



2013
*Honors &
Awards*

ASME

2013 Honors & Awards

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2013 HONORS AND AWARDS

The recognition of the excellence of an engineer's work by his or her peers is one of the greatest rewards for accomplishment. By presenting these individuals with tokens of excellence, the Society brings the character and importance of the engineer's work to the attention of the public. Accordingly, it is one of the major purposes of the Society to recognize engineering excellence through the Honors and Awards Program and to provide the forum for their exposition.

Society honors and awards recognize a wide variety of accomplishments. Some awards are based on contributions to engineering literature; others recognize general achievements in the advancement of engineering. Some are awarded for outstanding accomplishments by a young engineer beginning a career, others for distinguished service throughout a lifetime. Still others recognize contributions by outstanding Student Members.

Honors and Award are bestowed by authority of the Board of Governors, and certificates are signed by the President and Executive Director. The Honors and Awards Program is funded through the ASME Foundation by individual awards and endowment funds, not through member dues.

The pages that follow describe all society honors and awards presented in 2013 and give information about the recipients. Many awards were presented at the Society's meetings and conferences throughout the year, and others will be presented during the 2013 International Mechanical Engineering Congress, November 15 – November 21, in San Diego, CA.

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ASME Medal

SIA NEMAT-NASSER

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

THE ASME MEDAL was established in 1920 and is awarded for eminently distinguished engineering achievement.

SIA NEMAT-NASSER, Ph.D., distinguished professor of mechanics and materials, and director of the Center of Excellence for Advanced Materials, University of California, San Diego, *for creating micro-architected composites to mitigate shock-wave induced traumatic brain injury; metamaterials to redirect, attenuate and manage stress waves; and original comprehensive models of deformation and failure of metallic structures with application to metal forming and failure prevention; and for excellent contributions in promoting ASME's Materials Division.*

Dr. Nemat-Nasser earned his bachelor's degree in engineering from Sacramento State University, California, in 1960. While serving as an assistant professor in civil engineering at Sacramento State, he earned his master's degree in civil engineering and his Ph.D. in structural engineering from the University of California, Berkeley, in 1961 and 1964, respectively.

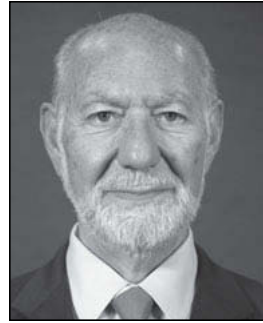
Following a postdoctoral fellowship (1964–66) at Northwestern University (Evanston, Ill.), Nemat-Nasser was appointed as assistant professor (1966–69) and then promoted to associate professor with tenure (1969–70) at the University of California, San Diego. He subsequently spent 15 years (1970–85) at Northwestern University as professor of civil engineering and applied mathematics before returning to UC San Diego in 1985.

He is currently a distinguished professor of mechanics and materials at UC San Diego and has been director of the Center of Excellence for Advanced Materials since 1987. He spearheaded the creation of an integrated Materials Science and Engineering Graduate Program and served as its founding director (1989–94). He was co-director (1992–97) and director (1997–2000) of the National Science Foundation-funded Institute for Mechanics and Materials.

Nemat-Nasser is a leading scholar in the field of mechanics and has made seminal contributions to a broad range of topics including: constitutive response and liquefaction in granular media; brittle crack growth and bifurcation in compressive loading; plasticity at large strains; elastic-plastic crack tip fields; failure of ductile metals under shock wave conditions; overall properties of composites; thermodynamics of deformation; ionic polymer metal composites; and metamaterials with novel electromagnetic and/or acoustic properties.

He has published a large number of scholarly works including *Plasticity: A Treatise on Finite Deformation of Heterogeneous Inelastic Materials* and the monograph (with Muneo Hori) *Micromechanics: Overall Properties of Heterogeneous Materials*. He is the founding editor and editor-in-chief of the international journal *Mechanics of Materials*, and has edited the book series *Mechanics Today* and the book series *Mechanics of Elastic and Inelastic Solids*. He has served on the board of several international journals.

Nemat-Nasser has lectured widely and recently delivered the inaugural Felix Bloch Lecture at Phononics 2011, the First International Conference on Phononic Crystals, Metamaterials and Optomechanics (2011); the Fourth Elsevier Distinguished Lecture on Mechanics at the New Jersey Institute of Technology (2011); and the 13th Yunchuan Aisinjiro-Soo Distinguished Lecture at the University of Illinois at Urbana-Champaign (2010).



(continued)

ASME Medal (cont.)

An ASME Fellow, Nemat-Nasser served as chair of the Materials Division (1997–98), and chair of its Publications (1995–96) and Program (1994–95) committees. Among other Society activities, he was chair of the Applied Mechanics Division's Geomechanics Committee (1981–85) and group representative for the Materials and Structures Technical Group (1995). He received ASME's Nadai Medal in 2002, Honorary Membership in 2005, the Robert Henry Thurston Lecture Award in 2006 and the Timoshenko Medal in 2008. In 2008 the Materials Division established the Sia Nemat-Nasser Early Career Award, which was elevated to a Society award in 2012.

Nemat-Nasser is a member of the National Academy of Engineering; a Fellow of the Society of Engineering Science (SES), where he served as president (1979–80); a Fellow of the American Academy of Mechanics, where he also served as president (1996–97); and a Fellow of the Society for Experimental Mechanics (SEM).

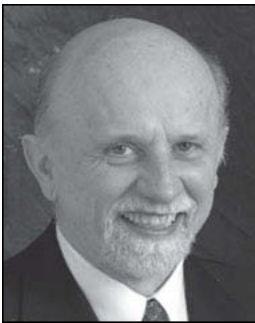
His extensive list of honors includes the SES's William Prager Medal (2002); the American Society of Civil Engineers' Theodore von Karman Medal (2008); and SEM's B.J. Lazan Award (2007), M.W. Murray Medal (2009), and M.M. Frocht Award (2012) as the educator of the year. He was the first recipient of the Sia Nemat-Nasser Medal (2011) established by SEM in his honor. At UC San Diego, Nemat-Nasser received the Faculty Research Lecture Award (2005) and was recognized three times by the graduating seniors as Best Teacher of the Year.

Honorary Membership

TED BELYTSCHKO

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

TED BELYTSCHKO, Ph.D., McCormick distinguished professor and Walter P. Murphy professor of computational mechanics, Northwestern University (Evanston, Ill.), *for fundamental contributions to computational and applied mechanics, particularly the extended finite element method and its impact on industry.*



Dr. Belytschko is a world renowned computational mechanician whose innovative and fundamental contributions to solid mechanics have enabled the solution of previously intractable problems and inspired new directions of research. He has had a broad impact on mechanics and particularly computational mechanics as reflected in his citation report: He has 26,595 citations and an h-index of 86, which is extremely high for an engineer.

Belytschko joined the faculty at Northwestern University (Evanston, Ill.) in 1977 as professor of computational mechanics. He has been Walter P. Murphy professor of computational mechanics since 1991, and since 2003 is McCormick distinguished professor. He was chair of the department of mechanical engineer-

ing from 1997 to 2002.

Previously he was on the faculty (1968–77) at the University of Illinois at Chicago, advancing from assistant professor to associate professor in 1973, and to professor of structural mechanics in 1976.

His main interests lie in the development of computational methods for engineering problems. He has developed explicit finite element methods that are widely

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Honorary Membership (cont.)

used in crashworthiness analysis and virtual prototyping. Recently he has worked on meshfree methods, techniques for representing arbitrary discontinuities in finite elements and multiscale coupling methods.

He is co-author of *Nonlinear Finite Element Methods for Continua and Structures* (John Wiley & Sons, 2000) with W.K. Liu and B. Moran and *A First Course in Finite Elements* (John Wiley & Sons, 2007) with J. Fish. He is editor-in-chief of the *International Journal for Numerical Methods in Engineering*. He has published more than 400 journal papers and is one of the most cited researchers in engineering science.

An ASME Fellow, Belytschko was chair (1990–91) of the Applied Mechanics Division (AMD). He chaired AMD's Computational Methods in Applied Mechanics Committee (1978–80) and the Technical Program Committee for the ASME/American Society of Civil Engineers (ASCE) Mechanics Conference in 1981. He served as associate editor of the *Journal of Applied Mechanics* (1979–85, 1990–91). Belytschko received the Timoshenko Medal in 2001. In 2007 the AMD renamed its Applied Mechanics Award the Ted Belytschko Applied Mechanics Division Award.

Belytschko is a member of the National Academy of Engineering, the American Academy of Arts and Sciences and the National Academy of Sciences. He is also a member of the American Academy of Mechanics; the American Association for the Advancement of Science; ASCE; and the United States Association for Computational Mechanics (USACM), where he served as president (1992–94).

Among his other honors, Belytschko received ASCE's Theodore von Karman Medal (1999), USACM's John von Neumann Medal (2001), the International Association for Computational Mechanics' Gauss-Newton Medal (2002) and the Society of Engineering Science's William Prager Medal (2011). In 2012 USACM renamed its Structures Award the Belytschko Medal for Computational Solid and Structural Mechanics.

Belytschko earned his bachelor's degree in engineering sciences and his Ph.D. in mechanics at the Illinois Institute of Technology, Chicago, in 1965 and 1968, respectively. He received honorary doctorates from the University of Liege, Belgium (1997); the École Centrale Paris (2004); and the Institut National des Sciences Appliquées de Lyon, France (2006).

Honorary Membership

JOHN HOWELL

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

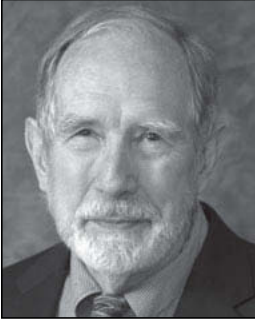
JOHN HOWELL, P.E., Ph.D., Ernest Cockrell Jr. memorial chair emeritus, The University of Texas at Austin, for continuous support of the engineering profession through service to ASME and other societies; and for ongoing contributions to research in heat transfer and to engineering education through technical publications and textbooks.

Dr. Howell is among the world's pre-eminent scholars in the field of radiation heat transfer. He has a long and distinguished record of contributions as a researcher, administrator, teacher and author, and through tireless service in the engineering community.

Howell began his career with the NASA Lewis (now Glenn) Research Center in Cleveland in 1961. As an engineer in the analytical section of the Heat Transfer Branch, he carried out fundamental research, mainly in low-g boiling and radiation heat transfer in advanced propulsion systems. He decided to go into academics as

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Honorary Membership (cont.)



the lunar program wound down and joined the faculty at the University of Houston (UH) in 1968. While at UH he was a consultant for the NASA Johnson Space Center.

In 1978 Howell moved to the University of Texas at Austin, where he held positions including mechanical engineering department chair (1982–90); and director of the Center for Energy Studies (1988–91), associate dean for research (1996–99) and director of the Advanced Manufacturing Center (2004–06) in the College of Engineering. Since 2010 Howell is Ernest Cockrell Jr. memorial chair emeritus in the department of mechanical engineering. Although retired, he has continued his research with graduate students and is preparing a new (sixth) edition of the text

Thermal Radiation Heat Transfer. He also self-published three books on the history of technology.

Howell was project manager for the National Science Foundation's (NSF) Thermal Transport and Thermal Processing Program from 1994 to 1995.

He is author/co-author of approximately 125 archival journals publications and nearly 150 conference papers. He holds seven patents.

An ASME Fellow, Howell served on the Board on Engineering Education in positions including chair of the Ad Hoc Subcommittee to review materials for recruiting students into engineering (1989–90), member of the Intercouncil Committee on Federal Research and Development (1989–92) and adjunct member of the Board on Governmental Relations (1998–2000). He also chaired the Task Force to Review the NSF Budget (1990–92) and testified before the U.S. House Appropriations Subcommittee. For the Heat Transfer Division (HTD), Howell served on a number of committees and task forces including the K-6 Committee on Heat Transfer in Energy Systems (1976–87; chair 1979–82) and K-11 Committee on Fire and Combustion Systems (1980–82). He served on the Task Force on Thermal Engineering (1991–93) and the Hydrogen Energy Advisory Committee (1989), and he was technical editor of the *Journal of Heat Transfer* (1995–2000). He received the Heat Transfer Memorial Award in 1991 and the ASME/ American Institute of Chemical Engineers' Max Jacob Memorial Award in 1998. In 2002 a Symposium on Radiation Heat Transfer was held in honor of Howell's 65th birthday during the American Institute of Aeronautics and Astronautics (AIAA)/ASME Thermophysics and Heat Transfer Conference.

Howell is a member of the National Academy of Engineering, a Fellow of the AIAA and a foreign member of the Russian Academy of Sciences.

His honors include NASA's Special Service Award (1965), the American Society for Engineering Education's Ralph Coats Roe Award (1987), AIAA's Thermophysics Award (1990) and the Poynting Award (2013) from the *Journal of Quantitative Spectroscopy and Radiative Transfer*. In 2004 the International Centre for Heat and Mass Transfer dedicated its Fourth International Symposium on Radiative Transfer to Howell and Drs. Kurosaki (Japan) and Sacadura (France).

Howell earned three degrees from Case Institute of Technology (now Case Western Reserve University), Cleveland: his bachelor's and master's degrees in chemical engineering in 1958 and 1960, respectively; and his Ph.D. in engineering in 1962. He is a registered professional engineer in Texas.

Honorary Membership

SAID JAHANMIR

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

SAID JAHANMIR, Ph.D., president and CEO, MiTiHeart Corporation (Gaithersburg, Md.); and vice president for biotechnology, Mohawk Innovative Technology, Inc. (Albany, N.Y.), *for seminal contributions to the advancement of mechanical engineering, particularly the multidisciplinary technologies in tribology, manufacturing, biomedical materials and devices, and in the promotion of standards; and for significant contributions to ASME.*

Dr. Jahanmir is president and CEO of the MiTiHeart Corporation (Gaithersburg, Md.), a subsidiary of Mohawk Innovative Technology, Inc. (MiTi) in Albany, N.Y., where he serves on the board of directors and as vice president for biotechnology. He is leading research and development efforts on implantable blood pumps, high-temperature coatings, high-speed micro-machining and high-speed oil-free compressors. His leadership has led to the development and pre-clinical testing of a new generation of mechanical heart assist pumps with magnetic bearings for heart failure patients, and the development of a novel ultra high-speed micro-machining spindle with rotational speeds beyond 500,000 rpm.



Prior to joining MiTi he was associated with the National Institute of Standards and Technology (NIST) in Gaithersburg, Md., where he served in several capacities between 1987 and 2002 including leader of the Ceramic Manufacturing Group. He directed research activities that ranged from characterization of ceramic powders to assessment of mechanical properties of ceramics. He coordinated several international collaborations on pre-standards research that led to ASTM and ISO standards. He established and managed a joint research program between NIST, industry and academia (1992–2001) and developed authoritative guides for machining of advanced ceramics.

Among his prior experience, Jahanmir was the first director of the Tribology Program (1985–87) at the National Science Foundation (Washington, D.C.); senior research engineer (1980–85) at Exxon Research and Engineering Company (Linden, N.J.); assistant professor of mechanical engineering (1977–80) at Cornell University (Ithaca, N.Y.); lecturer (1976–77) at the University of California at Berkeley; and instructor (1975–76) at the Massachusetts Institute of Technology (MIT), Cambridge.

Jahanmir's groundbreaking research on tribology was instrumental in establishing fundamental mechanics and materials science viewpoint for wear and provided a clear and simple understanding of the fundamentals of boundary lubrication. His research on wear and machining of advanced ceramics and dental materials resulted in a series of highly cited publications. He identified the basic mechanisms of wear and new insights into the fundamental micro-mechanisms of machining and damage formation in advanced ceramics and dental restorations.

He has published more than 240 archival papers and major reports and has edited several books and conference proceedings. He has served as the founding executive editor of the *Machining Science and Technology* journal, now in its 17th year. He holds six patents with one pending.

An ASME Fellow, Jahanmir has been an active volunteer in the Society and a strong advocate for change and growth. As chair of the Tribology Division, he revised the bylaws and initiated many innovative projects. Later, as chair of the Board on Research and Technology Development and vice president for research, he

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Honorary Membership (cont.)

streamlined the operating procedures and established fiscal management. As chair of the International Congress Committee he initiated the track-based technical program and encouraged collaboration among ASME divisions and sectors. As a governor at large (2009–12) he served on several Board committees and Presidential task forces, and was a driving force for the ASME Global Impact Strategic Initiative and the new ASME website. Jahanmir received ASME's Dedicated Service Award in 1995 and Mayo D. Hersey Award in 2001, and the Tribology Division's Donald Wilcock Distinguished Service Award in 2009.

He is a Fellow of the Society of Tribologists and Lubrication Engineers (STLE) and has served in various leadership positions. He is a member of the American Society for Artificial Internal Organs and the International Society for Rotary Blood Pumps. Among his other honors, Jahanmir received STLE's International Award and Honorary Membership (1997), and the Federal Laboratory Consortium's Technology Transfer Award (2000). He is listed in *Who's Who in America* and *Who's Who in Science and Engineering*.

Jahanmir received his bachelor's degree in mechanical engineering from the University of Washington, Seattle, in 1971. He earned his master's degree and Ph.D. in mechanical engineering from MIT in 1973 and 1976, respectively.

Honorary Membership

SADIK KAKAÇ

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

SADIK KAKAÇ, Ph.D., professor of mechanical engineering, TOBB University of Economics and Technology (Ankara, Turkey), *for seminal and pioneering achievements in transient two-phase flows, fuel cells and micro/nano heat transfer research and engineering; and for sustained contributions to education as an organizer of conferences and author of well-known textbooks on heat transfer and heat exchangers.*



Dr. Kakaç is a distinguished scientist and renowned educator whose career spans more than five decades. He received his Dipl.-Ing. degree from the department of mechanical engineering at the Technical University of Istanbul in 1955 and joined the chair of heat technique as a research/teaching assistant (1955–58). Kakaç received a scholarship to attend the Massachusetts Institute of Technology, Cambridge; after earning master's degrees in mechanical engineering and nuclear engineering in 1959 and 1960, respectively, he returned to Turkey.

Kakaç began his academic life in the department of mechanical engineering at the Middle East Technical University (METU) in Ankara. During his tenure (1960–82) he played a key role in developing the mechanical engineering department into an internationally recognized institution for heat transfer research and applications. He is the founder of heat transfer education and research at METU; and he established and directed (1971–80) the Heat Technique Research Unit, a research center sponsored by TÜBİTAK, the Scientific and Technological Research Council of Turkey. In 1963 Kakaç went to the U.K. on a

(continued)

Honorary Membership (cont.)

fellowship from UNESCO and earned his Ph.D. in 1965 from the Victoria University of Manchester.

While at METU, Kakaç was very active in scientific and public service. Among his governmental and research positions, he was elected as a board member of TÜBİTAK (1972–80); was appointed secretary general of the Turkish Atomic Energy Commission (1978–80); and represented Turkey in a number of scientific endeavors abroad as a member of the NATO Science Committee (1979–80), the OECD/NEA (Organisation for Economic Co-operation and Development/Nuclear Energy Agency) Steering Committee (1978–80) and the Cento Scientific Coordinating Board (1972–74).

Kakaç was a visiting professor (1980–82) in the department of mechanical engineering at the University of Miami (Coral Gables, Fla.), and in 1982 he was appointed as a full professor of mechanical engineering with tenure. He served as chairman of the department (1990–98). As a recipient of the Alexander von Humboldt Foundation's Senior Distinguished U.S. Scientists Award (1990–91), Kakaç was a research professor in the prestigious chair of thermodynamic A at the Technical University of Munich. Several of his sabbatical leaves from the University of Miami were spent at METU.

In 2008 Kakaç became professor emeritus at the University of Miami and joined TOBB University of Economics and Technology (TOBB ETÜ) in Ankara, Turkey, where he is currently a professor of mechanical engineering.

Kakaç is an honorary professor of Shanghai Institute of Electrical Power; Xi'an Jiatong University, China; and the Engineering College at the Gandhi Institute of Technology and Management, India.

His publications include more than 200 research and technical papers. He is the author/co-author of a number of popular textbooks, and editor of 15 volumes on thermal-fluid sciences. He has given invited lectures and short courses worldwide, and he organized many NATO Advanced Study Institutes and workshops.

An ASME Fellow, Kakaç is a member of the Heat Transfer Division's (HTD) K-16 Committee on Heat Transfer in Electronics. He served as a member of the Max Jakob Award Committee (1999–2005) and was chair in 2005. He has been involved in various ASME conferences held in Istanbul. Kakaç founded the ASME Student Section at the TOBB ETÜ and is a member of the ASME European Section. He received the Society's Heat Transfer Memorial Award in 1997 and HTD's 75th Anniversary Award (2013).

Kakaç is a member of the Turkish Society of Mechanical Engineers, the Turkish Academy of Sciences and the Academy of Sciences of the Republic of Bashkortostan (Russian); a corresponding member of the Brazilian Academy of Sciences; a Fellow of the International Centre for Heat and Mass Transfer (ICHMT) and member of its Scientific Council and Executive Committee; and a member of the American Institute of Chemical Engineers.

His honors include the Science Award from the Association of Turkish-American Scientists (1994); Distinguished Service awards from METU (1998) and TÜBİTAK (2000); the James P. Harnett Memorial Award from ICHMT (2009); a Lifetime Achievement Award from TOBB ETÜ (2010); and a Leadership Award from iNEER, the International Network for Engineering Education and Research (2012).

He received a doctor honoris causa from the University of Ovidius, Romania (1998), the University of Reims, France (1999) and Odessa State Academy of Refrigeration, Ukraine (2007).

Honorary Membership

ARUNAVA MAJUMDAR

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

ARUNAVA MAJUMDAR, Ph.D., vice president for energy, Google Inc. (Mountain View, Calif.), for pioneering research in micro/nanoscale heat transfer; and for distinguished service on the *Journal of Heat Transfer* editorial board, as the founding chair of the ASME Nanotechnology Institute, as founding director of the U.S. Department of Energy's Advanced Research Projects Agency–Energy and as acting under secretary of energy.



Dr. Majumdar is widely recognized as one of the foremost leaders in energy innovation. He has distinguished himself in research, teaching, university and professional service, and national service.

Majumdar is currently vice president for energy at Google Inc. (Mountain View, Calif.), where he is driving Google.org's energy initiatives and advising the company on its broader energy strategy.

In October 2009 Majumdar was nominated by President Obama and confirmed by the Senate to become the founding director of the U.S. Department of Energy's (DOE) Advanced Research Projects Agency–Energy (ARPA–E), where he served until June 2012. As the country's only agency devoted to transformational

energy research and development, ARPA–E identifies and invests in innovative projects to rapidly create new technologies. Between March 2011 and June 2012 he also served as the acting under secretary of energy and senior advisor to the secretary of energy.

Prior to joining DOE, Majumdar was the Almy and Agnes Maynard chair professor of mechanical engineering, and materials science and engineering at the University of California, Berkeley and the associate laboratory director for energy and environment at Lawrence Berkeley National Laboratory. Before joining UC Berkeley in 1997 he was on the faculty at the University of California, Santa Barbara (1992–96) and Arizona State University, Tempe (1989–92). His research career includes the science and engineering of nanoscale materials and devices as well as large engineered systems. He helped shape several strategic initiatives in the areas of energy efficiency, renewable energy and energy storage.

Majumdar has published more than 200 journal papers and his research is widely cited. He has given invited lectures worldwide, and has organized several conferences and symposiums. He holds 16 patents.

An ASME Fellow, Majumdar was associate editor of the *Journal of Heat Transfer* (1998–2001) and founding chair of the ASME Nanotechnology Institute (2003–06). He received the Society's Melville Medal in 1992, Gustus Larson Memorial Award in 2001 and Heat Transfer Memorial Award–Science in 2006; and a Best Paper Award from the Heat Transfer Division in 1993.

Majumdar is a member of the National Academy of Engineering and the American Academy of Arts and Sciences. He is also a Fellow of the American Association for the Advancement of Science and a member of the Materials Research Society.

Among his honors, Majumdar received an Institute Silver Medal (1985) and Distinguished Alumnus Award (2003) from the Indian Institute of Technology, Bombay; a University of California regents' fellowship (1985–86); a Young Investigator Award (1992) from the National Science Foundation; and an Outstanding Teacher Award (1996) from the department of mechanical engineering at UC Santa Barbara.

Majumdar received his bachelor's degree in mechanical engineering from the Indian Institute of Technology, Bombay, in 1985; and his master's degree and Ph.D. in mechanical engineering from UC Berkeley in 1987 and 1989, respectively.

Barnett-Uzgiris Product Safety Design Award

REN-JYE YANG

*Conferred at the International Design Engineering Technical Conferences,
Portland, Ore., August 2013*

THE BARNETT-UZGIRIS PRODUCT SAFETY DESIGN AWARD was established as the Triodyne Safety Award by the Design Engineering Division and operated as a division award until 2008, when it was elevated to a Society award and renamed the Barnett-Uzgiris Product Safety Design Award. The award recognizes individuals who have made significant contributions to the safe design of products through teaching, research and professional accomplishments.

REN-JYE YANG, P.E., Ph.D., senior technical leader, Ford Research and Advanced Engineering (Dearborn, Mich.), *for significant contributions to the safety design of vehicles through research and engineering practice, particularly pioneering developments and applications of computer-aided engineering design methods that led to innovative vehicle designs with improved safety and performance.*

Dr. Yang joined Ford Motor Company (Dearborn, Mich.) in 1988 and is currently a senior technical leader in the passive safety department at Ford Research and Advanced Engineering. He is responsible for the development of multidisciplinary design optimization, and safety optimization and robustness methods.

As a researcher, Yang has made original contributions in design sensitivity analysis, shape and topology optimization, reliability-based design optimization, crashworthiness and restraint system optimization, and multidisciplinary design optimization. He successfully applied his research to the structural design of full vehicles, including automotive body, chassis and powertrain systems, thereby contributing to more efficient and safer vehicles. He received numerous honors from Ford including three Henry Ford Technology awards (1995, 2005 and 2008), the automaker's highest recognition for technical achievement.

Yang serves on the Mechanical Engineering Advisory Board of Oakland University (Rochester, Mich.) and the Industry Advisory Board of the University of California, Los Angeles' civil and environmental engineering department. He is also a guest professor at Shanghai Jiao Tong University, Chongqing University and Nanjing University of Aeronautics and Astronautics, China.

He has published more than 60 refereed journal papers. Yang is a senior advisor and associate editor of the *Structural and Multidisciplinary Optimization Journal*; and serves on the editorial board of the *International Journal of Reliability and Safety*, the *SAE International Journal of Materials and Manufacturing* and the *International Journal of Vehicle Structures & Systems*.

An ASME Fellow, Yang has been active in the Design Engineering Divisions' Design Automation Committee and the annual Design Automation Conference (DAC), serving as an organizer, chair, reviewer and author. In 2004 he was elected as the first industrial advisor for the Design Automation Executive Subcommittee and served as champion for the Ford sponsored DAC Best Paper Award. Previously Yang served on the ASME V&V 10 Committee—Verification and Validation in Computational Solid Mechanics. He received an ASME/Black & Decker Best Paper Award in 1997, a Design Automation Award in 2005 and an ASME Service Award in 2007.

He is also a Fellow of SAE International and was honored with its Forest R. McFarland Award (2010), Arch T. Colwell Merit Award (2011) and Henry Ford II Distinguished Award (2012).

Yang received his bachelor's degree in civil engineering and his master's degree in engineering mechanics from National Taiwan University, Taipei, in 1975 and 1979, respectively. He earned his Ph.D. in civil engineering from The University of Iowa, Iowa City, in 1984. Yang is a registered structural engineer in Taiwan.



Bergles-Rohsenow Young Investigator Award in Heat Transfer

KRIPA K. VARANASI

*Conferral at the Heat Transfer Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE BERGLES-ROHSENOW YOUNG INVESTIGATOR AWARD IN HEAT TRANSFER, established in 2003 for initial bestowal in 2004, recognizes a young engineer who is committed to pursuing research in heat transfer and has demonstrated the potential to make significant contributions to this field.

KRIPA K. VARANASI, Ph.D., associate professor, Massachusetts Institute of Technology, Cambridge, *for developing a fundamental understanding of the role of surface chemistry and micro/nanoscale morphology on thermal and fluidic transport during phase change at multiple length and time scales using environmental scanning electron microscope-based experimental techniques, leading to scalable engineering surfaces for industrial applications.*



Dr. Varanasi is a Doherty associate professor in the department of mechanical engineering at the Massachusetts Institute of Technology (MIT), Cambridge. Prior to joining the faculty at MIT in January 2009, Varanasi was a research scientist and project leader for the Energy and Propulsion, and Nanotechnology programs at GE Research Center (Niskayuna, N.Y.). While at GE, he was principal investigator for the Defense Advanced Research Projects Agency's (DARPA) Advanced Electronics Cooling Program.

The primary focus of Varanasi's research to develop nanoengineered surface and coating technologies that can dramatically enhance performance in energy, water, agriculture, transportation, buildings, and electronics cooling. He is enabling this approach via interdisciplinary research focused on nanoengineered surfaces, thermal-fluids and materials discovery combined with scalable manufacturing. His work spans various thermal-fluid and interfacial phenomena including phase transitions (condensation, boiling, freezing), nanoscale transport, separation, wetting, catalysis, flow assurance in oil and gas, nanofabrication, and synthesis of inorganic bulk and nanoscale materials guided via materials design. He has published nearly 30 papers and filed more than 50 patents in these areas.

Varanasi is commercializing some of the slippery coating technology under LiquiGlide, which was named by *Time* magazine as one of the Best Inventions of the Year 2012 and by *Forbes* magazine as one of the Best Food Innovations of 2012. LiquiGlide has been covered in more than 200 news articles and has been featured on many television and radio shows. It was a Diamond Prize winner (2012) in the MassChallenge, a statewide entrepreneurship competition; and won the Audience Choice Award in the MIT 100K Entrepreneurship Competition (2012).

An ASME member, Varanasi has chaired sessions at various Society conferences. He received First Prize at ASME's 2008 Nanotechnology Symposium and received a Best Paper Award at the 2010 IEEE-ASME ITherm conference.

Varanasi is also a member of the American Physical Society, the American Chemical Society, the Materials Research Society and the Society of Manufacturing Engineers (SME).

He has received numerous GE awards (2005–09) including from Best Technology Project of the Year, Best Inventor, Best Patent as well as Management and Leadership awards. His extensive list of honors includes a National Science Foundation CAREER Award (2010–15), a DARPA Young Faculty Award (2010) and SME's Outstanding Young Manufacturing Engineer Award (2013).

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Bergles-Rohsenow Young Investigator Award in Heat Transfer (cont.)

Varanasi received his bachelor's degree in mechanical engineering from the Indian Institute of Technology, Madras, in 1998. He earned three degrees from MIT: a master's degree in mechanical engineering and a master's degree in electrical engineering and computer science, both in 2002; and a Ph.D. in mechanical engineering in 2004.

Blackall Machine Tool and Gage Award

CANER EKSIUGLU
ZEKAI MURAT KILIC
YUSUF ALTINTAS

*Conferred at the Manufacturing Science and Engineering Conference,
Madison, Wis., June 2013*

THE BLACKALL MACHINE TOOL AND GAGE AWARD was established in 1954 for the best paper or papers clearly concerned with or related to the design or application of machine tools, gages or dimensional measuring instruments.

CANER EKSIUGLU, design engineer, Tusas Engine Industries-GE Aviation, TTC (Gebze, Kocaeli, Turkey); ZEKAI MURAT KILIC, Ph.D. candidate, The University of British Columbia, Vancouver; and YUSUF ALTINTAS, P.Eng., Ph.D., professor, The University of British Columbia, Vancouver, for the paper titled "Discrete-Time Prediction of Chatter Stability, Cutting Forces, and Surface Location Errors in Flexible Milling Systems."

Mr. Eksioglu obtained his bachelor's degree in mechanical engineering from Istanbul Technical University in 2007. Following a design engineering role in the diesel engines department of Ford-Turkey (Gebze, Kocaeli), he joined the Manufacturing Automation Laboratory at The University of British Columbia (UBC), Vancouver, in 2008. He worked for 2 1/2 years under the supervision of Dr. Yusuf Altintas, initially as a graduate research assistant and then as a teaching assistant. Eksioglu earned his master's degree in mechanical engineering from UBC in early 2011. After working for a short period in the laboratory as a Mitac scholar, he joined Asco Aerospace Canada (Delta, British Columbia) as a method/cutting tool engineer.



Since June 2012 Eksioglu has been working as a design engineer on commercial and marine gas turbine engines at Tusas Engine Industries-GE Aviation, TTC (Gebze, Kocaeli, Turkey).

Mr. Kilic earned his bachelor's and master's degrees in mechanical engineering from Middle East Technical University (METU) in Ankara, Turkey, in 2006 and 2009, respectively. His master's research was on the dynamics of spindles of large-scale machine tools.

Kilic is now a Ph.D. candidate in the mechanical engineering department of The University of British Columbia (UBC), Vancouver, where he is studying large-scale machining processes. His current research topics are mechanic/dynamic modeling

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Blackall Machine Tool and Gage Award (cont.)



and optimization of general large-scale machining processes (milling, boring, drilling and turning); and analysis/design of double-sided milling of thin-walled components.

Currently Kilic is visiting the Industrial Technology Research Institute's Mechanical and Systems Research Laboratories (Hsinchu, Taiwan). His six-month project is on experimental verification of his research in cooperation with the Taiwanese machine tool industry.

Kilic, along with three other students, revived the ASME Student Section at UBC in 2011, and the members kick-started a Human Powered Vehicle Team in September 2012. He currently serves as webmaster for the section. Kilic attended the District D Student Professional Development Conference in 2011 and

Student Leadership Seminar in 2012.

Among his honors, Kilic made the METU Dean's High Honours List for all semesters (2002–06); and he was a High Honour Graduate, ranking third in the mechanical engineering department (2006). He received a master's scholarship (2006–08) from TÜBİTAK–The Scientific and Technological Council of Turkey, and a Graduate Entrance Scholarship (2009) and four-year fellowship (2009–13) from UBC's mechanical engineering department. In February 2013 he received a UBC Mechanical Engineering Graduate Student Leadership Award.



After working in the manufacturing industry for four years and completing his Ph.D., Dr. Altintas joined The University of British Columbia (UBC), Vancouver, and founded the Manufacturing Automation Laboratory in 1986. A professor since 1996, he also holds the NSERC (Natural Science and Engineering Research Council of Canada)–P&WC (Pratt & Whitney Canada) industrial chair professorship to develop the next generation of virtual high-performance machining technology. Altintas currently directs the NSERC CANRIMT (Canadian Network for Research and Innovation in Machining Technology); it is comprised of 18 researchers from six Canadian universities working in collaboration with eight industry partners and two government laboratories.

He conducts research on metal cutting mechanics, machine tool vibrations, machine tool control and virtual machining. In particular, he has contributed to the mechanics and kinematics of milling; the chatter stability of milling, turning and drilling operations in frequency and time domain; the dynamics and control of high-speed feed drives; spindle dynamics; and five axis machine tool control and simulation of part machining physics in a virtual environment. His machining process simulation and optimization algorithms are widely used in the aerospace, machine tool, die and mold, and cutting tool industries worldwide. He has trained 17 Ph.D. students and more than 60 master's students.

Altintas has published more than 130 archival journal articles with over 5,450 citations, and a widely used textbook titled *Manufacturing Automation: Metal Cutting Mechanics, Machine Tool Vibrations and CNC Design* (Cambridge University Press, 2000; second edition, 2012).

An ASME Fellow, Altintas has been a regular reviewer of ASME journal articles and conference proceedings since 1987. He served as associate editor of the *Journal of Manufacturing Science and Engineering* (1998–2002).

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Blackall Machine Tool and Gage Award (cont.)

Altintas is also a Fellow of CIRP–The International Academy for Production Engineering, the Society of Manufacturing Engineers (SME), the Canadian Academy of Engineering, the Royal Society of Canada, the International Society for Nanomanufacturing, and Engineers Canada.

Among his other honors, Altintas received an Alexander von Humboldt Research Fellowship (1992), a P&WC Technology Partnership Award in Manufacturing (1998), Meritorious Achievement (2002) and R.A. McLachlan Memorial (2010) awards from the Association of Professional Engineers and Geoscientists of British Columbia, the Gold Medal Award from Engineers Canada (2011) and UBC's Killam Teaching Prize of Engineering (2011); and he was inducted as a Fellow of the University of Tokyo (2010). He also received SME's Albert M. Sargent Progress Award (2012) and an NSERC Synergy Award for Innovation (large companies category) with P&WC (2013).

Altintas earned three degrees in mechanical engineering: his bachelor's in 1975 from Istanbul Technical University in 1975; his master's at the University of New Brunswick, Fredericton, in 1980; and his Ph.D. at McMaster University (Hamilton, Ontario) in 1987. He holds honorary doctorates from Stuttgart University, Germany (2009) and the Budapest University of Technology and Economics (2013). Altintas is a registered professional engineer in British Columbia.

Per Bruel Gold Medal for Noise Control and Acoustics

RICHARD H. LYON

*Conferred at the Boston Section Committee Meeting,
June 2013*

THE PER BRUEL GOLD MEDAL FOR NOISE CONTROL AND ACOUSTICS was established in 1987 in honor of Dr. Per Bruel, who pioneered the development of sophisticated noise and vibration measuring and processing equipment. The medal recognizes eminent achievement and extraordinary merit in the field of noise control and acoustics, including useful applications of the principles of noise control and acoustics to the art and science of mechanical engineering.

RICHARD H. LYON, Ph.D., professor emeritus, Massachusetts Institute of Technology, Cambridge; president, RH Lyon Corp (Belmont, Mass.); and consultant, Acen-tech Inc. (Cambridge, Mass.), *for pioneering contributions in the development of statistical energy analysis for analyzing vibrations in complex structural and acoustical systems, which continue to have a profound impact in the field of acoustics and noise control; and for contributions in the areas of sound quality assessment and machinery noise diagnostics.*

During a career spanning nearly 60 years, Dr. Lyon has made a profound impact in the field of noise control and acoustics. His interests include machine dynamics, random vibration, sound generation, interaction of sound and structures, the application of statistics to engineering analysis, and propagation of environmental noise. His efforts involve the use of scale models in outdoor sound propagation and building acoustics, the development of techniques for understanding machinery noise, and the use of vibrational and acoustical signals for machinery diagnostics.

Lyon joined the Massachusetts Institute of Technology (MIT), Cambridge, as professor of mechanical engineering in 1970 and taught courses in the areas of sound, vibration and dynamics. He also served as head of the Division of Mechanics and

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Per Bruel Gold Medal for Noise Control and Acoustics (cont.)



Materials. While at MIT, he founded and served as principal (1970–90) of Cambridge Collaborative, Inc., a consulting and research organization. Lyon retired from MIT in 1995 and is professor emeritus and senior lecturer.

In 1976 he founded RH Lyon Corp (Belmont, Mass.), a product design and development company specializing in sound, vibrations and dynamics, and he continues to serve as president. From 2005 to 2010, Lyon led efforts in transducer design and structural diagnostics at Acentech Inc., a multidisciplinary acoustics, audiovisual and vibration consulting firm. He was chief scientist in the firm's Cambridge, Mass., office. He now operates as an independent consultant.

Among his other professional experience, Lyon worked on problems of sound-structure interaction and excitation of structures by turbulence for NASA and the Department of Defense while on the staff of Bolt Beranek and Newman Inc. (Cambridge, Mass). Earlier, he taught courses in acoustics, circuit theory and random process, and carried out research on flow stability and random vibration while an assistant and subsequently an associate professor in the electrical engineering department at the University of Minnesota, Minneapolis.

He has written five books, and a number of technical reports and papers. He holds six U.S. patents.

Lyon is an ASME member. He is also a Fellow and former president (1993–94) of the Acoustical Society of America (ASA), a Fellow of the American Association for the Advancement of Science and the Institute of Noise Control Engineering, and an Honorary Fellow of the International Institute of Acoustics and Vibration. Additionally, he is a member of Sigma Pi Sigma, the Physics Honor Society; and Sigma Xi, the Scientific Research Society.

His honors include election to the National Academy of Engineering (1995), the Institute of Acoustics (UK) Rayleigh Medal (1995), ASA's Silver Medal in Engineering Acoustics (1998) and Gold Medal (2003), and the Acoustical Society of India's Gold Medal (2003).

Lyon received his bachelor's degree in physics, magna cum laude, from Evansville College, Ind. (now the University of Evansville) in 1952. He earned his Ph.D. in physics from MIT in 1955. In 1976 he received an honorary doctorate (D.Eng.) from the University of Evansville.

Edwin F. Church Medal

WILLIAM MARTIN WOREK

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE EDWIN F. CHURCH MEDAL, established in 1972, is awarded annually to an individual who has rendered eminent service in increasing the value, importance and attractiveness of mechanical engineering education.

WILLIAM MARTIN WOREK, Ph.D., associate dean and professor, Stony Brook University, N.Y., for the development of new courses in combined heat and mass transfer, and the establishment of a master of energy engineering program that gives students the tools to design, execute and manage new energy projects.

Dr. Worek is the associate dean of research and graduate studies, and professor of mechanical engineering at Stony Brook University, part of the State University of New York system. He is the past dean and Dave House professor at Michigan Technological University, Houghton; and a past professor, department head and director of the Energy Center at the University of Illinois at Chicago (UIC). He is a recognized expert in heat and mass transfer, fluid flow and thermodynamics as applied to energy efficient, renewable and sustainable energy systems.

During his 25 years at UIC, Worek led one of the U.S. Department of Energy's Industrial Assessment Centers that trained undergraduate and graduate students on evaluating energy technologies and processes; and he was instrumental in forming the first Regional Application Center for Combined Heating and Power.

At UIC, Worek also developed a master of energy engineering program that is heavily subscribed. The program is a unique, self-contained, fully accredited non-thesis program taught at night and structured to meet the needs of working students. Dynamic course offerings, on a guaranteed availability basis, are designed with proprietary course material and provide direct application to industry.

Worek is the American editor for the *Applied Thermal Engineering Journal*, associate editor for *Energy—the International Journal* and coordinating editor for *Heat Transfer Asian Research*. His technical publications number more than 120, many of which were presented at international conferences and invited presentations worldwide. He holds three patents, with three pending.

An ASME Fellow, Worek is a member (2012–15) of the Board of Governors; and, since 2002, has been serving on the Society's Homeland Security Steering Committee. Previously, he was vice president of the Energy Resources Board (2002–05) and chair of the Solar Energy Division (1993–94).

Worek is also a Fellow of the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

Among his honors, Worek was a UCI Fellow (2001–02) on the Committee on Institutional Cooperation's Academic Leadership Program, and he received the UCI College of Engineering's Harold A. Simon Award for Excellence in Teaching (2000).

Worek earned three degrees at the Illinois Institute of Technology, Chicago: his bachelor's in mechanical engineering with high honors in 1976; and his master's degree and Ph.D. in mechanical and aerospace engineering in 1977 and 1980, respectively.



Daniel C. Drucker Medal

YONGGANG HUANG

*Conferral at the Applied Mechanics Dinner,
2013 International Mechanical Engineering Congress and Exposition*

THE DANIEL C. DRUCKER MEDAL, established in 1997, is conferred in recognition of distinguished contributions to the field of applied mechanics and mechanical engineering through research, teaching and service to the community over a substantial period of time.

YONGGANG HUANG, Ph.D., Joseph Cummings professor, Northwestern University (Evanston, Ill.), for *fundamental and applied contributions to the mechanics of materials and structures across multiple scales.*



Dr. Huang joined the faculty at Northwestern University (Evanston, Ill.) as Joseph Cummings professor in 2007. Previously he was a faculty member at the University of Illinois at Urbana-Champaign; and, earlier, he was at Michigan Technological University, Houghton, and the University of Arizona, Tucson.

Huang has made seminal contributions to mechanics theory and applications, and is recognized as a leader in the research areas of mechanics of materials and mechanics of stretchable electronics. During the early years of his career, Huang focused on the advancement of mechanics theory and research in key areas across multiple scales. He was looking to integrate the disciplinary fields of mechanics and materials science by developing a clear understanding of the hierarchy of size scales that govern the material behavior. His work on the mechanism-based strain gradient plasticity theory represents a major advance in scale-dependent plasticity of metals.

Since 2005 Huang has moved to a new research area: mechanics of stretchable and curvilinear electronics. Using mechanics principles, Huang and his collaborators have developed electronics with performance equal to established technologies—those using flat and rigid semiconductor wafers—but in lightweight, curvilinear, foldable and stretchable formats that enable many new application possibilities. This represents the future electronics technology that overcomes the fundamental mismatch in mechanics and form between biology (soft, elastic and curved) and silicon wafer (hard, rigid and flat). It enables applications that are impossible to achieve with hard, planar integrated circuits that exist today, such as the seamless integration of stretchable electronics with the human body for health monitoring and certain therapeutic functions.

An ASME member, Huang is editor of the *Journal of Applied Mechanics*. He received the Society's Gustus L. Larson Memorial Award in 2003, the Melville Medal in 2004 and the Charles Russ Richards Memorial Award in 2010.

His honors include the Society of Engineering Science's Young Investigator Medal (2006), the *International Journal of Plasticity Medal* (2007) and a fellowship from the John Simon Guggenheim Memorial Foundation (2008). In 2009, he was identified by ISI as a Highly Cited Researcher in Engineering.

Huang received his bachelor's degree in mechanics from Peking University, Beijing, in 1984. He earned his master's degree and Ph.D. in engineering science from Harvard University (Cambridge, Mass.) in 1987 and 1990, respectively.

Thomas A. Edison Patent Award

MOSHE SHOHAM

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE THOMAS A. EDISON PATENT AWARD, established in 1997, recognizes creativity of a patented device or process that has the potential of significantly enhancing some aspect of mechanical engineering

MOSHE SHOHAM, D.Sc., professor, department of mechanical engineering, Technion–Israel Institute of Technology, Haifa, *for the invention of a miniature surgical robot that is affixed to the patient's bone, thereby enabling accurate treatment; and for founding Mazor Robotics to manufacture the robot, which has guided 35,000 spine implants with zero cases of permanent nerve damage.*

Dr. Shoham graduated from Technion–Israel Institute of Technology, Haifa, with a bachelor's degree in aeronautical engineering in 1978. After working at Israel Aircraft Industries (1978–80), he returned to Technion and earned his master's degree and D.Sc. in mechanical engineering in 1982 and 1986, respectively.

From 1986 to 1990, Shoham was an assistant professor and head of the Robotics Laboratory in the mechanical engineering department at Columbia University, New York. Since 1990 he is with Technion's department of mechanical engineering, where he is an endowed chair professor and head of the Robotics Laboratory. He held a visiting faculty appointment at Stanford University, California (1994–95).



Shoham is the founder of Mazor Robotics and Microbot Medical, companies that are based on technologies developed in his laboratory. Mazor Robotics, a Nasdaq-listed company, manufactures a miniature surgical robot for spine and brain surgeries. This robot, which has performed thousands of surgeries worldwide, enables the performance of robotic surgeries that achieve better outcomes than with conventional freehand techniques. Microbot Medical develops even smaller robots that are able to enter the human body for diagnostics and therapeutic tasks.

An ASME Fellow, Shoham is also a senior member of IEEE. He serves as chair of IFToMM's (the International Federation for the Promotion of Mechanism and Machine Science) Member Organization–Israel.

Shoham's honors include Hershel Rich Technion Innovation awards (2011 and 1998); the 2008 Technology Award from the Society for Medical Innovation and Technology; the 2007 Outstanding Israeli Project award for ROBOCAST (ROBOt for Computer Assisted Surgery and Therapy, European Union 7th Framework Programme for Research and Technology Development) from the European Commission; the 2003 Best Project Award for Israel Technological Incubators from the Israel Ministry of Trade and Commerce; and Technion's 2002 Sanford Kaplan Prize for Creative Management of High Technology and 1999 Juludan Award for Outstanding Scientific Research Achievements.

William T. Ennor Manufacturing Technology Award

JOHN W. SUTHERLAND

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE WILLIAM T. ENNOR MANUFACTURING TECHNOLOGY AWARD was established in 1990 by the ASME Manufacturing Engineering Division and the Alcoa Company to recognize an individual or team for developing or contributing significantly to an innovative manufacturing technology, the implementation of which has resulted in substantial economic or societal benefits.

JOHN W. SUTHERLAND, Ph.D., professor and Fehsenfeld family head of environmental and ecological engineering, Purdue University (West Lafayette, Ind.), *for leadership and pioneering contributions in the development of dry or nearly dry machining technology, the characterization of environmental performance of manufacturing processes and the creation of methodologies to promote the remanufacturing and recycling of end-of-life products.*



Dr. Sutherland is a well-known educator and a leading authority on the application of sustainability principles to design, manufacturing and other industrial issues. His teaching and research interests include environmentally responsible manufacturing and quality engineering.

In his present capacity as the Fehsenfeld family head of environmental and ecological engineering (EEE) at Purdue University (West Lafayette, Ind.), Sutherland provides leadership in all EEE activities including undergraduate and graduate programs, nurturing the growth of a robust research enterprise, promoting effective collaborations, mentoring of faculty, and fostering collegewide learning, discovery and engagement initiatives related to environmental

engineering. He has been at Purdue since 2009.

From 1991 to 2009 he held various positions at Michigan Technological University, Houghton, including the Henes chair professorship of mechanical engineering (2002–09), director of the Sustainable Futures Institute (2004–09) and director of graduate studies for the department of mechanical engineering–engineering mechanics (1997–2001). From 1987 to 1991 he was engaged in manufacturing consulting, development and marketing of quality engineering software, and delivery of workshops on quality engineering to industry.

Sutherland has mentored 80 students to the completion of their graduate degrees, including 21 Ph.D. students. He has published nearly 300 papers in various journals and conference proceedings.

An ASME Fellow, Sutherland has served in numerous capacities. He is currently chair of the ASME Center for Research and Technology Development's Research Committee on Sustainable Products and Processes, and is a member of the Merchant Medal Selection Committee. He recently served on the Society's Climate Change Task Force (2007–09) and as chair of the Division Operations and Training Committee for the ASME Manufacturing Technical Group (2008–11). Sutherland was elected to the Executive Committee of the Manufacturing Engineering Division (MED) and served from 1996 to 2001. He was secretary (1997–98), vice chair (1999–2000) and chair (2000–01) of MED; and served on the MED Advisory and Long-Range Planning committees (2001–03). He has co-organized a number of symposiums since 1993, most recently for the 2004 International Mechanical Engineering Congress and

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William T. Ennor *Manufacturing Technology Award (cont.)*

Exposition (IMECE); and was MED program chair for the 1999 IMECE. He received an ASME Dedicated Service Award in 2009 and MED Outstanding Service awards in 2001 and 2004.

Sutherland is also a Fellow of CIRP—the International Academy for Production Engineering and the Society of Manufacturing Engineers (SME); and a member of the American Society for Quality, the Institute of Industrial Engineers, SAE International, the Association of Environmental Engineering and Science Professors, and the American Academy of Environmental Engineers and Scientists. He is also a member of Alpha Pi Mu, the Industrial Engineering Honor Society; The Honor Society of Phi Kappa Phi (all disciplines); Pi Tau Sigma, the International Mechanical Engineering Honor Society; Sigma Xi, the Scientific Research Society; and Tau Beta Pi, the Engineering Honor Society.

His honors include the John Connor Environmental Award (2010) and Ralph R. Teeter Educational Award (1999) from SAE; an Outstanding Lifetime Service Award (2010) from the North American Manufacturing Research Institution/SME, and an Education Award (2009) and Outstanding Young Manufacturing Engineer Award (1992) from SME; a Research Award (2000) and Distinguished Teaching Award (1992) from Michigan Tech; and a Presidential Early Career Award for Scientists and Engineers (1996) and Career Development Award (1995) from the National Science Foundation.

Sutherland earned three degrees at the University of Illinois at Urbana-Champaign: his bachelor's and master's in industrial engineering in 1980 and 1982, respectively; and his Ph.D. in mechanical engineering in 1987.

Nancy DeLoye Fitzroy and *Roland V. Fitzroy Medal*

ANDREW VITERBI

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE NANCY DELOYE FITZROY AND ROLAND V. FITZROY MEDAL, established in 2011, recognizes pioneering contributions to the frontiers of engineering leading to a breakthrough(s) in existing technology or leading to new applications or new areas of engineering endeavor.

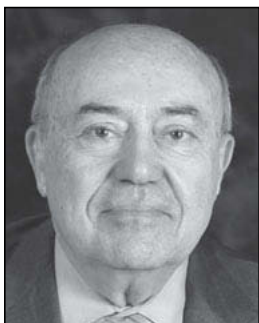
ANDREW VITERBI, Ph.D., president, Viterbi Group, San Diego; and presidential chair professor, University of Southern California, Los Angeles, *for fundamental contributions to communication technology and theory, particularly the development of the Viterbi algorithm.*

Dr. Viterbi has spent equal portions of his career in industry and in academia. He is a co-founder and retired vice chairman and chief technical officer of QUALCOMM Incorporated, San Diego; and was a professor in the School of Engineering at the University of California, Los Angeles, and the University of California, San Diego. Currently he is president of the Viterbi Group, a technical advisory and investment company in San Diego. He also serves as presidential chair professor at the University of Southern California, Los Angeles, and as a distinguished visiting professor at the Technion-Israel Institute of Technology, Haifa.

His principal research contribution, the Viterbi algorithm, is used in most mobile phones and satellite receivers, as well as in such diverse fields as magnetic record-

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Nancy DeLoye Fitzroy and Roland V. Fitzroy Medal (cont.)



ing, speech recognition, search engines and DNA sequence analysis. More recently, Viterbi helped establish code division multiple access as the multiple access technology of choice for mobile communication.

His publications include numerous technical papers in leading journals as well as a number of internationally regarded books. He holds six patents.

Viterbi is a member of the National Academy of Engineering and the National Academy of Sciences, and a Fellow of the American Academy of Arts and Sciences and IEEE. He served on the U.S. President's Information Technology Advisory Committee from 1997 to 2001.

Among his extensive list of honors are a National Medal of Science (2007) from the president of the United States; IEEE's Medal of Honor (2010), the highest award of the electrical engineering profession; the American Association of Engineering Societies' John Fritz Medal (2011); the Royal Academy of Engineering's International Medal (2011); and induction into the Consumer Electronics Association's Consumer Electronics Hall of Fame (2011).

Viterbi earned his bachelor's and master's degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1957. He earned his Ph.D. in electrical engineering from the University of Southern California in 1962. He received seven honorary doctorates (1990–2010) from universities in Canada, Cyprus, Israel, Italy and the U.S.

Fluids Engineering Award

EPHRAIM GUTMARK

*Conferred at the Fluids Engineering Division Summer Meeting,
Incline Village, Nev., July 2013*

THE FLUIDS ENGINEERING AWARD was established by the ASME Fluids Engineering Division in 1968 and was presented as a division award until 1978, when it was elevated to a Society award. It is conferred upon an individual for outstanding contributions over a period of years to the engineering profession and, in particular, to the field of fluids engineering through research, practice and/or teaching.

EPHRAIM GUTMARK, DSc, Ph.D., distinguished professor of aerospace engineering and Ohio regents eminent scholar, University of Cincinnati; and professor of otolaryngology, University of Cincinnati Medical Center, *for pioneering and outstanding contributions to the application of passive and active flow control to achieve quiet commercial and military aircraft engines, clean and stable combustion technology, aerodynamic flight effectors and efficient propulsion systems.*

Dr. Gutmark joined the University of Cincinnati (UC) in 2000 as the Ohio regents eminent scholar and professor of aerospace engineering. He was promoted to distinguished professor in 2008. He is also a professor of otolaryngology at the UC Medical Center and an affiliated professor at the Royal Institute of Technology (KTH) in Stockholm.

Among prior positions, Gutmark was chair and endowed professor of mechanical engineering at Louisiana State University (LSU), Baton Rouge (1995–

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Fluids Engineering Award (cont.)

2000); and a senior research scientist at the Naval Air Warfare Center in China Lake, Calif. (1986–95), where he co-initiated a national program on flow-based combustion control.

His research interests include jet noise characterization and suppression, flow-structure interactions, advanced propulsion systems, combustion control, scramjet propulsion, pulse detonation engines, afterburners, turbochargers, turbine blades heat transfer and aerodynamics, flight control using fluidic actuators, biomedical fluid dynamics and aeroacoustics, and hydrodynamics for oil explorations. Since joining UC in 2000, a total of eight postdocs, 30 doctoral and 31 master's students, and 55 research associates have been part of his research team. His voice research was featured on the "Discovery" series of BBC International.



Gutmark has published 170 archival journal papers, over 450 conference papers, and is a co-inventor of 60 U.S. and EU patents. He is an associate editor of the American Institute of Aeronautics and Astronautics' *AIAA Journal*.

An ASME member, Gutmark has organized and chaired sessions at various ASME conferences and has reviewed scientific papers for publication in Society journals. He co-chaired the 43rd AIAA/ASME /SAE/ASEE Joint Propulsion Conference and Exhibit, held in Cincinnati in 2007. He was recognized with three ASME Outstanding Teacher awards while at LSU. In 2010 he received a Best Paper Award from the ASME International Gas Turbine Institute's Aircraft Engine Committee.

Gutmark is a Fellow of AIAA and the American Physical Society; a member of the American Association for the Advancement of Science; and a member of the advisory board of the International Conference on Jets, Wakes and Separated Flows.

Among his other honors, Gutmark received an Annual Top Research Award (2009) from the U.S. Navy, the 42nd Annual Alan Berman Research Publication Award (2010) from the Naval Research Laboratory and the Plasmadynamics and Lasers Best Paper Award (2013) from AIAA; and he was honored as a Fellow of the Graduate School at UC in 2006.

Gutmark holds degrees in aerospace and aeronautical engineering from Technion-Israel Institute of Technology, Haifa. He earned his bachelor's, cum laude, in 1969; his master's in 1971; and his DSc, Ph.D. in 1976.

Y.C. Fung Young Investigator Award

JONATHAN P. VANDE GEEST

*Conferred at the Summer Bioengineering Conference,
Sunriver, Ore., June 2013*

THE Y.C. FUNG YOUNG INVESTIGATOR AWARD, established in 1985, recognizes a young investigator who is committed to pursuing research in bioengineering and has demonstrated significant potential to make substantial contributions to the field of bioengineering.

JONATHAN P. VANDE GEEST, Ph.D., associate professor, University of Arizona, Tucson, for numerous accomplishments in the field of bioengineering including developing a well-funded Soft Tissue Biomechanics Laboratory, generating numerous publications, educating many undergraduate and graduate students, and contributing to the profession through service activities.



Dr. Vande Geest earned his bachelor's degree in biomedical engineering from the University of Iowa, Iowa City, in 2000. He moved to the University of Pittsburgh, where he studied abdominal aortic aneurysms as a predoctoral student in Dr. David Vorp's Vascular Bioengineering Laboratory. The research Vande Geest performed there resulted in 11 published manuscripts on various topics of aneurysm and soft tissue mechanics.

After earning his doctorate in bioengineering from the University of Pittsburgh in 2005, Vande Geest accepted a tenure-track assistant professorship at the University of Arizona (UA), Tucson, where he started the Soft Tissue Biomechanics Laboratory (STBL). Since then he has secured more than \$4 million in

funding from the American Health Assistance Foundation, the American Heart Association, the National Science Foundation (CAREER Award) and the National Institutes of Health for STBL research. To date, he has published 39 journal articles, one book chapter and 75 conference abstracts.

Since 2011 Vande Geest is a tenured associate professor of aerospace and mechanical engineering, and biomedical engineering at UA. In 2012 he was awarded a visiting fellowship (late summer 2013) at the Oxford Centre for Collaborative Applied Mathematics, University of Oxford, UK.

An ASME member, Vande Geest has served on the Bioengineering Division's (BED) Solid Mechanics, Fluid Mechanics, and Tissue and Cellular Engineering technical committees since 2005. His active involvement in the Summer Bioengineering conferences includes podium session co-chair/chair; workshop/course organizer; and exhibits chair (2011), raising \$35,000 in sponsorship from 20 conference exhibitors. He earned first place in BED's Student Paper Competition (master's level) at ASME's 2002 International Mechanical Engineering Congress and Exposition.

Vande Geest is also a member of the Biomedical Engineering Society, the Association for Research in Vision and Ophthalmology, the American Heart Association and the American Society for Engineering Education.

His honors range from the University of Iowa's Caywood Engineering Scholarship (1999) to UA's Most Outstanding Junior Faculty award (2009) and Builder's Day Award from the Graduate Program in Biomedical Engineering (2011). He was a student delegate at the 53rd Lindau Nobel Laureates Meeting in Germany (2003) and received a fellowship award to attend the New York Academy of Sciences/Columbia University College of Physicians and Surgeons' Symposium on The Abdominal Aortic Aneurysm: Genetics, Pathophysiology and Molecular Biology (2006).

Gas Turbine Award

CHRISTIAN EICHLER
GEORG MARTIN BAUMGARTNER
THOMAS SATTELMAYER

*Conferred at the ASME Turbo Expo 2013,
San Antonio, June 2013*

THE GAS TURBINE AWARD was established in 1963 by the Gas Turbine Division, now the International Gas Turbine Institute (IGTI). The award recognizes outstanding contributions to the literature of combustion gas turbines or gas turbines thermally combined with nuclear or steam power plants.

CHRISTIAN EICHLER, Dr.-Ing., research and development engineer, MTU Aero Engines, Munich; GEORG MARTIN BAUMGARTNER, Dr.-Ing. candidate, Lehrstuhl für Thermodynamik, Technische Universität München; and THOMAS SATTELMAYER, Dr.-Ing., chair for thermodynamics, Lehrstuhl für Thermodynamik, Technische Universität München, for the paper titled “*Experimental Investigation of Turbulent Boundary Layer Flashback Limits for Premixed Hydrogen-Air Flames Confined in Ducts.*”

Dr. Eichler is currently working as a research and development engineer in the heat transfer/combustion department of MTU Aero Engines in Munich.

He earned his Dipl.-Ing. in aerospace engineering with distinction from the Universität Stuttgart, Germany, in 2007. In 2008 he received the ALSTOM Award for Best-in-Class Graduate of Aerospace Engineering and the Master Thesis Award for Distinguished Thesis of the Faculty of Aerospace Engineering.

Eichler’s doctoral work at the Technische Universität München (TUM) focused on flame flashback in premixed combustion devices with emphasis on hydrogen-containing fuels. He earned his Dr.-Ing. from TUM in 2011. In 2012, he received the WATT (Wissenschaftlicher Arbeitskreis Technische Thermodynamik) Award for his distinguished thesis.

IGTI’s Combustion Fuels and Emissions Committee recognized Eichler with a Best Technical Paper Award in 2011.

Between 2004 and 2010, Mr. Baumgartner studied aeronautical engineering at the Technische Universität München (TUM), where he specialized in lightweight structures and smart structures as well as flight propulsion and fluid machinery. He spent one year (2007–08) at the Royal Institute of Technology (KTH) in Stockholm under the double degree program T.I.M.E. (Top Industrial Managers for Europe). In 2010, he earned a Dipl.-Ing. in aeronautical engineering from TUM and a Civ.ing. in vehicle engineering from KTH.

Baumgartner is currently a Dr.-Ing. candidate at the Lehrstuhl für Thermodynamik of TUM. His research topic deals with safe and reliable premixed combustion of hydrogen-rich fuels. One of his responsibilities is the coordination and leadership of the reactive flows research group at the Lehrstuhl.

Among his honors, Baumgartner received an award from the Deutsche Physikalische Gesellschaft for excellent school achievements in the subject of physics (2003), a Verein Deutscher Ingenieure award for excellent achievements in the diploma thesis

(continued)



Gas Turbine Award (cont.)

(2010) and a Best Paper Award from IGTI's Combustion Fuels and Emissions Committee (2012).

Since October 2012, Baumgartner has been serving as one of four student leaders of the newly established IGTI/ASME Student Advisory Committee.



Dr. Sattelmayer has been with the Technische Universität München (TUM) since 1997 and is chair for thermodynamics. His research interest is thermo-fluid dynamics. In the combustion area, research projects include combustion noise and instabilities, turbulent flame propagation, self ignition and engine knock, turbulent mixing, NO_x formation, spray flames and supersonic combustion. Research projects in two-phase flow and heat transfer include renewable energy systems, atomization, confined multi-phase flows, flow boiling and catalytic exhaust gas treatment.

Prior to joining TUM, Sattelmayer was affiliated with Asea Brown Boveri (ABB) in Baden, Switzerland.

Between 1988 and 1997, he served as project leader for the development of combustion technologies for ABB Gas Turbines, group leader for gas turbine combustion and heat transfer, and head of the thermo- and aerodynamics department. He received an ABB Technology Achievement Award in 1993.

An ASME member, Sattelmayer's IGTI activities have included: Combustion Fuels and Emissions (CFE) Committee point contact, vice chair and chair; Turbo Expo technical program chair, review vice chair and review chair; chair of conferences; IGTI vice chair and chair; and member of the IGTI Board. He also served as an associate editor of the ASME *Journal of Engineering for Gas Turbines and Power*. Sattelmayer was honored with the IGTI John P. Davis Award in 1990 and ASME's Gas Turbine Award in 2002; and he received three IGTI CFE Best Paper awards.

He is also a member of The Combustion Institute.

Sattelmayer earned his Dipl.-Ing and Dr.-Ing. in mechanical engineering from the Karlsruhe Universität, Germany, in 1980 and 1985, respectively.

Kate Gleason Award

ANN DOWLING

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

THE KATE GLEASON AWARD, established in 2011, recognizes a female engineer who is a highly successful entrepreneur in a field of engineering or who has had a lifetime of achievement in the engineering profession. The award honors the legacy of Kate Gleason, the first woman to be welcomed into ASME as a full member.

ANN DOWLING, CEng, CPhys, Ph.D., Sc.D., head of the department of engineering and deputy vice-chancellor, University of Cambridge, U.K., for *significant contributions to advance gas turbine engine technology and the engineering science of combustion and acoustics; and for outstanding leadership in industry-university cooperative research and international engineering education.*

Dr. Dowling is head of the department of engineering at the University of Cambridge, U.K., where she is a professor of mechanical engineering and chair of the

(continued)

Kate Gleason Award (cont.)

University Gas Turbine Partnership with Rolls-Royce. She was appointed a deputy vice-chancellor in October 2013. She is one of the founders of the Energy Efficient Cities initiative at Cambridge and was the U.K. lead of the Silent Aircraft Initiative, a collaboration between researchers at Cambridge and the Massachusetts Institute of Technology, Cambridge.

Dowling's research is primarily in the fields of combustion, acoustics and vibration, and is aimed at low-emission combustion and quiet vehicles. Her research on unsteady combustion provides insight and models that are enabling gas turbine manufacturers to avoid damaging instabilities in low-emission combustors. She demonstrated that active feedback control is a powerful way of eliminating the damaging interactions that lead to instability. This technology, which results in extra thrust from an afterburner and ultra-low emissions from ground-based gas turbines, complements the passive control techniques Dowling has developed that are now being pursued by a number of manufacturers. Her group was the first to demonstrate the control of a combustion oscillation through the suitably phased unsteady injection of additional fuel. That laboratory experiment was rapidly followed by a demonstration of feasibility on a full-size aeroengine. She developed robust and adaptive control strategies that continue to work effectively through changing operating conditions.

Her publications include more than 200 papers, and she has given numerous keynote and plenary lectures. She holds two patents.

Dowling has been an ASME reviewer and conference participant. In 2001, she received a Best Technical Paper Award from ASME International Gas Turbine Institute's Combustion and Fuels Committee.

Dowling is a Fellow of the Royal Society and the Royal Academy of Engineering; a foreign member of the National Academy of Engineering (U.S.) and the French Academy of Sciences; an Honorary Fellow of the Institution of Mechanical Engineers and the Institution of Engineering Designers; a Fellow of the Royal Aeronautical Society (RAeS), the Institute of Acoustics (IOA), the Institute of Physics, the Institute of Mathematics and its Applications, and the American Institute of Aeronautics and Astronautics; and a member of Academia Europaea.

Among her honors, Dowling was recognized in the Queen's Birthday honours in 2002, receiving the Commander of the British Empire medal for services to mechanical engineering; she was recognized again in the 2007 New Year's Honours List, receiving a Dame Commander of the British Empire for services to science. She was included in BBC Radio 4's list of the top 100 most powerful women in the U.K. (2013) and was 37th in *The Times Eureka* magazine's list of the 100 most important people in British science (2010). Other honors include The Combustion Institute's Sugden Prize (2012), the Confederation of European Aerospace Societies' Aeroacoustics Award (2006), *Combustion and Flame's* Most Cited Author Award (2005–08), the American Helicopter Society's Best Acoustics Paper award (2003), RAeS's Ackroyd Stuart Prize (2001) and IOA's A.B. Wood Medal and Prize (1990).

Dowling earned three degrees from Girton College, Cambridge: bachelor's and master's degrees in mathematics; and a Ph.D. in engineering in 1978. In 2006 she earned a Sc.D. from the University of Cambridge. She holds honorary doctorates from the University of Kent, U.K. (2013); Imperial College, London (2013); and Trinity College, The University of Dublin (2008). Dowling is a chartered engineer and chartered physicist in the U.K.



Melvin R. Green Codes and Standards Medal

SIDNEY A. BERNSEN

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

THE MELVIN R. GREEN CODES AND STANDARDS MEDAL recognizes outstanding contributions to the development, promulgation or management of documents, objects or devices used in ASME programs of technical codification, standardization and conformity assessment; or the acceptance of ASME codes and standards within the United States or internationally. This medal was established in 1976 as the Codes and Standards Medal and renamed in 1996 to honor the memory and extraordinary contributions of Melvin R. Green, an ardent supporter of industrial standards. He was an ASME Fellow and longtime employee of the Society.

SIDNEY A. BERNSEN, Ph.D., consultant, *for distinguished leadership and professionalism in the development, advancement, promotion and acceptance of ASME codes and standards; and for pioneering efforts in the development and standardization of quality assurance and nuclear risk management programs for application in power plants and other facilities.*



For 60 years Dr. Bernsen has made outstanding contributions as a leader in research, development, design, licensing, quality assurance and management of nuclear and other high technology facilities including a number of unique and first-of-its-kind projects and programs.

After receiving his Ph.D. he joined Argonne National Laboratory, Illinois, where he had a major role in the development of the boiling water reactor. Subsequently he was a project manager at General Atomic, San Diego; and manager of the Nuclear Division of Advanced Technology Laboratory, Mountain View, Calif. In 1963 he joined the Bechtel Corporation, San Francisco, where he held numerous management positions including project and engineering manager,

as well as the first corporate quality assurance manager and corporate chief nuclear engineer. He was named a Bechtel Fellow in 1985.

Since retiring from Bechtel in 1993 Bernsen has been a consultant providing quality assurance management services to two engineering companies: ANATECH Corp. in San Diego and Hopper Engineering Associates in Redondo Beach, Calif. He also has provided expert witness support for industry.

Bernsen has been a leader in the development and application of nuclear quality assurance and nuclear risk management standards. He has also been a leader in national and international standards activities, including serving on the Executive Standards Council of the American National Standards Institute, chairing the International Organization for Standardization's (ISO) Committee on Nuclear Facilities and serving as a member of the initial Selection Committee for the National Institute of Standards and Technology's Malcolm Baldrige National Quality Award.

An ASME Fellow, Bernsen was the first chair of the ASME Standards Committee on Nuclear Quality Assurance; he served on the committee for 30 years and is now an honorary member. He also served on the ASME Nominating Committee and the Codes and Standards' Redesign Team. He is a founding member of the ASME Board on Nuclear Codes and Standards and has served continuously for more than 38 years. In 1998 Bernsen was appointed the first chair of the ASME Standards Committee on Nuclear Risk Management, and he continues as a member and serves on the Executive Committee. He is also a member of the ASME Standards Board on New Development and has served as vice chair. He received an ASME Dedicated Service Award in 1989 and the Bernard F. Langer Nuclear Codes and Standards Award in 2000.

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Melvin R. Green Codes and Standards Medal (cont.)

Bernsen is an Honorary Member and past director of the American Nuclear Society. He earned his bachelor's, master's and Ph.D. degrees in mechanical engineering from Purdue University (West Lafayette, Ind.) in 1950, 1951 and 1953, respectively.

J.P. Den Hartog Award

PETER HAGEDORN

Conferred at the International Design Engineering Technical Conferences, Portland, Ore., August 2013

THE J.P. DEN HARTOG AWARD, established by the Design Engineering Division in 1987 and elevated to a Society award in 2010, recognizes lifetime contributions to the teaching and practice of vibration engineering.

PETER HAGEDORN, D.Sc., head of the dynamics and vibrations group at the Chair of Numerical Methods, Technische Universität Darmstadt, Germany, *for more than 40 years of tireless efforts to advance the understanding of vibrations, particularly on nonlinear and continuous systems; and for authoring numerous highly cited articles and 10 textbooks including six that focus on vibrations.*

Dr. Hagedorn has been a full professor of mechanics at Technische Universität Darmstadt, Germany, since 1974. He served several terms as applied mechanics department head; and was TU Darmstadt vice president (1995–97), Chair of Dynamics and Vibrations (1974–2009), and head of the dynamics and vibrations group at the Chair of Structural Reliability (2009–12). Since September 2012 he is head of the dynamics and vibrations group at the Chair of Numerical Methods.

An adjunct professor at the University of Canterbury (Christchurch, New Zealand) since 2002, Hagedorn has been a visiting professor in Rio de Janeiro; Hanoi, Vietnam; Paris; Berkeley, Calif.; Irbid, Jordan; and Beijing, among others.

Hagedorn has been responsible for the engineering mechanics education of thousands of graduate and undergraduate students. He designed new curricula and further developed existing curricula, and his monographs and textbooks have been widely used. Since 1989 he has been the German coordinator of the IAS (International and Area Studies)/DAAD (Deutscher Akademischer Austausch Dienst) Student Exchange Program between the University of California, Berkeley, and TU Darmstadt.

Throughout his career, Hagedorn has made important contributions in the field of machine dynamics, analytical mechanics, engineering vibrations (linear and nonlinear), active control of vibrations, rotor dynamics, and mechatronics as it relates to exploiting nonlinear vibration effects. For the last 20 years he has been active in dealing with different dynamical problems connected to the transmission and generation of electric power. More recently he has worked on understanding and controlling brake squeal, and resolving vibrations in paper machinery. He has produced more than 100 peer-reviewed archival journal articles.

Hagedorn has been serving on Task Force 1 (Vibration Principles) of Working Group 11 for CIGRE (Conseil Internationale des Grands Réseaux Électriques) since

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J.P. Den Hartog Award (cont.)

1989. He was an elected referee of the DFG (Deutsche Forschungsgemeinschaft), the German Research Foundation (1992–96). Since 2004 he has been editorial advisor of the *Journal of Sound and Vibration*.

An ASME Fellow, Hagedorn has presented papers and chaired sessions at various ASME conferences.

Hagedorn is also a Fellow of the American Institute of Aeronautics and Astronautics; and a member of GAMM (Gesellschaft für Angewandte Mathematik und Mechanik), DGLR (Deutsche Gesellschaft für Luft- und Raumfahrt) and the American Academy of Mechanics.

His honors include the Akademiestipendium (Academy Award) from the Volkswagen Foundation (1972), awarded to carry out a two-year research project at Stanford University, California; and the inaugural Alexander von Humboldt-CAPES Research Award from CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), Brazil (1998).

Hagedorn received his engineer's degree in mechanical engineering and his doctor's degree from Escola Politécnica da Universidade de São Paulo, Brazil, in 1964 and 1966, respectively. In 1971, he earned his D.Sc. (habilitation) from the Universität Karlsruhe, Germany.

Heat Transfer Memorial Awards

ALDO STEINFELD — ART
YOGENDRA JOSHI — GENERAL
ISSAM MUDAWAR — SCIENCE

*Conferral at the Heat Transfer Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE HEAT TRANSFER MEMORIAL AWARD was established in 1959 by the Heat Transfer Division. In 1974, it was elevated to a Society award recognizing outstanding contributions to the field of heat transfer through teaching, research, practice and design, or a combination of such activities.

ART

ALDO STEINFELD, Ph.D., professor, ETH Zurich, *for distinguished leadership in the field of solar thermochemical fuel processing including fundamental research on radiative heat transfer in high-temperature reacting flows.*



Dr. Steinfeld is a professor in the department of mechanical and process engineering at ETH Zurich, where he holds the chair of renewable energy carriers. He also directs the Solar Technology Laboratory at the Paul Scherrer Institute (PSI). Prior to joining PSI in 1992 and ETH in 1999, he was a research fellow at the Weizmann Institute of Science, Israel.

Steinfeld's research program is directed toward the advancement of the thermal and thermochemical engineering sciences as applied to renewable energy technologies. His research focus is on high-temperature heat/mass transfer phenomena and multiphase reacting flows, with applications in solar power and fuels production, fossil fuel decarbonization, CO₂

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Heat Transfer Memorial Awards (cont.)

capture, mitigation and recycling, and sustainable energy systems. He has pioneered the development of solar reactor technologies for the thermochemical production of clean fuels using concentrated solar radiation. Steinfeld has supervised the successful completion of 19 Ph.D. and 155 M.Sc. theses at ETH Zurich.

He has authored more than 230 original articles in refereed journals and holds 26 patents. He currently serves on several editorial boards.

An ASME Fellow, Steinfeld was chair (2001–06) of the Solar Energy Division's (SED) Solar Chemistry and Bioconversion Committee; and associate editor (2000–04) and editor (2005–09) of the *Journal of Solar Energy Engineering*. He received the ASME Calvin W. Rice Lecture Award in 2006 and the SED's John I. Yellott Award in 2008.

Steinfeld is a member of The Minerals, Metals and Materials Society; the International Solar Energy Society; the American Institute of Chemical Engineers; and the Swiss Hydrogen Association. Among his honors, Steinfeld was elected to the Swiss Academy of Engineering Sciences (2010) and received the European Research Council Advanced Grant (2012).

Steinfeld earned his B.Sc. degree in aeronautical engineering from the Technion in 1983; his M.Sc. degree in mechanical engineering from Tel Aviv University in 1986; and his Ph.D. in mechanical engineering from the University of Minnesota in 1989.

GENERAL

YOGENDRA JOSHI, Ph.D., professor and John M. McKenney and Warren D. Shiver distinguished chair, Georgia Institute of Technology, Atlanta, *for outstanding basic and applied contributions to multimode transport and melting from discrete heat sources; and for advancements in microfabricated thermal management devices for electronics cooling, multi-objective thermal design of microsystems and reduced order thermal modeling of data centers.*

Dr. Joshi is professor and John M. McKenney and Warren D. Shiver distinguished chair at the George W. Woodruff School of Mechanical Engineering at the Georgia Institute of Technology, Atlanta. He joined the Georgia Tech faculty in August 2001 and served as associate chair for graduate studies for the Woodruff School (2003–07). He was a visiting professor (August 2007) at Xi'an Jiatong University, China, and a visiting fellow (June–August 2010) at Katholieke Universiteit (Leuven, Belgium).



His research interests are in multiscale heat transfer and thermal management. Through extensive experimental investigations and computational fluid dynamics simulations, Joshi has studied the fundamental aspects of processes governing flow and heat transfer in electronic equipment. His work is widely referenced in areas including electronics cooling, data centers, microscale transport and natural convection. He has advised/co-advised 21 Ph.D. students and 44 master's students.

Prior to joining Georgia Tech, Joshi held academic appointments at the University of Maryland, College Park (1993–2001) and the Naval Postgraduate School in Monterey, Calif. (1986–93); and worked in the semiconductor assembly industry (1984–85). While at the University of Maryland, he was appointed guest researcher (1993–July 2001) in the Semiconductor Electronics Division at the National Institute of Standards and Technology (Gaithersburg, Md.).

Joshi is the author/co-author of more than 300 archival journal and conference publications. He is an inventor on two U.S. patents.

An ASME Fellow, Joshi is chair (2013–14) of the Electronic and Photonic Packaging Division (EPPD) and a member of the Heat Transfer Division's K-16 Committee on Heat Transfer in Electronics. He served as associate editor for the *Journal of Electronics*

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Heat Transfer Memorial Awards (cont.)

Packaging (1994–99) and *Journal of Heat Transfer* (2005–08). He received an ASME Curriculum Innovation Award in 1999; EPPD's Outstanding Contribution Award in Thermal Management in 2006 and InterPACK Achievement Award in 2011; and the *Journal of Electronics Packaging* Best Paper of the Year Award in 2008.

Joshi is a Fellow of IEEE and the American Association for the Advancement of Science. Currently he is an associate editor for *IEEE Transactions on Components and Packaging Technologies*.

His honors include an Inventor Recognition Award from the Semiconductor Research Corporation (2001); an IBM Faculty Award (2008); IEEE's SEMI-THERM Significant Contributor Award (2009); a Distinguished Alumnus Award from the Indian Institute of Technology (IIT), Kanpur (2011); and an ITherm Achievement Award (2012).

Joshi received his bachelor's degree in mechanical engineering from IIT Kanpur in 1979. He earned his master's degree in mechanical engineering from the University at Buffalo–The State University of New York in 1981. In 1984 he earned his Ph.D. in mechanical engineering and applied mechanics from the University of Pennsylvania, Philadelphia.

SCIENCE

ISSAM MUDAWAR, Ph.D., professor, Purdue University (West Lafayette, Ind.), for *pioneering theoretical and experimental research on phase change mechanisms and applications in energy, materials processing, aerospace propulsion and thermal management, and electronics cooling*.



Dr. Mudawar joined the faculty at Purdue University (West Lafayette, Ind.) in 1984 and founded both the Boiling and Two-Phase Flow Laboratory (BTPFL) and the Purdue University International Electronic Cooling Alliance (PUIECA). He is director of BTPFL and PUIECA, and, since 1993, is professor of mechanical engineering.

Mudawar is internationally recognized for his theoretical and experimental research on phase change mechanisms and applications in energy, intelligent materials processing, space and electronics thermal management. His research contributions and innovations in these areas have been acknowledged worldwide in the form of national and international awards and recognitions.

He is also highly committed to education, as evidenced by the many awards he received at Purdue University for teaching, and both curriculum and instructional heat transfer laboratory development, as well as for dedicated services to minority students and organizations. He has supervised the projects of more than 60 Ph.D. and master's students. He is a Founding Fellow of the Teaching Academy at Purdue (1997).

Mudawar has authored more than 350 publications including four handbooks, 180 archival journal papers, nine book chapters, and numerous conference papers and technical reports. He has also made significant contributions to ASME and other engineering societies as keynote speaker, author, reviewer and conference session chair. He holds three patents.

An ASME Fellow, Mudawar is a member of the Society's Heat Transfer Division. He was honored for Best Paper in Thermal Management at the 1992 ASME/Japan Society of Mechanical Engineers (JSME) Joint Conference on Electronic Packaging, and for Outstanding Paper from the *Journal of Electronic Packaging* in 1995. He was a keynote speaker at the ASME/JSME 8th Thermal Engineering Joint Conference in

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Heat Transfer Memorial Awards (cont.)

Honolulu in 2011. Mudawar received an ASME Certificate of Recognition in 2011 for his 25 years of service.

He is a senior member of the American Institute of Aeronautics and Astronautics; and a member of ASM International and the American Society for Gravitational and Space Research.

Mudawar received his master's degree in mechanical engineering from the Massachusetts Institute of Technology (MIT), Cambridge, in 1980. He earned his Ph.D. in mechanical engineering, with a minor in management, from MIT in 1984.

Mayo D. Hersey Award

MICHAEL M. KHONSARI

*Conferred at the World Tribology Congress,
Torino, Italy, September 2013*

THE MAYO D. HERSEY AWARD, established in 1965, is bestowed for distinguished and continued contributions over a substantial period of time to the advancement of the science and engineering of tribology. Distinguished contributions may result from significant original research in one or more of the many scientific disciplines related to lubrication.

MICHAEL M. KHONSARI, Ph.D., Dow Chemical endowed chair in rotating machinery and professor of mechanical and industrial engineering, Louisiana State University, Baton Rouge, *for extensive contributions to tribology through work on thermal effects and thermal instability in lubrication and bearings, lubrication of bearings and gears, solid and powder lubrication, multiphase lubricating media and micropolar fluids; and the application of tribology in rotating machinery.*

Dr. Khonsari holds the Dow Chemical endowed chair in rotating machinery and is professor of mechanical and industrial engineering at Louisiana State University (LSU), Baton Rouge. At LSU, he also directs the Center for Rotating Machinery (CeRoM), which focuses on interdisciplinary research and development (R&D) in close coordination with industry. CeRoM's activities include tribology addressing lubrication, friction and wear; dynamics and vibration analysis of machinery; materials selection, advanced coating materials and processes; fatigue and damage analysis; measurement, testing and sensing; modeling and simulation; and education.



Prior to joining LSU in 1999, Khonsari spent a number of years as a faculty member at The Ohio State University, Columbus; the University of Pittsburgh; and Southern Illinois University, Carbondale. He also served as a research faculty fellow at NASA Glenn (formerly Lewis) Research Center, Cleveland; Wright-Patterson Air Force Laboratory, Ohio; and the U.S. Department of Energy, Pittsburgh.

In 2003 Khonsari was appointed as the Louisiana EPSCoR (Experimental Program to Stimulate Competitive Research) project director and associate commissioner for sponsored R&D programs at the Louisiana Board of Regents. In 2009 he was appointed by the governor to serve on the Louisiana Innovation Council.

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Mayo D. Hersey Award (cont.)

Khonsari has authored more than 220 archival papers, numerous book chapters and three books; and has delivered more than 150 invited lectures, seminars and plenary presentations. He holds several U.S. patents.

A Fellow of ASME, Khonsari is editor of the *Journal of Tribology* and a member of the Research Committee on Tribology. He received the Burt L. Newkirk Award in 1990.

Khonsari is also a Fellow of the Society of Tribologists and Lubrication Engineers (STLE) and the American Association for the Advancement of Science.

Among his honors are Alcoa Foundation awards (1990 and 1991), a Fulbright-Hayes Award (1990) and recognition as the William Kepler Whiteford Faculty Fellow (1990–92) at the University of Pittsburgh; STLE's Presidential Research Council Award (1993); and the LSU College of Engineering's Outstanding Research Award (2003). In 2013 he was awarded research funding from LSU's Innovation in Engineering Research Fund.

Khonsari earned his bachelor's (with honors), master's and Ph.D. degrees, all in mechanical engineering, from The University of Texas at Austin in 1978, 1979 and 1983, respectively.

Patrick J. Higgins Medal

ROBERT J. DEBOOM

*Conferred at The University of Texas at Dallas
May 2013*

THE PATRICK J. HIGGINS MEDAL recognizes an individual who has contributed to the enhancement of standardization through contributions to the development and promotion of ASME codes and standards or Conformity Assessment Programs. It was established in 2007 in remembrance of ASME's past vice president of the standardization department.

ROBERT J. DEBOOM, consultant, *for outstanding leadership, extraordinary perseverance and enthusiastic participation on numerous committees, including international committees, which led to the enhancement of standardization in the field of measurement of fluid flow in closed conduits.*



After earning an associate degree in electronics from DeVry Technical Institute, Chicago, in 1962, Mr. DeBoom joined Sandia National Laboratories (Albuquerque, N.M.). He worked on weapon research programs in a laboratory, on underground shots in Nevada and on high altitude nuclear shots in the Pacific. While at Sandia, DeBoom attended the University of New Mexico, Albuquerque, and earned a bachelor's degree in mechanical engineering in 1972.

DeBoom subsequently joined The Dow Chemical Co. (Freeport, Texas), where he worked from 1972 to 1995. His efforts included instrument development, instrument engineering and flow measurement product accountability. He also developed and built a flow lab for calibration and product evaluation, and managed instrument maintenance services as a superintendent of instrumentation.

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Patrick J. Higgins Medal (cont.)

Following his retirement from Dow, DeBoom worked for Micro Motion, Inc. (MMI), a part of Emerson Electric Co., in Boulder, Colo. He did research work to prove a new meter calibration method, and led the team that engineered and developed it. This system is now used in MMI facilities in Boulder, Colo.; Chihuahua, Mexico; Japan; China; and other manufacturing locations. The engineering team received a U.S. patent for the calibration process.

Although DeBoom retired from MMI in 2003, he continues to support the firm's efforts as a consultant. He has also continued doing standards work for ASME, the International Organization for Standardization, the American Petroleum Institute (API) and the American Gas Association (AGA).

Over the years, DeBoom has presented technical papers at International Society of Automation conferences, Texas A&M University Instrumentation symposia and Flomeko–International Flow Measurement conferences.

An ASME member, DeBoom has served on the Standards Committee on Measurement of Fluid Flow in Closed Conduits (MFC) since 1985, and he has been chair for the last 10-plus years. He was chair of MFC subcommittees on Coriolis Flowmeters, Electromagnetic Flowmeters and Ultrasonic Flowmeters (8–15 years); and a member of nine other subcommittees (6–20 years). He was also a member of the ASME Nominating Committee for three 2-year terms and served as chair for one year; and was a member of the ASME Board on Standardization and Testing for eight years. In 2000 and 2006, DeBoom received an ASME Codes and Standards Certificate of Appreciation for Leadership; and in 2004, 2010 and 2011, he received a Certificate of Acclamation for MFC standards development.

DeBoom has also been a member of API's Committee on Gas Fluids Measurement, Committee on Liquid Fluid Measurement and seven Work Groups for 22 years; and AGA's Transmission Measurement Committee for 11 years.

Soichiro Honda Medal

JOHN C. WALL

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE SOICHIRO HONDA MEDAL recognizes an individual for an outstanding achievement or a series of significant engineering contributions in developing improvements in the field of personal transportation. This medal was established in 1983 in recognition of Soichiro Honda's exemplary achievements in the field of personal transportation.

JOHN C. WALL, Sc.D., vice president and chief technical officer, Cummins Inc. (Columbus, Ind.), *for outstanding leadership in the research, design, development and production of low-emission, fuel-efficient diesel engines, reflected extensively in commercial products; and for serving as a resource for environmental policy development within the U.S. Environmental Protection Agency and the California Air Resources Board.*

Dr. Wall is vice president and chief technical officer of Cummins Inc., based in Columbus, Ind. He was named to this position in March 2000 and today leads an international technical organization with over 6,000 engineers in 17 major technical centers around the world, including the U.S., U.K., India, China and Brazil.

Since joining Cummins in 1986, Wall has held positions in emissions research, advanced product development and technology planning. As he has progressed from research and product engineering into engineering leadership, he has champi-

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Soichiro Honda Medal (cont.)



oned the application of innovative technologies and processes, and has remained directly involved in the most critical technology programs for low emissions, powertrain efficiency and alternative fuels. He contributes domestically and internationally in the areas of diesel engine emission controls and environmental policy. In 2002, Cummins was first to introduce cooled exhaust gas recirculation technology on commercial heavy-duty diesels. In 2007, Cummins was first to introduce NOx adsorber technology for heavy-duty diesels and first to certify to the U.S. Environmental Protection Agency's (EPA) 2010 Emission Standards with both diesel and natural gas products, three years ahead of the regulatory schedule. Cummins' 2013 engines met the first EPA Greenhouse Gas

Standards one year ahead of the regulatory schedule.

Wall has served on the EPA Mobile Sources Technical Review Subcommittee, led EPA work groups on low sulfur diesel fuels and technology readiness, and has served as an industry advisor to the California Air Resources Board.

Before joining Cummins, Wall worked in fuels and lubricants research at Chevron Research Co. (Richmond, Calif.). His research team at Chevron was the first to quantify the contribution of fuel sulfur to diesel particulate emissions.

Wall has published a number of technical papers, and given keynote and plenary lectures. He holds one patent.

An ASME member, Wall served as honorary chair for the 2006 ASME-Chinese Mechanical Engineering Society's International Mechanical Engineering Education Conference.

Wall is a member of the National Academy of Engineering and a Fellow of SAE International.

His honors include SAE's Arch T. Colwell Merit Award (1984), Horning Award-Engines and Fuels Research (1984), Teetor Industrial Lecturer award (1986), Distinguished Speaker Award (1987) and Sid Olsen Engineering Manager Award (2005).

Wall earned his bachelor's and master's degrees in mechanical engineering (honors program) from the Massachusetts Institute of Technology (MIT), Cambridge, in 1975. He received a Cummins fellowship in 1976 and earned his Sc.D. in mechanical engineering from MIT in 1978.

Internal Combustion Engine Award

JOHN H. JOHNSON

*Conferred at the Internal Combustion Engine Division Fall Technical Conference,
Dearborn, Mich., October 2013*

THE INTERNAL COMBUSTION ENGINE AWARD, established in 1966, is given in recognition of eminent achievement or distinguished contribution over a substantial period of time, which may result from research, innovation or education in advancing the art of engineering in the field of internal combustion engines.

JOHN H. JOHNSON, Ph.D., presidential professor emeritus, Michigan Technological University, Houghton, *for leadership in innovative research in the modeling of diesel engine particulate filters and aftertreatment systems based on extensive experimental data; for dedication in educating graduate students on diesel engines; and for leading and participating in national studies of technology to reduce internal combustion engine fuel consumption.*

Dr. Johnson is a presidential professor emeritus in the department of mechanical engineering–engineering mechanics at Michigan Technological University (MTU), Houghton. He joined the MTU faculty in 1970 and served in various positions including professor (1975–81), presidential professor (1981–2000) and chairman of the department (1986–93). In his laboratories at MTU, Johnson has trained generations of heavy-duty engine engineers. He has advised more than 80 master’s and Ph.D. students, and many are now leaders in industry, universities and national laboratories.



Prior to joining MTU, Johnson was chief engineer in applied engine research at the International Harvester Company (Melrose Park, Ill.); earlier he was project engineer at the U.S. Army Tank Automotive Center (Warren, Mich.).

His experience spans a wide range of analysis and experimental work on advanced engine concepts, diesel and other internal engine emissions studies, fuel systems and engine simulation. He has done pioneering work in the characterization of diesel particulate, in the development of diesel engine particulate filters, and in the modeling of these and other aftertreatment systems. His research into advanced combustion systems has helped the industry to meet increasingly strict emissions standards while also reducing fuel consumption.

Johnson has served on numerous committees related to engine technology, engine emissions and health effects including those of SAE International, the National Research Council (NRC), The Combustion Institute, the Health Effects Institute and the Environmental Protection Agency. In particular, Johnson served on NRC committees on Fuel Economy of Automobiles and Light Trucks, Advanced Automotive Technologies Plan, and the Impact and Effectiveness of Corporate Average Fuel Economy Standards; and on the Committee to Assess Fuel Economy for Medium and Heavy-Duty Vehicles. He chaired the NRC committees on Review of the Department of Energy’s Office of Heavy Vehicle Technologies and Review of the 21st Century Truck Partnership-Phase 1. As a consultant, he has worked with a number of government and private sector institutions.

He has authored more than 200 peer-reviewed journal publications and has given many invited presentations. He holds two patents.

An ASME Fellow, Johnson was an ASME-ABET program evaluator (1991–2001) and chair of the Soichiro Honda Medal Committee (2002–08). He received the Society’s Soichiro Honda Medal in 2002.

Johnson is a Fellow of SAE International; and a member of The Combustion Institute, the Air and Waste Management Association, and the American Society for

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Internal Combustion Engine Award (cont.)

Engineering Education. He is also a member of Pi Tau Sigma, the National Mechanical Engineering Honor Society; and Sigma Xi, the Scientific Research Society.

His honors include SAE's Harry L. Horning Memorial Award (1993), Arch T. Colwell Merit awards (1983 and 1994), Forest R. McFarland Award (1988), Myers Award for Outstanding Student Paper (1998) and the Franz F. Pischinger Powertrain Innovation Award (2011).

Johnson received his bachelor's and master's degrees in mechanical engineering from the University of Wisconsin-Madison in 1959 and 1960, respectively. He earned his Ph.D. in mechanical engineering, with a minor in physics, from UW-Madison in 1964.

Warner T. Koiter Medal

NORMAN A. FLECK

*Conferral at the Applied Mechanics Dinner,
2013 International Mechanical Engineering Congress and Exposition*

THE WARNER T. KOITER MEDAL was established in 1996 to recognize distinguished contributions to the field of solid mechanics with special emphasis on the effective blending of theoretical and applied elements, and on a high degree of leadership in the international solid mechanics community.

The medal honors the late Dr. Warner T. Koiter (1914–1997), world-renowned authority in the field of solid mechanics, and it commemorates his vast contributions as research engineer and teacher. The medal was funded by the Delft University of Technology, Netherlands.

NORMAN A. FLECK, CEng, Ph.D., professor, University of Cambridge, U.K., for combined theoretical and experimental contributions regarding the compressive failure of fiber reinforced composites; in the area of plasticity, particularly metal foams and lattice materials; and to the development of blast-resistant structures, all conducted within an international setting.



Dr. Fleck is professor of mechanics of materials in the engineering department at the University of Cambridge, U.K. He is also the founder/director of the Cambridge Centre.

He received his Ph.D. on the subject of metal fatigue from Cambridge in 1984 and spent a postdoctoral year at Harvard University (Cambridge, Mass.) as Lindemann Trust Fellow, working with Dr. John W. Hutchinson on creep fracture. Fleck returned to Cambridge as a lecturer in 1986 and was subsequently promoted to a readership and then to a professorship. He was head of the Mechanics, Materials and Design Division for 11 years (until 2009).

Fleck combines experiments and theory to develop mesoscale and macroscale constitutive models of engineering materials (e.g., compressive failure of composites, strain gradient plasticity theory, and mechanics of foams and lattice materials). He has close collaborations with many U.S. and European groups, having held visiting positions at Harvard University and at NASA's Langley Research Center (Hampton, Va.).

He has done much of the important research on the topic of blast resistant panels to protect structures, vehicles and sea vessels. Fleck has developed breakthrough

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Warner T. Koiter Medal (cont.)

experiments to identify panel behavior in response to blast impacts. He has dramatically advanced the theories and models used in this area to predict the response of sandwich panels and to design them so that they are robust against such impacts.

Fleck is an ISI highly cited author with more than 300 journal publications in the field of experimental and theoretical mechanics of materials, including ceramics, polymers and metals. He serves on the editorial board of several composites and mechanics journals.

He is a Fellow of the Royal Society, the Royal Academy of Engineering, Academia Europaea, the European Academy of Sciences, the European Mechanics Society, and the Institute of Materials, Minerals and Mining.

Fleck's honors included a Humboldt Research Award from the Alexander von Humboldt Foundation (2012). He is a chartered engineer in the U.K.

Robert E. Koski Medal

WAYNE J. BOOK

*Conferred at the Bath/ASME Symposium on Fluid Power and Motion Control,
Sarasota, Fla., October 2013*

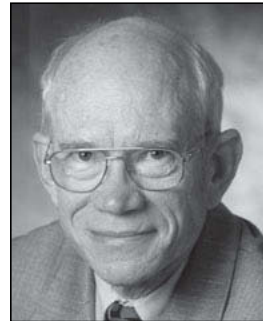
THE ROBERT E. KOSKI MEDAL recognizes an individual who has advanced the art and practice of fluid power motion and control through education and/or innovation. It was established in 2007 by the Fluid Power Systems and Technology Division to honor Mr. Koski's contributions to the field of design engineering and dynamic systems and control.

WAYNE J. BOOK, P.E., Ph.D., professor emeritus, George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, *for a lifetime of contributions and leadership in fluid power education and research related to motion control and the impact of operator interfaces on the control of hydraulic manipulation systems.*

Upon receiving his Ph.D., Dr. Book served as a research associate at the Massachusetts Institute of Technology (MIT), Cambridge, and then accepted a faculty appointment at the Georgia Institute of Technology, Atlanta, in 1974. He was promoted to professor in 1986, was selected as the first HUSCO/Ramirez chair in fluid power and motion control in 2001, and became professor emeritus at the George W. Woodruff School of Mechanical Engineering at Georgia Tech in 2011.

While at Georgia Tech, Book served as a research fellow at NASA's Johnson Space Center, Houston (1976); visiting scientist at the Robotics Institute at Carnegie Mellon University, Pittsburgh (1981); and head of the Computer Integrated Manufacturing Systems Program at Georgia Tech (1982–87).

The core of Book's research and teaching interest is system dynamics and control, especially as applied to robotics, automation, and human interfaces typically actuated by fluid power. Patents in these areas have led to the formation of three companies, including CAMotion, Inc. and Sentrinsic, Inc. Current activities, revolving heavily around fluid power and human interface design, are sponsored by the National Science Foundation and industry through the Center for Compact and Efficient Fluid Power, formed through the collaboration of seven universities.



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Robert E. Koski Medal (cont.)

Book initiated courses in industrial robotics, flexible automation, motion control and fluid power. He has advised 34 Ph.D. and more than 45 master's graduates. He has authored/co-authored more than 200 peer-reviewed research papers.

An ASME Fellow, Book has served the Society in various capacities including editor of the Dynamic Systems and Control Division (DSCD) Newsletter (1976–79); senior technical editor of the *Journal of Dynamic Systems, Measurement and Control* (1984–87); member/chair of DSCD's Executive Committee (1985–89); general chair of the 1988 American Control Conference (ASME sponsored); member/chair of the Management Committee of *IEEE/ASME Transactions on Mechatronics* (1995–2008); member of DSCD's Honors Committee (2000–04); and member of the Fluid Power Systems and Technology Division's (FPST) Executive Committee (2008–present). Book received an ASME Dedicated Service Award in 2003, a DSCD Leadership Award in 2004 and an FPST Best Paper Award in 2005. He received a Best Paper Award at the 2009 IEEE/ASME Conference on Advanced Intelligent Mechatronics and was Nyquist Lecturer at the ASME DSC Conference in 2010.

Book is also a Fellow of IEEE and the Society of Manufacturing Engineers (SME). He is a member of SAE International; the American Association for the Advancement of Science; and Sigma Xi, the Scientific Research Society. He currently serves as an associate editor of the *Journal of Systems and Control* of the Institution of Mechanical Engineers.

Among his honors, Book received a University LEAD Award from SME's Computer and Automated Systems Association (1986) and a Faculty Research Award from Georgia Tech (1987).

Book received his bachelor's degree in mechanical engineering at the University of Texas at Austin in 1969. He earned his master's and Ph.D. in mechanical engineering at MIT in 1971 and 1974, respectively. Book is a registered professional engineer in Georgia.

Frank Kreith Energy Award

JAMES E. SMITH

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE FRANK KREITH ENERGY AWARD was established in 2005 to honor an individual for significant contributions to a secure energy future with particular emphasis on innovations in conservation and/or renewable energy. Contributions may be through research, education, practice or significant service to society that will lead to a sustainable energy future. The award was established by the Solar Energy and Advanced Energy divisions to honor Dr. Frank Kreith's contributions to solar energy and heat transfer, and was funded by Holocaust Settlement Claim No. 4931 for Nazi victims and by the Kreith family.

JAMES E. SMITH, CEng, Ph.D., professor and director, Center for Industrial Research Applications, West Virginia University, Morgantown, for more than 30 years of significant contributions through the creation of energy related innovative technologies; the transfer of those technologies into the marketplace; and the use of that developmental process for the advanced training of students, staff and colleagues.

Dr. Smith is currently the director of the Center for Industrial Research Applications at West Virginia University (WVU), Morgantown, where he is a professor in the mechanical and aerospace engineering department. Prior to joining the faculty at WVU in 1976, he was a research engineer for the U.S. Department of Energy.

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Frank Kreith Energy Award (cont.)

He has been the principal/co-principal investigator for more than 100 research contracts for various projects funded by federal agencies (TACOM, DOD, HEW, DOT, U.S. Navy, DARPA and DOE), international corporations, U.S. corporations and many West Virginia companies. In his role, Smith has been actively involved in providing and/or enhancing technology solutions for the industrial marketplace. Several of these solutions have resulted in proprietary technologies that have been instrumental in the continued success of these business efforts while others have resulted in the creation of 10 new business entities. He has been granted 32 U.S. patents, with 26 pending, and numerous foreign patents on aerospace, mechanical, medical and energy related devices.



Smith has published more than 250 refereed conference papers and journal/bound transaction papers, as well as many final project reports and other publications. He has published on various technology topics including engine design; engine emissions, alternate fuels use and renewable energy production; flight vehicle development; radio frequency power processing; antenna development; and machine vision for medical related applications. He has also, most recently, published on innovation and leadership development and the use of current global research and development capabilities and infrastructure for the furthering of the same.

An ASME Fellow, Smith has authored articles for various Society publications. He is a former member of the Internal Combustion Engine Division.

Smith is also a Fellow of the Institution of Mechanical Engineers and SAE International. He has served on the SAE board of directors, and was president and chairman of the board (2009). He is a member of the American Institute of Aeronautics and Astronautics; the American Society for Engineering Education; Tau Beta Pi, the Engineering Honor Society; Sigma Xi, the Scientific Research Society; and Sigma Gamma Tau, the National Aerospace Engineering Honor Society.

He has received several awards for teaching, research and service including SAE's Ralph R. Teeter Educational Award (1988) and Forest R. McFarland Award for service (1992 and 2010); the WVU Academies of Distinguished Alumni Teaching Award (2004); and Outstanding Research awards (1989, 1995, 1997 and 2009) from WVU's Statler College of Engineering and Mineral Resources.

Smith earned three degrees from WVU: his bachelor's and master's in aerospace engineering in 1972 and 1974, respectively; and his Ph.D. in mechanical engineering in 1984. He is a chartered engineer in the U.K.

Bernard F. Langer Nuclear Codes and Standards Award

BRYAN A. ERLER

*Conferred during Boiler and Pressure Vessel Code Week,
Montreal, August 2013*

THE BERNARD F. LANGER NUCLEAR CODES AND STANDARDS AWARD was established in 1977 and is presented to an individual who has contributed to the nuclear power plant industry through the development and promotion of ASME nuclear codes and standards or the ASME Nuclear Certification Program

BRYAN A. ERLER, P.E., president, Erler Engineering Ltd., Chicago, for long-term contributions to the nuclear power plant industry through the development and promotion of ASME nuclear codes and standards.



Mr. Erler has been an executive in the nuclear power industry for more than 42 years, participating in and directing the design of numerous coal, gas and nuclear power plants worldwide. He spent 35 years with Sargent & Lundy, Chicago, including 18 years as senior vice president/owner of Sargent & Lundy LLC. He retired from Sargent & Lundy in 2004 and is president of Erler Engineering Ltd., Chicago.

An ASME member, Erler has been involved with ASME Nuclear Codes and Standards for 40 years. He has served on the Boiler and Pressure Vessel (BPV) committees on Construction of Nuclear Facility Components (Section III) and Nuclear Inservice Inspection (Section XI), and the ASME Board on Nuclear Codes and Standards since 1991. He is chair of the Board on

Conformity Assessment, serves on the Council on Standards and Certification, and currently chairs the Task Group on Design Basis and Response to Severe Accidents. As a featured expert for numerous domestic and international delegations and workshops, Erler has helped foster an in-depth understanding and acceptance of ASME's nuclear standards and certification products. He received an ASME Dedicated Service Award in 2006.

Erler is also a member of the American Society of Civil Engineers, the American Concrete Institute, the American Nuclear Society and the Post-Tensioning Institute.

His honors include Purdue University's Civil Engineering Alumni Achievement Award (1997) and Distinguished Engineering Alumni Award (1999); and a Distinguished Service Award from the Structural Engineers Association of Illinois (2003).

Erler earned his bachelor's and master's degrees in civil engineering at Purdue University (West Lafayette, Ind.) in 1969 and 1970, respectively. He is a registered professional engineer in 15 states.

Gustus L. Larson Memorial Award

WILLIAM P. KING

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE GUSTUS L. LARSON MEMORIAL AWARD was established in 1974 and honors Gustus L. Larson, Fellow and founder of Pi Tau Sigma. It is awarded to the engineering graduate who has demonstrated outstanding achievement in mechanical engineering within 10 to 20 years following graduation.

WILLIAM P. KING, Ph.D., Bliss professor of engineering, University of Illinois at Urbana-Champaign, for outstanding achievements in mechanical engineering within 10 to 20 years following graduation.

Dr. King is the Abel Bliss professor in the departments of mechanical science and engineering, materials science and engineering, and electrical and computer engineering at the University of Illinois at Urbana-Champaign. He joined the faculty at Illinois in 2006 after serving as assistant professor (2002–06) at the Georgia Institute of Technology, Atlanta.

King has been founder, adviser and board member at more than a dozen early stage technology companies specializing in nanotechnology, materials and manufacturing. Since 2007 he has been a member of the Defense Sciences Research Council, which advises the Defense Advanced Research Projects Agency on new science and technology opportunities beyond the current funding cycles.

Among his accomplishments, King has developed nanometer-scale thermal probing techniques for testing the properties of pharmaceuticals at size scales down to the single molecule. Since these properties are linked to shelf life and reactivity, which govern distribution logistics particularly in underdeveloped parts of the world, his efforts are changing the way new pharmaceuticals are developed. His pioneering work in nano-scale thermal measurement and thermal atomic force microscopy has improved electronics and energy conversion materials. In the area of renewable energy, he has developed tools for characterizing the nanometer-scale thermal properties of materials used for solar cells and batteries, providing useful measurements for the development of new technologies.

He has authored more than 170 journal articles and holds 20 patents.

An ASME Fellow, King received the Bergles-Rohsenow Young Investigator Award in Heat Transfer in 2009.

King is a member of IEEE, the American Association for the Advancement of Science, the Materials Research Society, AVS and the American Physical Society.

Among his numerous honors, King received a National Science Foundation Career Award (2003–08), a Presidential Early Career Award for Scientists and Engineers (2005–10), an Office of Naval Research Young Investigator Award (2007–10) and a Naval Research Laboratory Award for Innovation (2010). He was named among the world's young innovators on *Technology Review's* TR35 list (2006); received two R&D 100 awards (2007 and 2008) from *R&D Magazine*; and was recognized on the Society of Manufacturing Engineers' list of Innovations That Could Change the Way You Manufacture (2011).

King received his bachelor's degree in mechanical engineering from the University of Dayton, Ohio, in 1996. He earned his master's degree and Ph.D. in mechanical engineering from Stanford University, California, in 1998 and 2002, respectively.



H.R. Lissner Medal

MEHMET TONER

*Conferred at the Summer Bioengineering Conference,
Sunriver, Ore., June 2013*

THE H.R. LISSNER MEDAL was established in 1977 and is presented for outstanding accomplishments in the area of bioengineering.

MEHMET TONER, Ph.D., Helen Andrus Benedict professor of biomedical engineering, Massachusetts General Hospital, Harvard Medical School, Boston, *for inspirational efforts and far-reaching success in the training and mentoring of bioengineers; for seminal scientific contributions to cell and tissue preservation, tissue engineering and micro/nanotechnology; and for visionary leadership of academic programs and technology centers.*



Dr. Toner received his bachelor's degree in mechanical engineering from Istanbul Technical University in 1982; and his master's degree, also in mechanical engineering, from the Massachusetts Institute of Technology (MIT), Cambridge, in 1985. He earned his Ph.D. in medical engineering at Harvard-MIT Division of Health Sciences and Technology in 1989. Currently he is the Helen Andrus Benedict professor of biomedical engineering at the Massachusetts General Hospital (MGH), Harvard Medical School in Boston.

Toner is internationally regarded for his work in multiple areas at the interface of bioengineering and life sciences including micro/nanotechnology and applications in cancer. He established the Bio Micro-ElectroMechanical Systems Resource Center (BMRC)

at MGH and serves as its founding director. Primarily funded by the National Institutes of Health (NIH), BMRC aims to explore the applications of nano/micro-technologies in basic biology, systems biology, diagnostics and clinical medicine.

Among the more than 70 graduate and postgraduate students trained by Toner, more than 40 occupy major academic positions. Many of his alumni have received the National Science Foundation (NSF) CAREER Award, NSF Presidential Young Investigator Award, NIH FIRST Award and NIH Director's Young Investigator Award; and many have been elected a Fellow of the American Institute for Medical and Biological Engineering and/or ASME. A number of his former students secured endowed chairs or other prestigious awards such as Howard Hughes Medical Institute Investigator.

Toner has served on many national and international panels and review boards. In 2010 he was selected to serve a three-year term on the NSF Directorate for Engineering's Advisory Committee. He is a trustee of the Özyeğin University in Istanbul and a member of the President's Council at the Franklin W. Olin College of Engineering. He serves on the scientific advisory board of the Tissue Engineering Resource Center at Tufts University/MIT/Columbia University, the Resource for Synthesis and Bulk Characterization of Polymer Biomaterials at Rutgers University, the Institute for Engineering in Medicine at the University of Minnesota, the Center for Biomedical Engineering and Science at the University of North Carolina at Charlotte and the Center for Biomedical Engineering and Science at Brown University.

He is also on the editorial board of various technical and scientific journals including *CryoLetters*, *Cryobiology* (associate editor), *Cell Preservation Technology* (associate editor), *Nanomedicine*, *Integrative Biology*, *Nanolife* and the *Annual Review of Biomedical Engineering* (associate editor and co-founder).

Toner has published more than 250 original papers in archival journals including a wide spectrum of high impact journals such as *Nature*, *Science*, the *New England*

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H.R. Lissner Medal (cont.)

Journal of Medicine, Science Translational Medicine, Nature Biotechnology and *PNAS (Proceedings of the National Academy of Sciences)*. He has also delivered more than 350 invited, keynote and plenary presentations.

An ASME Fellow, Toner has been a member of the Bioengineering Division's (BED) Biotransport Technical Committee (formerly K-17 Heat and Mass Transfer in Biotechnology Committee) since 1992. He was the associate technical editor of the *Journal of Biomechanical Engineering* (1998–2004) and now serves on the editorial board. Toner was honored with BED's Y.C. Fung Investigator Award in 1994.

He is also a Fellow of the American Institute for Medical and Biological Engineering and the International Society of Cryobiology.

Among his other honors, Toner received the Whitaker Foundation Special Opportunity Award (1995) and MGH Cancer Center's "One-of-the-hundred" award (2008), was recognized by *Popular Mechanics* as one of the top ten inventors (2008) and received the American Association for Cancer Research's Team Science Award (2010).

Machine Design Award

CLÉMENT GOSSELIN

*Conferred at the International Design Engineering Technical Conferences
Portland, Ore., August 2013*

THE MACHINE DESIGN AWARD, established in 1958, recognizes eminent achievement or distinguished service in the field of machine design.

CLÉMENT GOSSELIN, P.Eng., Ph.D, professor and Canada research chair, Université Laval, Québec City, *for distinguished contributions in the design of novel mechanical and mechatronic devices and systems; notably in connection with mechanical intelligence, which allows the effective control of underactuated systems such as robotic grippers.*

After graduating with his Ph.D. degree, Dr. Gosselin accepted a postdoctoral fellowship from the French government in order to pursue work at INRIA (Institut National de Recherche en Informatique et en Automatique) in Sophia Antipolis, France, for one year. In 1989 he joined the department of mechanical engineering at the Université Laval, Québec City, and since 1997 is a full professor. Since 2001 he holds the Canada research chair in robotics and mechatronics.

Gosselin worked as a visiting researcher at the Institut für Getriebetechnik und Maschinendynamik of the RWTH Aachen University, Germany, in 1995, supported by a fellowship from the Alexander von Humboldt Foundation. He was a visiting professor at the University of Victoria, British Columbia, for three months in 1996 through a fellowship from the British Columbia Advanced Systems Institute. In 1999 he spent two months as a visiting professor at IRCCyN (Institut de Recherche en Communications et Cybernétique de Nantes), France.

His research activities include kinematics and dynamics of parallel mechanisms and manipulators; mechanics of grasping and robot hand design; cable-driven parallel mechanisms; human-robot cooperation; trajectory planning of robotic manipulators; and modeling and control of complex robotic systems. He has directed many



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Machine Design Award (cont.)

research initiatives including collaborations with several high-tech companies, and he has supervised the work of more than 100 graduate students.

Gosselin's research work has been the subject of two books, several patents, and numerous journal and conference publications.

An ASME Fellow, Gosselin was a member of the Design Engineering Division's (DED) Mechanisms and Robotics Committee (1996–2002) and associate editor of the *Journal of Mechanical Design* (1998–2001). He served as general program chair of the 2000 International Design Engineering Technical Conferences, and Computer and Information in Engineering Conference; program chair of the Mechanisms and Robotics Conference in 1998; and program chair of the mechanisms section of the Design Automation Conference in 1997. He received DED's Mechanisms and Robotics Committee Award in 2008.

Gosselin is a Fellow of IEEE and a member of the CCToMM (Canadian Committee for the Theory of Machines and Mechanisms).

Among his recent honors, Gosselin was appointed Officer of the Order of Canada (2010) and received the Queen Elizabeth II Diamond Jubilee Medal (2013).

He received his bachelor of engineering degree from the Université de Sherbrooke, Québec, in 1985. He earned his Ph.D. in mechanical engineering from McGill University, Montreal, in 1988. Gosselin is a registered professional engineer in the province of Québec.

Charles T. Main Student Section Awards

LEILA C. ABOHARB — GOLD
SARAH ELYSE JOHNSON — SILVER

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE CHARLES T. MAIN STUDENT SECTION AWARD was established in 1919 to recognize, at the Societywide level, an ASME student member whose leadership and service qualities have contributed, for a period of more than one year, to the programs and operation of a Student Section. In 1983, the award was expanded to include a second-place award.

GOLD

LEILA C. ABOHARB, undergraduate student, Drexel University, Philadelphia, *for outstanding contributions to ASME, including service as chair of the Drexel University Student Section and the District A Student District Operating Board; and for leadership roles in other student organizations as well as on university/department committees.*

Ms. Aboharb is in her final year at Drexel University, Philadelphia, and will graduate in June 2014 with a bachelor's degree in mechanical engineering. She currently holds chair positions (2012–14) for both the ASME Student Section at Drexel and the Student District Operating Board (SDOB) for District A. She is also very involved in ASME's Philadelphia Section, setting up sectionwide events at Drexel.

Aboharb previously served as vice chair of the ASME Student Section (2010–12), vice chair of the District A SDOB (2011–12) and student representative for the Philadelphia Section (2012–13). Since her freshman year, she has encouraged dozens of students across the district to get involved in ASME and is continuing her efforts to recruit new members.

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Charles T. Main Student Section Awards (cont.)

She is heavily involved in mechanical engineering department activities at Drexel, including interviewing new faculty, speaking to hundreds of perspective students and working with other student leaders to form new student organizations.

Aboharb is also a member of the Society of Women Engineers (SWE) and the American Institute of Aeronautics and Astronautics (AIAA). She is one of the founding volunteers for the Women in Aerospace and Technology Program, one of several programs she works with to promote science, technology, engineering and mathematics (STEM) fields to young students. She plans to continue her involvement in engineering associations such as ASME, SWE and AIAA when she enters the workforce, and will maintain her strong emphasis on volunteering and contributing to the community.



Her honors include an A.J. Drexel Scholarship (2009–14), recognition as Outstanding Volunteer at the West Chester Helicopter Museum (2010–13), a Student Leader Award from Drexel University's mechanical engineering department (2012) and ASME's Melvin R. Green Scholarship (2013).

SILVER

SARAH ELYSE JOHNSON, graduate student, Queen's University Belfast, U.K., for dedicated service to the ASME Student Section at The University of Alabama through leadership roles including chair; and for serving as a role model for students through academic achievement and active service within the campus community.

Ms. Johnson earned her bachelor's degree in mechanical engineering at The University of Alabama (UA), Tuscaloosa, in May 2013. During her four years at UA, she was heavily involved in ASME, the Society of Women Engineers (SWE), undergraduate research and extracurricular engineering projects. Her undergraduate research explored emissions issues in engine cold starts, and worked toward overcoming issues with using alternative fuels in these situations. She interned at NASA's Marshall Space Flight Center (Huntsville, Ala.) and Gulfstream Aerospace Corporation (Savannah, Ga.).



Johnson is currently pursuing a master's degree in advanced mechanical engineering at Queen's University Belfast, U.K., through the George J. Mitchell Scholarship Program.

Through her ASME activities at UA, Johnson worked to improve and provide professional development opportunities for fellow mechanical engineering students, and to encourage younger students to remain in the field. She served as the ASME Student Section liaison (2010–11), treasurer (2011–12) and chair (2012–13); and co-led the planning and execution (2012–13) of the UA District F Student Professional Development Conference (SPDC). Johnson earned first place in the District F SPDC Technical Web Page Design Competition in both 2011 and 2012.

As a member of the UA Rocket Girls (2011–13), Johnson worked on designing avionics systems and payloads for the NASA USLI (University Student Launch Initiative) rocket competition. Through the Rocket Girls and SWE, she was also actively involved in science, technology, engineering and mathematics (STEM) outreach activities to encourage young students to consider engineering as a possible career path by showing them how diverse and exciting it can be.

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Charles T. Main Student Section Awards (cont.)

In addition to ASME and SWE, Johnson is a member of Tau Beta Pi, the Engineering Honor Society and Pi Tau Sigma, the International Mechanical Engineering Honor Society.

Johnson's extensive list of honors includes various scholarships and fellowships, and UA awards. Among her 2013 honors are a National Science Foundation fellowship; the Goldwater Scholarship; the UA Catherine Johnson Randall Award for most outstanding graduating senior; and recognition as an Outstanding Senior by UA's Capstone Engineering Society and National Alumni Association.

McDonald Mentoring Award

ABEL HERNANDEZ-GUERRERO

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE MCDONALD MENTORING AWARD, established in 2007, recognizes the outstanding mentoring of other professionals by an engineer in industry, government, education or private practice.

ABEL HERNANDEZ-GUERRERO, Ph.D., professor, Universidad de Guanajuato (Salamanca, Mexico), *for outstanding contributions to the profession through the mentoring of individual students; the development of leadership seminars for ASME Student Section members; the mentoring of faculty that resulted in the establishment of numerous Student Sections in Mexico; and advocating mentoring programs through ASME committee activities.*



Dr. Hernandez-Guerrero is a professor in the mechanical engineering department at the Universidad de Guanajuato (Salamanca, Mexico). He has held various positions since joining the faculty in 1991 including mechanical engineering department head, and graduate and undergraduate programs chair.

Hernandez-Guerrero's prior affiliations include Texas A&M University, College Station, where he was a visiting professor; PEMEX (Mexican oil company); and the Instituto Tecnológico de Celaya (Guanajuato, Mexico).

He has published more than 250 scientific papers in journals and international energy conference proceedings. He is a member of the editorial board of the *International Journal of Exergy*, the *International Journal of Energy Research* and the *International Journal of Thermodynamics*. He has also been a member of scientific/technical committees for numerous national and international technical conferences.

Hernandez-Guerrero has worked tirelessly to create an ASME community in Mexico. He founded the ASME Student Section at the Universidad de Guanajuato in 1992 and has continuously served as its advisor. He has mentored numerous students on their research and dissertations while emphasizing the value of their profession and ASME membership; several of his students have won awards for innovation and best thesis dissertation in Mexico. In 2000 he was the principal organizer of the first Mexico Student Leadership Seminar (SLS), in which 13 Mexican universities participated. He has been behind the organization of every single annual ASME SLS (as well as the annual Student Professional Development Conferences) organized in

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McDonald Mentoring Award (cont.)

Mexico, and the number of participants, both in students and universities, has increased tremendously. He has also mentored faculty at other engineering schools in Mexico and, as a result, founded/helped to establish at least 12 ASME Student Sections.

An ASME Fellow, Hernandez-Guerrero has been an associate editor of the *Journal of Fuel Cell Science and Technology* since 2004 and is a recent member of the Frank Kreith Energy Award Committee. He has served as session chair for various ASME conferences. His prior service includes Region X senior representative on the ASME Student Sections Committee (1998–2013); member of the ASME Futures Team (1999–2000); assistant vice president-Mexico, Region X (1998–2005); member of the Continuity and Change Review Committee (2004–05); chair of the Student Sections Committee (2007–10); chair of the Advanced Energy Systems Division (2007–08) and chair of its Systems Analysis Technical Committee (2002–03); and Student Section advisor at Texas A&M University (1996–98). He received a Meritorious Service Award in 1998, the Student Section Advisor Award in 2001, a Dedicated Service Award in 2004 and the ASME Johnson & Johnson Consumer Companies, Inc. Medal in 2006.

He is a member of the Mexican Academy of Sciences; the Mexican Society of Mechanical Engineers, where he served as president (2000–02); and the National System of Researchers, a top-level honors society in Mexico.

Hernandez-Guerrero received his bachelor's degree in mechanical engineering from the Universidad de Guanajuato in 1984. He earned his master's degree and Ph.D. at Oregon State University, Corvallis, in 1987 and 1991, respectively.

Melville Medal

AHMED E. E. KHALIL
ASHWANI K. GUPTA
KENNETH MARK BRYDEN
SANG CHUN LEE

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE MELVILLE MEDAL was first awarded in 1927 and is the highest honor for the best original technical paper published in the ASME Transactions in the past two years.

AHMED E.E. KHALIL, Ph.D. candidate, University of Maryland, College Park; ASHWANI K. GUPTA, Ph.D., D.Sc., distinguished university professor, University of Maryland, College Park; KENNETH MARK BRYDEN, Ph.D., associate professor, Iowa State University, Ames, and program director, Simulation, Modeling and Decision Science, U.S. Department of Energy Ames Laboratory; and SANG C. LEE, Ph.D., professor and director of the Green Technology Center, Kyungnam University (Changwon, South Korea), for the paper titled "Mixture Preparation Effects on Distributed Combustion for Gas Turbine Applications."

Mr. Khalil, a Ph.D. candidate at the University of Maryland (UMD), College Park, received his bachelor's and master's degrees from the Faculty of Engineering at Cairo University (Giza, Egypt) in 2007 and 2009, respectively. He joined UMD's Combustion Laboratory in 2009 to pursue his doctoral degree and advanced to candidacy in 2011; he expects to receive his Ph.D. in December 2013.

His research interests include combustion, turbulence, power generation, emissions, renewable fuels and energy sustainability. At UMD, Khalil concentrated his

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Melville Medal (cont.)



research efforts on developing new combustion concepts for gas turbines that deliver ultralow emissions while maintaining high efficiency and extreme stability. He has co-authored 11 journal papers and 14 peer-reviewed conference papers.

Khalil is an active student member of the American Institute of Aeronautics and Astronautics (AIAA) and member of the Egyptian Society of Mechanical Engineers.

His honors include a Cairo University Excellence Assistantship (2002–07); a Best Graduation Project in Air Conditioning award from the Cairo Chapter of ASHRAE (2007); AIAA's Best Paper Award in Terrestrial Energy Systems (2012); and a fellowship (2009–10) and future faculty fellowship (January 2012) from

UMD's A. James Clark School of Engineering.



Dr. Gupta has been with the University of Maryland (UMD), College Park, since 1983. A professor of mechanical engineering since 1988, he was appointed distinguished university professor in 2008. He founded and is the director of the Combustion Laboratory at UMD.

His academic experience includes six years as a member of the research staff in the Energy Laboratory and department of chemical engineering at the Massachusetts Institute of Technology, Cambridge; and three years as a senior research associate and independent research worker in the chemical engineering and fuel technology department at the University of Sheffield, U.K. He served as a consultant to the Japanese government (Ministry of International Trade

and Industry) for 10 years; and worked for four years as an engineer at International Combustion Ltd., U.K.

He has co-authored three books, and published nine book chapters and more than 450 archival papers in various journals and refereed symposia/conference proceedings.

An ASME Fellow, Gupta served as chair of the Fuels and Combustion Technology Division (1998–2000) and the Computers and Information in Engineering (CIE) Division (2002–03); and was a member of the CIE Executive Committee (1998–2003) and the Society's Fellow Selection Committee (1998–2008). He received the George Westinghouse Gold Medal in 1998, the James Harry Potter Gold Medal in 2003, the James N. Landis Medal in 2004, the Worcester Reed Warner Medal in 2008 and the Holley Medal in 2010. He also received Best Paper awards in 1991, 1997 and 2003.

Gupta is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and, since 2007, has been serving as director of propulsion and energy and a member of the board of directors. He recently served on the Institute Development Committee (2009–12). He received AIAA's Energy Systems Award in 1990, Propellants and Combustion Award in 1999, and seven Best Paper awards between 1987 and 2012.

He is also a Fellow of SAE International and the Institute of Energy, U.K.; and a member of The Combustion Institute and the American Association for the Advancement of Science.

Among his other honors, Gupta received the UMD President Kirwan Research Award in 2003 and the College of Engineering Research Award in 2006; and, in 2009, he was appointed by the governor of Maryland to serve as chair of the Board of Boilers Rules.

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Melville Medal (cont.)

Gupta received his master's degree in combustion and high temperature gas dynamics from the University of Southampton, U.K., in 1970. He earned his Ph.D. in combustion from the University of Sheffield in 1973. He was awarded the higher doctoral degree, D.Sc., from the University of Sheffield and the University of Southampton in 1986 and 2013, respectively. Gupta is a chartered engineer in the U.K.

Dr. Bryden is an accomplished practicing engineer and a popular, pragmatic engineering professor who teaches from a fundamentals-to-practice perspective. He has been a faculty member in the department of mechanical engineering at Iowa State University (ISU), Ames, since 1998, and since 2006 he has been serving as the program director of Simulation, Modeling and Decision Science at the U.S. Department of Energy's Ames Laboratory, where he has built a multi-year, \$10+ million program.

His professional experience includes three years as an engineer and 11 years as a manager at Westinghouse Electric (Idaho Falls and Pittsburgh). In addition, for more than 15 years Bryden has worked on energy systems for the poor in a number of developing countries. Most recently he has worked in Mali, one of the poorest countries in the world, where he led an effort to develop the technology, infrastructure and in-country support network needed to provide household lighting to remote off-grid villages. Today, five villages with a combined population of more than 4,000 subsistence-level farmers who live in extreme poverty have sustainable lighting as a result of his efforts.

He has published more than 170 peer-reviewed articles and co-authored the textbook *Combustion Engineering* (CRC Press, 2011).

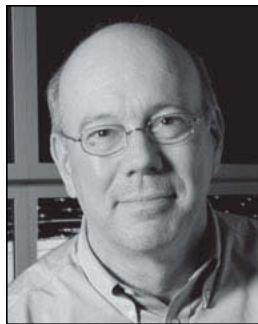
An ASME member, Bryden is chair of the Percy Nicholls Award Committee (2011–14) and a member of the James Harry Potter Gold Medal Committee (2010–16). He has been a member of the Fuels and Combustion Technology Division's Committee for Academic and Industrial Research since 2000, and served as chair (2002–03). He was vice chair (2004–05) and program chair (2003–04) of the Division's Executive Committee, and served as chair of Administrative Committees (2002–03). Bryden was a member of the Organizing Committee for the ASME Power Conference (2001–06), and he was session organizer and paper review coordinator (2012) and session/review chair (2013) for the special session on design for development at the Design Automation Conference. He served as associate editor for the *Journal of Engineering for Gas Turbines and Power* (2004–07). He received an Outstanding Mechanical Engineering Faculty Member Award from ISU's ASME Student Section in 2000.

Bryden is an Associate Fellow of the American Institute of Aeronautics and Astronautics; and a member of the American Society for Engineering Education and the International Environmental Modeling and Software Society. He is president of Engineers in Technical and Humanitarian Opportunities of Service.

His honors include ISU faculty awards (2002, 2004 and 2006); R&D 100 awards from *R&D Magazine* (2006, 2009 and 2010); and Regional Excellence in Technology Transfer awards (2009 and 2012) and a National Excellence in Technology Transfer award (2010) from the National Federal Laboratory Consortium.

Bryden earned his bachelor's degree in general engineering from Idaho State University, Pocatello, in 1977. He earned his master's degree and Ph.D. in mechanical engineering from the University of Wisconsin–Madison in 1993 and 1998, respectively.

Dr. Lee is a tenured professor in the nano science and engineering department of Kyungnam University (KU) in Changwon, South Korea. He has been a member of



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Melville Medal (cont.)



the chemistry and natural science departments since 1993. He also serves as a director of the KU Green Technology Center.

Lee is well-published, with numerous groundbreaking research articles in the areas of environmental analysis (persistent organic pollutants, dioxins, pesticides, etc.); solar energy research and development (lighting, heating, new materials, etc.); instrumentation and related technology for in situ analysis (glow discharge Auger electron spectroscopy, portable mass spectrometry, ionization sources, diode laser induced fluorescence, etc.); and micro gas turbine research and development. Lee's research and technology contributions earned him an appointment (2008–12) to the Korean Presidential Advisory Board

for Environmental Policies.

He holds various patents including direct solar lighting using concentric reflectors and optical fibers, a solar desalination system using direct solar heating and water jet, and a hybrid high concentration photovoltaic solar system. He has been serving as organizing chair of the Green Energy Resource and Technology Forum (previously Advanced Technologies and Applications) since 1995. He has also established a venture company named Creative Energy Technologies Limited that is collaborating with Nagoya University in Japan and the University of Maryland, College Park, on renewable green energy.

A member of the Korean Chemistry Society and the Korean Society for Mass Spectrometry, Lee serves as Analytical Division Committee member and vice president, respectively. He is also a member of the Society for Applied Spectroscopy, the American Chemical Society and the Advanced Science Society.

His honors include the 2000 Best Research Award for Analytical Chemistry from the Korean Chemistry Society; the 2003 Ministry Award (Science Education) from the Ministry of Science and Technology, South Korea; and the 2005 Ministry Award (University Education Activity) from the Ministry of Education, South Korea.

Lee earned three degrees from the University of Illinois at Chicago: his bachelor's degree in chemistry in 1984, his master's degree in physical chemistry in 1985 and his Ph.D. in analytical chemistry in 1990.

M. Eugene Merchant Manufacturing Medal of ASME/SME

BRYAN G. DODS

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE M. EUGENE MERCHANT MANUFACTURING MEDAL was established in 1986 by ASME and the Society of Manufacturing Engineers (SME) to honor an exceptional individual who has had significant influence and responsibility for improving the productivity and efficiency of the manufacturing operation.

BRYAN G. DODS, executive, manufacturing technology, General Electric Power & Water (Greenville, S.C.), *for technical contributions and leadership in increasing assembly efficiency, improving superalloy machining productivity, increasing the impact of process modeling and simulation in the areas of preventive maintenance and manufacturing in general, and in promoting manufacturing education and research.*

A well-recognized leader in the manufacturing engineering community, Mr. Dods' career has progressed through four stages: learning about manufacturing, changing manufacturing, changing the way others think about manufacturing and re-establishing manufacturing as a sustainable competitive advantage.

Dods began his career at McDonnell Douglas in St. Louis in 1987, supporting the composites, sheet metal and machining fabrication shops for the F-15, C-17, T-45 and MD-11 production programs. His notable accomplishments included titanium welding and nondestructive testing technology transfer with Israel, implementation of an automated infrared inspection system for superplastically formed/diffusion bonded structures, serving as the company's technical expert for federal fraud investigations of suppliers; expanding his expertise as a C-17 assembly production foreman; and his leadership role in right-sizing McDonnell Douglas' production facilities following the end of the Cold War.



His mid-career achievements included manufacturing changes for the U.S. Air Force C-17 Program. Dods implemented large compressively stress relieved aluminum forgings to reduce warpage during machining, and the C-17 main landing gear frame became the largest stress relieved forging produced at that time. He also implemented the aluminum investment casted equipment access door, and one-pass drilling to eliminate three-step drilling and disassembly/deburring of skins for the cargo door and ramp; and he developed one of the earliest uses of additive manufacturing for production tooling for main landing gear pod composite skin drill out.

With the merger of Boeing, McDonnell Douglas and Rockwell North American, Dods was selected to lead the newly formed assembly manufacturing research and development team. Over the next seven years, the team changed the way people thought about aircraft assembly and the factory floors were transformed by automation.

In 2008 he was recruited to General Electric Power & Water (Greenville, S.C.) to establish a global manufacturing technology organization. Under Dods' direction as executive of manufacturing technology, the team has had three world-class technology implementations: superalloy machining principles, machine power monitoring, and resin flow and cure simulation. GE has provided Dods with the opportunity to demonstrate manufacturing's sustainable competitive advantage by applying systems engineering and integration to create unique capabilities that are difficult to detect and duplicate.

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M. Eugene Merchant Manufacturing Medal of ASME/SME (cont.)

Dods is a dedicated promoter of close industry/university collaboration. He has served on various boards and was chair of the Industrial Executive Committee at the University of Michigan's National Science Foundation-sponsored Industry/University Cooperative Research Center for Intelligent Maintenance Systems. The Center consists of over 40 industrial member companies and three academic institutions.

He is a member of the Society of Manufacturing Engineers (SME) and serves as a board member on the North American Manufacturing Research Institution of SME. He has given keynote presentations at SME and ASME conferences.

Among his honors, Dods was invited to attend the National Academy of Engineering's Frontiers of Engineering Symposium in 2004.

Dods received his bachelor's degree in metallurgy, mechanics and materials science from Michigan State University, East Lansing, in 1987. He earned master's degrees in materials engineering and business administration from Washington University in St. Louis in 1990 and 2007, respectively.

Van C. Mow Medal

JEFFREY A. WEISS

*Conferred at the Summer Bioengineering Conference,
Sunriver, Ore., June 2013*

THE VAN C. MOW MEDAL was established by the Bioengineering Division in 2004 and was first bestowed in 2005. It is presented for demonstrated meritorious contributions to the field of bioengineering through research, education, professional development, leadership in the development of the profession, mentorship to young bioengineers, and for service to the bioengineering community.

JEFFREY A. WEISS, Ph.D., professor of bioengineering and adjunct professor of orthopaedics, University of Utah, Salt Lake City, *for seminal contributions to research in biomechanics related to fundamental structure-function relationships in musculoskeletal soft tissues, subject-specific modeling of joint mechanics, image-based biomechanics, the mechanics of angiogenesis, and the development and distribution of the FEBio software suite.*



Dr. Weiss received his bachelor's and master's degrees in bioengineering from the University of California, San Diego, in 1989 and 1990, respectively. He earned his Ph.D. in bioengineering from the University of Utah, Salt Lake City, in 1994; and received post-doctoral training (1995-96) with the applied mechanics group at Lawrence Livermore National Laboratory, California. Weiss is currently a professor of bioengineering and an adjunct professor of orthopaedics at the University of Utah.

His research efforts have focused on the areas of experimental and computational biomechanics, primarily applied to the musculoskeletal and cardiovascular soft tissues. He developed and validated techniques for subject-specific computational modeling of joint mechanics and applied these techniques to the mechanics of knee ligaments and patient-specific modeling of mechanics in the hip. Fundamental studies of ligament mechanics have included constitutive modeling, elucidation of ligament

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Van C. Mow Medal (cont.)

in situ strains, characterization of multiaxial viscoelastic material behavior, characterization of structure-function relationships, and determining the structural role of noncollagenous components including decorin proteoglycans and elastin. Weiss also developed finite element based techniques to incorporate medical image data directly into biomechanics analyses for strain measurement.

His current research interests include the mechanics of angiogenesis, the development of patient-specific analysis methods for joint and tissue mechanics, and the development of distribution of software for computational biomechanics. His lab develops, distributes and supports FEBio, an open-source finite element software suite for computational biomechanics (www.febio.org).

Weiss has authored over 100 original research articles in scientific journals.

He has been an active member of the ASME Bioengineering Division, participating regularly in the Summer Bioengineering Conference and serving on the Solid Mechanics Committee since 1993; and he has chaired, organized and served as a reviewer for numerous sessions. Weiss received the Society's Y.C. Fung Young Investigator Award in 2002.

His honors include a Whitaker Foundation Research Grant (1995), a National Science Foundation CAREER Award (2002), election to Fellow of the American Institute for Medical and Biological Engineering (2006) and several Best Paper awards.

Nadai Medal

TSU-WEI CHOU

*Conferral at the Materials Division Reception,
2013 International Mechanical Engineering Congress and Exposition*

THE NADAI MEDAL was established in 1975 to recognize significant contributions and outstanding achievements which broaden the field of materials engineering.

TSU-WEI CHOU, Ph.D., Pierre S. du Pont chair of engineering, University of Delaware, Newark, *for seminal contributions to fundamental studies of anisotropic, heterogeneous material systems and nanocomposites; and for the combination of theoretical and experimental work that has enabled unique insights essential to the engineering of ceramic, metal- and polymer-based advanced composite materials.*

Dr. Chou joined the faculty of the University of Delaware (UD), Newark, in 1969, and is currently the Pierre S. du Pont chair of engineering.

Chou has served as a visiting professor at the Argonne National Laboratory, Illinois; the British Science Research Council, U.K.; the University of the Witwatersrand, South Africa; the National Commission for the Investigation of Space, Argentina; the German Aerospace Research Establishment, Cologne; the London branch office of the U.S. Office of Naval Research; Tongji University, Shanghai; and the Tokyo University of Science. He is an honorary research professor of the Beijing University of Aeronautics and Astronautics and the Northwestern Polytechnical University in China; and an advisory professor of Tongji University. He has performed composites technology assessments in Europe and Asia for the U.S. Army Research Office and the Office of Naval Research.



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Nadai Medal (cont.)

Chou's research interests are in materials science, applied mechanics, fiber composite materials, piezoelectric materials and nanocomposites. He has made notable contributions in the application of analytical techniques to the study of a broad range of material problems; and has been a central figure in bringing composite materials, particularly fiber reinforced composites, from the laboratory into engineering practice.

He has authored more than 335 archival journal papers and book chapters. He is the author of the book *Microstructural Design of Fiber Composites* (Cambridge University Press, U.K., 1992), the co-author of the book *Composite Materials and Their Use in Structures* (Elsevier Applied Science, London, 1975) and the editor of several books. Chou is the editor-in-chief of the international journal *Composites Science and Technology* (Elsevier).

An ASME Fellow, Chou was a member of the first ASME delegation to visit the former Soviet Union in 1989. He served on the Applied Mechanics Division's Composite Materials Committee, Materials Processing and Manufacturing Committee and Nadai Award Committee; and was the organizer of several ASME symposia. Chou received the Society's Charles Russ Richards Memorial Award in 1996 and Worcester Reed Warner Medal in 2002.

He is also a Fellow of the American Institute of Aeronautics and Astronautics, The Minerals, Metals and Materials Society, the American Society for Composites, the American Ceramic Society and ASM International.

Among his honors, Chou was ranked No. 34 among the Top 100 Materials Scientists of the Decade (2000–10) by Times Higher Education/Thomson Reuters in 2011, and was named a highly cited researcher by ISI in 2002. He received a Distinguished Research Award (1998) from the American Society for Composites; and the Francis Alison Medal (2002) and the Medal of Excellence in Composite Materials (2009) from UD. He was honored as a World Fellow by the International Committee on Composite Materials in 2011.

Chou received his bachelor's degree in civil engineering from the National Taiwan University, Taipei, in 1963. He earned his master's degree in materials science at Northwestern University (Evanston, Ill.) in 1966; and his Ph.D. in materials science at Stanford University, California, in 1969.

Sia Nemat-Nasser Early Career Award

THAO D. NGUYEN

*Conferral at the Materials Division Reception,
2013 International Mechanical Engineering Congress and Exposition*

THE SIA NEMAT-NASSER EARLY CAREER AWARD recognizes research excellence in experimental, computational or theoretical aspects of mechanics of materials by a young investigator within 10 years following receipt of their Ph.D. degree. Established by the Materials Division in 2008, it was elevated to a Society award in 2012.

THAO (VICKY) NGUYEN, Ph.D., assistant professor, The Johns Hopkins University, Baltimore, *for outstanding contributions in both theoretical and experimental biomechanics, particularly work on the complex mechanics of the eye with applications to several conditions including glaucoma.*

Dr. Nguyen received her bachelor's degree in mechanical engineering from the Massachusetts Institute of Technology, