2013 FELLOWS

of the

National Academy of Inventors

Paul R. Sanberg, Ph.D., D.Sc.
President, National Academy of Inventors
Senior Vice President for Research and Innovation
University of South Florida
3702 Spectrum Boulevard, Suite 165
Tampa, Florida 33612-9445

Dear Dr. Sanberg:

On behalf of the United States Patent and Trademark Office (USPTO), I congratulate you, the National Academy of Inventors (NAI) and the newly-elected class of 2013 Fellows of the NAI. The USPTO is privileged to host the 2013 NAI Fellows Induction Ceremony and participate in recognizing the 143 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 as a member of the NAI Fellows Selection Committee, and we are delighted to have the names of the NAI Fellows and their institutions on permanent display in our offices.

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 you and the 2013 Fellows. I wish the NAI continued growth and success in future endeavors.

Warmest regards,

Margaret Focarino

Margaret (Peggy) Focarino
Commissioner for Patents
United States 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 highly 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.

HOW TO NOMINATE FOR 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

Nominations open July 1 – November 1 annually

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
- Two (2) Letters of Recommendation

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

ABOUT THE 2013 NAI FELLOWS

The 2013 class of Fellows of the NAI represent 94 prestigious research universities and governmental and non-profit research institutions and hold over 5,600 issued U.S. patents. Included in the class are senior leadership of research universities and non-profit research institutes, members of the other National Academies, inductees of the National Inventors Hall of Fame, recipients of the U.S. National Medal of Technology and the U.S. National Medal of Science, and Nobel Prize and Lemelson-MIT prize recipients, among other awards and distinctions.

The NAI Fellows are inducted at the NAI annual meeting each year. Fellows and their institutions are listed on a plaque on permanent display at the USPTO headquarters in Alexandria, Virginia.

Inducted by

Andrew I. Faile, Deputy Commissioner for Patent Operations

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 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, he 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 113th CONGRESS, FIRST SESSION

House of Representatives

HON. KATHY CASTOR OF FLORIDA

Extension of Remarks

Honoring 2013 Fellows of the National Academy of Inventors

Tuesday, February 11, 2014

Ms. CASTOR. Mr. Speaker, I rise today to honor the 143 inventors who will soon be recognized at the United States Patent and Trademark Office and inducted as the 2013 Fellows of the National Academy of Inventors' by the United States Deputy Commissioner of Patent Operations, Andrew Faile. 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, this elite group holds more than 5,600 patents.

The individuals making up this year's class of Fellows include individuals from 94 research universities and non-profit research institutes spanning not just the United States but also the world. This group of inductees touts 26 presidents and senior leadership of research universities and non-profit research institutes, 69 members of the National Academies, five inductees of the National Inventors Hall of Fame, six recipients of the National Medal of Technology and Innovation, two recipients of the National Medal of Science, nine Nobel Laureates, and 23 AAAS Fellows, among other major awards and distinctions.

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 2013 NAI Fellows include:

Patrick Aebischer, Ecole Polytechnique Federale de Lausanne; Rakesh Agrawal, Purdue University; Dimitris Anastassiou, Columbia University; David E. Aspnes, North Carolina State University; Michael Bass, University of Central Florida; David J. Bayless, Ohio University; Kurt H. Becker, New York University; Carolyn R. Bertozzi, University of California, Berkeley; Rathindra N. Bose, University of Houston; David E. Briles, The University of Alabama at Birmingham; Richard D. Bucholz, Saint Louis University; Mark A. Burns, University of Michigan; Anne K. Camper, Montana State University; Lisa A. Cannon-Albright, The University of Utah; Charles R. Cantor, Boston University; Dennis A. Carson, University of California, San Diego; Carolyn L. Cason, The University of Texas at Arlington; David M. Center, Boston University; Vinton G. Cerf, National Science Foundation; Stephen Y. Chou, Princeton University; Christos Christodoulatos, Stevens Institute of Technology; Benjamin Chu, Stony Brook University; Aaron J. Ciechanover, Technion-Israel Institute of Technology; Graeme M. Clark, The University of Melbourne; Leon N. Cooper, Brown University; Carlo M. Croce, The Ohio State University; William W. Cruikshank, Boston University; Brian T. Cunningham, University of Illinois at Urbana-Champaign; Jerome J. Cuomo, North Carolina State University; Narendra Dahotre, University of North Texas; William S. Dalton, H. Lee Moffitt Cancer Center; Rathindra DasGupta, National Science Foundation; Paul L. DeAngelis, The University of Oklahoma; William F. DeGrado, University of California, San Francisco; Peter J. Delfyett, University of Central Florida; Lawrence J. DeLucas, The University of Alabama at Birmingham; Steven P. DenBaars, University of California, Santa Barbara;

Joseph M. DeSimone, The University of North Carolina at Chapel Hill; Spiros S. Dimolitsas, Georgetown University; Michael P. Doyle, The University of Georgia; James A. Dumesic, University of Wisconsin-Madison; David A. Edwards, Harvard University; T. Taylor Eighmy, The University of Tennessee, Knoxville; John G. Elias, University of Delaware; Ronald L. Elsenbaumer, The University of Texas at Arlington; Todd S. Emrick, University of Massachusetts Amherst; Liang-Shih Fan, The Ohio State University; Nariman Farvardin, Stevens Institute of Technology; Henry C. Foley, University of Missouri System; Ophir Frieder, Georgetown University; Fred H. Gage, Salk Institute for Biological Studies; Tillman U. Gerngross, Dartmouth College; George W. Gokel, University of Missouri-St. Louis; Clifford M. Gross, University of South Florida; Robert H. Grubbs, California Institute of Technology; Theodor W. Hänsch, Max-Planck-Institut für Quantenoptik Germany; Jeffrey H. Harwell, The University of Oklahoma; Jason C. Heikenfeld, University of Cincinnati; Benjamin S. Hsiao, Stony Brook University; Stephen D. H. Hsu, Michigan State University; Lonnie O. Ingram, University of Florida; Tatsuo Itoh, University of California, Los Angeles; S. Sitharama Iyengar, Florida International University; Richard Jove, Vaccine and Gene Therapy Institute of Florida; Biing-Hwang Juang, Georgia Institute of Technology; Vistasp M. Karbhari, The University of Texas at Arlington; Joachim B. Kohn, Rutgers, The State University of New Jersey; George P. Korfiatis, Stevens Institute of Technology; Michael R. Ladisch, Purdue University; David C. Larbalestier, Florida State University; Cato T. Laurencin, University of Connecticut; Kam W. Leong, Duke University; Frank L. Lewis, The University of Texas at Arlington; Ping Liang, University of California, Riverside; Charles M. Lieber, Harvard University; Stephen B. Liggett, University of South Florida; Dennis C. Liotta, Emory University; Dmitri Litvinov, University of Houston; Michael R. Lovell, University of Wisconsin-Milwaukee; Richard J. Mammone, Rutgers, The State University of New Jersey; Michael A. Marletta, The Scripps Research Institute; Edith Mathiowitz, Brown University; Krzysztof Matyjaszewski; Carnegie Mellon University; Constantinos Mavroidis, Northeastern University; Robert M. Metcalfe, The University of Texas at Austin; Gary K. Michelson, Twenty Million Minds Foundation; Robert H. Miller, Case Western Reserve University; Chad A. Mirkin, Northwestern University; Samir Mitragotri, University of California, Santa Barbara; Shanta M. Modak, Columbia University; Marsha A. Moses, Harvard University; Ferid Murad, The George Washington University; Hameed Naseem, University of Arkansas; Laura E. Niklason, Yale University; Santa J. Ono, University of Cincinnati; Sethuraman Panchanathan, Arizona State University; P. Hunter Peckham, Case Western Reserve University; Gholam A. Peyman, Tulane University; Glenn D. Prestwich, The University of Utah; Stephen R. Quake, Stanford University; Dabbala R. Reddy, Carnegie Mellon University; Zhifeng Ren, University of Houston; Darrell H. Reneker, The University of Akron; John A. Rogers, University of Illinois at Urbana-Champaign; Bernard Roizman, The University of Chicago; Arye Rosen, Drexel University; Joseph C. Salamone, University of Massachusetts Lowell; W. Mark Saltzman, Yale University; Yoshiaki Sato, Kaatsu International University; Martin Schadt, Nanjing University; Vern L. Schramm, Yeshiva University; Sudipta Seal, University of Central Florida; Venkat Selvamanickam, University of Houston; Wei-Heng Shih, Drexel University; Mary Shire, University of Limerick, Ireland; Henry I. Smith, Massachusetts Institute of Technology; George F. Smoot, III, University of California, Berkeley; Thomas C. Südhof, Stanford University; Subra Suresh, Carnegie Mellon University; Theodore F. Taraschi, Thomas Jefferson University; Arthur J. Tipton, Southern Research Institute; Satish S. Udpa, Michigan State University; Kathryn E. Uhrich, Rutgers, The State University of New Jersey; Akos Vertes, The George Washington University; Vitaly J. Vodyanoy, Auburn University; John N. Vournakis, Medical University of South Carolina; Jay S. Walker, Cornell University; David R. Walt, Tufts University; Donald P. Weeks, University of Nebraska-Lincoln; Sherman M. Weissman, Yale University; James E. West, The Johns Hopkins University; Wayne C. Westerman, University of Delaware; George M. Whitesides, Harvard University; H. Kumar Wickramasinghe, University of California, Irvine; David J. Wineland, National Institute of Standards and Technology; Carl T. Wittwer, The University of Utah; Jerry M. Woodall, University of California, Davis; Mark S. Wrighton, Washington University in St. Louis; James J. Wynne, University of South Florida; Ralph T. Yang, University of Michigan; Frederic Zenhausern, The University of Arizona; Shuguang Zhang, Massachusetts Institute of Technology; Harald zur Hausen, German Cancer Research Center.

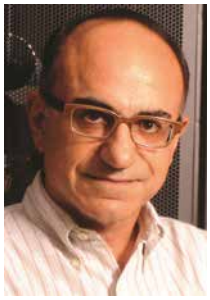
FELLOWS

Patrick Aebischer, École Polytechnique Fédérale de Lausanne

Patrick Aebischer was trained as an M.D. (1980) and a Neuroscientist (1983) at the Universities of Geneva and Fribourg in Switzerland. From 1984 to 1992, he worked at Brown University in Providence (Rhode Island, USA) as an Assistant and then Associate Professor of Medical Sciences. In the fall of 1992, he returned to Switzerland as a Professor and Director of the Surgical Research Division and Gene Therapy Center at CHUV, the Lausanne University Medical School Hospital. In 1999, Patrick Aebischer was appointed President of the École Polytechnique Fédérale de Lausanne (EPFL) by the Swiss Federal Council, a world class research university that he still leads today. Patrick Aebischer is a member of numerous professional societies, both in Europe and America. He is a fellow of the American Institute for Medical and Biological Engineering and a member of the Swiss Academy of Medicine and the Swiss Academy of Engineering Sciences. Patrick Aebischer is the founder of three biotechnology companies and a member of board of Lonza and the Nestlé Health Science Company. His current research focuses on the development of cell and gene transfer approaches for the treatment of neuro-degenerative diseases.

Rakesh Agrawal, Purdue University

Rakesh Agrawal, Sc.D., is the Winthrop E. Stone Distinguished Professor of Chemical Engineering at Purdue University. He received his masters of chemical engineering in 1997 at the University of Delaware and his doctorate in chemical engineering at the Massachusetts Institute of Technology in 1980. Agrawal joined the faculty of Purdue University School of Chemical Engineering in 2004 after a 24 year career at Air Products and Chemicals, Inc. He is a member of the National Academy of Engineering and the American Academy of Arts and Sciences. In 2011, he was awarded the National Medal of Technology and Innovation by President Obama, among many other awards and honors. His current research interests include energy systems analysis, energy transformation and use for solar, coal, biomass and hydrogen economy, cryogenics and gas liquefaction process. His research has yielded over 100 issued U.S. patents and hundreds more in international patents.



Dimitris Anastassiou, Columbia University

Dimitris Anastassiou, Ph.D., is Charles Batchelor Professor of Electrical Engineering at Columbia University, also affiliated with Columbia's Department of Systems Biology. He is an IEEE Fellow, the recipient of an IBM Outstanding Innovation Award, a National Science Foundation Presidential Young Investigator Award, and a Great Teacher Award from the Society of Columbia Graduates. He is author of patents in video technology accepted as essential for the implementation of the international standards MPEG-2, AVC/H.264 and MVC used in DVDs including Blu-ray HDTV discs and digital television broadcasting. His current research in systems biology is focused on the development of improved molecular biomarkers for cancer.

David E. Aspnes, North Carolina State University

David E. Aspnes, Ph.D., is Distinguished University Professor of Physics at North Carolina State University. He received B.S. and M.S. degrees in Electrical Engineering at the University of Wisconsin–Madison in 1960 and 1961, respectively, and a Ph.D. in Physics at the University of Illinois at Urbana-Champaign in 1965. In 1967 he joined Bell Laboratories, Murray Hill. In 1984 he became Head of the Interface and Optical Physics Departments of Bellcore, Red Bank. He joined NC State University in 1992. Current activities include chairing Class III of the NAS. Aspnes has published approximately 500 papers and holds 23 patents. He is best known for his experimental and theoretical contributions to the understanding of the optical properties of materials, thin films, interfaces, and surfaces, including nanostructures. He is primarily responsible for the development of spectroscopic ellipsometry, currently an indispensable metrology tool in integrated circuits technology.

Michael Bass, University of Central Florida

Michael Bass, Ph.D., is Professor Emeritus of Optics at CREOL, The College of Optics and Photonics at the University of Central Florida. He has made significant contributions to the field of lasers, laser applications and light-matter interactions. He is a Life Fellow of IEEE, Fellow of OSA, Fellow of the Laser Institute of America and Foreign Member of the Russian National Academy of Engineering Science. He is Editor-in-Chief of the Handbook of Optics, Second and Third Editions. He served on the boards of directors of OSA and the IEEE Photonics Society and was a founding editor of the Journal of the Optical Society-B. He has published 200 papers, presented many invited papers and holds 34 patents one of which made possible the use of laser light delivered by optical fibers to treat pathologies inside the human body.

David J. Bayless, Ohio University

David J. Bayless, Ph.D., is Loehr Professor of Mechanical Engineering at Ohio University's Russ College of Engineering and Technology, and faculty lead for the Center of Excellence in Energy and the Environment. He is also director of the Ohio Coal Research Center, and principal investigator and director of the Center for Algal Engineering Research and Commercialization. Responsible for more than $18 million in externally funded research, Bayless holds five U.S. and 25 international patents, with 13 applications pending. He has authored more than 50 peer-reviewed publications, is co-founder and president of ECO2Capture Inc., and is director of the Russ College Robe Leadership Institute. Previously, Bayless was an officer in the U.S. Navy, worked at American Electric Power, and served the State of Ohio as technical administrator of its Coal Research Consortium. He is a licensed professional engineer in Missouri and Ohio, a fellow of the American Society of Mechanical Engineers and the National Academy of Inventors, and holds a Ph.D. in mechanical engineering from the University of Illinois at Urbana-Champaign.

Kurt H. Becker, New York University

Kurt H. Becker, Dr. rer. nat., is known for his research into the properties of atmospheric-pressure microplasmas and their use in environmental, biological, and biomedical applications. He holds 7 US patents on stable atmospheric-pressure plasmas and their application and was involved in their commercialization. Kurt Becker earned a Diplom in Physik (M.S.) and Dr. rer. nat. (Ph.D.) from the Universität des Saarlandes, Saarbrücken, Germany in 1978 and 1981, respectively. He is a Fellow of the American Physical Society and the recipient of the Dr. Eduard-Martin Prize for Excellence in Research from the Freunde der Universität des Saarlandes, the Thomas Alva Edison Patent Award, and the SASP Erwin Schrödinger Medal and he holds an honorary professorship from the Leopold Franzens Universität Innsbruck, Austria. He is currently principal investigator of a NYSERDA-funded Cleantech Proof-of-Concept Center and a co-principal investigator of the NSF-funded NYC Regional I-Corps Node.

Carolyn R. Bertozzi, University of California, Berkeley

Carolyn R. Bertozzi, Ph.D., is T.Z. and Irmgard Chu Distinguished Professor of Chemistry and Professor of Molecular and Cell Biology at UC Berkeley, an Investigator of the Howard Hughes Medical Institute, and a Senior Faculty Scientist at the Lawrence Berkeley National Laboratory. Her research interests span the disciplines of chemistry and biology with an emphasis on studies of cell surface glycosylation pertinent to disease states. Her lab focuses on profiling changes in cell surface glycosylation associated with cancer, inflammation and bacterial infection, and exploiting this information for development of diagnostic and therapeutic approaches. She has been recognized with many honors and awards for her research accomplishments. She is an elected member of the Institute of Medicine, National Academy of Sciences, and American Academy of Arts and Sciences. She has been awarded the Lemelson-MIT Prize, the Wieland Prize, and a MacArthur Foundation Fellowship, among many others.

