2012 CHARTER FELLOWS

of the

National Academy of Inventors

Fellows pictured with U.S. Commissioner for Patents Margaret Focarino (seated in front row, third from left). Nearly half of the 101 NAI Charter Fellows were in attendance at the 2013 NAI Annual Conference for the Fellows' induction ceremony. (Photo: Aimee Blodgett)

2012 NAI CHARTER FELLOWS

The 101 top scientists and innovators elected as 2012 Charter Fellows of the National Academy of Inventors were inducted as Fellows on February 22, 2013, by United States Commissioner for Patents Margaret A. Focarino from the United States Patent and Trademark Office. The ceremony was held as part of the 2nd Annual Conference of the NAI, in Tampa, Florida. The Fellows received a special trophy and certificate; along with a rosette pin custom designed and made exclusively for the NAI Fellows.

The inventors who comprise the Charter class of Fellows represent 56 universities and non-profit research institutes. Collectively, they hold more than 3,200 U.S. patents. Included in the Charter class are eight Nobel Laureates, 14 presidents of research universities and non-profit research institutes, 54 members of the National Academies (National Academy of Sciences, National Academy of Engineering, Institute of Medicine), two Fellows of the Royal Society, 11 inductees of the National Inventors Hall of Fame, five recipients of the National Medal of Technology and Innovation, four recipients of the National Medal of Science, and 31 AAAS Fellows, among many other major awards and distinctions.

ABOUT THE NAI FELLOWS PROGRAM

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

Nominees must be a named inventor on at least one patent issued by the United States Patent and Trademark Office and must be affiliated with a university, nonprofit research institute or other academic entity.

Academic inventors and innovators elected to the rank of NAI Charter 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 own 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.

ABOUT THE NATIONAL ACADEMY OF INVENTORS®

The National Academy of Inventors is a 501(c)3 non-profit member organization comprised of more than 65 U.S. and international universities, and federal and non-profit research institutions, with over 2,000 individual academic inventor members, and growing rapidly. It was founded in 2010 to recognize and encourage inventors with patents issued from the U.S. Patent and Trademark Office, enhance the visibility of academic technology and innovation, encourage the disclosure of intellectual property, educate and mentor innovative students, and translate the inventions of its members to benefit society. The NAI offices are located in the University of South Florida Research Park of Tampa Bay. The NAI edits the multidisciplinary journal, *Technology and Innovation – Proceedings of the National Academy of Inventors,* published by Cognizant Communication Corporation (NY).

National Academy of Inventors, 3702 Spectrum Boulevard, Suite 175, Tampa, FL 33612-9444 USA
www.academyofinventors.org

UNITED STATES PATENT AND TRADEMARK OFFICE
COMMISSIONER FOR PATENTS

Paul R. Sanberg, Ph.D., D.Sc.
President, National Academy of Inventors
Vice President for Research and Innovation
University of South Florida
3702 Spectrum Boulevard, Suite 175
Tampa, Florida 33612-9444

Dear Dr. Sanberg:

On behalf of the United States Patent and Trademark Office (USPTO), I would like to express our heartfelt gratitude to the National Academy of Inventors (NAI) for its ongoing collaboration with USPTO initiatives such as our regional Independent Inventor Conferences and the Innovation Expo and to extend our appreciation of the NAI's mission to encourage innovation and recognize inventors.

Since its formation, the NAI has played a significant role in the inventor communities associated with universities and non-profit research institutes. Through its Journal of Technology and Innovation, the NAI disseminates important information that adds to the global body of technological literature. The many symposia and events the academy sponsors throughout the year raise awareness of the essential role that intellectual property plays in the technological ecosystem. By serving as an indispensable resource for innovators based in our nation's superb research institutions, the NAI makes meaningful contributions to both innovation and the American way of life.

The USPTO has found an important friend in the NAI, one whom we can call on for collaboration and support as we discharge our own mission to advance and protect innovation. I look forward to a lasting relationship between the USPTO and the NAI, one that will continue to benefit both of our organizations, the innovation community, and the American people as a whole.

Thank you for all that you do!

Warm regards,

Peggy Focarino

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

P.O. Box 1450, Alexandria, Virginia 22313-1450 – WWW.USPTO.GOV

KATHY CASTOR
14TH DISTRICT, FLORIDA

COMMITTEE ON
ENERGY AND COMMERCE
SUBCOMMITTEE ON HEALTH
SUBCOMMITTEE ON
ENERGY AND POWER
SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON THE BUDGET
REGIONAL WHIP

Congress of the United States
House of Representatives
Washington, DC 20515–0914

WASHINGTON OFFICE:
205 CANNON BUILDING
WASHINGTON, DC 20515
(202) 225-3376

DISTRICT OFFICE:
4144 NORTH ARMENIA AVENUE
SUITE 300
TAMPA, FL 33607
(813) 871-2817

www.castor.house.gov

February 22, 2013

Dear Friends,

I am honored to welcome the National Academy of Inventors for their Annual Conference being held on the campus of the University of South Florida.

It is a privilege for the USF campus and the City of Tampa to host the National Academy of Inventors Annual Conference this year. The National Academy of Inventors is a non-profit membership organization that has grown exponentially over the last three years. This annual event and luncheon brings together individuals from chapter based universities to come together to recognize and encourage inventors who have a United States Patent. The conference and the organization helps to enhance visibility on academic innovation, educate students, and through their inventions, provide benefits to our society and community as a whole.

I join you in welcoming your keynote speaker, the U.S. Commissioner for Patents, Ms. Margaret A. Focarino. Commissioner Focarino started her career as a patent examiner in 1977 and continued her career within the United States Patent and Trademark Office when in January 2012 she was appointed Commissioner. She has been commended for her effective leadership and management training throughout her career. I thank the National Academy of Inventors, the University of South Florida, and the devoted Charter Members who will be inducted today should be thanked for their efforts in making this conference possible.

On behalf of the constituents of the Fourteenth Congressional District of Florida, I offer best wishes for a successful and innovative conference this year and for many years to come.

Sincerely,

Kathy Castor

Kathy Castor
United States Representative
Florida, District 14

United States of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 113th CONGRESS, FIRST SESSION

Vol. 159

House of Representatives

HON. GUS M. BILIRAKIS OF FLORIDA

Extension of Remarks

Congratulating the 2012 National Academy of Inventors' Charter Fellows

Thursday, February 28, 2013

Mr. BILIRAKIS. Mr. Speaker, I rise today to honor the 101 inventors who were recently recognized at the University of South Florida in Tampa and inducted as the 2012 National Academy of Inventors' Charter Fellows by the United States Commissioner of Patents, Margaret A. Focarino. In order to be named as a Charter Fellow, these men and women were nominated by their peers and have undergone the scrutiny of the NAI Selection Committee, having had their innovations deemed as making significant impact on quality of life, economic development, and welfare of society. Collectively, this elite group holds more than 3,200 patents.

The individuals making up this year's class of Charter Fellows include individuals from 56 research universities and non-profit research institutes spanning not just the United States but also the world. This group of inductees touts eight Nobel Laureates, 14 presidents of research universities and non-profit research institutes, 53 members of the National Academies, 11 inductees of the National Inventors Hall of Fame, two Fellows of the Royal Society, five recipients of the National Medal of Technology and Innovation, four recipients of the National Medal of Science, and 31 AAAS Fellows, among other major awards and distinctions.

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

The 2012 NAI Charter Fellows include:

Dharma P. Agrawal, University of Cincinnati; Anthony Atala, Wake Forest University; Benton F. Baugh, University of Houston; Khosrow Behbehani, University of Texas at Arlington; Raymond J. Bergeron, University of Florida; Gerardine G. Botte, Ohio University; Robert H. Brown, Jr., University of Massachusetts Medical Center; Robert L. Byer, Stanford University; Sir Roy Calne, University of Cambridge; Curtis R. Carlson, SRI International.

Nai Yuen Chen, University of Texas at Arlington; Stephen Z. D. Cheng, The University of Akron; Paul C. W. Chu, University of Houston; James J. Collins, Boston University; James G. Conley, Northwestern University; Joseph T. Coyle, Harvard University; James E. Dahlberg, University of Wisconsin-Madison; Roger J. Davis, University of Massachusetts Medical Center; Sandra J. F. Degen, University of Cincinnati; Hector F. DeLuca, University of Wisconsin-Madison.

Donn M. Dennis, University of Florida; Akira Endo, Tokyo University of Agriculture & Technology; Howard J. Federoff, Georgetown University; Thomas J. Fogarty, Fogarty Institute for Innovation; Kenneth M. Ford, Institute for Human & Machine Cognition; Eric R. Fossum, Dartmouth College; Robert C. Gallo, University of Maryland; Alan N. Gent, The University of Akron; Morteza Gharib, California Institute of Technology; Ivar Giaever, Rensselaer Polytechnic Institute.

Barbara A. Gilchrest, Boston University; Richard D. Gitlin, University of South Florida; Leonid B. Glebov, University of Central Florida; D. Yogi Goswami, University of South Florida; Mark W. Grinstaff, Boston University; Greg Hampikian, Boise State University; Barbara C. Hansen, University of South Florida; Patrick T. Harker, University of Delaware; Martin E. Hellman, Stanford University; Nick Holonyak, Jr., University of Illinois at Urbana-Champaign.

Leroy E. Hood, Institute for Systems Biology; Richard A. Houghten, Torrey Pines Institute for Molecular Studies; Ernest B. Izevbigie, Jackson State University; Stephen C. Jacobsen, University of Utah; Eric W. Kaler, University of Minnesota; Linda P. B. Katehi, University of California, Davis; Joseph P. Kennedy, The University of Akron; Sakhrat Khizroev, Florida International University; Sung Wan Kim, University of Utah; George V. Kondraske, University of Texas at Arlington.

John J. Kopchick, Ohio University; Roger D. Kornberg, Stanford University; Max G. Lagally, University of Wisconsin-Madison; Robert S. Langer, Massachusetts Institute of Technology; Brian A. Larkins, University of Nebraska-Lincoln; Victor B. Lawrence, Stevens Institute of Technology; Virginia M.-Y. Lee, University of Pennsylvania; Jean-Marie Pierre Lehn, University of Strasbourg; Shinn-Zong Lin, China Medical University; Thomas A. Lipo, University of Wisconsin-Madison.

Barbara H. Liskov, Massachusetts Institute of Technology; Alan F. List, H. Lee Moffitt Cancer Center and Research Institute; R. Bowen Loftin, Texas A&M University; Dan Luss, University of Houston; Robert Magnusson, University of Texas at Arlington; Richard B. Marchase, University of Alabama at Birmingham; Stephen W. S. McKeever, Oklahoma State University; Craig C. Mello, University of Massachusetts Medical Center; Shyam Mohapatra, University of South Florida; Theodore D. Moustakas, Boston University.

George R. Newkome, The University of Akron; C. L. Max Nikias, University of Southern California; David P. Norton, University of Florida; Julio C. Palmaz, U. of Texas Health Science Center at San Antonio; Thomas N. Parks, University of Utah; C. Kumar N. Patel, University of California, Los Angeles; Prem S. Paul, University of Nebraska-Lincoln; David W. Pershing, University of Utah; G. P. Peterson, Georgia Institute of Technology; Leonard Polizzotto, Draper Laboratory.

Huntington Potter, University of Colorado Denver; Paul R. Sanberg, University of South Florida; Timothy D. Sands, Purdue University; Raymond F. Schinazi, Emory University; Dean L. Sicking, University of Alabama at Birmingham; Oliver Smithies, University of North Carolina at Chapel Hill; Solomon H. Snyder, Johns Hopkins University; Franky So, University of Florida; M. J. Soileau, University of Central Florida; Nan-Yao Su, University of Florida.

Jack W. Szostak, Harvard University; Esther Sans Takeuchi, Stony Brook University; H. Holden Thorp, University of North Carolina at Chapel Hill; Charles H. Townes, University of California, Berkeley; John Q. Trojanowski, University of Pennsylvania; Roger Y. Tsien, University of California, San Diego; James L. Van Etten, University of Nebraska-Lincoln; James W. Wagner, Emory University; John E. Ware, Jr., University of Massachusetts Medical Center; Herbert Weissbach, Florida Atlantic University; Shin-Tson Wu, University of Central Florida.

