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FOR IMMEDIATE RELEASE

NATIONAL ACADEMY OF ENGINEERING ELECTS 65 MEMBERS AND NINE FOREIGN ASSOCIATES

WASHINGTON – The National Academy of Engineering (NAE) has elected 65 new members and nine foreign associates, NAE President Charles M. Vest announced today. This brings the total U.S. membership to 2,227 and the number of foreign associates to 194.

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 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

Bernard Amadei, professor of civil engineering, University of Colorado, Boulder. For the creation of Engineers Without Borders, leadership in sustainable development education, and research on geomechanics.

Robert C. Armstrong, Chevron Professor of Chemical Engineering, Massachusetts Institute of Technology, Cambridge. For conducting outstanding research on non-Newtonian fluid mechanics, co-authoring landmark textbooks, and providing leadership in chemical engineering education.

Arvind, Charles W. and Jennifer C. Johnson Professor, department of computer science and engineering, Massachusetts Institute of Technology, Cambridge. For contributions to data flow and multi-thread computing and the development of tools for the high-level synthesis of hardware.

Dennis N. Assanis, Jon R. and Beverly S. Holt Professor of Engineering, University of Michigan, Ann Arbor. For scientific contributions to improving fuel economy and reducing emissions of internal combustion engines, and for promoting automotive engineering education.

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Wanda M. Austin, president and chief executive officer, The Aerospace Corporation, Los Angeles. For leadership in the engineering and integration of national space intelligence systems.

Ray Henry Baughman, Robert A. Welch Professor of Chemistry and director of the Alan G. MacDiarmid NanoTech Institute, University of Texas at Dallas, Richardson. For pioneering novel applications of conjugated polymers and related nanomaterials.

Pallab K. Bhattacharya, Charles M. Vest Distinguished University Professor of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor. For contributions to quantum-dot optoelectronic devices and integrated optoelectronics.

Paul N. Blumberg, independent consultant, Southfield, Mich. For the synthesis of automotive-system models that has led to more effective control of emissions and improvements in fuel economy.

Gerald G. Brown, distinguished professor of operations research, U.S. Naval Postgraduate School, Monterey, Calif. For contributions to large-scale optimization theory and its military and industrial applications.

Howard J. Bruschi, executive consultant, Westinghouse Electric Co., Pittsburgh. For leadership in the design, development, and licensing of the passively safe Westinghouse reactors, the AP600 and AP1000.

Gary S. Calabrese, former vice president and chief technology officer, Rohm and Haas Co., North Andover, Mass. For the development of advanced electronic materials and processes for semiconductor device manufacture.

Mau-Chung Frank Chang, professor, electrical engineering department, University of California, Los Angeles. For the development and commercialization of GaAs power amplifiers and integrated circuits.

Stephen Z.D. Cheng, dean, College of Polymer Science and Polymer Engineering, University of Akron, Akron, Ohio. For the development of materials for liquid crystal displays and the elucidation of structure-property relationships in polymeric materials.

Peter A. Cundall, principal and senior consultant, Itasca Consulting Group Inc., Minneapolis. For advancing the understanding of rock-deformation and failure processes and the development of innovative computational procedures in rock mechanics.

Robert H. Dodds Jr., professor and department head, M.T. Geoffrey Yeh Chair of Civil Engineering, department of civil and environmental engineering, University of Illinois, Urbana. For contributions in non-linear fracture mechanics and applications to practice in nuclear power and space systems.

Cynthia Dwork, senior researcher, Microsoft Research, Mountain View, Calif. For fundamental contributions to distributed algorithms and the security of cryptosystems.

David A. Dzombak, Walter J. Blenko Sr. Professor of Environmental Engineering, Carnegie Mellon University, Pittsburgh. For the development of models used in evaluating chemical behavior in water quality engineering and environmental remediation.

Anthony E. Fiorato, chairman, CTLGroup, Skokie, Ill. For research on improved concrete materials and construction, development of tests and standards, and technical leadership.

Thomas J. Fogarty, president, Fogarty Engineering, Portola Valley, Calif. For invention of the balloon catheter and devices that have revolutionized vascular surgery, and for creating companies to commercialize these inventions.

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James D. Foley, professor, College of Computing, and Stephen Fleming Chair in Telecommunications, Georgia Institute of Technology, Atlanta. For contributions to the establishment of the fields of computer graphics and human-computer interaction.

Lee-Lueng Fu, senior project scientist, Jet Propulsion Laboratory, Pasadena, Calif. For contributions to the development of satellite altimetry and applications in oceanography, geodesy, and climatology.

Gary Stephen Grest, distinguished member of the technical staff, Sandia National Laboratories, Albuquerque, N.M. For development of large-scale simulations for improved understanding of metals, polymers, and particulate matter.

Barbara J. Grosz, interim dean, Radcliffe Institute for Advanced Study, and Higgins Professor of Natural Sciences, School of Engineering and Applied Sciences, Harvard University, Cambridge, Mass. For pioneering research in natural language communication between humans and computers and its application to human-computer interaction.