Rathindra N. Bose, University of Houston

Rathindra N. Bose, Ph.D., is the Vice Chancellor and Vice President for Research and Technology Transfer at the University of Houston System and University of Houston. He is a tenured professor in the department of Chemistry, and holds joint appointments in the departments Biology and Biochemistry and Pharmacological & Pharmaceutical Sciences. He received his Ph.D. degree in Chemistry from Georgetown University, Washington D.C. Among Bose's achievements include the discovery of a new class of multi-target anticancer agents that exhibits excellent efficacy against metastatic ovarian, lung, and head and neck cancers without exhibiting severe toxicity. He has received a distinguished scholar award and four outstanding teaching awards. He has published extensively in drug development, chromium carcinogenesis, and hypervalent metal chemistry, and is also an author of several issued and pending patents. He has also served as a reviewer for many funding agencies and journals.

David E. Briles, The University of Alabama at Birmingham

David Elwood Briles received a B.A. in Zoology at the University of Texas in 1967 and a Ph.D. in immunogenetics with Richard Krause at the Rockefeller University in 1973. After postdoctoral work in immunology at Washington University, St. Louis with Joseph Davie, he became an Assistant Professor at the University of Alabama at Birmingham in 1978 and Full Professor in 1985. Briles focused on salmonella and pneumococcal infections. His lab has trained over 50 Ph.D. students and postdoctoral fellows and demonstrated that immunization of mice with non-capsular antigens could protect against otherwise fatal pneumococcal sepsis. He is an inventor on patents for the use of proteins PspA, PspC, PcpA, and NanA as human vaccines. All have been studied pre-clinically and two have been in human vaccine trials in efforts to develop vaccines more widely protective than capsular polysaccharide-protein conjugates and especially appropriate for developing world use.

Richard D. Bucholz, Saint Louis University

Richard Donald Bucholz, M.D., is the K.R. Smith Professor of Neurosurgery at Saint Louis University. He received his undergraduate, medical, and postgraduate education at Yale. His research involves the application of digital technology to the performance of neurosurgery, and his work has resulted in the awarding of 30 patents. He is the inventor of the StealthStation, a leading surgical navigational device, and he is active in the development of robotically delivered irradiation. Currently he is involved in long distance delivery of medical expertise and supervision using web based medical devices. As a co-investigator in the Human Connectome Project he is developing imaging techniques to locate cranial neural pathways. His clinical practice is confined to neuro-oncology and functional cranial surgery, with an emphasis on neural stimulation for degenerative and psychiatric disorders. He serves as a consultant in developing new neuromodulation devices and in his free time enjoys implementing automated residence control.

Mark A. Burns, University of Michigan

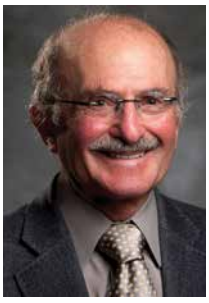
Mark A. Burns. Ph.D., is the T. C. Chang Professor of Engineering and Chair of the Chemical Engineering Department at the University of Michigan. Burns develops microfluidic and integrated systems that can be used in health-related biochemical analysis. His is best known for his pioneering work developing microfabricated devices (lab-on-a-chip) for the analysis of DNA. He is also a co-founder of MCubed, a revolutionary research seed-funding program. Burns joined the University of Michigan in 1990 after teaching at the University of Massachusetts for 4 years. He obtained his M.S. and Ph.D. in Chemical and Biochemical Engineering from the University of Pennsylvania, and his B.S. in Chemical Engineering from the University of Notre Dame. Burns has over 300 papers, book chapters, patents and conference presentations. He has won numerous awards including both a College of Engineering Research Excellence Award and a Teaching Excellence Award, and he is a Fellow of the American Institute for Medical and Biological Engineering.

Anne K. Camper, Montana State University

Anne K. Camper, Ph.D., is professor of civil engineering at Montana State University where she is the Associate Dean for Faculty and Administration in the College of Engineering, serves on the Executive Committee of the NSF Center for Biofilm Engineering, and has been the Interim Vice President for Research. She has received numerous honors including membership in Phi Beta Phi, Phi Kappa Phi and Chi Epsilon. She was named a Regent's Professor for the Montana University System, the first woman and engineer. Camper has dedicated her career to studying water quality and is internationally recognized for her contributions. She has made significant contributions to gender and race equity at MSU by providing leadership in successful grants and activities emphasizing diversity, providing mentorship and research activities inclusive of and beneficial to tribal lands and peoples, and serving as the graduate and undergraduate advisor to Native American and female students.

Lisa A. Cannon-Albright, The University of Utah

Lisa A. Cannon-Albright, Ph.D., is professor and Division Chief of Genetic Epidemiology in the Department of Internal Medicine at the University of Utah School of Medicine. Her research focuses on the use of genealogic resources for the study of extended high-risk pedigrees for identification of disease predisposition genes. She currently collaborates with the VHA in the construction of the largest US research genealogy resource, already including over 38 million individuals. Successful patented gene identifications include BRCA1, BRCA2, and CDKN2A. She is a pioneer in innovative methods developments for analysis of health-related traits using genealogic data and events involving distantly related individuals. She has published over 200 manuscripts, has mentored many Ph.D. students, fellows, residents and junior faculty, and is a Fellow of the American College of Medical Informaticists.



Charles R. Cantor, Boston University

Charles R. Cantor, Ph.D., is a founder, and retired Chief Scientific Officer at SEQUENOM, Inc., which is a genetics discovery and diagnostic company. He is also the founder of SelectX Pharmaceuticals, a drug discovery company, Retrotope, an anti-aging company, and DiThera, a biotherapeutic company. Cantor is professor emeritus of Biomedical Engineering and of Pharmacology at Boston University. He is currently adjunct professor of Bioengineering at UC San Diego, adjunct professor of Molecular Biology at the Scripps Institute for Research, and distinguished adjunct professor of Physiology and Biophysics at UC Irvine. Prior to this, Cantor held positions in Chemistry and then in Genetics and Development at Columbia University and in Molecular Biology at the University of California at Berkeley. Cantor has been granted more than 60 US patents. He sits on the advisory boards of numerous national and international biotechnology firms, has published more than 450 peer-reviewed articles, and is a member of the U.S. National Academy of Sciences.

Dennis A. Carson, University of California, San Diego

Dennis A. Carson, M.D., is professor emeritus in the Department of Medicine at the University of California, San Diego. He was Director of the UCSD Moores Cancer Center from 2003-2011 and Director of the Stein Institute for Aging from 1990-2003.He has published more than 500 scientific papers, is an inventor on more than 70 U.S. and international patents, and has founded 7 biotech companies. Among his accomplishments, Carson developed a chemotherapeutic agent, 2-chlorodeoxyadenosine, or 2-CdA, for the treatment of hairy cell leukemia. This drug, now called cladribine, is the treatment of choice for this disease and has resulted in long term, complete remissions in about 75 percent of patients, often after just a single infusion. His current research focuses on the development of inhibitors of Wnt signaling inhibitors, and immune system modulators.

Carolyn L. Cason, The University of Texas at Arlington

Carolyn L. Cason, Ph.D., R.N., is Professor College of Nursing and Distinguished Teaching Professor and Vice President for Research at The University of Texas at Arlington. She has a distinguished career as teacher, academic leader and innovator. She is co-founder of the university's Smart Hospital - a physical/virtual facility equipped with state of the art equipment and cutting-edge patient simulators to support instruction and research and development. With colleagues in engineering, she developed Smart Care (a living laboratory dedicated to developing non-invasive, pervasive technology to monitor health changes and support independent living for the elderly and those with disabilities). Her patent for a cardiopulmonary resuscitation sensor has been commercialized as a CPR card. Clinical trials are demonstrating the life-saving effects of feedback provided via the card to those delivering CPR to victims of cardiac arrest.

David M. Center, Boston University

David M. Center, M.D., is the Gordon and Ruth Snider Professor of Pulmonary Medicine, Associate Provost for Translational Research and Chief of Pulmonary, Allergy, Sleep and Critical Care Medicine at Boston University and Boston Medical Center. He is a graduate of Boston University School of Medicine where he completed Internal Medicine and Pulmonary Diseases Training before an Immunology research fellowship at Harvard Medical School. He joined the faculty of BU in 1978 where, along with William W. Cruikshank, Ph.D., he discovered, cloned and characterized many of the functional characteristics of Interleukin 16. Together they have developed IL-16 mimetics and antagonists as therapeutics for inflammatory diseases characterized by abnormal T helper and T regulatory cell function including organ transplant rejection, multiple sclerosis and asthma. In addition to the development of IL-16 based therapeutics, recent work has demonstrated a role for IL-16 mutations in Cutaneous T Cell lymphomas adding new insights into the dysfunctional proliferation of these cells.

Vinton G. Cerf, National Science Foundation

Vinton G. Cerf, Ph.D., is vice president and Chief Internet Evangelist for Google. Cerf is the co-designer of the TCP/IP protocols and the architecture of the Internet. He has served in executive positions at ICANN, the Internet Society, MCI, the Corporation for National Research Initiatives and the Defense Advanced Research Projects Agency. He is President of the Association for Computing Machinery and is a member of the National Science Board. Cerf is a recipient of numerous awards for his work, including the US Presidential Medal of Freedom, US National Medal of Technology, the Queen Elizabeth Prize for Engineering, the Prince of Asturias Award, the Tunisian National Medal of Science, the Japan Prize, the Charles Stark Draper award, the ACM Turing Award and 21 honorary degrees.

Stephen Y. Chou, Princeton University

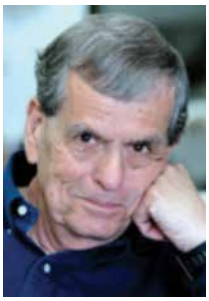
Stephen Y. Chou, Ph.D., is the Joseph C. Elgin Professor of Engineering and head of Nano-Structure Laboratory at Princeton University. He is a member of US National Academy of Engineering. Chou received his Ph.D. from MIT in 1986 and is a recipient of 30 other awards. He is recognized as a world leader, pioneer and inventor in a broad range of nanotechnologies. His work and inventions over 30 years have shaped new paths and opened up new fields in nanofabrication, nanoscale devices and materials (electrical, optical, magnetic, biological), and have significantly impacted both academia and industry. Chou's most well-known invention is nanoimprint (or nanoimprint lithography), a paradigm-shift method to manufacture nanostructures, which has grown into a large industry and has become a key corner-stone in today's nanomanufacturing in many industries. His other high-impact inventions are in the areas of new magnetic data storage paradigm (bit-patterned-media), nanoscale transistors/memories, nanophotonics, ultra-sensitive Raman and fluorescence sensors, nanochannel-biosensors, nanoplasmonic LEDs and solar cells.

Christos Christodoulatos, Stevens Institute of Technology

Christos Christodoulatos, Ph.D., is Vice Provost in the Office of Innovation & Entrepreneurship (OIE) at Stevens Institute of Technology. The mission of OIE is to modernize the technology transfer process and implement educational and research programs that bring the concepts of innovation and entrepreneurship into the classroom and the research laboratory. He has worked diligently over the last ten years to eliminate the obstacles endemic to the traditional university intellectual property exploitation. He has been teaching and performing research in environmental engineering since 1988 and serves as consultant to government and private organizations. He holds several patents and has authored over 150 research articles. He is the cofounder of two successful spinoff companies that were acquired by major U.S. corporations. He holds a B.E. and M.E. in Chemical Engineering from City College of the City University of New York, and a Ph.D. in Environmental Engineering from Stevens Institute of Technology.

Benjamin Chu, Stony Brook University

Benjamin Chu, Ph.D., is a Distinguished Professor at Stony Brook University, as well as Leading Professor of Chemistry and Professor of Materials Science and Engineering. He received his doctorate from Cornell University in 1959 and graduated magna cum lade from St. Norbert College in 1955. He has served as Assistant and Associate Professor of Chemistry at the University of Kansas from 1962 to 1968 and as a Research Associate at Cornell University from 1958 to 1962. Among his numerous awards and achievements are the 1998 Achievement Award of Chinese Institute of Engineers/USA, the Award for Distinguished Service in Advancement of Polymer Science from the Society of Polymer Science in Japan and the High Polymer Physics Prize from the American Physical Society. His research interests include deformation-induced polymer crystallization, polymer nanocomposites and nanofibers for biomedical and environmental applications. Chu's research has generated 30 issued US patents with numerous patent applications.

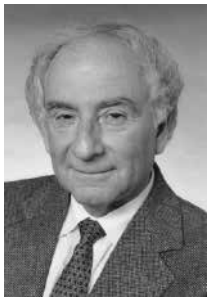


Aaron J. Ciechanover, Technion-Israel Institute of Technology

Aaron J. Ciechanover, M.D., was born in Israel in 1947. He is a distinguished Professor in the Technion in Haifa, Israel. He received his M.Sc. (1971) and M.D. (1973) from the Hebrew University in Jerusalem, and his D.Sc. from the Technion (1982), where as a graduate student with Avram Hershko and in collaboration with Irwin Rose from Philadelphia, they discovered the central reaction in the ubiquitin-proteasome system-covalent tagging of protein substrates with ubiquitin which target them for degradation. They also demonstrated the role of the system in removing short-lived, abnormal proteins. Ciechanover received the 2000 Albert Lasker Award, the 2003 Israel Prize, and the 2004 Nobel Prize in Chemistry (shared with Drs. Hershko and Rose). He is a member of the Israeli National Academy of Sciences and Humanities, the National Academy of Sciences of the USA (NAS) and its Institute of Medicine (IOM)(Foreign Associate), the Pontifical Academy of Sciences of the Vatican, and the Chinese Academy of Sciences (CAS; Foreign Fellow).

Graeme M. Clark, The University of Melbourne

For over 47 years the discoveries led by Graeme M. Clark, Ph.D., have resulted in the multi-channel cochlear implant, the first sensori-neural prosthesis to effectively and safely bring electronic technology into a direct physiological relation with the central nervous system and human consciousness. It was approved by the US FDA in 1985 for giving speech perception to severely-profoundly deaf people, and in 1990 for spoken language to profoundly deaf children. This also made it the first effective means of helping severely-to-profoundly deaf children to communicate in the last 250 years. His research using electrical stimulation of the brain has also provided important knowledge on how the brain codes both simple and complex sounds such as speech. He has received numerous international awards for his research which culminated in 2013 with the DeBakey Award for clinical medical research.



Leon N. Cooper, Brown University

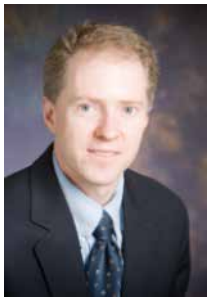
Leon N. Cooper, Ph.D., is the Thomas J. Watson, Sr. Professor of Science and the Director of the Institute for Brain and Neural Systems at Brown University. He acquired his A.M. and his Ph.D. from Columbia University in 1954. He was a member of the Institute for Advanced Study in Princeton and served as an Assistant Professor at The Ohio State University until 1958 when he became an Associate Professor at Brown University. He was awarded his current professorship in 1974. Cooper is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. In 1972, he was awarded the Nobel Prize in Physics, along with John Bardeen and Robert Schrieffer for "their jointly developed theory of superconductivity, or otherwise known as the BCS-theory". His current research includes artificial neural networks, learning and memory storage of the brain. Cooper's research has resulted in 12 issued US patents.

Carlo M. Croce, The Ohio State University

Carlo M. Croce, M.D., is a Distinguished University Professor Molecular Virology, Immunology and Medical Genetics at The Ohio State University. He received his M.D. from the University of Rome La Sapienza in Rome, Italy. Croce is world-renowned for his contributions involving the genes and genetic mechanisms implicated in the pathogenesis of human cancer. During the course of his career, he discovered the juxtaposition of the human immunoglobulin genes to the MYC oncogene, the deregulation of MYC in Burkitt lymphoma and the ALL1 (MLL1) gene involved in acute leukemias. His discoveries have led to revolutionary innovations in the development of novel and successful approaches to cancer prevention, diagnosis, monitoring and treatment, based on gene-target discovery, verification and rational drug development. His research has yielded 62 issued US patents. Croce is a member of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, the National Academy of Sciences and the Institute of Medicine.

William W. Cruikshank, Boston University

William W. Cruikshank, Ph.D., is a Professor of Medicine, Pathology and Laboratory Medicine at Boston University School of Medicine. He is an Assistant Dean of Diversity and Multicultural Affairs and director of the Graduate Program in Molecular and Translational Medicine. Cruikshank, along with Dr. David Center, discovered the CD4-cell chemoattractant, interleukin-16. Cruikshank's research addresses IL-16 in pulmonary inflammation associated with asthma and autoimmunity. He has over 150 publications identifying mediators and immunomodulators involved in immune cell recruitment to the lungs. The commercial value of these findings lead to the generation of IL-16 antagonists and mimetics, both being validated as having therapeutic potential in animal models. These concepts and therapeutic approaches have resulted in over a dozen patents for uses of neutralizing monoclonal antibodies in autoimmune diseases such as rheumatoid arthritis, multiple sclerosis, organ transplant rejection, and cardiac fibrosis following ischemia. Cruikshank has 12 patents covering the uses of interleukin-16 based reagents in asthma and autoimmune diseases.



