

National Academy of Engineering

October 4, 2020

# CLASS OF 2020

Members and  
International Members



# CLASS OF 2020 MEMBERS

In February 2020 the members of the NAE elected 86 new members and 18 new international members. Election to the NAE is one of the highest professional distinctions conferred on engineers. The main criteria for membership in the National Academy of Engineering are outstanding personal contributions and accomplishments in one or both of the following categories:

1. Engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature.
2. Pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education, or providing engineering leadership of major endeavors.

The following pages feature the names, photographs, and election citations of each newly elected member and international member. The numbers following their names denote primary and secondary NAE section affiliations.



**Dr. Lilia A. Abron (4)**

President and Chief Executive Officer  
PEER Consultants, P.C.

For leadership in providing technology-driven sustainable housing and environmental engineering solutions in the United States and South Africa.



**Dr. Saeed D. Barbat (10)**

Executive Technical Leader Safety, Policy, and  
Vehicle Analytical Tools  
Ford Motor Company

For leadership in automotive safety and contributions to the science of crashworthiness, occupant protection, and biomechanics.



**Ms. Eleanor J. Allen (4)**

Chief Executive Officer  
Water for People

For leadership and advocacy in making clean water and sanitation systems accessible to people around the world.



**Dr. Peter J. Basser (2)**

NIH Senior Investigator  
Section on Quantitative Imaging & Tissue  
Sciences  
National Institutes of Health National Institute of  
Child Health and Human Development

For development of diffusion tensor MRI and streamline tractography, transforming the characterization of brain disorders and visualization of nerve fiber pathways.



**Dr. David J. Allstot (7)**

Professor  
Electrical Engineering and Computer Science  
Oregon State University

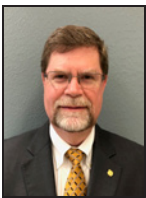
For research and commercialization of mixed-mode integrated circuits and systems.



**Dr. Barbara A. Bekins (11)**

Research Hydrologist  
U.S. Geological Survey

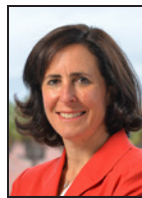
For contributions to characterizing subsurface microbial populations related to contaminant degradation.



**Dr. Robert O. Ambrose (10, 5)**

Division Chief  
Software, Robotics and Simulation Division  
NASA Johnson Space Center

For advances in dexterous space robotics and leadership in human-robotic teaming in space operations.



**Professor Stacey F. Bent (3, 9)**

Jagdeep and Roshni Singh Professor of  
Engineering  
Department of Chemical Engineering  
Stanford University

For contributions to materials surface chemistry and its application across technology platforms from energy to electronics.

# CLASS OF 2020 MEMBERS

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**Dr. Thomas A. Berson (5)**

Advisory Board Member  
Salesforce.com Inc.

For contributions to cybersecurity in the commercial and intelligence communities.

**Professor Graham V. Candler (1)**

McKnight Presidential Chair  
Aerospace Engineering and Mechanics  
University of Minnesota

For development and validation of computational models for high-fidelity simulation of supersonic and hypersonic interactions.



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**Dr. Stephan Biller (8, 5)**

Vice President Watson IoT  
International Business Machines Corporation

For leadership and advancement of manufacturing technologies and innovations based on the Internet of Things and digital data.



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**Dr. Reginald DesRoches (4)**

Howard Hughes Provost  
Rice University George R. Brown School of Engineering

For research and design of resilient infrastructure systems to mitigate damage from natural disasters and other extreme conditions.



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**The Honorable Charles F. Bolden, Jr. (1, 12)**

Founder & CEO Emeritus

For leadership and development of US human spaceflight and space operations programs, and for revitalizing fundamental aeronautics research.



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**Dr. Joel S. Emer (5)**

Senior Distinguished Research Scientist  
Nvidia

For quantitative analysis of computer architecture and its application to architectural innovation in commercial microprocessors.



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**Dr. Alison K. Brown (1, 7)**

President and CEO  
NAVSYS Corporation

For contributions to research and development of precision navigation and timing technologies.



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**Dr. Horacio D. Espinosa (10, 2)**

James and Nancy Farley Professor of Manufacturing and Entrepreneurship  
Mechanical Engineering Department  
Northwestern University

For contributions bridging nanoscale experimentation and atomistic simulations.



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**Professor Marilyn A. Brown (6)**

Chair  
School of Public Policy  
Georgia Institute of Technology

For bridging engineering, social and behavioral sciences, and policy studies to achieve cleaner electric energy.



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**Dr. John C.C. Fan (9, 7)**

Founder, Chairman, CEO, and President  
Kopin Corporation

For innovation and entrepreneurship in electronic materials and devices for displays.



# CLASS OF 2020 MEMBERS

**Dr. Margaret M. Faul (3)**

Vice President Drug Product Technologies  
Amgen

For technical leadership in the development of marketed medicines and leadership in enabling technologies, pharmaceutical standards, green chemistry, and sustainability.

**Mr. Eric Gebhardt (6, 8)**

Executive Vice President and Chief Technology Officer  
Wabtec Corporation

For development and utilization of advanced electric generation technologies including gas and wind turbines.

**Mr. Karl N. Fleming (6)**

President  
KNF Consulting Services LLC

For contributions to probabilistic risk assessment methods and their application to enhance the safety of nuclear power facilities.

**Dr. Thomas R. Giallorenzi (7, 12)**

Senior Fellow  
L3 Harris

For innovation and entrepreneurship in civilian and military communication networks and systems.

**Mr. Gene A. Frantz (7)**

Co-Founder and Former Chief Technical Officer  
Octavo Systems, LLC

For leadership in the development and commercialization of digital signal microprocessors.

**Dr. Robert B. Gilbert (4)**

Professor and Department Chair  
Department of Civil, Architectural and Environmental Engineering  
The University of Texas at Austin

For advancing the use of reliability analyses, risk assessment, and risk-based decision making for complex engineering projects.

**Mr. Paul L. Freedman (4)**

Chief Executive Officer  
LimnoTech

For development and application of science-based computer models for water body and watershed assessment, remediation, and management.

**Dr. Kenneth E. Goodson (10)**

Davies Family Provostial Professor and Senior Associate Dean  
School of Engineering  
Stanford University

For developments in microprocessor thermal management and nanoscale heat conduction.

**Dr. Rajeev Gautam (3)**

President and Chief Executive Officer  
Honeywell

For business and technical leadership in the oil, gas, and petrochemicals industry.

**Professor Kenneth C. Hall (1, 10)**

Julian Francis Abele Professor  
Department of Mechanical Engineering and Materials Science  
Duke University

For development of unsteady aerodynamic and aeromechanics theories and analysis for internal and external aerodynamic flows.

# CLASS OF 2020 MEMBERS

**Dr. Vicki L. Hanson (5)**

Executive Director and Chief Executive Officer  
Association for Computing Machinery

For contributions to the design of accessible systems and for leadership in the computer science and engineering community.