Donald J. Haderle, president, Haderle Consulting LLC, Los Gatos, Calif. For contributions to the management of high-performance relational databases and leadership in founding the relational database-management industry.

J. Michael Harrison, Adams Distinguished Professor of Management, Stanford University, Stanford, Calif. For fundamental contributions to stochastic networks and financial engineering.

John L. Hudson, Wills Johnson Professor, department of chemical engineering, University of Virginia, Charlottesville. For advances in the understanding and engineering of complex dynamic chemical-reaction systems.

Michael W. Hunkapiller, general partner, Alloy Ventures Inc., Palo Alto, Calif. For the invention and commercialization of DNA and protein sequencers and DNA synthesizers that have revolutionized comparative genetics and the mapping of the human genome.

Enrique Iglesia, Chancellor Professor, department of chemical engineering, University of California, Berkeley. For outstanding contributions to the understanding of catalyst structure-function relationships, the development of novel catalysts, and leadership in the field of catalysis.

Jon M. Kleinberg, professor of computer science, Cornell University, Ithaca, N.Y. For contributions to the understanding of the structure and behavior of the World Wide Web and other complex networks.

Anthony David Kurtz, chairman and chief scientist, Kulite Semiconductor Products, Leonia, N.J. For the conception, development, and commercialization of the silicon semiconductor pressure transducer.

Burn-Jeng Lin, senior director, Nanopatterning Technology, Taiwan Semiconductor Manufacturing Co., Ltd., Taiwan, Republic of China. For technical innovations and leadership in the development of lithography for semiconductor manufacturing.

Thomas Anthony Lipo, director, Wisconsin Power Electronics Research Center, University of Wisconsin, Madison. For contributions to the design and development of variable-speed drives and motor controls.

Alexis C. Livanos, president, Northrop Grumman Space Technology, Redondo Beach, Calif. For contributions to the development and insertion of advanced semiconductor technology for commercial and government space systems.

(MORE)

Michael J. Lockett, corporate fellow, Praxair Inc., Tonawanda, N.Y. For contributions to the theory and practice of distillation.

David G. Luenberger, professor, department of management science and engineering, Stanford University, Stanford, Calif. For contributions to control theory, optimization algorithms, and economic dynamics.

Stephen Malkin, distinguished professor, department of mechanical and industrial engineering, University of Massachusetts, Amherst. For pioneering research in and the implementation of grinding-system simulation and optimization.

W. Allen Marr Jr., chief executive officer, Geocomp Corp., Boxborough, Mass. For innovative applications of numerical methods, risk analysis, advanced laboratory techniques, and field instrumentation to geotechnical engineering and construction.

John C. Martin, president and chief executive officer, Gilead Sciences Inc., Foster City, Calif. For the invention, development, and commercialization of anti-viral medicines, especially treatments for HIV/AIDS.

James A. Miller, distinguished member of the technical staff, Sandia National Laboratories, Livermore, Calif. For research on the theory and modeling of combustion chemistry that has led to universally applied codes for combustion modeling.

David L. Mills, professor, electrical and computer engineering and computer and information sciences, University of Delaware, Newark. For contributions to Internet timekeeping and the development of the Network Time Protocol.

Shree K. Nayar, T.C. Chang Professor of Computer Science, Columbia University, New York City. For the development of computational cameras and physics-based models for computer vision and computer graphics.

Chrysostomos L. (Max) Nikias, provost and senior vice president for academic affairs, University of Southern California, Los Angeles. For contributions to the development and diverse applications of adaptive signal processing, and for leadership in engineering education.

Malcolm R. O'Neill, independent consultant, Vienna, Va. For exceptional leadership and innovative management of national missile-defense programs and other high-profile military-technology capabilities.

Prabhakar Raghavan, senior vice president and head, Yahoo! Research, Santa Clara, Calif. For significant contributions to algorithms and the structure of the World Wide Web.

Yahya Rahmat-Samii, Northrop Grumman Professor, department of electrical engineering, University of California, Los Angeles. For contributions to the design and measurement of reflector and handheld-device antennas.

Marc Raibert, president, Boston Dynamics Inc., Waltham, Mass. For biomechanically motivated analysis, synthesis, control, and application of multi-legged robots.

Bhakta B. Rath, head of Materials Science and Component Technology Directorate and associate director of research, Naval Research Laboratory, Washington, D.C. For leadership in advancing materials research and technology to support national security.

Rebecca Rae Richards-Kortum, Stanley C. Moore Professor and chair, department of bioengineering, Rice University, Houston. For research on the diagnosis and treatment of cancer in women, and for leadership in bioengineering education and global health initiatives.

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Stephen M. Robinson, professor of industrial engineering and computer sciences, University of Wisconsin, Madison. For fundamental contributions to the theory of nonlinear optimization and to military planning.