FELLOWS

Dharma P. Agrawal, University of Cincinnati

Dharma P. Agrawal, D.Sc., is Ohio Board of Regents Distinguished Professor at the University of Cincinnati. He has provided leadership in education and exemplary accomplishments in wireless technologies, including sensor networks. He is the recipient of the 2008 Harry Goode Memorial award, IEEE second millennium medal, Excellence in Mentoring of Doctoral Students (2011), and ISI Highly Cited Researcher (2002). He holds six U.S. patents and 24 patent disclosures. He is the co-founder of the Global Information Services LLC. He has published 624 articles, seven books, 40 book chapters and serves as editor or editorial board member for six peer-reviewed journals. He is a fellow of IEEE, ACM, AAAS, and WIF.

Anthony Atala, Wake Forest University

Anthony Atala, M.D., is director of Wake Forest Institute for Regenerative Medicine and chair of Urology at Wake Forest School of Medicine. He is a practicing surgeon and a researcher in regenerative medicine. He is editor-in-chief of *Stem Cells-Translational Medicine* and *Therapeutic Advances in Urology,* and serves on the editorial board of 20 journals. He has received the Christopher Columbus Award, World Technology Award in Medicine, Samuel Gross Prize, Barringer Medal, and Gold Cystoscope award. His medical breakthroughs have been featured in *Time* magazine and *U.S. News & World Report*. He is the editor of 12 books, has published over 300 journal articles, and has over 40 patents.

Benton F. Baugh, University of Houston

Benton F. Baugh, Ph.D., P.E., is Distinguished Adjunct Professor of Mechanical Engineering at the University of Houston and president of Baugh Consulting Engineers, Inc., which does oilfield related consulting, patent licensing, and expert witness work. He is a registered professional engineer having earned a BSME degree from the University of Houston and earned MS and Ph.D. degrees from Kennedy Western University. He founded, built, and sold Radoil, Inc., which specializes in manufacturing offshore equipment. He is a member of the National Academy of Engineering, a fellow of the ASME and MTS Societies and has been recognized as an industry pioneer by the Offshore Energy Center. He holds more than 100 patents.

Khosrow Behbehani, University of Texas at Arlington

Khosrow Behbehani, Ph.D., serves as chair of the Bioengineering department at the University of Texas at Arlington. He is a leading innovator in developing methods and devices for detection and treatment of sleep disordered breathing and chronic pulmonary disease. He is the recipient of the University of Texas Chancellor's Entrepreneurship and Innovation Award, and holds nine U.S. patents some of which are internationally registered. Over a million patients have been treated with devices designed using his bioengineering innovations. He is a fellow of the American Institute of Medical and Biological Engineering, and the Institute of Electrical and Electronics Engineers.

Raymond J. Bergeron, University of Florida

Raymond J. Bergeron, Ph.D., is Emeritus Graduate Research Professor at the University of Florida. He received his Ph.D. in Organic Chemistry from Brandeis University, studied under Nobel Laureate Konrad Bloch at Harvard, and joined the chemistry faculty at the University of Maryland. In 1978, he moved to the University of Florida department of Medicinal Chemistry, where he established his expertise in polyamine and iron metabolism, leading to the development of anticancer drugs and treatments for children with iron overload disease. He has published 200 papers and a bioorganic chemistry text, edited two books and generated over 200 patents. Six of his discoveries have reached human clinical trials.

Gerardine G. Botte, Ohio University

Gerardine G. Botte, Ph.D., is Russ Professor of Chemical and Biomolecular Engineering and currently serves as director of the Center for Electrochemical Engineering Research, Ohio University. She is a leading researcher in electrochemistry and has made significant innovations in this field. She is a fellow of the WTN and was named a finalist of the WTA 2010. She holds seven U.S. patents and two foreign patents that have been licensed. She is the founder and CTO of E3 Clean Technologies. She has published 56 articles, four book chapters and serves as editor for the *Journal of Applied Electrochemistry*. She is a member of prestigious organizations such as the ECS and the ISE.

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

Robert H. Brown, Jr., M.D., D.Phil., is professor and chair of Neurology at the University of Massachusetts Medical Center and Medical School, and founder and director of its Day Neuromuscular Research Laboratory. He graduated from Harvard Medical School, completed his doctoral training in neurophysiology at Oxford University, and trained in Neurology at the Massachusetts General Hospital. His laboratory focuses on identification of gene defects that elucidate the molecular pathogenesis of selected neuromuscular diseases including ALS, muscular dystrophy, adrenoleukodystrophy, hereditary neuropathy and hyperkalemic periodic paralysis. Knowledge of these genes facilitated the creation of mouse and cell-based models that have allowed study of therapeutic strategies using conventional small molecule approaches and new modalities such as inhibitory RNAi.

Robert L. Byer, Stanford University

Robert L. Byer, Ph.D., is professor of Applied Physics at Stanford University where he served as department chair and dean of Research. He has made significant contributions and inventions in the fields of lasers and nonlinear optics. He is a member of the NAE and the NAS, and received the Third Millennium Medal and the Photonics Award (IEEE), and the Federic Ives Medal (Optical Society of America). He has published over 400 scientific papers and holds over 50 patents, licensed worldwide. Key patents relate to lasers and to nonlinear optics such as the patent for the green laser pointer. He served as president of the Photonics Society (IEEE), the OSA, and the American Physical Society.

Sir Roy Calne, University of Cambridge

Sir Roy Calne, FRS, is a British surgeon and pioneer in organ transplantation; he performed the first liver transplantation operation in Europe in 1968, the world's first liver, heart, and lung transplant in 1987; and the first successful stomach, intestine, pancreas, liver, and kidney cluster transplant in 1994. He is a fellow of the Royal Society and was professor of Surgery at Cambridge University (1965-98). He was Harkness Fellow at Harvard Medical School (1960-61). He is currently the Yoah Ghim Professor of Surgery at the National University of Singapore. He received the Lister Medal, Ellison-Cliffe Medal from the Royal Society of Medicine and Lasker Award.

Curtis R. Carlson, SRI International

Curtis R. Carlson, Ph.D., is president and CEO of SRI International, and a world authority on creating value for customers through innovation. Carlson led development of HDTV technology that became the U.S. standard and received two Emmy® Awards for technical achievement. His book with William Wilmot, *Innovation: The Five Disciplines for Creating What Customers Want,* describes how SRI's unique process for innovation can be applied to all types of government and commercial enterprises. He serves on the Scientific Advisory Board of the Singapore National Research Foundation, Innovation Leadership Council for the World Economic Forum, and National Advisory Council on Innovation and Entrepreneurship. He received a lifetime achievement award from Rutgers University and the Otto Schade Prize.

Nai Yuen Chen, University of Texas at Arlington

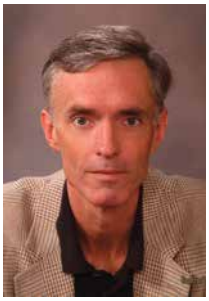
Nai Yuen Chen, Sc.D., is Distinguished Research Professor of Materials Science & Engineering at UT Arlington. He has been a member of the National Academy of Engineering since 1990. He came to UT Arlington in 2011. As a scientist at Mobil Research Laboratory between 1960 and 1993, he was the inventor of 126 U.S. patents on novel catalysts, oil refining, petrochemical and biomass processes. He was the major author of three books on *Shape Selective Catalysis* and contributor to eight other books on *Automotive Emissions Control, Catalyst Design, Chemicals Synthesis and Hydrocarbon Processing, Hydrogen Effects in Catalysis, Natural Zeolites, Molecular Sieve Science, Surface Science in Catalysis* and *Pyrolysis of Biomass.*

Stephen Z. D. Cheng, The University of Akron

Stephen Z. D. Cheng, Ph.D. is R. C. Musson & Trustees Professor and dean of the College of Polymer Science and Polymer Engineering at The University of Akron. He received the Presidential Young Investigator Award, John H. Dillon Medal (APS), PMSE Cooperative Research Award (ACS), and Polymer Physics Prize (APS). He holds 10 U.S. and foreign patents; with six licensed to two companies. He co-founded Akron Polymer System, has published over 430 papers and serves as senior editor of *Polymer* and on 14 editorial boards for peer-reviewed journals. He is a member of the National Academy of Engineering, a fellow of AAAS and APS, and an Honorable Fellow of the Chinese Chemical Society.

Paul C. W. Chu, University of Houston

Paul C. W. Chu, Ph.D., is T. L. L. Temple Chair of Science, and founding director and chief scientist, Texas Center for Superconductivity at the University of Houston. He is president emeritus and University Professor Emeritus, Hong Kong University of Science and Technology, and Honorary Chancellor, Taiwan Comprehensive University System. He received his B.S., M.S., and Ph.D. degrees from Cheng-Kung University (Taiwan), Fordham University, and University of California, San Diego, respectively. He is a world-leader in high temperature superconductivity research since his breakthrough in achieving superconductivity above the liquid nitrogen boiling point and remains the record holder of Tc. He received the National Medal of Science, and is a member of the National Academy of Sciences.



James J. Collins, Boston University and Harvard University

James J. Collins, Ph.D., is HHMI Investigator and University Professor at HHMI, Boston University and Wyss Institute, and Harvard University. He is a leading pioneer in synthetic biology, systems biology and antibiotics research. His patented technologies have been licensed by over 25 biotech, pharma and medical devices companies, and he has helped to launch a number of companies, including Sample6 Technologies and EnBiotix. He has received numerous awards and honors, including a Rhodes Scholarship, a MacArthur "Genius" Award, an NIH Director's Pioneer Award, a Sanofi-Institut Pasteur Award, as well as several teaching awards. Collins is a member of the National Academy of Engineering, Institute of Medicine and American Academy of Arts and Sciences.

James G. Conley, Northwestern University

James G. Conley, Ph.D., is clinical professor of technology in Managerial Economics & Decision Sciences at Northwestern University, faculty contributor in the Kellogg Center for Research in Technology & Innovation, faculty fellow at the Segal Design Institute, and visiting professor in the chair of technology and innovation management at the WHU in Germany. His research investigates the strategic use of intangible assets and intellectual properties to build and sustain competitive advantage. He holds seven U.S. patents with others pending, and, through Syndia Corporation (of which he is a founder), has grown and acquired a portfolio of intellectual properties licensed to entities worldwide.

Joseph T. Coyle, Harvard University

Joseph T. Coyle, M.D., is Eben S. Draper Professor of Psychiatry and Neuroscience at Harvard Medical School. He was Distinguished Service Professor of Neuroscience, Pharmacology and Psychiatry at Johns Hopkins and director of Child and Adolescent Psychiatry. He has published over 500 scientific articles and seven books. His research has been cited over 35,000 times. He sits on over 20 editorial boards including JAMA and is editor-in-chief of the *Archives of General Psychiatry,* the most highly cited journal in the field. He is a member of the Institute of Medicine, a Distinguished Fellow of the American Psychiatric Association, and fellow of the American Academy of Arts and Sciences, American College of Psychiatry, and American Association for the Advancement of Science.

James E. Dahlberg, University of Wisconsin–Madison

James E. Dahlberg, Ph.D., is interim CEO of Morgridge Institute for Research, and Professor Emeritus of the University of Wisconsin–Madison. He is a biochemist specializing in nucleic acid structure and function. Awards include Alumni Achievement, University of Chicago; Hilldale (Research), University of Wisconsin; Service to Humanity, Haverford College. He is inventor on 37 U.S. and 27 foreign patents. He cofounded two biotech companies, Cambridge Biosciences and Third Wave Technologies. He has published over 160 papers, edited six books and served on several editorial boards. Dahlberg is a AAAS Fellow and a member of American Academy of Microbiology, the European Molecular Biology Organization, the American Academy of Arts and Sciences and the National Academy of Sciences.

Roger J. Davis, University of Massachusetts Medical School

Roger J. Davis, Ph.D., is H. Arthur Smith Chair and professor of Molecular Medicine at the University of Massachusetts Medical School. He is interested in the mechanisms employed by cells to respond to extracellular stimulation, leading to the regulation of gene expression in the nucleus. He received his BA and Ph.D. at Cambridge University, and received a Damon Runyon-Walter Winchell Cancer Fund Fellowship to do postdoctoral work at UMass Medical Center. He serves as editor-in-chief of the ASM journal *Molecular & Cellular Biology.* He is an Investigator of the Howard Hughes Medical Institute and a Fellow of the Royal Society.

