startup companies. He is SPIE Fellow and senior member of IEEE. His Ph.D. is from The University of Iowa.

H. Jonathan Chao, New York University

H. Jonathan Chao, Ph.D., is a Professor of Electrical and Computer Engineering at the New York University Polytechnic School of Engineering, where he joined in January 1992. He was Head of the Department from 2004-2014. Known for his expertise in high-performance switches and routers, his pioneering work is responsible for advances in telecommunications systems, network components, network performance and network security. His research led to the formation of a start-up in 2000, Coree Networks in New Jersey, which developed a multi-terabit Multi-Protocol Label Switching (MPLS) switch router with carrier-class reliability, and he was instrumental in raising $30 million. From 1985-1992, he worked at Telcordia, where he received the Telcordia Excellence Award in 1987. He is a Fellow of the IEEE and has coauthored three networking and switching books, holds over 50 patents, and has published in more than 200 journals and conference papers.



Ching-Shih Chen, The Ohio State University

Ching-Shih Chen, Ph.D., holds the Lucius A. Wing Chair of Cancer Research and Therapy at The Ohio State University Comprehensive Cancer Center and is Professor of Medicinal Chemistry, Internal Medicine and Urology. He earned B.S. and M.S. degrees from National Taiwan University and a Ph.D. in Medicinal Chemistry from the University of Wisconsin. Prior to his current position at OSU, he served as Assistant and Associate Professor of Medicinal Chemistry at the University of Rhode Island, and Associate and full Professor of Pharmaceutical Sciences at the University of Kentucky. Among many honors, Chen was named a University Distinguished Scholar and the inaugural Innovator of the Year at OSU, and is a Fellow of the American Association for the Advancement of Science. Chen leads an internationally recognized drug discovery program that has successfully translated two agents into clinical trials. He has authored over 230 articles (h-index, 57) and holds 23 patents.

Ashutosh Chilkoti, Duke University

Ashutosh Chilkoti, Ph.D., is the Theo Pilkington Professor and the Chair of the Department of Biomedical Engineering at Duke University. Chilkoti was awarded the Clemson Award for Contributions to the Literature by the Society for Biomaterials in 2011, and the Robert A. Pritzker Distinguished Lecture award by the Biomedical Engineering Society in 2013. His areas of research include genetically encoded materials and biointerface science. He has published approximately 250 papers, has been cited approximately 16,000 times, has an h-index of 74, and has 21 patents awarded and 46 in process. He is the founder of three start-up companies: PhaseBio Pharmaceuticals, that has raised $65 million in venture capital funding and has taken the recombinant protein polymer drug delivery technology that he has developed into clinical trials; Sentilus, a clinical diagnostics company that was acquired by Immucor in 2014; and BioStealth, a spinoff of Sentilus.

Arul M. Chinnaiyan, University of Michigan

Arul M. Chinnaiyan, M.D., Ph.D., is an Investigator of the Howard Hughes Medical Institute at the University of Michigan, employing functional genomic/bioinformatic approaches to study cancer for the purposes of understanding cancer biology and developing novel diagnostics/therapeutics. He has characterized a number of cancer alterations including AMACR, EZH2, the sarcosine metabolite, and a landscape of long non-coding RNAs in cancer. Chinnaiyan is best known for discovering recurrent gene fusions/translocations in common solid tumors including the TMPRSS2-ETS fusions in a majority of prostate cancers. The TMPRSS2-ETS fusions have been translated into a non-invasive urine test for prostate cancer called Mi-Prostate Score (MiPS). His laboratory developed the popular cancer bioinformatics resource called Oncomine and, most recently, has been focused on translating massively parallel sequencing into clinical use for personalized oncology (MI-ONCOSEQ). To date, he has 41 patent filings and co-founded three companies including Compendia Biosciences and Oncofusion Therapeutics.

Steven Chu, Stanford University

Steven Chu, Ph.D., is the William R. Kenan, Jr., Professor of Physics and Molecular & Cellular Physiology at Stanford University. His research spans atomic and polymer physics, biophysics, biology, biomedicine and batteries. He shared the 1997 Nobel Prize in Physics for the laser cooling and trapping of atoms. From January 2009 until April 2013, Chu was the 12th U.S. Secretary of Energy and the first scientist to hold a cabinet position since Ben Franklin. During his tenure, he began ARPA-E, the Energy Innovation Hubs, the Clean Energy Ministerial meetings, and was tasked by President Obama to assist BP in stopping the Deepwater Horizon oil leak. Prior to his cabinet post, he was director of the Lawrence Berkeley National Laboratory, Professor of Physics and Molecular and Cell Biology at UC Berkeley, the Theodore and Francis Geballe Professor of Physics and Applied Physics at Stanford University, and head of the Quantum Electronics Research Department at AT&T Bell Laboratories.

James J. Coleman, The University of Texas at Dallas

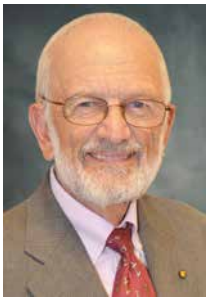
James J. Coleman, Ph.D., is a Professor of Electrical Engineering and of Materials Science and Engineering at The University of Texas at Dallas. He was born in Chicago and received degrees in electrical engineering from the University of Illinois, Urbana-Champaign. After working at Bell Laboratories and Rockwell International, he was professor of Electrical and Computer Engineering at the University of Illinois, Urbana-Champaign and held the Intel Alumni Endowed Chair. In 2013, he joined The University of Texas at Dallas. His work involves the development of novel quantum-well and nanostructure strained-layer semiconductor diode lasers and other photonic devices. Coleman has produced more than 425 journal papers, 13 book chapters, 10 U.S. patents and 100 invited presentations. He has been awarded the John Tyndall Award, the IEEE David Sarnoff Award, and the OSA Nick Holonyak, Jr. Award. He is a member of the U.S. National Academy of Engineering and a Fellow of the IEEE, OSA, SPIE, APS, and AAAS and was president of the IEEE Photonics Society from 2010 to 2011.

J. Edward Colgate, Northwestern University

J. Edward Colgate, Ph.D., is the Allen and Johnnie Breed University Design Professor and a member of the Department of Mechanical Engineering at Northwestern University. Colgate's principal research interest is human-robot interaction. He has worked extensively in the areas of haptic (tactile) interface and teleoperation, and he, along with collaborator Michael Peshkin, is the inventor of a class of collaborative robots known as "cobots," as well as an extensive suite of technologies for haptic interface via touch surfaces. Colgate was the founding editor-in-chief of the IEEE Transactions on Haptics and he is a Fellow of the IEEE. He has also been active in design education at Northwestern University, helping to establish the Segal Design Institute. In addition to his academic pursuits, Colgate has founded three companies.

Barry S. Coller, The Rockefeller University

Barry S. Coller, M.D., is the David Rockefeller Professor of Medicine, Physician-in-Chief of The Rockefeller University Hospital and Vice President for Medical Affairs at The Rockefeller University. He previously was Chairman of the Samuel Bronfman Department of Medicine at Mount Sinai School of Medicine. Coller received his M.D. from New York University School of Medicine and trained in internal medicine at Bellevue Hospital and hematology at the National Institutes of Health. He joined the faculty at Stony Brook in 1976 and rose to Professor of Medicine and Pathology at Stony Brook in 1982. Coller is a member of the American Society of Clinical Investigation, Institute of Medicine and the National Academy of Sciences of the National Academies. He is also a Fellow of the American Academy of Arts & Sciences. Coller is an inventor on 14 U.S. patents related to blood clotting and heart disease.



R. Graham Cooks, Purdue University

R. Graham Cooks, Ph.D., is the Henry B. Hass Distinguished Professor of Analytical Chemistry at Purdue University. He is a pioneer in the application of mass spectrometry for the analysis of complex chemical mixtures using two stages of mass analysis (MS/MS). He is also noted for introducing direct ambient ionization methods, including desorption electrospray ionization (DESI), and their applications in biofluid and tissue point-of-care diagnostics and forensics. His innovations include new types of mass spectrometers such as hybrid and handheld instruments and scanning methods like multiple reaction monitoring (MRM) and neutral loss scans. He introduced ion soft landing as a method of controllably modifying surfaces as well as the use of mass spectrometry to synthesize and collect macroscopic amounts of chemical compounds. Several of his inventions have been commercialized and four companies launched from his laboratory.

Rory A. Cooper, University of Pittsburgh

Rory A. Cooper, Ph.D., is FISA Foundation & Paralyzed Veterans of America Chair and Distinguished Professor of the Department of Rehabilitation Science & Technology at the University of Pittsburgh. He is also Founding Director and VA Senior Research Career Scientist of the Human Engineering Research Laboratories. Cooper has authored or co-authored 300 journal publications, has 15 patents awarded or pending, and is the author of two books: *Rehabilitation Engineering Applied to Mobility & Manipulation* and *Wheelchair Selection & Configuration,* and co-editor of *Introduction to Rehabilitation Engineering, Warrior Transition Leader: Medical Rehabilitation Handbook,* and *Care of the Combat Amputee.* He was recognized in the U.S. Congressional Record on July 27, 2009. In August 2010, his work in robotics to aid people with disabilities was featured in *Popular Science.* In September 2014, *PN Magazine* recognized Cooper as having transformed the lives of people with spinal cord injury.

Harold G. Craighead, Cornell University

Harold G. Craighead, Ph.D., is a Professor of Applied and Engineering Physics and the Charles Lake Jr. chaired Professor of Engineering at Cornell University. He was a Member of Technical Staff at Bell Laboratories and a Research Manager at Bellcore. Craighead served as the Director of the National Nanofabrication Facility and was the founding Director of the Nanobiotechnology Center. He is a member of the National Academy of Engineering and a Fellow of several scientific societies. His research has focused on nanofabrication and applications of nano-scale devices. Research projects include studies of nanomechanical systems, chemical sensors, and biomolecular analysis. He has been active in commercialization of academic research and is an inventor on 63 issued U.S. patents. He co-founded Nanofluidics, Inc., now Pacific Biosciences of California, a company based on single-molecule DNA sequencing technology.

Charles S. Craik, University of California, San Francisco

Charles S. Craik, Ph.D., currently serves as a Professor of Pharmaceutical Chemistry and Director of Chemistry and Chemical Biology Graduate Group at UCSF. Craik is internationally known for his work on proteolysis, both fundamental studies and the application of that knowledge to the diagnosis, monitoring and treatment of human disease. He is Phi Beta Kappa, named to the Top 100 Innovators (*Science Digest*), and a member of the Council of Experts, United States Pharmacopeia. He holds 10 U.S. patents and nine have been licensed. He co-founded Catalyst Biosciences and Alaunus Biosciences. He serves on several industry scientific advisory boards and is very active in pharma and biotech consulting. He has published 292 articles and serves as a reviewer for the NIH, NSF, *Science, Nature,* and *PNAS.* Craik is a Fellow of AAAS and been awarded several prestigious lectureships, including the Institute Medal Lecture, Academy of Sciences Prague.

Alfred J. Crosby, University of Massachusetts Amherst

Alfred J. Crosby, Ph.D., is a Professor in Polymer Science & Engineering at the University of Massachusetts Amherst. He has contributed significantly to the science and technology of soft materials, especially in the context of adhesion and bio-inspired materials. He received his B.S. degree in Civil Engineering and Applied Mechanics at the University of Virginia in 1996 and his Ph.D. in Materials Science and Engineering at Northwestern University in 2000. He has received numerous awards, including the National Science Foundation CAREER Award and the Army Research Office Young Investigator Award, and his research has been covered extensively in the popular media, including *CNN Money/Fortune Magazine,* which named his Geckskin™ technology one of the 5 Science Breakthroughs of 2012. He has served on several industrial advisory boards, consulted for numerous *Fortune 500* companies, and is the Scientific Founder of Felsuma, LLC, which holds the exclusive license for the Geckskin™ technology.

Marcos Dantus, Michigan State University

Marcos Dantus, Ph.D., is a Professor of Chemistry at Michigan State University. He has pioneered the use of spectrally and temporally shaped ultrafast pulses to probe molecular properties, control chemical reactions, and for practical applications such as biomedical imaging, proteomics, and standoff detection of explosives. Dantus' development of automated laser pulse compression is enabling research around the world. Dantus is a Fellow of the Optical Society of America, has over 196 publications, and was named Inventor of the Year by Michigan State University given his 43 invention disclosures, 22 issued patents and more pending. Dantus has founded two companies, KTM Industries in 1998, and Biophotonic Solutions in 2003, the company that is commercializing automated femtosecond pulse compression. He serves as Chairman and CTO. Dantus is also the Director of Research and Development of Total Power Inc., for which he formulated a biodegradable fuel additive primarily used in the mining industry to increase fuel efficiency and reduce emissions.

Huw M.L. Davies, Emory University

Huw M.L. Davies, Ph.D., is the Asa Griggs Candler Professor of Organic Chemistry at Emory University. His research focuses on the development of new enantioselective synthetic methods. His program covers design of chiral catalysts, metal carbene chemistry, development of new synthetic methodology, total synthesis of biologically active natural products, and development of chiral therapeutic agents. A major current theme of his program is catalytic asymmetric C–H functionalization by means of rhodium-carbene induced C–H insertion. He is currently the Director of the NSF Phase II Center for Chemical Innovation for Selective C-H Functionalization. He has many awards including the American Chemical Society Cope Scholar Award and the 2013 Encyclopedia of Reagents for Organic Synthesis Reagent of the Year Award. He is an elected Fellow of the Royal Society of Chemistry, the American Chemical Society, and the American Association for the Advancement of Science.

Mark R.D. Davies, University of Limerick

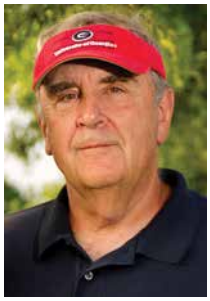
Mark R.D. Davies, Ph.D., is a Professor of Engineering Science at the University of Limerick in Ireland. He is an engineering graduate from Bath University in the UK. He received a Ph.D. from Cambridge and did his post-doctoral training at Oxford. Davies is the founder of many companies including the Stokes Institute and Stokes Bio. Stokes Bio sold in 2010 for $44 million. Davies was granted two U.S. patents and over 70 patents and patent applications bear his name from the Stokes Bio sale. In 2013 he formed Hooke Bio, a drug discovery company. This year, five patent applications have been filed with Davies as a named inventor.

Mark E. Dean, The University of Tennessee, Knoxville

Mark E. Dean, Ph.D., is Fisher Distinguished Professor at the University of Tennessee College of Engineering. His research focus is in advanced computer architecture (beyond Von Neumann systems), data centric computing, data analytics and computational sciences. Prior to joining UT, Dean was Vice President of World Wide Strategy and Operations for IBM Research, responsible for setting the direction of IBM's overall research strategy across eight worldwide labs and leading the global operations and information systems teams. During his career at IBM, Dean led several research and development teams including the IBM PC/AT. Of his 39 patents, Dean holds three of the nine patents for the original IBM PC. Dean received his B.S. in Electrical Engineering from the University of Tennessee and his Ph.D. in Electrical Engineering from Stanford University. He is a Fellow of the AAAS, NAE, IEEE and was inducted into the National Inventors Hall of Fame.

Richard D. DiMarchi, Indiana University

Richard D. DiMarchi, Ph.D., is the Cox Distinguished Professor of Biochemistry and Gill Chair in Biomolecular Sciences at Indiana University. His contributions in peptide and protein sciences consist of three decades of work in academia, the pharmaceutical industry and biotechnology companies. He is a co-founder of Ambrx, Inc., Marcadia Biotech, Assembly, Calibrium and MB2 Biotech. He has served as a scientific advisor to multiple pharmaceutical companies and three venture funds. He is Chairman of the Peptide Therapeutics Foundation. DiMarchi is a former executive at Eli Lilly & Company where he provided leadership in biotechnology, endocrine research and product development. He is recognized for the discovery and development of rDNAderived Humalog® (LisPro-human insulin). As scientist and executive, DiMarchi also significantly contributed to the commercial development of Humulin®, Humatrope®, rGlucagon®, and Forteo®. His current research is focused on developing macromolecules with enhanced therapeutic properties, an approach he has termed chemical-biotechnology.



Michael A. Dirr, The University of Georgia

Michael A. Dirr, Ph.D., is Professor Emeritus of Horticulture at The University of Georgia. He received his B.S. and M.S. in Horticulture from The Ohio State University and his Ph.D. in Plant Physiology from the University of Massachusetts. He previously served as Assistant and Associate Professor at the University of Illinois. While at The University of Georgia, he served as Director of the university's botanical garden and taught landscape plant taxonomy, propagation and introductory horticulture. He is currently a partner in Plant Introductions, Inc., a private breeding company with 45 plant patents issued or in review. He has mentored and advised undergraduate, masters and Ph.D. students, and published 50 scientific articles, over 300 popular and trade articles and 12 books. Dirr introduced 150 trees and shrubs into commerce with 40 patents granted during his Georgia tenure and is the recipient of UGA's 2009 Inventor of the Year award.

Richard A. Dixon, University of North Texas

Richard A. Dixon, Ph.D., is a Distinguished Research Professor in the Department of Biological Sciences at the University of North Texas. He was Director of the Plant Biology Division at the Samuel Roberts Noble Foundation from 1988-2013. He received his bachelor's and doctoral degrees in Biochemistry and Botany from Oxford University, UK. His research centers on the biosynthesis and engineering of plant natural product pathways and the improvement of forage and bioenergy feedstocks. He has published over 450 papers and chapters on these and related topics in international journals. Dixon is a Member of the National Academy of Sciences, a Fellow of the American Association for the Advancement of Science, a member of the editorial boards of five international journals, and has been named by the Institute for Scientific Information as one of the 10 most cited authors in the plant and animal sciences.

John P. Donoghue, Brown University

John P. Donoghue, Ph.D., is the Director of the Institute for Brain Science and is the Henry Merritt Wriston Professor of Neuroscience and Engineering at Brown University. He is a neuroscientist known for pioneering work in brain computer interfaces and basic research on how the cerebral cortex transforms plans into action. He has translated his basic work to create BrainGate, a novel brain computer interface designed to restore control for people with paralysis. His team of engineers, clinicians and neuroscientists has taken BrainGate from preclinical research to human clinical pilot trials. Donoghue is a member of the Institute of Medicine and the American Academy of Arts & Sciences and was a member of the U.S. BRAIN initiative's NIH Working Group. His awards include the first Israeli Brain Technology Prize in 2013. His work has been widely reported in media including the *New York Times,* CBS '60 Minutes', and the Charlie Rose Show Brain Series.

