Parker H "Pete" Petit Elected to the National Academy of Engineering

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National Academy of Engineering

FOR IMMEDIATE RELEASE

NATIONAL ACADEMY OF ENGINEERING ELECTS 68 MEMBERS AND NINE FOREIGN ASSOCIATES

WASHINGTON — The National Academy of Engineering (NAE) has elected 68 new members and nine foreign associates, announced NAE President Charles M. Vest today. This brings the total U.S. membership to 2,290 and the number of foreign associates to 202.

Election to the National Academy of Engineering is among the highest professional distinctions accorded to an engineer. Academy membership honors those who have made outstanding contributions to "engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature," and to the "pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

A list of the newly elected members and foreign associates follows, with their primary affiliations at the time of election and a brief statement of their principal engineering accomplishments.

New Members

James F. Albaugh, executive vice president, Boeing Co., and president and chief executive officer, Commercial Airplanes, Renton, Wash. For technical leadership in defense and commercial aerospace industry.

John E. Allison, senior technical leader, Ford Research and Advanced Engineering, Ford Motor Co., Dearborn, Mich. For contributions to automotive casting technology and computational materials engineering.

Nadine N. Aubry, Raymond J. Lane Distinguished Professor and head of the mechanical engineering department, Carnegie Mellon University, Pittsburgh. For contributions to low-dimensional models of turbulence and microfluidic devices, and for leadership in engineering education.

David D. Awschalom, Peter J. Clarke Professor, director of the California NanoSystems Institute, and director of the Center for Spintronics and Quantum Computation, University of California, Santa Barbara. For contributions to the understanding of spin coherence and spintronics.

William Frasier Baker Jr., structural and civil engineering partner, Skidmore, Owings, & Merrill LLP, Chicago. For leadership in the development of innovative structures for high-rise buildings worldwide.

James Edwin Barger, chief scientist, BBN Technologies, Cambridge, Mass. For applications of acoustic technology and engineering solutions for the benefit of national security and society.

Jeffrey S. Beck, manager, Corporate Strategic Research Laboratory, ExxonMobil Research and Engineering Co., Annandale, N.J. For discovery and commercialization of selective, environmentally beneficial catalytic routes to major petrochemicals and for leadership in industrial engineering.

John R. Birge, Jerry W. and Carol Lee Levin Professor of Operations Management, Booth School of Business, University of Chicago, Chicago. For contributions to the theory of optimization under uncertainty.

Lawrence D. Burns, retired vice president of research and development and strategic planning, General Motors Corp.; and professor of engineering practice, University of Michigan, Ann Arbor. For leadership and technical contributions to automotive technologies.

Albert Carnesale, chancellor emeritus and professor of public policy and mechanical and aerospace engineering, University of California, Los Angeles. For bringing engineering excellence and objectivity to international security and arms control, and for leadership in higher education.

Michael J. Cima, Sumitomo Electric Industries Professor of Engineering, department of materials science and engineering, Massachusetts Institute of Technology, Cambridge. For innovations in rapid prototyping, high-temperature superconductors, and biomedical device technology.

James Joseph Collins, professor of biomedical engineering and co-director, Center for BioDynamics, Boston University, Boston. For contributions to synthetic biology and engineered gene networks.

William John Cook, Chandler Family Chair Professor in Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta. For theoretical and computational contributions to discrete optimization.

Stuart L. Cooper, University Scholar Professor and chair, department of chemical and biomolecular engineering, Ohio State University, Columbus. For contributions to polymer chemistry, biomedical polyurethanes, blood compatibility, and academic administration.

Armen Der Kiureghian, Taisei Professor of Civil Engineering, University of California, Berkeley. For contributions to risk and reliability and earthquake engineering to advance the practice of civil and structural engineering.

Susan T. Dumais, principal researcher, adaptive systems and interaction group, Microsoft Research, Redmond, Wash. For innovation and leadership in organizing, accessing, and interacting with information.

Daniel C. Edelstein, IBM Fellow and manager, BEOL Technology Strategy, IBM T.J. Watson Research Center, Yorktown Heights, N.Y. For contributions to implementation of copper/low-dielectric chip interconnects.

