



2015 FELLOWS

FOURTH EDITION



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U.S. Capitol Dome Cover Photo: Jupiterimages

ABOUT THE NAI FELLOWS PROGRAM

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

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

HOW TO NOMINATE FOR NAI FELLOWSHIP

Nominees must be:

- A named inventor on a patent(s) issued by the United States Patent and Trademark Office. Median for current Fellows is 18 patents.
- Affiliated with a university, non-profit research institute, governmental agency or other academic entity.

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

- Nominee's CV
- A full list of nominee's U.S. Patents
- Letter of Nomination

Nominations open July 1 – October 1 annually

Submit nominations online at: www.Academyofinventors.com/fellows.asp

ABOUT OUR FELLOWS

With the induction of the 2015 class, there are now more than 80 presidents and senior leaders of research universities and non-profit research institutes, 310 members of the other National Academies (NAS, NAE, NAM), 27 inductees of the National Inventors Hall of Fame, 36 recipients of the U.S. National Medal of Technology and Innovation and U.S. National Medal of Science, 27 Nobel Laureates, 4 Lemelson-MIT prize recipients, 170 AAAS Fellows, and 98 IEEE Fellows, among other awards and distinctions.



United States Patent and Trademark Office

Office of the Commissioner for Patents

February 22, 2016

Dear Friends:

On behalf of the United States Patent and Trademark Office, I sincerely congratulate the NAI's newly-elected 2015 class of Fellows. The USPTO is privileged to participate in recognizing the 168 academic luminaries of innovation and invention, who have been bestowed this high professional distinction.

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

The USPTO values collaboration with the NAI and the friendship which has developed through our shared mission to advance and protect innovation. I look forward to the future relationship between the USPTO and NAI, one that will continue to benefit the innovation community worldwide.

Again, congratulations to the 2015 NAI Fellows. You are among our nation's top academic innovators and inventors and deserve much recognition for your outstanding achievements!

Warmest regards,

Andrew H. Hirshfeld
Commissioner for Patents
U.S. Patent and Trademark Office
United States Department of Commerce



Congressional Record

PROCEEDINGS AND DEBATES OF THE 114th CONGRESS, FIRST SESSION

House of Representatives

HON. DAVID W. JOLLY OF FLORIDA

Extension of Remarks

Honoring the 168 Inventors Inducted as the 2015 Fellows of the National Academy of Inventors

February 25, 2016

MR. JOLLY. Mr. Speaker, I rise today to honor the 168 inventors who will soon be recognized at the United States Patent and Trademark Office and inducted as the 2015 Fellows of the National Academy of Inventors (NAI) in an induction ceremony that will feature a keynote address by U.S. Commissioner for Patents Andrew Hirshfeld. 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 nearly 5,400 patents.

The individuals making up this year's class of Fellows include individuals from 109 research universities and non-profit research institutes spanning the United States and the world. The now 582-member group of Fellows is composed of more than 80 presidents and senior leadership of research universities and non-profit research institutes, 310 members of the other National Academies, 27 inductees of the National Inventors Hall of Fame, 36 recipients of the U.S. National Medal of Technology and Innovation and the U.S. National Medal of Science, 27 Nobel Laureates, 14 Lemelson-MIT prize recipients, and 170 AAAS Fellows, among other awards and distinctions.

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

We are greatly indebted to innovators such as these for contributions to society through their inventions. I commend these individuals, and the organizations that support them, for the work they do to revolutionize the world we live in. As the following inventors are inducted, may it encourage future generations to strive to meet this high honor and continue the spirit of discovery and innovation.

The 2015 NAI Fellows include:

C. Mauli Agrawal, The University of Texas at San Antonio; Dean P. Alderucci, The University of Chicago; Jayakrishna Ambati, University of Kentucky; Iver E. Anderson, Iowa State University; Kristi S. Anseth, University of Colorado Boulder; Allen W. Apblett, Oklahoma State University; Charles J. Arntzen, Arizona State University; Harry A. Atwater, Jr., California Institute of Technology; Lorne A. Babiuk, University of Alberta; John M. Ballato, Clemson University; John S. Baras, University of Maryland; Issa

Batarseh, University of Central Florida; Ray H. Baughman, The University of Texas at Dallas; Angela M. Belcher, Massachusetts Institute of Technology; Stephen J. Benkovic, The Pennsylvania State University; Shekhar Bhansali, Florida International University; Sangeeta N. Bhatia, Massachusetts Institute of Technology; J. Douglas Birdwell, The University of Tennessee, Knoxville; Kenneth J. Blank, Rowan University; Dale L. Boger, The Scripps Research Institute; Charles A. Bouman, Purdue University; John E. Bowers, University of California, Santa Barbara; Gary L. Bowlin, University of Memphis; C. Jeffrey Brinker, The University of New Mexico; Emery N. Brown, Massachusetts Institute of Technology; Milton L. Brown, Georgetown University; Richard B. Brown, The University of Utah; Steven R.J. Brueck, The University of New Mexico; Joe C. Campbell, University of Virginia; Selim A. Chacour, University of South Florida; Mau-Chung Frank Chang, National Chiao Tung University; Shu Chien, University of California, San Diego; Mary-Dell Chilton, Washington University in St. Louis; Diana S. Chow, University of Houston; Chung K. Chu, University of Georgia; Yoginder P. Chugh, Southern Illinois University; William J. Clancey, Institute for Human and Machine Cognition; Katrina Cornish, The Ohio State University; Delos M. Cosgrove III, Cleveland Clinic; Alan W.

Cramb, Illinois Institute of Technology; Benjamin F. Cravatt III, The Scripps Research Institute; Roy Curtiss III, University of Florida; P. Daniel Dapkus, University of Southern California; John G. Daugman, University of Cambridge; Mark E. Davis, California Institute of Technology; Robert C. Dean, Jr., Dartmouth College; Atam P. Dhawan, New Jersey Institute of Technology; Duane B. Dimos, The University of Texas at Arlington; David M. Eddy, University of South Florida; Nader Engheta, University of Pennsylvania; Antonio F. Facchetti, Northwestern University; Rudolf Faust, University of Massachusetts Lowell; Robert E. Fischell, University of Maryland; Christodoulos A. Floudas, Texas A&M University; Gabor Forgacs, University of Missouri; Scott E. Fraser, University of Southern California; Jean M.J. Fréchet, King Abdullah University of Science and Technology; Richard H. Frenkiel, Rutgers, The State University of New Jersey; Sanjiv S. Gambhir, Stanford University; Shubhra Gangopadhyay, University of Missouri; Sir Andre K. Geim, The University of Manchester; George Georgiou, The University of Texas at Austin; John C. Gore, Vanderbilt University; Venu Govindaraju, University at Buffalo, The State University of New York; Ali Hajimiri, California Institute of Technology; Naomi J. Halas, Rice University; Andrew D. Hamilton, New York University; Wayne W. Hanna, University of Georgia; Florence P. Haseltine, National Institutes of Health; Charlotte A.E. Hauser, King Abdullah University of Science and Technology; Craig J. Hawker, University of California, Santa Barbara; M. Frederick Hawthorne, University of Missouri; Barton F. Haynes, Duke University; Richard F. Heck, University of Delaware; Andrew B. Holmes, The University of Melbourne; Rush D. Holt, American Association for the Advancement of Science; H. Robert Horvitz, Massachusetts Institute of Technology; Chenming C. Hu, University of California, Berkeley; Leon D. Iasemidis, Louisiana Tech University; Mir Imran, University of Pittsburgh; Donald E. Ingber, Harvard University; Chennupati Jagadish, The Australian National University; Anil K. Jain, Michigan State University; Kristina M. Johnson, University of Colorado Boulder; Joseph S. Kalinowski, East Carolina University; Aaron V. Kaplan, Dartmouth College; Usha N. Kasid, Georgetown University; Kenneth W. Kinzler, Johns Hopkins University; Brian K. Kobilka, Stanford University; Steven J. Kubisen, The George Washington University; Donald W. Landry, Columbia University; Se-Jin Lee, Johns Hopkins University; Sunggyu Lee, Ohio University; Robert J. Lefkowitz, Duke University; G. Douglas Letson, H. Lee Moffitt Cancer Center & Research Institute; Jennifer A. Lewis, Harvard University; Guifang Li, University of Central Florida; James C. Liao, University of California, Los Angeles; John S. Lollar III, Emory University; Anthony M. Lowman, Rowan University; Rodney S. Markin, University of Nebraska Medical Center; Tobin J. Marks, Northwestern University; Dean F. Martin, University of South Florida; Helen S. Mayberg, Emory University; Edith G. McGeer, The University of British Columbia; Patrick L. McGeer, The University of British Columbia; Meyya Meyyappan, NASA Ames Research Center; Thomas E. Milner, The University of Texas at Austin; Umesh K. Mishra, University of California, Santa Barbara; Somenath Mitra, New Jersey Institute of Technology; Andreas F. Molisch, University of Southern California; Ramani Narayan, Michigan State University; Alan C. Nelson, Arizona State University; Kyriacos C. Nicolaou, Rice University; David R. Nygren, The University of Texas at Arlington; Richard M. Osgood, Jr., Columbia University; Alyssa Panitch, Purdue University; H. Anne Pereira, The University of Oklahoma Health Sciences Center; William M. Pierce, Jr., University of Louisville; John M. Poate, Colorado School of Mines; H. Vincent Poor, Princeton University; Ann Progulsk-Fox, University of Florida; Suzie H. Pun, University of Washington; Kaushik Rajashekar, The University of Texas at Dallas; Jahangir S. Rastegar, Stony Brook University; A. Hari Reddi, University of California, Davis; E. Albert Reece, University of Maryland; Kenneth L. Reifsnider, The University of Texas at Arlington; Jasper D. Rine, University of California, Berkeley; Ajeet Rohatgi, Georgia Institute of Technology; Stephen D. Russell, Space and Naval Warfare Systems Command; Michael J. Sailor, University of California, San Diego; Bahgat G. Sammakia, Binghamton University; Andrew V. Schally, University of Miami; Paul R. Schimmel, The Scripps Research Institute; Peter G. Schultz, The Scripps Research Institute; Marlan O. Scully, Texas A&M University; Jonathan L. Sessler, The University of Texas at Austin; Mohsen Shahinpoor, University of Maine; Ben Shneiderman, University of Maryland; Marvin J. Slepian, The University of Arizona; Kwok-Fai So, The University of Hong Kong; Richard A. Soref, University of Massachusetts Boston; Pramod K. Srivastava, University of Connecticut; Andrew J. Steckl, University of Cincinnati; Valentino J. Stella, The University of Kansas; Galen D. Stucky, University of California, Santa Barbara; Bala Subramaniam, The University of Kansas; R. Michael Tanner, Association of Public and Land-grant Universities; Guillermo J. Tearney, Harvard University; Stephen Tomlinson, Medical University of South Carolina; James M. Tour, Rice University; Kalliat T. Valsaraj, Louisiana State University; Bert Vogelstein, Johns Hopkins University; Sherry L. Harbin, Purdue University; Norman J. Wagner III, University of Delaware; Yong Wang, Washington State University; James A. Wells, University of California, San Francisco; Caroline C. Whitacre, The Ohio State University; Jay F. Whitacre, Carnegie Mellon University; Helena S. Wisniewski, University of Alaska Anchorage; Edward D. Wolf, Cornell University; Paul K. Wright, University of California, Berkeley; James C. Wyant, The University of Arizona; Pan-Chyr Yang, National Taiwan University; Yu-Dong Yao, Stevens Institute of Technology; Martin L. Yarmush, Rutgers, The State University of New Jersey; and Jianping Zheng, Florida State University.

2015 FELLOWS CEREMONY SPEAKERS

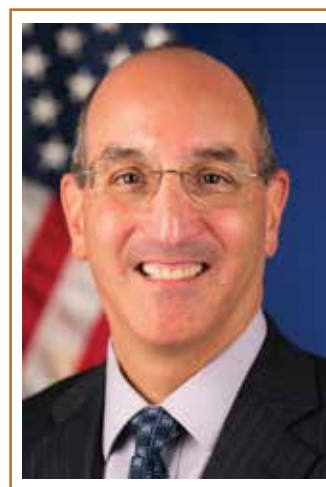


Host Remarks & Keynote Introduction By:

Elizabeth L. Dougherty

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

Elizabeth L. Dougherty, J.D., is director of inventor education, outreach, and recognition in the Office of Innovation Development at the United States Patent and Trademark Office (USPTO). In this capacity, she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs and the intellectual property interests of colleges and universities; she supervises the development of outreach programs to women, minority and other underserved communities; she also 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. She serves as an ex-officio on the National Academy of Inventors board of directors and as a member of the NAI Fellows Selection Committee since 2012.



Keynote Address By:

Andrew H. Hirshfeld

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

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

FELLOWS



C. Mauli Agrawal | *The University of Texas at San Antonio*

C. Mauli Agrawal, Ph.D., P.E., is vice president of research at The University of Texas at San Antonio. Agrawal specializes in medical devices for orthopedic and cardiovascular applications including regenerative medicine. He is the recipient of various awards and honors including the prestigious 2010 Julio Palmaz award. He holds 14 U.S. patents with several others pending. Many of these have been licensed to companies and he is the founder of two startup companies. The author of more than 315 scientific publications, he has also produced several books, including a textbook. He has served on the editorial boards of seven scientific journals and is an international fellow of SFB and AIMBE. Agrawal is a member of the boards of six different nonprofit organizations and also served on the Emerging Technology Fund, a \$200M investment fund, at the invitation of the Texas governor.



Dean P. Alderucci | *The University of Chicago*

Dean P. Alderucci, M.S., is adjunct professor of strategic management at The University of Chicago Booth School of Business. Alderucci's principal research interests include formal strategy frameworks for inventing, applying operations research tools to corporate patent processes, and the gaps between design thinking and competitive responses. He holds 185 U.S. patents that have been licensed to several companies, from startups to large corporations. In his previous work at a business incubator he helped launch over a dozen technology startups, including Priceline.com. He has published several articles and currently serves as an advisor to various startups and innovators. Alderucci holds master's degrees in computer science, applied mathematics, and operations research from Columbia University and a master's degree of law in innovation and information law from New York University. He also holds a bachelor's and master's in computer engineering from Boston University, where he graduated Summa Cum Laude and was inducted into the Tau Beta Pi Engineering Honor Society.



Jayakrishna Ambati | *University of Kentucky*

Jayakrishna Ambati, M.D., is professor and vice chair of ophthalmology and visual sciences and E. Vernon & Eloise C. Smith Endowed Chair at the University of Kentucky. Ambati has pioneered innovative concepts in the immunology of age-related macular degeneration and in the establishment of vascular boundaries in the eye. He has received numerous awards including the NIH Director's Pioneer Award, Cogan and Camras Awards from the ARVO, Doris Duke Distinguished Clinical Scientist Award, Ellison Foundation Senior Scholar in Aging Award, Burroughs Wellcome Fund Clinical Scientist Award, Roger Johnson Prize in Macular Degeneration and Harrington Discovery Institute Scholar-Innovator Award. He holds 11 U.S. patents, co-founded iVeena Pharmaceuticals, iVeena Delivery Systems, and Inflammasome Therapeutics and serves on the editorial boards of *IOVS*, *Ophthalmology*, *Ophthalmic Research*, and *TVST*. Ambati is a fellow of AAAS and member of AAP and ASCI.



Iver E. Anderson | *Iowa State University*

Iver E. Anderson, Ph.D., is senior metallurgist at Ames Laboratory U.S. DOE and adjunct professor of materials science and engineering at Iowa State University. Anderson led the team that invented the lead-free solder alloy for electronics assembly which is now found in most consumer electronic items and was selected for *One Hundred Discoveries and Innovations from DOE that have resulted in improvements for American Consumers*. He is recipient of the D.R. Boylan Eminent Faculty Award for Research from Iowa State University, Federal Laboratory Consortium Award for Excellence in Technology Transfer, Distinguished Scientist/Engineer from EMPM Division of TMS and 2006 Iowa Inventor of the Year. He holds 39 U.S. patents that have been licensed to 70 companies. His research on titanium powder processing is the basis for an award winning spinoff, IPAT, which was purchased and commercialized by a Fortune 250 company. Anderson has published 212 refereed journal and proceedings articles and serves on the editorial board of *International Journal for Powder Metallurgy*. Anderson is a fellow of TMS, ASM, APMI, and Alpha Sigma Mu.



Kristi S. Anseth | *University of Colorado Boulder*

Kristi S. Anseth, Ph.D., is Howard Hughes Medical Institute Investigator and Distinguished Professor of chemical and biological engineering at the University of Colorado Boulder (CU-Boulder). Anseth is known for her development of innovative biomaterials for drug delivery and regenerative medicine applications. She is the recipient of the Curtis W. McGraw Award from the ASEE, Alan T. Waterman Award from NSF, Colburn and Professional Progress Awards from AIChE, Outstanding Young Investigator and Mid-Career Research awards from MRS, Hazel Barnes Award from CU-Boulder, and Science and Medicine Prize from the Bonfils-Stanton Foundation. Anseth holds 15 U.S. patents or patents pending and is co-founder of Mosaic Biosciences. She has published over 300 articles and serves as an editor for *Biomacro-molecules*, *Progress in Materials Science*, and *Biotechnology & Bioengineering*. Anseth is a member of NAE, NAM, and NAS and is a fellow of AAAS, AIMBE, MRS and SFB.



Allen W. Apblett | *Oklahoma State University*

Allen W. Apblett, Ph.D., is professor of chemistry at Oklahoma State University and president of XploSafe LLC. Apblett's research is focused on the application of metallo-organic chemistry to challenges faced by our society in the areas of protection and cleanup of the environment, costs and quality improvements in industrial processes, and the development of novel routes to advanced materials. He is the recipient of the Canadian Governor General's Medal, the Regent's Distinguished Research Award, and the 2014 Oklahoma Chemist of the Year Award. His research has led to six U.S. patents, the publication of over 116 papers, and the graduation of eight masters and 38 doctoral students. Three companies have been created that commercialize his research, which produce materials for water purification, wireless sensors for corrosion detection, and products for homeland security and chemical safety. Apblett is a fellow of ACS and ACerS.



Charles J. Arntzen | *Arizona State University*

Charles J. Arntzen, Ph.D., holds the Florence Ely Nelson Chair and is Regents' Professor at Arizona State University. Arntzen is considered the "Godfather" of plant-made pharmaceuticals for his research relating to the production of subunit vaccines and therapeutic proteins in plant cells. He holds 27 issued U.S. patents and has filed 35 foreign patent applications. He has published over 200 peer-reviewed publications, and is a member of NAS in the U.S. and India. Arntzen is a fellow of AAAS and the ASPB. He was a member of President George W. Bush's Council of Advisors in Science and Technology and a presidential appointee to the National Nanotechnology Advisory Committee. *Fast Magazine* selected him as "The Most Creative Person in Business in 2015." Arntzen is a leader in U.S. plant biotechnology efforts.



Harry A. Atwater, Jr. | *California Institute of Technology*

Harry A. Atwater, Jr., Ph.D., is Howard Hughes Professor of Applied Physics and Materials Science at the California Institute of Technology, and director of the U.S. DOE's Joint Center for Artificial Photosynthesis. Atwater's scientific interests span from photovoltaics and solar energy to nanophotonics and plasmonics; he gave the name to the field of plasmonics in 2001. He is co-founder and chief technical advisor for Alta Devices, a solar company in Santa Clara, that set the current world record for 1-Sun single junction solar cell and module efficiencies. He serves as editor-in-chief for the journal *ACS Photonics*, and is associate editor for the *IEEE Journal of Photovoltaics*, and in 2006 he founded the Gordon Research Conference on Plasmonics, which he served as chair in 2008. Atwater is a fellow of MRS and a member of NAE.



Lorne A. Babiuk | *University of Alberta*

Lorne A. Babiuk, Ph.D., D.Sc., is vice president for research at the University of Alberta. Babiuk is a global leader in vaccinology, virology, and immunology. He is an officer of the Order of Canada and the recipient of the Saskatchewan Order of Merit, Killam Prize, Gairdner Wightman Award, McLaughlin Medal, Prix Galien Canada Research Prize, and Queen Elizabeth II Diamond Jubilee Medal. He holds 40 U.S. patents that have been licensed to numerous companies. He has published 600 peer-reviewed manuscripts and 80 review articles and book chapters. He serves as associate editor for *Vaccine* and *Emerging Microbes & Infections*. Babiuk is a fellow of the Royal Society of Canada and Canadian Academy of Sciences, an honorary fellow of the Royal College of Physicians and Surgeons Canada, and holder of three honorary doctorates, from Colorado State University, University of Guelph, and University of Saskatchewan.



John M. Ballato | *Clemson University*

John M. Ballato, Ph.D., is J.E. Serrine Endowed Chair and professor of materials science and engineering at Clemson University. Ballato's work is focused on the optical and optoelectronic properties of materials and his innovations span a wide range of technologies relating to optical fiber, lasers and light-emitting structures. Among numerous other honors, he is the recipient of the South Carolina Governor's Award for Scientific Research, and his collaborative work on Anderson-localizing optical fiber was chosen as one of *Physics World's* "Top Ten Breakthroughs" for that year, following the Rosetta space probe landing on a comet. He holds 21 U.S. patents and 11 foreign patents, has co-founded three startup companies, and has published in excess of 300 technical articles. Ballato is a fellow of OSA, SPIE, ACerS and WAC.