Jonathan S. Dordick, Rensselaer Polytechnic Institute

Jonathan S. Dordick, Ph.D., is Vice President for Research and Howard P. Isermann Professor of Chemical and Biological Engineering at Rensselaer Polytechnic Institute. Dordick received his B.A. degree in Biochemistry and Chemistry from Brandeis University and his Ph.D. in Biochemical Engineering from MIT. Prior to RPI, he held a chemical engineering faculty appointment at the University of Iowa. His research interests involve gaining a quantitative understanding of biological principles and applying them to advance bioengineering, nanobiotechnology, drug discovery, and biomanufacturing. He has received the 2007 Marvin J. Johnson Award and Elmer Gaden Award of the American Chemical Society, the International Enzyme Engineering Award and an NSF Presidential Young Investigator Award. He is a Fellow of the ACS, AAAS, and the American Institute of Medical and Biological Engineers. He has founded several biotech and bioenergy companies, has published over 330 papers, and is an inventor/co-inventor on nearly 40 patents.

Jennifer A. Doudna, University of California, Berkeley

Jennifer A. Doudna, Ph.D., is a Professor and Li Ka Shing Chancellor's Chair in Biomedical and Health Sciences at the University of California, Berkeley. Her research seeks to understand how RNA molecules control the expression of genetic information. Doudna's research led to insights about CRISPR-Cas9-mediated bacterial immunity that enabled her lab and that of collaborator Emmanuelle Charpentier to re-design this system for efficient genome engineering in animals and plants. Doudna is a Howard Hughes Medical Institute investigator and a member of the National Academy of Sciences, the American Academy of Arts & Sciences and the Institute of Medicine. She is a recipient of numerous awards including the NSF Waterman Award, the FNIH Lurie Prize, the Paul Janssen Award for Biomedical Research and the Breakthrough Prize in Life Sciences.

Anatoly Dritschilo, Georgetown University

Anatoly Dritschilo, M.D., FACR, is a physician-scientist and Chairman of the Department of Radiation Medicine at Georgetown University. He received his B.S. from the University of Pennsylvania, his M.S. from Newark College of Engineering and his M.D. from the University of Medicine and Dentistry of New Jersey and served his residency in radiation oncology at the Joint Center for Radiation Therapy, Harvard Medical School. His experience includes clinical cancer care, clinical research, basic research in radiation biology, and administrative leadership. His studies of the molecular mechanisms of cancer resistance to cure by radiation therapy have led to identification of molecular targets for radiation sensitization of cancers and protection of normal tissues. This research has been funded by the NIH and biotech industry and underlies the invention of novel therapeutics and technologies to improve cancer treatment. He is co-inventor of novel drugs, as well as DNA delivery and radiation delivery technology.

Robert V. Duncan, Texas Tech University

Robert V. Duncan, Ph.D., is Vice President for Research and a Professor of Physics at Texas Tech University (TTU). He formerly served as Vice Chancellor for Research at the University of Missouri (MU). He was the Gordon and Betty Moore Distinguished Scholar in the Division of Physics, Mathematics, and Astronomy at Caltech in 2004–2005. Duncan has published extensively in low-temperature physics, and he chaired a Panel of the National Academy of Sciences on the Future of Fundamental Physics in Space in 2011. He holds 10 U.S. patents with multiple international filings. In 2004, Duncan co-invented a less-invasive type of percutaneous and intravascular cryosurgery that is currently in human clinical trials and which is based upon a genuinely new cryogenic technology. As an administrator, Duncan has supported innovation broadly within academia, and has started new student entrepreneurial programs at both TTU and MU.

Russell D. Dupuis, Georgia Institute of Technology

Russell D. Dupuis, Ph.D., is a Professor of Electrical and Computer Engineering at the Georgia Institute of Technology. He earned his B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois at Urbana-Champaign. He was a Member of Technical Staff at Texas Instruments (1973-1975). He was a Member of Technical Staff (MTS) at Rockwell International (1975-1979) where he was the first to demonstrate that MOCVD could be used for the growth of high-quality semiconductor thin films and devices, including the first room-temperature quantum-well diode lasers. He was an MTS (1979-1986) and a Distinguished MTS (1986-1989) in Physics Research at AT&T Bell Laboratories. From 1989-2003, he was a chaired professor in ECE at The University of Texas at Austin. Since 2003, he has been a chaired professor in ECE at the Georgia Institute of Technology. He is currently studying the growth of III-V compound semiconductor devices by MOCVD, including materials in the InAlGaN, InAlGaP, InAlGaAsSb, and InAlGaAsP systems for optoelectronic and electronic applications.

Victor J. Dzau, Duke University

Victor J. Dzau, M.D., is President of the Institute of Medicine of the National Academy of Sciences, USA. He is Chancellor Emeritus and James B. Duke Professor of Medicine at Duke University. Previously, he was Chairman of Medicine at Harvard and Stanford Universities. Dzau's research on the renin angiotensin system led to the development of widely used lifesaving drugs. He pioneered gene therapy for vascular disease, and his recent work on microRNA in direct reprogramming provides a novel strategy for regenerative medicine. He holds 17 patents and founded Corgentech and Clerigen Inc. He was a member of the Advisory Committee to the Director of NIH, chaired the NIH Cardiovascular Advisory Committee and currently chairs the Steering Committee of the NIH Cardiovascular Progenitor Cell Biology Consortium. Formerly, he served as chair of the Scientific Advisory Board of CV Therapeutics, and member of the board of directors of Genzyme, Medtronic and Alnylam Inc. Among his honors are the Gustav Nylin Medal, the Max Delbruck Medal, the Polzer Prize from the European Academy of Sciences and Arts, and Distinguished Scientist Award from the American Heart Association. He has received six honorary doctorates.

James H. Eberwine, University of Pennsylvania

James H. Eberwine, Ph.D., is the Elmer Holmes Bobst Professor of Systems Pharmacology and Experimental Therapeutics at the University of Pennsylvania. Eberwine pioneered the field of Single Cell Biology and has published more than 200 papers and over 160 issued and pending patents. Eberwine was a member of the Board of Scientific Counselors for NIDA, is a member of the NIAAA Council and a member of the MCWG of the Brain Initiative. Eberwine originated and directed the Cold Spring Harbor Laboratory Course formerly entitled "Cloning of Neural Genes" and now called "Advanced Techniques in Neuroscience". More recently, he developed and directed the CSHL Course "Single Cell Techniques". Among the honors that Eberwine has received are two NARSAD Distinguished Investigator Awards, an NIH MERIT, the NIH Director's Pioneer Award, an Ellison Foundation Senior Scholar Award and the McKnight Technological Innovations in Neuroscience Award.

Elazer R. Edelman, Massachusetts Institute of Technology

Elazer R. Edelman, M.D., Ph.D., is the Thomas D. and Virginia W. Cabot Professor of Health Sciences and Technology at the Massachusetts Institute of Technology. He also holds faculty appointments at Harvard Medical School. He is Senior Attending Physician at Brigham and Women's Hospital. Edelman's research leverages controlled drug delivery, growth factor biochemistry, tissue engineering, biomaterials-tissue interactions, and continuum mechanics to examine tissue repair. He has pioneered fundamental findings in endothelial and vascular biology, and the homology between paracrine and angiocrine regulation in cancer and vascular diseases. In the applied domain, he has propelled biotechnology, e.g., helping optimize bare metal and drug-eluting stents and other emerging devices. Many findings are in clinical trial validation. Almost 300 students and postdoctoral fellows have passed through Edelman's laboratory, enabling publications of numerous papers and patents. As Chief Scientific Advisor of *Science: Translational Medicine,* member of the FDA Science Board and member of the National Academies, he has set the tone for the national debate on translational research and innovation.

J. Gary Eden, University of Illinois at Urbana-Champaign

J. Gary Eden, Ph.D., is the Gilmore Family Professor in the Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. He received his Ph.D. degree in Electrical Engineering from the University of Illinois, Urbana, in 1976 and conducted research in laser physics in the Optical Sciences Division of the U.S. Naval Research Laboratory between 1975 and 1979. Eden has authored more than 300 publications and 71 awarded patents, and is a Fellow of the IEEE, the Optical Society of America, the American Physical Society, the AAAS, and the SPIE. He has received numerous awards, including the IEEE Third Millennium Medal (2000), the IEEE/LEOS Aron Kressel Award (2005), the C.E.K. Mees Medal of the Optical Society of America (2007), and the Fulbright-Israel Distinguished Chair in the Natural Sciences and Engineering (2007-2008). Eden is a co-founder of Eden Park Illumination (2007) and EP Purification (2010), and was the recipient of the Harold E. Edgerton Award of SPIE in 2010. Eden is a member of the National Academy of Engineering.

Jennifer H. Elisseeff, Johns Hopkins University

Jennifer H. Elisseeff, Ph.D., is the Jules Stein Professor and directs the Translational Tissue Engineering Center at Johns Hopkins University. She received a Bachelor's degree in Chemistry from Carnegie Mellon University and a Ph.D. in Medical Engineering from the Harvard-MIT Division of Health Sciences and Technology. Elisseeff was a Fellow at the National Institute of General Medical Sciences Pharmacology Research Associate Program in the National Institute of Dental and Craniofacial Research. She has started a number of companies and serves as an SAB member. Elisseeff has received awards including the Carnegie Mellon Young Alumni Award and was named by *Technology Review* magazine as a top innovator under 35 in 2002 and top 10 technologies to change the future. In 2008, Elisseeff was elected a Fellow in the American Institute for Medical and Biological Engineering and a Young Global Leader in the World Economic Forum.

David A. Evans, Harvard University

David A. Evans, Ph.D., is the Abbott and James Lawrence Professor Emeritus of Chemistry at Harvard University. He was born in Washington, D.C. in 1941. He received his A.B. degree from Oberlin College in 1963. He subsequently obtained his Ph.D. at the California Institute of Technology in 1967 in the general area of organic synthesis. In that year, he joined the faculty at the University of California, Los Angeles. In 1974, he returned to Caltech where he remained until 1983. In that year, he joined the faculty at Harvard University in the Chemistry Department. In 1990, he was appointed to his current position. Evans was elected into the National Academy of Sciences in 1984, the American Academy of Arts & Sciences in 1988, a Fellow of the Royal Society of Chemistry in 2008, and Humboldt Senior Scientist in 2008. Evans also received the Phi Beta Kappa Teaching Prize for Contributions to Undergraduate Education at Harvard in 2007.

Sir Martin J. Evans, Cardiff University

Sir Martin Evans, D.Sc., Ph.D., currently serves as Chancellor of Cardiff University. In 1969 he was awarded a Ph.D. from University College, London. He joined the Cardiff University School of Biosciences in 1999. He was the first scientist to identify embryonic stem cells, which can be adapted for a wide variety of medical purposes. In 2007, he was awarded the Nobel Prize for Medicine for "ground-breaking discoveries concerning embryonic stem cells and DNA recombination in mammals." Sir Martin has published more than 120 scientific papers. He was elected a Fellow of the Royal Society in 1993 and in 2001 was awarded the Albert Lasker Medal for Basic Medical Research in the U.S. He was knighted in 2004 and was awarded the Gold Medal of the Royal Society of Medicine in 2009, both in recognition of his valuable contribution to medicine. In 2009 he received the Copley Medal, the Royal Society's oldest award, joining an eminent list of previous recipients including Albert Einstein.

Gregg B. Fields, Torrey Pines Institute for Molecular Studies

Gregg B. Fields, Ph.D., is a Professor and Chair of the Department of Chemistry & Biochemistry, Florida Atlantic University, and a Member of the Torrey Pines Institute for Molecular Studies and The Scripps Research Institute. His research interests are in the use of chemical approaches to better understand how protein three-dimensional structures influence cellular and enzymatic behaviors, with a focus on collagen-mediated diseases. Fields' laboratory developed collagen mimetics and utilized these for diagnostic, therapeutic, and biomaterial applications. His honors and awards include a University of Minnesota McKnight-Land Grant Professorship, a National Institutes of Health Research Career Development Award, an Association of Biomolecular Resource Facilities Excellence Award in Peptide Synthesis Research, a Distinguished Visiting Professorship at Imperial College London, a Texas Higher Education Science and Technology Acquisition and Retention Award, a Robert A. Welch Foundation Distinguished University Chair in Chemistry, and a Distinguished Chair of Metalloproteinase and Multiple Sclerosis Research.

Stephen R. Forrest, University of Michigan

Stephen R. Forrest, Ph.D., is the William Gould Dow Collegiate Professor of Electrical Engineering and Computer Science at the University of Michigan. He received his Ph.D. in Physics from the University of Michigan. Forrest worked at Bell Labs in New Jersey until 1985, when he joined the University of Southern California Electrical Engineering and Materials Science departments. In 1992, he moved to Princeton University as Director of the National Center for Integrated Photonic Technology and in 2006, returned to the University of Michigan as Vice President for Research. Forrest is recognized for his innovations in organic LEDs, organic thin films, photodetectors for optical communications systems and phosphorescent OLEDs. He is the author on over 550 papers and 263 issued U.S. patents and the co-founder of several companies including: Sensors Unlimited, Epitaxx, Inc., NanoFlex Power Corporation, Universal Display Corp. and ASIP, Inc.

Michael W. Fountain, University of South Florida

Michael W. Fountain, Ph.D., MBA, is the John and Beverley Grant Endowed Chair in Entrepreneurship at the Muma College of Business, and Professor in the College of Engineering and in the College of Medicine at the University of South Florida. He received his Honors B.S. from Samford University, M.S., and Ph.D. from Auburn University College of Veterinary Medicine and MBA from Bristol University. He is the Founding Director for the USF Interdisciplinary Center for Entrepreneurship. From 1997 until 2002, he served in various senior leadership roles, including Director of the USF Research Foundation, Entrepreneur-in-Residence at the Kauffman Foundation, and Program Director for the Kauffman Fellows Program. From 1981 until 1996, he was the founder or co-founder of 11 life science, medical device and biotechnology companies. He is the inventor on over 70 U.S. and foreign patents used in over 100 healthcare products around the world.

Ingrid Fristch, University of Arkansas

Ingrid Fritsch, Ph.D., is a Professor in the Department of Chemistry and Biochemistry at the University of Arkansas. She received a B.S. degree from the University of Utah and a Ph.D. from the University of Illinois at Urbana-Champaign and was a postdoctoral associate at the Massachusetts Institute of Technology. Fritsch has pioneered the field of redox-magnetohydrodynamic microfluidics and developed multifunctional miniaturized analytical devices and sensors, including protein and DNA-hybridization microarrays interfaced to electrochemical detection. This work is important in developing portable devices for environmental and point-of-care chemical analysis. She is the recipient of the 1997 Society of Electroanalytical Chemistry Young Investigator Award, a National Science Foundation CAREER Award, an NSF Special Creativity Extension, and an American Chemical Society Chemistry Ambassadorship. She holds 10 issued U.S. patents (nine licensed), co-founded two startup companies, and currently serves as a Member of the Board of Directors of SFC Fluidics, Inc. (Fayetteville, AR).

Cynthia M. Furse, The University of Utah

Cynthia M. Furse, Ph.D., is Associate Vice President for Research at The University of Utah and Professor of Electrical and Computer Engineering. Furse has developed novel methods for locating faults on live electrical wiring and is a founder of LiveWire Innovation, which is commercializing this technology. She has also developed antennas for use in the human body and novel advancements to the FDTD electromagnetic simulation method. Furse is also an innovative educator and leader in the flipped classroom initiative and has received numerous awards for her teaching. Furse works to interest young students in engineering and routinely volunteers in Utah's K-12 schools. She is a Fellow of the Institute of Electrical and Electronics Engineers.

Elsa M. Garmire, Dartmouth College

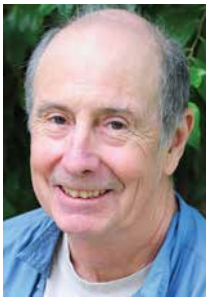
Elsa M. Garmire, Ph.D., is the Syndey E. Junkins 1887 Professor of Engineering at Dartmouth College. She is a member of the National Academy of Engineering and the American Academy of Arts & Sciences. Previously, she was at University of Southern California as the William Hogue Professor of Electrical Engineering. A Fellow of IEEE, OSA and APS, she has been on all three governing boards and served as OSA President. An expert on nonlinear optics and opto-electronics, including integrated optics, photonics, lasers, detectors and fibers, she has 14 U.S. patents, 250 papers and 30 Ph.D. awardees. She has consulted with industry in the U.S. and internationally, worked at two government laboratories, and started the laser light show "Laserium."

Samuel H. Gellman, University of Wisconsin-Madison

Samuel H. Gellman, Ph.D., is the Ralph F. Hirschmann Professor of Chemistry at the University of Wisconsin–Madison. Gellman is a pioneer in the development of "foldamers", biopolymer-mimetic oligomers that display discrete conformations. His laboratory has advanced our understanding of protein folding, developed new bioactive polymers and invented novel detergents for membrane protein crystallization. These achievements have been recognized by honors that include the Cope Scholar Award, Hirschmann Award in Peptide Chemistry and Breslow Award in Biomimetic Chemistry from the American Chemical Society, and the du Vigneaud Award from the American Peptide Society. Gellman is an inventor on 26 patents, some of which have been licensed to Anatrace, Avanti Polar Lipids and Longevity Biotech. Gellman is a co-founder of Longevity Biotech. Gellman's laboratory has published over 300 papers. He is a Fellow of the National Academy of Sciences and the American Academy of Arts & Sciences.

Amit Goyal, Oak Ridge National Laboratory

Amit Goyal, Ph.D., is a Corporate Fellow & Distinguished Scientist and a Battelle Distinguished Inventor at the Oak Ridge National Laboratory. He has co-authored over 350 publications and has over 80 issued patents. A recent analysis of citations and papers published worldwide in the field of high-temperature superconductivity, between 1999 and 2009, conducted by Thompson-Reuters's Essential Science Indicators, ranked him as the most cited author worldwide. He has received numerous awards of excellence including the prestigious 2012 World Technology Award in Materials, the 2012 DOE's E.O. Lawrence Award in the inaugural category of Energy Science & Innovation, the 2010 *R&D Magazine's* Innovator of the Year Award, eight R&D100 Awards, three Federal Laboratory Consortia (FLC) Awards, MIT's TR-100 Innovator Award and the University of Rochester's Distinguished Scholar Medal. He is a Fellow of eight professional societies including the AAAS, MRS, APS, WIF, IOP, WTN, ASM and ACERS.

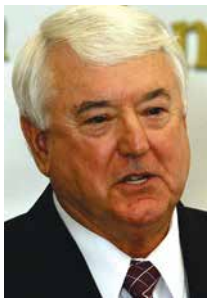


Bruce D. Hammock, University of California, Davis

Bruce D. Hammock, Ph.D., is a Distinguished Professor of Entomology at the University of California, Davis. He has made major innovations in multiple fields. Most recently, his laboratory found potent enzyme inhibitors that dramatically reduce inflammation, inflammatory pain and neuropathic pain. Through EicOsis, the compounds are in clinical trials for companion animals and pre-IND for neuropathic pain in human diabetics. He is developing both enzyme inhibitors and natural products as drugs for use in the U.S. and developing countries. In agriculture, his laboratory developed the first recombinant viruses as green insecticides, while in environmental chemistry, they pioneered the use of immunodiagnostics for environmental analysis and biosensor development, currently applying alpaca nanobodies to sensor technology. Hammock is a member of the U.S. National Academy of Sciences and is founder and CEO of EicOsis.