Abbas Firoozabadi, senior scientist and director, Reservoir Engineering Research Institute, Palo Alto, Calif. For contributions to oil and gas recovery processes through application of surface science and thermodynamics.

Christodoulos A. Floudas, Stephen C. Macaleer '63 Professor in Engineering and Applied Science and professor of chemical and biological engineering, Princeton University, Princeton, N.J. For contributions to theory, methods, and applications of global optimization in process systems engineering, computational chemistry, and molecular biology.

Jacqueline Gail (Berg) Gish, director of special projects, Northrop Grumman Aerospace Systems, Redondo Beach, Calif. For technical and programmatic contributions to high-power diode-pumped solid state lasers for defense applications.

John C. Gore, Hertha Ramsey Cress University Professor of Radiology and Radiological Sciences, Biomedical Engineering, Molecular Physiology and Biophysics, and Physics; and director of the Center for Imaging Sciences, Vanderbilt University, Nashville, Tenn. For contributions to the development and applications of magnetic resonance and other imaging techniques in medicine.

Linda G. Griffith, professor of biological and mechanical engineering and director, Biotechnology Process Engineering Center, Massachusetts Institute of Technology, Cambridge. For contributions to 3D functional biomaterials, engineered hepatic tissues, and cell transplant devices.

Daniel M. Hancock, vice president, Global Strategic Product Alliances, General Motors Corp., Pontiac, Mich. For contributions to automotive engines and transmissions and leadership in advanced powertrain technology and engineering

education.

James S. Harris Jr., James and Ellenor Chesebrough Professor of Electrical Engineering, Materials Science, and Applied Physics, Stanford University, Stanford, Calif. For contributions to epitaxial growth of compound semiconductor materials and their applications.

Chris T. Hendrickson, Duquesne Light Company Professor of Engineering and co-director, Green Design Institute, Carnegie Mellon University, Pittsburgh. For leadership and contributions in transportation and green design engineering.

Michael R. Hoffmann, James Irvine Professor of Environmental Science, California Institute of Technology, Pasadena. For oxidative treatment technologies for the removal of organic and inorganic contaminants from water.

Mark S. Humayun, professor of ophthalmology, biomedical engineering, and cell and neurobiology, University of Southern California, Los Angeles. For contributions to development and clinical implementation of the visual prosthesis for restoration of sight.

Linos J. Jacovides, retired director, Delphi Research Labs, Delphi Corp., Gross Pointe Farms, Mich. For research on the interactions between power electronics and electrical machines in electric vehicles, hybrid electric vehicles, and locomotives.

Keith P. Johnston, M.C. (Bud) and Mary Beth Baird Endowed Chair and Professor of Chemical Engineering, University of Texas, Austin. For advances in science and technology of particles and colloids used in drug delivery, biomedical imaging/therapy, microelectronics, and energy applications.

Min H. Kao, chairman and chief executive officer, Garmin Ltd., Olathe, Kansas. For leadership in developing and commercializing compact GPS navigation systems.

Henry Z. Kister, senior fellow and director of fractionation technology, Fluor Corp., Aliso Viejo, Calif. For leadership in distillation technology and for transforming distillation troubleshooting into an engineering science.

Daphne Koller, professor, department of computer science, Stanford University, Stanford, Calif. For contributions to representation, inference, and learning in probabilistic models with applications to robotics, vision, and biology.

Jindrich Kopecek, Distinguished Professor of Pharmaceutics and Pharmaceutical Chemistry and Distinguished Professor of Bioengineering, University of Utah, Salt Lake City. For contributions to the design of hydrogel biomaterials and polymeric drug delivery systems.

Mark J. Kushner, George I. Haddad Collegiate Professor and director, Michigan Institute for Plasma Science and Engineering, University of Michigan, Ann Arbor. For contributions to low-temperature plasmas for semiconductors, optics, and thin-film manufacturing.

Cato T. Laurencin, Van Dusen Endowed Chair in Academic Medicine; Distinguished Professor of Orthopaedic Surgery and Chemical, Materials, and Biomolecular Engineering; dean, School of Medicine; and vice president for health affairs, University of Connecticut, Farmington. For biomaterial science, drug delivery, and tissue engineering involving musculoskeletal systems, and for academic leadership.