Brian T. Cunningham, University of Illinois at Urbana-Champaign

Brian T. Cunningham, Ph.D., is a Professor in the Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign, where he also serves as the Interim Director of the Micro and Nanotechnology Laboratory and as Director of the NSF Center for Innovative Instrumentation Technology. His research is in the development of biosensors and detection instruments for pharmaceutical high throughput screening, disease diagnostics, point-of-care testing, life science research, and environmental monitoring. He has published 125 peer-reviewed journal articles, and is an inventor on 75 patents. Cunningham was a co-founder of SRU Biosystems in 2000, and founded Exalt Diagnostics in 2012 to commercialize photonic crystal enhanced fluorescence technology for disease biomarker detection. Acoustic MEMS biosensor technology that he developed at Draper Laboratory has been commercialized by Bioscale, Inc. Cunningham's work was recognized with the IEEE Sensors Council Technical Achievement Award. He is a Fellow of IEEE, OSA, and AIMBE.

Jerome J. Cuomo, North Carolina State University

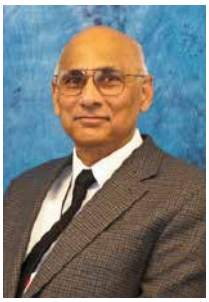
Jerome (Jerry) J. Cuomo, Ph.D., is a Distinguished Research Professor at NCSU. He has done pioneering work in materials synthesis, process development and equipment. His work resulted in greater than 125 US Patents and 250 Patent Publications and authored over 350 peer-reviewed papers, co-edited three books. He joined NCSU 21 years ago after 30 years at IBM Research. With his students, he has co-founded four currently operating companies and has received two IR 100 awards. He is an AVS fellow, IEEE life-fellow, World Innovation Foundation Fellow, Member of the European Academy of Science, The New York Academy of Sciences, IBM Academy of Technology, and recognized as one of the 100 major contributions to IBM over the past 100 years. He is a National Medal of Technology Laureate, and Member of the National Academy of Engineering.

Narendra Dahotre, University of North Texas

Narendra Dahotre, Ph.D., is a Distinguished Research Professor and former Chairman (2010-13) in the Department of Materials Science and Engineering at the University of North Texas. He has been recognized for the pioneering contributions to fundamentals and engineering of laser-materials interactions along with implementation of high power lasers in materials processing. He is internationally known for the work on fundamentals and applications of laser surface engineering of materials. His research was extensively funded by the government and industrial organizations including DOD, DOE, NSF, GM, Ford, Honda, ALCOA, and Babcock & Wilcox. His work over 25 years on laser materials-interactions has been compiled in four books, 15 U.S. Patents, 12 proceedings and over 225 papers. He has been elected to Fellows of MRS-I (2012), SME (2010), AAAS (2009), ASME (2008), *IIM* (2008), and *ASM* (2004). He has received 2006 *R&D 100 Award,* 2006 University of Tennessee *Chancellor's Research and Creativity Achievement Award,* 2006 University of Tennessee College of Engineering *Research Fellow Award.*

William S. Dalton, H. Lee Moffitt Cancer Center & Research Institute

William (Bill) S. Dalton, M.D., Ph.D., is Founder and CEO of M2Gen, a national biotechnology subsidiary of Moffitt Cancer Center. He is the past President, CEO & Center Director of Moffitt Cancer Center, an NCI-Designated Comprehensive Cancer Center (2002-2012). Prior to his role as the President, CEO & Center Director of Moffitt Cancer Center, Dalton was the Dean of the University of Arizona College of Medicine. Dalton is interested in the development of personalized cancer care and patient-centered outcomes research through Moffitt's nationally renowned Total Cancer Care™ approach to developing evidence-based, personalized cancer treatments and information/decision tools for patients and clinicians. For his leadership in this area, Dalton was recognized as the 2010 recipient of the Personalized Medicine Coalition's National Leadership in Personalized Medicine Award. He has over 200 publications, serves on several editorial boards, and has numerous patents in the fields of drug discovery and personalized medicine.



Rathindra DasGupta, National Science Foundation

Rathindra DasGupta, Ph.D., joined the National Science Foundation (NSF) in June 2006 as a Program Director in the Division of Industrial Innovation and Partnerships, Small Business Innovation Research Program. He is currently the lead program director for the Innovation Corps (I-Corps) program. Before joining NSF, DasGupta was the chief scientist for CONTECH Division, SPX Corporation. Prior to joining the industry, he held various professorships at the Milwaukee School of Engineering, UW-Madison, UW-Milwaukee, and Western Michigan University. DasGupta has received multiple awards and honors and has published numerous papers, has presented at various international and domestic conferences, and has five patents to his credit. In the summer of 1985, DasGupta was also invited as a visiting scientist to China Steel Corporation in Kaoshiung, Taiwan.

Paul L. DeAngelis, The University of Oklahoma

Paul L. DeAngelis, Ph.D., is a Presidential Professor of Biochemistry and Molecular Biology at The University of Oklahoma. His laboratory has made key discoveries in polysaccharide biosynthesis including cloning multiple new hyaluronan synthases, the first chondroitin synthase, and two novel distinct heparosan synthases. These enzymes were then harnessed to make sugar polymers with utility for medical uses. His chemoenzymatic synthesis methods result in products of unrivaled polydispersity in the polysaccharide world. Some of his inventions include recombinant polysaccharide production systems, new biomaterials, and a sugar-based drug delivery system. He is Co-founder and Chief Scientist of four biotech companies in Oklahoma (Hyalose, Choncept, Heparinex, Caisson Biotech). He has 34 US patents and more than 90 international patents; many are out-licensed to biotech and pharma companies. He has published 68 peer-reviewed papers and is on editorial board of *Glycobiology* and *Analytical Biochemistry.*

William F. DeGrado, University of California, San Francisco

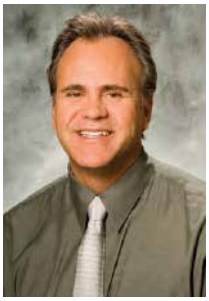
William F. DeGrado, Ph.D., is a Professor of Pharmaceutical Chemistry at the University of California, San Francisco. He received his bachelor's degree at Kalamazoo College in 1977 and his doctorate in chemistry from the University of Chicago in 1981. He previously served as a Professor of Biochemistry and Biophysics at the University of Pennsylvania from 1996 to 2011. He is a fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences and a member of the National Academy of Sciences. His most recent awards are the Makineni Award, the Ralph F. Hirschmann Award in Peptide Chemistry and the Merrifield Award. DeGrado's current research involves the De Novo protein design, bacterial signaling and medicinal chemistry. His research has generated more than 20 issued U.S. patents.

Peter J. Delfyett, University of Central Florida

Peter J. Delfyett, Ph.D., is a University Trustee Chair Professor of Optics, EE and Physics at CREOL, The College of Optics and Photonics, at the University of Central Florida. He received his Ph.D. in electrical engineering from The City University of New York. After obtaining his Ph.D., he joined Bell Communication Research as Member of the Technical Staff. Delfyett joined the faculty at CREOL in 1993. His technical expertise is in the area of ultrafast photonics, in the generation, transmission, detection and application of ultrafast optical pulse trains for applications in communications, signal processing, manufacturing and imaging. Delfyett is a Fellow of APS, IEEE, OSA, and NAI. He is the recipient of the NSF PECASE and APS Bouchet Award, and has over 700 technical publications, as well as 36 patents. He helped found Raydiance Inc., which manufactures the world's first software-controlled ultrashort pulse laser systems for industrial manufacturing and research.

Lawrence J. DeLucas, The University of Alabama at Birmingham

Lawrence J. DeLucas, O.D., Ph.D., is a Professor in the School of Optometry and Director of the Center for Structural Biology at The University of Alabama at Birmingham. He flew as a NASA Astronaut Payload Specialist on the United States Microgravity Laboratory-1 (a 14 day mission launched in June, 1992), participating in 31 materials processing experiments and from October 1994 to October 1995, he served as Chief Scientist for the International Space Station at NASA Headquarters. In April 1999, he received the Howard Heflin Statesmanship Award for Technology and in February, 2011 he received the UAB President's Award for Excellence in Teaching. He is a SAB member for Minerva Biotechnologies, Inc., Vivo BioSciences, Inc. and co-founder of Soluble Therapeutics, Inc. He published 148 research articles in scientific journals, co-authored and edited several books on protein crystal growth and is a co-inventor on 32 patents involving protein crystal growth, protein formulations and protein-based therapeutics.



Steven P. DenBaars, University of California, Santa Barbara

Steven P. DenBaars, Ph.D., Professor of Materials and Co-Director of the Solid-State Lighting Center at the University of California, Santa Barbara, is the Mitsubishi Chemical Chair in Solid State Lighting and Displays. DenBaars was a member of the technical staff at Hewlett- Packard involved in the growth and fabrication of visible LEDs. He received his Ph.D. in Electrical Engineering from the University of Southern California in 1988. Specific research interests include growth of GaN based wide-band gap semiconductors, and their application to Blue LEDs and lasers and energy efficient solid state lighting. This research has led to over 650 scientific publications and 188 U.S. patents on electronic materials and devices. He has co-founded several university spin-out companies such as Nitres Inc., and Soraa Inc. He has been awarded the NSF Young Investigator award, USC Distinguished Alumni Award, Young Scientist Award of the ISCS, IEEE Fellow, IEEE Aron Kressel Award, and has been elected to National Academy of Engineering.

Joseph M. DeSimone, The University of North Carolina at Chapel Hill

Joseph M. DeSimone, Ph.D., is the Chancellor's Eminent Professor of Chemistry at The University of North Carolina at Chapel Hill, and the William R. Kenan, Jr. Professor of Chemical Engineering at NC State University and of Chemistry at UNC-CH. He is also an Adjunct Member at Memorial Sloan-Kettering Cancer Center in New York. He is a member the National Academy of Sciences (2012), National Academy of Engineering (2005), the American Academy of Arts and Sciences (2005). DeSimone has published over 300 articles and holds over 140 patents. He has received over 50 major recognitions including the 2012 Walston Chubb Award for Innovation by Sigma Xi, the 2010 AAAS Mentor Award in recognition of efforts to advance diversity in the chemistry Ph.D. workforce, the 2009 NIH Director's Pioneer Award, and the 2008 Lemelson-MIT Prize. DeSimone has a B.S. in Chemistry from Ursinus College (1986) and a Ph.D. in Chemistry from Virginia Tech (1990).

Spiros S. Dimolitsas, Georgetown University

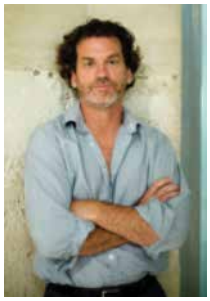
Spiros S. Dimolitsas, Ph.D., is Senior Vice President for Research & Chief Technology Officer at Georgetown University where he leads the development of innovation alliances and partnerships with industry, universities, and national laboratories. Prior to joining Georgetown in 2001, he served as Associate Director of the Lawrence Livermore National Laboratory, where his 2,500-person division led the engineering design of the world's largest laser facility. Prior to LLNL, he was with the Communications Satellite Corporation, United Technologies Corporation, and the Mayo Clinic. He holds a B.Sc. in Physics from Sussex University; a M.Sc. in Nuclear Engineering from Imperial and Queen Mary Colleges–London; and a Ph.D. in Electrical and Computer Engineering from Sussex University. In 1992, he received the Institute of Electrical and Electronics Engineers outstanding achievement medallion, and in 1995 was elected Fellow of the Institute. He has published more than 60 scientific papers and holds 12 patents.

Michael P. Doyle, The University of Georgia

Michael P. Doyle, Ph.D., is Director of the Center for Food Safety and Regents Professor of Food Microbiology at The University of Georgia. His research focuses on development of methods for foodborne pathogen detection, identification of means to control or eliminate harmful microbes in foods, and the study of microbial pathogenicity. He has been a scientific advisor to many organizations, including the World Health Organization, the Institute of Medicine, the National Research Council, and the U.S. Food and Drug Administration. He has more than 500 scientific publications, including editor or co-editor of 16 books, and has more than 800 invited presentations at national and international meetings. He is a Fellow of the American Academy of Microbiology, American Association for the Advancement of Science, the International Association for Food Protection, and the Institute of Food Technologists; and is a member of the Institute of Medicine of the National Academies.

James A. Dumesic, University of Wisconsin-Madison

James A. Dumesic earned his B.S. degree from UW-Madison and his M.S. and Ph.D. degrees from Stanford University. Dumesic joined the Department of Chemical Engineering in 1976, and he is currently the Steenbock Chair in the College of Engineering and the Michel Boudart Professor of Chemical and Biological Engineering. Dumesic has used spectroscopic, microcalorimetric, and reaction kinetics techniques to study the surface and dynamic properties of heterogeneous catalysts, and he pioneered the field of microkinetic analysis. He has recently elucidated how aqueous-phase reforming of biomass-derived carbohydrates can be tailored to produce H_2 or directed to produce liquid hydrocarbons. Most recently, he has developed the use of g-valerolactone as a biomass-derived platform chemical and a solvent for the production of fuels and chemicals from lignocellulosic biomass. He co-founded Virent Energy in 2002 and Glucan Bionewables in 2012.



David A. Edwards, Harvard University

David A. Edwards, Ph.D., is the inventor of aerosols for drug and vaccine delivery, of filters for plant remediation of toxic gases, of olfactory communication systems, of edible food packaging, of nutritional aerosols, of novel water carrying devices, and other technologies leading to multiple startup companies and nonprofits in the USA, France and South Africa. He is the Gordon McKay Professor of the Practice of Idea Translation at Harvard University in the School of Applied Sciences and the founder of Le Laboratoire (Paris and Cambridge, MA), as well as the international network of ArtScience Labs. He is a member of the National Academies of Engineering in the USA and France.

T. Taylor Eighmy, The University of Tennessee, Knoxville

T. Taylor Eighmy, Ph.D., is the Vice Chancellor for Research & Engagement and Professor of Civil & Environmental Engineering at The University of Tennessee. He serves on the UT–Battelle Liaison Committee to Oak Ridge National Laboratory. He serves on the boards of Oak Ridge Associated Universities (ORAU) and the UT Research Foundation. Eighmy represents UTK on the National Academies' Government-University-Industry Research Roundtable (GUIRR) and the University-Industry Demonstration Partnership (UIDP) as well as the Technology Leadership & Strategy Initiative of the Council on Competitiveness. He serves on the U.S. EPA Science Advisory Board (SAB). Eighmy received his B.S. in Biology from Tufts University (1980), his M.S. in Civil Engineering (1983) and his Ph.D. in Civil (Environmental) Engineering from the University of New Hampshire (1986). He is a Diplomate of the American Academy of Environmental Engineers and Scientists. He is an inventor of a patented reactive barrier technology for contaminated sediments (US 6290637 B1).

John G. Elias, University of Delaware

John G. Elias, Ph.D., is professor of electrical engineering at the University of Delaware. In 1999 he co-founded FingerWorks, Inc., the first company to commercialize multitouch with a line of ten-finger touch pads and keyboards that seamlessly combine typing, pointing, scrolling, and editing gestures within the same surface area. In 2005 FingerWorks was acquired by Apple Inc., where he is a multitouch hardware engineer and has contributed to the design of touch hardware for the iPhone and iPad.

Ronald L. Elsenbaumer, The University of Texas at Arlington

Ronald L. Elsenbaumer, Ph.D., is currently provost and vice president for academic affairs, professor of chemistry and biochemistry, and professor of materials science and engineering at The University of Texas at Arlington. He previously held positions as chair of chemistry and biochemistry, chair of materials science and engineering, director of the nanofabrication research and teaching center, and vice president for research and federal relations at UT Arlington. Prior to joining UT Arlington, Elsenbaumer held various positions in corporate research at Allied-Signal, Inc., Morristown, NJ, involved with developing new electrically conductive polymer materials for use in high energy density batteries as well as a variety of electronic applications. He holds a B.S. degree in chemistry from Purdue University, and a Ph.D. from Stanford University. He has authored or co-authored more than 100 publications and has more than 35 U.S. patents.

Todd S. Emrick, University of Massachusetts Amherst

Todd S. Emrick, Ph.D., is a Professor at the University of Massachusetts Amherst, and Director of the National Science Foundation supported Materials Research Science and Engineering Center (MRSEC) on Polymers at UMass. He completed his Ph.D. in organic chemistry at the University of Chicago in 1997, working on small molecule synthesis and strained hydrocarbons, then transitioned to polymer research (1997-2000) as a postdoctoral associate at University of California, Berkeley. Emrick's independent career at UMass began in 2001, and he has since been promoted to full professor, with active federal and corporate sponsored projects in the areas of monomer and polymer synthesis, nanoscale materials for therapeutics (gene and cancer drug delivery), electronically active polymers and nanocomposites, surfactants in solution, and environmentally friendly plastics and adhesives. Emrick has published over 180 papers during his independent career, and is a Fellow of the Polymer Materials Science and Engineering (PMSE) Division of the American Chemical Society.

Liang-Shih Fan, The Ohio State University

Liang-Shih Fan, Ph.D., is Distinguished University Professor and C. John Easton Professor in Engineering in the Department of Chemical and Biomolecular Engineering at The Ohio State University. His research fields are in fluidization, powder technology, and multiphase reaction engineering. Professor Fan is a member of the U. S. National Academy of Engineering, an Academician of Academia Sinica and a Foreign Member of Chinese Academy of Engineering, Australia Academy of Technology Science and Engineering, and Mexican Academy of Sciences. He was named in 2008 as one of the "One Hundred Engineers of the Modern Era" by the AIChE.