Justin Hanes, Johns Hopkins University

Justin Hanes, Ph.D., is the Lewis J. Ort Endowed Professor of Ophthalmology and Director of the Center for Nanomedicine at the Wilmer Eye Institute of the Johns Hopkins University School of Medicine, where he holds faculty appointments in the departments of Biomedical Engineering, Chemical & Biomolecular Engineering, Environmental Health Sciences, Neurosurgery, Oncology, Ophthalmology, and Pharmacology & Molecular Sciences. He is an inventor on more than 200 patents and patent applications focused in the area of advanced delivery systems that make drugs safer and more effective. A few companies have been launched based on these patents, including Kala Pharmaceuticals and GrayBug, which were founded based on patents from his lab at Johns Hopkins. Two companies based on his colleagues' and his patents have had highly successful exits. Two Phase III and three Phase II human clinical trials are currently ongoing to treat diseases ranging from Parkinson's to dry eye. He was recently named to "The World's Most Influential Scientific Minds: 2014" by Thompson Reuters based on his high number of highly cited papers (top 1% in their field) over the past 10 years.



Frank W. Harris, The University of Akron

Frank W. Harris, Ph.D., is internationally known for his work in condensation polymerization and has been active in the field for over 35 years. He is Distinguished Professor Emeritus of Polymer Science and Biomedical Engineering at The University of Akron. Following his academic career, he founded and currently serves as President and Chief Executive Officer of Akron Polymer Systems, a university start-up company. Akron Polymer Systems is active in the commercialization of polyimides and other high performance aromatic polymers including polyquinoxalines and polyimidazoles. He is also known for the development of polymer structure/property relationships used in the development of commercial products. In collaboration with Dr. Stephen Cheng of The University of Akron, he invented a polyimide optical compensation film, which was licensed and has generated more than $1 billion in sales. His start-up company continues to invent and commercialize high performance coatings for demanding applications in optics, electronics and aerospace applications. Harris is the author on 41 issued U.S. patents.

Vikki Hazelwood, Stevens Institute of Technology

Vikki Hazelwood, Ph.D., currently serves as Director of the Biomedical Engineering Program at Stevens Institute of Technology. She has been PI or Investigator for more than a dozen clinical trials aimed at bringing new technologies to practice. She has developed and led a program that formally indoctrinates all of her students to the invention process. Hazelwood received the Advancement of Invention Award from the New Jersey Inventors Hall of Fame and multiple awards for teaching excellence at Stevens. She holds four U.S. medical device patents with her student co-inventors. Three patents have been licensed to three different companies including one start-up company that she founded, and her students remained engaged in these companies after graduation. She has written 25 articles, one book, and two book chapters related to innovation-education and advancing medical technology. Currently, Hazelwood is President of the Stevens chapter of the National Academy of Inventors and a member of AIMBE.

Maurice P. Herlihy, Brown University

Maurice P. Herlihy, Ph.D., is a Professor of Computer Science at Brown University. He has an A.B. in Mathematics from Harvard University, and a Ph.D. in Computer Science from M.I.T. He has served on the faculty of Carnegie Mellon University and on the staff of DEC Cambridge Research Lab. He is the recipient of the 2003 Dijkstra Prize in Distributed Computing, the 2004 Gödel Prize in theoretical computer science, the 2008 ISCA influential paper award, the 2012 Edsger W. Dijkstra Prize, and the 2013 Wallace McDowell award. He received a 2012 Fulbright Distinguished Chair in the Natural Sciences and Engineering Lecturing Fellowship, and he is a Fellow of the ACM and a member of the National Academy of Engineering.

John C. Herr, University of Virginia

John C. Herr, Ph.D., is Professor of Cell Biology, Biomedical Engineering, Urology, and Obstetrics and Gynecology at the University of Virginia School of Medicine. He founded the Lymphocyte Culture Center, where monoclonal antibodies are made, and the Center for Research in Contraception and Reproductive Health. He was named Inventor of the Year at UVA in 1999 and Virginia's Outstanding Scientist in 2000. His patent portfolio focuses on "differentiation antigens of gametogenesis," protein molecules that are uniquely expressed in the sperm or the egg and are not found in other normal organs in the body. These sperm-and egg-specific proteins have found uses as targets for developing male and female contraceptives, in forensic science, and in cancer therapy. He started biotechnology companies: Humagen, male reproduction/in vitro fertilization; ContraVac, maker of SpermCheck, a home sperm test available at pharmacies nationwide; Neoantigenics, developing oncology theranostics products; and OVASTASIS, working to develop a non-steroidal female contraceptive.

David R. Hillyard, The University of Utah

David R. Hillyard, M.D., is a Professor of Pathology at The University of Utah School of Medicine and Director of Molecular Infectious Disease Testing at ARUP Laboratories. Hillyard received his B.S. in biology from The University of Utah and his M.D. from Columbia University College of Physicians and Surgeons. He has made important contributions to the area of rapid thermal cycling for polymerase chain reaction (PCR) which have been applied to the detection of pathogenic microorganisms and other genetic targets. These technologies formed the basis for two very successful startup companies, BioFire Diagnostics and BioFire Defense. He has also made discoveries and developed methods that have accelerated discovery-based research on peptide toxins and their use in drug discovery. Hillyard is the author on 32 U.S. patents and more than 100 publications.

Jeffrey A. Hubbell, The University of Chicago

Jeffrey A. Hubbell, Ph.D., is the Barry L. McLean Professor for Molecular Engineering Innovation and Enterprise in the Institute for Molecular Engineering of The University of Chicago, as well as Professor in the Institute for Bioengineering of the Swiss Federal Institute of Technology Lausanne (EPFL). He holds a B.S. from Kansas State University and a Ph.D. from Rice University, both degrees being in chemical engineering. He was elected to the U.S. National Academy of Engineering in 2010. Hubbell uses biomaterials and protein engineering approaches to investigate topics in regenerative medicine and immunotherapeutics. His interests are both basic and translational, having founded or co-founded three biomedical companies based on his technology (Focal Inc., in Boston, acquired by Genzyme; Kuros Biosurgery AG, in Zurich, in the domain of regenerative medicine; and Anokion SA, in Lausanne, in the domain of immunological tolerance).

Suzanne T. Ildstad, University of Louisville

Suzanne T. Ildstad, M.D., is the Director of the Institute for Cellular Therapeutics, the Jewish Hospital Distinguished Professor of Transplantation and Professor of Surgery, at the University of Louisville. She is the CEO of Regenerex, LLC, a biotechnology company formed to make the facilitating cell-based discovery (FCRx) widely available. Ildstad's research is currently being applied in numerous Food and Drug Administration (FDA) approved translational clinical trials, including kidney tolerance, sickle cell disease and inherited metabolic disorders. Ildstad was elected to the Institute of Medicine (IOM) of the National Academies in 1997 in recognition of her pioneering work in cell therapies. In 2002, she formed Regenerex LLC, serving as the CEO. Her recent breakthrough in eliminating the need for chronic immunosuppressive agents in kidney transplant recipients has been referred to as "disruptive."

M. Saif Islam, University of California, Davis

M. Saif Islam, Ph.D., is a Professor of Electrical and Computer Engineering and Director of the Center for Nano and Micro Manufacturing at the University of California, Davis. He works on the challenges of interfacing and interconnecting one-dimensional semiconductor nano-wires with devices, sensors and circuit elements—employing processes compatible with mass-manufacturing. He is an inventor on patents on nano-bridging and its applications in electronic, photonic and sensing systems. He published 190 scientific articles and holds 37 issued U.S. patents that have been licensed to five companies. He has received over 20 major recognitions, including the NSF Faculty Early Career Award and Academic Senate Distinguished Teaching Award—the highest teaching honor the University of California, Davis bestows on its faculty. He received his B.Sc. Degree in Physics from Middle East Technical University (1994), M.S. degree in Physics from Bilkent University (1996) and Ph.D. degree in Electrical Engineering from the University of California, Los Angeles (2001).

Robert D. Ivarie, The University of Georgia

Robert D. Ivarie, Ph.D., is Professor of Genetics at The University of Georgia. He earned his B.S. in Biological Sciences with Honors and Distinction from Stanford University (1967) and Ph.D. in Molecular, Cellular, and Developmental Biology from the University of Colorado (1972). After postdoctoral work in Biochemistry and Biophysics at the University of California, San Francisco, he joined the genetics faculty at the University of Georgia (1980) rising to the rank of full Professor (1993) and he served as Head from 2004 to 2009. His research has ranged from epigenetic mechanisms of inheritance to molecular determinants of development and analysis of the chicken genome. In 1996, he founded AviGenics, Inc. (now Synageva BioPharma) commercializing transgenesis for high yield, low cost biopharmaceutical production in chicken egg whites. He served as Chief Scientific Officer until 1999 and as consultant through 2009. He was named a Fellow of the American Association for the Advancement of Science (2005) and The University of Georgia Inventor of the Year (2007).

Allan J. Jacobson, University of Houston

Allan J. Jacobson, Ph.D., is a Professor of Chemistry and of Chemical Engineering at the University of Houston. He received a B.A. in Chemistry from St. Catherine's College, Oxford in 1966, and M.A., and D.Phil. degrees in Chemistry from New College, Oxford in 1969. In 1970, he was appointed as Fellow and Tutor in Chemistry, Keble College. In 1976, Jacobson moved to the Exxon Corporate Research Laboratories. While at Exxon, he worked in a number of research areas in materials and catalysis. In 1991, he joined the University of Houston as Robert A. Welch Chair in Science and Professor of Chemistry. He is currently Director of the Texas Center for Superconductivity. Jacobson was a Member of the National Materials Advisory Board (2000-2003) and was the U.S. Editor for *Solid State Ionics* (1999-2004). He is currently Associate Editor of *Solid State Ionics* and *Materials Research Bulletin*. Jacobson's research interests are in inorganic solid-state synthesis. He has published over 433 papers and has 48 issued U.S. patents.

Trevor O. Jones, Case Western Reserve University

Trevor O. Jones is Chairman of the International Development Corporation. He has had a broad career as an inventor and as an executive and entrepreneur in diverse fields including biomedical devices, aviation, space and automotive as Director of GM's Advanced Product Engineering group. He has held executive positions at GM, TRW, LOF and Echlin. Jones has participated on many industry boards and advisory bodies including the NRC Vehicle Fuel Economy Study, the US DOT Vehicle Safety Advisory Council and the U.S. Defense Science Board's Task Force on International Arms Development. Jones has 16 issued U.S. patents, has received multiple awards and was elected to the NAE in 1982. He is a Fellow of SAE, IEE (UK), IEEE and IMECH (UK). In 2008, he was awarded the Ellis Island Medal of Honor. A native of England, Jones graduated in electrical engineering at Aston Technical College and in mechanical engineering at Liverpool Technical College. He is a registered Professional Engineer and a Chartered Engineer in the UK.

Michael E. Jung, University of California, Los Angeles

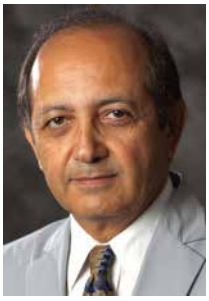
Michael E. Jung, Ph.D., is a Distinguished Professor of Chemistry at the University of California, Los Angeles. A native of New Orleans, Jung received his B.A. from Rice University and his Ph.D. from Columbia University with Gilbert Stork. In 1974, after a NATO Postdoctoral Fellowship at the ETH with Albert Eschenmoser, he joined UCLA as an assistant professor. Jung has mentored 89 Ph.D. and eight master's students, 118 postdoctoral associates, and 63 undergraduates and research technicians. He has more than 330 publications and 55 issued U.S. patents or patent applications, and has given over 570 lectures on his research. He has consulted for numerous industrial firms and helped found five biotech companies. Jung has won every teaching award at UCLA, and was the first recipient of the Gold Shield Award for excellence in teaching and research. His research interests are organic synthesis and drug discovery. He is the founding director of the Bioscience Synthetic Chemistry Facility, an academic drug discovery program at UCLA that has generated several drugs and lead compounds.

Kattesh V. Katti, University of Missouri–Columbia

Kattesh V. Katti, Ph.D., D.Sc., is the Curators' Professor of Radiology, Physics and Senior Research Scientist at the Nuclear Reactor at the University of Missouri. He is Director of the University of Missouri's Institute of Green Nanotechnology and Center for Green Nanotechnology at the University of the Western Cape, South Africa. His pioneering discoveries in bioconjugate chemistry ('Katti Peptides'), radiopharmaceuticals, nanomedicine and green nanotechnology are used in the development of cancer diagnostic and therapeutic agents, osteoarthritis therapy, nuclear waste remediation, and in alternate energy production. He is recognized as the 'Father of Green Nanotechnology' and has received the MU Presidential Economic Development Award, the Outstanding Missourian Award and the Gauss Professorship from the Gottingen Academy of Sciences, Germany. He holds numerous U.S. and foreign patents licensed to domestic and international companies. He has published over 170 peer-reviewed articles and 10 book chapters. Katti is an elected Fellow of the AAAS, and Fellow of the Academy of Science, St. Louis.

Jay D. Keasling, University of California, Berkeley

Jay D. Keasling, Ph.D., is the Hubbard Howe Jr. Distinguished Professor of Biochemical Engineering at the University of California, Berkeley in the Departments of Bioengineering and Chemical and Biomolecular Engineering, senior faculty scientist and Associate Laboratory Director for Biosciences at Lawrence Berkeley National Laboratory, Chief Executive Officer of the Joint BioEnergy Institute (JBEI), and director of the Synthetic Biology Engineering Research Center (SynBERC). Keasling's research focuses on the metabolic engineering of microorganisms for degradation of environmental contaminants or for environmentally friendly synthesis of drugs, chemicals, and fuels. Keasling received a B.S. in Chemistry and Biology from the University of Nebraska and M.S. and Ph.D. in Chemical Engineering from the University of Michigan, and did post-doctoral research in biochemistry at Stanford University. He is a member of the National Academy of Engineering and holds 32 U.S. issued patents.



Behrokh Khoshnevis, University of Southern California

Behrokh Khoshnevis, Ph.D., is a Dean's Professor of Engineering at University of Southern California. Through his passion driven inventive research and educational activities, Khoshnevis has made many useful inventions and innovations in different domains including robotics, biomedical, oil and gas, renewable energy, fabrication, construction and space systems. One of his inventions, Contour Crafting, is regarded as the most promising approach for planetary construction of human outposts, and is destined to cause a revolution in terrestrial construction. Earlier this year, a prestigious NASA organization awarded Contour Crafting the Grand Prize of the Create the Future Design Contest among 1000+ globally competing technologies. Khoshnevis has over 160 technical publications, and holds 66 issued U.S. and foreign patents. He has developed products that help people worldwide. He is a NASA Innovative Advanced Concept Fellow, a Fellow of the Institute of Industrial Engineering, and a Fellow of the Society for Computer Simulation.

Marcia J. Kieliszewski, Ohio University

Marcia J. Kieliszewski, Ph.D., is a Professor of Chemistry and Biochemistry at Ohio University. She received a B.A. in Psychology from Michigan State University in 1974, and in 1985 returned to enter the graduate program in biochemistry. For her Ph.D. thesis project, she worked with Dr. Derek Lamport of the MSU Department of Energy Plant Research Laboratory. Her dissertation work, completed in 1989, entailed the isolation and characterization of structural proteins from the cell walls of *Zea mays*. She then moved to the Complex Carbohydrate Research Center at the University of Georgia where she began research defining the 'codes' that determine the relationship between amino acid sequence and hydroxproline O-glycosylation. In 1995, Kieliszewski joined the Ohio University faculty in the Department of Chemistry and Biochemistry where she began using her hydroxyproline O-glycosylation code to create 'designer gums' and novel glycoproteins for use in human therapeutics. This work was the foundation of her patents.

Michael N. Kozicki, Arizona State University

Michael N. Kozicki, Ph.D., is a Professor of Electrical Engineering at Arizona State University. He is best known for the invention of Conductive Bridging Random Access Memory (CBRAM®), an ultra-low energy data storage technology, but his more than 80 issued U.S. and foreign patents also include innovations ranging from a cleanroom wheelchair to bio-inspired optical devices. His patents have been cited over a thousand times and are ranked in the top tier by independent intellectual property organizations. Kozicki is also a founder of Axon Technologies Corp. and Idendrix, Inc., and served as Chief Scientist of Adesto Technologies. He is a visiting professor at the University of Edinburgh and is a Chartered Engineer in the UK/EU. He has published extensively, developed entrepreneurship-infused undergraduate and graduate courses in solid state electronics, is a frequent invited speaker at international meetings, and has made several television appearances to promote public understanding of science.

Juan C. Lasheras, University of California, San Diego

Juan C. Lasheras, Ph.D., is the Stanford and Beverly Penner Professor of Applied Sciences at the University of California, San Diego. He is a Distinguished Professor of Mechanical and Aerospace Engineering and Bioengineering and the Director of the Center for Medical Devices and Instrumentation at the Institute of Engineering in Medicine. He is a member of the National Academy of Engineering and of the Royal Academy of Engineering of Spain (Real Academia de Ingeniería de España), and a Fellow of the American Physical Society. He was a Guggenheim Fellow and a George Van Ness-Lothrop Fellow and served in 2010 as the Chairman of the Division of Fluid Dynamics of the APS. He was awarded *Doctor Honoris Causa* degrees from the Universidad Carlos III de Madrid, and from the Universidad Politécnica de Madrid, Spain. Lasheras holds 46 issued U.S. patents in medical devices technology. He received his Ph.D. from Princeton University in 1982.

Wen-Hwa Lee, China Medical University

Wen-Hwa Lee, Ph.D., currently serves as the Chancellor of China Medical University in Taichung, Taiwan. Lee graduated from the University of California, Berkeley in 1981 in Molecular Biology. As a pioneer and frontier of tumor suppressor in cancer biology, he identified the first tumor suppressor gene, RB, in 1987. He showed that a disruption of this gene is a primary reason for carcinogenesis, and it is possible to suppress the neoplastic phenotype of tumors by re-introduction of the wild-type RB gene. He later elucidated the molecular basis for the function of the two breast cancer susceptibility genes, BRCA-1 and BRCA-2, in modulating DNA repair. Today, Lee nurtures young talents and continues to investigate the mechanisms of tumor suppressors in the maintenance of cell homeostasis, genomic stability and its relation to cancers. His contributions expedite the design and implementation of novel strategies for prevention and treatment of cancer.