John S. Baras | *University of Maryland*

John S. Baras, Ph.D., is Lockheed Martin Endowed Chair in Systems Engineering, founding director of the Institute for Systems Research, founding director of Maryland Center for Hybrid Networks at the University of Maryland, and guest professor at the Royal Institute of Technology (KTH), Sweden. Baras is an international authority in automatic control, communication, computing systems and model-based systems engineering. He conceived and led the development of the industry sector for Internet services over satellite, which was commercialized by Hughes Network Systems. He is the recipient of the 1980 George Axelby Prize from the IEEE Control Systems Society, 2006 Leonard Abraham Prize from the IEEE Communications Society, 2014 Tage Erlander Guest Professorship from the Swedish Research Council, and 2014-2017 Senior Hans Fischer Fellowship from the Institute for Advanced Study Technical University of Munich, Germany. He has published over 700 journal and conference articles, and has been awarded 15 U.S. patents and a software copyright for the first ever Internet protocols over satellite. Baras is a fellow of IEEE, SIAM, AAAS, and a foreign member of the Royal Swedish Academy of Engineering Sciences.



Issa Batarseh | *University of Central Florida*

Issa Batarseh, Ph.D., P.E., is professor of electrical engineering at the University of Central Florida. Batarseh's work focuses on developing innovative power electronic systems for grid-tied solar applications. The research goal is to design advanced inverter technologies to achieve high efficiency, low cost inverter topologies, enabled by advanced digital control strategies for enhanced performance, fault protection, system integration and health monitoring for power grids. His research findings have been licensed to three companies. Batarseh is a founding partner of two technology companies, Petra Solar and Apecor. He has received 26 U.S. patents, graduated 42 doctoral students and 70 masters and undergraduate students. He has published 85 journal papers, more than 250 refereed papers at international conferences, and six books and book chapters. Batarseh is a fellow of IEEE and AAAS.



Ray H. Baughman | *The University of Texas at Dallas*

Ray H. Baughman, Ph.D., is Robert A. Welch Professor of Chemistry and director of the Nano-Tech Institute at The University of Texas at Dallas. Baughman's inventions with team members have provided vaccine indicators that have long been saving lives in the underdeveloped world, as well as artificial muscles and carbon nanotube sheets and yarns that are being commercially developed by licensees for diverse applications. He has 72 issued U.S. patents and 380 refereed publications, with over 29,000 citations. Baughman is a member of NAE; the Academy of Medicine, Engineering and Science of Texas; foreign member of the European Academy of Sciences; fellow of the Royal Society of Chemistry and APS; Academician of The Russian Academy of Natural Sciences; honorary professor of six universities in China; and is on editorial or advisory boards of *Science* and other journals.



Angela M. Belcher | *Massachusetts Institute of Technology*

Angela M. Belcher, Ph.D., is James Mason Crafts Professor of Biological Engineering and Materials Science and Engineering at Massachusetts Institute of Technology. Belcher's inventions and research have focused on evolving organisms to create new and improved functions in the synthesis and assembly of materials and devices for energy storage, solar cells, electronics, catalysts, and medical imaging and detection. She is a Packard Fellow, Alfred P. Sloan Fellow, MacArthur Fellow, and member of AAAS. She received the Lemelson-MIT Prize for her innovations as well as the ENI Prize for Renewable Energy. She was awarded the Presidential Early Career Award, as well as *Scientific American's* "Research Leader of the Year". She holds 25 U.S. patents and several foreign patents that have been licensed to multiple companies. Belcher is the founder of Siluria Technologies Inc. and Cambrios Technologies Inc.



Stephen J. Benkovic | *The Pennsylvania State University*

Stephen J. Benkovic, Ph.D., is Evan Pugh University Professor and Eberly Chair in chemistry at The Pennsylvania State University. Benkovic's work has focused on DNA replication and repair; the protein dynamics in an enzyme's catalytic cycle; intracellular metabolic networks; and novel benzoxaboroles pharmacophores as antibiotics and antifungal agents. He received the Pfizer Award in Enzyme Chemistry, Gowland Hopkins Award, Repligen Award for Chemistry of Biological Processes, Alfred Bader Award, Chemical Pioneer Award, Christian B. Afinsen Award, Benjamin Franklin Medal in Life Science, Ralph F. Hirschmann Award in Peptide Chemistry, National Medal of Science, and NAS Award in Chemical Sciences. He holds 57 U.S. and 20 foreign patents that have been licensed to four companies. He is a founder of Anacor and Boragen. He has published 613 articles, books, and book chapters and serves as a reviewer/editor for *Science*, *Biochemistry* and *PNAS*. Benkovic is a fellow of AAAS, and member of NAS, NAM, and the American Philosophical Society.



Shekhar Bhansali | *Florida International University*

Shekhar Bhansali, Ph.D., is Alcatel Lucent Professor and chair of electrical and computer engineering at Florida International University (FIU). Bhansali's research interests are in the area of nano-enabled biosensors and impedance based microsystems. He has invented numerous room temperature sensors for both biomolecules and gases. He has conceptualized and led numerous interdisciplinary graduate research-training programs, including IGERT, NSF Bridge to Doctorate and Alfred P. Sloan Doctoral Fellowship Programs to increase diversity, retention and graduation rates of doctoral students in STEM. These programs have matriculated over 180 graduate students. Bhansali is the recipient of the NSF CAREER Award (2003), Outstanding Researcher Award (2004), Alfred P. Sloan Foundation Outstanding Mentor Award (2009), William R. Jones Outstanding Mentor Award (2004, 2009), Florida Education Fund Outstanding Mentor Award (2009) and FIU Top Scholar Award (2013). He holds 24 issued U.S. patents and has published over 200 peer-reviewed publications.



Sangeeta N. Bhatia | *Massachusetts Institute of Technology*

Sangeeta N. Bhatia, M.D., Ph.D. is Howard Hughes Medical Institute Investigator and John J. and Dorothy Wilson Professor of Health Sciences and Technology & Electrical Engineering and Computer Science at Massachusetts Institute of Technology. Bhatia's laboratory leverages "tiny technologies" of miniaturization tools used in semiconductor manufacturing to yield inventions with new applications in tissue regeneration, stem cell differentiation, medical diagnostics, and drug delivery. Among her team's inventions are human microfluidics which model human drug metabolism and liver disease, and nanoparticles that can assemble and communicate to study, diagnose and treat a variety of diseases, including cancer. She has published extensively in peer-reviewed, interdisciplinary journals. She recognizes commercializing her inventions is a path to impacting patient health and has co-founded startups, supported student-led startups, and licensed to existing entities and industry collaborators. She consults for industry, government and academic organizations, and is a passionate advocate for diversity in science and engineering. Bhatia has received multiple honors including the Lemelson-MIT Prize and Heinz Award, and is a member of NAE, AAAS, and AAA&S.



J. Douglas Birdwell | *The University of Tennessee, Knoxville*

J. Douglas Birdwell, Ph.D., is professor emeritus of electrical engineering and computer science at The University of Tennessee, Knoxville. Birdwell's research into computing and information systems has spanned from their initial surge in the 1970s through their universal adoption today. He is an inventor of key patented technologies, licensed and in use worldwide in human identification. His current interests are in computational neuroscience, neuromorphic computing, and open source software tools. Birdwell has over 100 publications and 31 U.S. patents. He has served in many leadership positions in the IEEE Control Systems Society, including president, associate editor of *IEEE Transactions on Automatic Control*, program co-chair (1996) and general chair (1998) of the IEEE Conference on Decision and Control. Birdwell is a fellow of IEEE.



Kenneth J. Blank | *Rowan University*

Kenneth J. Blank, Ph.D., is senior vice president for health sciences at Rowan University. Blank's research interests include molecular and cellular basis for host/virus interactions in the development of persistent retrovirus infection and retrovirus-induced leukemogenesis. His role in academic administration has focused on fostering use-inspired research programs that result in technology development and commercialization that promote regional economic development. He serves as vice chair of the board of directors of the University City Science Center in Philadelphia and is a member of the New Jersey Council on Innovation. Blank holds three U.S. patents, has received numerous grants and contracts from the NIH and U.S. DoD and has over 60 publications on molecular and cellular pathology and genetics. He is the recipient of a Leukemia Society of America Scholar Award (presently the Leukemia and Lymphoma Society) and is a fellow of the Philadelphia College of Physicians.



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Dale L. Boger, Ph.D. is chairman for the department of chemistry at The Scripps Research Institute. He received his bachelor's degree in chemistry from the University of Kansas (1975, with highest distinction) and doctor of philosophy in chemistry from Harvard University (1980) under the direction of E. J. Corey. He returned to the University of Kansas as a member of the faculty in the department of medicinal chemistry (1979-1985), moved to the department of chemistry at Purdue University (1985-1991), and joined the faculty in the newly created department of chemistry at The Scripps Research Institute (1991-present) as the Richard and Alice Cramer Professor of Chemistry. Boger is internationally recognized for his work in organic synthesis, natural products total synthesis and their biological evaluation, synthetic methodology development, and medicinal chemistry, and has made seminal contributions to improving the glycopeptide antibiotics and the understanding of DNA-drug interactions of naturally occurring antitumor-antibiotics. He holds 35 issued U.S. patents and is the founding scientist of both Sequoia Holdings, Inc. and CombiChem, Inc.



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Charles A. Bouman, Ph.D., is Showalter Professor of Electrical and Computer and Biomedical Engineering at Purdue University. His research is in statistical signal and image processing with applications ranging from medical and scientific to consumer imaging. Bouman is a fellow of IEEE, AIMBE, Society for Imaging Science and Technology and SPIE professional society. He is a recipient of the Electronic Imaging Scientist of the Year award, and he has served as the editor-in-chief for the *IEEE Transactions on Image Processing* and as vice president of technical activities for IEEE Signal Processing Society. His research resulted in the first commercial model-based iterative reconstruction (MBIR) system for medical computed tomography (CT) and demonstrated its potential for dramatic X-ray dosage reduction. He is co-inventor on over 47 issued U.S. patents that have been licensed and used in millions of consumer imaging products.



John E. Bowers | *University of California, Santa Barbara*

John E. Bowers, Ph.D., is director of the Institute for Energy Efficiency at the University of California, Santa Barbara. Bowers holds the Fred Kavli Chair in Nanotechnology and is a professor in the departments of electrical and computer engineering and materials. He received a doctorate degree from Stanford University and worked for AT&T Bell Laboratories. He received the Tyndall Award, Holonyak Prize, William Streifer Award, SCBT Entrepreneur of the Year Award and ACE Award for Most Promising Technology. The UCSB faculty awarded him UCSB's highest honor, the UCSB Faculty Research Lecturer. Bowers' research is primarily in optoelectronics and silicon photonic integrated circuits. He is co-founder of Aurrion, Aeriux Photonics, PowWow Energy, Terabit Technology and Calient Networks. He has published 14 book chapters, 650 journal papers, 900 conference papers and has received 58 U.S. patents. He is a member of NAE and fellow of IEEE, OSA and APS.



Gary L. Bowlin | *University of Memphis*

Gary L. Bowlin, Ph.D., is professor and Herbert Herff Chair of Excellence at University of Memphis. Bowlin's research focuses on the application of electrospinning for biomedical applications, leading to more than 115 publications that have been cited over 7,000 times. He is an inventor on 10 U.S. and 30 foreign patents with a portfolio of patent applications at various stages of review. To date, this technology has led to eight license agreements and the formation of five startup companies. Most recently, he has been a co-founding inventor of Sweetbio, Inc., St. Teresa Medical, Inc., and St. Francis Veterinary Medical, Inc. He was the winner of the 1995 Collegiate Inventors Competition and in 2013 was awarded the Billy R. Martin Innovation Award. Bowlin has served as a long-standing first round judge of the Collegiate Inventors Competition and is a fellow of AIMBE.



C. Jeffrey Brinker | *The University of New Mexico*

C. Jeffrey Brinker, Ph.D., is Sandia National Laboratory Fellow, Distinguished and Regents Professor of chemical & biological engineering at The University of New Mexico and member of the UNM Cancer Center. Brinker is internationally known for his pioneering work in sol-gel processing and evaporation-induced self-assembly, a robust process to create porous and composite thin film and particulate nanostructures. He also invented a lipid-bilayer encapsulated porous nanoparticle also known as protocell, a drug delivery platform. He is the recipient of numerous awards including the U.S. DOE Ernest O. Lawrence Memorial Award in Materials Science, the MRS Medal, and five R&D 100 Awards. In 2002 he was elected as a member of NAE. Brinker is also a fellow and member of the board of directors of the MRS. He has published over 300 papers and holds 43 U.S. patents that have been licensed to several energy, microelectronics, and pharmaceutical companies.



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Emery N. Brown, M.D., Ph.D., is Edward Hood Taplin Professor of Medical Engineering and Computational Neuroscience at the Massachusetts Institute of Technology and the Warren M. Zapol Professor of Anaesthesia at Harvard Medical School and Massachusetts General Hospital. He is recognized for his contributions to neural signal processing and to understanding the neuroscience mechanisms of general anesthesia. He is the recipient of the NIH Director's Pioneer Award, NIH Director's Transformative Research Award, and 2015 American Society of Anesthesiologists Excellence in Research Award. He has 18 issued or pending patents and has published more than 180 journal articles. He served on the NIH BRAIN Initiative Working Group. He is a fellow of AAA&S, and a 2015 Guggenheim Fellow in Applied Mathematics. He is a member of NAM, NAS and NAE.



Milton L. Brown | *Georgetown University*

Milton L. Brown, M.D., Ph.D., is professor of oncology and director of the Drug Discovery Program at Georgetown University. Additionally, Brown has been honored with professorships in the departments of neuroscience, pharmacology, physiology, biochemistry and molecular and cellular biology. He is presently a consultant with several companies in the areas of drug development, medicinal chemistry and pharmacology. He has focused research expertise primarily in the discovery and development of anti-cancer agents (prostate, breast, Ewing sarcomas), radiation modifying agents, radiation countermeasures, neuro-therapeutics (epilepsy, pain and traumatic brain injury), and cardiovascular innovations (new anti-hypertensive/renal protective agents). He received the Exemplar Mentor Award from the Urban Education Institute in recognition of his contributions to raising the achievement and performance levels of people of color in STEM fields. He has 15 issued U.S. patents, which have been licensed to commercial partners for development and led to his founding of a startup company.



Richard B. Brown | *The University of Utah*

Richard B. Brown, Ph.D., is dean of engineering at The University of Utah. Brown is one of the pioneers in the field of miniature, silicon-based chemical sensors that are used to test water, neurochemicals, and blood. He is the recipient of a Distinguished Faculty Award from the Michigan Governing Boards of Universities, and a University of Michigan Arthur F. Thurnau Endowed Professorship. He was an IBM Austin Center for Advanced Studies Fellow. Brown holds 16 U.S. patents plus foreign patents that have been licensed to nine companies. He is a founder of Sensicore, i-SENS, Mobius Microsystems, and e-SENS. He has authored more than 225 peer-reviewed publications, and has graduated 31 doctoral students. He has served as associate editor for IEEE Transactions on VLSI, and as guest editor for *Proceedings of the IEEE* and *IEEE Journal of Solid-State Circuits*. Brown is a fellow of IEEE.



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Steven R.J. Brueck, Ph.D., is Distinguished Professor Emeritus of electrical and computer engineering and the Center for High Technology Materials at The University of New Mexico (UNM). Brueck has made significant contributions to nonlinear optics, nanoscale lithography, semiconductor lasers, infrared detectors, nanophotonics and nanofluidics. He was named the STC.UNM Innovation Fellow in 2010 and received the UNM Presidential Award of Distinction in 2013. He has published over 500 technical papers and has served as associate editor of *Optics Letters*, as editor of the *IEEE Journal of Quantum Electronics* and as founding editor of the *IEEE Journal Selected Topics in Quantum Electronics*. He holds 61 U.S. patents of which 63 licenses and options have been exercised by 24 companies. Brueck is a fellow of OSA, IEEE, and AAAS.



Joe C. Campbell | *University of Virginia*

Joe C. Campbell, Ph.D., is Lucian Carr Professor of Electrical and Computer Engineering at the University of Virginia. Campbell's technical area is photodetectors. At present he is actively involved in single-photon-counting APDs, Si-based optoelectronics, high-speed low-noise avalanche photodiodes, high-power high-linearity photodiodes, and ultraviolet avalanche photodiodes. He has co-authored ten book chapters, 420 articles for refereed technical journals, and more than 400 conference presentations. Campbell teaches graduate and undergraduate courses on lasers and optoelectronic components. He has seven issued U.S. patents and in 2002 he was inducted as a member of NAE. Campbell has also received the OSA/IEEE John Tyndall Award and IEEE Photonics Award and is a fellow of IEEE.



Selim A. Chacour | *University of South Florida*

Selim A. Chacour is professor in the Institute for Advanced Discovery & Innovation at the University of South Florida. After a successful career at Allis Chalmers, Chacour founded American Hydro Corporation, leading it from a small entrepreneurial enterprise to one of the industry's leading turbine manufacturers. He is credited with revolutionizing the way runners were designed throughout the hydro turbine industry. The runner is central to the turbine, and its turning transforms the power of water into a rotational force that propels a generator. His more than 40 years of engineering achievements involving creative mechanical and hydraulic design, the development of advanced computational codes, and the successful leadership of two U.S. organizations involved in the design and manufacture of hydraulic machinery were recognized by his election as a member of NAE. Chacour holds eight U.S. patents and is the recipient of the National Hydropower Association Henwood Award, the industry's highest honor.



Mau-Chung Frank Chang | *National Chiao Tung University*

Mau-Chung Frank Chang, Ph.D., is president at National Chiao Tung University and Wintek Chair Professor at University of California, Los Angeles. He received his bachelor's degree in physics from National Taiwan University, master's degree in materials science from National Tsing Hua University and doctorate in electrical engineering from National Chiao Tung University. His research focus is in high-speed semiconductor devices and integrated circuits for RF and mixed-signal radio, radar and imaging system applications. He was assistant director and department manager at Rockwell Science Center from 1983 to 1997. He is the recipient of the IEEE David Sarnoff Award (2006) and The Engineers' Council John J. Guarrera Engineering Educator of the Year Award (2014). He holds 41 U.S. patents and has published over 350 peer-reviewed papers. He founded and co-founded several companies in the U.S. and Taiwan. Chang is a member of NAE, Academia Sinica in Taiwan, and fellow of IEEE.



Shu Chien | *University of California, San Diego*

Shu Chien, M.D., Ph.D., is university professor of bioengineering and medicine at the University of California, San Diego. Chien is an innovator and leader in cardiovascular physiology and bioengineering. He is the recipient of the U.S. National Medal of Science, NAE Founders Medal, Benjamin Franklin Medal, Poiseuille Medal, Roger Revelle Medal, Zweifach Award, and the ROC (Taiwan) Presidential Prize in Science. He holds two U.S. patents and is founder of Drug Array. He has published 575 articles, 14 books, and 57 book chapters. Chien is a member of NAS, NAE, NAM, AAA&S, Academia Sinica in Taiwan, foreign member of Chinese Academy of Sciences, and fellow of AAAS, AIMBE, APS, ASME and BMES.



Mary-Dell Chilton | *Washington University in St. Louis*

Mary-Dell Chilton, Ph.D., is Distinguished Science Fellow and founder of Syngenta's biotechnology research labs. While on faculty at Washington University in St. Louis, Chilton led a collaborative research study that produced the first transgenic (genetically engineered) plants. She has been called the *Queen of Agrobacterium* because she was the first to demonstrate the presence of a fragment of *Agrobacterium* Ti plasmid DNA in the nuclear DNA of crown gall tissue. In 2015, she was inducted into both the NIHF and the USDA Hall of Heroes. In 2013, she was named a World Food Prize Laureate. She is also the author of more than 100 scientific publications and holds seven U.S. patents. Chilton's efforts pioneered the field of agricultural biotechnology and forever changed the way plant genetic research was conducted. She is recognized for her groundbreaking research and its continued impact on agriculture.



Diana S. Chow | *University of Houston*

Diana S. Chow, Ph.D., is professor of pharmaceuticals and director of the Institute for Drug Education and Research in the College of Pharmacy at the University of Houston. Chow is known for her work to develop innovative pharmaceutical formulations and drug delivery systems, especially that of Parental Busulfan which dramatically improves the clinical safety for transplants. She was named the 2009 *Inventor of the Year* by the Houston Intellectual Property Lawyers Association. She holds nine U.S. and two foreign patents, from three of which a pharmaceutical product was developed, approved by FDA and commercialized. She has published more than 50 articles and book chapters, and serves as editor of *British Journal of Pharmacology*, and editorial board member for *Drug Development and Industrial Pharmacy*. Chow is a member of the NY Academy of Sciences, American Association for Cancer Research, American College of Clinical Pharmacology and American Association of Pharmaceutical Scientists.



Chung K. Chu | *University of Georgia*

Chung K. Chu, Ph.D., is Distinguished Research Professor Emeritus at the University of Georgia. Chu is a medicinal chemist who has been involved in the discovery of antiviral and anticancer agents for over 40 years. Specifically, he has worked on the antiviral agents for HIV, hepatitis B virus and shingles. During his academic career, he has discovered a number of clinical candidates for cancer and viral diseases. Two of his discoveries reached phase III clinical stages as potential anticancer and antiviral agents, one of which (Clevudine) is being used clinically to treat chronic hepatitis B virus infection in humans. Chu is the recipient of John A. Montgomery award and NIH Merit award. He holds 58 U.S. and numerous foreign patents of which several patents related to antiviral and anticancer agents have been licensed to several U.S. companies and a foreign country. He is a co-founder of Pharmasset and ATEA Pharmaceuticals. He published 315 peer-reviewed articles and edited four books. He is a member of editorial board of *Nucleosides, Nucleotides & Nucleic Acids*. Chu is a fellow of AAAS.