Fred C. Lee, University Distinguished Professor, Bradley Department of Electrical and Computer Engineering, and director, Center for Power Electronics Systems, Virginia Polytechnic Institute and State University, Blacksburg. For contributions to high-frequency power conversion and systems integration technologies, education, industry alliances, and technology transfer.

Henry M. Levy, Wissner-Slivka Endowed Chair in Computer Science and Engineering and department chair, University of Washington, Seattle. For contributions to design, implementation, and evaluation of operating systems, distributed systems, and processor architectures.

Donald Liu, retired executive vice president and chief technology officer, American Bureau of Shipping, Houston. For finite-element techniques for ship structural designs and contributions to the principles for safer ships.

Lester L. Lyles, independent aerospace consultant, The Lyles Group, Vienna, Va. For leadership in advancing air and space technology and for national service in space exploration.

Asad M. Madni, retired president and chief technical officer, BEI Technologies, Inc.; and independent consultant, Los Angeles, Calif. For contributions to development and commercialization of sensors and systems for aerospace and automotive safety.

Joanne M. Maguire, executive vice president, Lockheed Martin Space Systems Co., Littleton, Colo. For individual and team leadership of successful space programs.

Jitendra Malik, Arthur J. Chick Professor of Electrical Engineering and Computer Science, University of California, Berkeley. For contributions to computer vision and image analysis.

Ralph D. Masiello, senior vice president and innovation director, KEMA Inc., Chalfont, Pa. For online analysis, operator training simulation, and modern market development for secure operation of electric power grids.

Nicholas William McKeown, professor of electrical engineering and computer science, Stanford University, Stanford, Calif. For contributions to the design, analysis, and engineering of high-performance routers.

Richard B. Miles, professor, department of mechanical and aerospace engineering, Princeton University, Princeton, N.J. For development of laser-based flow field diagnostics and contributions to hypersonic testing technologies.

Donald A. Norman, Allen K. and Johnnie Cordell Breed Senior Professor in Design, professor of electrical engineering and computer science, and co-director of the Segal Design Institute, Northwestern University, Evanston, Ill. For development of design principles based on human cognition that enhance the interaction between people and technology.

Amedeo R. Odoni, T. Wilson Professor of Aeronautics and Astronautics and professor of civil and environmental engineering, Massachusetts Institute of Technology, Cambridge. For contributions and global leadership in air traffic control and airport systems.

John Arthur Orcutt, professor of geophysics and Distinguished Researcher, San Diego Supercomputer Center, Scripps Institution of Oceanography, University of California, San Diego, La Jolla. For international leadership in development of new ocean-observing infrastructure and environmental and geophysics research.

Parker H. "Pete" Petit, president, The Petit Group, Roswell, Ga. For developing and manufacturing the first home Sudden Infant Death Syndrome monitor and for pioneering pediatric home health care.

Karsten Pruess, senior scientist, earth sciences division, Lawrence Berkeley National Laboratory, Berkeley, Calif. For advances in modeling and engineering performance assessment of subsurface heat and mass transport processes.

Ramamoorthy Ramesh, Plato Malozemoff Chair Professor in Materials Science and Physics, University of California, Berkeley. For contributions to the science and technology of functional complex oxide materials.

Aristides A.G. Requicha, Gordon Marshall Chair in Engineering, University of Southern California, Los Angeles. For contributions to solid modeling and programmable automation at the macro- and nano-scales.

Thomas J. Richardson, vice president, engineering, Qualcomm-Flarion Technologies, Bridgewater, N.J. For contributions to error control coding theory and their application to multiple access wireless systems.

Franklin D. Robinson, retired president and chairman, Robinson Helicopter Co., Torrance, Calif. For the conception, design, and manufacture of low-noise, low life-cycle cost, and high-reliability helicopters.

John A. Rogers, Lee J. Flory-Founder Chair in Engineering, department of materials science and engineering, University of Illinois, Urbana-Champaign. For novel electronic and optoelectronic devices and systems.