Sandra J. F. Degen, Cincinnati Children's Hospital and University of Cincinnati

Sandra J. F. Degen, Ph.D., is interim chair of Molecular Genetics, Biochemistry & Microbiology, associate chair for Academic Affairs for the department of Pediatrics and professor of Pediatrics. She has made major contributions to the field of blood coagulation and identified a new growth factor homologous to blood coagulation proteins. She has three patents. She was a Pew Scholar and an Established Investigator of the American Heart Association (AHA). She serves on the editorial board of the *Journal of Biological Chemistry.* In 2005, she received the Special Recognition Award in Thrombosis from the AHA. She is a AAAS Fellow.

Hector F. DeLuca, University of Wisconsin–Madison

Hector F. DeLuca, Ph.D., is professor emeritus in the department of Biochemistry at the University of Wisconsin–Madison, and was department chair for 30 years. His laboratory discovered and delineated the vitamin D endocrine system and identified virtually all metabolites of vitamin D. He is responsible for eight pharmaceuticals based on the vitamin D structure that are in use worldwide for the treatment of renal failure, osteoporosis, and vitamin D-resistant conditions. He founded three successful companies, has won many national and international prizes, is a member of the National Academy of Sciences, American Academy of Arts & Sciences, and a fellow of the AAAS. He has over 1,180 publications and has held 1,500 patents.

Donn M. Dennis, University of Florida

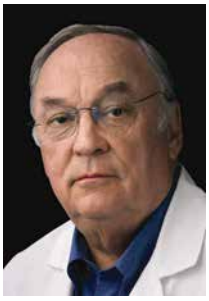
Donn M. Dennis, M.D., F.A.H.A., is J.S. Gravenstein, M.D. Professor of Anesthesiology, and joint professor of Psychiatry, and Pharmacology at the University of Florida. He also serves as Chief Science Officer of Xhale. He holds 62 U.S. and foreign patents and applications that have been licensed to six companies. These patient-centric technologies have won a number of awards, including Popular Science for Best of What's New in 2009: 100 Best Innovations of the Year, 2010 Medical Design Excellence Award, and 2012 New Product Innovation Award by Frost & Sullivan. He has published 71 peer-reviewed articles, 10 book chapters, and edited two anesthesiology textbooks. He co-founded four startup companies.

Akira Endo, Tokyo University of Agriculture and Technology

Akira Endo, Ph.D., currently serves as director of Biopharm Research Laboratories and is Distinguished Professor Emeritus at Tokyo University of Agriculture and Technology. He received his B.A. and Ph.D. degrees from Tohoku University in Japan. He received the 2006 Japan Prize, the 2008 Lasker-DeBakey Clinical Medical Research Award, and was inducted into the National Inventors Hall of Fame. In 1973, while at Sankyo Company in Tokyo, he discovered mevastatin, pioneering research into a new class of molecules known as statins, now a hugely successful class of drugs targeting the lowering of cholesterol.

Howard J. Federoff, Georgetown University Medical Center

Howard J. Federoff, M.D., Ph.D., is executive vice president for Health Sciences and executive dean of Medicine at Georgetown University. He trained at the Albert Einstein College of Medicine and Harvard Medical School. His research interests include gene therapy and neurodegenerative diseases such as Parkinson's, Alzheimer's, and prion diseases. He holds a number of medical patents and other patents pending. He has published widely in peer-reviewed journals, is co-editor-in-chief of *Technology and Innovation* and serves on five editorial boards. He was named chair of the NIH Recombinant DNA Advisory Committee, has received the Arthur Kornberg Research Award and the Bernard Sanberg Award, and co-founded two biotechnology start-up companies.



Thomas J. Fogarty, Fogarty Institute for Innovation

Thomas J. Fogarty, M.D., is chair, director and founder of the Fogarty Institute for Innovation and an internationally recognized cardiovascular surgeon, inventor, entrepreneur, and vintner. He founded more than 30 medical device companies, and holds 135 surgical patents, including the Fogarty balloon catheter used in more than 300,000 procedures worldwide per year, estimated to have saved the lives/limbs of 20M patients. He received the Jacobson Innovation Award of the American College of Surgeons, the Lemelson-MIT prize, and was inducted into the National Inventors Hall of Fame and the National Academy of Engineering. In February 2012 he was inducted as the first NAI Charter Fellow.

Kenneth M. Ford, Institute for Human & Machine Cognition

Kenneth M. Ford, Ph.D., is founder and CEO of the Institute for Human & Machine Cognition (IHMC). He is the author of hundreds of scientific papers and six books. He is a fellow of the Association for the Advancement of Artificial Intelligence and has received many awards and honors including the Doctor Honoris Causas from the University of Bordeaux and the Robert Englemore Memorial Award for his work in artificial intelligence. He has served on the National Science Board, Air Force Science Advisory Board, Defense Science Board and NASA Advisory Council, which he chaired from 2008-20011. He is the recipient of NASA's Outstanding Leadership Medal and the NASA Distinguished Public Service Medal, the highest honor the agency confers.

Eric R. Fossum, Dartmouth College

Eric R. Fossum, Ph.D., is professor at the Thayer School of Engineering at Dartmouth. While at JPL/Caltech, he invented the CMOS image sensor used in billions of camera phones, webcams, DSLRs, swallowable pill cameras, dental x-ray sensors, and many other applications. He co-founded Photobit to further develop and commercialize the technology which was eventually acquired by Micron. He holds over 140 U.S. patents and was inducted into the National Inventors Hall of Fame and the Space Technology Hall of Fame. He has published over 250 papers, is an IEEE Fellow, and received the IEEE Andrew Grove Award and the NASA Exceptional Achievement Medal. He serves as president of the International Image Sensor Society and is a member of the National Academy of Engineering.

Robert C. Gallo, University of Maryland

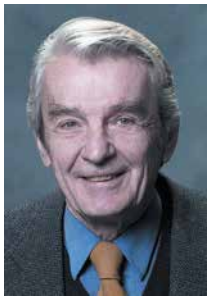
Robert C. Gallo, M.D., is director of the Institute of Human Virology at the University of Maryland School of Medicine, and previously spent 30 years at the National Cancer Institute. He co-discovered HIV as the cause of AIDS, developed the HIV blood test, discovered the first endogenous inhibitors of HIV, and opened up new approaches to treatment of HIV disease. He and colleagues discovered interleukin-2 (Il-2), the first and second known human retrovirus (HTLV-1 and HTLV-2), and the human herpes virus-6 (HHV-6). He received the Lasker Award in Medicine twice, is a member of the National Academy of Sciences and the Institute of Medicine, a National Inventors Hall of Fame inductee, and has published nearly 1,300 papers.

Alan Neville Gent (1927-2012), The University of Akron

The late Alan Neville Gent, Ph.D., was professor emeritus of Polymer Physics and Polymer Engineering and research professor at The University of Akron. He was widely regarded as the foremost expert on the fracture mechanics of rubber and plastics. He received his Ph.D. from the University of London. At the UofA, he served as assistant director of the Institute of Polymer Science and dean of graduate studies and research. He was consultant and scientific adviser to the Goodyear Tire & Rubber Company for nearly 40 years. He published over 200 papers, book chapters, and edited a book titled *Engineering with Rubber.* He held one U.S. and two British patents and was a member of the National Academy of Engineering.

Mory Gharib, California Institute of Technology

Mory Gharib, Ph.D., is vice provost for Research and Hans W. Liepmann Professor of Aeronautics and Bioinspired Engineering at the California Institute of Technology, specializing in hydro and aerodynamics, biological flows, bioinspired medical devices, and advanced flow visualization techniques. He co-founded Bioengineering Option at Caltech. He holds more than 50 U.S. patents in areas of biomedical devices and imaging technology. He is a fellow of the AAAS and five other professional societies. He has received five new technology recognition awards from NASA in the fields of advanced laser imaging and nanotechnology. He received the R&D 100 Award for the design of a 3D imaging system in 2008.

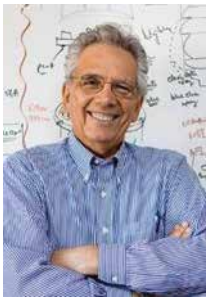


Ivar Giaever, Rensselaer Polytechnic Institute

Ivar Giaever, Ph.D., is institute professor emeritus at Rensselaer Polytechnic Institute and founder, president and chief technical officer of Applied BioPhysics, Inc. He is a mechanical engineer educated in Norway and received a Ph.D. from RPI in physics in 1964. He received the Nobel Prize in physics in 1973 for work in superconductivity. He received the Buckley Prize, the Zworykin Award, the Onsager Medal and the Gunnerus Medal. He is a member of the National Academy of Engineering and the Norwegian Academy of Science and Letters. He has approximately 40 patents, has published more than 100 papers, and has many honorary degrees.

Barbara A. Gilchrest, Boston University

Barbara A. Gilchrest, M.D., is professor and chair emeritus of Dermatology at Boston University School of Medicine. She has received 35 national and international awards for her research on the aging process, pigmentation, and UV damage responses in human skin. She has been awarded 17 U.S. and 65 foreign patents comprising 10 families, and founded SemaCo Inc., to commercialize these inventions. She has published over 450 original articles, reviews, editorials and invited book chapters; authored, co-authored or edited 15 books; and is editor-in-chief of the *Journal of Investigative Dermatology,* the leading journal in her field. She is a AAAS Fellow and member of the Institute of Medicine.



Richard D. Gitlin, University of South Florida

Richard D. Gitlin, Sc.D., is a State of Florida 21st Century World Class Scholar and the Agere Systems Chair Distinguished Professor of Electrical Engineering at the University of South Florida. His research focuses on the intersection of communications with medicine and wireless networking in vivo miniature wirelessly controlled devices to advance minimally invasive surgery and other cyber-physical health care systems. He is the co-inventor of DSL. He is a member of the National Academy of Engineering, a fellow of the IEEE and Bell Laboratories, co-recipient of the Thomas Alva Edison Patent Award and the S.O. Rice prize, has co-authored a text, published 100 papers and holds 47 patents.

Leonid B. Glebov, University of Central Florida

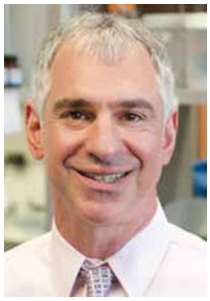
Leonid B. Glebov, Ph.D. is research professor of Optics at the University of Central Florida. He earned his Ph.D. in Physics from State Optical Institute, Leningrad. Following nearly 20 years at SOI, he joined UCF's School of Optics/CREOL. He has published one book, over 190 papers in scientific journals and holds one U.S. and 15 Russian patents. The main directions of his research are optical properties of glasses, photosensitive glasses for hologram recording, nonlinear phenomena including laser-induced damage, holographic optical elements. He is a fellow of the OSA, an ACS Fellow, an SPIE Fellow, and received the 2008 SPIE Dennis Gabor Award.

D. Yogi Goswami, University of South Florida

D. Yogi Goswami, Ph.D., is Distinguished University Professor, John and Naida Ramil Professor of Chemical Engineering, and co-director of the Clean Energy Research Center at the University of South Florida. His research focuses on solar thermal energy, thermodynamics, heat transfer, HVAC, photovoltaics, hydrogen, and fuel cells. He is editor-in-chief of *Solar Energy* and *Progress in Solar Energy,* author/editor of 16 books, 16 book chapters, six conference proceedings and over 300 refereed papers. He holds 18 patents. He is a fellow of ASME International and ASES, and received the ISES' Farrington Daniels Award, ASME's Frank Kreith Energy medal, ASME's John Yellott Award for Solar Energy, and the ASES' Charles Greely Abbott award.

Mark W. Grinstaff, Boston University

Mark W. Grinstaff, Ph.D., is professor of Biomedical Engineering and Chemistry at Boston University and Distinguished Faculty Fellow of Engineering. He received his Ph.D. from the University of Illinois and was an NIH postdoctoral fellow at the California Institute of Technology. He received the ACS Nobel Laureate Signature Award, NSF Career Award, Alfred P. Sloan Research Fellowship, Pew Scholar in the Biomedical Sciences, Camille Dreyfus Teacher-Scholar, and Edward M. Kennedy Award for Health Care Innovation. He has published more than 170 articles, is co-founder of four companies commercializing his ideas, and has three medical products sold and used clinically. Current research includes new macromolecule and amphiphile syntheses, self-assembly chemistry, tissue engineering, drug delivery, and imaging.