**Dr. Omar Ishrak (2)**

Chairman and Chief Executive Officer  
Medtronic, Inc.

For contributions to diagnostic ultrasound and for leadership in medical technology innovation and globalization.

**Dr. Latonia M. Harris (2, 3)**

Scientific Director - CMC Leader Janssen R&D  
Portfolio Management  
Janssen Pharmaceutical Companies

For leadership in biomanufacturing of a breakthrough immunotherapy biotherapeutic and for outreach activities in STEM education.

**Dr. Dana K. Jackson (1)**

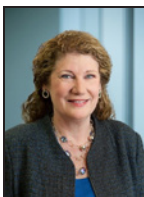
Chief Engineer and Vice President of Engineering  
and Program Operations  
Corporate Engineering, Technology, and  
Operations  
Lockheed Martin Corporation

For developing human and technological aerospace capabilities for national security and for promoting global technology cooperation.

**Lt. General Susan J. Helms (1)**

Principal and Owner  
Orbital Visions LLC

For accomplishments in civil and military space programs.

**Dr. Mrdjan Jankovic (10, 7)**

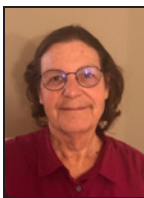
Senior Technical Leader Ford Research and  
Advanced Engineering  
Ford Motor Company

For contributions to nonlinear control theory and automotive technology.

**Dr. Susanne V. Hering (12)**

President  
Aerosol Dynamics, Inc.

For advances and commercialization in aerosol measurements and instrumentation.

**Dr. Sallie A. Keller (8, 12)**

Distinguished Professor of Biocomplexity  
University of Virginia Biocomplexity Institute &  
Initiative

For development and application of engineering and statistical techniques in support of national security and industry.

**Dr. Susan S. Hubbard (11, 12)**

Associate Laboratory Director and Senior  
Scientist  
Earth and Environmental Sciences  
Lawrence Berkeley National Laboratory

For contributions to hydrogeophysics and biogeophysics and the geophysics of permafrost.

**Professor Ioannis G. Kevrekidis (3)**

Bloomberg Distinguished Professor  
Johns Hopkins University

For research on multiscale mathematical modeling and scientific computation for complex, nonlinear reaction, and transport processes.





# CLASS OF 2020 MEMBERS

**Mr. Ron Klemencic (4)**

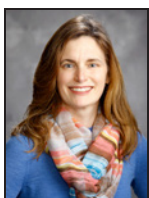
Chairman and Chief Executive Officer  
Magnusson Klemencic Associates, Inc.

For innovation in the design of high-rise buildings worldwide and for research and design guidelines to advance structural engineering practices.

**Dr. Thomas R. Kurfess (8, 10)**

Chief Manufacturing Officer  
Manufacturing Demonstration Facility  
Oak Ridge National Laboratory

For development and implementation of innovative digital manufacturing technologies and system architectures.

**Dr. Tamara G. Kolda (5, 8)**

Distinguished Member of Technical Staff  
Informatics and Systems Assessments  
Sandia National Laboratories

For contributions to the design of scientific software, including tensor decompositions and multilinear algebra.

**Dr. James F. Kurose (5)**

Distinguished Professor  
College of Information and Computer Science  
University of Massachusetts Amherst

For contributions to the design and analysis of network protocols for multimedia communication.

**Professor Julia A. Kornfield (3, 9)**

Elizabeth W. Gilloon Professor of Chemical Engineering  
Division of Chemistry and Chemical Engineering  
California Institute of Technology

For developing megasupramolecules for antimisting fuel additives and light-adjustable intraocular lenses to improve cataract surgery outcomes.

**Professor Sarah Kurtz (9, 6)**

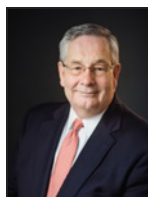
Professor  
University of California, Merced

For contributions to the development of GaInP/GaAs photovoltaic cells and leadership in solar cell reliability and quality.

**Dr. Paul E. Krajewski (9)**

Director  
Vehicle Systems Laboratory  
General Motors R&D Center

For development and implementation of lightweight automotive materials.

**Mr. Mark G. Lauby (6)**

Senior Vice President and Chief Engineer  
North American Electric Reliability Corporation

For the development and application of techniques for electric grid reliability analysis.

**Professor Steven L. Kramer (4)**

Professor  
University of Washington

For contributions to geotechnical earthquake engineering, including liquefaction, seismic stability, and seismic site response.

**Professor Fei-Fei Li (5)**

Sequoia Capital Professor Operations,  
Information and Technology  
Computer Science Department Denning Family  
Co-Director of Stanford Human-Ctr  
Stanford University

For contributions in building large knowledge bases for machine learning and visual understanding.

# CLASS OF 2020 MEMBERS

**Dr. Eugene Litvinov (6)**

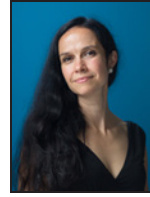
Chief Technologist Business Architecture and Technology  
ISO New England

For development of optimization mathematics for new electricity markets and innovative applications for electric grid control, visualization, and planning.

**Professor Muriel Médard (7)**

Cecil H. Green Professor  
Electrical Engineering and Computer Science  
Massachusetts Institute of Technology

For contributions to the theory and practice of network coding.

**Dr. Chen-Ching Liu (6)**

American Electric Power Professor Director, Power and Energy Center  
Electrical and Computer Engineering  
Virginia Tech

For contributions to computational methods for power system restoration and cybersecurity.

**Dr. Lelio H. Mejia (4)**

Senior Principal  
Geosyntec Consultants

For the evaluation, design, and construction of embankment dams and foundation systems and contributions to geotechnical earthquake engineering.

**Dr. Susan S. Margulies (2)**

Wallace H. Coulter Professor and Department Chair  
Biomedical Engineering  
Georgia Institute of Technology & Emory University

For elaborating the traumatic injury thresholds of brain and lung in terms of structure-function mechanisms.

**Dr. Russell D. Meller (8)**

Vice President Solution Design and R&D  
Fortna, Inc.

For contributions to large-scale distribution center design and operation.

**Professor Thomas L. Marzetta (7)**

Distinguished Industry Professor Electrical and Computer Engineering  
New York University Tandon School of Engineering

For contributions to massive multiple-input multiple-output antenna arrays in wireless communications.

**Professor James A. Momoh (6, 5)**

Chairman and Chief Executive Officer  
Nigerian Electricity Regulatory Commission

For the development of electric grid optimization techniques and implementation of advanced technology and policy for emerging electric grids in Africa.

**Dr. Paul F. McKenzie (3, 2)**

Chief Operating Officer  
CSL Behring

For delivering breakthrough medicines, modernizing process development and manufacturing, and integrating modern engineering concepts in pharmaceutical industries.