Vladimir Rokhlin, professor of computer science and mathematics, Yale University, New Haven, Conn. For the development of fast multipole algorithms and their application to electromagnetic and acoustic scattering.

Thomas P. Russell, professor, polymer science and engineering department, University of Massachusetts, Amherst. For contributions to the processing of thin-block copolymer films to achieve well-organized nanostructures.

Robert F. Sawyer, Class of 1935 Professor of Energy Emeritus, department of mechanical engineering, University of California, Berkeley. For pioneering work in reducing energy consumption and improving the environment, and for contributions to our understanding of air pollution.

James A. Sethian, vice chair for undergraduate affairs and professor, department of mathematics, University of California, Berkeley. For the development of efficient methods of tracking moving interfaces.

Paul H. Siegel, director, Center for Magnetic Recording Research, and CMRR Endowed Chair, department of electrical and computer engineering, University of California, San Diego, La Jolla. For the invention and development of advanced coding techniques for digital recording systems.

R. Paul Singh, professor, biological and agricultural engineering department, University of California, Davis. For innovation and leadership in food engineering research and education.

Kumares C. Sinha, Olson Distinguished Professor of Civil Engineering, Purdue University, West Lafayette, Ind. For contributions to the advancement of highway infrastructure engineering and management and to the education of transportation professionals worldwide.

Richard L. Sites, software engineer, Google Inc., Mountain View, Calif. For leadership in using rigorous cost and benefit analyses in processor designs, and leadership in the development of binary translation technology.

Frans Spaepen, John C. and Helen F. Franklin Professor of Applied Physics, School of Engineering and Applied Sciences, Harvard University, Cambridge, Mass. For contributions to the understanding of structures of melts, amorphous metals, and semiconductors.

Zhigang Suo, Allen E. and Marilyn M. Puckett Professor of Mechanics and Materials, School of Engineering and Applied Sciences, Harvard University, Cambridge, Mass. For fundamental and applied contributions to the thermo-mechanical performance of electronic material systems, actuator materials, and composites.

David A. Tirrell, Ross McCollum-William H. Corcoran Professor and Chair, division of chemistry and chemical engineering, California Institute of Technology, Pasadena. For pioneering contributions to bioengineered materials and the synthesis of novel artificial proteins.

David R. Walt, Robinson Professor of Chemistry, Tufts University, Medford, Mass. For the development of revolutionary sensors that can simultaneously image and perform biochemical analyses.

Andrew M. Weiner, Scifres Distinguished Professor of Electrical and Computer Engineering, Purdue University, West Lafayette, Ind. For contributions to the development of femtosecond optical-pulse shaping technology.

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William W-G. Yeh, distinguished professor and chair, department of civil and environmental engineering, University of California, Los Angeles. For the development of methodologies for optimizing the management of water resources, and for inverse methods of estimating subsurface parameters.

Roe-Hoan Yoon, Nicholas T. Camicia Professor, department of mining and minerals engineering, Virginia Polytechnic Institute and State University, Blacksburg. For advancing the surface chemistry of mineral systems and developing new mineral processing technology and flotation kinetic models.

Yannis C. Yortsos, dean, Viterbi School of Engineering, University of Southern California, Los Angeles. For fundamental advances in fluid flow, transport, and reactions in porous media applied to the recovery of subsurface resources.

New Foreign Associates

Isamu Akasaki, professor, Meijo University, Nagoya, Japan. For contributions to the development of nitride-based semiconductor materials and optoelectronic devices.

Ann P. Dowling, professor and head of the division, department of engineering, University of Cambridge, Cambridge, U.K. For advances in acoustics and unsteady flow, and for leadership in collaborative research between industry and universities.

Thomas W. Healy, professorial fellow, department of chemical and biomolecular engineering, University of Melbourne, Victoria, Australia. For contributions to mineral-water interfacial phenomena, their application to mineral processing, and leadership in industry-government-academic cooperation.

Akihisa Inoue, president, Tohoku University, Sendai, Japan. For outstanding achievements and international leadership in the design of advanced bulk metallic glasses and other metastable materials.

Alexander I. Leontiev, professor, department of thermogas dynamics and gas turbine engines, Moscow State Technical University, Moscow. For contributions to the fundamental understanding of convective heat transfer, and for furthering international scientific cooperation.

Arthur John Robin Gorell Milner, emeritus professor, University of Cambridge, Cambridge, U.K. For fundamental contributions to computer science, including the development of LCF, ML, CCS, and the pi-calculus.

Ekkehard Ramm, professor, Institute for Structural Mechanics, University of Stuttgart, Stuttgart, Germany. For contributions to the finite element analysis of plates and shells and leadership in computational mechanics.

Rutger Anthony van Santen, professor, department of chemical engineering and chemistry, Eindhoven University of Technology, Eindhoven, Netherlands. For pioneering work on the fundamentals of reaction mechanisms in heterogeneous catalysis.

Tadashi Watanabe, project leader, RIKEN, Tokyo. For contributions to the design and development of vector architectures for supercomputers.

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