Greg Hampikian, Boise State University

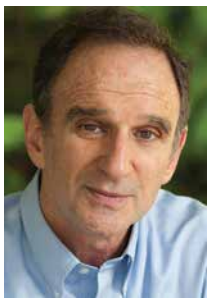
Greg Hampikian, Ph.D, is professor of Biology and Criminal Justice at Boise State University and director of the Idaho Innocence Project. He has pioneered the study of the smallest sequences absent from nature which he termed Nullomers. His inventions include 198 drugs made from Nullomer peptides, effective against cancer and other diseases. He invented DNA tags based on Nullomers, used to tag forensic samples and prevent contamination. His diverse research includes patents granted and pending covering power generation and miniature pumps using magnetic shape memory alloys. Beyond his inventions, he is best known as the volunteer forensic DNA expert on Innocence Project cases worldwide, including Amanda Knox.

Barbara C. Hansen, University of South Florida

Barbara C. Hansen, Ph.D., is professor of Internal Medicine and Pediatrics, and director of the Center for Preclinical Research at the University of South Florida. Her research addresses physiological, cellular, and molecular defects underlying development of obesity and diabetes mellitus and their prevention, and long-term prevention of diabetic complications. She is a member of the Institute of Medicine, and served on the Advisory Committee to the Director of the National Institutes of Health, the Board of Scientific Counselors of the National Toxicology Program of the National Institute of Environmental Health Sciences, and the Armed Forces Epidemiological Board of the Department of Defense.

Patrick T. Harker, University of Delaware

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

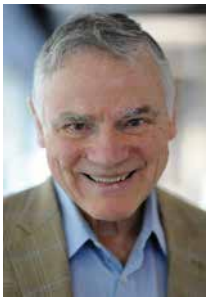


Martin E. Hellman, Stanford University

Martin E. Hellman, Ph.D., is professor emeritus of Electrical Engineering at Stanford University. He is co-inventor of public key cryptography, the technology which allows secure internet communication. Honors include Marconi International Fellow, Stanford Engineering Hero, IEEE Hamming Medal, induction into the National Inventors Hall of Fame, Cyber Security Hall of Fame, and Silicon Valley Hall of Fame. He holds 10 U.S. patents and foreign equivalents. He served as a technical adviser to Silicon Valley startups, including PayPal, published 76 articles, was co-editor of *Breakthrough: Emerging New Thinking,* is a member of the National Academy of Engineering, and a fellow of the IEEE and International Association for Cryptologic Research.

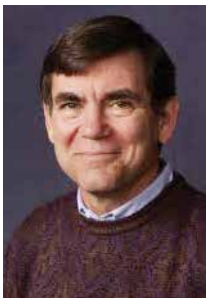
Nick Holonyak, Jr., University of Illinois at Urbana-Champaign

Nick Holonyak, Jr., Ph.D., is John Bardeen Endowed Chair Professor of Electrical and Computer Engineering and Physics at the University of Illinois at Urbana-Champaign, where he has been since 1963. He invented the first practically useful visible LED in 1962 while at General Electric and has been called "the father of the light-emitting diode". He holds 41 patents and received the National Medal of Science, National Medal of Technology, Lemelson-MIT Prize, Japan Prize, IEEE Medal of Honor and Edison Medal, among others. He is an inductee in the National Inventors Hall of Fame, fellow of AAAS and IEEE, and member of the National Academy of Sciences and National Academy of Engineering.



Leroy E. Hood, Institute for Systems Biology

Leroy E. Hood, Ph.D., M.D., is president of the Institute for Systems Biology, and a pioneer in developing molecular and genomic instrumentation. He played an important role in developing computational and proteomics techniques and pushed the frontiers of genomics, biotechnology, and system biology. He received the Lasker Prize, Kyoto Prize, Economist Innovation Award, Lemelson-MIT Prize, Heinz Prize, Russ Prize, and National Medal of Science. He holds 36 patents. He is the founder or co-founder of 13 startup companies. He has published more than 750 research articles and five books and is a member of all three National Academies, the American Philosophical Society, and is a AAAS Fellow.

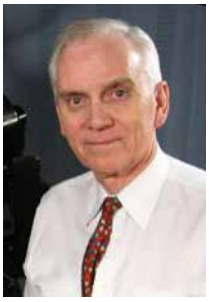


Richard A. Houghten, Torrey Pines Institute for Molecular Studies

Richard A. Houghten, Ph.D. is founder, CEO and president of Torrey Pines Institute for Molecular Studies, a not-for-profit, bi-coastal medical research organization. Now in its 24th year, it has become internationally recognized for its scientific contributions. He founded three commercial businesses, including a publicly-traded biotechnology company. His many awards include the 2004 Ralph Hirschmann Award in Peptide Chemistry by the American Chemical Society and the 2005 Bruce Merrifield Award by the American Peptide Society. He has authored/co-authored over 500 publications and has been issued 75 U.S. and 47 foreign patents. He is an American Association of Pharmaceutical Sciences Fellow.

Ernest B. Izevbigie, Jackson State University

Ernest B. Izevbigie, Ph.D., is professor of Biology and Biochemistry at Jackson State University, currently serving as deputy vice chancellor at Benson Idahosa University in Nigeria. He received his Ph.D. from Michigan State University. He has translated his research discoveries on the health benefits of Vernonia amygdalina extracts into pharmacological supplements under the brand name edoTIDE, commercially available internationally, and is founder of edoBotanics, a biotechnology company licensed to commercialize edoTIDE. He holds three patents, has mentored many M.S. and Ph.D. students, and published many peer-reviewed articles. His awards include the JSU Research Award, Inventor's Award, Edo Leadership and Outstanding Achievement Award.



Stephen C. Jacobsen, The University of Utah

Stephen C. Jacobsen, Ph.D., is distinguished professor and director of the Center for Engineering Design at The University of Utah. He received his Ph.D. from MIT and was mentored by Robert Mann and Willem Kolff, father of artificial organs, with whom he led the development of the wearable kidney. He founded multiple companies and currently leads Sterling Technologies. He holds over 200 patents and led more than 359 projects including the Utah Arm, considered the world's finest artificial limb. He is a member of the National Academy of Engineering and Institute of Medicine. Awards include the Leonardo da Vinci Award (ASME), Pioneer of Robotics Award (IEEE) and Utah Governor's Medal for Science and Technology.

Eric W. Kaler, University of Minnesota

Eric W. Kaler, Ph.D., became president of the University of Minnesota in 2011 after serving as provost of Stony Brook University. From 1989 to 2007 he held faculty positions at the University of Delaware and was dean of the College of Engineering from 2000-07. After receiving a B.S. in chemical engineering from Caltech, he earned his Ph.D. from the University of Minnesota in 1982 and held faculty positions at the University of Washington from 1982-89. He is an expert in the field of complex fluids and has received numerous professional honors, including election to the National Academy of Engineering in 2010.

Linda P. B. Katehi, University of California, Davis

Linda P. B. Katehi, Ph.D., is chancellor of the University of California, Davis. She is a member of the National Academy of Engineering, a AAAS Fellow, fellow of the American Academy of Arts and Sciences, and member of numerous national boards and committees. She chaired the President's Committee for the National Medal of Science and the Secretary of Commerce's committee for the National Medal of Technology and Innovation. Her work in electronic circuit design has led to numerous national and international awards and 19 U.S. patents. She is author of over 650 publications. Prior to joining UC Davis, she was a top administrator at the Universities of Illinois at Urbana-Champaign, Purdue and Michigan.

Joseph P. Kennedy, The University of Akron

Joseph P. Kennedy, Ph.D., is distinguished professor of polymer science and chemistry at The University of Akron. He was an industrial researcher for 13 years (Celanese, Exxon) before starting his academic career in 1970. His main interest is the creation of new useful polymers and devices for medicine and premium industrial applications. He holds over 100 U.S. patents, some in production generating billions of dollars of revenue. He is the author of four books and over 700 publications, and the recipient of numerous prestigious national and international awards. His latest book, *How to Invent and Protect Your Inventions,* has just been published.

Sakhrat Khizroev, Florida International University

Sakhrat Khizroev, Ph.D., is professor of Electrical Engineering and Immunology, director of the Center for Personalized NanoMedicine, and vice chair of Immunology at Florida International University. His vision is to leverage his expertise in the physics of nanomagnetics/spintronics to enable leapfrog advances in diverse applications ranging from information processing to medicine. Perpendicular magnetic recording, energy-efficient spin computing, nanotechnologies for HIV, cancer, and Parkinson's disease are among the groundbreaking technologies that have emerged because of his inventions. He holds 30 U.S. patents and has published over 120 peer-review articles, five books and book chapters.

Sung Wan Kim, The University of Utah

Sung Wan Kim, Ph.D., is distinguished professor of Pharmaceutics & Pharmaceutical Chemistry and Bioengineering at The University of Utah. He received his B.S. and M.S. at Seoul National University, and his Ph.D. in Physical Chemistry at The University of Utah. He is a pioneer in drug delivery research in the areas of hydrogels, biodegradable drug conjugates, self-regulating drug delivery and stimuli sensitive polymers. He has received numerous awards including the Research Achievement Award-Pharmaceutical Sciences World Congress, Rosenblatt Prize, Ho-Am Prize, Dale Wurster Award, and is a member of the National Academy of Engineering and Institute of Medicine.

George V. Kondraske, University of Texas at Arlington

George V. Kondraske, Ph.D., is professor of Electrical and Biomedical Engineering at the University of Texas at Arlington and founding director of the Human Performance Institute. He is widely recognized for work in human performance modeling and measurement, including a Human Performance Capacity Measurement System (commercially available and used internationally), General Systems Performance Theory, and the Elemental Resource Model for human performance, applied to medical rehabilitation, ergonomics, sports, music, information technology based training systems, etc. He has over 200 publications, received the IEEE Engineering in Medicine and Biology Society Early Career Award, Association for the Advancement of Medical Instrumentation Career Achievement Award, and is an IEEE Fellow.

John J. Kopchick, Ohio University

John J. Kopchick. Ph.D., is Goll-Ohio Eminent Scholar & Professor of Molecular Biology at Ohio University. He received a Ph.D. in Biomedical Sciences from the University of Texas, with post-doctoral training at the Rochae Institute of Molecular Biology, followed by 5 years employment at Merck & Co. At OU, he and his group were the first to discover and characterize GH receptor antagonists; now an FDA-approved drug for acromegaly. He is president of the Growth Hormone Research Society. His research interests are molecule mechanisms of growth hormone action as applied to diabetes and aging.

Roger D. Kornberg, Stanford University

Roger D. Kornberg, Ph.D., is professor of Structural Biology at Stanford University School of Medicine. He was awarded the Nobel Prize in Chemistry in 2006 for his studies of the process by which genetic information from DNA is copied to RNA. His father is Nobel laureate biophysicist Arthur Kornberg. He received his Ph.D. from Stanford, was a postdoctoral fellow at the Laboratory of Molecular Biology in Cambridge, England, and on the faculty at Harvard University School of Medicine. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences, among others. Multiple awards include the Horwitz Prize, Dickson Prize, Alfred P. Sloan Jr. Prize, and Massry Prize.

Max G. Lagally, University of Wisconsin–Madison

Max G. Lagally, Ph.D., is Mueller Professor of Materials Science and Physics at the University of Wisconsin–Madison, and investigates nanoscale semiconductor materials. Awards include the AVS Welch Award, MRS Medal, APS Davisson-Germer and David Adler Lectureship Awards, and SBA Tibbetts Award. He holds over 20 U.S. and foreign patents, 15 licensed to four companies. He is founder of nPoint, Inc., and SonoPlot, Inc. He has over 400 publications and edited four books. He is a member of the National Academy of Engineering, the German National Academy of Sciences–Leopoldina, a fellow of the AAAS, APS, MRS, and AVS, and 1996 Outstanding Science Alumnus of the Pennsylvania State University.

Robert S. Langer, Massachusetts Institute of Technology

Robert S. Langer, D.Sc., is the David H. Koch Institute Professor at MIT (there are 14 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 1,190 articles. He also has 810 issued and pending patents worldwide. His many awards include the United States National Medal of Science, the United States National Medal of Technology and Innovation, the Charles Stark Draper Prize (considered the engineering Nobel Prize), Albany Medical Center Prize (largest U.S. medical prize), the Wolf Prize for Chemistry and the Lemelson-MIT prize, for being "one of history's most prolific inventors in medicine." Langer is one of the very few individuals ever elected to the Institute of Medicine, the National Academy of Engineering and the National Academy of Sciences.