**Professor Paulo J. Monteiro (4, 9)**

Professor  
Civil and Environmental Engineering  
University of California, Berkeley

For contributions to the science and nanotechnology of concrete for sustainable construction and durable structures.



# CLASS OF 2020 MEMBERS

**Dr. Jayathi Y. Murthy (10)**

Ronald and Valerie Sugar Dean and Distinguished Professor  
School of Engineering & Applied Science  
University of California, Los Angeles

For the development of unstructured solution-adaptive finite volume methods for heat, mass, and momentum transport.

**Dr. Per F. Peterson (6, 10)**

Floyd Distinguished Professor of Engineering  
Department of Nuclear Engineering  
University of California, Berkeley

For experimental and analytical research contributions for the design and development of passive safety systems for advanced nuclear reactors.

**Dr. Laura E. Niklason (2)**

Professor of Anesthesiology & Biomedical Engineering  
Anesthesia & Biomedical Engineering  
Yale University

For cardiovascular tissue engineering, lung regeneration, and biomedical imaging.

**Dr. Francisco F. Roberto (11, 12)**

Senior Manager Processing Technology and Innovation  
Technical Services Processing and Metallurgy  
Malozemoff Technical Facility  
Newmont Corporation

For advancing biotechnical applications for environmentally responsible mine production.

**Dr. Jorge Nocedal (8, 5)**

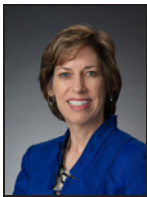
Walter P. Murphy Professor  
Northwestern University

For contributions to the theory, design, and implementation of optimization algorithms and machine learning software.

**Dr. Anne K. Roby (3)**

Executive Vice President  
Linde, PLC

For developments in oxidation processes and leadership in technological developments, safety, and business growth in global industrial gas companies.

**Dr. Ellen Ochoa (12)**

Center Director, Astronaut  
NASA Johnson Space Center (retired)

For service as an astronaut, a technical leader in government, and an optical scientist/engineer.

**Dr. Ahmadreza Rofougaran (7)**

Co-CEO, CTO & Co-Founder  
Movandi Corporation

For the development of radio system-on-a-chip technology for wireless networking.

**Ms. Sara N. Ortwein (11)**

Former President, XTO Energy  
Exxon Mobil Corporation (retired)

For engineering leadership in the upstream sector of the oil and gas industry.

**Mr. Mark E. Russell (7)**

Corporate Vice President Engineering,  
Technology and Mission Assurance  
Raytheon Company

For leadership in developing radar systems for enhanced national security and safety.



# CLASS OF 2020 MEMBERS

**Dr. Amarpreet S. Sawhney (2, 3)**

Chairman and CEO  
Instylla Inc.

For development of innovative medical devices that have impacted millions of patients.

**Dr. Michael A. Sutton (10)**

Carolina Distinguished Professor Emeritus  
Mechanical Engineering College of Engineering  
and Computing  
University of South Carolina

For creation of digital image correlation-based measurement technology and its dissemination through commercialization and applications in industry.

**Professor Alexander Shapiro (8)**

A. Russell Chandler III Chair and Professor  
School of Industrial and Systems Engineering  
Georgia Institute of Technology

For contributions to the theory, computation, and application of stochastic programming.

**Professor Maria C. Tamargo (9)**

Professor Physical Chemistry and Inorganic  
Chemistry  
City College of New York

For forging the way toward an inclusive science and engineering research community and for contributions to molecular-beam epitaxy of semiconductor materials.

**Dr. Peter W. Shor (5)**

Morss Professor of Applied Mathematics  
Department of Mathematics  
Massachusetts Institute of Technology

For pioneering contributions to quantum computation.

**Professor Russell H. Taylor (12, 5)**

John C. Malone Professor  
Department of Computer Science  
Johns Hopkins University

For contributions to the development of medical robotics and computer-integrated systems.

**Ms. Gwynne E. Shotwell (1)**

President and Chief Operating Officer  
SpaceX

For bringing affordable, commercially competitive space transportation to NASA and the US National Security Space Launch.

**Dr. Mark E. Thompson (9, 3)**

Professor of Chemistry and Materials Science  
University of Southern California

For development of highly efficient electrophosphorescent materials for organic light emitting devices used in displays and lighting worldwide.

**Dr. Nancy R. Sottos (10, 9)**

Swanlund Endowed Chair and Department Head  
Materials Science and Engineering  
University of Illinois at Urbana-Champaign

For contributions to the design and applications of self-healing and multifunctional materials.

**Dr. Rudolf M. Tromp (9)**

Research Staff Member IBM Research Division  
IBM T.J. Watson Research Center

For contributions to development and commercialization of nanoscale characterization methods, and their application in materials science.



# CLASS OF 2020 MEMBERS

**Professor Leung Tsang (12, 7)**

Professor  
Electrical Engineering and Computer Science  
University of Michigan

For contributions in wave scattering and microwave remote sensing theories for satellite missions.

**Dr. Charles W. Wampler, II (10)**

Senior Technical Fellow Chemical and Materials  
Systems Laboratory  
General Motors Global R&D

For leadership in robotic systems in manufacturing, mathematical methods for robot motion and machine design, and traction battery modeling.

**Dr. Kerry J. Vahala (7)**

Jenkins Professor of Information Science and  
Technology  
Applied Physics and Materials Science  
California Institute of Technology

For research and application of nonlinear optical microresonators to the miniaturization of precision time and frequency systems.

**Dr. Kenneth E. Washington (12)**

Chief Technology Officer  
Ford Motor Company

For leadership in nuclear safety, information systems and high-performance computing, space research, and automotive technologies.

**Dr. Richard A. Vaia (9)**

Senior Technologist  
Emergent Materials Systems Materials and  
Manufacturing Directorate  
Air Force Research Laboratory

For aerospace applications of polymeric nanomaterials and for technical leadership in materials for national defense applications.

**Professor Dick K. Yue (12)**

Philip J. Solondz Professor of Engineering and  
Professor of Mechanical and Ocean Engineering  
Massachusetts Institute of Technology

For contributions to ocean engineering and innovation of OpenCourseWare to make higher education freely available worldwide.

**Dr. Steven H. Walker (1)**

Vice President and Chief Technology Officer  
Corporate Engineering, Technology and  
Operations  
Lockheed Martin Corporation

For leadership of national security R&D at the Defense Advanced Research Projects Agency and the US Air Force.

**Dr. Jie Zhang (11, 2)**

Chairman and Chief Scientist  
GeoTomo, LLC

For advances in earthquake seismology, geophysical imaging, and medical technology.

# CLASS OF 2020 INTERNATIONAL MEMBERS

**Dr. Eduard Arzt (9)**

Scientific Director and CEO and Professor (W3) for New Materials  
Leibniz Institute for New Materials (INM) and Saarland University

For research on mechanical properties and development of bio-inspired functional surfaces for medical adhesives and novel gripping systems.

**Professor Igor Emri (9, 10)**

Chair Professor of Mechanics Faculty of Mechanical Engineering  
University of Ljubljana

For contributions to the testing and modeling of time-dependent materials, and to novel sound and vibration isolation materials.

**Professor Gunter Blöchl (4, 12)**

Professor of Hydrology and Water Resources  
Inst. of Hydraulic Engrg. and Water Resources  
Vienna University of Technology

For international leadership in the prediction and management of extreme hydrological events.

**Professor Claudia A. Felser (9, 11)**

Director  
Solid State Chemistry  
Max Planck Institute for Chemical Physics of Solids

For the prediction and discovery of engineered quantum materials ranging from Heusler compounds to topological insulators.

**Dr. Daeje Chin (7, 5)**

Chief Executive Officer  
Skylake Investment Company

For innovations and industry leadership in semiconductor technology.

**Dr. Pawan K. Goenka (10, 8)**

Managing Director & CEO  
Mahindra & Mahindra Ltd.

For leadership and expansion of Mahindra's automotive business in India and contributions in automotive engine lubrication.

**Professor Raffaello D'Andrea (10, 7)**

Professor  
Department of Mechanical and Process Engineering  
ETH Zurich Institute for Dynamic Systems and Control

For contributions to the design and implementation of distributed automation systems for commercial applications.

**Professor Susan T. Harrison (11, 3)**

Deputy Vice Chancellor Professor, Chemical Engineering  
University of Cape Town

For leadership in biochemical engineering and its application to mining and environmental remediation.

**Dr. Zhonghan J. Deng (7)**

Co-Founder/Chairman  
Vimicro Group Zhongxing Microelectronics Company Ltd.

For development of the world's first CMOS single-chip web camera and China's Surveillance Video and Audio Coding (SVAC) national video standard.

**Professor Chennupati Jagadish (7, 9)**

Distinguished Professor  
Research School of Physics  
Australian National University

For contributions to nanotechnology for optoelectronic devices.

# CLASS OF 2020 INTERNATIONAL MEMBERS

**Professor Wolfgang Marquardt (3, 5)**

Chairman of the Board of Directors  
Forschungszentrum Jülich GmbH

For contributions to process systems engineering and large-scale computations, and for national leadership in science/technology policy and management.

**Professor Essam A. Sharaf (4, 12)**

Professor  
Cairo University

For leadership to modernize transportation systems in Egypt and the Middle East through scholarship, advocacy, and public policy.

**Professor Roberto Meli Piralla (4)**

Research Professor  
National Autonomous University of Mexico

For advancing the preservation of historic structures and improving the seismic safety of concrete, masonry, and adobe structures worldwide.

**Dr. Guaning Su (12, 7)**

President Emeritus  
Nanyang Technological University

For contributions to regional security and defense and for academic leadership.

**Prof. Michael V. Sefton (2, 3)**

University Professor  
Chemical Engineering & Applied Chemistry  
University of Toronto

For advances in biomaterials and tissue engineering through cell microencapsulation and leadership of large-scale research initiatives.

**Professor Viola Vogel (2)**

Professor  
Dept. of Health Sciences and Technology  
ETH Zurich

For elucidation of how proteins work as nanoscale mechanochemical switches, and applications to bioengineering and medicine.

**Professor Abigail J. Sellen (5, 12)**

Deputy Director and Principal Researcher  
Microsoft Research Cambridge, UK

For contributions that ensure consideration of human capabilities in the design of computer systems.

**Professor Rabab K. Ward (7, 5)**

Professor Emeritus Electrical and Computer Engineering  
University of British Columbia

For innovative applications of signal processing to industrial and bioengineering problems.



# CLASS OF 2020

**By Section and  
Geographic Location**





# CLASS OF 2020 BY SECTION

## **SECTION 1 AEROSPACE ENGINEERING** (PRIMARY SECTION)

Bolden, Charles F., Jr.  
Brown, Alison K.  
Candler, Graham V.  
Hall, Kenneth Charles  
Helms, Susan Jane  
Jackson, Dana Keoki  
Shotwell, Gwynne E.  
Walker, Steven H.

## **SECTION 2 BIOENGINEERING** (PRIMARY SECTION)

Basser, Peter Joel  
Harris, Latonia M.  
Ishrak, Omar  
Margulies, Susan S.  
Niklason, Laura Elizabeth  
Sawhney, Amarpreet Singh  
Sefton, Michael Vivian  
Vogel, Viola

## **SECTION 2 BIOENGINEERING** (SECONDARY SECTION)

Espinosa, Horacio Dante  
McKenzie, Paul F.  
Zhang, Jie

## **SECTION 3 CHEMICAL ENGINEERING** (PRIMARY SECTION)

Bent, Stacey Francine  
Faul, Margaret Mary  
Gautam, Rajeev  
Kevrekidis, Ioannis George  
Kornfield, Julia Ann  
Marquardt, Wolfgang Hermann  
McKenzie, Paul F.  
Roby, Anne K.

## **SECTION 3 CHEMICAL ENGINEERING** (SECONDARY SECTION)

Harris, Latonia M.  
Harrison, Susan Therese Largier  
Sawhney, Amarpreet Singh  
Sefton, Michael Vivian  
Thompson, Mark Edward

## **SECTION 4 CIVIL & ENVIRONMENTAL ENGINEERING** (PRIMARY SECTION)

Abron, Lilia A.  
Allen, Eleanor Juliana Maria  
Bloschl, Gunter  
DesRoches, Reginald  
Freedman, Paul L.  
Gilbert, Robert B.  
Klemencic, Ron  
Kramer, Steven L.  
Mejia, Lelio H.

Meli Piralla, Roberto  
Monteiro, Paulo J.M.  
Sharaf, Essam Abdel Aziz

## **SECTION 5 COMPUTER SCIENCE AND ENGINEERING** (PRIMARY SECTION)

Berson, Thomas A.  
Emer, Joel S.  
Hanson, Vicki Lynne  
Kolda, Tamara G.  
Kurose, James F.  
Li, Fei-Fei  
Sellen, Abigail J.  
Shor, Peter W.

## **SECTION 5 COMPUTER SCIENCE AND ENGINEERING** (SECONDARY SECTION)

Ambrose, Robert O.  
Biller, Stephan  
Chin, Daeje  
Marquardt, Wolfgang Hermann  
Momoh, James Adeche  
Nocedal, Jorge  
Taylor, Russell H.  
Ward, Rabab Kreidieh

## **SECTION 6 ELECTRIC POWER/ENERGY SYSTEMS ENGINEERING** (PRIMARY SECTION)

Brown, Marilyn Ann  
Fleming, Karl N.  
Gebhardt, Eric  
Lauby, Mark G.  
Litvinov, Eugene  
Liu, Chen-Ching  
Momoh, James Adeche  
Peterson, Per F.

## **SECTION 6 ELECTRIC POWER/ENERGY SYSTEMS ENGINEERING** (SECONDARY SECTION)

Kurtz, Sarah

## **SECTION 7 ELECTRONICS, COMMUNICATIONS & INFORMATION SYSTEMS ENGINEERING** (PRIMARY SECTION)

Allstot, David J.  
Chin, Daeje  
Deng, Zhonghan John  
Frantz, Gene Alan  
Giallorenzi, Thomas Robert  
Jagadish, Chennupati  
Marzetta, Thomas Louis  
Medard, Muriel  
Rofougaran, Ahmadrza

Russell, Mark E.  
Vahala, Kerry J.  
Ward, Rabab Kreidieh

## **SECTION 7 ELECTRONICS, COMMUNICATIONS & INFORMATION SYSTEMS ENGINEERING** (SECONDARY SECTION)

Brown, Alison K.  
D'Andrea, Raffaello  
Fan, John C.C.  
Jankovic, Mrdjan  
Su, Guaning  
Tsang, Leung

## **SECTION 8 INDUSTRIAL, MANUFACTURING, AND OPERATIONAL SYSTEMS ENGINEERING** (PRIMARY SECTION)

Biller, Stephan  
Keller, Sallie A.  
Kurfess, Thomas R.  
Meller, Russell D.  
Nocedal, Jorge  
Shapiro, Alexander

## **SECTION 8 INDUSTRIAL, MANUFACTURING, AND OPERATIONAL SYSTEMS ENGINEERING** (SECONDARY SECTION)

Gebhardt, Eric  
Goenka, Pawan K.  
Kolda, Tamara G.

## **SECTION 9 MATERIALS ENGINEERING** (PRIMARY SECTION)

Arzt, Eduard  
Emri, Igor  
Fan, John C.C.  
Felser, Claudia Anna-Maria  
Krajewski, Paul E.  
Kurtz, Sarah  
Tamargo, Maria C.  
Thompson, Mark Edward  
Tromp, Rudolf Maria  
Vaia, Richard A.

## **SECTION 9 MATERIALS ENGINEERING** (SECONDARY SECTION)

Bent, Stacey Francine  
Jagadish, Chennupati  
Kornfield, Julia Ann  
Monteiro, Paulo J.M.  
Sottos, Nancy R.

## **SECTION 10 MECHANICAL ENGINEERING**

## **(PRIMARY SECTION)**

Ambrose, Robert O.  
Barbat, Saeed David  
D'Andrea, Raffaello  
Espinosa, Horacio Dante  
Goenka, Pawan K.  
Goodson, Kenneth E.  
Jankovic, Mrdjan  
Murthy, Jayathi Y.  
Sottos, Nancy R.  
Sutton, Michael Albert  
Wampler, Charles W., II

## **SECTION 10 MECHANICAL ENGINEERING** (SECONDARY SECTION)

Emri, Igor  
Hall, Kenneth Charles  
Kurfess, Thomas R.  
Peterson, Per F.

## **SECTION 11 EARTH RESOURCES ENGINEERING** (PRIMARY SECTION)

Bekins, Barbara A.  
Harrison, Susan Therese Largier  
Hubbard, Susan S.  
Ortwein, Sara N.  
Roberto, Francisco F.  
Zhang, Jie

## **SECTION 11 EARTH RESOURCES ENGINEERING** (SECONDARY SECTION)

Felser, Claudia Anna-Maria

## **SECTION 12 SPECIAL FIELDS AND INTERDISCIPLINARY ENGINEERING** (PRIMARY SECTION)

Hering, Susanne V.  
Ochoa, Ellen  
Su, Guaning  
Taylor, Russell H.  
Tsang, Leung  
Washington, Kenneth Edward  
Yue, Dick K.P.

## **SECTION 12 SPECIAL FIELDS AND INTERDISCIPLINARY ENGINEERING** (SECONDARY SECTION)

Bloschl, Gunter  
Bolden, Charles F., Jr.  
Giallorenzi, Thomas Robert  
Hubbard, Susan S.  
Keller, Sallie A.  
Roberto, Francisco F.  
Sellen, Abigail J.  
Sharaf, Essam Abdel Aziz

# CLASS OF 2020 BY GEOGRAPHIC LOCATION

## CALIFORNIA

Bekins, Barbara A.  
Bent, Stacey Francine  
Berson, Thomas A.  
Faul, Margaret Mary  
Goodson, Kenneth E.  
Hering, Susanne V.  
Hubbard, Susan S.  
Kolda, Tamara G.  
Kornfield, Julia Ann  
Kurtz, Sarah  
Li, Fei-Fei  
Mejia, Lelio H.  
Monteiro, Paulo J.M.  
Murthy, Jayathi Y.  
Peterson, Per F.  
Rofougaran, Ahmadreza  
Shotwell, Gwynne E.  
Thompson, Mark Edward  
Vahala, Kerry J.

## COLORADO

Allen, Eleanor Juliana Maria  
Brown, Alison K.  
Helms, Susan Jane  
Meller, Russell D.  
Roberto, Francisco F.

## CONNECTICUT

Niklason, Laura Elizabeth  
Roby, Anne K.

## DISTRICT OF COLUMBIA

Abron, Lilia A.

## GEORGIA

Brown, Marilyn Ann  
Lauby, Mark G.  
Margulies, Susan S.  
Shapiro, Alexander

## IDAHO

Ochoa, Ellen

## ILLINOIS

Espinosa, Horacio Dante  
Gautam, Rajeev  
Nocedal, Jorge  
Sottos, Nancy R.

## MARYLAND

Basser, Peter Joel  
Jackson, Dana Keoki  
Kevrekidis, Ioannis George  
Momoh, James Adeche  
Taylor, Russell H.  
Walker, Steven H.

## MASSACHUSETTS

Emer, Joel S.  
Fan, John C.C.  
Kurose, James F.  
Litvinov, Eugene  
Medard, Muriel  
Russell, Mark E.

Sawhney, Amarpreet Singh  
Shor, Peter W.  
Yue, Dick K.P.

## MICHIGAN

Barbat, Saeed David  
Freedman, Paul L.  
Jankovic, Mirdjan  
Krajewski, Paul E.  
Tsang, Leung  
Wampler, Charles W.  
Washington, Kenneth Edward

## MINNESOTA

Candler, Graham V.  
Ishrak, Omar

## NEW YORK

Hanson, Vicki Lynne  
Marzetta, Thomas Louis  
Tamargo, Maria C.  
Tromp, Rudolf Maria

## NORTH CAROLINA

Biller, Stephan  
Hall, Kenneth Charles

## OHIO

Vaia, Richard A.

## OREGON

Allstot, David J.

## PENNSYLVANIA

Harris, Latonia M.  
McKenzie, Paul F.

## SOUTH CAROLINA

Sutton, Michael Albert

## TENNESSEE

Kurfess, Thomas R.

## TEXAS

Ambrose, Robert O.  
DesRoches, Reginald  
Frantz, Gene Alan  
Gebhardt, Eric  
Gilbert, Robert B.  
Ortwein, Sara N.  
Zhang, Jie

## UTAH

Giallorenzi, Thomas Robert

## VIRGINIA

Bolden, Charles F.  
Keller, Sallie A.  
Liu, Chen-Ching

## WASHINGTON

Fleming, Karl N.  
Klemencic, Ron  
Kramer, Steven L.

## AUSTRALIA

Jagadish, Chennupati

## AUSTRIA

Bloschl, Gunter

## CANADA

Sefton, Michael Vivian  
Ward, Rabab Kreidieh

## CHINA

Deng, Zhonghan John

## EGYPT

Sharaf, Essam Abdel Aziz

## GERMANY

Arzt, Eduard  
Felser, Claudia Anna-Maria  
Marquardt, Wolfgang Hermann

## INDIA

Goenka, Pawan K.

## MEXICO

Meli Piralla, Roberto

## SINGAPORE

Su, Guanling

## SLOVENIA

Emri, Igor

## SOUTH AFRICA

Harrison, Susan Therese Largier

## SOUTH KOREA

Chin, Daeje

## SWITZERLAND

D'Andrea, Raffaello  
Vogel, Viola

## UNITED KINGDOM

Sellen, Abigail J.

NAE  
ANNIVERSARY  
MEMBERS



# NAE ANNIVERSARY MEMBERS

## 50+ YEARS

Members whose names are in boldface type are celebrating their 50th year.

R. Byron Bird

**Arthur E. Bryson**

John S. Foster, Jr.

Richard J. Grosh

**J. Ross Macdonald**

**William J. Perry**

## 45 TO 49 YEARS

Members whose names are in boldface type are celebrating their 45th year.

**Arthur G. Anderson**

**Stephen D. Bechtel, Jr.**

Donald L. Bitzer

**Andrew H. Bobeck**

Lewis M. Branscomb

Norman H. Brooks

J. Fred Bucy

Malcolm R. Currie

A.J. Field

Robert A. Frosch

**Ivar Giaever**

James F. Gibbons

**Ralph E. Gomory**

Roy W. Gould

John C. Hancock

John P. Hirth

Nick Holonyak, Jr.

Arthur E. Humphrey

Robert G. Loewy

Fujio Matsuda

Thomas L. Phillips

**Leslie Earl Robertson**

Ivan E. Sutherland

Morris Tanenbaum

**James G. Wenzel**

## 40 TO 44 YEARS

Members whose names are in boldface type are celebrating their 40th year.

Egil Abrahamsen

H. Norman Abramson

Andreas Acrivos

Clarence R. Allen

John G. Anderson

Alfredo H-S. Ang

**Seymour Baron**

**Wallace B. Behnke**

C. Gordon Bell

Daniel Berg

John E. Breen

William B. Bridges

Frederick P. Brooks, Jr.

**Jose B. Cruz, Jr.**

Robert C. Dean, Jr.

**Raymond F. Decker**

Anthony J. DeMaria

Leo Esaki

Thomas E. Everhart

Joseph Feinstein

Steven J. Fennes

Merton C. Flemings

Douglas W. Fuerstenau

Theodore V. Galambos

Robert G. Gallagher

William J. Galloway

Richard L. Garwin

Welko E. Gasich

Ronald L. Geer

John B. Goodenough

Stephen E. Harris

Robert W. Hellwarth

Joseph M. Hendrie

Charles L. Hosler, Jr.

Paul C. Jennings

Bernard H. Kear

**Leonard Kleinrock**

Herwig Kogelnik

**Henry Kressel**

William R. Lucas

Robert W. Lucky

John D. Mackenzie

Enrique A. Marcatili

Hans Mark

Robert D. Maurer

John S. Mayo

Perry L. McCarty

William J. McCune, Jr.

Ross E. McKinney

**Charles J. McMahon, Jr.**

James K. Mitchell

Johannes Moe

**Carl L. Monismith**

Gordon E. Moore

James J. Morgan

C. Kumar N. Patel

Harold W. Paxton

**J. R. Anthony Pearson**

Marc J. Pelegri

**Karl S. Pister**

John M. Prausnitz

Ronald F. Probst

**James R. Rice**

**Herbert H. Richardson**

Theodore Stern

Daniel M. Tellep

**Kenneth Thompson**

**Thomas A. Vanderslice**

Andrew J. Viterbi

John B. Wachtman, Jr.

William M. Webster

James Wei

**Jasper A. Welch, Jr.**

Lloyd R. Welch

**Albert R. C. Westwood**

**Gerald L. Wilson**

Amnon Yariv

**Laurence R. Young**

# NAE ANNIVERSARY MEMBERS

## 35 TO 39 YEARS

Members whose names are in boldface type are celebrating their 35th year.

Dell K. Allen  
William A. Anders  
Arthur Ashkin  
Norman R. Augustine  
Lionel O. Barthold  
Arden L. Bement, Jr.  
John G. Bollinger  
**Klaus D. Bowers**  
**Alfred Y. Cho**  
Anil K. Chopra  
John L. Cleasby  
**Philip M. Condit**  
**Paul M. Cook**  
Robert C. Crooke  
James W. Dally  
F. Paul de Mello  
Daniel B. DeBra  
Robert H. Dennard  
**James M. Duncan**  
Peter S. Eagleson  
Charles A. Eckert  
**Richard E. Emmert**

John V. Evans  
G. David Forney, Jr.  
**Donald C. Fraser**  
**Richard J. Goldstein**  
**Hermann K. Gummel**  
Robert S. Hahn  
Kent F. Hansen  
Robert D. Hanson  
Kenneth E. Haughton  
Alfred J. Hendron, Jr.  
Cyril Hilsum  
David A. Hodges  
**William G. Howard, Jr.**  
John W. Hutchinson  
**Erich P. Ippen**  
Irwin M. Jacobs  
Trevor O. Jones  
Thomas Kailath  
C. Judson King  
Donald E. Knuth  
James N. Krebs  
Butler W. Lampson

**Ronald M. Latanision**  
George Leitmann  
Peter W. Likins  
Raymond C. Loehr  
Dan Luss  
**John W. Lyons**  
**John B. MacChesney**  
**Robert Malpas**  
Carver A. Mead  
Robert Mehrabian  
**Richard C. Messinger**  
Hyla S. Napadensky  
Robin B. Nicholson  
Thomas K. Perkins  
**George P. Peterson**  
Lawrence R. Rabiner  
Raj Reddy  
Eli Reshotko  
Stanley T. Rolfe  
**Ronald E. Rosensweig**  
James F. Roth  
Irwin W. Sandberg

John H. Schimertmann  
William R. Schowalter  
John H. Seinfeld  
**Eugene Sevin**  
Charles V. Shank  
Eugene D. Shchukin  
John Brooks Slaughter  
George E. Smith  
Kenneth A. Smith  
**Ponisseril Somasundaran**  
Nickolas J. Themelis  
**Vern W. Weekman, Jr.**  
Sheldon Weinig  
Willis S. White, Jr.  
**Sheila E. Widnall**  
**Edward L. Wilson**  
Theodore Y. Wu  
Takeo Yokobori  
Dante C. Youla  
Paul Zia



# NAE ANNIVERSARY MEMBERS

## 30 TO 34 YEARS

Members whose names are in boldface type are celebrating their 30th year.

Richard C. Alkire  
 Frank F. Aplan  
**Minoru S. (Sam) Araki**  
 John A. Armstrong  
**Michael F. Ashby**  
 Bishnu S. Atal  
 David H. Auston  
 William F. Ballhaus, Jr.  
 Robert G. Bea  
 George A. Bekey  
 Alexis T. Bell  
 John A. Betti  
 Joel S. Birnbaum  
**Richard E. Blahut**  
 Kenneth A. Blenkarn  
 Geoffrey Boothroyd  
 H. Kent Bowen  
**Donald A. Brand**  
 Robert W. Brodersen  
**Robert D. Burnham**  
 Robert L. Byer  
**James D. Callen**  
 William J. Carroll  
 John R. Casani  
**Kenneth E. Case**  
 John F. Cashen  
 Herbert S. Cheng  
 Richard M. Christensen  
 Jon F. Claerbout  
 Rodney J. Clifton  
**G. Wayne Clough**  
**James M. Coleman**  
**Harry M. Conger**  
 Robert W. Conn  
 Lynn A. Conway  
 Richard A. Conway  
 Edward J. Cording  
 Ernest L. Daman  
 Morton M. Denn  
**Frederick H. Dill**  
 Stephen W. Director  
 James J. Duderstadt  
 Russell D. Dupuis  
 Lloyd A. Duscha  
 Robert J. Eaton  
 James Economy  
 Charles Elachi  
 Gerard W. Elverum  
 Tony F. W. Embleton  
 Frank F. Fang

Edward A. Feigenbaum  
 Robert E. Fischell  
 John W. Fisher  
**Alan B. Fowler**  
**Judson C. French**  
 Elsa M. Garmire  
 Jerome B. Gilbert  
 Alastair M. Glass  
**George J. Gleghorn**  
**W. Barney Gogarty**  
**Marvin E. Goldstein**  
 Joseph W. Goodman  
 Arthur C. Gossard  
**Paul R. Gray**  
 Keith E. Gubbins  
 Donald L. Hammond  
 Juris Hartmanis  
 Michael Hatzakis  
 Siegfried S. Hecker  
 Adam Heller  
 Robert J. Hermann  
**Arthur H. Heuer**  
 Edward A. Hiler  
 Narain G. Hingorani  
 Yu-Chi Ho  
 Lester A. Hoel  
 John E. Hopcroft  
 Izzat M. Idriss  
 Anthony J. Iorillo  
 Robert B. Jansen  
 Marvin E. Jensen  
 James O. Jirsa  
 Ellis L. Johnson  
 Gunther F. Joklik  
 Frank D. Judge  
 Robert E. Kahn  
 Melvin F. Kanninen  
 Makoto Kikuchi  
**Robert H. Kingston**  
 Albert S. Kobayashi  
 Bernard L. Koff  
 Louis J. Lanzerotti  
 Kaye D. Lathrop  
 Gerald D. Laubach  
 L. Gary Leal  
**Norman N. Li**  
 Barbara H. Liskov  
 John D. Little  
 Benjamin Y.H. Liu  
 Daniel P. Loucks

Albert Macovski  
 Robert F. Mast  
**James F. Mathis**  
 Shiro Matsuoka  
**Adolf D. May**  
 John C. McDonald  
 Chiang C. Mei  
**David G. Messerschmitt**  
**Keith K. Millheim**  
 Harold Mirels  
 James W. Mitchell  
 Sanjoy K. Mitter  
 Joe H. Mize  
 Joel Moses  
 C. D. (Dan) Mote, Jr.  
 Roddam Narasimha  
 Albert Narath  
**Stuart O. Nelson**  
 George L. Nemhauser  
 Arun N. Netravali  
 J. Nicholas Newman  
 William D. Nix  
 Ronald P. Nordgren  
 J. Tinsley Oden  
 William G. Oldham  
 Alan V. Oppenheim  
 Morton B. Panish  
 Frank L. Parker  
 Ronald R. Parker  
**Bradford W. Parkinson**  
 Donald R. Paul  
 J. Randolph Paulling  
 Val P. Peline  
**Arno A. Penzias**  
 Donald E. Petersen  
**Dennis J. Picard**  
 R. Byron Pipes  
 John William Poduska, Sr.  
 Michael Prats  
**Edwin P. Przybylowicz**  
 Robert A. Rapp  
 Jerome G. Rivard  
**Ronald L. Rivest**  
 Enders A. Robinson  
 Ignacio Rodriguez-Iturbe  
**Larry A. Roesner**  
 Ronald A. Rohrer  
**Murray W. Rosenthal**  
 Della M. Roy  
**Eli Ruckenstein**

Elbert L. Rutan  
 Chih-Tang Sah  
**Gavriel Salvendy**  
 Alan Schriesheim  
 Frank J. Schuh  
 Charles D. Scott  
**Norman R. Scott**  
 Laurence C. Seifert  
 Don W. Shaw  
 Michael L. Shuler  
 Leonard M. Silverman  
 Merrill I. Skolnik  
 Henry I. Smith  
 James J. Solberg  
 William J. Spencer  
 Fred I. Stalkup  
 Dale F. Stein  
 Charles V. Sternling  
 Richard G. Strauch  
 William D. Strecker  
 Ben G. Streetman  
**John H. Sununu**  
 Chung L. Tang  
 Byron D. Tapley  
 Robert E. Tarjan  
 David A. Thompson  
 Larry F. Thompson  
 Charles E. Till  
 Neil E. Todreas  
 Jeffrey D. Ullman  
 Raymond Viskanta  
 Daniel I. C. Wang  
**Dianzuo Wang**  
 Kuo K. Wang  
 William J. Ward, III  
 Arthur W. Westerberg  
 John A. White, Jr.  
 Robert M. White  
 Janusz S. Wilczynski  
 Forman A. Williams  
 James C. Williams  
 Ward O. Winer  
 John J. Wise  
 Eugene Wong  
 Jerry M. Woodall  
**David A. Woolhiser**  
 Israel J. Wygnanski  
**Loring A. Wyllie, Jr.**  
 Abe M. Zarem  
 Jacob Ziv

# NAE ANNIVERSARY MEMBERS

## 25 TO 29 YEARS

Members whose names are in boldface type are celebrating their 25th year.