Nariman Farvardin, Stevens Institute of Technology

Nariman Farvardin, Ph.D., is President of Stevens Institute of Technology. Prior to Stevens, he was a member of the faculty of the University of Maryland for 27 years, culminating as Senior Vice President for Academic Affairs and Provost. Farvardin is an accomplished researcher in information theory and coding, multimedia signal compression and transmission, high-speed networks, and wireless networks. He has made significant contributions to communications standards and practical systems in data communication, image and video compression, and voice coding in wireless applications. Farvardin holds seven U.S. patents in data communication, image coding, and wireless communication and co-founded two companies. A fellow of the Institute of Electrical and Electronics Engineers, he has co-authored more than 150 technical papers in journals and conference proceedings. Farvardin was named CEO of the Year by the New Jersey Technology Council in 2013. Farvardin received his B.S., M.S. and Ph.D. degrees from Rensselaer Polytechnic Institute.

Henry C. Foley, University of Missouri System

Henry (Hank) C. Foley, Ph.D., is the Executive Vice President for Academic Affairs, Research and economic development at the University of Missouri System. He provides system-wide leadership for academic programs, technology-based economic development, research initiatives, student access and success, academic program review and eLearning. Previously, Foley 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, Foley served on the chemical engineering faculty at the University of Delaware for 14 years. Earlier he worked at American Cyanamid a world leader in refinery catalysts, and he has consulted with DuPont, Air Products, Mobil Oil, Monsanto, Engelhard Corporation and Westvaco. Foley earned a master's degree in physical chemistry from Purdue University and a doctorate in physical/inorganic chemistry from Penn State.

Ophir Frieder, Georgetown University

Ophir Frieder, Ph.D., holds the Robert L. McDevitt, K.S.G., K.C.H.S. and Catherine H. McDevitt L.C.H.S. Chair in Computer Science and Information Processing and is Chair of the Department of Computer Science at Georgetown University. He is also Professor of Biostatistics, Bioinformatics and Biomathematics in the Georgetown University Medical Center. His research interests focus on scalable information retrieval systems spanning search and retrieval and communications issues in multiple domains. He frequently consults for industry and government and for key intellectual property litigation; his systems are deployed in commercial and governmental production environments worldwide. He is a Fellow of the AAAS, ACM, and IEEE.

Fred H. Gage, Salk Institute for Biological Studies

Fred H. Gage, Ph.D., a Professor in the Laboratory of Genetics. Gage's work concentrates on the adult central nervous system and unexpected plasticity that remains throughout the life of all mammals. In addition, he models human neurological and psychiatric disease using human stem cells. He also studies the genomic mosaicism that exists in the brain as a result of mobile elements that are active in the genome. Gage is a Fellow of the American Association for the Advancement of Science, a Member of the National Academy of Sciences and the Institute of Medicine, and American Philosophical Society, and a Member of the American Academy of Arts and Sciences. Gage has served as President of the Society for Neuroscience in 2002, and past President for the International Society for Stem Cell Research 2012.

Tillman U. Gerngross, Dartmouth College

Tillman U. Gerngross, Ph.D., is a Professor of Bioengineering at Dartmouth College and an active entrepreneur and innovator. He has founded several successful companies including GlycoFi, where he led the effort to humanize the glycosylation machinery in yeast to produce therapeutic proteins, with fully human carbohydrate structures. In 2006 Nature Biotechnology named Gerngross one of the most notable people in Biotechnology in the past ten years. Since 2006, Gerngross has served as a Venture Partner at SV Life Science and in 2007 he co-founded Adimab, which since has launched one of the most commercially successful antibody discovery technologies in the last decade. In 2010 Gerngross co-founded Arsanis Inc. to develop antibody based therapies for the treatment of infectious diseases. In 2012 Gerngross co-founded Avitide to address a bottleneck in the purification of protein based therapeutics. In 2013 Gerngross co-founded Alector to develop new treatment strategies for dementia and Alzheimer's related diseases.

George W. Gokel, University of Missouri-St. Louis

George W. Gokel, Ph.D., is Distinguished Professor of Science and Director of the Center for Nanoscience at the University of Missouri-St. Louis. He obtained the Ph.D. in chemistry from the University of Southern California and worked as a post-doctoral fellow at UCLA in the laboratory of Nobel Laureate Donald Cram. He has served as professor at the Washington University School of Medicine in St. Louis, the University of Miami, the University of Maryland, and the Pennsylvania State University. His current interests are in interactions of DNA and antibiotics with synthetic amphiphiles especially as delivery strategies. He has published over 400 refereed papers, authored or edited nearly 20 monographs, and is a named inventor on 15 issued patents.

Clifford M. Gross, University of South Florida

Clifford M. Gross, Ph.D., is CEO of Tekcapital Ltd. based in Oxford, U.K. and has completed more than 100 technology transfers from university and federal laboratories to a wide range of companies. Previously, he founded Biomechanics Corporation and Utek where he served as CEO. Following this, he was CEO of Innovacorp, the provincial VC fund of Nova Scotia, Canada. Cliff has served as Acting Director of the graduate program in Biomechanics and Ergonomics at NYU, Chairman of the Nelson Rockefeller Department of Biomechanics at the New York Institute of Technology (NYCOM) and Research Professor at USF. Recently, he authored Too Good to Fail (Springer 2013) and is a named inventor on 19 issued patents. Cliff serves on the board of directors of the Technology Transfer Society and S.U.N.Y. at Empire State College. He received his Ph.D. from New York University and an M.B.A. from the University of Oxford. He is a member of the University of South Florida Chapter of the NAI.

Robert H. Grubbs, California Institute of Technology

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.

Theodor W. Hänsch, Max-Planck-Institut für Quantenoptik

Theodor W. Hänsch, Dr. rer. nat., is Director at the Max-Planck-Institut für Quantenoptik in Garching and Carl Friedrich von Siemens Professor of Physics at the Ludwig-Maximilians-Universität in Munich. After receiving his doctorate degree from the University of Heidelberg in 1969, he went to Stanford University, where he became Associate Professor of Physics in 1972 and Full Professor in 1975. In 1986 he returned to Germany. Prof. Hänsch has authored and co-authored more than 600 papers, focusing on coherent nonlinear interactions between light and matter. His early work includes the first narrowband tunable dye laser, the invention of commonly used techniques of Doppler-free laser spectroscopy, and the first proposal for laser cooling of atomic gases. He has long pursued precision spectroscopy of the simple hydrogen atom, which permits unique confrontations between experiment and fundamental theory. In 2005, Prof Hänsch shared half of the Physics Nobel Prize with John L. Hall *"for his contributions to the development of laser-based precision spectroscopy, including the optical frequency comb technique."*

Jeffrey H. Harwell, The University of Oklahoma

Jeffrey H. Harwell, Ph.D., is Asahi Glass Foundation Chair of Chemical Engineering at The University of Oklahoma. He received his Ph.D. in chemical engineering from The University of Texas at Austin. He is a Fellow of the American Institute of Chemical Engineers and recipient of the American Chemical Society's Victor K. LaMer Award. He has published more than 150 referred scientific journal articles, has 30 patents in 12 countries, and has launched and collaborated with start-up companies in the areas of enhanced oil recovery, ground water remediation and carbon nanotubes. He has worked with Fortune 500 companies around the world to invent and improve surfactants, nanoparticles and colloids for better product performance, greater cost efficiency, and reduced environmental impact. Current research interests include surfactant-only enhanced oil recovery, nanoparticle gels, microemulsions, and nanocomposites.

Jason C. Heikenfeld, University of Cincinnati

Jason C. Heikenfeld, Ph.D., is an internationally-known expert in electrofluidics and flex-electronics, with work spanning displays, lab-on-chip, and now wearable sensors. Prof. Heikenfeld is a recipient of NSF CAREER, and AFOSR and Sigma Xi Young-Investigator awards. He is currently a Professor of Electrical Engineering at the University of Cincinnati and also currently working with his second start-up company in color-video electronic paper. Heikenfeld is a Senior member of the Institute for Electrical and Electronics Engineers, a Senior member of the Society for Information Display, a life-member of SPIE, a member of ASEE, and a Fellow of the National Academy of Inventors. In addition to his scholarly work, Heikenfeld is an award winning educator and has lead the creation of programs and coursework at the University of Cincinnati that foster innovation, entrepreneurship, and an understanding of the profound change that technology has on society.

Benjamin S. Hsiao, Stony Brook University

Benjamin S. Hsiao, Ph.D., is Professor of Chemistry at Stony Brook University, where he served as department chair and Vice President for Research. His research is mainly focused on the use of nanostructured polymeric materials for energy, environmental and medical applications. He has been awarded 18 U.S. and 15 foreign patents, and launched 3 start-up companies to commercialize biomedical anti-adhesion films and high flux nanofibrous membranes for water purification. He received his B.S. degree from National Taiwan University, Ph.D. degree from University of Connecticut and post-doctorate training from University of Massachusetts. He worked as a staff scientist in DuPont Company before joining Stony Brook. He has published over 405 peer-reviewed papers, 41 chapters in books and encyclopedias, 226 conference proceedings, and has edited 2 books. He was elected as Fellow of the AAAS, ACS and APS, and received the Chang-Jiang Scholar professorship from the Education Ministry of China.

Stephen D. H. Hsu, Michigan State University

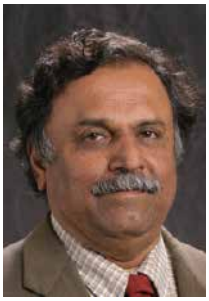
Stephen D. H. Hsu, Ph.D., is Vice President of Research and Graduate Studies at Michigan State University. He was formerly the director of the Institute for Theoretical Science and professor of physics at the University of Oregon. He currently serves as scientific adviser to BGI (formerly Beijing Genomics Institute) and as a member of its Cognitive Genomics Lab. Hsu is founder of two Silicon Valley companies—SafeWeb, a pioneer in SSL VPN (Secure Sockets Layer Virtual Private Networks) appliances, which was acquired by Symantec in 2003, and Robot Genius Inc., which developed anti-malware technologies. He graduated from the California Institute of Technology and received his doctorate in physics from the University of California, Berkeley. A Junior Fellow of the Harvard Society of Fellows, he has also been on the faculty at Yale University.

Lonnie O. Ingram, University of Florida

Lonnie O. Ingram, Ph.D., is a member of UF's Institute of Food and Agricultural Sciences. Ingram joined the faculty in UF's Microbiology and Cell science Department in 1972. He has published more than 230 research papers and holds 24 patents. Ingram serves as the director of the Florida Center for Renewable Chemicals and Fuels, home of the Stan Mayfield Biorefinery Pilot Plant. He is best known for his 5,000,000th Landmark Patent that engineered bacteria to convert pentose and hexose sugars from inedible plant fiber and wood into fuel ethanol. This work was further extended by engineering bacteria for the now commercial production of compounds for biodegradable plastics (D-lactic acid and succinic acid) and pharma products. Ingram was elected to membership in the U.S. National Academy of Sciences and the American Academy of Microbiology, among other honors.

Tatsuo Itoh, University of California, Los Angeles

Tatsuo Itoh, Ph.D., is Distinguished Professor of Electrical Engineering and holder of Northrop Grumman Chair in Microwave Electronics at UCLA. He received his Ph.D. in electrical engineering from University of Illinois in 1969. He is a Fellow of the IEEE, was President of the MTT Society in 1990. He was elected as an Honorary Life Member of MTT Society in 1994. He was the Chairman of Commission D of International Union of Radio Science for 1993-1996. He received many awards including IEEE Third Millennium Medal and IEEE MTT Distinguished Educator Award in 2000 and Microwave Career Award in 2011. He was elected as a member of National Academy of Engineering in 2003. He has over 1100 publications and generated 76 Ph.D.'s in the area of microwave and millimeter-waves, computational electromagnetics, antennas, quasi-optical and active integrated antennas, EBG and Metamaterials.



S. Sitharama Iyengar, Florida International University

S. Sitharama Iyengar, Ph.D., is a Distinguished Ryder Professor and Director of the School of Computing and Information Sciences at the Florida International University. Iyengar is a pioneer in sensor networks and image processing. Iyengar has published over 500 research papers and has authored/co-authored/edited 18 books. He is also a member of the European Academy of Sciences, a Fellow of IEEE, a Fellow of ACM, a Fellow of AAAS, and a Fellow of Society of Design and Process Program (SPDS), Fellow of Institution of Engineers (FIE), awarded a Distinguished Alumnus Award of the Indian Institute of Science, Bangalore, and was awarded the IEEE Computer Society Technical Achievement Award. He has received a Lifetime Achievement Award conferred by the International Society of Manufacturing (ISAM) in recognition of his career and lifelong contributions to the fields of Engineering and Computer Science at Indian Institute of Technology (BHU). Iyengar and Nulogix were awarded in the 2012 Innovation 2 Industry (i2i) Florida competition.

Richard Jove, Vaccine and Gene Therapy Institute of Florida

Richard Jove, Ph.D., received his pre-doctoral training at Columbia University and postdoctoral training at Rockefeller University, New York. He began his independent research career as Assistant to Associate Professor with Tenure at the University of Michigan Medical School, Ann Arbor, where he was also Director of Molecular Oncology. Subsequently, Jove helped establish the H. Lee Moffitt Comprehensive Cancer Center in Tampa, Florida, as Professor and Director of the Molecular Oncology Program. He then served as Director of the Beckman Research Institute and Deputy Director of the NCI Comprehensive Cancer Center at City of Hope, Los Angeles. His group was the first to directly link STAT3 signaling to cancer and immune evasion, as well as validate STAT3 as a promising molecular target for innovative cancer therapy. Since July 2013 Jove has been serving as the President and Director of the new Vaccine and Gene Therapy Institute of Florida.

Biing-Hwang Juang, Georgia Institute of Technology

Biing-Hwang Juang, Ph.D., is Motorola Foundation Chair Professor and Georgia Research Alliance Eminent Scholar at School of Electrical and Computer Engineering, Georgia Institute of Technology. Prior to joining Georgia Tech in 2002, he was Director of Acoustics and Speech Research at Bell Laboratories, and Director of Multimedia Technologies Research at Avaya Labs. Prof. Juang has published extensively, and holds many patents. He has served as Editor-in-Chief for the *IEEE Transactions on Speech and Audio Processing,* and a number of leading positions in the IEEE Signal Processing Society, including Chair of its Fellow Reference Committee. He is a Fellow of the IEEE, a Fellow of Bell Laboratories, a member of the National Academy of Engineering (NAE) of the United States, and an Academician of Academia Sinica (Taiwan, Republic of China).

Vistasp M. Karbhari, The University of Texas at Arlington

Vistasp M. Karbhari, Ph.D., became president of The University of Texas at Arlington in June 2013. At UT Arlington, he holds a professorship in two disciplines: Mechanical and Aerospace Engineering and Civil Engineering. Karbhari served as provost and executive vice president for academic affairs at the University of Alabama in Huntsville from 2008-2013, after having served on the faculty at the University of California, San Diego (1995-2008) and the University of Delaware (1991-1995). Karbhari earned his bachelor's degree in civil engineering and a master's degree in structures, both from the University of Poona in India. He earned his Ph.D. from the University of Delaware for work in the area of composite materials. A prolific researcher, Karbhari has international renown in the areas of processing and mechanics of composites, durability of materials, infrastructure rehabilitation, multi-threat mitigation, and structural health monitoring. He has authored or co-authored over 460 papers in journals and refereed conference proceedings, and has edited or co-edited five books. He is a fellow of ASM International, and the International Institute for Fiber-reinforced Polymers in Construction, and has received numerous awards for research, teaching and innovation.

Joachim B. Kohn, Rutgers, The State University of New Jersey

Joachim B. Kohn, Ph.D., is a Board of Governors Professor of Chemistry at Rutgers. He has written over 200 peer-reviewed articles and holds 54 issued U.S. patents. In 1997, Kohn founded the New Jersey Center for Biomaterials, which has grown into a nationwide collaborative network. He is a Fellow of AIMBE, and was inducted into the New Jersey High-Tech Hall of Fame. He is the recipient of numerous awards, including the Thomas Alva Edison Patent Award for best medical patent in New Jersey (in 1999 and 2006) and the Clemson Award for Basic Science (given by the Society for Biomaterials). He has raised about $100M in research funding at Rutgers and has helped four licensees to raise about $200M in private capital. Currently, over 40,000 patients use medical implants that consist of polymers invented by Kohn.

George P. Korfiatis, Stevens Institute of Technology

George P. Korfiatis, Ph.D., Provost and University Vice President, is an internationally recognized expert in environmental research and technology development. In his 30-year career at Stevens, he has served as professor and researcher, Dean of the Charles V. Schaefer Jr. School of Engineering, where he implemented an environment of innovation and entrepreneurship. He was the Founding Director of the Stevens Center for Environmental Engineering, where he managed research contracts valued in excess of $30 million. Korfiatis also a co-founded two Stevens Enterprise Companies: PlasmaSol Corp. and HydroGlobe LLC. Both companies have introduced technology in the marketplace and have been acquired by Fortune 500 companies.