Brian A. Larkins, University of Nebraska–Lincoln

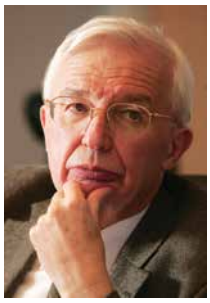
Brian A. Larkins, Ph.D., is associate vice chancellor for Life Sciences at the University of Nebraska–Lincoln. He has made contributions to agricultural biotechnology through research in plant molecular genetics. He is recipient of the Shull and Hoagland Awards from the American Society of Plant Biologists, Innovator of the Year Award from the Arizona Innovation Network, and the Koffler Prize in Research from the University of Arizona. He holds eight U.S. patents. He has over 200 research publications and was editor-in-chief of *The Plant Cell*. He is a member of the National Academy of Sciences, and a fellow of AAAS and the American Society of Plant Biologists.

Victor B. Lawrence, Stevens Institute of Technology

Victor B. Lawrence, Ph.D., is associate dean for Special Topics, director of the Center for Intelligent Networked Systems, and Batchelor Chair Professor of Electrical Engineering at Stevens Institute of Technology. He was VP of Communications Technology Research at Lucent Bell Laboratories and is a proponent of R&D globalization and bringing fiber optic connectivity to Africa. His research provided major contributions to gigabit, photonic, and wireless networking, signal processing, modem technology, digital techniques, ATM switching and protocols, DSL, speech and audio coding. He is a member of the National Academy of Engineering, an IEEE Fellow, and received the Emmy® Award for HDTV Grand Alliance Standard, IEEE Millennium Medal and Simon Ramo Medal.

Virginia M.-Y. Lee, University of Pennsylvania

Virginia M.-Y. Lee, Ph.D., is John H. Ware 3rd Professor in Alzheimer's Research and directs the Center for Neurodegenerative Disease Research at the University of Pennsylvania. She obtained her Ph.D. in Biochemistry at the University of California, San Francisco and MBA at the Wharton School. Her work was instrumental in demonstrating that tau, α-synuclein and TDP-43 proteins form unique brain aggregates with a central role in numerous neurodegenerative diseases, including Alzheimer's, Parkinson's, frontotemporal dementias and amyotrophic lateral sclerosis. She is a member of the Institute of Medicine and has won numerous awards, including the Alzheimer's Association Khalid Iqbal Lifetime Achievement Award and AAUW Founders Distinguished Scholars Award.

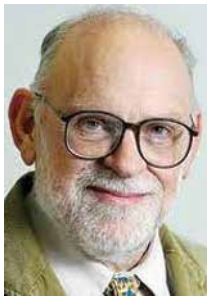


Jean-Marie Lehn, University of Strasbourg

Jean-Marie Lehn, Ph.D., is director of the Supramolecular Chemistry Laboratory at the ISIS Institute and emeritus professor at the University of Strasbourg. He shared the 1987 Nobel Prize for Chemistry, particularly for his synthesis of the cryptands. He was an early innovator in supramolecular chemistry, and its extension towards adaptive chemistry and complex systems, of interest for life and materials sciences. He holds 27 U.S. and a number of foreign patents and co-founded three start-up companies. He has over 900 publications and two books, serves on editorial boards for peer-reviewed journals, is a member of the National Academy of Sciences, Académie des Sciences, and Royal Society, among many, and received dozens of prestigious international medals, decorations and awards.

Shinn-Zong (John) Lin, China Medical University

Shinn-Zong (John) Lin, M.D., Ph.D., is professor of Neurosurgery, superintendent of China Medical University Beigang Hospital, and vice superintendent of the Center for Neuropsychiatry at China Medical University Hospital, Taiwan. He trained at the National Defense Medical Center, Taipei, and SUNY Stony Brook. He served as professor of Neurosurgery at the National Defense Medical Center, chair of Neurosurgery at Tri-Service General Hospital, and superintendent at Tzu-Chi General Hospital. He is the inventor of many patented treatment technologies for brain damage patients, holds 13 patents, and has over 212 publications in refereed journals. He is a highly accomplished neurosurgeon and applied neuroscientist for translational innovative therapies for stroke and neuro-degenerative diseases.



Thomas A. Lipo, University of Wisconsin–Madison

Thomas A. Lipo, Ph.D., is Grainger Professor Emeritus at the University of Wisconsin–Madison. In 1980 he co-founded the Wisconsin Electric Machines and Power Electronics Consortium (WEMPEC) at UW, supporting research in power electronics and electric machines, now numbering over 90 companies. He holds 40 U.S. patents and has published over 550 technical papers. He received the Nikola Tesla, William E Newell and Outstanding Achievement Awards from three IEEE Societies. He is a Life Fellow of IEEE, a fellow of the IET (London), and a member of the National Academy of Engineering and the Royal Academy of Engineering (UK).

Barbara H. Liskov, Massachusetts Institute of Technology

Barbara H. Liskov, Ph.D., is Institute Professor and head of the Programming Methodology Group at Massachusetts Institute of Technology. Her research interests are programming methodology, programming languages and systems, and distributed computing. Her work created building blocks for software programming languages that were key to personal computers and the Internet. She has over 240 publications, including 3 books, is a member of the National Academy of Engineering, a fellow of the American Academy of Arts and Sciences and the Association for Computer Machinery, and received The Society of Women Engineers' Achievement Award, IEEE von Neumann Medal, ACM's Programming Languages Achievement Award, and the 2008 A.M. Turing Award, the most prestigious prize in computer science.

Alan F. List, H. Lee Moffitt Cancer Center & Research Institute

Alan F. List, M.D., is president and CEO of Moffitt Cancer Center. He is internationally known for his contributions to understanding the biology and advancing the development of novel therapeutics for acute myeloid leukemia and myelodysplastic syndromes (MDS). He has authored or coauthored more than 230 peer-reviewed manuscripts, appearing in journals such as *The New England Journal of Medicine, Blood,* and *Science.* He led the development of lenalidomide (Revlimid®) from the laboratory to clinical trials, which received fast-track FDA approval for treatment of MDS and multiple myeloma, and transformed MDS into a condition managed in the outpatient setting with oral agents.

R. Bowen Loftin, Texas A&M University

R. Bowen Loftin, Ph.D., is president of Texas A&M University. He earned his Ph.D. in physics at Rice University. He is a frequent consultant to industry and government in modeling and simulation, advanced training technologies, and scientific/engineering data visualization. He has over 100 technical publications and serves on numerous advisory committees and panels for governmental and professional organizations. Citations and honors include the University of Houston-Downtown Awards for Excellence in Teaching and Service (twice), American Association of Artificial Intelligence Award for an innovative application of artificial intelligence, NASA's Space Act Award, NASA Public Service Medal, and 1995 NASA Invention of the Year Award.

Dan Luss, University of Houston

Dan Luss, Ph.D., is Cullen Professor of Engineering at the University of Houston. His research is in chemical reactor design and in recent years he has conducted extensive research on hot zone formation in packed bed reactor and synthesis of complex oxides. He is editor of a book series, a professional journal, and serves on two journal editorial boards. He is a member of the National Academy of Engineering and a fellow of the AIChE. Awards include the Wilhelm Award (AIChE), Alexander von Humboldt Foundation Research Award, Sartorius India's Chemcon Distinguished Speaker Award, Founders Award (AIChE), and Amundson Award (ISCRE).

Robert Magnusson, University of Texas at Arlington

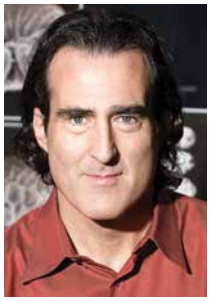
Robert Magnusson, Ph.D., is the Texas Instruments Distinguished University Chair in Nanoelectronics and professor of Electrical Engineering at UT-Arlington. He received his Ph.D. in Electrical Engineering from the Georgia Institute of Technology. Previously he was professor and head of electrical and computer engineering at the University of Connecticut. He served as associate editor of *Applied Optics and Optical Engineering.* Current research addresses periodic nanostructures, nanolithography, nanophotonics and electronics, nanoplasmonics, and optical bio- and chemical sensors. He is a fellow of the Optical Society of America and SPIE, received the IEEE Third Millennium Medal, and is an elected member of the Connecticut Academy of Science and Engineering.

Richard B. Marchase, The University of Alabama at Birmingham

Richard B. Marchase, Ph.D., is vice president for Research and Economic Development and former interim president of The University of Alabama at Birmingham. His research and patents center on controlling cellular calcium entry pathways in physiology and pathologies such as ischemia. He has been instrumental in creating a culture of entrepreneurism at UAB and in integrating the regional business community into the university's innovation and commercialization processes. He also chairs the board of Innovation Depot, Birmingham's award-winning technology incubator. He served as president of the Federation of American Societies for Experimental Biology and has been honored for his contributions by several research organizations.

Stephen W. S. McKeever, Oklahoma State University

Stephen W. S. McKeever, Ph.D., is vice president for Research and Technology Transfer and Regents professor of physics at Oklahoma State University, and Secretary of Science and Technology for the State of Oklahoma. His field of research is radiation detection, for which he holds six U.S. and nine foreign patents. He has served on several scientific committees of the National Council on Radiation Protection and Measurements, has over 190 scientific publications and six books, and is consulting editor of *Radiation Measurements.* He is a fellow of the American Physical Society and the Institute of Physics, and a member of the Health Physics Society.



Craig C. Mello, University of Massachusetts Medical School

Craig C. Mello, Ph.D., is distinguished professor of Molecular Medicine at the University of Massachusetts Medical School and a Howard Hughes Medical Investigator. He shared the 2006 Nobel Prize in Physiology or Medicine for his pioneering research on RNA interference which discovered a fundamental mechanism for controlling the flow of genetic information. He holds 10 U.S. patents and serves as chair of the PEW National Advisory Committee and on numerous scientific advisory boards. He is a member of the National Academy of Sciences, American Academy of Arts and Sciences, and has received numerous awards, including the Gairdner Foundation International Award, Massry Prize, and Paul Ehrlich and Ludwig Darmstaedter Prize.

Shyam S. Mohapatra, University of South Florida

Shyam S. Mohapatra, Ph.D., is Distinguished Health Professor, vice chair of Basic Research for Internal Medicine, and director of the Translational Medicine-USF Nanomedicine Research Center at the University of South Florida, and a research career scientist at the James A. Haley VA Hospital in Tampa, Fla. He received the Alexander von Humboldt research fellowship (Germany) and Pharmacia Allergy Research Foundation Award (Paris). An expert in biotechnology, immunology, infectious disease and translational nanomedicine, his research focuses on molecular and immunologic mechanisms of inflammation in respiratory diseases, cancers, viral infections and traumatic brain injury. He has published over 160 papers and has 12 U.S. patents and numerous pending patent applications.

Theodore D. Moustakas, Boston University

Theodore D. Moustakas, Ph.D., is professor of Electrical and Computer Engineering at Boston University. He is the inventor of the nucleation steps for the growth of GaN blue LEDs and lasers on foreign substrates and other important inventions in Nitride semiconductors, amorphous silicon and diamond. He received an honorary doctorate from the Aristotle University, the 2010 Molecular Beam Epitaxy innovator, and Boston University College of Engineering Distinguished Scholar. He holds 30 U.S. and several foreign patents, licensed to six companies, and is co-founder of one startup. He published 330 articles, nine book chapters and edited eight books, and is a fellow of the American Physical Society and Electrochemical Society.

George R. Newkome, The University of Akron

George R. Newkome, Ph.D., serves as vice president for Research at The University of Akron; president of The University of Akron Research Foundation, chairman of the board of the UofA Student Venture Fund for Northeast Ohio, Oelschlager Professor of Science & Technology, and professor of Chemistry and Polymer Science. He was one of the founders of dendritic polymers and holds 24 U.S. and 23 foreign patents. He has spun-out over 100 companies from universities/industry and is on 10 boards of directors as well as eight science advisory boards. He has published over 460 publications, authored 20 books, and edited 18 comprehensive volumes. He is a fellow of AAAS and the Ohio Academy of Science.