Ares J. Rosakis, Theodore von Kármán Professor of Aeronautics and professor of mechanical engineering, and chair, division of engineering and applied science, California Institute of Technology, Pasadena. For discovery of intersonic rupture, contributions

to understanding dynamic failure, and methods to determine stresses in thin-film structures.

Joan B. Rose, Homer Nowlin Endowed Chair of Water Research, co-director of the Center for Water Sciences, and co-director of the Center for Advancing Microbial Risk Assessment, Michigan State University, East Lansing. For contributions to improving water quality safety and public health.

Joseph C. Salamone, chief scientific officer, Rochal Industries LLP, San Antonio. For advances in ophthalmological devices and wound healing therapies and for distinguished academic and professional service.

Fred B. Schneider, Samuel B. Eckert Professor of Computer Science, Cornell University, Ithaca, N.Y. For contributions to the design of trustworthy and secure computer systems.

Terrence J. Sejnowski, Francis Crick Professor and director of the Computational Neurobiology Laboratory, Salk Institute for Biological Studies, La Jolla, Calif. For contributions to artificial and real neural network algorithms and applying signal processing models to neuroscience.

Alexander J. Smits, Eugene Higgins Professor of Mechanical and Aerospace Engineering and chair, mechanical and aerospace engineering, Princeton University, Princeton, N.J. For contributions to the measurement and understanding of turbulent flows, fluids engineering, and education.

James C. Stevens, research fellow in core research and development, Dow Chemical Co., Freeport, Texas. For contributions to the discovery and commercialization of polyolefins and polyolefin products.

John M. Undrill, independent consultant, John Undrill LLC, Scotia, N.Y. For the development and application of testing methods and power system analysis tools in the electric utility industry.

Wallace R. Wade, consultant; and retired chief engineer and technical fellow, Powertrain Systems Technology and Processes, Ford Motor Co., Novi, Mich. For implementation of low-emission technologies in the automotive industry.

Yulan Wang, founder, chairman, and chief executive officer, InTouch Health, Santa Barbara, Calif. For creation of remotely operated surgical robots and telemedicine devices.

Mihalis Yannakakis, Percy K. and Vida L. W. Hudson Professor of Computer Science, Columbia University, New York City. For contributions to algorithms and computational complexity.

Gregory J. Yurek, founder, chairman of the board, president, and chief executive officer, American Superconductor Corp., Devens, Mass. For engineering and leadership in development of high-temperature superconductor commercial products.

Mark D. Zoback, Benjamin M. Page Professor of Geophysics, Stanford University, Stanford, Calif. For advances in the application of geomechanics to oil and gas production, geothermal stimulation, and carbon dioxide sequestration.

New Foreign Associates

Ronald Bullough, consultant, Goring, Reading, U.K. For contributions to understanding irradiation effects in solids and leadership in nuclear technology.

M. Elizabeth Cannon, president, University of Calgary, Calgary, Alberta. For innovative use of GPS data for a wide range of applications and for pioneering the field of geomatics.

Guilherme de Oliveira Estrella, director of exploration and production, Petróleo Brasileiro S.A. Petrobras, Rio de Janiero. For leadership in development of deepwater technology and discovery of giant oil fields offshore Brazil in the pre-salt formations.

Prabha S. Kundur, president, Kundur Power Systems Solutions Inc., Toronto. For contributions to modeling and control techniques to enhance the stability and reliability of large electric power systems.

Ingemar Lundström, professor emeritus, IFM-Linköping University, Linköping, Sweden. For contributions to the development

and commercialization of sensing platforms for biological interactions.

Jacob H. Masliyah, University Professor Emeritus, department of chemical and materials engineering, University of Alberta, Edmonton. For advancing the science and technology for recovery of bitumen from oil sands.

D. Roger J. Owen, professor in civil engineering, Swansea University, Swansea, U.K. For contributions to computational solid mechanics and industrial application of finite and discrete element methods.

Jonathan Scott Rose, professor, department of electrical and computer engineering, University of Toronto, Toronto. For contributions to research and engineering of field-programmable gate array architectures and computer-aided design tools.

Michael J. Rouse, independent international consultant, Oxford, U.K. For international leadership in water governance, regulation, and research to ensure safe drinking water.

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