Michael R. Ladisch, Purdue University

Michael R. Ladisch, Ph.D., is Director of the Laboratory of Renewable Resources Engineering (LORRE), and Distinguished Professor of Agricultural and Biological Engineering with a joint appointment in the Weldon School of Biomedical Engineering. His B.S. (1973) from Drexel University and M.S. (1974) and Ph.D. (1977) from Purdue University are in Chemical Engineering. He is continuing his activities with Mascoma Corporation, where he has been a contributor since 2007. Ladisch's research includes bioprocess engineering, transformation of renewable resources into biofuels and bioproducts, and food safety. His fundamental studies address proteins and living organisms at surfaces, microfluidic biosensor systems, bionanotechnology and bioseparations. He is an author for two textbooks, numerous journal papers, book chapters and abstracts, with 20 patents granted or applied for. Ladisch was elected to the National Academy of Engineering in 1999, received the Charles D. Scott Award in 2009, and became fellow of ACS and AAAS in 2011.

David C. Larbalestier, Florida State University

David C. Larbalestier, Ph.D., is Director of the Applied Superconductivity Center at the National High Magnetic Field Laboratory at Florida State University, where he is also Francis Eppes Professor in the Department of Mechanical Engineering. Larbalestier has been deeply involved in the development of conductors for high field superconducting magnets throughout his whole career, first in his Ph.D. work at Imperial College, then as a postdoc at the Rutherford Laboratory, then as faculty in Materials Science and Engineering at the University of Wisconsin–Madison. Through extensive industry-national laboratory interactions, inter-disciplinary R&D and key patents, his group has been central to the development of all the conductors used for superconducting magnets. He is a member of the National Academy of Engineering and a Fellow of the APS, the IOP (UK) and the IEEE and holds the world record for magnetic field of a superconducting magnet, 35.4 T.

Cato T. Laurencin, University of Connecticut

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.

Kam W. Leong, Duke University

Kam W. Leong, Ph.D., is the James B. Duke Professor of Biomedical Engineering at Duke University. He received his Ph.D. in Chemical Engineering from the University of Pennsylvania. After serving as a faculty in the Department of Biomedical Engineering at The Johns Hopkins School of Medicine for 20 years, he moved to Duke University in 2006 to work on nanomedicine research, focusing on nanoparticle-mediated nonviral gene delivery and cancer immunotherapy. His lab also works on the application of nanostructured biomaterials for regenerative medicine, particularly on understanding cell-topography interactions and on the nonviral approach for direct cellular reprogramming. He owns more than 50 issued patents, and has published over 280 peer-reviewed research manuscripts. He is a member of the USA National Academy of Engineering.

Frank L. Lewis, The University of Texas at Arlington

Frank L. Lewis, Ph.D., Fellow IEEE, Fellow IFAC, PE Texas, U.K. Chartered Engineer, is a UTA Distinguished Scholar Professor, UTA Distinguished Teaching Professor, and Moncrief-O'Donnell Chair at The University of Texas at Arlington Research Institute. He obtained a Bachelor's Degree in Physics/EE and the MSEE at Rice University, his M.S. in Aeronautical Engineering from the University West Florida, and his Ph.D. at the Georgia Institute of Technology. He is the author of 6 U.S. patents, numerous journal papers, and 14 books, including *Optimal Control, Aircraft Control, Optimal Estimation,* and *Robot Manipulator Control* which are used as university textbooks worldwide. He received the Fulbright Research Award, NSF Research Initiation Grant, ASEE *Terman Award,* Int. Neural Network Soc. *Gabor Award,* U.K. Inst Measurement & Control *Honeywell Field Engineering Medal*, and IEEE Computational Intelligence Society *Neural Networks Pioneer Award.* He is Distinguished Visiting Professor at Nanjing University of Science & Technology and Project 111 Professor at Northeastern University in Shenyang, China.

Ping Liang, University of California, Riverside

Ping Liang, Ph.D., is a serial entrepreneur who co-founded RF DSP Inc. to develop next generation wireless technologies, and was the founder and CEO of TransDimension Inc., a fabless semiconductor and embedded software company. He founded TransDimension with a research contract award from DARPA. His technology leadership and inventions fueled the growth of TransDimension and it was ranked the 32nd fastest growing technology companies in North America before it was acquired. His inventions, ranging from embedded USB and wireless networking to nano-magnetic devices and circuits and nano-magnetoelectric particles for nano-medicine applications, provided enabling technologies for multiple industry standards, and have been used in over 100 million product units. He has led the design course at the Department of Electrical Engineering, University of California, Riverside, and taught inventions to students for over 10 years. He currently conducts research at UCR in the UC-Light Center and in nano-magnetic devices and circuits.

Charles M. Lieber, Harvard University

Charles M. Lieber received his doctoral degree from Stanford University, and postdoctoral training at the California Institute of Technology. He holds appointments in Harvard University's Department of Chemistry and Chemical Biology (Mark Hyman Chair Professor), and School of Engineering and Applied Sciences. Lieber has pioneered the synthesis of nanowire materials; characterization of their fundamental properties; development of methods of hierarchical assembly of nanowires; and their applications in nanoelectronics, nanophotonics, nanocomputing, and biology. He has pioneered nano-bioelectronics development of new sensors, novel nanoelectronic cell and tissue probes, and cyborg tissues. Lieber's recent awards include the IEEE Nanotechnology Pioneer Award (2013), Willard Gibbs Medal (2013), and Wolf Prize (2012). Lieber is an elected member of the National Academy of Sciences and the American Academy of Arts and Sciences. He is Co-Editor of *Nano Letters,* has produced over 350 papers and 80 patents, with the latter nucleating several nanotechnology companies.

Stephen B. Liggett, University of South Florida

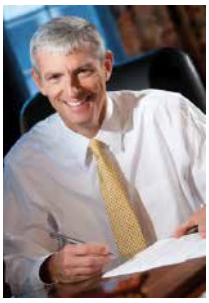
Stephen B. Liggett, M.D., is the Vice Dean for Research and Vice Dean for Personalized Medicine and Genomics, at the University of South Florida Morsani College of Medicine. He is also Professor of Internal Medicine and of Molecular Pharmacology and Physiology. He received a B.S. in physics from the Georgia Institute of Technology and an M.D. from the University of Miami School of Medicine with subsequent years of post-doctoral training at Washington University School of Medicine in St. Louis and the Howard Hughes Medical Institute at Duke University Medical Center. His interests and patents center around G-protein coupled receptor biology.

Dennis C. Liotta, Emory University

Dennis C. Liotta (Ph.D., CUNY, 1974; postdoc, The Ohio State University, 1974-76) is the Samuel Candler Dobbs Professor of Chemistry at Emory University, where he has been a faculty member since 1976. He currently serves as the Executive Director of the Emory Institute for Drug Development, as well as the co-director of the Republic of South Africa Drug Discovery Training Program. While at Emory, Liotta has authored over two hundred and thirty research publications and over seventy issued U.S. patents. Recently, he founded DRIVE (Drug Innovation Ventures at Emory), an innovative, non-profit drug development company that focuses on diseases caused by single stranded RNA viruses. In addition, he is the inventor of record for many clinically important agents, including FTC (Emtriva®, Emtricitabine), 3TC (Epivir®, Lamivudine), Reverset® (DPC-817, D-D4FC), Racivir®, Elvucitabine® (L-D4FC) and Q-122. Emtricitabine and Lamivudine are components of ten different FDA-approved combination therapies used to treat HIV and hepatitis B.

Dmitri Litvinov, University of Houston

Dmitri Litvinov, Ph.D., is the John and Rebecca Moores Professor of Electrical and Computer Engineering at the University of Houston. He also holds joint appointments in Chemical and Biomolecular Engineering, in Chemistry, and in Materials Engineering. Litvinov earned his Ph.D. in Applied Physics and M.S.E. in Electrical Engineering at the University of Michigan in Ann Arbor. He also holds a M.S. degree Physics from the University of Miami in Coral Gables, FL and a B.S. degree in Applied Physics from the Moscow Institute of Physics and Technology. Litvinov has co-authored over 130 peer-reviewed papers, a book on magnetic recording, have given numerous invited presentations at various venues. He received 30 technical achievement awards while with Seagate Technology before joining the academia. Litvinov has 26 issued U.S. patents to his credit. He is a recipient of an IEEE Individual Achievement Award. Litvinov has served in various editorial capacities on a number of engineering and scientific journals.



Michael R. Lovell, University of Wisconsin-Milwaukee

Michael R. Lovell, Ph.D., is Chancellor of the University of Wisconsin-Milwaukee and a State of Wisconsin Distinguished Professor—a designation recognizing professorships in areas of vital or emerging significance to Wisconsin. Throughout his career, Lovell has fostered entrepreneurship and innovation. On the University of Pittsburgh faculty, he founded and was executive director of the Swanson Center for Product Innovation. In its first four years it generated 220 new or reengineered products and launched eight companies. In Milwaukee, Lovell started numerous initiatives including the ANSYS Institute for Industrial Innovation and the Energy Advancement Lab, a unique research and staff partnership with Johnson Controls Inc. Lovell also helped launch the Student Startup Challenge, providing funding and support for student entrepreneurs, and Mobile Innovation Lab, allowing students to develop mobile apps for regional innovators. Lovell holds three U.S. patents and four provisional patents. His mechanical engineering degrees, including Ph.D., are from the University of Pittsburgh.

Richard J. Mammone, Rutgers, The State University of New Jersey

Richard J. Mammone, Ph.D., is professor of Electrical and Computer Engineering and Business at Rutgers University holding joint appointments in Rutgers School of Engineering and Rutgers Business School. He is the Associate Vice President of Innovation and Partnerships, leading the University's strategic objectives in public-private partnerships, technology commercialization, entrepreneurship related activities. A serial inventor and entrepreneur, Mammone's technological innovations in Lasik surgery, speaker recognition, and detection of hazardous materials have fueled the growth of several entrepreneurial ventures. He holds 17 issued patents from the United States Patent and Trademark Office (USPTO) and is recipient the Research & Development Council of New Jersey's Thomas Alva Edison Patent Award. He has published over 150 journal articles and 4 books.

Michael A. Marletta, The Scripps Research Institute

Michael A. Marletta, Ph.D., is the President and CEO of The Scripps Research Institute and the Cecil H. and Ida M. Green Professor of Chemistry. He received an A.B. degree from SUNY College at Fredonia and a Ph.D. from the University of California, San Francisco. He held faculty positions at M.I.T, The University of Michigan and the University of California, Berkeley. He was Chair of the Berkeley Department of Chemistry from 2005-2010. He assumed the Scripps presidency in January 2012. He was a MacArthur Fellow, and elected to the Institute of Medicine, the American Academy of Arts and Sciences, the National Academy of Sciences, and a co-founder of Omniox, Inc. Marletta's research interests lie at the interface of chemistry and biology where he has made discoveries relevant to human disease.

Edith Mathiowitz, Brown University

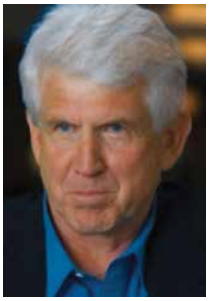
Edith Mathiowitz, Ph.D., is a Professor of Medical Science and Engineering at Brown University in the Department of Molecular Pharmacology, Physiology & Biotechnology. She is the Director of the Biotechnology Graduate Program. Her extensive experience includes development of therapeutic polymer bases, 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, Mathiowitz has made 120 publications, over 75 patents, 1 book, Encyclopedia of Drug Delivery; her work has been published in over 120 conference proceedings and abstracts. She is a cofounder of Perosphere.

Krzysztof Matyjaszewski, Carnegie Mellon University

Krzysztof Matyjaszewski, Ph.D., is J.C. Warner University Professor of Natural Sciences at Carnegie Mellon University. He discovered Cu-mediated atom transfer radical polymerization, commercialized in the U.S., Europe and Japan. He has co-authored more than 800 publications (cited more than 60,000 times, h-index 124), co-edited 17 books, more than 80 book chapter and holds 46 U.S. patents. He is the editor of *Progress in Polymer Science* and *Central European Journal of Chemistry.* Matyjaszewski received 2012 Prize of Société Chimique de France, 2012 Maria Curie Medal, 2011 Wolf Prize in Chemistry, 2009 Presidential Green Chemistry Challenge Award, and from the American Chemical Society: 2013 North America Science Award, 2011 Hermann Mark Award, 2011 Award in Applied Polymer Science, 2002 Polymer Chemistry Award and 1995 Creative Polymer Chemistry Award. He was awarded with seven honorary degrees (Ghent, Lodz, Athens, Moscow, Toulouse, Pusan and Paris) and is a member of National Academy of Engineering, Polish Academy of Sciences and Russian Academy of Sciences.

Constantinos Mavroidis, Northeastern University

Constantinos Mavroidis, Ph.D., is Distinguished Professor of Engineering at Northeastern University in Boston, MA. Mavroidis was a Tenured Associate Professor at the Department of Mechanical and Aerospace Engineering at Rutgers University (2001 - 2004). He received the Diploma in Mechanical Engineering from the National Technical University of Athens, Greece in 1988 and the M.S. and Ph.D. degrees in Robotics from the University of Paris VI, France, in 1989 and 1993 respectively. From 1993 to 1996 he was a Post-Doctoral Associate at the Department of Mechanical Engineering at MIT. Mavroidis has focused his research on smart medical devices, medical robotics and compact actuator drives. In 2006 he was named *Fellow* of the American Society of Mechanical Engineers. Mavroidis is co-inventor in 6 patents issued and 15 patent applications pending. In 2013 he was elected Fellow of the National Academy of Inventors (NAI).



Robert M. Metcalfe, The University of Texas at Austin

Robert M. Metcalfe, Ph.D., is Professor of Innovation in the Cockrell School of Engineering at The University of Texas at Austin, since 2011. He is an Internet Society Hall of Famer for pioneering work on the Internet beginning in 1970 at MIT, Harvard, and Stanford. Bob led the invention of Ethernet at Xerox Parc in 1973 and the founding of 3Com Corporation in 1979. Starting in 1990 Bob spent a decade as an Internet publisher-pundit at IDG/InfoWorld and starting in 2001 spent a decade as a venture capitalist at Polaris Venture Partners. Bob is a life trustee of MIT, member of the National Academy of Engineering, and recipient of the National Medal of Technology for "leadership in the invention, standardization, and commercialization of Ethernet."

Gary K. Michelson, Twenty Million Minds Foundation

Gary Karlin Michelson, M.D., is a Board Certified Orthopedic spinal surgeon and sole inventor of more than 900 issued patents. Michelson was recognized in 2006 as the leading research scientist in spine by the prestigious Paralyzed Veterans of America and was inducted into the National Inventors Hall of Fame in 2011. Michelson founded, funded, funds and directs three charitable foundations. The Medical Research Foundation endowed with gifts in excess of 100 million dollars funds cutting edge medical research in the areas of neurodegenerative disorders, spinal cord regeneration, reproductive biology, and through the Sabin Institute the creation of a quadravalent antihelminthic vaccine. Michelson recently gifted USC $50 million to create the USC Michelson Center for Convergent Bioscience. Michelson's Found Animal Foundation has affected the lives of hundreds of thousands of animals. The 20mm.org has been virtually leading the drive to make high quality education far more accessible, affordable and effective. Michelson funded the reforestation of nearly 50,000 acres andthe planting of 7 million trees.

Robert H. Miller, Case Western Reserve University

Robert H. Miller, Ph.D., is the Vice President for Research and Technology Management and the Allen C. Holmes Professor of Neurological Diseases at Case Western Reserve University in Cleveland, Ohio. He obtained his B.Sc. and Ph.D. from University College in London, England and joined the faculty at Case Western Reserve University in 1987. He is a founding member of the Myelin Repair Foundation, a non-profit foundation whose goal is to rapidly develop new therapies for Multiple Sclerosis. He serves on multiple review groups including as chair of NIH study sections. He is a member of the Scientific Advisory Board of the Shriners Hospital and serves on the advisory board for the Maryland Stem Cell Foundation. Miller serves on the Editorial board of several neurobiological and developmental journals. He has won numerous awards, including the Alfred P. Sloan Fellowship Award, Jacob Javits Neuroscience Merit Award, and the Charles Judson Herrick Award.

Chad A. Mirkin, Northwestern University

Chad A. Mirkin, Ph.D., is the Director of the International Institute for Nanotechnology and the George B. Rathmann Professor of Chemistry, Chemical and Biological Engineering, Biomedical Engineering, Materials Science and Engineering, and Medicine. He has authored over 550 manuscripts, is inventor on over 900 patent applications worldwide (243 issued), and has received over 90 national and international awards. He is a Member of PCAST (Obama Administration), one of only 15 scientists, engineers, and medical doctors to be elected to all three U.S. National Academies, and the founder of multiple companies, including Nanosphere, AuraSense, and AuraSense Therapeutics.

Samir Mitragotri, University of California, Santa Barbara

Samir Mitragotri, Ph.D, is professor of Chemical Engineering and Director for Center for Bioengineering at the University of California, Santa Barbara (UCSB). He received B.S. from Institute of Chemical Technology in Mumbai and Ph.D. from MIT. He is a world leader in the field of drug delivery and has developed a number of technologies for transdermal, oral and nanoparticle-based drug delivery systems. He has published over 160 publications and is an inventor on dozens of issued and pending U.S. patents. His has co-founded seven companies that are developing therapeutic and diagnostic products. Mitragotri is an elected fellow of American Association of Advancement of Science and American Institute of Medical and Biological Engineering. Professor Mitragotri has received a number of awards including American Institute of Chemical Engineering's Allan P. Colburn award (2005), Controlled Release Society's Young Investigator award (2008) and Technology Review Young Innovator award (1999).