Chiang J. Li, Harvard University

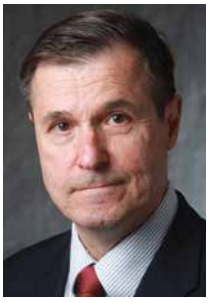
Chiang J. Li, M.D., is a Lecturer on Medicine at Harvard University. He is a physician, scientist, inventor and entrepreneur. Li serves as Director of the Ackerman Center for Therapeutics and is on the Board of Trustees at BIDMC of Harvard, Chairman at 1Globe Health, President and CEO at Boston Biomedical, and Head of Global Oncology at Sumitomo Dainippon Pharma Group. Li, an internationally-recognized leader in therapeutic innovation, invented one of the world's very first synthetic biology therapeutics, award-winning platform technologies for designing gene-targeted therapeutics, multiple first-in-class cancer drugs, and is a named inventor in over 230 issued patents or patent applications worldwide. He founded multiple companies, including Boston Biomedical (world's most capital efficient company, 2012). Li is a Fellow of the American College of Physicians (invited direct election) and a member of the Oversea Expert Advisory Committee of China's State Council. He graduated from HST of Harvard-MIT and received his M.D. from Harvard University.

James Linder, University of Nebraska System

James Linder, M.D., is Interim President of the University of Nebraska System and is a Professor of Pathology and Microbiology at the University of Nebraska-Lincoln. A native of Omaha Nebraska, Linder received degrees in biochemistry and microbiology from Iowa State University, and his medical degree from the University of Nebraska Medical Center. After residency training in pathology at Duke University, he returned to Nebraska. He has been on the faculty full or part time since 1983 as Professor and has filled many roles, including technology development. Linder has been active in the private sector as Chief Medical Officer for Cytyc Corporation through 2007 and at Roche Diagnostics Hematology. In both roles, he has developed new technologies to aid diagnostics and cancer detection. He and his wife, Karen Linder, founded Linseed Capital to support entrepreneurship through mentorship and funding to startup companies. They founded Tethon3D which develops products and services for ceramic 3D printing in manufacturing, design and medicine.

Stuart M. Lindsay, Arizona State University

Stuart M. Lindsay, Ph.D., is Director of the Center for Single Molecule Biophysics in the Biodesign Institute, a Regent's Professor and the Nadine and Edward Carson Professor of Physics and Chemistry at Arizona State University. The invention of the STM stimulated a move into nanoscience research in the 1980s, and his subsequent inventions led to the founding of Molecular Imaging (now the Nanomeasurements division of Keysight Technologies). His book, *Introduction to Nanoscience,* is the first comprehensive nanoscience text. He is currently developing molecular profiling for personalized medicine based on quantum tunneling spectroscopy of single molecules. Applications to DNA sequencing are licensed to Roche and single molecule proteomics applications are being developed by Recognition Analytix. Lindsay holds 32 issued U.S. patents.



Robert J. Linhardt, Rensselaer Polytechnic Institute

Robert J. Linhardt, Ph.D., is currently the Anne and John Broadbent, Jr. '59 Senior Constellation Chair in Biocatalysis and Metabolic Engineering at Rensselaer Polytechnic Institute. He received his Ph.D. in Chemistry from Johns Hopkins University in 1979 and did his postdoctoral studies at the Massachusetts Institute of Technology. His research focuses on glycoscience and he is an expert on heparin and glycosaminoglycans, their synthesis, biology and analysis. He has received multiple honors, including the American Chemical Society Isbell, Hudson and Wolfrom Awards for his work in carbohydrate chemistry, the Volwiler Research Achievement Award for Pharmaceutical Research, recognition in the *Scientific American 10,* and is a Fellow of the American Association for the Advancement of Science. He has authored over 680 research articles and holds over 50 issued U.S. and foreign patents.

Philip S. Low, Purdue University

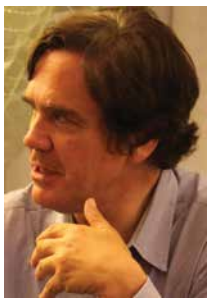
Philip S. Low, Ph.D., is the Director of the Center for Drug Discovery and the Ralph C. Corley Distinguished Professor of Chemistry at Purdue University. Low has spent over 39 years exploring novel methods for drug targeting and characterizing the structure, function, and pathologies of the erythrocyte membrane. He has published over 350 scientific articles and has more than 50 U.S. issued patents or patents pending. Seven drugs stemming from his research are undergoing human clinical trials and three companies (Endocyte Inc., OnTarget Laboratories Inc., and HuLow LLC) have been founded to commercialize his discoveries. Low has received an NIH MERIT Award, the ACS Award for Cancer Research (Sosnovsky Award), both of Purdue's awards for outstanding research, the university's highest career achievement award (Morrill Award), and numerous other national and international awards. Low received his B.S. in Chemistry from Brigham Young University (1971) and his Ph.D. in Biochemistry from UCSD (1975).

Yuri M. Lvov, Louisiana Tech University

Yuri M. Lvov, Ph.D., is a Professor of Chemistry and the T. Pipes Eminent Endowed Chair on Micro and Nanosystems at Louisiana Tech University. His works in nanomaterials include nanoassembly of ultrathin films, bio/nanocomposites, ordered nanoshells, organic-inorganic composites and clay nanotubes with controlled release of chemical agents. He was among the pioneers of the polyelectrolyte layer-by-layer assembly, a nanotechnology method which found a number of industrial applications. His works on composites with clay nanotubes allowed for anticorrosion, antimicrobial, and antiaging fictionalization of polymers. Lvov holds 12 issued U.S. and Japanese patents, published 220 papers which were cited 13,200 times, and his h-index is 60. He was named the Louisiana Top Researcher in New Technologies and in 2008 received the Best of Small Tech Innovator Award in micro/nano technology. Lvov was awarded the prestigious Alexander von Humboldt Prize for lifetime achievements in nanochemistry.

Asad M. Madni, University of California, Los Angeles

Asad M. Madni, Ph.D., D.Sc.(H), Sc.D.(H), D.Eng.(H), is a Distinguished Adjunct Professor and Scientist at the University of California, Los Angeles. He was President, COO and CTO of BEI Technologies (1992-2006) and Chairman, President and CEO of Systron Donner (1975-1992). His pioneering contributions include development and commercialization of sensors and systems for aerospace and automotive safety. He is the recipient of three Honorary Doctorates; UCLA: Professional Achievement, Engineering Alumnus of the Year, Lifetime Contribution, and EE Distinguished Alumnus Awards; IEEE Millennium Medal, AESS Pioneer Award, IMS Career Excellence Award, R6 Outstanding Engineer/Outstanding Leadership & Professional Service Awards; TCI Marconi Medal; WAC Medal of Honor & Lifetime Achievement Award; IEE Achievement Medal; EC's Distinguished Engineering Achievement Award and LACES' G. Washington Engineer of the Year Award. He is credited with 37 issued U.S. and 31 pending patents, and 170 refereed publications. Madni is member of NAE and Fellow of NAI, IEEE, IEE, IET, IAE, NYAS, AAAS, SAE, AIAA.



Marc J. Madou, University of California, Irvine

Marc J. Madou, Ph.D., is the Chancellor's Professor in Mechanical and Aerospace Engineering at the University of California, Irvine. He is the author of several books in micro and nanotechnology, a field he helped pioneer both in academia and industry. He founded several micromachining companies and has been on the board of many more. Madou was founder of the SRI International's Microsensor Department, founder and President of Teknekron Sensor Development Corporation (TSDC), Visiting Miller professor at UC Berkeley and Endowed Chair at The Ohio State University (Professor in Chemistry and Materials Science and Engineering). Some of Madou's recent research work involves a compact disc-based fluidic platform and carbon MEMS, the two latter fields were pioneered by Madou.

Richard A. Mathies, University of California, Berkeley

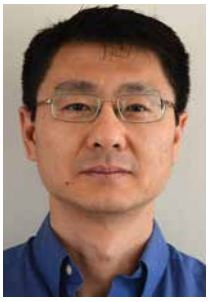
Richard A. Mathies, Ph.D., is a Professor Emeritus in the Chemistry Department at the University of California, Berkeley. He received his B.S. in Chemistry at the University of Washington, Seattle in 1968 and his M.S. and Ph. D. in Physical Chemistry from Cornell University in 1973. After a Helen Hay Whitney Postdoctoral Fellowship at Yale, he moved to UC Berkeley in 1976, becoming Professor in 1986 and Dean of the College of Chemistry and G. N. Lewis Professor (2008-2013). Mathies is noted for developing high sensitivity confocal fluorescence scanning systems and energy transfer fluorescent dye labels that enabled the first human genome sequence and for his development of microfabricated lab-on-a-chip chemical and biochemical analysis systems. He has 43 issued U.S. patents, the majority of which have been licensed to seven companies. He has founded six companies and was scientific advisor to an additional eight companies. He has published 453 papers and book chapters (h-index >100; 35,000 citations) and served on editorial boards for seven journals.

Richard D. McCullough, Harvard University

Richard D. McCullough, Ph.D., is Vice Provost for Research and Professor of Materials Science and Engineering at Harvard University. At Harvard, he provides leadership for interdisciplinary research initiatives, corporate and foundation development, entrepreneurship, and planning for the Allston campus. Formerly, he was Vice President for Research at Carnegie Mellon University, where he also had served as Dean of Science, Head of Chemistry, and was the Thomas Lord Professor of Chemistry. He has pioneered the discovery and development of printed electronic materials, including regioregular polythiophenes, reactive metal inks, highly conductive block copolymers, transistors, solar cells, nanoelectronics, and the living synthesis of conductive polymers. He has founded two companies: Plextronics and Liquid X Printed Metals. He received his B.S. in chemistry at The University of Texas, Dallas, a Ph.D. at Johns Hopkins University, and was a postdoctoral fellow at Columbia University.

Carver A. Mead, California Institute of Technology

Carver A. Mead, Ph.D., is the Gordon and Betty Moore Professor Emeritus of Engineering and Applied Science at the California Institute of Technology. Over a 50-year career, Carver Mead has been the most influential thinker and pioneer in silicon technology. His contributions to microelectronics and integrated circuits have been truly foundational and far-reaching. The richness and diversity of Mead´s work is difficult to overstate. His work from structured silicon designs to device physics to neural engineering has propelled the entire semiconductor industry and enabled the vast array of computing devices that permeate our everyday lives. Mead is a member of the National Academy of Sciences, the National Academy of Engineering, and a Fellow of the American Academy of Arts & Sciences and the Institute of Electrical and Electronic Engineers. Among his many awards are the U.S. National Medal of Technology, the Lemelson-MIT Award and his induction into the National Inventors Hall of Fame. Mead holds 85 issued U.S. patents.



Wen Jin Meng, Louisiana State University

Wen Jin Meng, Ph.D., is the Gerlad Cire and Lena Grand Williams Professor of Mechanical and Industrial Engineering at Louisiana State University. He entered the Physics Department of Peking University in China in 1978, and transferred to California Institute of Technology in 1980. He received his B.S. degree in Physics with honors in 1982 and his Ph.D. degree in Applied Physics in 1988, both from Caltech. He served as a postdoctoral fellow in the Materials Science Division of Argonne National Laboratory from 1988 to 1989 and a staff research scientist in the General Motors/Delphi Automotive Systems R&D Center from 1989 to 1999. Since 1999, he has been with Louisiana State University. His research spans topics concerning solid-state phase transformations, hetero-epitaxial growth of ceramic and metal thin films, plasma-assisted vapor phase deposition processes, nanostructured ceramic coatings, micro/nano scale fabrication and assembly, especially in relation to metal-based micro/nano structures and devices.

Xiang-Jin Meng, Virginia Tech

Xiang-Jin Meng, M.D., Ph.D., is a University Distinguished Professor of Molecular Virology at Virginia Tech. He studies emerging, re-emerging and zoonotic viruses and develops vaccines against them. Meng has authored and co-authored more than 270 peer-reviewed articles and book chapters which have been cited 14,786 times with an h-index of 67. Meng is an inventor on 20 awarded and 17 pending U.S. patents as well as 40 awarded foreign patents on vaccines and diagnostics of important virus diseases. Meng discovered swine hepatitis E virus which led to the paradigm-shifting recognition of human hepatitis E as a zoonotic disease. Meng's inventions of licensed commercial antiviral vaccines, such as a vaccine against the deadly porcine circovirus-associated diseases, are believed to have saved the global swine industry tens of millions of dollars. He is an elected Fellow of the American Academy of Microbiology.

Thomas O. Mensah, Florida State University

Thomas O. Mensah, Ph.D., is President and CEO of Georgia Aerospace Systems Inc, a nanocomposites manufacturing company, and Chairman of Lightwave and Wireless Systems, a leader in large scale infrastructure development projects in emerging countries. He is one of the four original inventors of fiber optics in the United States, and was awarded 7 pioneering patents in fiber optics which support modern day broadband high speed internet. He worked at Corning Glass Works and at AT&T Bell Laboratories. He has served on the MIT visiting committee in Chemical Engineering, and received his Ph.D. in Chemical Engineering from Montpelier University in France and a post graduate certificate in modeling and simulation of Chemical Processes from MIT. He is a Fellow of AIChE and Associate Fellow of the American Institute of Aeronautics and Astronautics. He is the recipient of many awards including the Percy Julian Award, Golden Torch Award from NSBE, AIChE Eminent Engineer Award, and Turner Trumpet Award, and was named a member of the AIChE 100 in 2008. He is the author of many publications and three books including *Fiber Optics Engineering*.

Antonios G. Mikos, Rice University

Antonios G. Mikos, Ph.D., is the Louis Calder Professor of Bioengineering and Chemical and Biomolecular Engineering at Rice University. His research focuses on the synthesis, processing, and evaluation of new biomaterials for use as scaffolds for tissue engineering, as carriers for controlled drug delivery, and as non-viral vectors for gene therapy. His work has led to the development of novel orthopaedic, dental, cardiovascular, neurologic, and ophthalmologic biomaterials. He is the author of over 520 publications and 27 U.S. patents. He has been recognized by various awards including the Founders Award of the Society for Biomaterials and the Robert A. Pritzker Distinguished Lecturer Award of the Biomedical Engineering Society. He is a founding editor and editor-in-chief of the journal *Tissue Engineering*. Mikos is a member of the National Academy of Engineering, the Institute of Medicine of the National Academies, and the Academy of Medicine, Engineering and Science of Texas.

Duane D. Miller, The University of Tennessee Health Science Center

Duane D. Miller, Ph.D., is the Van Vleet Endowed Professor and Chair of the department of Pharmaceutical Sciences in the College of Pharmacy at The University of Tennessee Health Science Center, Memphis, TN. He obtained his B.S. degree at Kansas University in 1966. He was an NIH Fellow while at the University of Washington and obtained his Ph.D. in 1969. He joined The Ohio State University faculty in 1969, where he became Chairman of the Division of Medicinal Chemistry and Pharmacognosy in 1982. He moved to The University of Tennessee Health Science Center in 1992. Miller has over 388 publications, 14 book chapters, has given 370 presentations and has over 400 U.S. patents and patents pending. He has trained 30 Ph.D. students and over 30 postdoctoral fellows and research assistants. Research interests have focused on new drugs for radiation mitigation, cachexia, inflammation, prostate cancer, glioma and melanoma.

Jan D. Miller, The University of Utah

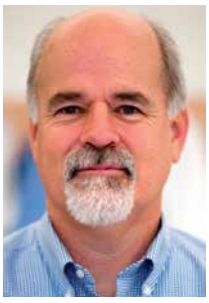
Jan D. Miller, Ph.D., is the Ivor D. Thomas Distinguished Professor at The University of Utah where he has served on the Metallurgical Engineering faculty for 45 years. From 2002 to 2013, he was the Chair of the Department of Metallurgical Engineering (10 tenure track faculty positions and about 100 students). He is well known for his numerous technical contributions with more than 600 publications, including 32 issued U.S. patents. Miller is a member of the National Academy of Engineering and a Distinguished Member of SME. He has received honorary Ph.D. degrees from the University of Pretoria in South Africa and the Gdansk University of Technology in Poland. In addition, he has Honorary professorial appointments from several universities in China and from the Chinese Academy of Sciences.

Richard K. Miller, Olin College of Engineering

Richard K. Miller, Ph.D., was appointed President and first employee of Olin College of Engineering in 1999. He served as Dean of the College of Engineering at the University of Iowa from 1992-99 and spent the previous 17 years on the faculties at USC and UCSB. Miller's research interests are in innovative engineering education and applied mechanics about which he has authored many publications and given numerous keynote presentations. He is a member of the National Academy of Engineering. He is a recipient of the NAE's 2013 Gordon Prize for Innovation in Engineering and Technology Education and the 2011 Marlowe Award for administrative leadership from the ASEE. He earned his engineering B.S. from UC Davis where he received the 2002 Distinguished Engineering Alumnus Award. He earned his M.S. from MIT and Ph.D. from California Institute of Technology, where he received the 2014 Caltech Distinguished Alumni Award.

Sergey B. Mirov, The University of Alabama at Birmingham

Sergey B. Mirov, Ph.D., is University Professor of Physics and Director of the Center for Optical Sensors and Spectroscopies at The University of Alabama at Birmingham. He received his Ph.D. degree in physics in 1983 from the P.N. Lebedev Physics Institute of the USSR Academy of Sciences. Mirov is engaged in the development and investigation of novel gain media for middle-infrared tunable lasers. He was awarded the Snell Prize by the Royal Institute of Electrical Engineers (UK) in 2004 and UAB's Caroline P. and Charles W. Ireland Prize for Scholarly Distinction in 2009. In 2012, he was elected Fellow of the Optical Society of America. He holds 13 U.S. patents and numerous foreign patents. In 2010, IPG Photonics Corporation licensed Mirov's patents in middle-infrared laser technology and simultaneously acquired his start-up company (Photonics Innovations, Inc.). Mirov has published one book, 126 peer-reviewed articles in refereed journals, nearly 300 book chapters, articles in conference proceedings, and extended abstracts.



Jeffrey R. Morgan, Brown University

Jeffrey R. Morgan, Ph.D., is a Professor of Medical Science and Engineering and Co-Director of the Center for Biomedical Engineering at Brown University. A graduate of Syracuse and Harvard with postdoctoral training at MIT and the Whitehead Institute, he was on the faculty of Harvard Medical School prior to Brown. Morgan has received numerous awards and patents for his research in gene therapy and tissue engineering and co-founded three companies, including his latest, Microtissues, Inc. Among his inventions are the 3D Petri Dish, a technology for growing cells in three dimensions with applications in toxicity testing, drug discovery and tissue engineering. *TIME* magazine named the bioartificial ovary developed using the 3D Petri Dish as one of its top 10 medical breakthroughs of 2010. Morgan has published over 130 peer-reviewed papers, reviews and chapters, has edited two books and is an inventor on 12 U.S. and foreign patents.