C. L. Max Nikias, University of Southern California

C. L. Max Nikias, Ph.D., is president of the University of Southern California, holds the Robert C. Packard President's Chair, Malcolm R. Currie Chair in Technology and the Humanities, and chairs the USC Hospitals Governing Board. He is a member of the National Academy of Engineering, and fellow of IEEE and AAAS. Honors include the IEEE Simon Ramo Medal, SUNY Buffalo's Distinguished Alumni Award, and two honorary doctorates. He is recognized internationally for pioneering research on digital signal processing, digital media systems, and biomedicine. The Department of Defense has adopted his innovations and patents in sonar, radar, and communication systems. He has over 275 publications and eight patents.

David P. Norton, University of Florida

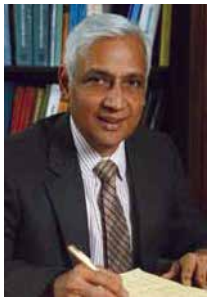
David P. Norton, Ph.D., is vice president for Research and professor of Materials Science and Engineering at the University of Florida. He has 23 years of experience in science and technology research and served 11 years as a research scientist at Oak Ridge National Laboratory. His research interests primarily focus on electronic, photonic and magnetic thin film materials. He has published over 350 refereed journal articles with over 11,000 citations. He is an inventor on 10 patents and a fellow of the American Physical Society, the American Vacuum Society, and the American Association for the Advancement of Science.

Julio C. Palmaz, University of Texas Health Science Center at San Antonio

Julio C. Palmaz, M.D., is Ashbel Smith Professor at the University of Texas Health Science Center at San Antonio and chairman and chief scientist of Palmaz Scientific. He invented the first commercially-successfully intravascular stent, the Palmaz Stent, which revolutionized cardiac care, with over one million people undergoing stenting annually to repair clogged arteries, for which he was inducted into the National Inventors Hall of Fame. He holds 32 patents and published 39 books or chapters and 115 journal articles. Honors include the Landmark Innovations Award, Society of Interventional Radiology Gold Medal and Leaders in Innovation Award, and American Heart Association Distinguished Scientist.

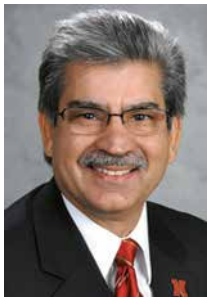
Thomas N. Parks, The University of Utah

Thomas N. Parks, Ph.D., is vice president for Research, interim vice president for Technology Venture Development, and professor of Neurobiology & Anatomy at The University of Utah, where he has been a neurobiology researcher and teacher at the School of Medicine since 1978. He received his Ph.D. from Yale University. He holds four U.S. patents and was a co-founder and long-term board member of NPS Pharmaceuticals Inc. (NASDAQ: NPSP), which has developed several marketed pharmaceuticals, including two first-in-class products. He has also served as a board member or scientific advisor for several private technology companies and as a trustee or director for several non-profit organizations.



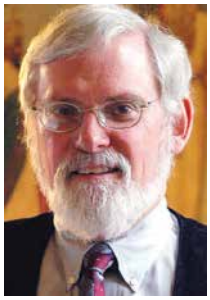
C. Kumar N. Patel, University of California, Los Angeles

C. Kumar N. Patel, Ph.D., is professor of Physics and former vice chancellor for Research at the University of California, Los Angeles. He developed the carbon dioxide laser in 1963, widely used in industry for cutting and welding, as a laser scalpel in surgery, and in laser skin resurfacing. He holds 36 U.S. patents. He received the National Medal of Science and is a member of the National Academy of Engineering and National Academy of Sciences. He is a fellow of the American Academy of Arts and Sciences, AAAS, American Physical Society, IEEE, Optical Society of America, Laser Institute of America, and American Society of Laser Medicine.



Prem S. Paul, University of Nebraska–Lincoln

Prem S. Paul, D.M.V., Ph.D., is vice chancellor for research and economic development at the University of Nebraska–Lincoln. He has made significant contributions to animal health through research on viral pathogenesis of respiratory and reproductive diseases, leading to improved vaccines and diagnostic tests. He received the SmithKline Beecham Award for Research Excellence, and holds 21 U.S. patents (19 licensed to two companies). He has published more than 100 papers in refereed journals and numerous books, book chapters, and review articles. In 2009, he was elected as a fellow of the American Association for the Advancement of Science.



David W. Pershing, The University of Utah

David W. Pershing, Ph.D., is president of The University of Utah, distinguished professor of Chemical Engineering and founding director of the DOE Center for the Simulation of Accidental Fires & Explosions (C-SAFE). He earned bachelor's and doctorate degrees from Purdue University and the University of Arizona, respectively. At Utah, he has served as dean of Engineering and senior vice president of Academic Affairs. He is a gifted teacher and a prolific researcher. He is the recipient of numerous illustrious awards, and has authored more than 80 peer-reviewed publications, won research grants totaling approximately $60 million, and earned five patents.

G. P. "Bud" Peterson, Georgia Institute of Technology

G. P. "Bud" Peterson, Ph.D., is president of the Georgia Institute of Technology. He has served as chancellor at the University of Colorado at Boulder, provost at Rensselaer Polytechnic Institute and worked at both NSF and NASA. His research involves fundamental aspects of phase change heat transfer, including reduced gravity environments, boiling from enhanced surfaces and groundbreaking work in phase change heat transfer in microchannels. A fellow of the American Society of Mechanical Engineers and the American Institute of Aeronautics and Astronautics, he is author or co-author of 14 books or book chapters and over 350 publications, and has 11 patents either issued or pending.

Leonard Polizzotto, The Charles Stark Draper Laboratory

Leonard Polizzotto, Ph.D., is Draper Laboratory's vice president responsible for Strategic Business Development and Marketing. Reporting to the president and CEO, he is leading efforts to raise the Laboratory's profile to help capture new opportunities for sponsored research and bring the Laboratory's emerging technologies to market to benefit the public good. Prior to joining Draper Lab in 2007, Polizzotto served for six years as corporate vice president for Business Development and Marketing for SRI International, a world leader in contract R&D services. A 25-year tenure at the Polaroid Corporation preceded this, concluding with the assignment of corporate vice president for New Business Development. Between corporate experiences, Polizzotto directed the Center for the Globalization of Technology at Worcester Polytechnic Institute.

Huntington Potter, University of Colorado, Denver

Huntington Potter, Ph.D., is professor of Neurology and director of Alzheimer's Disease Programs, department of Neurology and the Linda Crnic Institute for Down Syndrome at the University of Colorado, Denver. He studied, researched and taught for 30 years at Harvard University and 13 years at the University of South Florida and was founding director of the Byrd and Florida Alzheimer's Center & Research Institutes. He photographed the first Holliday intermediates in genetic recombination, invented the electroporation cuvette for gene transfer, discovered that apoE4 promotes Alzheimer's amyloid formation, and found that Alzheimer's is a mosaic form of trisomy 21/Down syndrome. He has authored over 100 scientific articles and books, holds 15 patents and is a AAAS Fellow. His electron micrographs of DNA are on permanent exhibit in the Smithsonian Institution.

Paul R. Sanberg, University of South Florida

Paul R. Sanberg, Ph.D., D.Sc., is founder and president of the National Academy of Inventors, and senior vice president for Research & Innovation, Distinguished University Professor, and executive director of the Center of Excellence for Aging and Brain Repair at the University of South Florida. He holds 30 licensed health-related U.S. and 70 foreign patents. His work has been instrumental in translating new pharmaceutical and cellular therapeutics to clinical trials and commercialization for Tourette syndrome, stroke, ALS, Alzheimer's, Huntington's, and Parkinson's disease. He has approximately 600 publications, is a AAAS Fellow, and serves on the evaluation committee of the National Medal of Technology and Innovation.

Timothy D. Sands, Purdue University

Timothy D. Sands, Ph.D., serves as provost and is the Basil S. Turner Professor of Engineering at Purdue University. He has served as acting president of Purdue, director of the Birck Nanotechnology Center, a member of the faculty at UC Berkeley and a researcher at Bellcore. His research in nanomaterials and devices has advanced the fields of solid-state lighting, thermoelectric energy conversion and semiconductor processing. He holds 16 U.S. patents, some of which have contributed to manufacturing processes for GaN LEDs. He has published more than 250 refereed papers. He is a Fellow of IEEE and the Materials Research Society.

Raymond F. Schinazi, Emory University

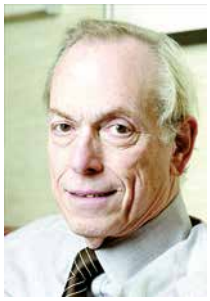
Raymond F. Schinazi, Ph.D., D.Sc., is Frances Winship Walters Professor of Pediatrics at Emory University and director of the Laboratory of Biochemical Pharmacology. He is senior research career scientist at the Atlanta Veterans Affairs Medical Center and director of the Scientific Working Group on Viral Eradication for Emory University Center for AIDS Research. A world leader in the area of nucleoside chemistry, he is founder of five biotechnology companies including Pharmasset Inc. He holds 92 U.S. patents, and 121 foreign national stage patents and patent applications, which have resulted in 11 New Drug Applications. More than 94 percent of HIV-infected individuals take at least one of the drugs he invented.

Dean L. Sicking, The University of Alabama at Birmingham

Dean L. Sicking, Ph.D., is associate vice president of product development and professor of Engineering at The University of Alabama at Birmingham. He spent 20 years at University of Nebraska–Lincoln as professor and director of the Midwest Roadside Safety Facility. He developed road safety firsts including the energy absorbing guardrail terminal and guardrail system compatible with light trucks and SUVs. His inventions are installed along virtually every mile of U.S. rural highways. Sales of his proprietary products exceed $1BN. NASCAR and IRL have had no serious injuries or fatal crashes involving his SAFER Barrier for high speed tracks since installation system-wide in 2004. Honors include the National Medal of Technology and Innovation.

Oliver Smithies, The University of North Carolina at Chapel Hill

Oliver Smithies, D.Phil., is Weatherspoon Eminent Distinguished Professor of Pathology and Laboratory Medicine at The University of North Carolina at Chapel Hill. He shared the Nobel Prize in Physiology or Medicine in 2007. His work in the field of genetics led to groundbreaking discoveries that revolutionized genetic research and led to the use of gene therapy. Awards include the Lasker Award, Wolf Prize, Massry Prize, Gairdner Foundation International Award (twice), Alfred P. Sloan Award, March of Dimes $250,000 annual prize, Ciba Award and Bristol-Myers Squibb Award. He is a member of the National Academy of Sciences, Institute of Medicine, American Academy of Arts and Sciences, Royal Society, and a AAAS Fellow.



Solomon H. Snyder, Johns Hopkins University

Solomon H. Snyder, M.D., is Distinguished Service Professor of Neuroscience, Pharmacology and Psychiatry at the Johns Hopkins University School of Medicine. He pioneered the discovery of the major drug and neurotransmitter receptors and identified novel neurotransmitters such as nitric oxide and D-serine. He has published over 1,000 journal articles and several books and holds 41 patents. Honors include the Lasker Award, National Medal of Science, Albany Prize, Wolf Prize, Dickson Prize, Bower Award, Bristol-Myers Squibb Award, and Gerard Prize. He is a member of the National Academy of Sciences, Institute of Medicine, and fellow of the American Academy of Arts and Sciences and American Philosophical Society.

Franky So, University of Florida

Franky So, Ph.D., is Rolf E. Hummel Professor in Electronic Materials at the University of Florida. He has made important contributions in organic light emitting diodes, polymer solar cells and flexible electronics. He received the DOE Solid State Lighting Program Significant Achievement Award, UF Faculty Excellence Award, and was named Motorola Distinguished Innovator and Master Innovator. He holds 70 U.S. and 20 foreign patents, most licensed to four companies. His Motorola patents were acquired for over $10M. He is a founder of Nirvision, Sestar Technologies and nVerpix, has over 125 publications, and is a fellow of IEEE, OSA and SPIE.

M. J. Soileau, University of Central Florida

M. J. Soileau, Ph.D., is vice president for Research & Commercialization and distinguished professor of Optics, ECE, and Physics at the University of Central Florida. He received his Ph.D. in electrical engineering and quantum electronics from the University of Southern California. Research interests include nonlinear optics, transient optical phenomena, and laser-induced breakdown. Honors include the SPIE Gold Medal and Director's Award, and Esther Hoffman Beller Medal. He has over 150 scientific publications and holds six patents. He is a foreign member of the Russian Academy of Engineering Sciences and a fellow of the IEEE, AAAS, SPIE, and Optical Society of America.