Shanta M. Modak, Columbia University

Shanta M. Modak, Ph.D., is a Research Scientist in the Department of Surgery at Columbia University. She received her masters of science from Bombay University, India in 1965 and her doctorate in 1969. Modak previously served as Senior Scientific Officer of the Haffkine Institute from 1966 to 1970 and as a Research Associate with Columbia University from 1971 to 2002, she has been in her current position since 2003. Modak has been invited to speak at several conferences and events. She has published over 50 papers and a book chapter on infection-resistant devices. In 2004 she received a grant from the state of New York for her research and development in infection control technologies and prevention methods. Modak's research has generated more than 45 patents with nearly 30 more patent applications.

Marsha A. Moses, Harvard University

Marsha A. Moses, Ph.D., is the Julia Dyckman Andrus Professor at Harvard Medical School and the Director of the Vascular Biology Program at Boston Children's Hospital. She has had a long-standing interest in identifying and characterizing the biochemical and molecular mechanisms that underlie the regulation of tumor growth and progression with the goal of developing novel cancer therapeutics. Named a pioneer in the field of biomarker medicine by the Journal of the National Cancer Institute, Moses and her laboratory have also discovered and validated noninvasive urinary cancer biomarkers that can predict disease status and stage in cancer patients and are sensitive and specific markers of disease progression and therapeutic efficacy of cancer drugs. A number of these urine tests have been made commercially available. Moses was elected to the Institute of Medicine of the National Academies of the United States in 2008.

Ferid Murad, The George Washington University

Ferid Murad, M.D., Ph.D., is University Professor at George Washington University's School of Medicine and Health Sciences. Murad received the Nobel Prize in medicine in 1998 for his discovery of the role of nitric oxide in the cardiovascular system. The discovery not only contributed to a better understanding of how information is transmitted between cells but also had a significant influence on cardiovascular medicine, leading to changes in treatment following a heart attack. He is a member of the National Academy of Sciences and its Institute of Medicine, fellow of the American Academy of Arts and Sciences and member of the Texas Academy of Medicine, Engineering and Science Technology. He completed his undergraduate work at DePauw University and received his M.D and Ph.D. from Case Western Reserve University. He has received 17 honorary degrees, trained 150 fellows and published 450 research papers and edited 30 books.

Hameed A. Naseem, University of Arkansas

Hameed A. Naseem, Ph.D., received the B.Sc. Honors and M.Sc. Honors degrees in Physics from Panjab University, Chandigarh, India, in 1975 and 1976, respectively. He received his M.S. in Physics and Ph.D. in Material Science Engineering from Virginia Polytechnic Institute and State University, Blacksburg, VA, in 1980 and 1984, respectively. Naseem served as an Assistant Professor in the Department of Electrical Engineering, University of Arkansas, Fayetteville, AR, from 1985 to 1990. He was an Associate Professor from 1990-95, and has been a Professor since 1995. He has been a senior member of IEEE since 1990. He has published over 200 peer-reviewed journal and proceedings papers and presented about 200 papers at national/international conferences. He has graduated 40 M.S. students and 8 Ph.D. students. He currently supervises 7 Ph.D. students and 5 M.S. students. He has been awarded eight patents by the U.S. Patent Office and several are pending. Naseem was elected a Fellow of the National Academy of Inventors in 2013.

Laura E. Niklason, Yale University

Laura E. Niklason, Ph.D., is a Professor at Yale University in Biomedical Engineering and Anesthesia. She completed her residency training in anesthesia at the Massachusetts General Hospital, and post-doctoral training at Massachusetts Institute of Technology. From there she went on to a faculty position at Duke University from 1998-2005, before moving to Yale. Early in her career, Niklason developed novel tools for analyzing medical images to detect vascular disease, as well as the mathematical basis for current digital mammography tomosynthesis machines. In the mid-1990's, Niklason turned her attention to regenerative medicine, focusing on vascular and lung regeneration. She founded a biotechnology company, Humacyte, which has brought engineered, "off-the-shelf" arteries to patients with vascular and kidney disease. Niklason's lab was also the first to describe the engineering of whole lung tissue that could exchange gas in vivo. She was inducted into the American Institute for Medical and Biological Engineering (AIMBE) in 2008.

Santa J. Ono, University of Cincinnati

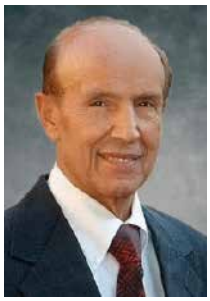
Santa J. Ono, Ph.D., currently serves as the University of Cincinnati's 28th president. His research focuses on the pathogenesis of allergic inflammation in the eye and the role of the immune response in age-related macular degeneration. He co-founded iCo Therapeutics Inc., of Vancouver, Canada, which holds exclusive worldwide rights to three products related to diabetic macular edema and other sight-threatening and infectious diseases. He has served as a consultant to GlaxoSmithKline, Novartis, Johnson & Johnson, Oxagen and Santen Pharmaceuticals and currently works with Ohio Governor John Kasich on his biopharmaceutical initiative. Ono holds one U.S. patent and one provisional patent. An elected Fellow of the American Association for the Advancement of Science, the Royal Societies of Medicine & Chemistry and the American Academy of Allergy & Immunology, he also served in administrative, teaching and research positions at Emory University, The Johns Hopkins School of Medicine, Harvard Medical School, the Schepens Eye Research Institute, University College London and Moorfields Eye Hospital in London.

Sethuraman Panchanathan, Arizona State University

Sethuraman (Panch) Panchanathan, Ph.D., is Senior Vice President of the Office of Knowledge Enterprise Development for Advancing Research, Entrepreneurship and Economic Development at Arizona State University. He is Director of the Center for Cognitive Ubiquitous Computing (CUbiC) and Professor at Arizona State University. He is a leading innovator in Media Processor Designs and Ubiquitous Computing Environments for enhancing the quality of life for individuals with disabilities. He is the recipient of the Governor's Innovator of the Year-Academia Award. He is the author of over 400 publications in refereed journals and conferences. He holds 4 U.S. patents and over 20 patent disclosures. He served as Editor-in-Chief of the IEEE Multimedia Magazine. He is an Associate Editor of 7 Journals. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), National Academy of Inventors (NAI), Society of Optical Engineering (SPIE) and member of the Canadian Academy of Engineering.

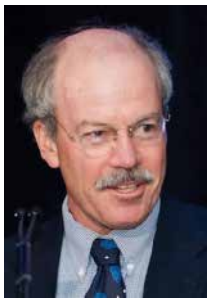
P. Hunter Peckham, Case Western Reserve University

P. Hunter Peckham, Ph.D., is the Donnell Institute Professor of Biomedical Engineering and Distinguished University Professor at Case Western Reserve University. He is the Founding Director of the Institute for Functional Restoration and was the founding Director of the Functional Electrical Stimulation Center of Excellence in the Louis Stokes Cleveland Veterans Affairs Medical Center. He serves as Co-Director of the MetroHealth Rehabilitation Institute at MetroHealth Medical Center. Peckham has developed the technique of functional electrical stimulation to restore movement in spinal cord injury. He and his collaborators have developed implantable neural prostheses that utilize electrical stimulation to control neuromuscular activation and provide hand/arm control to individuals of high-level spinal cord injury (tetraplegia). He is a Fellow of the American Institute of Medical and Biological Engineering, the American Spinal Injury Association, and member of the National Academy of Engineering.



Gholam A. Peyman, Tulane University and The University of Arizona

Gholam A. Peyman, M.D., an Iranian-American, received his M.D. from the University of Freiburg, Germany, interned in Germany and the USA, completed his Ophthalmology residency and a Retina fellowship at the University of Essen in Essen, Germany. He became an Assistant Professor at UCLA in 1971, an Associate Professor in 1974 and a full Professor of Ophthalmology at the University of Illinois, LSU and Tulane University. He is presently Professor Basic Medical Sciences University Arizona College of Medicine Phoenix, College of Optical Sciences UA Tucson, Emeritus Professor Tulane University, co-director Arizona Retinal Specialists. Peyman invented the LASIK procedure, developed the field of Intraocular Drug delivery, Intraocular tumor endoresection, enhanced cancer nano therapy, Visual and brain cell stimulation/restoration with Quantum dot /Gene therapy, holds 150 U.S. patents, including operating microscope, surgical/optical instruments, Glaucoma shunt, automated A.O. phoropter, Telelaser system. He received the presidential National Medal of Technology and Innovation, Honorary doctorate from University of Cordoba /Argentina, ARVO Translational Award, member of Ophthalmology Hall of Fame. He has published 900 scientific articles and 10 books.

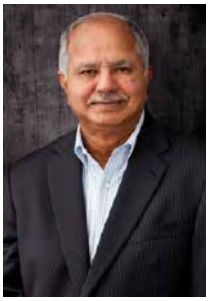


Glenn D. Prestwich, The University of Utah

Glenn D. Prestwich, Ph.D., is Presidential Professor of Medicinal Chemistry and Presidential Assistant for Faculty Entrepreneurs at The University of Utah. He created and directs the U's Entrepreneurial Faculty Scholars program. His research encompasses drug discovery in cell signaling, semisynthetic extracellular matrices for regenerative medicine, and glycosaminoglycan derivatives as anti-inflammatory agents. He co-founded 8 companies including Echelon Biosciences, Glycosan BioSystems, Sentrx Animal Care, and GlycoMira Therapeutics. He received the Governor's Medal for Science and Technology for 2006, the 1998 Paul Dawson Biotechnology Award & the 2008 Volwiler Research Award of the American Association of Colleges of Pharmacy, and the 2010 University of Utah Distinguished Scholarly and Creative Research Award. During 37 years as a faculty member, he has published over 600 peer-reviewed papers and chapters, has been issued 25 patents, and has trained over 125 scientists. He is a pilot and sings first tenor in the Utah Symphony Chorus.

Stephen R. Quake, Stanford University

Stephen R. Quake, D.Phil., is the Lee Otterson Professor of Bioengineering and Applied Physics at Stanford University and an investigator of the Howard Hughes Medical Institute. Quake's work has led to a number of groundbreaking inventions in personalized medicine, drug discovery and noninvasive diagnostics, among other areas. His contributions in science and technology have been internationally recognized with the Human Frontiers of Science Nakasone Prize, the MIT-Lemelson Prize, the Raymond and Beverly Sackler International Prize in Biophysics, the American Society for Microbiology Promega Biotechnology Research Award, the Royal Society of Chemistry Publishing Pioneer of Miniaturization Award, and the NIH Director's Pioneer Award. His research has led to four companies and over 100 issued U.S. patents. He is member of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. He obtained his B.S. in physics and M.S. in mathematics at Stanford University and his doctorate in theoretical physics from Oxford University as a Marshall Scholar.



Dabbala R. Reddy, Carnegie Mellon University

Dabbala (Raj) R. Reddy, Ph.D., is the Moza Bint Nasser University Professor of Computer Science and Robotics in the School of Computer Science at Carnegie Mellon University, Pittsburgh, Pennsylvania. Reddy's research interests include the study of human-computer interaction and artificial intelligence. His professional honors include: Appointed Fellow of the Institute of Electrical and Electronics Engineers, Fellow of the Acoustical Society of America, Fellow of the American Association for Artificial Intelligence, Member of the National Academy of Engineering and Member of the American Academy of Arts and Sciences. Reddy received a B.E. degree from the Guindy Engineering College of the University of Madras, India in 1958 and an M.Tech. degree from the University of New South Wales, Australia, in 1960. He received a Ph.D. degree in Computer Science from Stanford University in 1966.

Zhifeng Ren, University of Houston

Zhifeng Ren, Ph.D., is M. D. Anderson Chair Professor in the Department of Physics and TcSUH of the University of Houston. He received Ph.D. degree from the Institute of Physics of the Chinese Academy of Sciences in 1990, M.S. degree from Huazhong University of Science and Technology in 1987, and B.S. degree from Xihua University in 1984. He is an expert in materials synthesis, physics, and applications and has made seminar contributions to high temperature superconductors, carbon nanotubes, ZnO nanowires, thermoelectric and photovoltaic materials, nano-bio materials and sensors, etc. He has published ~300 journal papers, has been issued with 24 U.S. patents, has co-founded 3 High Tech companies. He received the 2008 R&D 100 Award and the 2014 Edith and Peter O'Donnell Award in Science from The Academy of Medicine, Engineering & Science of Texas (TAMEST). He is a fellow of APS and a fellow of AAAS.

Darrell H. Reneker, The University of Akron

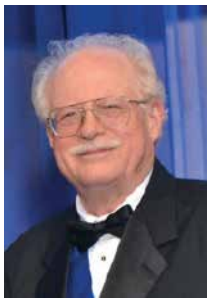
Darrell H. Reneker, Ph.D., did his research in Physics at the University of Chicago on the interaction of electrons and sound waves in bismuth in liquid helium. His B.Sc. degree was from Iowa State University, in electrical engineering. His pioneering studies of polymer morphology began at DuPont and continued at the National Institutes of Standards and Technology where he managed the Center for Materials Science, receiving the Silver Medal Award of the Department of Commerce, and a Senior Executive Service bonus. He was Executive Secretary of the Committee on Materials of the White House Science Office for four years. He became Professor of Polymer Science and Director of the Institute of Polymer Science at The University of Akron. His papers on electrospinning and nanofibers have thousands of citations. He is a named inventor on 22 issued U.S. patents and 52 international patents.

John A. Rogers, University of Illinois at Urbana-Champaign

John A. Rogers, Ph.D., is Swanlund Chair Professor at University of Illinois at Urbana-Champaign. He obtained B.A. and B.S. degrees in chemistry and in physics from the University of Texas at Austin, in 1989. From MIT, he received S.M. degrees in physics and in chemistry in 1992 and the Ph.D. degree in physical chemistry in 1995. From 1995 to 1997, Rogers was a Junior Fellow in the Harvard University Society of Fellows. He joined Bell Laboratories in 1997 and served as Director of Condensed Matter Physics Research from 2000 to 2002. He moved to Illinois in 2003, where he is currently Director of the Seitz Materials Research Laboratory. His research focuses on unusual semiconductor materials, for applications in biomedicine and photovoltaics. He has published more than 400 papers and is inventor on more than 80 patents, many of which are in current use by various companies, including startups that he co-founded.

Bernard Roizman, The University of Chicago

Bernard Roizman, Sc.D., is the Joseph Regenstein Distinguished Service Professor of Virology at The University of Chicago. The focus of his research is on the molecular biology of herpes simplex viruses and, more recently, on the development of viral vectors that specifically target cancer cells. He is a member of the National Academy of Sciences and the Institute of Medicine, a Fellow of the American Academy of Arts and Sciences, American Academy of Microbiology, and the American Association for the Advancement of Science. He is also an honorary member of the Hungarian Academy of Sciences, and a foreign member of the Chinese Academy of Engineering. He is the recipient of honorary professorships from several Chinese universities and numerous awards including the ICN International Prize in Virology, J. Allyn Taylor International Prize in Medicine, Bristol-Myers Squibb Award for Distinguished Achievement in Infectious Disease Research, and the Abbott-ASM Lifetime Achievement Award.



Arye Rosen, Drexel University

Arye Rosen, Ph.D., holds a Bachelor of Science degree in engineering (Cum Laude) from Howard University, a Master's degree in engineering from Johns Hopkins University, a M.Sc. degree in physiology from Thomas Jefferson University, and a Ph.D. degree in electrical engineering from Drexel University. He currently holds appointments at Drexel University, Philadelphia, PA, as Academy Professor of Biomedical and Electrical Engineering in the School of Biomedical Engineering, Science and Health Systems, and Associate Vice Provost for Strategic Initiatives. He has also been engaged in research in the Division of Cardiology at Jefferson Medical College since 1970. Rosen is an elected Member of the National Academy of Engineering, a Life Fellow of the Institute of Electrical and Electronics Engineers, a Fellow of the American Institute for Medical and Biological Engineering, and a Fellow of the National Academy of Inventors. He is the recipient of numerous distinguished awards.

Joseph C. Salamone, University of Masachusetts Lowell

Joseph C. Salamone, Ph.D., is Professor Emeritus of the University of Massachusetts Lowell, Adjunct Professor of Biomedical Engineering at the University of Texas at Austin and at San Antonio, Chief Scientific Officer of Rochal Industries LLP, and former VP of Research at Bausch & Lomb. He is a member of the National Academy of Engineering and a Fellow of AIMBE, ACS, SBE, and POLY. His patents include 206 U.S. Patents and (non-duplicative) U.S. Patent Applications and 764 international patents and applications. He is a leading pioneer in the development of novel biomaterials for ophthalmology and for wound care, having commercialized 45 products in rigid and soft contact lenses, silicone hydrogel contact lenses, contact lens care solutions and cleaners, intraocular lens materials, controlled drug delivery, and spray-on, non-stinging liquid bandages for human and veterinary use. He is actively involved in the development of cell-compatible substrates for wound healing

W. Mark Saltzman, Yale University

W. Mark Saltzman, Ph.D., is the Goizueta Foundation Professor at Yale University. His research has impacted the fields of drug delivery, nanobiotechnology, and tissue engineering: this work is described in over 200 research papers and 15 patents. He is also the sole author of three textbooks: *Biomedical Engineering* (2009), *Tissue Engineering* (2004), and *Drug Delivery* (2001). Saltzman earned degrees from Iowa State University and the Massachusetts Institute of Technology, prior to faculty appointments at Johns Hopkins, Cornell, and Yale. He has received awards for research and teaching, including the Camille and Henry Dreyfus Foundation Teacher-Scholar Award; the CRS Young Investigator Award; and the Professional Achievement Citation in Engineering from Iowa State. He is an elected Fellow of the American Institute for Medical and Biological Engineering; the Biomedical Engineering Society (2010); and the Connecticut Academy of Science & Engineering. He has delivered over 250 invited lectures throughout the world.