Brij M. Moudgil, University of Florida

Brij M. Moudgil, Sc.D., is a Distinguished Professor of Materials Science and Engineering and Director of the Particle Engineering Research Center (PERC) and the Center for Particulate and Surfactant Systems (CPaSS – NSF I/UCRC) at the University of Florida. His current research interests include surfactant structures and coatings, corrosion inhibition, dispersion and flocculation, emulsions and foams, antimicrobial coatings, photocatalysis, crop protection, mineral separations, water treatment, and nanotoxicity. Moudgil received his B.E degree in Metallurgy from Indian Institute of Science, Bangalore, India, and his M.S and Eng.Sc.D. degrees from Columbia University. He has published more than 300 technical papers and has been awarded 21 patents. His research has contributed to the development of new processes and products. Both his research and professional leadership accomplishments are recognized by several major awards including his election to the National Academy of Engineering.

José M.F. Moura, Carnegie Mellon University

José M.F. Moura, D.Sc., is the Philip L. and Marsha Dowd University Professor and Associate Department Head of Research and Strategic Initiatives in Carnegie Mellon University's Department of Electrical and Computer Engineering. He was born and raised in Mozambique and went to college in Portugal and the U.S., with degrees from IST (Portugal) and MIT. Moura directs the CMU Portugal Program, co-founded SpiralGen, and holds 11 U.S. patents in signal, image, and video processing, several of which have been adopted by industry. The recipient of numerous awards and recognitions from professional organizations, Moura is a member of the National Academy of Engineering, a corresponding member of the Portugal Academy of Sciences, an IEEE Fellow, and a Fellow of the AAAS. He is Vice President Elect of the IEEE, was an IEEE Board Director, President of the IEEE Signal Processing Society, and editor-in-chief of *Transactions on Signal Processing*.

Shuji Nakamura, University of California, Santa Barbara

Shuji Nakamura, Ph.D., is currently the Research Director of the Solid State Lighting and Energy Electronics Center and the Cree Professor in Solid State Lighting and Display at the University of California, Santa Barbara. He obtained B.E., M.S., and Ph.D. degrees in Electrical Engineering from the University of Tokushima. He joined Nichia Chemical Industries Ltd. in 1979. In 1989, he started researching blue LEDs using group-III nitride materials. Nakamura developed the first III-nitride-based blue/green LEDs and III-nitride-based violet laser diodes. Nakamura joined the University of California, Santa Barbara in 1999. His research includes MOCVD, UVPE, and growth and device fabrication of gallium nitride (GaN) light-emitters. He received the 2006 Millennium Technology Prize for his invention of revolutionary new energy-saving light sources and the 2014 Nobel Prize in Physics for the invention of efficient blue LEDs, which have enabled bright and energy-saving white light sources. Nakamura is also the co-founder of Soraa Inc.

Jagdish Narayan, North Carolina State University

Jagdish (Jay) Narayan, Ph.D., is the Fan Family Distinguished Chair Professor in the Department of Materials Science and Engineering at North Carolina State University. He is also a Distinguished Visiting Scientist at the Oak Ridge National Laboratory. He obtained his M.S. (1970) and Ph.D. (1971) from UC Berkeley after his B. Tech. (1969) (Highest Hons. and Dist.) from IIT, Kanpur, India. Narayan has published over 500 scientific papers in international journals and an equal number in conference proceedings, nine edited books, 40 patents, which have over 20,000 citations with an h-index of 70. He is a Fellow of AAAS and the National Academy of Sciences (India) and six other professional societies, and is the winner of the 1999 ASM Gold Medal, 2011 Acta Materialia Gold Medal and 2014 TMS RF Mehl Gold Medal. He has won the 2014 O. Max Gardner Award and the 2014 North Carolina Award in Science (Highest UNC and NC Honors).

Shree K. Nayar, Columbia University

Shree K. Nayar, Ph.D., is the T. C. Chang Professor of Computer Science at Columbia University, where he heads the Computer Vision Laboratory. He has published over 200 scientific articles and has been awarded over 40 U.S. patents for his inventions related to digital imaging, computer vision, human-computer interfaces and robotics. Today, his research results are being widely used in cameras for smart phones, industrial vision systems for factory automation, and rendering engines for computer graphics. Nayar is the recipient of the David Marr Prize in 1990 and 1995, the David and Lucile Packard Fellowship in 1992, the National Young Investigator Award in 1993, and the NTT Distinguished Scientific Achievement Award in 1994. Nayar was elected to the National Academy of Engineering in 2008 and the American Academy of Arts & Sciences in 2011 for his pioneering work on computational imaging and his seminal contributions to physics-based computer vision. In 2006, he also received the Columbia Great Teacher Award from the Society of Columbia Graduates.

Douglas F. Nixon, The George Washington University

Douglas F. Nixon, M.D., Ph.D., is the Walter G. Ross Professor and Chair of the Department of Microbiology, Immunology, and Tropical Medicine at The George Washington University. Nixon has 27 years of experience in the study of immune responses to viruses and pathogens in murine models and using clinical samples. Nixon has pursued research towards HIV-1 vaccines and immunopathogenesis studies and is chair of the AIDS Vaccine Research Sub-committee of the NIH. He holds an NIH MERIT award and is experienced in conducting human immunological studies in virus infections and in international research. He has a strong record of mentorship of junior colleagues and several of his previous postdoctoral fellows have gone on to tenured academic scientific positions. Nixon is co-author on over 210 peer-reviewed papers, as well as additional letters and book chapters. He is a named inventor or co-inventor on several patents and patent applications.

Babatunde A. Ogunnaike, University of Delaware

Babatunde A. Ogunnaike, Ph.D., is the William L. Friend Chaired Professor of Chemical Engineering and Dean of the College of Engineering at the University of Delaware. He received a B.Sc. degree in Chemical Engineering from the University of Lagos, Nigeria, his M.S. degree in Statistics and his Ph.D. degree in Chemical Engineering both from the University of Wisconsin–Madison. He is the author or co-author of four books including a widely used textbook, *Process Dynamics, Modeling and Control*, and *Random Phenomena: Fundamentals of Probability and Statistics for Engineers*. His awards include the American Institute of Chemical Engineers 1998 CAST Computing Practice Award, the 2007 ISA Eckman Award, and the 2008 AACC Control Engineering Practice award. He was named a fellow of the American Institute of Chemical Engineers in 2009, and elected to fellowship of the Nigerian Academy of Engineering and to the U.S. National Academy of Engineering both in 2012.

Iwao Ojima, Stony Brook University

Iwao Ojima, Ph.D., is a University Distinguished Professor of Chemistry and Director of the Institute of Chemical Biology and Drug Discovery at Stony Brook University. He received his Ph.D. at The University of Tokyo in 1973 and worked at the Sagami Institute of Chemical Research until 1983, when he moved to the chemistry department at Stony Brook. Ojima is an expert in synthetic organic, medicinal and organofluorine chemistry, and chemical biology. His awards include the Author Cope Scholar Award in 1994, Emanuel Hershberg Award in 2001, ACS Award for Creative Work in Fluorine Chemistry in 2013, The Chemical Society of Japan Award in 1999, and the Research Foundation of SUNY Outstanding Inventor Award in 2002. He is an elected Fellow of the John S. Guggenheim Foundation, the American Association for the Advancement of Science, the New York Academy of Sciences and the American Chemical Society. Ojima has published over 430 papers and reviews, edited eight books and has been granted over 100 patents (33 U.S. patents).

Nicholas A. Peppas, The University of Texas at Austin

Nicholas A. Peppas, Sc.D., is the Cockrell Family Regents Chair in Engineering, Professor of Chemical Engineering, Biomedical Engineering and Pharmacy and Chairman of the Department of Biomedical Engineering at The University of Texas at Austin. His research blends modern molecular and cellular biology with engineering to generate the next-generation of medical systems and devices for patient treatment. He is the inventor of numerous medical products including contact and intraocular lenses, artificial kidney membranes, cartilage, and devices for oral delivery of insulin for treatment of diabetics, calcitonin for osteoporosis and interferon beta for multiple sclerosis. He is an elected member of NAE (2012 Founders Award), the Institute of Medicine, the National Academy of France, the Royal Academy of Spain, the Academy of Athens and the Texas Academy. In 2008, AIChE named him among the 100 Engineers of the Modern Era. Peppas holds a Dipl. Eng., National Technical University of Athens (1971), an Sc.D. from MIT (1973), and honorary doctorates from the Universities of Ghent (Belgium), Parma (Italy), Ljubljana (Slovenia) and Athens (Greece).

Michael A. Peshkin, Northwestern University

Michael A. Peshkin, Ph.D., is a Professor of Mechanical Engineering at Northwestern University. He created foundational intellectual property for four spinoff companies: MAKO Surgical (now part of Stryker), Cobotics (now part of Stanleyworks), Kinea Design (now part of HDT Global), and Tangible Haptics. His research is in the area of human-machine interaction, recently emphasizing haptic perception on touchscreens. He received degrees in physics from University of Chicago, Cornell University, and Carnegie Mellon. In 2011, Peshkin was awarded Northwestern University's Charles Deering McCormick Professorship of Teaching Excellence in recognition of innovative teaching methods which include a hands-on electronics unlab course, and the lightboard video technology for distance and hybrid learning.

Victor L. Poirier, University of South Florida

Victor L. Poirier, MBA, is a Professor of the Institute for Advanced Discovery and Innovation at the University of South Florida and an internationally recognized pioneer of artificial heart technology with a BSME and MBA from Northeastern University. Poirier authored or co-authored over 110 manuscripts and is a holder of 17 issued U.S. patents. He was a guest lecturer at Northeastern University and Yale University and held the position of assistant professor at Tufts School of Medicine. He created and packaged the technology to form two public companies; invented the Heartmate technology used to take over the pumping function of the natural heart and held several positions including chairman of the board as a trustee of two hospitals. In 2003, Poirier was inducted into the National Academy of Engineering. Poirier organized and chaired the 2013 International Gordon Research Conference on Assisted Circulation in Tuscany, Italy.

Mark R. Prausnitz, Georgia Institute of Technology

Mark R. Prausnitz, Ph.D., is the Regents' Professor of Chemical and Biomedical Engineering at the Georgia Institute of Technology. His research addresses biophysical methods of drug delivery using microneedles, lasers, ultrasound, electric fields, heat, convective forces and other physical means to control the transport of drugs, proteins, genes and vaccines into and within the body. Prausnitz and his coworkers carry out studies ranging from design and formulation of drug delivery systems to their assessment in vitro, in animals, and in human clinical trials. Prausnitz also teaches classes on introductory engineering and pharmaceuticals. His scholarship has produced more than 200 published papers and more than 30 issued or pending U.S. patents, with additional patents filed internationally.

Darwin J. Prockop, Texas A&M University

Darwin J. Prockop, M.D., Ph.D., is a Professor of Internal Medicine and the Director of the Texas A&M College of Medicine Institute for Regenerative Medicine in Temple, Texas. He received an A.B. degree from Haverford College, an M.A. degree from Oxford University, an M.D. degree from the University of Pennsylvania, and a Ph.D. degree in biochemistry from George Washington University. He was formerly professor at the School of Medicine at the University of Pennsylvania, Chair of Biochemistry at the University of Medicine and Dentistry of New Jersey, Chair of Biochemistry and Director of the Jefferson Institute for Molecular Medicine at Jefferson Medical College, Director of the Center for Gene Therapy at Hahnemann/Allegheny/Drexel, and Director of the Center for Gene Therapy at Tulane University. He has authored more than 600 publications, and been awarded three honorary degrees. He is a member of the National Academy of Sciences and the Institute of Medicine of the National Academies.

Alain T. Rappaport, Institute for Human and Machine Cognition

Alain T. Rappaport, M.D., Ph.D., is an internet entrepreneur and co-founder and CEO of Nudgit, Inc. He was previously founder and CEO of search company Medstory Inc., acquired by Microsoft in 2007, where he was general manager of health search until 2010. Previously, he was co-founder, president and chief scientist of Neuron Data Inc. Rappaport serves on the board of the Institute for Human and Machine Cognition. In 2010-2011, he served as a member of the Technology and Innovation Committee of the NASA Advisory Council. In 1998-1999, he held an appointment as senior advisor in the NASA Center of Excellence for Information Technology. He is a founding member of the Innovative Applications of Artificial Intelligence Conference. After completing his M.D. and Ph.D. at the University of Paris, Rappaport joined the Robotics Institute at Carnegie Mellon University as a postdoctoral fellow and later adjunct faculty.

Renee A. Reijo Pera, Montana State University

Renee A. Reijo Pera, Ph.D., currently serves as Vice President for Research and Economic Development and Professor of Cell Biology and Neurosciences, Department of Chemistry and Biochemistry at Montana State University. She is an inventor and leading authority on human development and pluripotent stem cells. She has developed technologies to address infertility in men and women, neurodegenerative diseases and women's health issues. She has created four companies to commercialize her technologies. She has been named one of the twenty most influential women in America by *Newsweek* and her lab has been recognized for one of the top 10 biomedical breakthroughs by *TIME* magazine for technology that provides the ability to accurately predict which *in vitro* fertilized (IVF) embryos will develop successfully after transfer. This technology has received FDA approval and the company she co-founded, Auxogyn, has commercialized the technology

Daniel E. Resasco, The University of Oklahoma

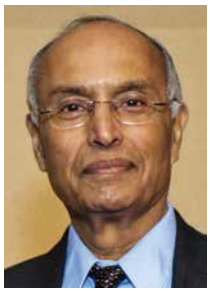
Daniel E. Resasco, Ph.D., is the George Lynn Cross Professor of Chemical, Biological and Materials Engineering at The University of Oklahoma. He obtained his B.S. (1975) in Argentina and his Ph.D. (1984) from Yale University. He specializes in heterogeneous catalysis and nanostructured materials for applications in energy, fuels, and chemicals. He has been editor of the *Journal of Catalysis* and member of editorial boards for several periodicals. He is an industrial consultant in areas related to catalysis, reaction engineering, oil refining, nanotechnology, and carbon nanotubes. He has more than 30 issued U.S. patents in the field of synthesis and applications of carbon nanotubes. He is inventor of the CoMoCAT process and founder of South-West Nanotechnologies, a company that produces carbon nanotubes in large scale. In recent years, he has focused on the catalytic upgrading of biomass-derived compounds for production of fuels and chemicals. Resasco is author of over 250 publications and 40 industrial patents. He has more than 10,000 citations.

Rebecca R. Richards-Kortum, Rice University

Rebecca R. Richards-Kortum, Ph.D., is the Stanley C. Moore Professor of Bioengineering at Rice University. Previously, she held the Cockrell Family Chair in Engineering and was a Professor of Biomedical Engineering at The University of Texas at Austin, where she was also a Distinguished Teaching Professor. After receiving a B.S. in Physics and Mathematics from the University of Nebraska-Lincoln in 1985, she continued her graduate work at the Massachusetts Institute of Technology, where she received a Ph.D. in Medical Physics in 1990. She joined the faculty in Bioengineering at Rice University in 2005 and served as Chair of Bioengineering from 2005-2008 and 2012-2014. She was named a Howard Hughes Medical Institute Professor in 2002 and 2006, and was elected to the U.S. National Academy of Engineering in 2008. Richards-Kortum's group is developing imaging systems to enable better screening for oral, esophageal, and cervical cancer at the point-of-care in low-resource settings; novel, low-cost sensors to detect infectious diseases at the point-of-care; and technologies to improve neonatal care in low-resource settings.

Yasuko Rikihisa, The Ohio State University

Yasuko Rikihisa, Ph.D., is Professor of Microbiology at The Ohio State University College of Veterinary Medicine. She is widely recognized as the world's preeminent scholar in rickettsial diseases. Her work spans organisms within *Ehrlichia, Anaplasma, Neoehrlichia, Neorickettsia,* and *Aegyptianella* genera, and susceptible host species (including deer, mouse, rat, dog, horse, cattle, cat, birds, and humans). She identified and patented diagnostic/vaccine platforms for a number of tick-borne zoonotic diseases. Products based on her work are commercially available. She is The Ohio State University 2012 Innovator of the Year, Distinguished University Professor and Scholar, and member of the National Academy of Sciences. She holds 11 U.S. and three foreign patents that have been licensed to six companies. She has published 261 articles, 25 book chapters, serves as editor for *mBio*, and as associate editor for *Frontiers in Cellular and Infection Microbiology*. Rikihisa is a Fellow of AAAS and the American Academy of Microbiology, and past president, American Society for Rickettsiology.

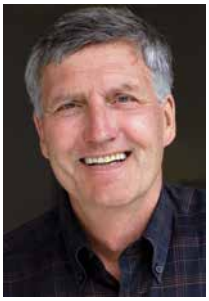


Pradeep K. Rohatgi, University of Wisconsin-Milwaukee

Pradeep K. Rohatgi, Ph.D., currently serves as Distinguished Professor of Mechanical Engineering and Director of Centers for Composites and Materials Manufacture at the University of Wisconsin-Milwaukee. He received his B.S. from IITBHU and his Doctorate from MIT in 1964. He was Professor, Indian Institute of Science in Bangalore and Founding Director of CSIR National Institute of Interdisciplinary Research (Trivandrum) and Advanced Materials and Processing Research Institute (Bhopal) India. Rohatgi authored twelve books, 400 papers and has 18 U.S. Patents. He has received numerous awards including the TMS Chalmers Award and ASME Tribology Award and was elected to fellowships of TMS, ASM, ASME, SAE, TWAS, SME, AAAS, MRS, and the Wisconsin Academy. His research on cast composites is listed as a major landmark in the history of casting. TMS organized a Rohatgi Honorary Symposium in 2006. His work has led to the multimillion dollar metal composites industry saving energy. He has been a consultant to major corporations, the United Nations, and the World Bank. He is the founder and CTO of Intelligent Composites.

Bärbel M. Rohrer, Medical University of South Carolina

Bärbel M. Rohrer, Ph.D., is Professor of Ophthalmology and the Feldberg Endowed Chair at the Medical University of South Carolina, a VA Research Scientist, and an academic and innovative leader in diseases of the retina. She holds three U.S. and five foreign patents, with an additional 22 applications pending. Her IP contributed to the foundation for three start-up companies, one of which she co-founded. A major pharmaceutical company acquired one, and the other two companies are continuing clinical development of her therapies. She has published more than 70 manuscripts, received 37 peer-reviewed grants, serves as editor/reviewer for many journals, and has mentored more than 50 trainees. She is a Foundation Fighting Blindness Scientific Advisory Board member and member of multiple professional societies, including the Association for Research in Vision and Ophthalmology and the Society for Neuroscience. Rohrer's educational background includes a Neuroscience Diploma from the University of Tübingen, a Neuroscience Ph.D. from the University of Calgary, and postdoctoral training at the University of California, San Francisco.