Yoginder P. Chugh | *Southern Illinois University*

Yoginder P. Chugh, Ph.D., is professor of mining and mineral resources engineering at Southern Illinois University. His notable research and intellectual property achievements are in the areas of mining ground control, coal mine dust control, and coal combustion byproducts management. Chugh has earned multiple awards including Outstanding Teacher in the Department, Professor of the Year Award from the National Stone Association, Invited Professorships in several countries, three Fulbright Fellowships, College Outstanding Scholar, and College Outstanding Faculty. He has won several national society SME-AIME awards including the Rock Mechanics, Howard N. Eavenson, Distinguished Member, Health and Safety Excellence, and Percy Nicholls. Chugh is also the recipient of the prestigious Old Timers Club Faculty Award. He has nine active U.S. patents and one pending for dust control around longwall shearer. Chugh holds bachelor's, master's and doctoral degrees in mining engineering from The Pennsylvania State University.



William J. Clancey | *Institute for Human and Machine Cognition*

William J. Clancey, Ph.D., is senior research scientist at the Institute for Human and Machine Cognition. Clancey is a computer scientist with influential contributions to cognitive science in modeling human knowledge and reasoning, particularly the “heuristic classification” framework. He developed programming architectures for artificial intelligence applications in medicine, education, robotics, and spaceflight systems and co-founded two software companies. Clancey’s six U.S. patents include a work practice simulation tool for comprehensive design of human-automation systems. He served as chief scientist, human-centered computing, in the Intelligent Systems Division at NASA Ames for 15 years. An invited speaker in over 20 countries, he has published seven books, including *Working on Mars: Voyages of Scientific Discovery with the Mars Exploration Rovers*. He is the recipient of the 2014 AIAA Gardner-Lasser Aerospace History Literature Award. Clancey is a fellow of APS, Association for Advancement of AI, and American College of Medical Informatics.



Katrina Cornish | *The Ohio State University*

Katrina Cornish, Ph.D., is Ohio Research Scholar and Endowed Chair of Bioemergent Materials at The Ohio State University. Cornish is the leading global expert on alternate rubber production, processing and products, and exploitation of opportunity feedstocks and wastes, for sustainable and resilient bioproducts and biofuels, and her research and inventions form the foundation of the alternate rubber industry. She is the recipient of the Good Housekeeping Award for Women in Government, Outstanding Research Scientist of the Year (USDA-ARS), ACS Presidential Award, and Outstanding Research Scientist of the Year (AAIC). She has 36 issued and pending U.S. and foreign patents, 14 of which have been licensed to private industry. She is the founder of EnergyEne, Inc., EnergyEne Australia Pty. Ltd, EnergyEne Africa, and DamSafe LLC. She has 201 academic publications, and serves on the editorial boards of *Industrial Crops and Products*, *Phytochemistry* and *Industrial Biotechnology*. Cornish is a fellow of AAAS.



Delos M. Cosgrove III | *Cleveland Clinic*

Delos M. Cosgrove III, M.D., is president and CEO of Cleveland Clinic. He presides over an \$8B health care system comprising Cleveland Clinic, nine regional hospitals, and 21 family health and ambulatory surgery centers in Ohio, Florida, Las Vegas, Toronto, and Abu Dhabi. Under his leadership, Cleveland Clinic has consistently been named among “America’s Top Five Hospitals” by *U.S. News & World Report* and is one of only two hospitals named among America’s 99 *Most Ethical Companies* by the Ethisphere Institute. He received his medical degree from the University of Virginia. He was a surgeon in the U.S. Air Force and was awarded the Bronze Star and the Republic of Vietnam Commendation Medal. He has published nearly 450 articles, book chapters, one book and 17 training and continuing medical education films. He performed more than 22,000 operations and earned an international reputation for expertise in all areas of cardiac surgery, especially valve repair. Cosgrove has 30 patents filed for developing medical and clinical products used in surgical environments.



Alan W. Cramb | *Illinois Institute of Technology*

Alan W. Cramb, Ph.D, is the ninth president of Illinois Institute of Technology (IIT). Prior to joining IIT, Cramb served as dean of engineering and the John A. Clark and Edward T. Crossan Professor of Engineering at Rensselaer Polytechnic Institute. He joined IIT as provost in 2008. He is the author of over 200 publications and holds two U.S. patents. He was the recipient of the American Iron and Steel Institute Medal in 1985 and 1986, the Robert Woolston Hunt Silver Medal of the Iron and Steel Society in 1987, and was awarded the Benjamin Richard Teare Teaching Award at CMU for excellence in engineering education in 1995. In 2000 he was elected president of the Iron and Steel Society. He was named the John Elliott lecturer of TMS in 2002, and in 2003 was awarded the Benjamin F. Fairless Award of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME). Cramb is a distinguished member or fellow of AIST, AIME, ASM International, AAAS, Iron and Steel Institute of Japan and was elected as a member of NAE in 2014.



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Benjamin F. Cravatt III, Ph.D., is professor and chair of chemical physiology at The Scripps Research Institute (TSRI). His research group is interested in understanding the roles that enzymes play in physiological and pathological processes, especially as pertains to the nervous system and cancer. Cravatt obtained his undergraduate education at Stanford University, receiving a bachelor's degree in the biological sciences and in history. He then received a doctorate from TSRI in 1996. Cravatt joined the faculty at TSRI in 1997. Cravatt is a co-founder and scientific advisor of Activx Biosciences and Abide Therapeutics and holds 12 issued U.S. patents. His honors include the Searle Scholar Award, Eli Lilly Award in Biological Chemistry, Cope Scholar Award, Protein Society Irving Sigal Young Investigator Award, Tetrahedron Young Investigator Award in Bioorganic and Medicinal Chemistry, and ASBMB Merck Award. Cravatt is a member of NAS.



Roy Curtiss III | *University of Florida*

Roy Curtiss III, Ph.D., is professor of veterinary medicine at the University of Florida. Curtiss has 60 years of research experiences in genetics, molecular biology, microbiology and vaccinology. He was granted the first U.S. patent issued for a genetically modified micro-organism in 1976, holds the first patent on genetically engineered attenuated bacteria to deliver protective anti-gens as vaccines to prevent infectious diseases and the first patents on genetically modified plants expressing pathogen-derived protective antigens as vaccines against bacterial and viral pathogens. Curtiss founded two biotechnology vaccine development companies and was recently recognized as the recipient of the 2014 Lifetime Achievement Award by the American Society for Microbiology. Curtiss received his bachelor's of science degree from Cornell University and doctorate from The University of Chicago. Curtiss is a member of NAS and fellow of the American Academy of Microbiology and AAAS.



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P. Daniel Dapkus, Ph.D., is W. M. Keck Distinguished Professor of engineering at the University of Southern California. He serves as the director of the Center for Energy Nanoscience and Technology. He has received several awards for his innovations in photonic materials and devices including the John Tyndall Award of OSA and IEEE, IEEE David Sarnoff Award, Heinrich Welker Award of the ISCS, Nick Holonyak, Jr. Award of OSA, IEEE Photonics Society Engineering Achievement Award and has been an IEEE Photonics Society Distinguished Lecturer. He holds six U.S. and four foreign patents. He was a founder of E2O and T-Networks, startup companies in the optical communications industry. He has published more than 500 scientific articles, and three book chapters. Dapkus is a member of NAE and a fellow of IEEE, APS, OSA, and AAAS.



John G. Daugman | *University of Cambridge*

John G. Daugman, Ph.D., is professor of computer vision and pattern recognition at the University of Cambridge. He received his degrees at Harvard University and has held faculty appointments at Harvard, the University of Groningen, and the Tokyo Institute of Technology. Daugman is the inventor of automatic recognition of persons by their iris patterns, and his algorithms are the core of all public operational deployments of such technology. One major current deployment involves the enrollment of the entire population of India (1.2 billion persons) by end of 2016 in a new national ID system. Awards for his work include the Information Technology Award, Medal of the British Computer Society, and the Order of the British Empire. Daugman is a fellow of the Royal Academy of Engineering, Institute of Mathematics and its Applications, British Computer Society, and has been inducted into NIHF.



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Mark E. Davis, Ph.D., is Warren and Katharine Schlinger Professor of Chemical Engineering at the California Institute of Technology. Davis has made significant innovations in molecular sieves that are used for adsorption and catalysis applications and in polymer-based materials for the delivery of therapeutic agents. He is the recipient of numerous awards including the NSF Alan T. Waterman Award and Prince of Asturias Award for Technical and Scientific Research. Davis is an inventor on over 75 U.S. patents. Thirty of his U.S. patents have been licensed to three companies, and he is the founder of three startup companies. Davis has published greater than 425 scientific papers and two textbooks. He has served as an editor for three journals and is on the editorial board of seven other journals. He is a member of all three sections of the U.S. National Academies (NAE, NAS, NAM).



Robert C. Dean, Jr. | *Dartmouth College*

Robert C. Dean, Jr., Sc.D., is professor emeritus of engineering at the Thayer School of Engineering at Dartmouth College. Dean is the founder of 10 companies based on his research and innovations including Creare Inc., Hypertherm Inc., Creare Innovations Inc., Verax Inc., Synosys Inc., Synergy Research Corporation and Synergy Innovations, Inc., SIMBEX LLC, NanoComp Technologies, Inc., and Synticos LLC. He is a member of NAE and fellow of ASME. In 1996, the U.S. Small Business Administration awarded Dean one of the first Tibbett's Pioneer Awards in recognition of his contributions to the Small Business Innovation Research Program. In 1996, he was awarded the ASME Gold Medal for his technical accomplishments, inspiration of fellow engineers and many contributions to the engineering profession. In 1998, The New Hampshire High Technology Council awarded Dean the Entrepreneur of the Year Award. He holds 28 U.S. and foreign patents licensed to eight companies. He is now working on creating materials-working processes and products and accident-prevention aids for the elderly.



Atam P. Dhawan | *New Jersey Institute of Technology*

Atam P. Dhawan, Ph.D., is Distinguished Professor and vice provost for research at the New Jersey Institute of Technology. Dhawan's inventions in multispectral transillumination technology have led to the commercialization of products for clinical examination and administering treatment of spider veins, and detection of skin cancers, through two companies. He is the recipient of IEEE Engineering in Medicine and Biology Society (EMBS) Early Career Achievement Award, EMBS Distinguished Lecturer Award, Sigma-Xi Young Investigator Award, and Martin Epstein Award. He holds five patents, and has published five books and more than 210 research articles in journals, conferences and edited books. He is the founding editor-in-chief of *IEEE Journal of Translational Engineering in Health and Medicine* and has chaired several conferences in biomedical engineering, point-of-care technologies and health care innovation. Dhawan is a fellow of AIMBE and IEEE.



Duane B. Dimos | *The University of Texas at Arlington*

Duane B. Dimos, Ph.D., is vice president for research at The University of Texas at Arlington (UTA). Before joining UTA, Dimos served in Sandia National Laboratories in a wide variety of leadership and management positions, including acting vice president of the Science and Technology Division. Dimos is an expert in materials science and engineering, specializing in processing and properties of electronic ceramics. He has published more than 140 technical papers, edited four proceedings volumes and holds 11 patents. He established four cooperative R&D agreements with industry partners and founded the National Institute for Nano-Engineering (NINE), a lab-industry-university partnership, which received a "Deal of Distinction" award from the Licensing Executives Society. He is a fellow of MRS, AAAS and the ACerS. He earned his doctorate in materials science and engineering from Cornell University.



David M. Eddy | *University of South Florida*

David M. Eddy, M.D., Ph.D., is professor in the Institute for Advanced Discovery & Innovation at the University of South Florida and a physician, mathematician, and health care analyst. He has done seminal work in mathematical modeling of diseases, clinical practice guidelines, and evidence-based medicine. According to NAM (of which he is a member) “he wrote the seminal paper on the role of guidelines in medical decision-making, the first Markov model applied to clinical problems, and the original criteria for coverage decisions; he was the first to use and publish the term ‘evidence-based.’” Eddy was a professor at Stanford University and the J. Alexander McMahon Professor at Duke University. He is author of five books and more than 100 papers, including a series of 28 in the *Journal of the American Medical Association*. He has received 10 national and international awards in several fields, and awards from five organizations for lifetime achievement. In 2012, he was ranked the 13th most innovative person in health care by *Future Health 100*. He founded Archimedes Inc., and holds two U.S. patents.



Nader Engheta | *University of Pennsylvania*

Nader Engheta, Ph.D., is H. Nedwill Ramsey Professor at University of Pennsylvania in Philadelphia, with diverse research activities in electrodynamics, optics, nanophotonics, graphene optics and light-matter interaction. He has pioneered the fields of extreme-parameter metamaterials and optical nanocircuits (metatronics). He and his group have introduced and developed various game-changing topical areas and trailblazing paradigms in optical sciences and technology. His numerous honors include the 2015 SPIE Gold Medal, 2015 National Security Science and Engineering Faculty Fellow (NSSEFF) award from the U.S. DoD, the 2014 URSI Balthasar van der Pol Gold Medal, and the 2012 IEEE Electromagnetics Award. He holds 22 U.S. and foreign patents in areas of optical materials, electromagnetic structures, and imaging and sensing. *Scientific American Magazine* selected him as one of the 50 leaders in science and technology in 2006. Engheta is a fellow of IEEE, APS, OSA, SPIE, MRS, and AAAS.



Antonio F. Facchetti | *Northwestern University*

Antonio F. Facchetti, Ph.D., is adjunct professor of chemistry at Northwestern University and King Abdulaziz University, CSO of Polyera Corp. and scientific advisor of Raynergy Teck. Facchetti has made important contributions to the chemistry and engineering of unconventional organic, inorganic, and hybrid opto-electronic materials and devices. He is the recipient of the ACS Award for Creative Invention, Italian Chemical Society Research Prize, team IDTechEx Printed Electronics Europe Award, and corporate Flextech Award. He was selected among the *Top 100 Materials Scientists of the Past Decade* and recognized as a “Highly Cited Scientist” by Thomson Reuters. He holds more than 80 U.S. patents and more than 40 foreign patents that have been licensed to five companies. He is the co-founder of Polyera Corporation. He has published more than 350 articles, one book, 11 book chapters and serves as editor for six peer-reviewed journals. Facchetti is a fellow of AAAS, MRS, Kavli Foundation, and RSC.



Rudolf Faust | *University of Massachusetts Lowell*

Rudolf Faust, Ph.D., is professor of chemistry at the University of Massachusetts Lowell. Faust pioneered living carbocationic polymerization of hydrocarbon olefins and has made important contributions in macromolecular engineering, i.e., the preparation of well-defined polymers with controlled architecture, molecular weight, molecular weight distribution and end-functionalities. He is the recipient of the Mark Milkovich Memorial Lecture Award (University of Akron, 2006) and the Chemistry of Thermoplastic Elastomers Award (Rubber Division, ACS, 2010). He holds 32 U.S. patents of which 17 have been licensed to three companies. He has published more than 260 articles, five book chapters/books and serves on the editorial board of *Polymer Bulletin* and the *Journal of Macromolecular Science*. Faust is a member of the ACS.



Robert E. Fischell | *University of Maryland*

Robert E. Fischell, Sc.D. honorary, received his bachelor's degree in mechanical engineering from Duke University and master of science and doctor of science (honorary) degrees from the University of Maryland. Fischell has formed 15 private companies that licensed his patents on medical devices including heart pacemakers, defibrillators, coronary stents, and devices to treat epilepsy and migraine headaches. He is a prolific inventor with over 200 issued U.S. and foreign patents many of which started these medical device companies. He is a trustee of the University of Maryland, College Park Foundation, a member of the board of visitors for the College of Engineering, and the board of visitors of the University of Maryland School of Medicine and a director of the University System of Maryland. Fischell's honors include Inventor of the Year for the USA in 1984, election to NAE in 1996, and several medals for distinguished accomplishments in science, engineering and innovation.



Christodoulos A. Floudas | *Texas A&M University*

Christodoulos A. Floudas, Ph.D., is director of the Texas A&M Energy Institute and the Erle Nye '59 Chair Professor for Engineering Excellence at Texas A&M University. He is a world-renowned authority in mathematical modeling and optimization of complex systems. The recipient of numerous awards and honors for teaching and research, he presented the P.V. Danckwerts Memorial Lecture in 2015 and was named a Thomson Reuters Highly Cited Researcher in 2015 and 2014 for the 11 years between 2002-2012. He also received the Constantin Caratheodory Prize in 2015. He holds 41 U.S. patents, has published 322 journal articles, has an ISI Web of Science h-index of 61 with 11,600 citations. He serves on the editorial board of 10 peer-reviewed journals. Floudas was elected to the NAE in 2011 and was inducted as a corresponding member of the Academy of Athens in 2015.



Gabor Forgacs | *University of Missouri*

Gabor Forgacs, Ph.D., is George H. Vineyard Professor of biological physics at the University of Missouri-Columbia. Forgacs is an expert in biological physics and tissue engineering and inventor of bio-printing and associated tissue and organ fabrication technologies. He is, among others the recipient of the AutoVision Innovation Award by Volkswagen and was listed as the *100 Most Innovative People in Business* in 2010. He holds six U.S. patents and three foreign patents licensed to two companies. He is the founder of two startup companies, Organovo, Inc. and Modern Meadow, Inc. of which he is the chief scientific officer. Both companies utilize innovative tissue engineering technologies developed by his research group. He has published 147 articles, five books and eight book chapters and currently serves on the editorial board for the peer-reviewed journals, *Biofabrication* and *Frontiers in Physiology*. Forgacs is a fellow of APS.



Scott E. Fraser | *University of Southern California*

Scott E. Fraser, Ph.D., is Provost Professor at the University of Southern California's (USC) Dorn-sife College of Letters, Arts and Sciences, Children's Hospital Los Angeles, Keck School of Medicine of USC and USC Viterbi School of Engineering. As USC's Elizabeth Garrett Chair of Convergent Bioscience, he applies the tools of chemistry, engineering and physics to problems in biology and medicine. He has published 215 peer-reviewed scientific papers and has served as an editor or board member for *Developmental Biology*, *Development*, *Molecular Biology of the Cell*, *Neuroimage*, and ARVO's *Translational Vision Science and Technology*. He has received 63 U.S. patents for inventions in fields ranging from imaging technologies to molecular sensors and medical diagnostics. He has actively fostered translation through licensing and co-founding companies such as Clinical Micro Sensors and Varocto. Fraser is a fellow of the European Academy of Science, AAAS and AAA&S.



Jean M.J. Fréchet | *King Abdullah University of Science and Technology*

Jean M.J. Fréchet, Ph.D., is vice president for research at King Abdullah University of Science and Technology (KAUST). Fréchet is a chemist and chemical engineer known for his contributions to materials science, modern electronics and biotechnology. He holds about 100 patents and is best known for having developed chemically amplified photoresists—ubiquitous in the fabrication of the microprocessors and memory chips found in many consumer electronics; other notable achievements include novel separation media and polymers for therapeutic uses. The author of over 800 scientific papers with nearly 90,000 citations, he serves as associate editor of the *Journal of the American Chemical Society*, is the recipient of the Japan Prize, Erasmus Medal, and multiple recognitions from the ACS, including the Arthur C. Cope Award, and awards in polymer chemistry and applied polymer science. Fréchet is a member of NAS and NAE.



Richard H. Frenkiel | *Rutgers, The State University of New Jersey*

Richard H. Frenkiel is senior advisor at WINLAB, the wireless research laboratory at Rutgers University. At Bell Laboratories, Frenkiel worked on AMPS, the world's first cellular system, and was later responsible for the design and manufacture of cordless phones. For his contributions to the theory, design and deployment of cellular systems, Frenkiel received the Alexander Graham Bell Medal (1987), National Medal of Technology (1994) and Draper Prize (2013). After retiring from Bell Labs in 1993, Frenkiel joined WINLAB, at Rutgers University, where he also created a popular course on technology, economics and politics in the cellular industry. Frenkiel was mayor of Manalapan, New Jersey, in 1999. He is a fellow of Bell Labs and IEEE, and member of NAE.



Sanjiv S. Gambhir | *Stanford University*

Sanjiv S. Gambhir, M.D., Ph.D., is Virginia & D.K. Ludwig Professor of Cancer Research and the chair of radiology at Stanford University School of Medicine. He heads the Canary Center at Stanford for Cancer Early Detection and directs the Molecular Imaging Program at Stanford. He received his master's and doctoral degrees from the UCLA medical scientist training program. He has over 575 publications in the field, and over 40 patents pending or granted. His lab's intellectual property has been licensed by multiple companies and he has co-founded several start-ups. An internationally recognized researcher in molecular imaging with over \$90 million of NIH funding as the principal investigator, his lab focuses on interrogating fundamental molecular events in living subjects for cancer detection and management. He was elected to the NAM in 2008 and as a fellow of AAAS in 2014.



Shubhra Gangopadhyay | *University of Missouri*

Shubhra Gangopadhyay, Ph.D., is LaPierre Endowed Chair Professor and co-director of the Center for Nano/Micro Systems and Nanotechnology at the University of Missouri-Columbia. Gangopadhyay has worked collaboratively with many scientists and engineers domestically and internationally to stimulate novel, innovative and potentially high-risk research and education projects in nano/biotechnology, energy and nanoelectronics. She is the recipient of Nanotech Briefs' nano50 2007 Technology Award for nanoengineered superthermite, shock wave and energy generation. She holds 14 U.S. patents, many of which have been licensed to a number of companies. She is the founder of Amorphous Carbon Solutions, Inc., NEMS and MEMS Works, LLC, and Nanos Technologies, LLC. She has published 155 journal articles and serves on the editorial board for *The Journal of Materials Science: Materials in Electronics*. Gangopadhyay is a fellow of APS.



Sir Andre K. Geim | *The University of Manchester*

Sir Andre K. Geim, Ph.D., is Regius and Royal Society Research Professor at The University of Manchester. Awarded the 2010 Nobel Prize for his work on graphene, a one-atom-thick material made of carbon, he has received numerous international awards and distinctions, including medals from the Royal Society and NAS, and holds honorary doctorates and professorships from around the world. Thomson Reuters repeatedly named him among the world's most active scientists and attributed to him three new research fronts – diamagnetic levitation, gecko tape and graphene. Twenty of his papers were cited more than 1,000 times, three of them more than 10,000 times which has placed two of the latter among 100 most cited research papers in history. He was awarded the 2000 Ig Nobel Prize for his work on levitation, becoming the first and only recipient of both Nobel and Ig Nobel Prizes. He has also received both Dutch and British knighthoods.



George Georgiou | *The University of Texas at Austin*

George Georgiou, Ph.D., is professor in the Cockrell School's McKetta Department of Chemical Engineering, department of biomedical engineering, and in the department of molecular biosciences in The University of Texas at Austin's College of Natural Sciences. He also holds the Laura Jennings Turner Chair in Engineering. His research is focused on the discovery and pre-clinical development of antibody and enzyme therapeutics, the development of tools for the understanding of serological and B cell antibody repertoire and on the high-resolution evaluation of humoral responses to vaccines for seasonal influenza and other diseases. Georgiou is a member the NAM, NAE and AAA&S. He has co-authored more than 230 referred publications and holds 82 issued and pending U.S. patents. Georgiou founded GGMJD LLC in 1999, Aeglea Biotherapeutics in 2013 and Kyn Therapeutics in 2015. In 2014, Georgiou was named UT Austin's Inventor of the Year. In 2013, Georgiou was named one of the top 20 translational researchers by *Nature Biotechnology*.



John C. Gore | *Vanderbilt University*

John C. Gore, Ph.D., holds the Hertha Ramsey Cress Chair in Medicine and is university professor of radiology and radiological sciences, biomedical engineering, molecular physiology and biophysics, and physics and astronomy at Vanderbilt University, and director of the Vanderbilt University Institute of Imaging Science. Gore has made significant contributions to the development and applications of biomedical imaging, especially magnetic resonance imaging, and also is the inventor of novel forms of radiation dosimetry and optical tomography. He is a recipient of the Gold Medal of the International Society for Magnetic Resonance in Medicine (ISMRM), has published over 600 original research articles, and serves as the editor-in-chief of the journal *Magnetic Resonance Imaging*. Gore is a member of NAE, an elected fellow of AAAS, APS, and ISMRM, and a Distinguished Investigator of the Academy of Radiology Research.



Venu Govindaraju | *University at Buffalo, The State University of New York*

Venu Govindaraju, Ph.D., is vice president for research and economic development, SUNY Distinguished Professor of computer science and engineering, and director for the Center for Unified Biometrics and Sensors at the University at Buffalo. Govindaraju is a globally recognized authority in pattern recognition with patents spanning multiple application areas such as handwriting recognition and biometrics. The technology developed by his team for reading handwritten addresses for the U.S. Postal Service, widely viewed as a trailblazing success story for machine learning, was also licensed to UK's Royal Mail and Australia Post. He is the recipient of prestigious awards such as the IEEE Technical Achievement Award and ICDAR/IAPR Outstanding Achievements Award. His prolific publishing record includes over 400 refereed publications and five edited books. He is a fellow of ACM, IEEE, AAAS, SPIE and IAPR. He currently chairs the IEEE Biometrics Council, and is on the editorial boards of many top journals.



Ali Hajimiri | *California Institute of Technology*

Ali Hajimiri, Ph.D., is Thomas G. Myers Professor and executive officer of electrical engineering at California Institute of Technology. He does active research in the areas of integrated circuits, photonics, medical diagnostic and therapeutic devices. He holds 78 issued U.S. patents that have been licensed to several companies. He is the founder of Axiom Microdevices Inc., which mass produced and shipped more than 250 million units of the world's first fully-integrated RF CMOS power amplifier for cell phones. He has published more than 180 peer-reviewed articles and eight books and book chapters, with more than thirteen thousand citations. He has served on numerous editorial boards, technical program panels, and committees and has been named a distinguished lecturer of both the IEEE solid-state and microwave societies. Hajimiri is a fellow of IEEE, winner of the Microwave Prize, National Blavatnik Award finalist, and was selected to the TR35 world top innovators list.



Naomi J. Halas | *Rice University*

Naomi J. Halas, Ph.D., D.Sc., is Stanley C. Moore Professor in Electrical and Computer Engineering and professor of chemistry, physics and astronomy, bioengineering, and founding director of the Smalley-Curl Institute. Halas is a pioneering researcher in the field of plasmonics, creating the concept of the “tunable plasmon” and inventing a family of nanoparticles with resonances spanning the visible and infrared regions of the spectrum. She pursues studies of plasmonic systems and applications in biomedicine, optoelectronics, chemical sensing, photocatalysis, and solar energy, with ‘solar steam’ technology. She is a recipient of the APS Frank Isakson Prize and R. W. Wood Prize. She is a fellow of six professional societies and member of NAE, NAS, AAA&S, and AAAS. She is a member of the editorial advisory board of *Chemical Physics Letters* and *Laser and Photonics Reviews* and an associate editor of *Nano Letters*.



Andrew D. Hamilton | *New York University*

Andrew D. Hamilton, Ph.D., was named the 16th president of New York University in March 2015. He most recently served as the vice chancellor of Oxford University, the university's senior officer, after an academic career that took him from Princeton to the University of Pittsburgh and then to Yale, where he was named provost. In addition to his record as an academic leader, he is a noted, award-winning, widely published chemist and continues his scholarly work, including an active research laboratory. Hamilton's research lies at the intersection of organic and biologic chemistry. He received his doctoral degree from Cambridge University, his master's degree from the University of British Columbia, and his bachelor's degree from Exeter University. He is a fellow of the Royal Society, member of AAA&S and a named inventor on 24 issued U.S. patents.



Wayne W. Hanna | *University of Georgia*

Wayne W. Hanna, Ph.D., is part-time professor of crop and soil sciences at the University of Georgia (UGA). Hanna has made significant contributions to innovation in the scientific and agricultural communities in the areas of turfgrass, forage and ornamental crops. He was the recipient of the USDA Distinguished Service Award and the ARS Outstanding Scientist of the Year. Hanna was also named Inventor of the Year by the UGA Research Foundation and was inducted as a member of the Georgia Agricultural Hall of Fame. He holds 16 patents, three pending patents, three foreign patents, six plant variety protection certificates, four trademarks, and 13 foreign trademarks that have resulted in approximately 235 intellectual property related agreements with more than 130 different companies. Hanna has authored or co-authored over 660 scientific papers. Hanna is a fellow of the American Society of Agronomy and Crop Science Society of America.



Sherry L. Harbin | *Purdue University*

Sherry L. Harbin, Ph.D., is professor of biomedical engineering and basic medical sciences at Purdue University. Harbin is a pioneer in the tissue engineering and regeneration arena with contributions to decellularized tissue graft technology and more recently the first soluble collagens that are standardized based upon their fibril-matrix forming capacities. She was named to Purdue's Innovator Hall of Fame in 2014 and the recipient of the 2015 Outstanding Commercialization Award for Purdue faculty. She holds 24 U.S. patents and 72 foreign patents that have been licensed to more than four companies. Most recently, she founded GeniPhys, a life science startup focused on translating her collagen polymer and multi-scale tissue engineering technologies for creation of off-the-shelf tissues, injectable self-assembling tissues, and designer bio-constructive material and tissue implants. She has published more than 50 peer-reviewed articles and book chapters as well as spear-headed an ASTM International standard guidance document for polymerizable collagens.



Florence P. Haseltine | *National Institutes of Health*

Florence P. Haseltine, Ph.D., M.D., is Emerita Scientist at the National Institutes of Health. Haseltine is a molecular biologist and obstetrician gynecologist. A member of NAM and fellow of AAAS, she has been cited for her work in medical advocacy, notably as founder of the Society for Women's Health Research (SWHR) in 1990. Her patents include one for protective wheelchair containers and another for secure internet commerce. In 1995, she founded Haseltine Systems, which manufactures and sells the containers. As a pioneer in women's health research, she was the founding editor of the *Journal of Women's Health*. Her scholarly publications are in the area of sex differentiation, and she also wrote *Woman Doctor*, a best-selling novel about her medical training published in 1977. Since achieving emerita status, Haseltine works with scientific organizations developing databases and digital applications to disseminate their important work.



Charlotte A.E. Hauser | *King Abdullah University of Science and Technology*

Charlotte A.E. Hauser, Ph.D., is professor of bioscience at King Abdullah University of Science and Technology (KAUST). Hauser developed the first truly human recombinant coagulation factor VIII (hFVIII) approved by FDA, EMEA and other regulatory authorities. This recombinant factor, available under the trade name of NUWIQ®, is the newest therapeutic for hFVIII replacement. Her invention of ultrashort peptide-based wound healing nanogels ranked first on the innovation list of *Asian Biotech Innovations to Watch in 2015*. Her honors and awards include awards from the German Federal Ministry of Science and Technology, France's Société des Amis des Sciences, and the Bavarian Research Foundation. She holds 17 U.S. patents, several of which are owned or licensed to Octapharma, 3-D Matrix Co. Ltd. and PepNano. Hauser was also founder, partner and CEO of Octagene, Germany. Hauser is an AIMBE Fellow and member of the German and American Chemical Societies, among others.



Craig J. Hawker | *University of California, Santa Barbara*

Craig J. Hawker, Ph.D., is Ruth and Alan J. Heeger Professor in Interdisciplinary Studies at the University of California, Santa Barbara. Hawker is internationally recognized for his successful combination of organic chemistry and polymer synthesis to create innovative materials with new properties and applications. Numerous companies across the globe use and apply the synthetic strategies that Hawker has developed. The author or co-author of more than 450 publications and 50 patents. Hawker is the recipient of numerous honors and awards, including the Centenary Prize from the Royal Society of Chemistry and 2013 ACS Award in Polymer Chemistry. He is the co-founder and founding scientific advisor to six startup companies and his patents have been licensed to over 20 companies world-wide. Hawker is a fellow of the Royal Society, ACS and AAAS.



M. Frederick Hawthorne | *University of Missouri*

M. Frederick Hawthorne, Ph.D., is director of the International Institute of Nano and Molecular Medicine at the University of Missouri-Columbia. Hawthorne is globally recognized as a pioneer in boron chemistry, and most notably for his work with boron neutron capture therapy for cancer. He is the recipient of the 2011 National Medal of Science, American Chemical Society's 2009 Priestley Medal and 2003 King Faisal International Prize for Science. He holds 35 U.S. patents and has published 565 articles, two books and 11 book chapters. He served for two years as the associate editor and 31 years as editor-in-chief for the ACS's journal, *Inorganic Chemistry*. Hawthorne is a fellow of AAAS and ACS, and a member of NAS and AAA&S.



Barton F. Haynes | *Duke University*

Barton F. Haynes, M.D., is professor of medicine and immunology and director of the Human Vaccine Institute at Duke University. Haynes is a thought leader in the fields of human host-pathogen interactions and immune reconstitution, and is a pioneer in development of monoclonal antibodies for human immune cells and in design of experimental vaccines for HIV. His honors include the Arthritis Foundation Lee Howley Prize, American College of Rheumatology Distinguished Investigator Award; Infectious Disease Society of America Alexander Fleming Award for Lifetime Achievement; and American Association of Immunology Ralph Steinman Award for Achievement in Human Immunology Research. He holds 30 U.S. patents, and has licensed 24 monoclonal antibodies to 26 companies. His CD7 mAb is used world-wide for the phenotypic analysis of T cell malignancies. Haynes is a member of AAP and NAM, and fellow of AAA&S.



Richard F. Heck | *University of Delaware*

Richard F. Heck, Ph.D., who died after his election to NAI Fellowship in late 2015, spent nearly two decades of his career on the faculty at the University of Delaware where he rose to the rank of Willis F. Harrington Professor. Heck was highly noted for the discovery and development of the Heck reaction, which uses palladium to catalyze organic chemical reactions that couple aryl halides with alkenes. The Heck reaction has been subject to numerous scientific review articles, including a 600 page monograph dedicated to this subject published in 2009. He shared the 2010 Nobel Prize in Chemistry for creating techniques to synthesize complex carbon molecules that are now widely used in developing medicine, electronics and other products. He was recognized by awards including the Wallace H. Carothers Award (2005) and Herbert C. Brown Award (2006) for Creative Research in Synthetic Methods from ACS. Heck is a named inventor on four issued U.S. patents.



Andrew B. Holmes | *The University of Melbourne*

Andrew B. Holmes, Ph.D., is Laureate Professor Emeritus of chemistry at The University of Melbourne and emeritus professor of organic and polymer chemistry at Imperial College. Holmes is distinguished for his contributions to organic electronic semiconductors, in particular the development of polymer light emitting devices and organic and polymeric photovoltaic devices. He has also made significant contributions in using affinity probes to study intracellular signaling. He is co-recipient of the Descartes Prize of the European Commission and Royal Medal of the Royal Society. He holds 20 U.S. patents and 25 foreign patents many of which have been licensed to various companies. He is the co-founder of Cambridge Display Technology. He has published over 520 peer-reviewed papers and serves as associate editor for *Organic Letters*. Holmes is a fellow (and the current president) of the Australian Academy of Science, Australian Academy of Technology and Engineering and Royal Society.



Rush D. Holt | *American Association for the Advancement of Science*

Rush D. Holt, Ph.D., is chief executive officer for AAAS. Holt served 16 years as a member of the U.S. House of Representatives, representing New Jersey's 12th Congressional District. He served as a senior member of the Committee on Natural Resources and the Committee on Education and the Workforce. Holt established a long track record of advocacy for federal investment in R&D, science education and innovation, served on the National Commission on the Teaching of Mathematics and Science, and founded the Congressional Research and Development Caucus. From 1987 to 1998, Holt was assistant director of the Princeton University Plasma Physics Laboratory, a U.S. DOE national lab. He holds one patent for a method of maintaining a correct density gradient in a non-convecting solar pond. He is the past recipient of two of AAAS' highest honors: the William D. Carey Lectureship Award (2005) and Philip Hauge Abelson Award (2010). He is currently the executive publisher of the *Science* family of journals. He is an elected fellow of AAAS, APS and Sigma Xi.



H. Robert Horvitz | *Massachusetts Institute of Technology*

H. Robert Horvitz, Ph.D., is professor of biology at the Massachusetts Institute of Technology and Investigator of the Howard Hughes Medical Institute. Horvitz's research has helped define evolutionarily conserved molecular genetic pathways important in human biology and human disease, including the pathway responsible for programmed cell death, or apoptosis. He is the recipient of many honors and awards, including the 2002 Nobel Prize in Physiology or Medicine. Horvitz holds numerous patents, has co-founded four biotechnology companies (NemaPharm, Idun, Epizyme, Mitobridge) and has advised pharmaceutical and venture capital companies. He has published many scientific articles and one book and served on many editorial boards. Horvitz is a member of NAS, NAM, American Philosophical Society and Royal Society of London, and is a fellow of AAA&S and the American Academy of Microbiology.



Chenming C. Hu | *University of California, Berkeley*

Chenming C. Hu, Ph.D., is Taiwan Semiconductor Manufacturing Company Distinguished Professor Emeritus at University of California, Berkeley. He led the development of FinFET, the 3D transistor that since 2011 has revolutionized computer chips, allowing semiconductor industry to create denser, faster and more energy frugal products. He also led the development of the industry standard transistor model (BSIM) that has been used worldwide since 1997 to design integrated circuits worth hundreds of billions of dollars. He is the recipient of the IEEE Morton Award, Nishizawa Medal, Asian American Engineer of the Year award, and Berkeley Distinguished Teaching Award, which is UC Berkeley's highest honor for teaching. He founded Celestry Design Technology. He holds 130 U.S. patents and has published five books and 900 research articles. Hu is a member of NAE, a foreign member of the Chinese Academy of Sciences and a life fellow of IEEE.



Leon D. Iasemidis | *Louisiana Tech University*

Leon D. Iasemidis, Ph.D., is professor and the Rhodes Eminent Scholar Chair of Biomedical Engineering, and director of the Center for Biomedical Engineering and Rehabilitation Science at Louisiana Tech University. Iasemidis is recognized as a world expert in nonlinear dynamics, the detection, prediction and control of crises in the brain and is one of the founders of the field of epileptic seizure prediction and a co-founder of two startup companies. His research and over 100 peer-reviewed publications, 14 awarded and four licensed regular and provisional patents and invited talks have stimulated an international interest and research in closed-loop neuromodulation. Iasemidis' discoveries have been highlighted in multiple forums, including *the New York Times*, *Discover Magazine*, *The Teaching Company*, and AAAS. Iasemidis is a senior member of IEEE and fellow of AIMBE.



Mir Imran | *University of Pittsburgh*

Mir Imran is adjunct professor of bioengineering at University of Pittsburgh. Imran began his career with his pioneering contributions to the first FDA-approved implantable defibrillator (ICD) with Intec Systems. Intec was acquired by Eli Lilly in 1985. Since then, Imran has developed novel therapies for a number of chronic diseases, including epilepsy, anemia, obesity, chronic pain, stroke, diabetes, and several cardiovascular conditions. Many of these therapies have become the standard of care, improving or saving the lives of millions of patients. He holds more than 450 issued or pending U.S. patents and several hundred foreign patents that have been licensed to the more than 25 companies that he has started over the past 37 years. Fifteen of these companies have been acquired by large companies. Imran is a fellow of AIMBE and was inducted in the Rutgers University Hall of Distinguished Alumni.



Donald E. Ingber | *Harvard University*

Donald E. Ingber, M.D., Ph.D., is founding director of the Wyss Institute for Biologically Inspired Engineering at Harvard University, Judah Folkman Professor of Vascular Biology at Harvard Medical School and Boston Children's Hospital, and professor of bioengineering at the Harvard School of Engineering and Applied Sciences. He received his bachelor's, masters' and doctoral degrees from Yale University. Ingber has made major contributions to cell biology, mechanobiology, bioengineering, tissue engineering, nanobiotechnology, angiogenesis, cancer, medical device development, and translational medicine. He has authored more than 400 publications and 125 patents that have been licensed to multiple companies, founded four startups, presented more than 450 presentations world-wide, and received numerous honors in a broad range of disciplines, including membership in the NAM and AIMBE.



Chennupati Jagadish | *The Australian National University*

Chennupati Jagadish, Ph.D., is Distinguished Professor of physics at The Australian National University. Jagadish has made pioneering contributions to semiconductor optoelectronics and nanotechnology and provided broader national and international leadership to science and engineering. He has received the IEEE Nanotechnology Pioneer Award, IEEE Photonics Society Engineering Achievement Award, Boas Medal, Peter Baume Award, Quantum Device Award, IEEE Third Millennium Medal, and Electronics and Photonics Society Award of the Electrochemical Society. He holds five U.S. patents and co-founded Acton Lasers. He has published 550 journal papers, co-authored one book, co-edited eight books, co-edited 12 conference proceedings, authored 11 book chapters and serves as an editor/associate editor of six journals, three book series and on editorial boards of 19 journals. Jagadish is a fellow of the Australian Academy of Science, Australian Academy of Technological Sciences and Engineering, IEEE, APS, MRS, AAAS, OSA and SPIE, among others.



Anil K. Jain | *Michigan State University*

Anil K. Jain, Ph.D., is University Distinguished Professor of computer science and engineering at Michigan State University. He received his bachelor's degree from the Indian Institute of Technology, Kanpur and master's and doctoral degrees from The Ohio State University. His research interests include pattern recognition, computer vision and biometric recognition. He received Guggenheim, Humboldt Research, Fulbright, IEEE W. Wallace McDowell, and IAPR King-Sun Fu awards and is a fellow of ACM, IEEE, AAAS, IAPR and SPIE. Jain has been assigned six U.S. patents on fingerprint recognition (licensed to IBM) and two Korean patents on video surveillance. His research has resulted in technologies for tattoo image retrieval, facial sketch matching, unconstrained face recognition and fingerprint obfuscation that have been licensed to Morpho and NEC Corporation. He is a member of the Forensic Science Standards Board and previously served as member of the Defense Science Board.



Kristina M. Johnson | *University of Colorado Boulder*

Kristina M. Johnson, Ph.D., is founder, chairman and CEO of Enduring Hydro, LLC. She served as undersecretary at the U.S. DOE, as provost and senior vice president for academic affairs at Johns Hopkins University, as dean of the Pratt School of Engineering at Duke University and as professor at University of Colorado Boulder. She is an inventor and entrepreneur in liquid crystal optoelectronic devices and high definition displays. She is the recipient of many accolades including NSF Presidential Young Investigator (1985), Fulbright Faculty Scholar (1991), Dennis Gabor Prize (1993) and John Fritz Medal (2008). She co-founded several companies, including SouthEast Techninventures, Cube Hydro Partners and ColorLink, Inc., which was sold to RealD, and is responsible for 3D effects in movies such as *Avatar*, and 300 others. Johnson has published 147 refereed papers and proceedings and holds 43 U.S. patents. She is an inductee of Women in Technology International Hall of Fame (2003), Colorado Women's Hall of Fame (2014) and NIH (2015) and is a fellow of OSA, IEEE, SPIE and AAAS.



Joseph S. Kalinowski | *East Carolina University*

Joseph S. Kalinowski, Ph.D., is professor of communication sciences and disorders at East Carolina University. He is a named inventor on seven U.S. and 18 foreign patents, of which three have been licensed to two university startup companies. His pivotal patents relate to treatments for stuttering and other fluency disorders. Janus Development Group has licensed these patents for developing products and services for the treatment of stuttering and fluency disorders related to Parkinson's disease. Another patent is the subject of new computer applications to assist a subset of stutterers who struggle with silent block. Kalinowski served as technical advisor to Janus for commercialization of the SpeechEasy® fluency aid for the treatment of stuttering and he has advised developers of the computer applications for silent blocks. He is widely published in the field of fluency disorders in both peer-reviewed journals and in the popular media.



Aaron V. Kaplan | *Dartmouth University*

Aaron V. Kaplan, M.D., is professor of medicine at the Geisel School of Medicine/Dartmouth-Hitchcock Medical Center. Kaplan is a practicing interventional cardiologist, inventor and entrepreneur. He has been on the founding team of a number of medical device companies including LocalMed (local drug delivery) and Perclose (femoral artery closure; acquired by Abbott). Kaplan is the founder of Tryton Medical, which has developed the first dedicated coronary stent to treat branch point lesions. Kaplan is the founding director of the Dartmouth Device Development Symposium, held annually to bring together leaders from the clinical, regulatory, manufacturing and financial communities to discuss policy impacting the medical device ecosystem. Kaplan is a fellow of The American College of Cardiology and The Society of Cardiovascular Angiography and Interventions. He serves on the editorial boards of *Cardiac Catheterization and Intervention* and *Cardiovascular Revascularization*, has authored more than 65 papers and more than 45 U.S. patents.



Usha N. Kasid | *Georgetown University*

Usha N. Kasid, Ph.D., is professor of radiation medicine and biochemistry and molecular and cellular biology, and molecular oncology at Georgetown-Lombardi Comprehensive Cancer Center. Her research is centered on the signal transduction mechanisms of tumor growth, metastasis and resistance to radiation and chemotherapies. Her research demonstrated that CRAF depletion reduces tumorigenic potential of cancer cells. This work had major impact on future definitions of the RAF family members as druggable targets in cancer therapy. Her team's work has led to the development and application of CRAF silencing nanoparticles in clinical trials. Kasid's lab has discovered new apoptotic and oncogenic molecules. They are using genome-wide screening approaches to understand how these molecules influence tumor cells. They are developing target-specific nanoparticles as tumor radiation and chemo-sensitizers. Kasid has published over 165 research articles, book chapters and abstracts. She is the first-inventor on ten issued U.S. patents on cancer causing genes and molecular-targeted delivery systems.



Kenneth W. Kinzler | *Johns Hopkins University*

Kenneth W. Kinzler, Ph.D., is professor of oncology at the Johns Hopkins University School of Medicine, co-director of the Ludwig Center at Johns Hopkins University and associate director for basic research for the Sidney Kimmel Comprehensive Cancer Center. Kinzler has contributed to the delineation of the genetic bases of several forms of inherited cancer and the identification of over a dozen driver genes for sporadic cancer. He developed novel and powerful methods for analyzing mutations and gene expression that led to major advances in cancer genomics and precision medicine in oncology. He holds 127 U.S. patents that have been licensed to over 25 companies and has participated in the founding of five companies. He has coauthored over 350 peer-reviewed articles on the molecular analyses of cancer. Kinzler is fellow of the American Association of Cancer Research Academy and a member of NAM.



Brian K. Kobilka | *Stanford University*

Brian K. Kobilka, M.D., is professor of molecular and cellular physiology, and Hélène Irwin Fagan Chair in Cardiology at Stanford University School of Medicine. Research in the Kobilka Lab focuses on the structure and mechanism of action of G protein coupled receptors (GPCRs), which constitute the largest family of receptors for hormones and neurotransmitters in the human genome. GPCRs are the largest group of targets for new therapeutics for a very broad spectrum of diseases. The Kobilka Lab developed, implemented and patented several protein engineering methods for obtaining crystal structures of GPCRs. In 2012, Kobilka was awarded the Nobel Prize in Chemistry for his work on GPCRs. He is a member of NAS, NAM, and AAA&S and is a named inventor on 17 issued U.S. patents.



Steven J. Kubisen | *The George Washington University*

Steven J. Kubisen, Ph.D., is managing director of The George Washington University (GW) Technology Commercialization Office. He is an inventor, serial entrepreneur, corporate executive and university technology commercialization executive. His career has spanned research, research management and general management for Union Carbide, Akzo, GE and Alcoa. He has founded two successful companies and has served on numerous boards. His passion for commercializing early technologies and growing entrepreneurial communities led him to university technology commercialization operations at Utah State University, Johns Hopkins University, and currently GW. At each institution, the focus on commercializing university technology through startups moved each to the top of the national rankings. Over his career, he has helped found over 35 university ventures, has five issued and four pending U.S. patents, and has commercialized over 300 new products. Kubisen has a bachelor's degree in chemistry from Cornell University and a doctorate in organic chemistry from Harvard University.



Donald W. Landry | *Columbia University*

Donald W. Landry, M.D., Ph.D., is Samuel Bard Professor and chair of medicine, director of the Division of Experimental Therapeutics and physician-in-chief at New York-Presbyterian Hospital/Columbia University Medical Center. Landry's work includes artificial enzyme approaches to cocaine, small molecule drug development, and the discovery of vasopressin deficiency syndrome in septic shock. He was awarded the Presidential Citizens Medal, the nation's second highest civilian award, at the Oval Office in 2008. He holds 25 U.S. patents, several of which have been licensed to companies from many different industries, including pharmaceuticals, medical supplies, and software. He is a co-founder of Tonix Pharmaceuticals. He has published over 125 articles, and eight book chapters. Landry was a member of the President's Council on Bioethics from 2008 to 2009; he is a member of ASCI and AAP, and is co-chairman of the Witherspoon Council on Ethics and the Integrity of Science.



Se-Jin Lee | *Johns Hopkins University*

Se-Jin Lee, M.D., Ph.D., is Michael and Ann Hankin and Partners of Brown Advisory Professor in Scientific Innovation and professor of molecular biology and genetics at Johns Hopkins University School of Medicine. Lee is best known for discovering and elucidating the functions of numerous members of the transforming growth factor- β superfamily of signaling molecules, including myostatin, which plays a critical role in regulating skeletal muscle growth and function. His work has launched intense efforts in the pharmaceutical industry to target myostatin for treatment of muscle diseases, and there are currently at least 12 phase II clinical trials underway testing myostatin inhibitors in a variety of clinical settings characterized by muscle loss. Lee is the recipient of the Rolf Luft Award and the Ho-Am Prize in Medicine. He is a named inventor on over 50 U.S. patents. Lee is a fellow of AAAS and a member of NAS.



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Sunggyu Lee, Ph.D., is Russ Ohio Research Scholar in Coal Syngas Utilization and professor of chemical and biomolecular engineering at Ohio University. Lee is an innovator and pioneer in the fields of alternative and transportation fuels, advanced coal technology, biofuels, industrial supercritical fluid technology, green chemical processes, catalysis and catalytic process engineering, polymer synthesis and processing, polymer blends and composites, and functional material development. He holds 35 U.S. patents and 180 foreign patents that have been licensed to 16 companies. He is the founder of the Sustainable Energy and Advanced Materials Laboratory. He has published 154 journal articles, 16 books, 44 book chapters and serves as editor-in-chief of the *Encyclopedia of Chemical Processing* and editor of the *Green Chemistry and Chemical Engineering* book series. Lee is an Enshrinee of the Engineering and Science Hall of Fame, fellow of AIChE, and overseas member of the National Academy of Engineering of Korea.



Robert J. Lefkowitz | *Duke University*

Robert J. Lefkowitz, M.D., is James B. Duke Professor of Medicine and professor of chemistry and biochemistry at Duke University. He received his bachelor's and master's degrees from Columbia University, clinically trained in internal medicine and cardiology at Columbia Presbyterian and Massachusetts General Hospitals, trained in research at the National Institutes of Arthritis and Metabolic Diseases and joined the Duke University faculty in 1973. He has been an Investigator of the Howard Hughes Medical Institute since 1976. He is best known for his discovery of the large family of G-protein-coupled receptor (GPCRs) and of the two families of proteins which regulate them, the G protein-coupled receptor kinases and β -arrestins. He has received more than 70 awards including the Nobel Prize in Chemistry (2012), National Medal of Science (2007), Shaw Prize in Life Sciences and Medicine (2007) and Albany Medical Center Prize in Medicine and Biomedical Research (2007). He is a member of NAS, AAA&S and NAM.



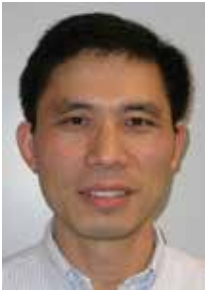
G. Douglas Letson | *H. Lee Moffitt Cancer Center & Research Institute*

G. Douglas Letson, M.D., is executive vice president of clinical affairs and physician-in-chief at Moffitt Cancer Center and is Moffitt Medical Group president. He is a professor of surgery, radiology and orthopedics at the University of South Florida, and holds the position of senior research fellow at Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences at the University of Oxford. Letson's patents are in the area of pediatric and adult limb salvage in bone and soft tissue tumors, along with development of tumor prosthesis. He has a reputation as a leader in medical education. He holds five U.S. patents that have been licensed to three companies. He serves on the board of the International Society of Limb Salvage (ISOLS). He has published over 99 articles and five books. Letson is an active member of the American Academy of Orthopedic Surgeons, American Orthopedic Association, Musculoskeletal Tumor Society, Connective Tissue Oncology Society and International Society of Limb Salvage.



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Jennifer A. Lewis, Sc.D., is Hansjörg Wyss Professor of Biologically Inspired Engineering at Harvard University. Lewis is developing new printable materials and assembly methods. Lewis and her team have developed new classes of concentrated colloidal, fugitive organic, polymer, hydrogel, and sol-gel inks for pen-on-paper, inkjet, roll-to-roll and 3D printing. She is the recipient of the NSF Presidential Faculty Fellow Award, Langmuir Lecture Award from ACS, and MRS Medal Award. She holds 10 U.S. patents and one foreign patent that have been licensed to three companies. She is the co-founder of Voxel8, Inc. and Electroninks Incorporated. She has published more than 150 papers and serves on the editorial boards of *Advanced Materials*, *Soft Matter*, and several other journals. Lewis is a member of AAA&S and a fellow of ACS, APS, and MRS.



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Guifang Li, Ph.D., is professor of optics, electrical and computer engineering and physics at the University of Central Florida. Li made seminal contributions to the field of fiber-optic communication including advanced modulation formats, digital coherent optical communication, and space-division multiplexing. He is the recipient of the NSF CAREER Award and the ONR Young Investigator Award. He holds 20 U.S. patents of which three have been licensed to two companies. He co-founded Optium based on two of his patents, which is now part of Finisar and went public in 2006. He has published over 250 journal and conference articles, and two book chapters. He served as an associate editor for *Optical Networks* and *IEEE Photonics Technology Letters*. He currently serves as a deputy editor for *Optics Express*, the overseas associate editor-in-chief of *Frontiers of Optoelectronics*, and an associate editor for the Chinese *Optics Letters*. He is a fellow of IEEE, SPIE and OSA.



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James C. Liao, Ph.D., is Parsons Foundation Professor and chair of chemical and biomolecular engineering at University of California, Los Angeles. Liao is an expert of metabolic engineering and synthetic biology for the production of biofuels and chemicals. He received numerous awards, including the Presidential Green Chemistry Challenge Award (2010), White House “Champion of Change” for Innovations in Renewable Energy (2012), ENI Award Renewable Energy Prize (2013), and NAS Award for Industrial Application of Science (2014). He holds nine U.S. patents and eight foreign patents that have been licensed to four companies. He is the founder of Easel Biotechnologies, LLC. He has published 220 articles and book chapters and serves as associate editor for *Metabolic Engineering* and *AIChE Journal*. Liao is a member of NAS, NAE and Academia Sinica in Taiwan.



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John S. Lollar III, M.D., is director of hemostasis research in the Aflac Cancer and Blood Disorders Center at Children’s Healthcare of Atlanta and Emory University; professor of pediatrics at Emory School of Medicine; and Hemophilia of Georgia, Inc. chair in hemostasis. He is pursuing methods to increase synthesis of factor VIII, to develop gene therapy for patients with hemophilia A. He cofounded biotechnology company Octagen, bought by Baxter International, to commercialize the drug Obizur, which was approved by the FDA in 2014. He received NIH’s Clinical Investigator Award, American Heart Association’s Established Investigator Award, and Bayer Hemophilia Award, among others. He holds 10 U.S. patents, published more than 75 papers, 16 reviews and book chapters, and served as a manuscript reviewer for *Biochemistry*, *Blood*, *JTH*, *Nature Biotechnology*, and *Science*. He has served as a member of the NIH, American Heart Association National Peer Review Committee (Thrombosis), editorial board for *The Hematologist*, and advisory board for the *JTH*. Lollar is a member of the American Society of Hematology, ASBMB, ACS, and International Society of Thrombosis and Haemostasis.



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Anthony M. Lowman, Ph.D., is dean of the Henry M. Rowan College of Engineering at Rowan University, and an internationally recognized researcher for his work in biomedical applications of polymeric hydrogels. Lowman has published more than 100 papers in peer-reviewed journals, has 11 issued patents and has attracted more than \$20 million in funding for his research. His many areas of innovation have been in the area of novel oral protein delivery systems and injectable biomaterials for orthopedic applications. Previously, he was the founder of Gelifex, Inc., that was developing hydrogel implants for nucleus pulposus replacement. This company was acquired by Synthes in 2004. Currently, he is the founder and CTO of ReGel Technologies. ReGel is developing novel injectable biomaterials for non-invasive treatments for intervertebral disc disease and joint reconstruction. He is a fellow of AIMBE.



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Rodney S. Markin, M.D., Ph.D., is associate vice chancellor for business development and chief technology officer at University of Nebraska Medical Center (UNMC). Markin founded and co-founded 13 businesses and was instrumental in commercializing technology in clinical laboratory automation that was invented and discovered at UNMC. He is the recipient of the Young Alumni Achievement Award, Nebraska Wesleyan University (1990), Tenure, UNMC, College of Medicine (1991), Alpha Omega Alpha (1993), First Annual Becton Dickinson Award for Significant Contributions in Medical Systems Engineering (1997), Sasake Award, The 1st Cherry Blossom Symposium (1998) and David T. Purtilo, Professor of Pathology and Microbiology, Endowed Chair (2005). He holds 17 U.S. patents and three foreign patents that have been licensed to 13 companies. He has published 175 articles, one book and 23 book chapters and serves on the editorial boards of several journals. Markin is a fellow of the National Academy of Clinical Biochemistry.



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Tobin J. Marks, Ph.D., is professor of chemistry, materials science and engineering, and applied physics at Northwestern University. He has made important contributions to invention and innovation in catalytic olefin polymerization and materials for printed electronics. He is the recipient of the U.S. National Medal of Science, the Dreyfus Prize in Chemical Science, the Prince of Asturias Science and Technology Prize, the NAS Award in Chemical Science, and 105 other awards and lectureships. He holds 233 U.S. patents that have been licensed to several major corporations. He is co-founder of the printed electronics startup company Polyera. He has published 1,195 peer-reviewed articles, books, and book chapters, and serves on the editorial boards of 10 scientific journals. Marks is a member of NAS, NAE, AAA&S, and the German and Indian Academies of Sciences.



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Dean F. Martin, Ph.D., is Emeritus Distinguished University Professor of chemistry at the University of South Florida. Martin has been interested in the management of nuisance aquatic organisms and is now focused on removal of nuisance aquatic anions by supported chelating agents. A tour speaker for the ACS, he gave invited lectures in 46 states from 1968-2009. He received the Alumni Award of Grinnell College, the Florida Award and Civic Service Award of the Florida Section (ACS), F.J. Zimmermann Award in Environmental Science, and was co-recipient with his wife, Barbara Martin, of the Medalist Award from the Florida Academy of Sciences. Martin holds two U.S. patents. He has over 450 publications, including six books and is editor emeritus of the *Florida Scientist*, having served as editor for 26 years. Martin was a USPHS Career Development Awardee from 1969-1974 and is a fellow of AAAS.



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Helen S. Mayberg, M.D., is professor of psychiatry, neurology, and radiology and the Dorothy Fuqua Chair in Psychiatric Imaging and Therapeutics at Emory University. Her research has characterized neural systems mediating major depression and its recovery, defined brain-based illness subtypes to optimize treatment selection, and introduced the first use of deep brain stimulation for treatment-resistant patients. She has more than 200 publications and is co-holder of one U.S. patent, now licensed and in clinical trials. She is the recipient of the Falcone Prize from NARSAD, Roche-Nature Medicine Senior Award for Translational Neuroscience, Robert J. and Claire Pasarow Foundation Award, Gold Medal Award from the Society of Biology Psychiatry, and Distinguished Service Award from the American Psychiatric Association. She is a member of NAM and is an active participant in a variety of advisory, editorial and scientific activities across multiple fields in the neurosciences.



Edith G. McGeer | *The University of British Columbia*

Edith G. McGeer, Ph.D., is professor emerita in the faculty of medicine at The University of British Columbia. She worked for the DuPont Company in Wilmington, Del., winning three patents and a citation from the Delaware section of ACS before moving with her husband to Vancouver when he entered UBC's medical school. She has served on the editorial boards of 15 international journals in the neuroscience field, and on numerous scientific review boards, particularly for the U.S. NIH. She was one of the initial members of the Executive Committee of the World Federation of Neurology Group on the Dementias. She is a fellow of the Royal Society of Canada, an Officer of the Order of Canada and a member of the Order of British Columbia. With her husband she has more than 700 scientific publications and is co-director of the Kinsmen Laboratory program to eliminate dementia. McGeer is a fellow of the Royal Society of Chemistry.



Patrick L. McGeer | *The University of British Columbia*

Patrick L. McGeer, M.D., Ph.D., is professor emeritus at The University of British Columbia. McGeer is a leader in the field of neuroinflammation and neurodegenerative diseases, being one of the world's most highly cited neuroscientists. He has been issued five U.S. and four foreign patents that have been licensed to three companies. He is the founder of Aurin Biotech Inc. With colleagues, he has published 555 peer-reviewed articles, 139 book chapters, two books and has edited two books. He serves on the editorial board of the *Journal of Neuroinflammation*. McGeer is a fellow of AAAS and the Royal Society of Canada, and is an officer of the Order of Canada. He served in the B.C. Government from 1962-1986 and as a Cabinet Minister from 1975-1986. He played basketball for Canada's 1948 Olympic team and is now in the UBC and BC Sport Halls of Fame. McGeer is a fellow of the Royal College of Physicians of Canada.



Meyya Meyyappan | *NASA Ames Research Center*

Meyya Meyyappan, Ph.D., is chief scientist for exploration technology at NASA Ames Research Center. He has made pioneering contributions in the application of nanomaterials in chemical and biosensors, electronics and other nanoscale devices. He is the recipient of IEEE Judith Resnik Award, IEEE Nanotechnology Pioneer Award, IEEE-USA Harry Diamond Award, AIChE Nanoscale Science and Engineering Forum Award, AVS Nanotechnology Recognition Award, Sir Monty Finniston Award from IET, and IEEE-USA Professional Achievement Award. He was inducted into the Silicon Valley Engineering Council Hall of Fame in 2009. He received an honorary doctorate from the University of Witwatersrand in South Africa in 2015. Meyyappan has published 310 articles in peer-reviewed journals and serves as the editor-in-chief of *Materials Research Express*. He has 22 issued and five pending U.S. patents, several of which have been licensed to industry. Meyyappan is a fellow of IEEE, MRS, AIChE and ASME, among others.



Thomas E. Milner | *The University of Texas at Austin*

Thomas E. Milner, Ph.D., is Joe King Professor of Engineering at The University of Texas at Austin. Milner is an inventor of laser devices for surgery and diagnostic imaging. Milner co-invented the dynamic cooling device that is used on laser surgical instruments worldwide. Milner is one of the early developers of optical coherence tomography – a diagnostic imaging technology used in ophthalmology and cardiology. He is the recipient of the Coherent Young Investigator Award, grants from the NIH, and Inventor of the Year at The University of Texas. He holds 41 U.S. patents and five foreign patents that have been licensed to six companies. He is the founder of CardioSpectra and Dermalucent. He has published 157 peer-reviewed articles, eight book chapters and serves on the editorial board for *Measurement Science and Technology*. Milner is a member of the American Society for Lasers in Medicine and Surgery.



Umesh K. Mishra | *University of California, Santa Barbara*

Umesh K. Mishra, Ph.D., is professor in the department of electrical and computer engineering at University of California, Santa Barbara. Mishra is a recognized world leader in compound semiconductor materials and devices. He is the recipient of the IEEE David Sarnoff Award, the ISCS Quantum Device Award and the Heinrich Welker Medal for his contributions to the development and commercialization of Gallium Nitride-based electronics. He holds 103 U.S. patents and is the co-founder of Nitres Inc (the first GaN startup in the world) and Transphorm. He has published over 800 papers with an h-index of 80 and was one of Thomson's most cited researchers in 2014. Mishra is a fellow of IEEE, international fellow of the Japanese Society of Applied Physics and member of NAE.



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Somenath Mitra, Ph.D., is Distinguished Professor at New Jersey Institute of Technology (NJIT). Mitra has several significant inventions in important areas including real-time environmental monitoring, functionalization of carbon nanotubes and their applications in flexible batteries, solar cells and water desalination. He is the recipient of the Innovator Award from the NJ Inventors Hall of Fame (2014), Thomas Alva Edison Patent Development Awards (2009 and 2014) from New Jersey R&D Council and the Excellence in Research Medal from the board of overseers at NJIT (2014). He holds 11 U.S. patents, three of which are in the process of being licensed to companies. He is the founder of one startup company. Mitra has published 156 peer-reviewed journal articles and two books.



Andreas F. Molisch | *University of Southern California*

Andreas F. Molisch, Ph.D., D.Sc., is professor of electrical engineering and director of the Communications Sciences Institute at the University of Southern California. He has made major contributions to physical-layer wireless communications, in particular in the field of multi-antenna systems, ultrawideband communications and localizations, wireless video distribution systems, and propagation channel measurement and modeling. He is the recipient of numerous awards, among them the Eric Sumner Award. He holds 63 U.S. patents, most of which are also granted abroad. He has published four books, 18 book chapters, more than 180 journal papers, and more than 250 conference papers. He has served as editor or guest editor for a variety of international journals and has been general chair or TPC chair for a variety of international conferences. He is a fellow of AAAS, IEEE, Institution of Engineering and Technology, and member of the Austrian Academy of Sciences.



Ramani Narayan | *Michigan State University*

Ramani Narayan, Ph.D., is University Distinguished Professor of chemical engineering and materials science at Michigan State University. Narayan holds 29 patents in the field of bioplastics and commercialized multiple technologies. Two patents on starch ester thermoplastics technology were acquired by Japan Corn Starch. Two patents on starch nanoparticle adhesives were acquired by EcoSynthetic, of which he is a founding member, and went public on the Canadian Stock Exchange (TSE: ECO), raising \$100 million. Four patents on biodegradable starch-biopolyesters were licensed to Ingredion (NYSE: INGR), a \$5.7 billion global ingredient solutions provider. He is the company founder of BioPlastics, with three patents on biodegradable polyesters licensed, which is commercializing bioplastics technologies with Northern Technologies, a publicly traded (NASDAQ: NTIC) micro-cap company. He is founding member of KTM – commercializing biobased and biodegradable packaging foams. Narayan is the recipient of many awards including the Governor's University Award for commercialization excellence; Michigan Green Chemistry Governor's Award for innovation in biobased foams; Fulbright Distinguished Lectureship Chair in Science & Technology Management & Commercialization; and ASTM International Award of Merit and named fellow.



Alan C. Nelson | *Arizona State University*

Alan C. Nelson, Ph.D., is chairman and CEO of VisionGate, Inc., dedicated to the eradication of lung cancer, and president of the Predictive Health Analytics Institute (PHAIT; a non-profit corporation) dedicated to disease prevention through comprehensive biosignature analysis. Nelson is the founder of four successful companies. He has held professorships at MIT (W.M. Keck Endowed Chair for bioengineering), Harvard, UW, and ASU. His expertise is in machine vision and automated disease detection using innovative optical systems. He is the recipient of the American Nuclear Society Outstanding Professor Award, Admiral Rickover Fellow in Physics, Arizona Governor's Award for most innovative company, Arizona's Top Business Leader Award, Arizona Bioscience Company of the Year Award, and Arizona Entrepreneur of the Year Award. He holds 27 U.S. patents and 93 foreign patents; all have been assigned to five companies. He published 53 articles and five book chapters. Nelson is a fellow of AIMBE.



Kyriacos C. Nicolaou | *Rice University*

Kyriacos C. Nicolaou, Ph.D., is Olga K. Wiess Professor of Chemistry at Rice University. Nicolaou is known for his work in total synthesis of molecules of biological and medical importance including syntheses of the anticancer drugs Calicheamicin γ 1 and Taxol. He is the recipient of numerous awards and honors, including the Benjamin Franklin Medal and the Nemitsas Prize (Cyprus). He holds over ten U.S. and ten foreign patents that have been licensed to more than five companies. He is the co-founder of Irori, Array Biopharma and Anadys Pharmaceuticals. He has published more than 775 articles and five books. Nicolaou is a fellow of AAA&S, and member of NAS, American Philosophical Society, German Academy of Sciences Leopoldina and a foreign member of the Royal Society of London and the Academy of Athens.



David R. Nygren | *The University of Texas at Arlington*

David R. Nygren, Ph.D., is Presidential Distinguished Professor in the College of Science at The University of Texas at Arlington. Nygren is one of the world's top innovators in experimental high-energy physics. His invention, the Time Projection Chamber (TPC), transformed high-energy physics experiments by providing an entirely new and powerful device to detect, identify, and track multitudes of charged particles in three dimensions. TPCs have become the internationally preferred detector in a wide range of elementary particle and nuclear physics experiments since the 1980s. He is the recipient of many awards including the 2013 Breakthrough of the Year by *Physics World*. He holds three patents and has commercialized his inventions (MicroDose system), which were acquired recently by Philips and approved by the FDA in 2013. Nygren's X-ray lens patent was an enabling technology for the development of large-format charged-coupled devices, which are finding numerous applications in major astronomy projects. He is a member of NAS.



Richard M. Osgood, Jr. | *Columbia University*

Richard M. Osgood, Jr., Ph.D., is Higgins Professor Emeritus at Columbia University. He is a pioneer in new laser sources, chemical laser processing; numerical optical simulation and design; laser surface interactions; optical, materials, and molecular physics; and Si linear- and nonlinear optical guided-wave devices. From 2000-2002, he served as associate lab director at Brookhaven National Laboratory, where he founded its departments of nanocenter and materials science. He graduated from the U.S. Military Academy and obtained his doctor of philosophy in physics in Ali Javan's Group at MIT. He received the OSA R.W. Wood Award, Japanese Optical Device Association Honorary Lectureship, and IEEE Photonics Quantum Electronics Award. Research in his group contributed to the formation of four startup companies. He holds 23 patents and has published 481 (ISI) journal articles on laser science, materials science, and optical devices and physics. He is fellow of IEEE, APS, and OSA and a Guggenheim Fellow.



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Alyssa Panitch, Ph.D., is Leslie A. Geddes Professor of Biomedical Engineering and vice provost for faculty affairs at Purdue University. Her inventions span cell-penetrating peptide therapeutics to treat diseases involving inflammation and fibrosis and proteoglycan mimics that bind to the extracellular matrix and promote healthy tissue healing. She is the recipient of the NSF CAREER Award, the Leading Lights Risk Taker Award from Women in High Tech, and is a Renaissance Weekend Invitee. Panitch holds 14 U.S. and multiple associated foreign patents that have been licensed to three startup companies of which she is a co-founder. She has published over 80 manuscripts and serves as a member of the editorial advisory board for *Biomacromolecules* and as associate editor for *Cellular and Molecular Bioengineering*. Panitch is a fellow of AIMBE and BMES.



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H. Anne Pereira, Ph.D., has been on the University of Oklahoma Health Sciences Center faculty for the past 23 years. She serves as dean of the Graduate College, associate dean for research in the College of Pharmacy and professor of pharmaceutical sciences. Pereira's research focuses on the design and development of novel bioactive peptide therapeutics for the treatment of serious infections caused by antibiotic resistant bacteria. Her research on innate immunity and inflammation and the role of antibacterial peptides in host defense have been supported by various private foundations as well as the NIH. She holds 16 U.S. patents and four foreign patents. She serves as chief scientific officer of Biolytx Pharmaceuticals Corporation, a company she co-founded in 2005. Pereira has received numerous awards including the distinction of being named an Academic Research Program Fellow of the American Association of Colleges of Pharmacy and a fellow of AAAS.



William M. Pierce, Jr. | *University of Louisville*

William M. Pierce, Jr., Ph.D., is professor of pharmacology and toxicology as well as a professor of chemistry at the University of Louisville. He holds seven issued U.S. patents and licenses for his developed technologies and is a company founder. As executive vice president for research and innovation at the University of Louisville, he leads a university team which is the only university in the nation which simultaneously holds an NSF I-Corps award, and NIH REACH Award and a Coulter Project Award. Pierce is dedicated to his personal leadership in innovation and also to development of the discovery and innovation of a distinguished university faculty.



John M. Poate | *Colorado School of Mines*

John M. Poate, Ph.D., is emeritus senior vice president of research at the Colorado School of Mines. Poate has pioneered and led research in many areas of materials research and processing technologies that have principally impacted the semiconductor industry in the areas of silicide films and laser processing and ion implantation technologies. His awards include the John Bardeen TMS Award and an honorary doctorate of engineering from the Colorado School of Mines. He holds 12 U.S. and foreign patents which Bell Labs licensed. He has published over 300 papers, edited five books and seven conference proceedings, and is co-editor-in-chief of *Applied Physics Review*. Poate is a fellow of APS and MRS.



H. Vincent Poor | *Princeton University*

H. Vincent Poor, Ph.D., is dean of engineering and applied science at Princeton University, where he is also the Michael Henry Strater University Professor. Poor's expertise is in wireless networks and related fields. Recent recognition includes the 2014 URSI Booker Gold Medal, the 2016 John Fritz Medal, and honorary doctorates from several universities. He holds 14 U.S. and six foreign patents, seven of which have been assigned to four companies, and has served as a technical advisor to a number of startup companies that have been successfully acquired by major players in the electronics industry. He has published more than 500 journal articles and 17 books, and serves on the editorial boards of *Philosophical Transactions of the Royal Society* and *Proceedings of the IEEE*. Poor is a member of NAE and NAS, a foreign member of the Royal Society, and a fellow of several other academies and learned societies.



Ann Progulsk-Fox | *University of Florida*

Ann Progulsk-Fox, Ph.D., is Distinguished Professor and director of the Center for Molecular Microbiology at the University of Florida. Progulsk-Fox's research focus is on the pathogenesis of oral bacteria and her group has developed novel technology (IVIAT) to discover which bacterial genes are expressed only while causing disease in the human host. By identifying virulence-associated genes that would not be found by conventional methods, she has improved the understanding of the pathogenic mechanisms employed by 35+ pathogens that have been studied by this technology. She is the recipient of a UF Research Foundation Professorship (twice) and Distinguished Scientist Award for Research in Periodontal Disease from the International Association for Dental Research. She holds seven U.S. and foreign patents that have been licensed to three companies. She is a co-founder of two startup companies, has published over 100 articles and five book chapters, and serves as an editor or editorial board member for multiple peer-reviewed journals. Progulsk-Fox is a fellow of AAAS.



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Suzie H. Pun, Ph.D., is Robert F. Rushmer Professor of Bioengineering at University of Washington. Pun has developed new biomaterials for applications in drug delivery to the central nervous system, cancer therapy, and trauma care. She is the recipient of a Presidential Early Career Award for Scientists and Engineers (2006), NSF CAREER Award, and Controlled Release Society's Young Investigator Award (2014). She holds 11 U.S. patents that have been licensed to two companies. She has published 90 peer-reviewed manuscripts and serves on the editorial advisory boards for several journals, including *Biomacromolecules*, *ACS Macro Letters*, *Biomaterials Science*, *Molecular Therapy*, and *Acta Biomaterialia*. Pun is an AIMBE fellow, and is currently serving as an AAAS-Lemelson Invention Ambassador.



Kaushik Rajashekara | *The University of Texas at Dallas*

Kaushik Rajashekara, Ph.D., MBA, is Distinguished Professor of engineering and Endowed Chair in Erik Jonsson School of Engineering and Computer Science at The University of Texas at Dallas. He has published more than 130 papers in international journals and conferences and has 34 U.S. and 10 foreign patents. He has given more than 100 invited presentations in over 45 countries. He has co-authored one book on sensorless control of ac motor drives, five monographs, and contributed individual chapters to six published books. For his contributions to power conversion and transportation electrification, he has received numerous awards including election as a member of NAE, foreign fellow of the Indian NAE, IEEE Richard Harold Kaufmann award, IEEE Industry Applications Society Outstanding Achievement Award, and others. He is a fellow of IEEE and SAE International for contributions to the advancement of power conversion and propulsion systems.



Jahangir S. Rastegar | *Stony Brook University*

Jahangir S. Rastegar, Ph.D., is associate professor of mechanical engineering at Stony Brook University. Rastegar holds 184 issued and over 150 pending patents in the fields of sensors; actuation devices; medical systems and devices; safety and accident prevention devices; power sources and components; mechanical tools, devices and structural elements; military products and components; optical and electronic devices. Over 20 of his inventions are in production by Omnitek Partners, LLC, a company that he co-founded, and over 30 are under development by government or its contractors for insertion into military products. He is a fellow of ASME and recipient of its 2010 Machine Design Award, for “eminent achievements as an inventor and scholar in the field of machine design, particularly in the area of smart actuation and control.” He served as associate editor of *ASME Journal of Mechanical Design* and *Journal of Medical Devices*.



A. Hari Reddi | *University of California, Davis*

A. Hari Reddi, Ph.D, is Distinguished Professor of orthopedic surgery and member of the Biomedical Engineering Graduate Group, Lawrence Ellison Endowed Chair in Musculoskeletal Molecular Biology in the School of Medicine, University of California, Davis. He has published over 350 peer-reviewed papers, edited four books and holds six patents. He is a pioneer in the field of bone and cartilage regeneration and tissue engineering and made sustained and incisive contributions to the cell biology of bone morphogenetic proteins (BMPs). BMPs are in everyday use in medical centers all over the world for healing of bone fractures, fusion of vertebrae in spine surgery and craniofacial bone regeneration. BMPs have played a major role in healing injuries to skeletons of U.S. veterans in the Afghan and Iraq wars. His honors and awards include Marshall Urist Award for Excellence in Tissue Regeneration, Kappa Delta Award of the American Academy of Orthopedic Surgeons, NIH Director’s award, Nicholas Andry Award of the Association of Bone and Joint Surgeons and JAPSAM Prize of the Japanese Society of Science and Art of Medicine.



E. Albert Reece | *University of Maryland*

E. Albert Reece, M.D., Ph.D., MBA, is vice president for medical affairs at the University of Maryland, John Z. and Akiko K. Bowers Distinguished Professor, dean of medicine, and professor of obstetrics and gynecology, medicine, biochemistry and molecular biology and he directs a NIH multi-million dollar research laboratory. His research focuses on diabetes in pregnancy, including birth defects and prenatal diagnosis and prevention methods. He received awards including Berson Medical Alumni Achievement Award in Health Sciences from New York University, American Diabetes Association’s Norbert Freinkel Research Award, and AAMC David E. Rogers Award. He has published 12 books, five monographs and 500+ articles, chapters, and abstracts. He served council of deans chair of the Association of American Medical Colleges and on committees including the FDA, NAM, NIH, Secretary of Health & Human Services Committee on Infant Mortality, March of Dimes Birth Defects Foundation, Massachusetts General Hospital Scientific Advisory Committee, and board (chairman) of the Nelly Berman Classical Music Institute, and Agnes Irwin School for Girls. Reese is a member of NAM and NAS.



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Kenneth L. Reifsnider, Ph.D., is Presidential Distinguished Professor of mechanical and aerospace engineering and director of the Institute for Predictive Performance Methodologies at The University of Texas at Arlington Research Center. Reifsnider has pioneered the development and implementation of composite materials in aerospace, land, and water vehicles and in energy conversion and storage devices. He is the recipient of the Silver Award from the Royal Aeronautical Society, and the Distinguished Career Award from the International Conference on Computational and Experimental Science and Engineering. He holds four U.S. patents, one licensed to a company. He has published over 200 archival articles, one signature text book, and many book chapters, and serves on the editorial board of the *Journal of Multifunctional Materials*. Reifsnider is a member of NAE and a fellow of ASME and the American Society for Testing and Materials.



Jasper D. Rine | *University of California, Berkeley*

Jasper D. Rine, Ph.D., is professor of genetics genomics and development at the University of California, Berkeley. Rine is known for pioneering work on genetics, epigenetics, chromatin, sterol biosynthesis, genomics, and the dog genome and is a recipient of the University Distinguished Teaching Award. He holds 10 U.S. patents, including several licensed by biotech and pharmaceutical companies, and was a founder of Acacia/Rosetta InPharmatics, Taxon Biosciences, and Vitapath Genetics, and has consulted for Chiron, Merck, Squibb, Myriad Genetics, Affymetrix, Amyris and Pioneer. He has published approximately 200 research papers and serves on editorial boards of *PNAS*, *GENETICS*, *G3* and others. He is a member of NAS, an HHMI Professor, and a fellow of AAA&S, American Society of Microbiology, and AAAS. He also served a term as president of the Genetics Society of America.



Ajeet Rohatgi | *Georgia Institute of Technology*

Ajeet Rohatgi, Ph.D., is Regents' Professor, John Weitnauer Chair, GRA Eminent Scholar, and founding director of UCEP at Georgia Institute of Technology. He is founder and CTO of Suniva, Inc. Rohatgi is known for his leadership in industry-relevant research and innovation in photovoltaics, making solar energy cost-effective through the development of low-cost, high-efficiency silicon cells. He is the recipient of the GT Outstanding Achievement in Research Innovation, EPA Climate Protection, ASES Hoyt Clark Hottel, IEEE Cherry, and DOE/NREL Rappaport Awards. He was named a Champion of PV by *Renewable Energy World Magazine*. He holds 19 U.S. and 22 foreign patents; seven of which have been licensed to Suniva. He has published 500 papers and served on technical advisory committees for U.S. DOE solar energy programs, GT Solar Inc., NCPRE, SERIUS, and editorial boards of *Solar Cell Journal*, *Solar Energy Material and Solar Cells*, and *Progress in Photovoltaics*. Rohatgi is a fellow of IEEE.



Stephen D. Russell | *Space and Naval Warfare Systems Command*

Stephen D. Russell, Ph.D., Senior Executive Service (SES), is director of science and technology and CTO at Space and Naval Warfare Systems Command. He leads a highly technical team of 800+ personnel and influences \$1.2B supporting R&D in command and control, communications, computers, intelligence, surveillance and reconnaissance. He is the recipient of many awards including: AFCEA's International Gold Medal in Engineering, SSC Pacific's Lauritsen-Bennett Award for Science, Navy Meritorious Civilian Service Award and the FLC Excellence in Technology Transition Award. He holds 115 U.S. and foreign patents and over 20 percent of his IP portfolio has been commercially licensed. He has authored or co-authored over 70 articles in peer-reviewed journals, conference proceedings, and technical reports and serves on the editorial board for *Naval Science & Technology* *FUTURE FORCE Magazine*. Russell received his master's and doctoral degrees from University of Michigan and bachelor's degree from SUNY Stony Brook, and is a member of APS and SPIE.



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Michael J. Sailor, Ph.D., is Distinguished Professor at the University of California, San Diego. Sailor's inventions focus on silicon nanomaterials, including biosensors, explosives detectors, drug delivery systems, anti-counterfeiting labels, and bioimaging agents. He is recipient of an Alfred P. Sloan Foundation Fellowship, Camille Dreyfus Foundation Teacher-Scholar Award, J. Clarence Karcher Medal, NIH Collegiate Inventors Grand Prize, two "Best of What's New" awards from *Popular Science Magazine*, and Meritorious Civilian Service Award of the U.S. Air Force. He holds 29 U.S. and six foreign patents that have been licensed to seven companies. He is the founder of Spinnaker Biosciences and Common Sensor Technologies. He has published 226 peer-reviewed papers, seven book chapters and one book, and serves on the editorial boards of the journals *Nanoscale Horizons*, *ACS Sensors*, *ACS Nano*, *Advanced Healthcare Materials*, *Advanced Materials*, and *Molecular Cancer Therapeutics*. Sailor is an elected fellow of AAAS.



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Bahgat G. Sammakia, Ph.D., is Distinguished SUNY Professor and vice president for research at Binghamton University. Sammakia has spent much of his research career working to improve thermal management strategies in electronic systems at multiple scales ranging from devices to entire data centers. He joined the faculty of the Watson School for Engineering and Applied Science in 1998 following a fourteen-year career at IBM where he worked in the area of research and development of organic electronic systems. He has contributed to several books on natural convection heat transfer and is also the principal investigator or co-principal investigator on several cross-disciplinary research projects. Sammakia received his doctorate in mechanical engineering from the State University of New York at Buffalo. He was a postdoctoral fellow at the University of Pennsylvania from 1982 to 1984. He holds 24 patents and is a fellow of IEEE and ASME.



Andrew V. Schally | *University of Miami*

Andrew V. Schally, Ph.D., M.D.(hc)(multiple), D.Sc. (hc), is Distinguished Medical Research Scientist at the Department of Veterans' Affairs and professor at the University of Miami. Schally is the discoverer of hypothalamic hormones. For his work in neuroendocrinology, he was awarded the Nobel Prize for Medicine in 1977. Subsequently, he pioneered the application of analogs of hypothalamic hormones to cancer treatment, including the therapy of prostate cancer with agonists of LHRH. He was elected to NAS in 1978; he also received the Lasker Award (1975); Borden Award in Medical Research, (1975); Gairdner Award, (1974); Mickle Prize (1974) and many other prizes. He was elected to Academy of Medicine, Mexico, 1971; Brazil, 1983; Venezuela, 1986; Poland, 1994; and Hungarian Academy of Sciences, 1986; and received the French "Legion d'Honneur" in 2004 and various other decorations. Schally holds more than 40 U.S. and foreign patents, licensed to five companies, is author or co-author of more than 2,400 publications and has been awarded over 30 honorary degrees.



Paul R. Schimmel | *The Scripps Research Institute*

Paul R. Schimmel, Ph.D., is Hahn Professor at The Scripps Research Institute and previously was MacArthur Professor at MIT. His research interests focus on aminoacyl tRNA synthetases as interpreters of genetic information. He is known for his discovery of a synthetase-directed activity that corrects errors in the interpretation of genetic information and of a 'second genetic code.' His laboratory also discovered the structural and functional metamorphosis of tRNA synthetases, whereby they acquire novel activities, both inside and outside the cell, in a variety of cell signaling pathways. Schimmel holds a portfolio of patents and is a co-founder or founding director of numerous enterprises that create new medicines, and has experienced the saving of a large numbers of lives. Schimmel is an elected member of NAS, NAM, American Philosophical Society, AAA&S and AAAS.



Peter G. Schultz | *The Scripps Research Institute*

Peter G. Schultz, Ph.D., is CEO and professor of chemistry at The Scripps Research Institute. Schultz is the founder of nine biotech/tech companies that have pioneered the application of molecular diversity technologies to challenges in energy, materials and human health. Schultz's leadership has led to the development of a number of innovative new medicines including Zykadia, Odomzo, and LGK974 for cancer, BAF312 for multiple sclerosis, KAE609 for malaria, and LFU835 for HSC therapy. In addition, Schultz has established the California Institute for Biomedical Research (Calibr), a nonprofit institute that accelerates the translation of biomedical research discoveries to innovative new medicines. He is the recipient of Alan T. Waterman Award, Wolf Prize in Chemistry, ACS Arthur C. Cope Award, Solvay Prize, and Heinrich Wieland Prize, among others. Schultz has coauthored over 500 publications and received more than 100 U.S. patents.



Marlan O. Scully | *Texas A&M University*

Marlan O. Scully, Ph.D., is director of the Institute for Quantum Science and Engineering and University Distinguished Professor at Texas A&M and also holds a faculty appointment at Baylor. Scully has made many seminal contributions to laser science and quantum optics. Furthermore his work on quantum coherence has shed new light on the foundations of quantum mechanics and yielded new insights into quantum thermodynamics. His awards include: Frederic Ives Medal / Quinn Prize (OSA's top award), Commemorative Medal of the Czech Senate, Herbert Walther Award (DPG/OSA), Arthur L. Schawlow Prize (APS), Charles H. Townes Award (OSA), Quantum Electronics Award (IEEE), Elliott Cresson Medal (Franklin Institute), Adolph E. Lomb Medal (OSA), a Guggenheim Fellowship, and Alexander von Humboldt Distinguished Faculty Prize. He has many patents, articles and books. He is a member of NAS, AAA&S, Max Planck Society and Academia Europaea.



Jonathan L. Sessler | *The University of Texas at Austin*

Jonathan L. Sessler, Ph.D., is Rowland K. Pettit Centennial Chair in Chemistry at The University of Texas at Austin. Sessler is credited with developing the fields of non-covalent electron transfer, calixpyrroles, and expanded porphyrins. He has received many honors, including the Dreyfus Teacher-Scholar and Sloan Foundation Fellowships, Izatt-Christensen Award, RSC Centenary Prize, Molecular Logic and Molecular Sensors Award, and Society of Porphyrins and Phthalocyanines Fischer Prize. He holds 75 U.S. and numerous foreign patents. Many were licensed to Pharmacyclics, Inc., a company he co-founded in 1991 and which was recently acquired by AbbVie for \$21 billion. He has more than 600 peer-reviewed publications, over 150 of which have appeared in the *Journal of the American Chemical Society* or *Angewandte Chemie International Edition*. He serves as an associate editor for *ChemComm* and is a fellow of AAAS and a lifetime honorary member of the Israeli Chemical Society.



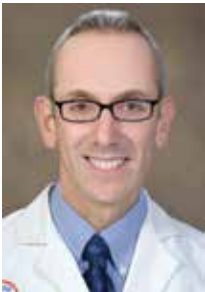
Mohsen Shahinpoor | *University of Maine*

Mohsen Shahinpoor, Ph.D., is professor of mechanical engineering, as well as professor of biomedical science and engineering at the University of Maine, where he established and currently directs the biomedical engineering and robotics programs. He has contributed to innovations in smart/intelligent materials, artificial muscles, ionic polymers, biomimetic soft robotics, advanced nanocomposites, heart assist devices and systems, bionic vision and ophthalmological engineering and neuro and endovascular surgical tools and medical implants. He holds many awards such as the NASA Space Act Award. He holds more than 32 U.S. patents, mostly in health engineering and medical implants. He wrote the first textbook in robotic surgery in 2014. He is a fellow of ASME, Institute of Physics and Royal Society of Chemistry. He has over 484 refereed journal articles, book chapters and proceedings publications, 50 books and edited volumes and 65 patents, patents pending and publications.



Ben A. Shneiderman | *University of Maryland*

Ben A. Shneiderman, Ph.D., is Distinguished University Professor in computer science, founding director of the Human-Computer Interaction Laboratory, and a member of the University of Maryland Institute for Advanced Computer Studies (UMIACS). His contributions include the direct manipulation concept, clickable highlighted web-links, small touchscreen keyboards, dynamic query sliders for Spotfire, development of treemaps, novel network visualizations for NodeXL, and temporal event sequence analysis for electronic health records. He has more than 400 publications including *Designing the User Interface: Strategies for Effective Human-Computer Interaction* (6th ed., 2016, with five co-authors). He co-authored *Readings in Information Visualization: Using Vision to Think and Analyzing Social Media Networks with NodeXL*. Shneiderman's latest book is *The New ABCs of Research: Achieving Breakthrough Collaborations*. He is a fellow of AAAS, ACM and IEEE, and a member of NAE.



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Marvin J. Slepian, M.D., is professor of medicine, professor and associate department head of biomedical engineering and McGuire Scholar in the Eller College of Management at The University of Arizona, and director of the Arizona Center for Accelerated Biomedical Innovation. His work has focused on the development and use of novel biomaterials for tissue engineering, drug delivery and medical device development. He is author on 250+ articles, textbook chapters and abstracts, in journals such as *Science*, *Nature Materials*, *PNAS*, *PlosOne*, *Circulation*, *The New England Journal of Medicine*, and *Cardiovascular Pathology* and serves on several editorial boards. He is a prolific inventor with 55+ issued and filed patents and founded numerous medical device companies including FOCAL (NASDAQ), Endotex, Angiotrax, Hansen Medical (NASDAQ), Arsenal, 480 BioMedical, MC10 and SynCardia. He has brought many new devices through the FDA regulatory process into clinical use, including the total artificial heart. He has received multiple awards including the American Heart Association Award for the most significant advance in cardiovascular medicine. He is a fellow of AIMBE.



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Richard A. Soref | *University of Massachusetts Boston*

Richard A. Soref, Ph.D., is research professor of engineering at the University of Massachusetts Boston. He is known for visionary, fundamental contributions to silicon photonics (SiPh) and for inventing the Si-based opto-electronic integrated circuit. The SiPh industry has its origins in his work. During a 52-year research career, he made major contributions to SiGeSn materials development, free-carrier modulators, nonlinear optics, laser physics, flat-panel displays, photonic crystals and plasmonic-photonics. In 2004, he founded the IEEE International Group IV Photonics Conference. He holds 53 U.S. patents that have been cited 1400 times within the patents of other inventors. His publications have been cited 14,600 times with an h-index of 58 and an i10-index of 200. Soref is a fellow of IEEE, OSA, AFRL, and Institute of Physics UK. He received the IEEE Group IV Lifetime Achievement Award, USAF Basic Research Award, and USAF Civilian Career Award.



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Pramod K. Srivastava, Ph.D., M.D., is professor in the department of immunology at the University of Connecticut and director of the Center for Immunotherapy of Cancer and Infectious Diseases. He has championed the cause of personalized immunotherapy for human cancer for 25+ years. He was the first to suggest that cancers are individually antigenically distinct because of random passenger mutations, a proportion of which become immunogenic in any given patient. The cancer vaccine vitespen or Oncophage (consisting of a heat shock protein of hsp90 family and non-covalently associated peptides) was the first therapeutic cancer vaccine to be approved for clinical use anywhere in the world (Russia), and was developed from his work. An NIH/CTEP-funded large randomized study testing Oncophage in recurrent glioblastomas is currently ongoing at multiple U.S. centers. Building on his original hypothesis, he is now pursuing genomics-driven personalized immunotherapy of human ovarian and other cancers. He holds 60 U.S. patents.



Andrew J. Steckl | *University of Cincinnati*

Andrew J. Steckl, Ph.D., is Ohio Eminent Scholar & Gieringer Professor of Solid State Electronics at the University of Cincinnati. Steckl's current research activities are focused on: organic and biopolymeric materials for photonic and electronic devices; electrofluidic materials and devices for nano/bio applications; chem/bio/med smart materials for diagnostics and therapy. To date, he has graduated 45 doctoral students and has supervised 11 postdoctoral fellows. Together with his students, he has published about 425 papers, which have received about 10,000 citations. This has resulted in a current citation h-index of 53 (including patent citations). He has also obtained 18 patents on various electronic materials and devices. He has been awarded nearly \$19 million in research funding at UC from a variety of sources, including federal and state agencies and industry. Steckl is a life fellow of IEEE and a fellow of AAAS. He was awarded the Rieveschl Award for Distinguished Research and elected scientific member of the Bohmische Physikalische Gessellschaft.



Valentino J. Stella | *The University of Kansas*

Valentino J. Stella, Ph.D., is University Distinguished Professor of pharmaceutical chemistry at The University of Kansas (KU). Stella is an inventor of four drug products for the treatment of epilepsy, AIDS and cancer, and an anesthetic. He also developed an agent, Captisol, a modified cyclodextrin, used to dissolve drugs for injection more efficiently and is in seven FDA-approved products. As director of KU's Center for Drug Delivery Research, he spun off three successful companies: CyDex, CritiTech and ProQuest. He holds 42 issued U.S. and numerous foreign patents, and has authored more than 300 publications, reviews and book chapters. Stella received a bachelor's degree in pharmacy from the Victorian College of Pharmacy, now Monash University, in Melbourne, Australia. His many honors include the American Pharmacists Association's Takeru Higuchi Research Prize (named for his doctoral adviser at KU), the Distinguished Scientist Award from the American Association of Pharmaceutical Scientists, and election as a fellow of AAAS.



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Galen D. Stucky, Ph.D., is professor of chemistry and materials at the University of California, Santa Barbara. Stucky has made breakthrough discoveries in the field of mesostructured and nanostructured materials and their applications. He is the recipient of the ACS Award in the Chemistry of Materials (2002); International Mesostructured Materials Association Award (2004); the Advanced Technology Applications for Combat Casualty Care Award (2008); Nano Today Award (2011); and Prince of Asturias Award, with A. Corma and M. E. Davis (2014). He is a named inventor on 34 U.S. patents, of which 14 have been licensed, and has been involved in starting five companies. He has published over 780 scientific articles and book chapters. Stucky is a fellow of AAA&S and ACS, and a member of NAS.



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Bala Subramaniam, Ph.D., is Dan F. Servey Professor of Chemical Engineering at The University of Kansas (KU). His research utilizes unconventional solvents such as gas-expanded liquids and supercritical fluids to intensify crystallization and catalytic processes. Subramaniam's inventions harness the pressure-tunable physicochemical properties of these solvents to manufacture drug nanoparticles with improved bioavailability and to develop resource-efficient catalytic technologies with reduced environmental footprint. Such technologies for anticancer drugs and renewable plastics have been licensed. His honors include ASEE's Dow Outstanding Young Faculty Award, Indian Institute of Chemical Engineers' Chemcon Lectureship Award, and KU's Higuchi Research Achievement Award. Subramaniam is founding director of the Center for Environmentally Beneficial Catalysis, a university/industry consortium. He also co-founded CritiTech, a pharmaceutical company. Subramaniam holds 27 U.S. patents, authored 160+ research publications, edited two books, and is associate editor of *ACS Sustainable Chemistry and Engineering*. He is a fellow of AIChE and ACS Industrial & Engineering Chemistry Division.



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R. Michael Tanner, Ph.D., is vice president for academic affairs at the Association of Public and Land-grant Universities (APLU). Tanner is credited as a pioneer in error-correcting coding methods for digital data communication, presented in patents and journal articles. His methods have had widespread impact on design practices for error-correcting coding systems. Tanner received the IEEE Information Theory Golden Jubilee Paper Award. His innovations are now part of the communication standards for smartphones, Wi-Fi, satellites and deep space probes. He was provost and vice chancellor for academic affairs at the University of Illinois at Chicago and previously, executive vice chancellor at the University of California, Santa Cruz for a total of 17 years. Tanner founded the Personalized Learning Consortium at APLU. He holds four issued U.S. patents and is a fellow of IEEE and California Council on Science and Technology.



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Stephen Tomlinson | *Medical University of South Carolina*

Stephen Tomlinson, Ph.D., is professor and vice chair in the Department of Microbiology and Immunology at the Medical University of South Carolina. Tomlinson is an immunologist with a research focus on the biology of the complement system. He has made significant contributions to our understanding of how the complement system is involved in various inflammatory and neuropathological processes, alloimmunity (transplant rejection) and tumor immunity. His work in the area of complement regulation has been the foundation for 25 invention disclosures and 132 patent applications in more than 50 countries, with 53 patents issued. Several patents are licensed, and he has the largest patent portfolio at his institution. His patents were the foundation for a startup company, Taligen Therapeutics, which was subsequently acquired by a pharmaceutical company. He is currently involved in a second startup company based on the targeted regulation of complement. Tomlinson has published over 140 research articles.



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James M. Tour, Ph.D., is T.T. and W.F. Chao Professor of Chemistry, professor of computer science, and professor of materials science and nanoengineering in the NanoCarbon Center at Rice University. Tour's nanotechnology scientific research areas include nanoelectronics, graphene electronics, silicon oxide electronics, carbon nanovectors for medical applications, green carbon research for enhanced oil recovery, graphene photovoltaics, carbon supercapacitors, lithium ion batteries, CO₂ capture, water splitting to H₂ and O₂, and synthesis of single-molecule nanomachines which includes molecular motors, nanocars and nanosubmarines. Tour was named among "The 50 Most Influential Scientists in the World Today" by TheBestSchools.org in 2014; "Scientist of the Year" by *R&D Magazine*, 2013. He is a fellow of AAAS since 2009. He holds 75 patents that have been licensed to 10 companies, is the founder of six companies and has published 600 research publications.



Kalliat T. Valsaraj | *Louisiana State University*

Kalliat T. Valsaraj, Ph.D., is vice president for research and economic development and the Roddey Distinguished Professor in chemical engineering at Louisiana State University. Valsaraj has been involved in seminal contributions towards the separations of trace compounds of pollutants from wastewaters and other environmental media. He is the recipient of several awards including the Charles Coates award jointly from the AIChE and ACS. He holds two U.S. patents. He has published three books, 28 book chapters and serves as editor-in-chief of two journals and on the editorial review boards of 10 other journals. He has published 198 peer-reviewed journal papers. Valsaraj is a fellow of prestigious organizations such as AAAS and AIChE.



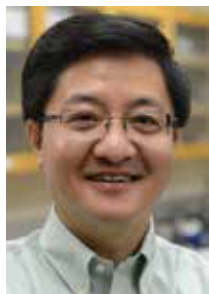
Bert Vogelstein | *Johns Hopkins University*

Bert Vogelstein, M.D., is co-director of the Ludwig Center, investigator of the Howard Hughes Medical Institute, Clayton Professor and Lustgarten Distinguished Scholar at Johns Hopkins Medical Institution. Vogelstein was the first scientist to determine the molecular basis of a common human cancer, forming the paradigm for much of modern cancer research. He has been awarded more than 160 U.S. patents and served as founding or senior director to four diagnostic companies. He received awards including the American Cancer Society Medal of Honor, Gairdner Foundation International Award in Science, William Allan Award from the American Society of Human Genetics, Richard Lounsbery Award from NAS, Louisa Gross Horwitz Prize from Columbia University, Harvey Prize in Human Health from the Technion, Charles S. Mott Prize from the General Motors Cancer Research Foundation, Breakthrough Prize in Life Sciences, and Janssen Award for Biomedical Research. He is a member of NAS, NAM, AAA&S, the American Philosophical Society, and European Molecular Biology Organization and has held editorial positions at *Science*, *Molecular Cell*, *Cancer Cell* and *The New England Journal of Medicine*.



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Norman J. Wagner III, Ph.D., is Robert L. Pigford Chaired Professor of Chemical and Biomolecular Engineering at the University of Delaware. Wagner is known for his work on shear thickening fluids for personal protective equipment and the development of new scientific instruments. He has received numerous scientific awards, including the Bingham Medal of the Society of Rheology, Thomas Baron Award of the AIChE Particle Technology Forum, and Siple Award of the U.S. Army, among others. He holds seven U.S. and two foreign patents. He is the co-founder of STF-Technologies LLC. He has published two books and over 240 scientific manuscripts and serves on the editorial boards of five peer-reviewed journals. Wagner is a member of NAE and a fellow of prestigious organizations such as the AAAS and Neutron Scattering Society of America.



Yong Wang | *Washington State University*

Yong Wang, Ph.D., is Voiland Distinguished Professor at Washington State University. He holds a joint appointment (laboratory fellow) at Pacific Northwest National Laboratory. Wang is best known for his leadership in the development of novel catalytic materials and reaction engineering to address the issues related to energy and atom efficiency for converting fossil and biomass feedstocks to fuels and chemicals. He is the recipient of the 2006 Asian American Engineer of the Year Award, Presidential Green Chemistry Award, and three R&D 100 Awards. He holds 95 issued U.S. patents, more than 90 percent of which have been licensed to several companies. His discoveries in microchannel reaction technologies led to the formation of Velocys, trading under the London Stock Exchange (VLS). He has published 215 peer-reviewed papers, co-edited two books and six special journal issues, and serves on editorial boards of seven catalysis and energy related journals. Wang is a fellow of AAAS, ACS and AIChE, and the Royal Society of Chemistry.



James A. Wells | *University of California, San Francisco*

James A. Wells, Ph.D., is Harry Wm. and Diana V. Hind Distinguished Professor in pharmaceutical sciences. Wells has pioneered the engineering of proteins, antibodies, and small molecules that target catalytic, allosteric, and protein-protein interaction sites. He innovated mutagenesis methods including cassette mutagenesis, protein and substrate phage display, alanine-scanning, engineered enzymes for bioconjugations, and disulfide “tethering”, a novel site-directed fragment based approach for drug discovery. These led to important new insights into protease mechanisms and signaling pathways, growth factor signaling, hot-spots in protein-protein interfaces, and several protein engineered products sold by biotechnology companies today including Genentech, Genencor, and Pfizer. He received seven societal awards collectively from the ACS, Protein Society, American Peptide Society and ASBMB. He is an elected member of NAS and AAA&S. He is an inventor on more than 60 patents, authored 170 peer-reviewed papers, is on eight editorial boards, and is a founder of Sunesis, Calithera, and Warp Drive.



Caroline C. Whitacre | *The Ohio State University*

Caroline C. Whitacre, Ph.D., is vice president for research at The Ohio State University. She is responsible for strategic planning and infrastructure support for the university’s \$983 million annual research program. Whitacre was a major contributor in the development of Neuro-technology Innovations Translator LLC, and instituted the Industry Liaison Office. She is professor of microbial infection and immunity, specializing on treatment strategies in multiple sclerosis. Whitacre holds one U.S. patent in the field of peptides/proteins. She has published 116 articles and serves on multiple editorial boards for journals in her field. Whitacre serves on the boards of Rev1 Ventures, Center for Science and Industry (Columbus, Ohio), Transportation Research Center, National Board for the Multiple Sclerosis Society, and Oak Ridge Associated Universities. She chairs the board of Sci-Tech, the OSU Research Park. Whitacre is a fellow of AAAS.



Jay F. Whitacre | *Carnegie Mellon University*

Jay F. Whitacre, Ph.D., is professor of materials science and engineering, and engineering and public policy at Carnegie Mellon University and is founder and CTO of Aquion Energy. Whitacre has contributed significantly to the field of low cost stationary energy storage, where he has developed a novel battery chemistry and design that is currently being manufactured and sold by Aquion Energy. He is the recipient of the 2015 \$500k Lemelson-MIT Prize, 2014 Caltech Resnick Institute Resonate Award, and was named as one of the top 25 “Eco-innovators” in the world by *Fortune Magazine* in 2014. He has authored or co-authored over 60 peer-reviewed journal articles and holds 13 granted U.S. patents with over 30 others granted or pending around the world. Whitacre has also served on the boards or advisory committees of multiple energy-related technology companies.



Helena S. Wisniewski | *University of Alaska Anchorage*

Helena S. Wisniewski, Ph.D., is vice provost for research and graduate studies at University of Alaska Anchorage (UAA). She has guided innovation from concept to market benefiting society in biometrics, medical devices, image compression, telecommunications, and steganography, and combined facial recognition and intelligent software agents to successfully find missing and exploited children. She served with DARPA and created the first mathematics program with the CIA. She is the founding director of the DHS Arctic Domain Awareness Center of Excellence. At UAA and Stevens Institute of Technology, she established commercialization infrastructures and significantly increased the number of invention disclosures and patents. She received the Women in Technology Leadership Award for Entrepreneurship, Award for Extraordinary Leadership from Lockheed, awards for special achievement from DARPA and the CIA, and Distinguished Alumni of William Paterson University. She holds patents in steganography and facial recognition and founded 15 startup companies and serves on the board of directors of Greatbatch Inc., a publicly traded billion-dollar provider of medical devices. In 2007, the U.S. Secretary of the Navy appointed her to the Naval Research Advisory Committee.



Edward D. Wolf | *Cornell University*

Edward D. Wolf, Ph.D., is professor emeritus at Cornell University. He was senior scientist at Hughes Aircraft Company Research Laboratories in Malibu, Cal. Wolf was first director of the National Nanofabrication Facility (later franchised nationally by NSF as the National Nanotechnology Infrastructure Network). His research focused on nanolithography and chemically assisted ion beam etching. He was founding director, Cornell Office for Technology Access and Business Assistance; Visiting Fellow Commoner, Trinity College, Cambridge University; and first foreign fellow, Erwin Schrödinger Gessellschaft für Microwissenschaften, Austria. He holds nine patents in electron, ion, and macro-particle beam technology. Wolf is co-inventor of the Biolistic Gene Gun and co-founder of Biolistics, Inc. The Biolistic gene gun prototype III, with accessories, is in the Smithsonian National Museum of American History. Wolf is a life fellow of IEEE and was a director of Novellx, Inc., Lafayette, CA, which created the desktop thermal-field emitter scanning electron microscope.



Paul K. Wright | *University of California, Berkeley*

Paul K. Wright, Ph.D., is A. Martin Berlin Professor of Mechanical Engineering and director of the Berkeley Energy and Climate Institute. His resilience and analytics of energy systems research in the Advanced Manufacturing for Energy Laboratory covers a broad spectrum: communicating MEMS-sensors for advanced electrical-grids and gas distribution systems; energy harvesting; 3D printing of storage systems; demand Response, and condition based monitoring (CbM) of energy systems. In earlier work, CyberCut, funded by the NSF, his research team created the concept of open architecture control, which expanded the control of machine tools and enabled both better connections to high-end computer-aided design images so that more complex surfaces could be machined and the use of more sensors for in-process inspection and real-time adjustments. Such projects have been catalysts for four startups including Imprint Energy and Wireless Industrial Technologies. His research has produced more than 460 books, chapters and journal articles, and 12 U.S. and foreign patents issued or pending, which have been licensed for commercial development. He is a member of NAE and a fellow of ASME and SME.



James C. Wyant | *The University of Arizona*

James C. Wyant, Ph.D., is professor emeritus and founding dean at the College of Optical Sciences at The University of Arizona and has been on faculty since 1974. Wyant is the co-founder of four companies, including WYKO, where he served as president and board chairman from 1984 to 1997. He holds 10 U.S. patents and has more than 300 written publications and invited talks on interferometry, holography, and optical testing. He was the 2010 president of OSA and the 1986 president of SPIE. He has received several awards including the OSA Joseph Fraunhofer Award; SPIE Gold Medal; SPIE Technology Achievement Award; SPIE Chandra Vikram Award; and four R&D 100 awards. Wyant is a member of NAE, a fellow of OSA and SPIE, and former editor-in-chief of OSA journal *Applied Optics*.



Pan-Chyr Yang | *National Taiwan University*

Pan-Chyr Yang, M.D., Ph.D., is president of National Taiwan University. Yang's major contributions are leading the translational research and precision therapy for lung cancer patients in Taiwan. He is the recipient of the Outstanding Research Award and Academic Award from the Ministry of Education Taiwan. He holds 22 patents in the field of translational cancer medicine, 11 of which have been licensed. His group identified novel genes and biomarkers for precision lung cancer therapy. They established a platform for lung cancer stem cell (CSC) culture and developed the technology for lung CSC and microenvironment directed therapy. His group also developed DNA aptamers against PD-1, PD-L1 and CTLA-4 for cancer immunotherapy. He has published more than 500 articles and three books, and served on the editorial boards of the *Journal of Clinical Oncology* and *JAMA Oncology*, among others. Yang is a member of Academia Sinica in Taiwan and Academy of Sciences for the Developing World.



Yu-Dong Yao | *Stevens Institute of Technology*

Yu-Dong Yao, Ph.D., is professor and department director of electrical and computer engineering at Stevens Institute of Technology. His research interests include wireless communications, software defined radio, and cognitive radio. He received the Advancement of Invention Award from the New Jersey Inventors Hall of Fame and the Outstanding Achievement Award from Association of Old Crows (AOC-Electronic Defense). He holds 13 U.S. patents that have been licensed to companies that manufacture cell phones and cellular networks. He has published over 150 papers and served as editor/associate editor of *IEEE Transactions on Wireless Communication*, *IEEE Transactions on Vehicular Technology*, and *IEEE Communications Letters*. Yao is a fellow of IEEE and an IEEE ComSoc Distinguished Lecturer.



Martin L. Yarmush | *Rutgers, The State University of New Jersey*

Martin L. Yarmush, M.D., Ph.D., is Paul and Mary Monroe Chair and Distinguished Professor of biomedical engineering at Rutgers University. Yarmush is internationally recognized as a pioneer in numerous fields including: applied immunology and bioseparations; metabolic engineering; tissue engineering and regenerative medicine; BioMEMS and nanotechnology; and medical devices. He is the recipient of more than 25 awards including the 2011 Bioengineering Award from AIChE; 2013 Top 20 Translational Researchers from Nature Biotechnology, and 2015 Pritzker Distinguished Lecturer Award from BMES. He holds 21 patents that have been licensed to 11 companies and is founder of 10 startups. He has published more than 500 articles and book chapters, and serves as editor-in-chief for three peer-reviewed journals including the *Annual Review of Biomedical Engineering*, the highest impact factor journal in its peer-group. Yarmush is a founding fellow of AIMBE, and has mentored more than 140 graduate students and post-doctoral fellows, the majority of whom are currently leading academics or captains of industry.



Jianping Zheng | *Florida State University*

Jianping Zheng, Ph.D., is professor and Sprint Eminent Scholar Chair of electrical and computer engineering at Florida A&M University and Florida State University. Zheng discovered a novel high energy lithium-ion capacitor, developed hydrous ruthenium oxide nano-particles for supercapacitors, and explored ultra-low platinum loading and using buckypaper supported catalytic electrodes for high performance fuel cells. He is a National Research Council Fellow, and the recipient of the Army Research & Development Achievement Award, NASA Faculty Research Award, and Progress Energy Professional Development Award. He holds five U.S. patents that have been licensed to three private companies. He is the founder of General Capacitor LLC, and a co-founder of Bing Energy International Inc. He has published 122 articles in peer-reviewed journals, 119 papers in conference proceedings, and serves on the editorial board of the *Journal of Materials*. Zheng is a senior member of IEEE and Electrochemical Society.

2015 FELLOWS SELECTION COMMITTEE



Norman R. Augustine

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

Norman R. Augustine is retired chairman and CEO of the board of the Lockheed Martin Corporation. Prior to joining Martin Marietta, he served as Assistant Secretary of the Army (R&D) from 1973-75 and Undersecretary 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, NAS, AAA&S, the Explorers Club, Tau Beta Pi, Phi Beta Kappa and Sigma Xi. He holds 24 issued U.S. patents and has published over 200 peer-reviewed publications.



Karen J.L. Burg

*Harbor Lights Endowed Chair, Department of Small Animal Medicine and Surgery
University of Georgia
AAAS-Lemelson Invention Ambassador
NAI Fellow*

Karen J.L. Burg, Ph.D., is professor and the Harbor Lights Endowed Chair in the Department of Small Animal Medicine and Surgery at the University of Georgia. Prior to joining UGA, she served as vice president for research and a professor of chemical engineering at Kansas State University from 2014 to 2016. Burg's honors include a Presidential Early Career Award for Scientists and Engineers, the inaugural Swiss AO Research Prize, recognition as a Massachusetts Institute of Technology's TR100 Young Innovator, an American Institute for Medical and Biological Engineering Fellow, an American Council on Education Fellow, a U.S. Department of Defense Era of Hope Scholar, and an AAAS-Lemelson Invention Ambassador. She has seven patents issued, 13 disclosures and/or provisional patent applications recorded, with one patent serving as the basis for a diagnostics startup company. Burg has given over 200 invited presentations and authored over 140 peer-reviewed publications on the subject of engineered tissues. A Burg invention was one of ten technologies featured in the inaugural Avon Foundation for Women – National Institutes of Health – Center for Advancing Innovation Breast Cancer Start-Up Challenge. She holds 24 issued U.S. patents and has published over 200 peer-reviewed publications.



Anne H. Chasser

*Chair, Selection Committee
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 Anne served as the Commissioner for Trademarks at the United States Patent and Trademark Office. Appointed by President Clinton and confirmed by the United States Senate, she served in both the Clinton and Bush administrations, where she oversaw the trademark operations at the USPTO. During her term at the USPTO, the trademark operations implemented full electronic processing of trademark applications and examination and implemented the Madrid Protocol. She was recognized by *Managing Intellectual Property Magazine* as one of the Fifty Most Influential People in Global Intellectual Property. Anne co-authored two books: *Brand Rewired* and *Domain Rewired*, published by John Wiley. In 2014, Chasser was awarded the Distinguished Career Award by The Ohio State University, John Glenn School of Public Affairs.



Edward G. Derrick

*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. These include the interplay of science with religion, law and human rights; they connect scientists and policy makers through programs in science and government, including the S&T Policy Fellowship program; and they address improvement in the conduct of science through activities promoting responsible conduct of science and through a peer review service. He holds a Ph.D. from The University of Texas at Austin, with a dissertation in theoretical particle physics, and a B.S. from the Massachusetts Institute of Technology, with an undergraduate thesis in biophysics.



Elizabeth L. Dougherty

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

Elizabeth L. Dougherty, J.D., is director of inventor education, outreach, and recognition in the Office of Innovation Development at the United States Patent and Trademark Office (USPTO). In this capacity, she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs and the intellectual property interests of colleges and universities; she supervises the development of outreach programs to women, minority and other underserved communities; she also 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. She serves as an ex-officio on the National Academy of Inventors board of directors and as a member of the NAI Fellows Selection Committee since 2012.



Henry C. Foley

*Interim Chancellor
University of Missouri System
NAI Fellow*

Henry (Hank) C. Foley, Ph.D., is interim chancellor and former senior vice chancellor for research and graduate studies and the University of Missouri System executive vice president for academic affairs, research and economic development. Foley has led the system's strategic planning efforts, provided system-wide leadership in academic programs, promoted economic development and advanced research collaborations and enhanced funding and oversees a \$2.1 billion enterprise, while directing MU's research mission, which is classified as a "Research University/Very High" by the Carnegie Institute. Foley is a tenured professor of chemistry at MU and a tenured professor of chemical and biochemical engineering at the Missouri University of Science and Technology. Foley is a fellow of AAAS, Industrial and Engineering Division of the ACS and NAI. He is a member of the Cosmos Club in Washington, D.C., and Sigma Xi, Phi Lambda Upsilon and Sigma Pi Sigma. He has been recognized with the New York Metropolitan Catalysis Society's Excellence in Catalysis Award, Philadelphia Catalysis Club's Annual Award, Leo C. Friend Award from ACS, Research Innovation Recognition Award from Union Carbide Corporation, Presidential Young Investigator Award from NSF, Thiele Lecture in Chemical Engineering at the University of Notre Dame, Distinguished Departmental Lecture in Chemical Engineering at the University of Utah, and Henry E. Bent Lecture in Chemical Engineering at MU. He has authored more than 120 refereed archival journal articles, is an inventor with 16 U.S. patents and is the author of *Introduction to Chemical Engineering Analysis Using Mathematica*, published in 2003. Graduate and undergraduate students he has mentored have prospered in industry and in academia.



Eric R. Fossum

*National Inventors Hall of Fame Inductee
National Academy of Engineering Member
Dartmouth College
NAI Charter Fellow*

Eric R. Fossum, Ph.D., is professor at the Thayer School of Engineering at Dartmouth and director 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 and led Photobit to further develop and commercialize the technology which was eventually acquired by Micron. He holds over 150 U.S. patents and was inducted into the National Inventors Hall of Fame and the Space Technology Hall of Fame. He has published over 270 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, serves on several boards, and is a Trustee of Trinity College. He is co-editor-in-chief of the NAI journal, *Technology and Innovation*.



Robert H. Grubbs

*Nobel Laureate
National Academy of Engineering Member
Victor and Elizabeth Atkins Professor of Chemistry
California Institute of Technology
NAI Fellow*

Robert H. Grubbs, Ph.D., is the Victor and Elizabeth Atkins Professor of Chemistry at the California Institute of Technology. He received his bachelor's degree in chemistry from the University of Florida in 1963 and his doctoral degree 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. He is a member of NAS and NAE, a fellow of AAAS and an inductee of the Florida Inventors Hall of Fame. His research has generated over 120 issued U.S. patents.



Andrew H. Hirshfeld

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

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



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Robert S. Langer

*National Medal of Technology and Innovation Recipient
National Medal of Science Recipient
National Inventors Hall of Fame Inductee
David H.Koch Institute Professor
Massachusetts Institute of Technology
NAI Charter Fellow*

Robert S. Langer, Sc.D., 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 1,300 articles. He also has 1,100 issued and pending patents worldwide. His many awards include the United States National Medal of Science, United States National Medal of Technology and Innovation, Charles Stark Draper Prize (considered the engineering Nobel Prize), Albany Medical Center Prize (largest US medical prize), Wolf Prize for Chemistry and Lemelson-MIT Prize, for being “one of history’s most prolific inventors in medicine.” Langer is an elected member of NAM, NAE and NAS.



Cato T. Laurencin

*Designated University Professor
Albert and Wilda Van Dusen Distinguished Professor of Orthopaedic Surgery
University of Connecticut
NAI Fellow*

Cato T. Laurencin, M.D., Ph.D. is a designated university professor at the University of Connecticut. He is the Albert and Wilda Van Dusen Distinguished Professor of Orthopaedic Surgery and professor of chemical engineering, professor of materials science and engineering, and professor of biomedical engineering at the school. He serves as director of the Institute for Regenerative Engineering, and director of the Raymond and Beverly Sackler Center for Biomedical, Biological, Physical and Engineering Sciences at the UConn Health Center. In addition, he serves as chief executive officer of the Connecticut Institute for Clinical and Translational Science at UConn. Laurencin earned a B.S.E. in chemical engineering from Princeton, his medical degree magna cum laude from Harvard Medical School and his Ph.D. in biochemical engineering/biotechnology from M.I.T. He is an elected member of NAM, NAS and NAE, and a recipient of the U.S. Medal of Technology and Innovation.



Sir George Henry Martin, CBE

*Rock and Roll Hall of Fame Inductee
Producer of The Beatles
Commander of The British Empire
Six-Time Grammy® Award Winner*

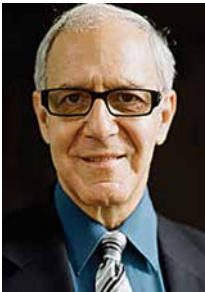
Prior to his death on March 8, 2016, Sir George Henry Martin served as a member of the NAI Fellows Selection Committee from its inception in 2012. A composer in his own right, Martin was responsible for the music of a considerable number of films, ‘A Hard Day’s Night’ (for which he won an Academy Awards Nomination); ‘The Family Way’; John Schlesinger’s ‘Honky Tonk Freeway’; ‘Yellow Submarine’; ‘Pulp’ starring Michael Caine and Mickey Rooney; ‘Optimist of Nine Elms’ with Peter Sellers and the Bond movie ‘Live and Let Die’ (for which he won a Grammy). He was also Musical Director and Composer for ‘Sgt. Pepper’ starring the Bee Gees and ‘Give My Regards to Broad Street’ and the award-winning cartoon ‘Rupert and The Frog Song’ for Paul McCartney. He also composed The David Frost Theme, ‘By George,’ for television and BBC Radio One’s signature tune ‘Theme One.’ It was in 1962 that he signed The Beatles to EMI - a decision which launched them on their remarkable career, producing every record they made until they disbanded in 1970. Martin 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 he was appointed Commander of the British Empire for his services to the music industry. Until his death, he continued to write music; perform concerts; give motivational talks; work with charities; advise broadcasters and government on music content and serve as an active research advocate.



Richard D. McCullough

*Vice Provost for Research
Harvard University
NAI Fellow*

Richard D. McCullough, Ph.D., is vice provost for research and professor of materials science and engineering at Harvard University. At Harvard, he provides leadership for interdisciplinary research initiatives, corporate and foundation development, entrepreneurship, and planning for the Allston campus. Formerly, he was vice president for research at Carnegie Mellon University, where he also had served as dean of science, head of chemistry, and was the Thomas Lord Professor of Chemistry. He has pioneered the discovery and development of printed electronic materials, including regioregular polythiophenes, reactive metal inks, highly conductive block copolymers, transistors, solar cells, nanoelectronics, and the living synthesis of conductive polymers. He has founded two companies: Plextronics and Liquid X Printed Metals. He received his bachelor's degree in chemistry at The University of Texas at Dallas, a Ph.D. at Johns Hopkins University, and did his postdoctoral fellowship at Columbia University.



Arthur Molella

*Director Emeritus
Smithsonian Lemelson Center for The Study of Invention & Innovation*

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



Rini Paiva

*Executive Director
National Inventors Hall of Fame*

Rini Paiva is the executive director of the National Inventors Hall of Fame. 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 facilitates NIHF Inductee involvement with the Collegiate Inventors Competition (CIC), which brings recognition to the country's outstanding college students who create the technologies that shape the future. Both 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 to be involved in Invent Now's education programs so that they may serve as inspiration, encouragement, and examples to younger generations. With NIHF since 1995, Paiva is an authority on the topic of U.S. invention.



Fred Reinhart

*Immediate Past President, Association of University Technology Managers
Senior Advisor for Technology Transfer
University of Massachusetts Amherst*

Fred Reinhart, MBA, RTTP, is immediate past president of the Association of University Technology Managers, a 3,300 member international professional organization dedicated to facilitating the transfer of academic discoveries to the public through out-licensing of intellectual property to industry, creation of high-technology startup companies, and corporate collaboration. He previously served for four years as AUTM's vice president for finance. Reinhart has over 30 years of experience as a technology transfer executive at UMass Amherst, Tufts-New England Medical Center, University of Michigan and Wayne State University. He was also chairman of the Michigan Biosciences Industry Association. He is currently senior advisor for technology transfer at UMass Amherst. He is a registered technology transfer professional and a graduate of the University of Michigan with a master of business degree in new product development and marketing.



Jessica A. Sebeok

*Associate Vice President for Policy
Association of American Universities*

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



James K. Woodell

*Vice President for Economic Development and Community Engagement
Association of Public and Land-grant Universities*

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

COMPLETE LIST OF CURRENT NAI FELLOWS

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C. Mauli Agrawal, The University of Texas at San Antonio
Dharma P. Agrawal, University of Cincinnati
Rakesh Agrawal, Purdue University
Ilhan A. Aksay, Princeton University
Dean P. Alderucci, The University of Chicago
Nancy L. Allbritton, The University of North Carolina at Chapel Hill
Jan P. Allebach, Purdue University
Jayakrishna Ambati, University of Kentucky
Dimitris Anastassiou, Columbia University
Iver E. Anderson, Iowa State University
Kristi S. Anseth, University of Colorado Boulder
Allen W. Apblett, Oklahoma State University
Daniel W. Armstrong, The University of Texas at Arlington
Frances H. Arnold, California Institute of Technology
Charles J. Arntzen, Arizona State University
David E. Aspnes, North Carolina State University
Anthony Atala, Wake Forest University
Kyriacos A. Athanasiou, University of California, Davis
Harry A. Atwater, Jr., California Institute of Technology
Nadine N. Aubry, Northeastern University
Lorne A. Babiuk, University of Alberta
John M. Ballato, Clemson University
David Baltimore, California Institute of Technology
Amit Bandyopadhyay, Washington State University
John S. Baras, University of Maryland
Michael Bass, University of Central Florida
Issa Batarseh, University of Central Florida
Benton F. Baugh, University of Houston
Ray H. Baughman, The University of Texas at Dallas
David J. Bayless, Ohio University
Joseph J. Beaman, Jr., The University of Texas at Austin
Kurt H. Becker, New York University
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Robert A. Brown, Boston University
Robert H. Brown, Jr., University of Massachusetts Medical School
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Karen J.L. Burg, University of Georgia
Mark A. Burns, University of Michigan
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Robert H. Byrne, University of South Florida
A. Robert Calderbank, Duke University
Sir Roy Calne, University of Cambridge
Joe C. Campbell, University of Virginia
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Nai Yuen Chen, The University of Texas at Arlington
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Katrina Cornish, The Ohio State University
Delos M. Cosgrove III, Cleveland Clinic
Joseph T. Coyle, Harvard University
Harold G. Craighead, Cornell University
Charles S. Craik, University of California, San Francisco

* Indicates deceased

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Benjamin F. Cravatt III, The Scripps Research Institute
Carlo M. Croce, The Ohio State University
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COMMON ABBREVIATIONS

AAA&S	American Academy of Arts and Sciences
AAAS	American Association for the Advancement of Science
AAP	.....	Association of American Physicians
ACerS	.....	American Ceramic Society
ACM	.....	Association for Computing Machinery
ACS	.....	American Chemical Society
AIChE	.....	American Institute of Chemical Engineers
AIMBE	.....	American Institute for Medical and Biological Engineering
APMI	.....	American Powder Metallurgy Institute
APS	.....	American Physical Society
ARS	.....	Agricultural Research Service
ARVO	.....	Association for Research in Vision and Ophthalmology
ASBMB	.....	American Society for Biochemistry and Molecular Biology
ASCI	.....	American Society for Clinical Investigation
ASEE	.....	American Society for Engineering Education
ASLMS	.....	American Society for Laser Medicine and Surgery
ASM	.....	American Society for Metals International
ASME	.....	American Society Of Mechanical Engineers
ASPB	.....	American Society of Plant Biology
BMES	.....	Biomedical Engineering Society
DARPA	.....	Defense Advanced Research Projects Agency
FDA	.....	U.S. Food and Drug Administration
HHMI	.....	Howard Hughes Medical Institute
IAPR	.....	International Association of Pattern Recognition
IEEE	.....	Institute of Electrical and Electronics Engineers
IGERT	.....	Integrative Graduate Education and Research
IOVS	.....	Investigative Ophthalmology & Visual Science
JTH	.....	Journal of Thrombosis and Haemostasis
MRS	.....	Materials Research Society
NAE	.....	National Academy of Engineering
NAM	.....	National Academy of Medicine
NAS	.....	National Academy of Sciences
NIH	.....	National Institutes of Health
NIHF	.....	National Inventors Hall of Fame
NSF	.....	National Science Foundation
OSA	.....	Optical Society of America
PNAS	.....	Proceedings of the National Academy of Sciences
SFB	.....	Society for Biomaterials
SIAM	.....	Society of Industrial and Applied Mathematics
SME	.....	Society of Manufacturing Engineers
SPIE	.....	International Society of Optical Engineering
TMS	.....	The Minerals, Metals and Materials Society
TVST	.....	Translational Vision Science & Technology
U.S. DoD	.....	United States Department of Defense
U.S. DOE	.....	United States Department of Energy
USDA	United States Department of Agriculture
WAC	World Academy of Ceramics



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