Yoshiaki Sato, KAATSU International University

Sir Yoshiaki Sato, M.D., Ph.D., is the inventor of KAATSU Physiology of Medicine who discovered and patented blood flow restricted exercise. The Knight Commander of the Ecumenical Medical Humanitarian Order of Saint John Jerusalem has spent his career developing KAATSU equipment and exercise protocols in fitness and medical applications. He founded KAATSU Japan in Tokyo and the KAATSU Medical Institute and the KAATSU Research Foundation in Boston. He has co-authored over 100 peer-reviewed publications and been granted 47 patents covering KAATSU. He is a Medical Officer, Doctor of Medicine of the World Health Organization, a Special Advisor of the Green Cross, the Chancellor of the KAATSU International University in Sri Lanka, and the Manager of the KAATSU Center at the Research Institute of Sports Science of the State General Administration of Sports and the KAATSU Medical Center at Jilin University, China-Japan Union Hospital in China.

Martin Schadt, Nanjing University

Martin Schadt, Ph.D., is a Swiss physicist and pioneer in liquid crystal displays, materials and optical alignment of LC-molecules. He is co-inventor of the first organic light emitting diode (OLED). After invention of the twisted nematic-effect at Roche Ltd., Basel, which became the basis for today's field-effect LCD technology, he headed the interdisciplinary LC-research division of Roche and was the first CEO of Rolic Ltd., a spin-off from his research division. He received the NAE Charles Stark Draper Prize, the European Inventor Award for Lifetime Achievement and the IEEE Jun-Ichi Nishizawa Medal, among others. He is a Fellow of the European Academy of Sciences and SID and honorary professor of the Universities of Nanjing and Sichuan. He holds more than 119 U.S. and 166 EU-patents and has published 185 papers in leading scientific journals.

Vern L. Schramm, Yeshiva University

Vern L. Schramm, Ph.D., studied chemistry, microbiology, nutrition and enzymatic mechanisms at South Dakota State University, Harvard and the Australian National University. He began his independent research career at Temple University School of Medicine, and is now Professor and Chair of Biochemistry at Einstein. Schramm has developed the use of kinetic isotope effects and computational chemistry to understand enzymatic transition states. Knowledge of the transition-state permits the design and synthesis of powerful inhibitors. Two of the inhibitors designed by the Schramm laboratory have entered clinical trials and others are in earlier stages of development. Professor Schramm has received many honors including Merit Research Award from the NIH, election as a Fellow of the AAAS, Rudi Lemberg Award (Australian Academy of Science) and the Repligen Award from the Biological Chemistry Division of the ACS. In 2007 he was elected to membership in the National Academy of Sciences.

Sudipta Seal, University of Central Florida

Sudipta Seal, Ph.D., is a Professor of Materials Science and Engineering, College of Medicine and Director of Nanoscience Technology Center and Advanced Materials Processing Analysis Center at University of Central Florida, Orlando, Florida. He has made significant contributions and invention in the field of nano-oxide materials processing and applications. He is University Distinguished Professor and Pegasus Professor and the recipient of the Office of Naval Research Young Investigator Award. He has published more than 350 journal articles/book chapters/books and been awarded 38 patents licensed to companies. His research focuses on novel nanoparticle development and nonmanufacturing targeted to functional coatings, nanoenergetics and regenerative nano-medicine. Key patents relate to cerium oxide nanoparticles and its novel biomedical applications. He is a fellow American Society of Materials, American Vacuum Society, American Advancement of Association of Science, and Institute of Nanotechnology (UK).

Venkat Selvamanickam, University of Houston

Venkat Selvamanickam, Ph.D., is M.D. Anderson Chair Professor of Mechanical Engineering at the University of Houston and Director of the Texas Center for Superconductivity Applied Research Hub. Previously, he was Chief Technology Officer of SuperPower Inc. He is a renowned technologist in the field of superconducting materials for his pioneering work in the development and manufacturing of thin film superconductor wires that carry 300 times the current-carrying capacity of comparably-sized copper wires. He led his organization to multiple world-records for the highest performance wire over several length scales, the longest thin film superconductor wire made, first to pilot manufacturing and commercialization. He holds 53 issued patents, 13 pending U.S. and over 80 pending international patents. He is the recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE), several R&D 100 awards and the Superconductor Industry Person of the Year award.

Wei-Heng Shih, Drexel University

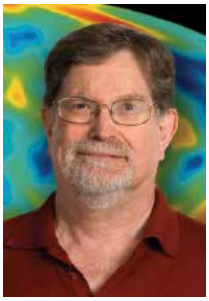
Wei-Heng Shih, Ph.D., is a professor in the Department of Materials Science and Engineering at Drexel University. He received a B.Sc. in physics in 1976 from Tsing-Hua University in Taiwan and completed his Ph.D. degree in Physics in 1984 from Ohio State University. His research includes surface modification of powders by colloidal coating, sol-gel processing of nanoparticles, low-temperature processing of perovskite piezoelectric ceramics, and fabrication of piezoelectric sensors. He has received the American Ceramic Society 1999 Edward C. Henry Electronics Division Best Paper Award and Drexel's Research Achievement Award. Currently he focuses on the development of aqueous synthesis of nanocrystalline quantum dots for biomedical imaging, environmental and energy applications, as well as highly piezoelectric freestanding films for biosensor, energy harvesting, and optoelectronic applications. He has published 119 journal papers and 21 patents and his inventions have been licensed by 4 companies.

Mary Shire, University of Limerick

Mary Shire, Ph.D., holds the position of Vice President for Research at the University of Limerick since 2011 and is responsible for the leadership, development and delivery of the University's research policy, strategy, support services, industry engagement and commercialization activities. Prior to this she held the role of Director of Research Support Services at UL responsible for research funding and research metrics. Prior to joining UL in 2005 Shire spent 11 years in the Pharmaceutical Industry where she held management roles in a number of multinational pharmaceutical companies. While working with leading US-based pharmaceutical company, Celgene Corporation, Shire developed inventions covered by 20 US patents for drug discovery. A number of these compounds are on the market in the US and Europe. Shire holds a Ph.D. in Chemistry and an MBA. Shire is a Fellow of the National Academy of Inventors and holds Director positions of a number of companies and not-for-profit organizations.

Henry I. Smith, Massachusetts Institute of Technology

Henry I. Smith, Ph.D., is an Emeritus Professor of Electrical Engineering at MIT. He and his coworkers are responsible for a number of innovations and inventions in nanoscale science and engineering. He holds over 40 U.S. patents and has published over 400 technical articles. He is a member of the National Academy of Engineering and a Fellow of the American Academy of Arts and Sciences, the IEEE, the Optical Society of America and the International Society for Nanomanufacturing. He is a recipient of the Cledo Brunetti Award of the IEEE, the Baccus Award of SPIE, the Nano 50 Innovator Award, the Robert H. Hill Memorial Award, the Professional Excellence Award of the Boston College Alumni Association.

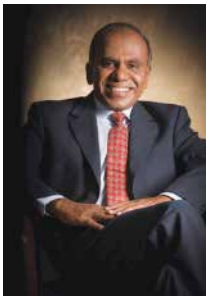


George F. Smoot, III, University of California, Berkeley

George F. Smoot, III, Ph.D., is Professor of Physics and Research Physicist at the University of California, Berkeley. He received his B.S. from the Massachusetts Institute of Technology in 1966 and his Ph.D. in 1970. He has been serving UC Berkeley and the Lawrence Berkeley National Laboratory since 1970. In 2006 he was co-awarded the Nobel Prize in Physics with John Mather for *"their discovery of the blackbody form and anisotropy of the cosmic microwave background radiation."* Currently, Smoot conducts research in astrophysics and observational cosmology, and is widely known for his research on the cosmic background radiation, which is believed to have been left behind by the Big Bang. He is the author on 9 U.S. patents and a member of the National Academy of Sciences.

Thomas C. Südhof, Stanford University

Thomas C. Südhof, M.D., is Professor of Molecular and Cellular Physiology, Avram Goldstein Chair, and Investigator of the Howard Hughes Medical Institute at the Stanford University School of Medicine. Südhof obtained his M.D. and doctoral degrees from the University of Göttingen in 1982, and trained as a postdoctoral fellow with Drs. Brown and Goldstein at UT Southwestern from 1983-1986. Subsequently, Südhof served on the faculty at UT Southwestern, where he was among others founding chair of the Dept. of Neuroscience. Südhof left UT Southwestern in 2008 to assume the Avram Goldstein Chair at Stanford Unviersity. Südhof's research focuses on the molecular mechanisms underlying synapse function, and identified the structure and function of key molecules, such as synaptotagmins, RIMs, Munc13s, Munc18s, complexins, neurexins, and neuroligins. Südhof is a member of the National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences, and recipient of the Kavli Award in Neuroscience (2010), the Lasker-DeBakey Prize (2013), and Nobel Prize in Physiology or Medicine (2013).



Subra Suresh, Carnegie Mellon University

Subra Suresh, Sc.D., is President of Carnegie Mellon University, a position he assumed in 2013 after serving as Director of the U.S. National Science Foundation. Prior to his service at NSF, he was dean of the College of Engineering at MIT. A prominent materials scientist, Suresh has conducted research on the mechanical properties of structural and functional materials, developed innovations in materials design and characterization, and discovered connections between cellular nanomechanical processes and human disease states. He has co-authored more than 250 journal articles, registered 21 patents, and written three widely used textbooks. Suresh is a member of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, one of 16 Americans to be elected to all three U.S. National Academies. He is also a member of seven other national academies of science or engineering, including, most recently, the Chinese Academy of Sciences.

Theodore F. Taraschi, Thomas Jefferson University

Theodore F. Taraschi, Ph.D., is Vice President for Research of Thomas Jefferson University and Professor and Vice Chair for Education in the Department of Pathology, Anatomy and Cell Biology at the Jefferson Medical College at Thomas Jefferson University. He received his Ph.D. in chemistry from Rutgers University. Taraschi was appointed the Director of the Graduate Program in Cell and Developmental Biology in 2003, Vice Chair for Education in the Department of Pathology, Anatomy and Cell Biology at Thomas Jefferson University in 2005, Associate Dean for Research in the Jefferson Medical College in 2009 and Interim Vice President for Research in 2013. Taraschi's research interests are in the areas of malaria cell biology and biochemistry. He has published over 100 manuscripts and texts and directly mentored over 20 Ph.D. and M.S. students.

Arthur J. Tipton, Southern Research Institute

Arthur J. Tipton, Ph.D., is President and CEO of Southern Research Institute. He has worked in the pharmaceutical and biotech industry for 25 years, participating in the growth aspects of three startups. The firm he founded in 2005 as a Southern Research spinout was acquired by SurModics in 2007 and by Evonik in 2011. At Evonik, Tipton was Senior VP of the Birmingham Division and head of global drug delivery. Prior to that, he served as Durect's COO and Senior VP of biodegradable systems, VP of Southern BioSystems, President of Birmingham Polymers, and Manager of Polymer Science at Atrix Laboratories. Tipton serves on the boards of the Controlled Release Society, Birmingham Venture Club, Economic Development Partnership of Alabama Foundation, and Biotech Association of Alabama. He is an advisor to the Biomedical Engineering Department and School of Business at the University of Alabama at Birmingham. A CRS and American Institute of Medical and Biological Engineers fellow and recipient of CRS's Distinguished Service Award, Tipton has 32 issued U.S. patents, 26 published U.S. patent applications, and numerous foreign equivalents. He earned a Ph.D. in Polymer Science and Engineering from the University of Massachusetts Amherst and a B.S. in Chemistry from Spring Hill College.

Satish S. Udpa, Michigan State University

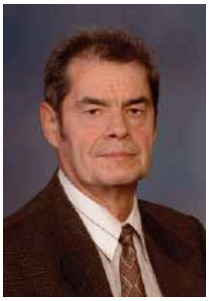
Satish S. Udpa, Ph.D., serves Michigan State University as Executive Vice President for Administrative Services and University Distinguished Professor. He served as Dean of the College of Engineering and Chair of the Electrical and Computer Engineering Department at MSU before his current appointment. Prior to joining MSU in 2001, he was Whitney Professor of Electrical and Computer Engineering at Iowa State University. He was on the faculty at Colorado State University prior to his stint at Iowa State University. Udpa's research interests span the broad area of materials characterization and nondestructive evaluation (NDE). Work done by him to date in the area includes an extensive repertoire of forward models for simulating physical processes underlying several inspection techniques. He has also been involved in the development of system-based and model-based inverse solutions for defect and material property characterization. His interests have expanded in recent years to include the development of noninvasive tools for clinical applications.

Kathryn E. Uhrich, Rutgers, The State University of New Jersey

Kathryn E. Uhrich, Ph.D., is Professor of Chemistry at Rutgers, where she also holds graduate appointments in Biomedical Engineering, Chemical Engineering and Pharmaceutics. She received her B.S. degree from the University of North Dakota, and Ph.D. degree from Cornell University. Before moving to her present post at Rutgers, she held post-doctoral positions at AT&T Bell Laboratories and Massachusetts Institute of Technology. Her research accomplishments have been disseminated in hundreds of publications, conference proceedings, and invited presentations as well as tens of millions of dollars in grant funding, hundreds of patents/filings, and several start-up companies. Her innovative research in polymer chemistry and biomaterials has trained over 150 undergraduate, graduate and high school students as well as postdoctoral scientists.

Akos Vertes, The George Washington University

Akos Vertes, Ph.D., is Professor of Chemistry and Professor of Biochemistry and Molecular Biology at The George Washington University. He is a Co-Founder and Co-Director of the W. M. Keck Institute for Proteomics Technology and Applications. His research interests span from analytical and physical chemistry to the development of new technologies for biomedical analysis. His interdisciplinary research has been presented in over 140 peer-reviewed publications and in two edited books. His honors and awards include the Hillebrand Prize, the Velmer A. Fassel Lecture in Analytical Chemistry, the Oscar and Shoshana Trachtenberg Prize for Scholarship, and the Doctor of the Hungarian Academy of Sciences. His inventions garnered a "Top 10 Innovations of 2011" award from The Scientist magazine in the UK, a "2012 R&D 100 Award" from the *R&D Magazine,* and the Frost & Sullivan 2012 New Product Innovation Award in Bioanalytics.



Vitaly J. Vodyanoy, Auburn University

Vitaly J. Vodyanoy, Ph.D., is professor of biophysics and director of Biosensor Laboratory at Auburn University. He has made a significant contribution and inventions in the fields of high resolution light microscopy, biopolymers, biosensors, and biophysics of olfaction. He has received 2000 Pfizer Award for Research Excellence, 2006 R&D 100, 2007 R&D 100 Awards, 2007 Nano 50 Award, 2008 Rice Alliance for Technology and Entrepreneurship Award. He has tutored over 50 Ph.D. and M.S. students, has published over 100 scientific papers and holds over 50 patents. His 9 U.S. patents are commercialized and 3 commercial products are marketed.

John N. Vournakis, Medical University of South Carolina

John N. Vournakis, Ph.D., is a member of the Graduate Faculty of the Medical University of South Carolina (MUSC), and is Vice President for Research and Development at Marine Polymer Technologies, Inc., Burlington, MA. He graduated from Albion College with a B.S. degree, earned his Ph.D. in Biophysical Chemistry from Cornell University and received postdoctoral training at the Massachusetts Institute of Technology and Harvard University. Prior to joining MUSC, Vournakis held Professorships at Dartmouth College and Syracuse University. Vournakis has had numerous management posts in corporate biotechnology and in academia, including Senior Vice President and CEO of Genmap Inc., Vice President of Science at Verax Corporation, Director of the Molecular Genetics Center at Dartmouth College and Director of the Center for Molecular and Cellular Biology at MUSC. He is currently a member of the Board of Directors of the Foundation for Research Development at MUSC, and is a former Trustee of Albion College.

Jay S. Walker, Cornell University

Jay S. Walker is curator and chairman of TEDMED and a longtime TED supporter. He also chairs Patent Properties Inc., a public company that leverages the patents and intellectual property developed by Walker Digital (Walker's privately held invention lab based in Stamford, Connecticut). Founder of three companies that serve more than 50 million customers each, Walker is the world's 11th most patented living inventor. He is listed as the lead inventor on 700 U.S. patents across a dozen different industries. Best known as the founder of Priceline (today a $60 billion market cap company), Walker is also the founder and curator of the world's only Library of the History of Human Imagination.