Erkki Ruoslahti, Sanford-Burnham Medical Research Institute

Erkki Ruoslahti, M.D., Ph.D., is Distinguished Professor and former president of Sanford-Burnham Institute for Medical Research and a founder of the Center for Nanomedicine at University of California, Santa Barbara. Ruoslahti is a pioneer in the field of cell adhesion. His main discovery and invention is the integrin-binding tripeptide motif RGD and integrins that recognize this motif. He now studies specific vascular addresses in directing drugs to sites of disease. Ruoslahti is a member of the U.S. National Academy of Sciences, Institute of Medicine, and American Academy of Arts & Sciences. He is the recipient of the Japan Prize, Gairdner Award, Clowes Award, Pasarow Award, and Jacobaeus Prize, and is 2012 Thomson-Reuters Citation Laureate. He is Knight and Commander of the Orders of White Rose of Finland and Lion of Finland.

B. Don Russell, Jr., Texas A&M University

B. Don Russell, Jr., Ph.D., serves as Distinguished Professor and Regent's Professor at Texas A&M University where he has been on the faculty for 40 years. Russell directs the Power System Automation Laboratory and is recognized as the developer of waveform analytic methods for detecting downed power lines and real-time diagnostics for failing power equipment. He is the recipient of numerous honors including the IEEE Herman Halperin Transmission and Distribution Field Award and the Outstanding Engineering Achievement Award of the National Society of Professional Engineers. Russell is a member of the National Academy of Engineering. He holds 13 U.S. patents, all of which have been licensed and commercialized. Russell is the founder of the start-up company, Power Solutions Inc. He has published extensively. He is the former president of the IEEE Power and Energy Society and is editor-in-chief emeritus and a founding editor of the journal *Electric Power Systems Research*. He is a Fellow of six societies including IEEE, NSPE, NAFE and IET.

Ram Sasisekharan, Massachusetts Institute of Technology

Ram Sasisekharan, Ph.D., is currently Alfred H. Caspary Professor of Biological Engineering and Health Sciences and Technology, David H. Koch Institute for Integrative Cancer Research at the Massachusetts Institute of Technology and a principal investigator in the Infectious Diseases Interdisciplinary Research Group of the SMART Centre in Singapore. He is the lead PI of the MIT-Skotech Center for Infectious Diseases. He is considered a pioneer of the emerging and important field of *glycomics* representing the third biopolymer (polysaccharides or glycans) along with DNA (genomics) and proteins (proteomics). Sasisekharan's approaches to studying glycans have already yielded novel translational applications for a wide range of problems such as in infectious diseases and generic pharmaceutical opportunities. Sasisekharan obtained his bachelor's in Physical Sciences from Bangalore University and Ph.D. in Medical Sciences from Harvard Medical School. Sasisekharan joined the MIT faculty in 1996, was awarded tenure in 2001, and promoted to full professor in 2003. Sasisekharan has published over 180 manuscripts, filed 77 U.S. patents, and founded five biotechnology companies.

W. Gregory Sawyer, University of Florida

W. Gregory Sawyer, Ph.D., is the N.C. Baugh Professor and UF Research Foundation Professor of Mechanical and Aerospace Engineering at the University of Florida. Sawyer's research area is in the field of tribology, with a focus on materials for use in extreme environments. His interests span a wide range of disciplines from aerospace to biology. As a part of the MISSE 7 mission on the International Space Station, Sawyer led an effort that successfully performed eight friction experiments while exposed to the harsh conditions of low earth orbit. In 1998 he was a speaker at TED8 where he presented on Molecular Dynamics simulations for the classroom and methods for teaching atomic theory in introductory courses. Sawyer is a caring, creative and fearless experimentalist with a passion for invention.

Axel Scherer, California Institute of Technology

Axel Scherer, Ph.D., is the Bernard Neches Professor of Electrical Engineering, Medical Engineering, and Physics at the California Institute of Technology and visiting professor at Dartmouth College. He received his Ph.D. in 1985 and worked at Bellcore before joining Caltech in 1993. Scherer's group works on nanofabrication of electrical, optical, magnetic and fluidic devices and their integration into microsystems. He has co-authored 350 publications and holds over 100 patents in the fields of optoelectronics, microfluidics, and fabrication techniques. Scherer has co-founded several companies and has pioneered vertical cavity surface emitting lasers and photonic crystals, and developed silicon nanophotonics and surface plasmon enhanced light emitters. His group has perfected the fabrication of 3nm silicon nanostructures to engineer bandgap and mechanical properties through geometry. Scherer now works on building wireless implantable health monitors that can provide feedback for precision medicine and automation of point-of-care molecular pathology instruments for early detection of disease.

Joseph M. Schimmels, Marquette University

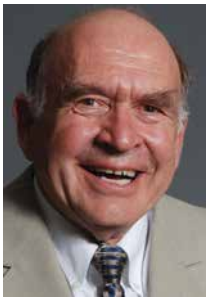
Joseph M. Schimmels, Ph.D., is Professor of Mechanical Engineering and Associate Dean for Research in the College of Engineering at Marquette University. He received his B.S. from Marquette University and M.S. and Ph.D. from Northwestern University, all in mechanical engineering. His research interests are directed toward the assessment, analysis, design, and realization of desirable linear and nonlinear multi-directional dynamic mechanical behaviors. Applications include robotics, prosthetics, and vibration isolation. His research has resulted in five patents and more than 70 research publications. His teaching interests are directed toward developing student knowledge, skills and personal attributes associated with innovative design and new product development. He designed and implemented novel practice-oriented freshman and senior innovation and design programs and coordinated several entrepreneurship oriented student activities. He is also a Fellow of the American Society of Mechanical Engineers.

C. Richard Schlegel, Georgetown University

Richard Schlegel, M.D., Ph.D., is the Chair of Pathology and Professor of Pathology and Oncology at Georgetown University and an expert in human papillomaviruses (HPV) biology. He received his M.D. and Ph.D. degrees from Northwestern University Medical School and was a resident and postdoctoral fellow at Harvard Medical School. He moved to the NIH in 1980 where he continued viral oncology studies and became the Chief of the Cell Regulation Section at NCI. In 1990 he moved to Georgetown where his work led to the technology for the current FDA-approved HPV vaccine. He has published more than 150 papers and received Georgetown's Presidents Award, Vicennial Award, and Patrick Healy Award and has patented several technologies related to HPV. Schlegel also directs the Center for Cell Reprogramming that focuses on a new cell biology technology that he developed. A new spin-off biotechnology company, Propagenix, will utilize this technology for diagnostic and regenerative medicine applications.

Saïd M. Sebti, H. Lee Moffitt Cancer and Research Institute

Saïd M. Sebti, Ph.D., is the Manuel and Adeline Garcia Endowed Chair of the Department of Drug Discovery at the Moffitt Cancer Center and is a global pioneer in the science of fighting cancer. Sebti's work has resulted in over 35 issued patents, 280 research articles, and—with his team at the Moffitt Cancer Center and other collaborators—the discovery of seven licensed drugs, three of which have reached clinical trials. Sebti's outstanding track record in developing new cancer treatments has led to grants totaling more than $37 million. Sebti's lab research is focused on understanding the mechanisms by which aberrant signal transduction pathways contribute to the onset of cancer, and developing novel anticancer drugs based on interfering with these pathways. Among the pathways he has studied are those involving the Ras superfamily (Ras, Rho, and Ral), Kinases (Akt, RhoK, and Aurora), STAT3, Bcl/Mcl, FTase/GGTase, and the proteasome.



George E. Seidel, Jr., Colorado State University

George E. Seidel, Jr., Ph.D., is University Distinguished Professor Emeritus of Biomedical Sciences at the Colorado State University. He received his bachelor's degree from Pennsylvania State University and his M.S. and Ph.D. from Cornell University. He studied bull semen and endocrinology of superovulating calves and the development of resulting embryos. His postdoctoral research at Harvard Medical School evaluated oocytes with electron microscopy. Since 1971 he has been at Colorado State University and between 1973 and 1983 more than 6000 bovine embryos were collected from donor cows and transferred to the uteri of less valuable recipients. Fees for these services funded teaching and development of nonsurgical recovery and transfer techniques for bovine and equine embryos, cryopreservation of embryos, and a simple procedure for bisecting embryos to produce identical twins. Seidel was elected to the U.S. National Academy of Sciences in 1992. In the late 1990s, his laboratory made sexing sperm by flow cytometry/cell sorting practical for artificial insemination. Current research includes in vitro oocyte maturation, fertilization, culture, and cryopreservation of embryos.

Arup K. SenGupta, Lehigh University

Arup K. SenGupta, Ph.D., is currently the P.C. Rossin Professor of the Department of Civil and Environmental Engineering at Lehigh University in Bethlehem, Pennsylvania. During the last three decades, SenGupta's laboratory and field level research work has encompassed multiple facets of water science and technology, spanning from decontamination to desalination to detection. SenGupta's work has demonstrated that through appropriate scientific innovations, water crisis can be transformed into an economic opportunity for resource-poor people. SenGupta is the inventor of the first polymer-based, reusable, arsenic-selective hybrid ion exchanger-nano (HIX-nano) that is now used globally, including the U.S. Over one million people routinely drink arsenic-safe water through SenGupta's HIX nanotechnology. SenGupta currently has seven U.S. patents and four are pending. For his research innovation and its impact on human lives, SenGupta received many national and international accolades including the 2007 Grainger Silver Challenge Award from the National Academy of Engineering.

Wan Y. Shih, Drexel University

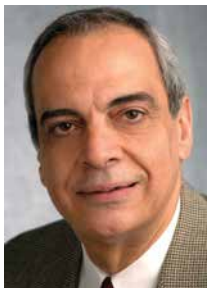
Wan Y. Shih, Ph.D., currently serves as an Associate Professor in the School of Biomedical Engineering, Science and Health Systems and holds a secondary appointment in the Materials Science and Engineering Department at Drexel University. Shih is a prolific inventor of the applications of engineering technology in healthcare. She is a recipient of the 1999 Edward C. Henry Electronics Division Best Paper Award of the American Ceramic Society. She holds 29 U.S. patents that have been licensed to four companies. She is the founder of Lenima Field Diagnostics. She has published 102 peer-reviewed journal articles, and one book chapter and serves on the editorial boards of *Nano Biomedicine and Engineering* and *Biosensors*. Shih is a member of American Physical Society, American Ceramic Society, Materials Research Society, American Chemical Society, IEEE, and Biomedical Engineering Society.

Kevin M. Short, University of New Hampshire

Kevin M. Short, Ph.D., currently serves as Professor of Mathematics at the University of New Hampshire (UNH). Short's research in nonlinear dynamics and signal processing led to his discovery of cupolets (chaotic unstable periodic orbit-lets), which allow extremely complicated systems to be replicated using very little information. This work catalyzed innovations in audio and video compression, audio restoration, speech recognition, improved hearing aids, and data encryption and storage. He is the recipient of a Grammy Award, an Entrepreneurial Venture Creation Person of the Year Award, the UNH Innovator of the Year Award, and is one of only four professors at UNH with the distinction of University Professor. He holds nine U.S. patents and associated foreign patents in Canada, Europe, Japan and Hong Kong, that have been licensed to four companies, along with several that are pending. He is the founder of Chaoticom (later renamed Groove Mobile), Kaonyx Labs and Setem Technologies.

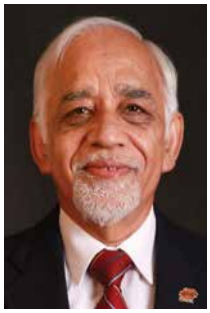
Richard B. Silverman, Northwestern University

Richard B. Silverman, Ph.D., is the John Evans Professor of Chemistry and Professor of Biochemistry, Molecular Biology and Cell Biology at Northwestern University. He received his B.S. in chemistry from the Pennsylvania State University in 1968, served in the United State Army as a Physical Sciences Assistant at the Walter Reed Army Institute of Research from 1969 to 1971, and received his Ph.D. in organic chemistry from Harvard University in 1974. Silverman is the inventor of the blockbuster drug Lyrica™, marketed by Pfizer for fibromyalgia, neuropathic pain and epilepsy. His awards include: Perkin Medal (2009); American Chemical Society (ACS) Medicinal Chemistry Hall of Fame (2009); Sato Memorial International Award (Pharmaceutical Society, Japan, 2012); BMS-Smissman Award (ACS, 2013); Centenary Prize (Royal Society of Chemistry, 2013); Fellow, Royal Society of Chemistry (2013); Medicinal Chemistry Prize (Israel Chemical Society, 2014); Trustee Medal for Faculty Innovation and Entrepreneurship (Northwestern, 2014); iCON Innovator Award (iBIO Institute, 2014); and Fellow, American Academy of Arts & Sciences (2014). Silverman is the author on 330 research articles, 59 issued U.S. patents and five books.



Marwan A. Simaan, University of Central Florida

Marwan A. Simaan, Ph.D., is the Florida 21st Century Chair and Distinguished Professor of EECS at the University of Central Florida. Prior to joining UCF in 2008, he was the Bell Atlantic Professor and Chair of ECE at the University of Pittsburgh. He received a Ph.D. in Electrical Engineering from the University of Illinois at Urbana-Champaign. His research is highly interdisciplinary and covers a broad spectrum of topics in control, optimization, and signal processing and has been funded by NSF, DARPA, AFOSR, ONR, NIH, and a variety of industrial sources including Gulf Oil, Alcoa, and Westinghouse. His recent research is focused on improving the technology of Left Ventricular Assist Devices for patients with congestive heart failure. In 1995 he received the University of Illinois Distinguished ECE Alumnus Award and in 2008 the Distinguished College of Engineering Service Award. He is a member of the National Academy of Engineering and Fellow of IEEE, ASEE, AAAS, and AIMBE.



Raj N. Singh, Oklahoma State University

Raj N. Singh, Sc.D., is the Williams Company Distinguished Chair Professor and Head of the School of Materials Science and Engineering (MSE) at Oklahoma State University. He is cited for his innate ability to invent new materials and their novel processing for creating new products as documented in 27 granted patents; for the world's first commercialization and use of his inventions in ceramic matrix composites (CMCs) for aircraft engines and gas turbines; for seminal and transformative contributions to the field of MSE; for the invention of materials for high energy density battery and fuel cells; for recognized scientific and technological contributions to the MSE profession as documented in over 350 articles, books and book chapters; for selection as a Fellow of the American Ceramic Society and American Society of Materials; for serving on the editorial boards of five international journals; for awards of distinguished service, patents, research and publications from universities, industry and national laboratory organizations.

Thomas C. Skalak, University of Virginia

Thomas C. Skalak, Ph.D., is Vice President for Research and Professor of Biomedical Engineering at the University of Virginia, where he has conducted research and innovation for 28 years. An international authority on bioengineering with a focus on biomechanics of the cardiovascular system with patented work on blood flow analytics, he served as Chair of the Department of Biomedical Engineering at UVA from 2001-2008, as past president of both the American Institute of Medical and Biological Engineering and the Biomedical Engineering Society. He is a frequent speaker on innovation at Fortune 500 and government partners, including the White House. Skalak led the launch of U.Va. Innovation; the UVA Venture Summit; and the statewide i6 innovation Virginia Innovation partnership. He was the founder of the UVA-Coulter Foundation Translational Research Partnership and other proof-of-concept funds including corporate and private partners such as Johnson & Johnson, AstraZeneca, and the Ivy Foundation. Skalak was educated as a bioengineer at the Johns Hopkins University (B.E.S. 1979) and at the University of California, San Diego (Ph.D. 1984).

Mohamed Y. Soliman, Texas Tech University

Mohamed Y. Soliman, Ph.D., is the Livermore Chair professor at the Petroleum Engineering Department of Texas Tech University. Prior to joining Texas Tech University in January of 2011, Soliman worked for Halliburton Energy Services for more than 30 years. He holds 28 patents on fracturing operations and analysis, testing and conformance applications. He has nine patent applications that are pending. He is the author or co-author of over 200 technical papers and articles. He has authored chapters in World Oil's *Handbook of Horizontal Drilling and Completion Technology,* the text *Well Construction,* and the SPE monograph *Well Test Analysis*. He is an accomplished speaker at numerous seminars, conferences, workshops, short courses, and forums both domestically and internationally. Soliman earned his B.S. degree from Cairo University and M.S. and Ph.D. degrees from Stanford University, all in Petroleum Engineering. He is a distinguished member of the Society of Petroleum Engineers.

Bruce J. Tatarchuk, Auburn University

Bruce J. Tatarchuk, Ph.D., is currently the Gavin Endowed Chair and Director of the Center for Microfibrous Materials Manufacturing at Auburn University. He earned his B.S. from the University of Illinois at Urbana-Champaign and his Ph.D. from UW-Madison. Tatarchuk joined the Department of Chemical Engineering at Auburn in 1982. Tatarchuk's work focuses on chemical interactions occurring at solid surfaces. He has pioneered the hierarchical design and microfibrous entrapment of sorbents, catalysts and electrocatalysts to attain heretofore unattainably high levels of steady-state reactivity (and desired selectivity) by manipulation of structure-property relationships to simultaneously control surface kinetics, mass and heat transport, and electrical conduction. His fundamental discoveries of new structures of matter have led to 12 U.S. patents, a large number of foreign counterparts, and commercialization of numerous products including: double layer capacitors, advanced batteries, polishing sorbents, heterogeneous catalysts, filters, and thermal and electrical conduction aids. These products impact hundreds of millions of users each year. He is a co-founder of IntraMicron Inc.

Gordon A. Thomas, New Jersey Institute of Technology

Gordon A. Thomas, Ph.D., is a Professor of Physics at the New Jersey Institute of Technology. He was recently honored by the New Jersey Inventors Hall of Fame for his portfolio of 23 issued and pending patents. He has also received two Thomas Edison Patent Awards: one for an implantable, wireless Smart Shunt to monitor the flow of cerebrospinal fluid and another for a flexible sensor circuit to help prevent explosions. Two of his earlier inventions have led to notable products: a fabrication method for Bell Labs' ultra-pure optical fiber, now widely used for optical communications, and a produce recognition system for NCR's grocery check-out counters. Thomas was educated at Brown and University of Rochester. He has worked at Bell Labs, Harvard, MIT, and University of Tokyo. He has been honored as a Fellow of the American Physical Society for some of his 150 peer-reviewed articles on basic physics.

Mark E. Thompson, University of Southern California

Mark E. Thompson, Ph.D., is a Professor of Chemistry, Materials Science and Chemical Engineering at the University of Southern California. Thompson received his B.S. degree in chemistry in 1980 from the University of California, Berkeley and his Ph.D. in chemistry in 1985 from California Institute of Technology. He spent two years as an S.E.R.C. fellow in the inorganic Chemistry laboratory at Oxford University. Thompson took a position in the chemistry department at Princeton University in 1987 as an assistant professor. In 1995, he moved his research team to the University of Southern California. His research program involves the study of new materials and devices for electroluminescence, solar energy conversion, chemical and biological sensing and catalysis.

Thomas G. Thundat, University of Alberta

Thomas G. Thundat, Ph.D., is a Canada Excellence Research Chair Professor of Oil Sands and Molecular Engineering at the University of Alberta, Edmonton, Canada. He is also a Research Professor at The University of Tennessee, Knoxville, a visiting professor at the University of Burgundy, France, a Distinguished Professor at the Indian Institute of Technology, Madras, and Centenary Professor at the Indian Institute of Science, Bangalore. He received his Ph.D. in physics from the State University of New York at Albany in 1987. He is the author of over 380 publications in refereed journals, 45 book chapters, and 40 patents. Thundat is an elected Fellow of the American Physical Society, the Electrochemical Society, the American Association for Advancement of Science, the American Society of Mechanical Engineers, and the SPIE. Thundat's research is currently focused on novel physical, chemical, and biological detection using micro and nano mechanical sensors.

Richard B. Timmons, The University of Texas at Arlington

Richard B. Timmons, Ph.D., is a Distinguished Professor of Chemistry and Biochemistry at The University of Texas at Arlington. His entire professional career has been in academia. Timmons' Ph.D. and postdoctoral research experiences were in the areas of experimental and theoretical studies of gas phase chemical reactions. Beginning in the early 1990s, he began experimental work involving use of low pressure plasma discharges to create thin film coatings. Most notably, his studies involved examination of the utility of employing variable duty cycle pulsed plasmas as a potential route to creating molecularly tailored films. He was able to demonstrate successful large scale progressive changes in polymeric film with sequential changes in the on to off ratios of the plasma discharges employed, all other plasma variables being held constant. The film chemistry controllability, so attained, has proven to be useful for a wide variety of practical applications and has led to a number of patents for this technology.

Mark L. Tykocinski, Thomas Jefferson University

Mark L. Tykocinski, M.D., serves as Provost and Executive Vice President for Academic Affairs at Thomas Jefferson University, and the Anthony F. and Gertrude M. DePalma Dean of Sidney Kimmel Medical College at the university. For over five years, he also served as President of Jefferson University Physicians. Before joining Jefferson in 2008, he was Professor and Chair of the Department of Pathology and Laboratory Medicine at the University of Pennsylvania for a decade. Tykocinski's research contributions and patent portfolio are in the fields of molecular and cellular immunology. He serves as SAB Chair for KAHR-Medical, the biotech company he founded in 2007 to develop fusion protein pharmaceuticals. He is Past President of the Association of Pathology Chairs and the American Society for Investigative Pathology/FASEB. He earned a B.A. in biology *magna cum laude* from Yale University and his M.D. from New York University.

Kamil Ugurbil, University of Minnesota

Kamil Ugurbil, Ph.D., currently holds the McKnight Presidential Endowed Chair Professorship in Radiology, Neurosciences, and Medicine and is the Director of the Center for Magnetic Resonance Research (CMRR) at the University of Minnesota. After receiving his B.A. and Ph.D. degrees from Columbia University in physics (1971) and chemical physics (1976), respectively, he joined AT&T Bell Laboratories in 1977 and subsequently returned to Columbia as a faculty member in 1979. He moved to the University of Minnesota in 1982 where his research in magnetic resonance (MR) led to the evolution of his laboratory into an interdepartmental and interdisciplinary research center, the CMRR. His central research focus is development and biomedical applications of high magnetic field MR imaging techniques and instrumentation for the study of the human brain function, connectivity and anatomy.

Anthony J. Vizzini, Wichita State University

Anthony J. Vizzini, Ph.D., is Provost and Senior Vice President at Wichita State University. He received his Ph.D. in Aeronautics and Astronautics in 1986 from M.I.T. and joined the faculty at the University of Maryland where he was the founding director of the Composites Research Laboratory. As the Bill and Carolyn Cobb Chair, he served as a department head at Mississippi State. He was a dean at Western Michigan. He came to Wichita State as the Vice President for Academic Affairs and in 2014 was promoted to Provost and Senior Vice President. He is the author of over 100 articles and has been involved in the design and manufacture of composite structures for helicopters, uninhabited air vehicles, and space applications. He is a registered engineer in Mississippi, Michigan, and Kansas. He is a past president of SAMPE, a past president of the American Society for Composites, an Associate Fellow of the AIAA, and a Fellow of the American Society for Composites.

Horst Vogel, École Polytechnique Fédérale de Lausanne

Horst Vogel, Ph.D., is a Professor Emeritus of Chemical Sciences and Engineering at École Polytechnique Fédérale de Lausanne. He studied chemistry at the University of Wuerzburg, Germany, and did his Ph.D. at the Max-Planck Institute for Biophysical Chemistry in Goettingen, Germany. After directing research on the structure and function of membrane proteins at the Max-Planck Institute for Biology in Tuebingen, Germany, the Biocenter at the University of Basel, Switzerland, and the Karolinska Institute in Stockholm, Sweden, he was appointed as professor for biophysical chemistry at the Swiss Federal Institute of Technology in Lausanne (EPFL) in 1994. His laboratory bridges activities from biophysics, biochemistry, cell and molecular biology to novel micro- and nanotechnologies. He presently concentrates on three areas: (i) cellular signaling mediated by ionotropic and G protein coupled receptors, (ii) self-assembly and folding of (bio)polymers, (iii) novel bioanalytical techniques using micro- and nanotechnologies. He actively transfers his inventions to industrial applications by licensing patents, collaborating with industrial partners and creating startup companies.

Nicholi Vorsa, Rutgers, The State University of New Jersey

Nicholi Vorsa, Ph.D., is a Professor of Plant Biology and Pathology and is Director of the Rutgers/NJAES PE Marucci Center at Rutgers, The State University of New Jersey. He received a B.S. from Rutgers University (1976), an M.S. degree from University of Wisconsin-Madison (1978), and a Ph.D. from Rutgers University (1985). Vorsa's major areas of research are the genetic enhancement of blueberry and cranberry, and the study of natural products, particularly polyphenols of cranberry in relation to human health. He has collected and utilized diverse germplasm to improve yield, disease resistance, and phytonutrient content through breeding and selection for these crops. He developed a DNA fingerprinting method for cranberry and the first genetic map of cranberry. He has two utility patents, four U.S. Plant Patents and two Canadian Plant Breeders' Rights. His cranberry varieties have received wide acceptance in the US and Canada. He has over 100 publications in scientific journals and book chapters.

Gordana Vunjak-Novakovic, Columbia University

Gordana Vunjak-Novakovic, Ph.D., is the Mikati Foundation Professor of Biomedical Engineering and Medicine at Columbia University. She directs the Laboratory for Stem Cells and Tissue Engineering that has focus on engineering human tissues for regenerative medicine, stem cell research and modeling of disease. Vunjak-Novakovic is extensively published and highly cited and has over 70 licensed, issued, and pending patents. She founded two biotech companies and is a frequent advisor to government and industry. Among her many recognitions, Vunjak-Novakovic is a Fellow of the American Institute for Medical and Biological Engineering, a member of the New York Academy of Sciences, Academia Europaea, Serbian Academy of Sciences and Arts, and the Women in Technology International Hall of Fame. She is a member of the National Academy of Engineering, the first female professor at Columbia University to receive this distinction, and a member of the Institute of Medicine of the National Academies.

Kristiina Vuori, Sanford-Burnham Medical Research Institute

Kristiina Vuori, M.D., Ph.D., is President of the Sanford-Burnham Medical Research Institute, and Professor and Pauline & Stanley Foster Presidential Chair. She earned her M.D. and Ph.D. degrees at University of Oulu, Finland, received postdoctoral training at Sanford-Burnham, and was appointed to faculty in 1996. She served as Director of the Institute's Cancer Center in 2005-2013, and has been President of Sanford-Burnham since 2010. Vuori was selected PEW Scholar in 1997 and she is an investigator of a Stand Up To Cancer Dream Team. She serves on the Board of Directors for the American Association for Cancer Research, California Institute for Regenerative Medicine, California Breast Cancer Research Program and Florida Inventors Hall of Fame. She is co-founder of three biotechnology companies, and her research focuses on cancer metastasis. Presently, one approved drug and five therapies for cancer in Phase III trials stem from the work of Sanford-Burnham scientists.

Kevin M. Walsh, University of Louisville

Kevin M. Walsh, Ph.D., is the Samuel T. Fife Endowed Professor in Electrical and Computer Engineering at the University of Louisville. He is also the founding director of the University's nationally-recognized $30 million, 30,000 sq. ft., class 100 Micro/NanoTechnology Center (MNTC) which supports an average of $5 million a year of research. Walsh holds a doctorate from the University of Cincinnati in microelectronics. His research is in the areas of micro-electro-mechanical systems (MEMS) and nanotechnology. He has been awarded a dozen patents and has co-founded four technical start-up companies (Assenti, Intelli-rod Spine, UltraTrace Detection and Simon Sounds). Walsh has taught over 20 different courses, advised over 25 completed theses, and published over 150 technical papers. Walsh also founded the KY nanoNET Initiative and has served on several national advisory panels for the National Science Foundation.

Christine A. Wang, Massachusetts Institute of Technology

Christine A. Wang, Ph.D., is a Senior Staff member in the Laser Technology and Applications Group at Lincoln Laboratory, Massachusetts Institute of Technology. Her research involves the growth and optimization of III-V semiconductors for advanced optoelectronic devices. She pioneered concepts used in rotating-disk organometallic vapor phase epitaxial reactors and is internationally recognized for her contributions in growth of advanced semiconductor optoelectronic devices including diode lasers, quantum cascade lasers, thermophotovoltaic cells, and extended wavelength Geiger-mode avalanche photodiodes. Wang has authored or co-authored over 160 publications, has five patents and one patent pending, and edited one book. She has given numerous invited talks at national and international conferences and has chaired and organized several national and international conferences related to epitaxial crystal growth, mid-infrared materials, and lasers. Wang received her S.B., M.S., and Ph.D., all from Materials Science and Engineering at the Massachusetts Institute of Technology.

Shaomeng Wang, University of Michigan

Shaomeng Wang, Ph.D., is the Warner-Lambert/Parke Davis Professor of Medicine and Professor of Internal Medicine, Pharmacology and Medicine Chemistry at the University of Michigan. He received his B.S. in Chemistry from Peking University in 1986 and his Ph.D. in Chemistry from Case Western Reserve University in 1992, and did his postdoctoral training at the National Cancer Institute, NIH. He was assistant-associate professor at Georgetown University in 1996-2001. He joined the University of Michigan in 2001 and was named to his current position in 2007. He serves as the Co-Director of the Molecular Therapeutics Program in the Comprehensive Cancer Center and is the Director of the Cancer Drug Discovery Program at University of Michigan. He has published 250 papers and is an inventor on 38 issued U.S. patents. He is a co-founder of Ascenta Therapeutics, Ascentage Pharma and OncoFusion Therapeutics. Wang also serves as the co-editor-in-chief for the *Journal of Medicinal Chemistry* of the American Chemical Society.

Paul H. Weigel, The University of Oklahoma

Paul H. Weigel, Ph.D., is the George Lynn Cross Research Professor and the Ed Miller Chair of Molecular Biology in the College of Medicine at The University of Oklahoma Health Sciences Center. He was trained at Cornell University (Chemistry, B.A.) and Johns Hopkins University SOM (Biochemistry, Ph.D.). His research program, currently focused on hyaluronan biology, has been funded by grants from the NIH (17 as PI or co-PI), DOD, ONR and other agencies. He has published 186 scientific articles, served on journal editorial boards and grant review panels, been an elected officer of the Association of Medical and Graduate Departments of Biochemistry (Webmaster and President) and the International Society for Hyaluronan Sciences (Secretary, Treasurer, and President), and he founded the Association of Biochemistry Course Directors for biochemistry educators. He has 27 U.S. and 35 foreign patents, and co-founded Hyalose LLC, a biotech company.

Jonathan A. Wickert, Iowa State University

Jonathan A. Wickert, Ph.D., serves as Senior Vice President, Provost and Professor of Mechanical Engineering at Iowa State University with responsibility for the university's academic, research, extension and outreach, and information technology programs. Wickert's research and teaching interests are in the areas of vibration and noise control. He is the author of over one hundred technical papers, holds two U.S. patents, and has served as a consultant to the computer, automotive, aerospace, and materials industries. Wickert is the author of the textbook, *An Introduction to Mechanical Engineering,* which has been translated into the Korean, Chinese, and Portuguese languages. Wickert holds bachelor's, master's and doctorate degrees from the University of California, Berkeley, and previously served on the faculty at Carnegie Mellon University.

Alan E. Willner, University of Southern California

Alan E. Willner, Ph.D., is the Steven and Kathryn Sample Chaired Professor of Engineering at the University of Southern California. He worked at AT&T Bell Labs and Bellcore prior to his position at USC. Willner is a member of the U.S. Army Science Board and was founder/CTO of Phaethon Communications. His honors include: International Fellow of UK Royal Academy of Engineering; Presidential Faculty Fellows Award from the White House; IEEE Eric Sumner Award; Guggenheim, Packard, and Fulbright Fellowships; Optical Society Forman Engineering Excellence Award; IEEE Photonics Society Engineering Achievement Award; SPIE President's Award; Eddy Best Technical Paper Award from Pennwell; and Fellow of AAAS, IEEE, OSA and SPIE. Willner's activities include: co-chair of U.S. National Academies' Study on Optics & Photonics; IEEE Photonics Society OSA Vice-President; editor-in-chief of *Optics Letters* and IEEE/OSA *Journal of Lightwave Technology;* and General Co-Chair of Conference on Lasers and Electro-Optics. He has approximately 1,100 publications, including one book and 26 U.S. patents, primarily in optical communications.

Richard C. Willson, III, University of Houston

Richard C. Willson, III, Ph.D., is Huffington-Woestemeyer Professor of Chemical and Biomolecular Engineering, Biochemistry and Biomedical Engineering at the University of Houston, a Senior Affiliate of the Houston Methodist Research Institute, and a member of the SCBMB program at Baylor College of Medicine. Raised in Littleton, Colorado, he completed B.S. and M.S. degrees in Chemical Engineering at Caltech, and his Ph.D. in Biochemical Engineering and postdoctoral studies in Biochemistry at MIT. Willson is a recipient of the Presidential Young Investigator Award, a Fellow of AIMBE, AAAS, and ACS, a member of Phi Kappa Phi and Sigma Xi, and former President of the International Society for Molecular Recognition. Both his father and his son are IP attorneys.

Chi-Huey Wong, Academia Sinica

Chi-Huey Wong, Ph.D., is President of Academia Sinica and Professor of Chemistry at the Scripps Research Institute. He received his B.S. and M.S. degrees from National Taiwan University and Ph.D. in chemistry from Massachusetts Institute of Technology. He is a recipient of numerous awards, including the U.S. Presidential Green Chemistry Challenge Award, the American Chemical Society Award for Creative Work in Synthetic Organic Chemistry, Claude Hudson Award in Carbohydrate Chemistry, Arthur C. Cope Award and the Wolf Prize in Chemistry. He is a member of the American Academy of Arts & Sciences and the U.S. National Academy of Sciences. His research interests are in the areas of chemistry and chemical biology, including synthesis of complex carbohydrates, glycoproteins and small-molecule probes for the study of carbohydrate-mediated biological recognition. He is the author of over 700 publications (h-index 101) and over 100 U.S. patents.

John A. Woollam, University of Nebraska-Lincoln

John A. Woollam, Ph.D., is the George Holmes Distinguished Professor of Electrical Engineering at the University of Nebraska-Lincoln. He is an internationally known expert in ellipsometry and is founder and president of the J.A. Woollam Company, a university spin-off that has emerged as a worldwide leader in the production of spectroscopic ellipsometry instrumentation. For 27 years, the J.A. Woollam Company has manufactured ellipsometers for a wide range of applications. With distributors in more than a dozen countries, his company sells ellipsometers worldwide. Woollam is co-inventor on dozens of patents, and his company has secured more than 150 patents to date. Woollam has co-authored hundreds of articles and presented at numerous scientific meetings. He is a Fellow of the American Physical Society (APS) and the American Vacuum Society. Woollam received the 2013 Prize for Industrial Application of Physics from the APS for sustained contributions to commercialization of spectroscopic ellipsometry.

S. Davis Worley, Auburn University

S. Davis Worley, Ph.D., is Professor Emeritus in the Department of Chemistry and Biochemistry at Auburn University. He earned his Ph.D. at The University of Texas in 1969. In 1974, Worley began work at Auburn University, where he conducted research in diverse areas such as UV photoelectron spectroscopy, XPS, molecular orbital computations, FTIR studies of molecular interactions with supported catalysts, and synthesis and testing of antibacterial N-halamine monomers and polymers for water disinfection and antimicrobial coatings. In 1997, Worley and microbiologist Jeff Williams formed HaloSource, Inc. Worley developed the core biocidal technology that Seattle-based HaloSource has commercialized. The company markets the technology in a disinfecting cartridge to drinking water device manufacturers around the world, most notably in China, India, and Brazil. The technology was granted U.S. Environmental Protection Agency registration in early 2009. The core technology was licensed to HaloSource in 1997. Worley has received 40 patents in the course of his work.

Chris Xu, Cornell University

Chris Xu, Ph.D., is a Professor at the School of Applied and Engineering Physics at Cornell University. Prior to Cornell, he was a member of technical staff at Bell Laboratories. He received his Ph.D. in Applied Physics from Cornell University. His current research areas are fiber optics and biomedical imaging. His research is supported by major grants from NIH, NSF, and DARPA. Xu has chaired or served on numerous conference organization committees and NSF/NIH review panels. He currently serves as associate editor for *Biomedical Optics Express,* and is on the editorial board of several journals. He has published more than 100 journal papers (including seven invited review articles) and eight book chapters. He has 28 patents granted or pending. He has won the NSF CAREER award, Bell Labs team research award, and the Tau Beta Pi and two other teaching awards from Cornell Engineering College. He is a Fellow of the Optical Society of America.

Ping Xu, Shanghai Jiao Tong University

Ping Xu, Ph.D., is a Distinguished Professor and Deputy Director of State Key Laboratory of Microbial Metabolism in Shanghai Jiao Tong University, as well as a leading researcher of Applied & Environmental Biotechnology. He received his doctorate from Shandong University in 1999. He has served as Professor of Microbiology at Shandong University, Chinese Academy of Sciences, and Shanghai Jiao Tong University since 1997. Among his numerous awards and achievements are the 2007 Young Asian Biotechnologist Prize (sole winner, Japan Society for Biotechnology), and Fellow of American Institute of Medical and Biological Engineering. He has invented numerous bioprocesses with his seminal discovery of useful bacteria and by metabolic engineering that have significant impacts for agricultural, biotechnological, and clean-environmental engineering, and waste-treatment applications. He has also made significant contributions to the understanding of mechanisms of microbial remediation of environmental pollutants. This is especially important in developing countries and all emerging economies.

Zhi Xu, University of Missouri-St. Louis

Zhi Xu, Ph.D., is Associate Professor of Chemistry and Biochemistry at the University of Missouri-St. Louis. He received his B.S. degree in Chemistry, an M.S. degree in Electrical Engineering from Tsinghua University, Beijing, China, and his Ph.D. in Chemistry from the University of Pittsburgh. He held a postdoctoral position at the University of Illinois at Urbana-Champaign prior to joining the University of Missouri-St. Louis faculty in 1994. He invented and developed an optical technology for non-invasive detection of blood glucose. This technology-could enable faster, cheaper, and better detection of blood glucose for both Type 1 and Type 2 diabetes without the pain of drawing blood and potentially improve the quality of life for nearly 26 million Americans and over 340 million people worldwide. He also invented and developed "Ultrasensitive Spectrophotometry," an optical technology capable of 50 to 100 fold sensitivity enhancement in most optical instruments. Several analytical instruments have been introduced into the worldwide market since 2004.

Janet K. Yamamoto, University of Florida

Janet K. Yamamoto, Ph.D., is a Professor of Retroviral Immunology in the Department of Infectious Diseases and Pathology, College of Veterinary Medicine at the University of Florida. Yamamoto, who received her Ph.D. in Microbiology from The University of Texas Medical Branch at Galveston, is the co-discoverer of feline immunodeficiency virus (FIV), the feline counterpart of HIV, and is also the inventor of the first commercial FIV vaccine sold by Pfizer-Zoetis and Boehringer. She and Nobel Laureate Dr. Francoise Barré-Sinoussi were the first to demonstrate that interferon-gamma will not protect against HIV-1 and she served as the consultant for the second FDA-approved HIV-1 Western blot for HIV-1 confirmatory test. The author of more than 30 patents, Yamamoto is currently developing an HIV-1 vaccine using anti-HIV T-cell epitopes conserved among FIV, SIV and HIV-1, testing the peptide-based vaccine delivery system, and developing an FIV vaccine for immunotherapy.

Shu Yang, University of Pennsylvania

Shu Yang, Ph.D., is a Professor in the Department of Materials Science and Engineering at the University of Pennsylvania. She creates materials with precise but tunable size, shape, and morphology into 3D structures, and manipulates their responsiveness for real world applications, including energy efficient buildings, photonics, coatings, and soft robotics. Yang received her B.S. degree from Fudan University, China in 1992, and Ph.D. degree in chemistry and chemical biology from Cornell University in 1999. She then joined Bell Laboratories, Lucent Technologies as a Member of Technical Staff until 2004. She is a recipient of ICI (1999) and Unilever (2001) student awards from American Chemical Society. She was selected for the Frontier of Engineering symposium by the National Academy of Engineering in 2002, and later as a speaker in 2011. She was selected by MIT's *Technology Review* as one of the world's Top 100 Young Innovators under 35 in 2004.

Michael J. Yaszemski, Mayo Clinic

Michael J. Yaszemski, M.D., Ph.D., is the John and Posy Krehbiel Endowed Professor of Orthopedic Surgery and Biomedical Engineering at Mayo Clinic and director of its Polymeric Biomaterials and Tissue Engineering Laboratory. He is a retired USAF Brigadier General. He recently completed his term as the Mayo Clinic medical staff president and served as chair of Mayo's Spine Surgery Division. He received both bachelor's and master's degrees in Chemical Engineering from Lehigh University in 1977 and 1978, an M.D. from Georgetown University in 1983 and a Ph.D. in Chemical Engineering from Massachusetts Institute of Technology in 1995. He chaired the NIH Musculoskeletal Tissue Engineering study section, and completed a term of service on the Advisory Council of the National Institute of Biomedical Imaging and Bioengineering. He served as chair of the FDA CDRH Advisory Committee. He is a member of the FDA Science Board and the Lehigh University Board of Trustees.

Phillip D. Zamore, University of Massachusetts Medical School

Phillip D. Zamore, Ph.D., is the Gretchen Stone Cook Professor and Chair of Biomedical Sciences, Professor of Biochemistry and Molecular Pharmacology, Howard Hughes Medical Institute Investigator, and managing co-director of the RNA Therapeutics Institute, at the University of Massachusetts Medical School. He received his A.B. (1986) and Ph.D. (1992) degrees in Biochemistry and Molecular Biology from Harvard University, and then pursued postdoctoral studies on the role of RNA-binding proteins in *Drosophila* development jointly with Ruth Lehmann and David Bartel at the Whitehead Institute for Biomedical Research and James Williamson at the Massachusetts Institute of Technology. His laboratory studies small RNA silencing pathways in eukaryotes and prokaryotes, including the RNA interference (RNAi), microRNA, and PIWI-interacting RNA pathways. Zamore and his collaborators seek to use these insights to design therapies for human diseases, including Huntington's disease.

2014 FELLOWS SELECTION COMMITTEE

Norman R. Augustine

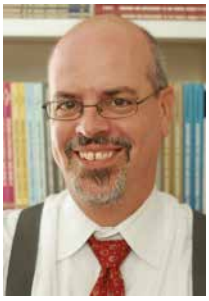
National Medal of Technology and Innovation Recipient
Retired Chairman and CEO
Lockheed Martin Corporation

Norman R. Augustine is retired Chairman and CEO of the Lockheed Martin Corporation. Prior to joining Martin Marietta, he served as Assistant Secretary of the Army (R&D) from 1973-75 and Under Secretary from 1975-77. He was a professor at Princeton, his alma mater, from 1997-99. 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 the Department of Defense's highest civilian decoration, the Distinguished Service Medal. He has been elected to membership in the American Philosophical Society, the National Academy of Sciences, the American Academy of Arts & Sciences, the Explorers Club, Tau Beta Pi, Phi Beta Kappa and Sigma Xi.

Anne H. Chasser

Former Commissioner for Trademarks
United States Patent and Trademark Office

Anne H. Chasser is an author and Intellectual Property Strategist and expert. From 1999-2004 she served as Commissioner for Trademarks at the United States Patent and Trademark Office, having been appointed by President Bill Clinton and confirmed by the United States Senate. She served in both the Clinton and Bush administrations, where she oversaw trademark operations at the USPTO. During her term at the USPTO, 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. Along with Jennifer Wolfe, she authored in 2010, *Brand Rewired: Connecting Branding, Creativity, and Intellectual Property Strategy.*



Edward Derrick, Ph.D.

Chief Program Director
Center of Science, Policy and Society Programs
American Association for the Advancement of Science

Since July 2011, Edward G. Derrick, Ph.D., has been 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 including the interplay of science with religion, law and human rights, connecting scientists and policy makers through programs in science and government, including the S&T Policy Fellowship program; and addressing improvement in the conduct of science through activities promoting responsible conduct of science and through a peer review service. He holds a Ph.D. from The University of Texas at Austin, with a dissertation in theoretical particle physics, and a B.S. from the Massachusetts Institute of Technology, with an undergraduate thesis in biophysics.

Elizabeth L. Dougherty, J.D.

Director of Inventor Education, Outreach and Recognition
Office of Innovation Development
United States Patent and Trademark Office

Elizabeth Dougherty is the Director of Inventor Education, Outreach, and Recognition in the Office of Innovation Development at the USPTO where she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs and the intellectual property interests of colleges and universities; coordinates the agency's ombudsman program for small businesses and entrepreneurs as mandated by the American Invents Act (AIA); supervises the development of outreach programs to women, minority and other underserved communities; and builds and maintains relationships with state and local governments to promote local programs that support invention and innovation in the United States. Dougherty has spearheaded a number of special projects with such organizations and oversees a portfolio of ongoing and future initiatives designed to assist independent inventors, entrepreneurs, and minorities.

Margaret Focarino

Commissioner for Patents
United States Patent and Trademark Office

Margaret A. Focarino is Commissioner for Patents for the USPTO. She was appointed to this position in January 2012. She previously served as Deputy Commissioner for Patents, providing administrative oversight to nine Patent Technology Centers and coordinating the activities of patent application examination and reissues of patents. As Commissioner, she manages and leads the Patent organization as the chief operating officer. She is responsible for the management and direction of all aspects of the organization including patent operations, examination policy, resources and planning, and administration. Focarino began her career at the USPTO in 1977 as a Patent Examiner. She became a Supervisory Patent Examiner in 1989 and was promoted to the Senior Executive Service in 1997. She received the Department of Commerce Bronze Medal Award in 1993 for her work as a Supervisory Patent Examiner and the Department of Commerce Silver Medal for leadership in 2010 for leading a joint union and management task force that developed and implemented the first significant changes to the patent examiner work credit system in more than 30 years.

Henry C. "Hank" Foley, Ph.D.

Executive Vice President for Academic Affairs, Research and Economic Development
University of Missouri System
NAI Fellow

Previously, Hank was at Penn State for 13 years, where he most recently he served as Vice President of Research, Dean of The Graduate School at Pennsylvania State, and President of the Penn State Research Foundation. Prior to Penn State, he served on the chemical engineering faculty at the University of Delaware for 14 years. Before his transition to academia, Hank worked at American Cyanamid, then a world leader in refinery catalysts. He has consulted with many companies including DuPont, Air Products, Mobil Oil, Monsanto, Engelhard Corporation and Westvaco. Hank is an inventor on 16 patents with content that includes a fast flow plasma reactor for materials processing, new kinds of bimetallic catalysts, carbon membranes for small or large molecule separations and new kinds of carbon materials for reaction and separation. He has authored over 120 peer reviewed journal articles. Hank earned a bachelor of science degree in chemistry at Providence College, a master's degree in physical chemistry from Purdue University and a doctorate in physical/inorganic chemistry from Penn State.

Eric R. Fossum, Ph.D.

National Inventors Hall of Fame Inductee
Thayer School of Engineering at Dartmouth
NAI Charter Fellow

Eric R. Fossum, Ph.D., is Professor at the Thayer School of Engineering at Dartmouth and Faculty Coordinator of the Ph.D. Innovation Program. 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 Photobit to further develop and commercialize the technology which was eventually acquired by Micron. He holds over 140 U.S. patents and was inducted into the National Inventors Hall of Fame and the Space Technology Hall of Fame. He has published over 260 papers, is a Member of the National Academy of Engineering, an IEEE Fellow, 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.

Robert H. Grubbs, Ph.D.

Nobel Laureate
Victor and Elizabeth Atkins Professor of Chemistry
California Institute of Technology
NAI Fellow

Robert H. Grubbs, Ph.D., is the Victor and Elizabeth Atkins Professor of Chemistry at the California Institute of Technology. He received his bachelors in chemistry from the University of Florida in 1963 and his doctorate in chemistry from Columbia University in 1968. The Grubbs group discovers new catalysts and studies their fundamental chemistry and applications. In addition to their broad usage in academic research, these catalysts are now used commercially to prepare new pharmaceuticals, composites for structural applications and for the conversion of biorenewable carbon sources into fuels and commodity chemicals. Grubbs received the 2005 Nobel Prize in Chemistry for *"the development of the metathesis method in organic synthesis,"* among many other distinguished awards. Grubbs is a member of the National Academy of Sciences, a Fellow of the American Academy of Arts and Sciences. His research has generated over 120 issued U.S. patents.

Patrick T. Harker, Ph.D.

President
University of Delaware
NAI Charter Fellow

Patrick T. Harker, Ph.D., is President of the University of Delaware and a research leader in service operations management and economics, financial services operations and technology, operations research methodology, and transportation systems. He holds a U.S. patent and U.S. copyright for methods optimizing transportation schedules. He has published or edited nine books and 100+ articles, and is an ISI highly cited researcher in mathematics. He serves on the advisory boards of INFORMS *Service Science* and *Operations Research,* where he was previously editor-in-chief. Harker is an INFORMS Fellow and a member of IEEE, the American Economic Association and the International Academy of Management.

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Robert S. Langer, Sc.D.

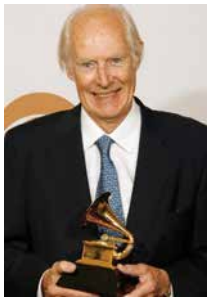
David H. Koch Institute Professor
Massachusetts Institute of Technology
NAI Charter Fellow

Robert S. Langer is the 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 1,230 articles and has 1,026 issued and pending patents worldwide. His many awards include the United States National Medal of Science, the United States National Medal of Technology and Innovation, the Charles Stark Draper Prize, Albany Medical Center Prize (largest U.S. medical prize), the Wolf Prize for Chemistry and the 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 the Institute of Medicine, the National Academy of Engineering and the National Academy of Sciences.

Cato T. Laurencin, M.D., Ph.D.

University Professor
University of Connecticut
NAI Fellow

Cato T. Laurencin, M.D., Ph.D. is a designated University Professor at the University of Connecticut. He is the 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 school. He 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. In addition, he serves as Chief Executive Officer of the Connecticut Institute for Clinical and Translational Science at UConn. Laurencin earned a B.S.E. in chemical engineering from Princeton, his medical degree *magna cum laude* from Harvard Medical School and his Ph.D. in biochemical engineering/biotechnology from M.I.T. He is an elected member of both the Institute of Medicine of the National Academy of Sciences and the National Academy of Engineering.



Sir George Henry Martin, CBE

Rock and Roll Hall of Fame Inductee
Producer of The Beatles

A composer in his own right, George has been responsible for the music of a considerable number of films, 'A Hard Day's Night' (for which he won an Academy Awards Nomination); 'The Family Way'; John Schlesinger's 'Honky Tonk Freeway'; 'Yellow Submarine'; 'Pulp' starring Michael Caine and Mickey Rooney; 'Optimist of Nine Elms' with Peter Sellers and the Bond movie 'Live and Let Die' (for which he won a Grammy). He was also Musical Director and Composer for 'Sgt. Pepper' starring the Bee Gees and 'Give My Regards to Broad Street' and the award winning cartoon 'Rupert and The Frog Song' for Paul McCartney. He also composed The David Frost Theme, 'By George' for television and BBC Radio One's signature tune 'Theme One'. It was in 1962 that he signed The Beatles to EMI - a decision which launched them on their remarkable career, producing every record they made until they disbanded in 1970. George has received several distinguished honors and awards including: an Academy Award in 1964, six Grammy Awards, induction into the Rock and Roll Hall of Fame and in 1988 George was appointed C.B.E. (Commander of the British Empire) for his services to the music industry. He continues to write music; perform concerts; give motivational talks; work with charities; advise broadcasters and government on music content and serves as an active research advocate.

Edith Mathiowitz, Ph.D.

Professor of Medical Science and Engineering
Brown University
NAI Fellow

Edith Mathiowitz is a Professor of Medical Science and Engineering at Brown University in the Department of Molecular Pharmacology, Physiology & Biotechnology. She is the Director of the Biotechnology Graduate Program. Her extensive experience includes development of therapeutic polymer bases, drug and gene delivery systems, biomaterials, and tissue engineering. Mathiowitz directs an interdisciplinary laboratory that focuses on developing smart delivery systems based on bioadhesive polymers that enhance and prolong oral delivery of traditional oral dosage forms. She has been a pioneer in the area of Nanomedicine by developing biodegradable nanoparticles that penetrate mucosal barriers delivering active biologics. She has experience with polymers; vascular grafts, microencapsulation, nanoencapsulation and polymer based thermal sensors. To date, Professor Mathiowitz has made 120 publications, over 75 patents, one book, *Encyclopedia of Drug Delivery;* her work has been published in over 120 conference proceedings and abstracts. She is a cofounder of Perosphere.

Rini Paiva

Executive Director
National Inventors Hall of Fame

Rini Paiva is the Executive Director of the National Inventors Hall of Fame (NIHF). In this role, she oversees the annual Inductee Selection process for the 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. The NIHF is part of Invent Now, Inc., a non-profit dedicated to recognizing and fostering invention, creativity, and entrepreneurship. Paiva also 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. With the National Inventors Hall of Fame since 1995, Paiva is an authority on the topic of U.S. invention.

Fred Reinhart, MBA

President-Elect, Association of University Technology Management
Senior Advisor for Technology Transfer
University of Massachusetts Amherst

Fred Reinhart is President-elect of the Association of University Technology Managers, a 3200 member international professional organization dedicated to facilitating the transfer of academic discoveries to the public through out-licensing of intellectual property to industry, creation of high-technology startup companies, and corporate collaboration. He previously served for four years as AUTM's Vice President for Finance. Mr. Reinhart has over 29 years of experience as a technology transfer executive at UMass Amherst, Tufts-New England Medical Center, University of Michigan and Wayne State University. He was also Chairman of the Michigan Biosciences Industry Association (MichBio). He is currently Senior Advisor for Technology Transfer at UMass Amherst. He is a Registered Technology Transfer Professional and a graduate of the University of Michigan with an MBA degree in New Product Development and Marketing.

Jessica A. Sebeok, J.D.

Associate Vice President for Policy
Association of American Universities

Jessica A. Sebeok is Associate Vice President for Policy at the Association of American Universities, where her portfolio includes intellectual property, tax, immigration, 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. Jessica received her JD from Yale Law School and her master's degree from the University of Oxford, where she was a Marshall Scholar. She also has a BA in History from The University of Chicago.

James K. Woodell, Ph.D.

Assistant Vice President for Innovation and Technology Policy
Association of Public and Land-Grant Universities

James K. Woodell is Assistant Vice President for Innovation and Technology Policy at the Association of Public and Land-grant Universities (APLU), where 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. Jim also coordinates the organization's advocacy efforts on technology and intellectual property issues. Jim holds a Master of Education degree from Harvard University, and a Ph.D. in Higher Education from the Pennsylvania State University.

COMPLETE LIST OF CURRENT NAI FELLOWS

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Dharma P. Agrawal, University of Cincinnati

Rakesh Agrawal, Purdue University

Ilhan A. Aksay, Princeton University

Nancy L. Allbritton, The University of North Carolina at Chapel Hill

Jan P. Allebach, Purdue University

Dimitris Anastassiou, Columbia University

Daniel W. Armstrong, The University of Texas at Arlington

Frances H. Arnold, California Institute of Technology

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Anthony Atala, Wake Forest University

Kyriacos A. Athanasiou, University of California, Davis

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Amit Bandyopadhyay, Washington State University

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Benton F. Baugh, University of Houston

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Khosrow Behbehani, The University of Texas at Arlington

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Robert H. Brown, Jr., University of Massachusetts Medical School

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Karen J.L. Burg, Kansas State University

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H. Jonathan Chao, New York University

Ching-Shih Chen, The Ohio State University

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Ashutosh Chilkoti, Duke University

Arul M. Chinnaiyan, University of Michigan

Stephen Y. Chou, Princeton University

Christos Christodoulatos, Stevens Institute of Technology

Benjamin Chu, Stony Brook University

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