John L. Anderson

**John C. Angus**

**Karl J. Astrom**

**Arthur B. Baggeroer**

Donald W. Bahr

B. Jayant Baliga

Peter M. Banks

Craig R. Barrett

**Robert W. Bartlett**

Forest Baskett

Leslie A. Benmark

James R. Biard

David T. Blackstock

F. Peter Boer

David B. Bogy

Robert K. Brayton

John D. Bredehoeft

Peter R. Bridenbaugh

Roger W. Brockett

Lord Alec N. Broers

Alan C. Brown

Robert A. Brown

Keith A. Browning

Wilfried H. Brutsaert

**Federico Capasso**

Renso L. Caporali

John J. Cassidy

**Francois J. Castaing**

**Vinton G. Cerf**

Don B. Chaffin

**K. Mani Chandy**

Steve S. Chen

**Wai-Fah Chen**

Harvey E. Cline

Joseph P. Colaco

Richard W. Conway

**Thomas M. Cook**

Donald C. Cox

M. George Craford

Jerome J. Cuomo

David N. Cutler

Lance A. Davis

Stephen H. Davis

Carl R. de Boer

George E. Dieter

**Nicholas M. Donofrio**

Steven D. Dorfman

Earl H. Dowell

Elisabeth M. Drake

E. Linn Draper, Jr.

Stephen W. Drew

T. Dixon Dudderar

Robert W. Dutton

**George J. Dvorak**

Lewis S. (Lonnie) Edelheit

Fredric F. Ehrich

Jerald L. Ericksen

Charles Fairhurst

Odd M. Faltinsen

Eugene J. Fasullo

**John E. Ffowcs Williams**

Leroy (Mike) M. Fingerson

Bruce A. Finlayson

Fred N. Finn

Essex E. Finney, Jr.

George M.C. Fisher

Marshall L. Fisher

William L. Fisher

**Nancy D. Fitzroy**

Edith M. Flanigen

**Samuel C. Florman**

Hans G. Forsberg

L. B. Freund

William L. Friend

Samuel H. Fuller

B. John Garrick

C. William Gear

**Charles M. Geschke**

Thomas G. Giallorenzi

Ronald E. Goldsberry

Richard E. Goodman

Bernard M. Gordon

**Robert W. Gore**

Susan L. Graham

Sidney J. Green

Donald P. Greenberg

**Edward M. Greitzer**

**Charles T. Haan**

George I. Haddad

**Gene H. Haertling**

Delon Hampton

**Niels Hansen**

**Wesley L. Harris**

Howard R. Hart, Jr.

Henry J. Hatch

John L. Hennessy

John A. Herbst

George J. Hess

George J. Hirasaki

Kaare Høeg

**Stanley H. Horowitz**

**Thomas J.R. Hughes**

Seiueemon Inaba

James F. Jackson

David W. Johnson, Jr.

Donald L. Johnson

Anita K. Jones

Paul G. Kaminski

Frank E. Karasz

Richard M. Karp

John G. Kassakian

**Susumu Kato**

Donald B. Keck

**Ralph L. Keeney**

Alexander M. Klibanov

Mark H. Kryder

David J. Kuck

Gerald L. Kulcinski

H. T. Kung

Charles R. Kurkjian

Richard T. Lahey, Jr.

James L. Lammie

Leslie B. Lamport

Robert S. Langer

Robert C. Lanphier, III

Richard C. Larson

**George D. Leal**

W. John Lee

Sidney Leibovich

Johanna M. H. Levelt Sengers

Robert H. Liebeck

Robert W. MacCormack

Alexander MacLachlan

Thomas L. Magnanti

Thomas J. Malone

Anna M. Marabini

Robert C. Marini

Karl E. Martersteck

**Stephen L. Matson**

William C. Maurer

Eugene R. McGrath

James C. McGroddy

**Jarold A. Meyer**

**Jerome H. Milgram**

Jan D. Miller

Linn F. Mollenauer

L. David Montague

Manfred Morari

William B. Morgan

Norbert R. Morgenstern

Van C. Mow

Richard S. Muller

Earl M. Murman

Venkatesh Narayanamurti

John Neerhout, Jr.

Shlomo P. Neuman

**Andrew R. Neureuther**

Deborah J. Nightingale

Tak H. Ning

Robert M. Nowak

John H. Nuckolls

James G. O'Connor

Thomas D. O'Rourke

**M. Elisabeth Paté-Cornell**

David A. Patterson

**Judea Pearl**

Irene C. Peden

Paul Penfield, Jr.

Alan W. Pense

Stewart D. Personick

Richard H. Petersen

Arun G. Phadke

**Nelson L. de S. Pinto**

William F. Powers

Richard B. Priority

Robert A. Pucel

W. Harmon Ray

**Elsa Reichmanis**

John R. Rice

Jose M. Roesset

# NAE ANNIVERSARY MEMBERS

## 25 TO 29 YEARS (*continued*)

Members whose names are in boldface type are celebrating their 25th year.

Donald E. Ross  
William B. Rouse  
**John M. Rowell**  
Paul E. Rubbert  
William B. Russel  
**Jesse E. Russell**  
Maxine L. Savitz  
Ronald W. Schafer  
Jorg Schlaich  
Gabriel Schmergel  
Ronald V. Schmidt  
Jerome S. Schultz  
Robert J. Schultz  
Lyle H. Schwartz  
Mischa Schwartz  
Charles L. Seitz  
Robert J. Serafin  
F. Stan Settles  
Robert R. Shannon

Hsieh W. Shen  
**Thomas B. Sheridan**  
Jeffrey J. Sirola  
Arnold H. Silver  
Richard W. Skaggs  
**Larry L. Smarr**  
Helmut E. Sobieczky  
George S. Springer  
Raymond S. Stata  
Hermann Statz  
**Charles R. Steele**  
Richard J. Stegemeier  
Gunter Stein  
Richard S. Stein  
Robert Stratton  
Yasuharu Suematsu  
George W. Sutton  
James M. Symons  
**Simon M. Sze**

Zehev Tadmor  
**George J. Tamaro**  
**Man-Chung Tang**  
Richard A. Tapia  
**Kathleen C. Taylor**  
Robert L. Taylor  
Shoichiro Toyoda  
Alvin W. Trivelpiece  
**R. Rhodes Trussell**  
**Stephen Wei-Lun Tsai**  
Rao R. Tummala  
G. Keith Turnbull  
**Robert C. Turnbull**  
**Fawwaz Ulaby**  
Gottfried Ungerboeck  
Irv Waaland  
**Robert H. Wagoner**  
**Steven J. Wallach**  
**Kenneth Walters**

C. Michael Walton  
**Jaw-Kai Wang**  
**John D. Warner**  
Watt W. Webb  
Robert J. Weimer  
**W. Henry Weinberg**  
Sheldon M. Wiederhorn  
C. Grant Willson  
Niklaus Wirth  
Savio L-Y. Woo  
Edgar S. Woolard, Jr.  
Wm. A. Wulf  
Henry T. Y. Yang  
A. Thomas Young  
John A. Young  
William D. Young  
Zheming Zheng  
**Ben T. Zinn**