David R. Walt, Tufts University

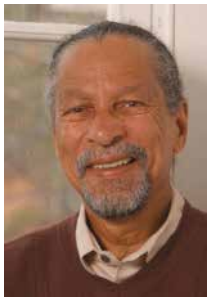
David R. Walt, Ph.D., is Robinson Professor of Chemistry, Professor of Biomedical Engineering, Professor of Genetics, and Professor of Oral Medicine at Tufts University and is a Howard Hughes Medical Institute Professor. He is a pioneer in the field of high-density microarrays and single molecule diagnostics. Walt is the Founding Scientist of both Illumina, Inc. and Quanterix Corporation and is a Director at both companies. He has published over 300 papers and holds over 70 patents. He co-chairs the Board on Chemical Sciences and Technology of the National Academy of Sciences. He is a member of the National Academy of Engineering, American Academy of Arts and Sciences, a fellow of the American Institute for Medical and Biological Engineering, and a fellow of the American Association for the Advancement of Science.

Donald P. Weeks, University of Nebraska-Lincoln

Donald P. Weeks, Ph.D., is Maxcy Professor of Agriculture and Natural Resources in the Department of Biochemistry at the University of Nebraska-Lincoln. He is a Plant Molecular Biologist who specializes in genetic engineering of agricultural crops and in fundamental and applied aspects of algal biology. His laboratory was responsible for characterization of the bacterial dicamba O-demthylase enzyme system that degrades the herbicide, dicamba. The gene encoding the key enzyme responsible for dicamba inactivation, dicamba monooxygenase (DMO), was cloned by the Weeks laboratory and used to produce transgenic crop plants (e.g., soybean, maize, cotton, and tomato) that are resistant to treatments with dicamba. The dicamba resistance gene technology offers farmers an important means of controlling yield-robbing weeds, especially many that have developed resistance to other herbicides. Weeks also has pioneered development of new methods such as TALENs and CRISPR/Cas9/gRNA for targeted gene modification and genome editing in crop plants and algae.

Sherman M. Weissman, Yale University

Sherman M. Weissman, M.D., is Sterling Professor of Genetics and Medicine at Yale University School of Medicine. Weissman graduated magna cum laude with his M.D. from Harvard Medical School. He received his B.S. in mathematics from Northwestern University and his M.S. in mathematics from the University of Chicago. Weissman has served as a professor of medicine with Yale University School of Medicine since 1967. He is a member of the National Academy of Sciences, the American Physiological Society and a fellow of the American Association for the Advancement of Science. Weissman's research has included studies of molecular genetics of higher cells with recent emphasis on hematopoiesis and methods of nucleic acid analysis. He has over 300 scientific publications, has served on a number of editorial boards, and been a scientific consultant and co-founder of several biotech companies.



James E. West, The Johns Hopkins University

James E. West holds more than 50 U.S. and 200 foreign patents on various microphones and techniques for making polymer electrets and transducers. He was inducted into The National Inventors Hall of Fame in 1999 for the invention of the electret microphone. West is a member of the National Academy of Engineering, a Fellow of IEEE and the Acoustical Society of America He is the recipient of the Acoustical Society of America's Silver Medal in Engineering Acoustics (1995), an honorary Doctor of Science degree from New Jersey Institute of Technology (1997). West was awarded the Mexican Institute of Acoustics' John William Strutt 3rd Baron of Raleigh Award (2003), the Acoustical Society of America's Gold Medal (2006), an honorary Doctor of Engineering from Michigan State University (2006), the National Medal of Technology (2006) and the Franklin Medal in Engineering (2010), an honorary Doctors degree from University of Pennsylvania(2013). West has been active in creating and supporting programs aimed at improving diversity in the Science, Technology, Engineering and Mathematics (STEM) fields.

Wayne C. Westerman, University of Delaware

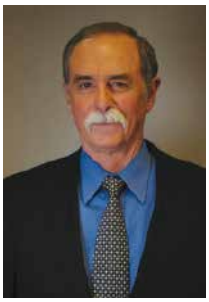
Wayne C. Westerman earned a Ph.D. in Electrical Engineering from the University of Delaware in 1999. His dissertation's exploration of typing and gesture on capacitive, multiple-touch-sensitive surfaces helped to anticipate the iPad gesture experience. In 1999 he co-founded FingerWorks, Inc., the first company to successfully commercialize Multi-Touch with a line of ten-finger touch pads and ergonomic keyboards that seamlessly combine pointing, scrolling, typing, and editing gestures in the same space. Wayne's 64 U.S. patents on Multi-Touch cover aspects such as swipe gestures, chording gestures, surface typing recognition, typing drift tracking, finger identification, resting palm rejection, noise reduction and ellipse fitting for capacitive images. He is currently Multi-Touch Architect at Apple Inc. where he has designed algorithms for dozens of products.

George M. Whitesides, Harvard University

George M. Whitesides, Ph.D., is Woodford L. and Ann A. Flowers University Professor at Harvard University. He received his Ph.D. from the California Institute of Technology in 1964. Whitesides has served on the faculty at the Massachusetts Institute of Technology from 1963 to 1982 and has served on the faculty of Harvard University since 1982. He is a member of the National Academy of Sciences, the National Academy of Engineering, the American Academy of Arts and Sciences and a fellow of the American Association for the Advancement of Science. Whitesides' current research activities include physical and organic chemistry, materials science, biophysics, water in biology, surface science, microfluidics, self-assembly, micro- and nano-technology, science for developing economies, the origin of life, rational drug design, magnetic levitation, dissipative systems and emergence, complexity, and simplicity. His research has generated over 100 patents.

H. Kumar Wickramasinghe, University of California, Irvine

H. Kumar Wickramasinghe, Ph.D., is a member of the National Academy of Engineering and respected pioneer in nanotechnology. He currently holds the Henry Samueli Endowed Chair in the Engineering faculty at UC Irvine. Earning a Ph.D. in Electrical Engineering from the University of London in 1974, he joined the Electrical Engineering Department at University College London as a faculty member in 1978. From 1984 to 2006 he was at the IBM Research Division where he held several executive positions including IBM Fellow, Chief Scientist Manufacturing Research, and CTO Science and Technology, IBM Almaden Research Center. Holding 94 patents, some of his most significant inventions and contributions to the nano field include the development of the vibrating mode atomic force microscope (AFM), the magnetic force microscope, the Kelvin probe force microscope, the scanning thermal microscope, and the apertureless near-field optical microscope (sSNOM) –all these are standard instruments used today for nano-scale characterization.



David J. Wineland, National Institute of Standards and Technology

David J. Wineland received a B.A. degree from the University of California, Berkeley and a Ph.D. from Harvard University. He has been a member of the Time and Frequency Division of NIST (National Institute of Standards and Technology) since 1975, where he is a group leader and NIST Fellow. The group's research has focused on quantum state control and spectroscopy of trapped atomic ions with applications to atomic clocks, quantum-limited metrology, and quantum information processing. He is a member of the National Academy of Sciences and a Fellow of the American Physical Society and Optical Society of America. He received the National Medal of Science in 2007 and shared the 2012 Nobel Prize in Physics with Serge Haroche of Collège de France, Paris.

Carl T. Wittwer, The University of Utah

Carl T. Wittwer, M.D., Ph.D., is Professor of Pathology at The University of Utah Medical School with over 180 publications that focus on technique and instrument development in molecular diagnostics. He is also a technical vice president and medical director of the clinical laboratory, ARUP, where he initiated molecular diagnostics during the 1990s. Wittwer holds 28 U.S. patents and their foreign equivalents and is the primary inventor of the LightCycler® real-time PCR system with over 8,000 units placed worldwide by Roche. He received small business innovation awards in 1999 and 2002, the State of Utah Governor's Medal for Science and Technology in 2003, the AMP award for excellence in molecular diagnostics in 2008, and the Innovation and Impact Award from The University of Utah in 2011. His current focus is high-resolution DNA melting of PCR products for genotyping, mutation scanning, and sequence identity.

Jerry M. Woodall, University of California, Davis

Jerry M. Woodall, Ph.D., is Distinguished Professor of ECE at UC Davis and a National Medal of Technology Laureate. Jerry earned a B.S. in Metallurgy from MIT and a Ph.D. in EE from Cornell University. The first part of his career was spent at IBM, where he rose to the rank of IBM Fellow. There he invented and patented many important commercial high-speed electronic and photonic devices that depend on heterojunctions. He has 370 journal publications and 80 U.S. patents. He is a member of the National Academy of Engineering and is a Fellow of the APS, IEEE, ECS, and AVS. He is a co-founder of LightSpin Technologies Inc., a high performance photo detector company, and Compound Photonics, a high performance optical projector engine company. His research is currently focused on three areas: 1) energy storage, transport, and hydrogen production; 2) very-high-efficiency photovoltaic devices; and 3) ultra-fast transistor materials and devices.

Mark S. Wrighton, Washington University in St. Louis

Mark S. Wrighton, Ph.D., was elected as the 14th Chancellor of Washington University in St. Louis in 1995, following over two decades at the Massachusetts Institute of Technology, where he was professor of chemistry, department head, and later provost. Chancellor Wrighton earned a bachelor's degree in Chemistry from Florida State University and a doctorate in chemistry from the California Institute of Technology. Recognized widely for his research, he is the holder of 16 patents, and the author of more than 300 research papers. Active in public and professional affairs, he has served on numerous governmental panels, including the National Science Board, and is currently a director on the boards of national companies and several St. Louis organizations. He is a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science and a member of the American Philosophical Society.

James J. Wynne, University of South Florida

James J. Wynne, Ph.D., is a senior member of the staff of IBM Research Headquarters. He was raised in New York, earned a B.A. in physics in 1964 and a Ph.D. in applied physics in 1969 from Harvard University, and subsequently has spent his entire career with IBM Research. His research contributions have been in nonlinear optics of semiconductors and insulators, nonlinear spectroscopy of atomic and molecular vapors, laser etching and fluorescence studies of human and animal tissue, and cluster science. Wynne and two IBM colleagues discovered excimer laser surgery in 1981, laying the foundation for LASIK and PRK, techniques for surgically correcting myopia, astigmatism, and hyperopia. For this discovery, Wynne has received many awards, including induction into the National Inventors Hall of Fame, the National Medal of Technology and Innovation, and the Russ Prize of the National Academy of Engineering. He is a member of the University of South Florida Chapter of the NAI.

Ralph T. Yang, University of Michigan

Ralph T. Yang, Ph.D., is Dwight F. Benton Professor of Chemical Engineering at the University of Michigan. He has published two books: "Gas Separation by Adsorption Processes," Butterworth, Boston, 1987, and "Adsorbents: Fundamentals and Applications," Wiley, New York, 2003. He has published over 400 refereed journal papers and holds 33 U.S. patents on materials and processes for chemical separations and for energy and environmental applications. He is an elected member of National Academy of Engineering and Academia Sinica (Taiwan). He has received national awards from the American Institute of Chemical Engineers (William H. Walker Award, Clarence Gerhold Award, and Institute Award for Industrial Gas Technology), the American Chemical Society (ACS Award in Separation Science and Technology), and the triennial American Carbon Society SGL Carbon Award.

Frederic Zenhausern, The University of Arizona

Frederic Zenhausern, Ph.D., is Endowed Chair Professor of Basic Medical Sciences at the College of Medicine, Phoenix and Director of the Center for Applied Nanobioscience and Medicine at The University of Arizona. Prior, he was Director of the Center for Applied Nanobioscience at the Arizona State University's Biodesign Institute and R&D Director of the Center for Flexible Display, then CTO at MacroTechnology Works. Zenhausern was tenured Professor at the Electrical Department and School of Materials at Ira A. Fulton School of Engineering at Arizona State University. Zenhausern is Professor at the Translational Genomics Research Institute (TGen) and Director of the Laboratory for Research in Personalized Medicine at Scottsdale Healthcare Research Institute. Zenhausern also held corporate research positions at IBM Research Division and Motorola Labs. Zenhausern received his B.S. in biochemistry from the University of Geneva, his M.B.A. in finance from Rutgers University and his Doctorate Es Science in Applied Physics / Condensed Matter at the University of Geneva.

Shuguang Zhang, Massachusetts Institute of Technology

Shuguang Zhang, Ph.D., is at Center for Bits & Atoms, Massachusetts Institute of Technology (MIT). He was an American Cancer Society Postdoctoral Fellow (1988-1991) and a Whitaker Foundation Investigator (1998-2002) at MIT. His work of designer self-assembling peptide scaffold won R&D100 award (2004). He was one of the 10 finalists of Saatchi & Saatchi Award for World Changing Ideas (2005). He is a John Simon Guggenheim Fellow (2006) and won Wilhelm Exner Medal of Austria (2006). He is a Foreign Corresponding Member of the Austrian Academy of Sciences (2010) and a Fellow of American Institute of Medical and Biological Engineering (2010). He has published over 170 scientific papers. He co-founded 3DMatrix (Tokyo 7777:JP).

Harald zur Hausen, German Cancer Research Center

Harald zur Hausen, M.D., is a virologist and cancer researcher who discovered the important role that human papillomavirus plays in cervical cancer. His ground-breaking research in the 1970s and 1980s paved the way for the development of the HPV vaccine in 2006 for which he was honored with the Nobel Prize in Medicine in 2008. He also studied the Epstein-Barr virus (EBV). zur Hausen studied medicine at the Universities of Bonn, Hamburg, and Düsseldorf. He worked in the virus laboratories of the Children's Hospital in Philadelphia and as a senior scientist at the Institute of Wuerzburg. In 1972, he was appointed chairman and professor of virology at the University of Erlangen-Nuernberg and in 1977 he moved to the University of Freiburg. From 1983 until 2003 he served as scientific director of the German Cancer Research Center. He is an elected member of various research organizations and academies.

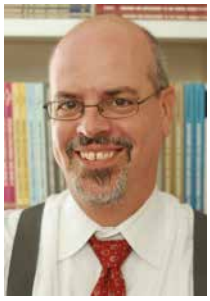
2013 FELLOWS SELECTION COMMITTEE

Norman R. Augustine
National Medal of Technology and Innovation Recipient
Retired Chairman and CEO of the Board
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 Science, 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 Intellectual Property Protections, Branding and Creativity.*



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 the Ph.D. from The University of Texas at Austin, with a dissertation in theoretical particle physics, and the B.S. from the Massachusetts Institute of Technology, with an undergraduate thesis in biophysics.

Elizabeth L. Doughtery, 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.

Sean P. Flanigan, BA, LLB, RTTP

President of the Association of University Technology Managers
Assistant Director, Technology Partnerships
University of Ottawa

Sean Flanigan is the President of the Association of University Technology Managers and a technology transfer practitioner. He studied law at the University of Ottawa and has been a member of the Ontario Bar since 1993. At the University of Ottawa, Flanigan leads the team responsible for industrial liaison, technology development and transfer, new company creation and student entrepreneurship. He has created a student incubator and an applied research program for small and medium sized enterprises. Flanigan is a member of the Board of Directors of several early stage technology based companies in the Ottawa region. In 2006 he became active in AUTM and in 2008 became Vice President for Canada. In 2010 he was part of the team that formed the Alliance of Technology Transfer Professionals (ATTP), which brought the Registered Technology Transfer Professional (RTTP) designation to the profession. The University of Ottawa is a comprehensive university with more than 40,000 students located in the heart of the Nation's Capital and is one of Canada's top 10 research universities with annual research expenditures exceeding $275M.

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.

Eric R. Fossum

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.

Morteza Gharib

Vice Provost for Research
California Institute of Technology
NAI Charter Fellow

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, bio-inspired medical devices, and advanced flow visualization techniques. He co-founded 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 AAAS, and five other professional societies. He has received five new technology recognition awards from NASA in the fields of advanced laser imaging and nanotechnology. He was recipient of the R&D 100 Award for the design of a 3D imaging system in 2008.

Patrick T. Harker

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.

Sir Harold Walter Kroto

Nobel Prize Recipient
Francis Eppes Professor
Florida State University

Dr. Sir Harold "Harry" W. Kroto received the 1996 Nobel Prize in Chemistry for his co-discovery of buckminsterfullerene, a form of pure carbon better known as "buckyballs." The extraordinary molecule consists of 60 carbon atoms arranged as a spheroid, in a pattern exactly matching the titching on soccer balls. The configuration reminded Kroto of the geodesic domes designed by the late inventor/architect Buckminster Fuller, hence the name "buckminsterfullerines. A few of Kroto's additional achievements include being awarded Fellow of the Royal Society (1990), Fellow of the Royal Society of Chemistry; and President of the Royal Society of Chemistry (2002-2004). Kroto is currently a Francis Eppes Professor at Florida State University.

Robert S. Langer

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.

Sir George Henry Martin, CBE

Rock and Roll Hall of Fame Inductee
Producer of The Beatles

A composer in his own right, Sir George Martin has been responsible for the music of a considerable number of films, 'A Hard Day's Night' (for which he won an Academy Award 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. Martin 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 Martin 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.

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. Paiva also serves as Executive Director of the Collegiate Inventors Competition (CIC), striving to bring recognition to the country's outstanding college students who create the technologies that shape the future. Both the NIHF and the CIC are a part of Invent Now, Inc., a non-profit dedicated to recognizing and fostering invention, creativity, and entrepreneurship. Paiva also encourages NIHF Inductees and CIC students 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.

NATIONAL ACADEMY OF INVENTORS

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