Nan-Yao Su, University of Florida

Nan-Yao Su, Ph.D., is professor of Entomology at the University of Florida, and recognized internationally as an authority on termites. He received the U.S. Secretary of Agriculture's Honor Award, EPA's Presidential Green Chemistry Challenge Award, Recognition Award in Urban Entomology, and Medal of Honor of the Entomological Foundation. He holds seven U.S. and 70 foreign patents that have been licensed to commercialize the termite bait Sentricon system, marketed worldwide to protect over two million homes and has reduced pesticide use by more than 6,000 tons. He has published over 230 peer-reviewed articles and book chapters and is a fellow of the Entomological Society of America.

Jack W. Szostak, Harvard University

Jack W. Szostak, M.D., is an investigator of the Howard Hughes Medical Institute, professor of Genetics at Harvard Medical School, professor of Chemistry and Chemical Biology at Harvard University, and Alex Rich Distinguished Investigator at Massachusetts General Hospital. He shared the 2009 Nobel Prize in Physiology or Medicine for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase. Honors include the National Academy of Sciences Award in Molecular Biology, Albert Lasker Basic Medical Research Award, and H.P. Heineken Prize in Biophysics and Biochemistry. He holds 16 patents, co-founded two biotech companies, and published over 200 scientific papers. He is a member of the National Academy of Sciences, American Philosophical Society, and a AAAS Fellow.

Esther Sans Takeuchi, Stony Brook University

Esther Sans Takeuchi, Ph.D., is SUNY Distinguished Professor with a joint appointment in Chemistry and Materials Science & Engineering at Stony Brook University, and Chief Scientist in Brookhaven National Laboratory's Global and Regional Solutions Directorate. She is one of the world's leading energy storage researchers, best known for developing the technology for the power source used in implantable cardiac defibrillators. She holds 153 patents, more than any woman in the United States. She received the National Medal of Technology and Innovation, E.V. Murphree Award in Industrial and Engineering Chemistry (American Chemical Society), was inducted into the National Inventors Hall of Fame, and is a member of the National Academy of Engineering.

H. Holden Thorp, The University of North Carolina at Chapel Hill

H. Holden Thorp, Ph.D., is chancellor at The University of North Carolina at Chapel Hill, and Kenan Professor of Chemistry. He received his Ph.D. at the California Institute of Technology and was a postdoctoral associate at Yale University. He developed technology for electronic DNA chips and founded spin-off companies. He serves on the national Commission on Higher Education Attainment, Homeland Security Academic Advisory Council, and National Advisory Council on Innovation and Entrepreneurship. His book *Engines of Innovation — The Entrepreneurial University in the 21st Century* argues the pivotal role of research universities as agents of societal change. He has 130 scholarly publications, holds 12 U.S. patents and co-founded Viamet Pharmaceuticals, which is developing drugs for prostate cancer and fungal infection.

Charles H. Townes, University of California, Berkley

Charles H. Townes, Ph.D., is University Professor Emeritus and professor in the Graduate School at the University of California, Berkley (1967-present). He shared the 1964 Nobel Prize in Physics for contributions to fundamental work in quantum electronics leading to the development of the maser and laser, and holds the original patent for the maser and laser. He was at Bell Laboratories (1939-47), Columbia University (1948-61), vice president and director of Research of the Institute for Defense Analysis (1959-61), Provost and Institute Professor at MIT (1961-67), and chair of the NASA Science Advisory Committee for the Apollo lunar landing program (1966-1970). He is a member of the National Academy of Sciences. Honors include the National Medal of Science, National Inventors Hall of Fame and Templeton Prize.

John Q. Trojanowski, University of Pennsylvania

John Q. Trojanowski, M.D., Ph.D., is William Maul Measey-Truman G. Schnabel, Jr., M.D. Professor of Geriatric Medicine and Gerontology at the University of Pennsylvania Perelman School of Medicine; director of the Center for Neurodegenerative Disease Research, Institute on Aging, Alzheimer's Disease Core Center, and Penn Udall Center for Parkinson's Research. His research focuses on AD, PD, ALS, dementia with Lewy bodies, frontotemporal lobar degeneration and other aging related nervous system disorders. He is a member the Association of American Physicians and Institute of Medicine, among others. He has over 900 publications and 13 patents. Honors include an NIH MERIT Award, Metropolitan Life Foundation Award for Alzheimer's Disease Research, and Emmy® Award for best documentary, *Alzheimer's Disease: Facing The Facts.*

Roger Y. Tsien, University of California, San Diego

Roger Y. Tsien, Ph.D., is professor of Pharmacology and Chemistry & Biochemistry and Howard Hughes Investigator at the University of California, San Diego. He shared the 2008 Nobel Prize in Chemistry for his seminal contributions regarding understanding the chemistry of the fluorescence properties of the green fluorescent protein and is renowned for revolutionizing the fields of cell biology and neurobiology by allowing scientists to peer inside living cells and watch the behavior of molecules in real time. He holds approximately 100 patents, and is a member of the National Academy of Sciences and Institute of Medicine, and foreign fellow of the Royal Society. Honors include the Wolf Prize in Medicine, E.B. Wilson Medal, Heineken Prize, and Max Delbrück Medal.

James L. Van Etten, University of Nebraska–Lincoln

James L. Van Etten, Ph.D., is William Allington Distinguished Professor of Plant Pathology and co-director of the Nebraska Center for Virology at the University of Nebraska–Lincoln. He is the leader in the discovery and characterization of large dsDNA viruses that infect algae. He holds four patents and has published over 200 research papers, over 40 review articles, edited one book on giant viruses, and served on editorial boards of seven scientific journals. He is a fellow of AAAS, American Society of Microbiology, American Phytopathology Society and a member of the National Academy of Sciences.

James W. Wagner, Emory University

James W. Wagner, Ph.D., is president of Emory University. His early career as an electronics engineer at the FDA was followed by professorships in materials science and engineering and biomedical engineering at Johns Hopkins University, and then dean of engineering, provost, and interim president at Case Western Reserve University. He has authored more than 115 publications and served as editor or editorial board member for several serial publications. He is a fellow in the American Academy of Arts and Sciences, recipient of a Distinguished Alumnus Award from Johns Hopkins Whiting School of Engineering, and vice-chair of the Presidential Commission for the Study of Bioethical Issues.

John E. Ware, Jr., University of Massachusetts Medical School

John E. Ware, Jr., Ph.D., is professor and chief of Outcomes Measurement Science in Quantitative Health Sciences at the University of Massachusetts Medical School and president and CEO of the John Ware Research Group, Inc. He is an internationally recognized leader of the field of healthcare outcomes assessment and was one of the first to demonstrate the feasibility and advantages of computerized adaptive testing and other "modern" psychometric methods is assessing generic and disease-specific health outcomes. He published over 400 peer-reviewed articles. Honors include the Distinguished Investigator Award (Academy Health), Novartis/Zitter Group Outcomes Leadership Award, and Ellwood Award (FACCT). He is a member of the Institute of Medicine.

Herbert Weissbach, Florida Atlantic University

Herbert Weissbach, Ph.D., is Distinguished Research Professor and director of the Center for Molecular Biology and Biotechnology at Florida Atlantic University. He has had a prominent career in biochemistry, receiving a number of awards and honors including the American Chemical Society Enzyme Award, the Townsend Harris Medal from City College of New York and the George Washington University Distinguished Alumni Award. He holds three recent patents that have been licensed to a biotechnology company. He has more than 460 publications and has served as an editor for the *Journal of Biological Chemistry* and *Archives of Biochemistry and Biophysics*. Weissbach is a member of the National Academy of Sciences and a fellow of the American Academy of Microbiology.

Shin-Tson Wu, University of Central Florida

Shin-Tson Wu, Ph.D., is Pegasus professor of Optics and Photonics at the University of Central Florida. He has made pioneering contributions in liquid crystal materials and display devices, spatial light modulators, and adaptive lenses. He is the recipient of the SID Slottow-Owaki Prize, OSA Joseph Fraunhofer Award, SPIE G.G. Stokes Award, and SID Jan Rajchman Prize. He holds 80 U.S. and 20 foreign patents that have been licensed to several companies. He published seven books and over 420 journal papers, and serves as chair of OSA Publication Councils, OSA board of directors, and SID Honors and Awards committee. He was founding editor-in-chief of the *Journal of Display Technology,* and is a fellow of the IEEE, OSA, SID and SPIE.

2012 NAI FELLOWS SELECTION COMMITTEE

The 2012 NAI Charter Fellows Selection Committee is comprised of 14 Members from the National Academies, recipients of National Medals, a National Inventors Hall of Fame inductee, an NAI Charter Fellow, and senior officials from the United States Patent and Trademark Office (USPTO), the American Association for the Advancement of Science (AAAS), the Association of University Technology Managers (AUTM), the United Inventors Association and university research leaders.

Anne H. Chasser

Former Commissioner for Trademarks, United States Patent and Trademark Office
Chair of the Fellows Selection Committee

Anne H. Chasser is an author, intellectual property strategist and expert. As Strategic Advisor for Wolfe-SMBC, she advises clients on IP strategy, branding and licensing and provides expert work in litigation matters. From 1999-2004 she served as the Commissioner for Trademarks at the USPTO. During her term, the Trademark Operations implemented full electronic processing of trademark applications and examination and the Madrid Protocol. *Managing Intellectual Property Magazine* named her one of the Fifty Most Influential People in Global Intellectual Property. Formerly associate vice president for Intellectual Property for the University of Cincinnati, she chaired the Ohio Technology Transfer Officers Council, and served on the board member of the Cincinnati Intellectual Property Law Association and National Inventors Hall of Fame. She was President of the International Trademark Association and testified before Congress in that capacity. She is co-author of *Domain Names Rewired* and of *Brand Rewired: Connecting Intellectual Property Protections, Branding and Creativity,* published by Wiley & Son and ranked among the top 35 books in product development on Amazon.

Nasser Arshadi

Vice Provost for Research, University of Missouri–St. Louis

Nasser Arshadi, Ph.D., is vice provost for Research and professor of Finance at the University of Missouri–St. Louis. He received his Ph.D. in financial economics from the University of Nebraska–Lincoln. He has published extensively in economics and finance journals on capital markets and the microeconomics of corporations with an emphasis on assessing and managing risk, and has published two books on financial intermediation and insider trading. He serves on the editorial boards of *Technology and Innovation* and *Public and Municipal Finance,* and served as an economist and policy analyst at the Board of Governors of the Federal Reserve System.

Norman R. Augustine

National Medal of Technology and Innovation
National Academy of Sciences
Retired Chairman and CEO, Lockheed Martin Corporation

Norm Augustine is retired Chairman and CEO of the Lockheed Martin Corporation. 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. He received the National Medal of Technology and the Joint Chiefs of Staff Distinguished Public Service Award. He has five times received the Distinguished Service Medal. He is co-author of *The Defense Revolution* and *Shakespeare In Charge* and author of *Augustine's Laws* and *Augustine's Travels.* He was chairman and principal officer of the American Red Cross for nine years, chairman of the National Academy of Engineering, president and chairman of the Association of the United States Army, chairman of the Aerospace Industries Association, president of the Boy Scouts of America and chairman of the Defense Science Board. He is a Trustee Emeritus of Johns Hopkins, a former member of the Board of Trustees of Princeton and MIT, and is a Regent of the University System of Maryland. He has been elected to membership in the American Philosophical Society, the National Academy of Sciences, the American Academy of Arts & Sciences, Phi Beta Kappa and Sigma Xi. He holds 29 honorary degrees and was selected by Who's Who in America and the Library of Congress as one of "Fifty Great Americans" on the occasion of Who's Who's fiftieth anniversary.

Edward 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. He oversees an annual budget over $18 million and serves as a member of senior management. He joined AAAS in 1998 as a member of the AAAS Research Competitiveness Program, which provides review and guidance to the science and innovation community, and became director of the program in 2004. He holds a Ph.D. from the University of Texas at Austin, and a B.S. from the Massachusetts Institute of Technology. He was an Alexander von Humboldt Fellow. His publications include refereed scientific journals, conference proceedings, software documentation and newspaper articles.

Elizabeth Lea Dougherty

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

Elizabeth Dougherty, J.D., is the Director of Inventor Education, Outreach, and Recognition in the Office of Innovation Development at the USPTO, where she develops, implements and supervises programs that support the independent inventor community, small businesses, entrepreneurs, and the intellectual property interests of colleges and universities, and coordinates the ombudsman program for small businesses and entrepreneurs. She also supervises the development of outreach programs to women, minority and other underserved communities, and builds and maintains relationships with state and local governments to promote local programs that support invention and innovation in the U.S.

Margaret A. Focarino

Commissioner for Patents, United States Patent and Trademark Office

Margaret A. Focarino became Commissioner for Patents for the U.S. Patent and Trademark Office in 2012. She has been with the agency for more than 34 years, beginning her career at the USPTO in 1977 as a patent examiner. She became a supervisory patent examiner in 1989 and was promoted to the Senior Executive Service in 1997. She received the Department of Commerce Bronze Medal Award in 1993 for her work as a supervisory patent examiner and the Department of Commerce Silver Medal for leadership in 2010 for leading a joint union and management task force that developed and implemented the first significant changes to the patent examiner work credit system in more than 30 years. She was the 2010 recipient of American University's School of Public Affairs Roger W. Jones Award for Executive Leadership. The annual award recognizes two public servants in the federal government whose careers are marked by extraordinary effectiveness in organizational performance and strong commitment to training and development of employees. She has been a strong advocate for independent inventors and small business initiatives. In her role as commissioner, she has led a continued effort to educate and assist the inventor community and small businesses. She was instrumental in the USPTO's efforts to expand its educational outreach program to include universities, graduate and undergraduate students, technology transfer faculty, and entrepreneurship offices.

Thomas J. Fogarty

First Charter Fellow of the National Academy of Inventors (inducted February 2012)
National Inventors Hall of Fame Inductee
National Academy of Engineering
(see page 12)

Sir Harold Walter Kroto

Nobel Prize
Fellow of the Royal Society
Francis Eppes Professor at Florida State University

Dr. Sir Harold "Harry" W. Kroto, received the 1996 Nobel Prize in Chemistry for his co-discovery of buckminsterfullerene, a form of pure carbon better known as "buckyballs." The extraordinary molecule consists of 60 carbon atoms arranged as a spheroid, in a pattern exactly matching the stitching on soccer balls. The configuration reminded Kroto of the geodesic domes designed by the late inventor/architect Buckminster Fuller, hence the name "buckminsterfullerines." A few of Kroto's additional achievements include being awarded Fellow of the Royal Society (1990), Fellow of the Royal Society of Chemistry; President of the Royal Society of Chemistry (2002-2004), Mexican Academy of Science; Member Academia Europaea (1993); Hon. Foreign Member Korean Academy of Science and Technology (KAST) (1997); Hon. Fellow of the Royal Microscopical Society (1998); Hon. Fellow of the Royal Society

of Edinburgh (1998); Hon Fellow of the RSC (2000), Foreign Member Finnish Academy of Sciences, Academy of Sciences (Torino 2005), Foreign Associate of the National Academy of Sciences (US 2007). In 2001, Kroto won the Royal Society's prestigious Michael Faraday Award, which is given annually to a scientist who has done the most to further public communication of science, engineering or technology in the United Kingdom.

Sir George Henry Martin CBE

Rock and Roll Hall of Fame Inductee
Producer of The Beatles
Commander of the British Empire (CBE)
Academy Award Winner
Six-time Grammy Award Winner

A composer in his own right, Sir George Martin has been responsible for the music of a considerable number of films, 'A Hard Day's Night' (for which he won an Academy 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. He has received several distinguished honors and awards including: an Academy Award in 1964, six Grammy Awards, induction into the Rock and Roll Hall of Fame and in 1988 was appointed C.B.E. (Commander of the British Empire) for his services to the music industry. He is an active research advocate.

Vinit Nijhawan

Managing Director, Office of Technology Development, Boston University

Vinit Nijhawan is managing director of Technology Development, and director of Enterprise Programs at the Institute of Technology, Entrepreneurship & Commercialization at Boston University, and where he also teaches MBA courses on entrepreneurship. He spent 30+ years building five startups that were acquired and was CEO of three. He was venture partner at Key Venture Partners where in two years he sourced over 200 deals and made one investment acquired for $430M. He is advisor and board member to several technology startups including MTDC, an early stage, quasi-public Massachusetts venture capital firm, and was a Mass High Tech All-Star in 2005. He earned a B.A.Sc. in electrical engineering from the University of Waterloo, Canada.

Felix A. Okojie

Vice President for Research and Federal Relations, Jackson State University

Felix A. Okojie, Ph.D., is vice president of Research and Federal Relations and professor of Public Health at Jackson State University. He has devoted considerable energies to the growth of research programs at Jackson State University and plays leadership roles in the funding and ongoing implementation of several research centers including National Center for Biodefense Communications, Center for Defense Integrated Data, Institute for Epidemiology and Health Services Research, Jackson Heart Study Coordinating Center, Center for Nanotoxicity, and Center of Excellence for the Study of National Disasters, Coastal Infrastructure and Emergency Management. A Certified Research Administrator and academician, he is active in several academic and research organizations, published, and serves on several regional and national research and education boards.

Mark T. Reyland

Executive Director, The United Inventors Association of America

Mark Reyland serves the inventor community as executive director and executive committee member of The United Inventors Association of America. In addition to being the largest non-profit inventor organization in the world, the UIA is a team of well-respected professional inventors, executives, and product suppliers providing education and guidance to its over 13,000 members through the many inventor outreach programs under Reyland's leadership. Prior to joining the UIA, he was director of Classified Technology Development for a Fortune 500 company, a National Security Agency liaison to the Korean government and the U.S. Air Force Special Programs Office, and a successful manufacturing technology and product inventor.

Todd Sherer

Former President of the Association of University Technology Managers
Associate Vice President for Research Administration and Executive Director for the Office of Technology Transfer, Emory University

Todd Sherer, Ph.D., is associate vice president for Research Administration and executive director of Technology Transfer at Emory University. Since joining Emory in 2003, he has instituted a commercially oriented product pipeline to highlight Emory's varied portfolio, and created an in-house patent department to reduce costs and better align patent work with research activity. Licensing revenues have exceeded $650 million under his leadership. He also worked with colleagues to monetize downstream licensing revenues on an Emory-discovered molecule that is now part of the leading AIDS drug cocktail, resulting in a $540 million one-time payment. He is former president for the Association of University Technology Managers (AUTM) and serves on the Board of Southeast BIO. He is a Registered Patent Agent with the USPTO and a Certified Licensing Professional.

Lonnie G. Thompson

National Medal of Science
National Academy of Science
Distinguished University Professor in the School of Earth Sciences, The Ohio State University

Lonnie G. Thompson, Ph.D., is one of the world's foremost authorities on paleoclimatology and glaciology. He has led 58 expeditions during the last 35 years, conducting ice-core drilling programs in the Polar Regions as well as on tropical and subtropical ice fields in 16 countries including China, Peru, Russia, Tanzania and Papua, Indonesia (New Guinea). Thompson and his team were the first to develop lightweight solar-powered drilling equipment for the acquisition of histories from ice fields in the high Andes of Peru and on Mount Kilimanjaro in Tanzania. He is a member of the National Academy of Sciences and was awarded the National Medal of Science, the John and Alice Tyler Prize for Environmental Achievement, and was selected by *Time* magazine and CNN as one of *America's Best* in science and medicine. He received the Dan David Prize (jointly with Ellen Mosley-Thompson) and the Seligman Crystal award, the highest professional award given in Glaciology. He was elected as a foreign member of the Chinese National Academy of Sciences, received the 'Mountain Hero' award from The Mountain Institute in Washington, D.C., and the Benjamin Franklin Medal in Earth and Environmental Science.

U.S. Commissioner for Patents Presents the Fellows Plaque

Margaret Focarino, U.S. Commissioner for Patents, holds up a plaque engraved with the names and institutions of the Fellows. The plaque will hang at the USPTO and each subsequent year a plaque listing the name and institution of each NAI Fellow will be on display at the USPTO federal building in Alexandria, Va. (Photo: Aimee Blodgett)

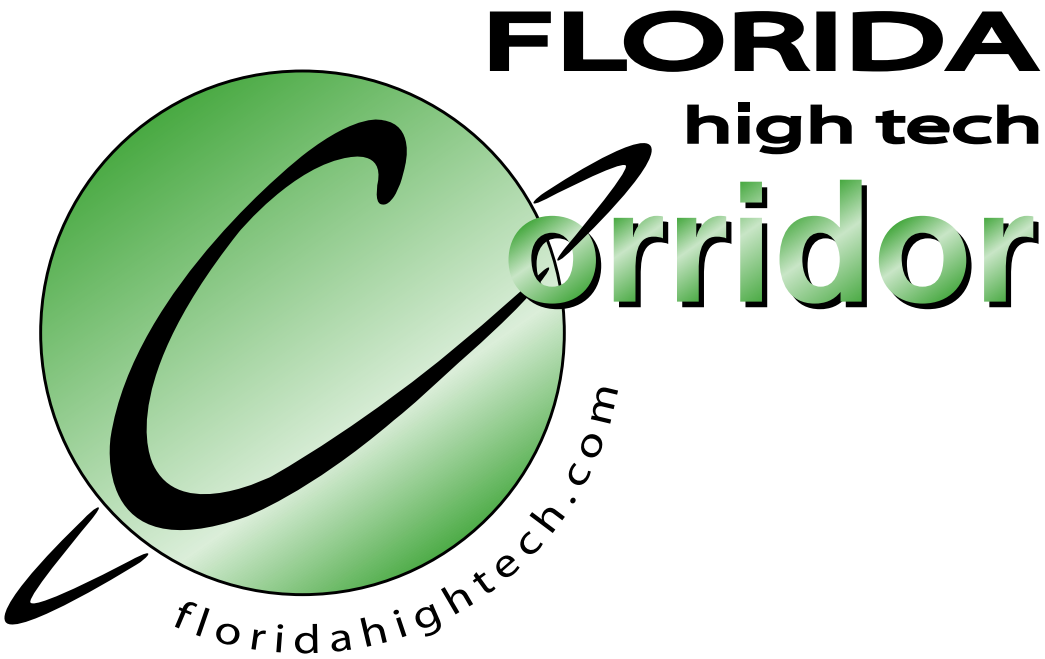
Would Thomas Edison Receive Tenure?

University leaders panel at the 2013 NAI Annual Conference on changing the academic culture to include patenting and commercialization in promotion and tenure consideration: Mory Gharib, vice provost for research, California Institute of Technology; Eric Kaler president, University of Minnesota; Richard Marchase, vice president for research, The University of Alabama at Birmingham; Patrick Harker, president, University of Delaware; Timothy Sands, provost, Purdue University. (Photo: Aimee Blodgett)

Harnessing Opportunities to Promote and Foster Academic Innovation

The U.S. Patent and Trademark Office hosted a panel at the 2013 NAI Annual Conference: Elizabeth Dougherty, USPTO; Dean Florez, Twenty Million Minds Foundation; Rathindra DasGupta, National Science Foundation; Babs Carryer, National Collegiate Inventors & Innovators Alliance (NCIIA). (Photo: Aimee Blodgett)

The NAI Fellows Program is Sponsored by



A regional economic development initiative of:

University of Central Florida

USF UNIVERSITY OF SOUTH FLORIDA

UF UNIVERSITY of FLORIDA

The Florida High Tech Corridor Council (FHTCC) is a regional economic development initiative of the University of Central Florida (UCF), the University of South Florida (USF) and the University of Florida (UF) whose mission is to grow high tech industry and innovation in the region through partnerships that support research, marketing, workforce and entrepreneurship. A partnership involving more than 25 local and regional economic development organizations (EDOs) and 14 community colleges, the Council is co-chaired by the presidents of UCF, USF and UF. The Council includes the presidents of two of the community colleges, the president of Florida Institute of Technology and representatives of high tech industry. The unique partnership has resulted in a strategic approach to high tech economic development that involves matching funds research, workforce development and a marketing program leveraging governmental, EDO and corporate budgets on a regional rather than local basis.

NAI

National Academy of Inventors

National Academy of Inventors, 3702 Spectrum Boulevard, Suite 175, Tampa, FL 33612-9444 USA
www.academyofinventors.org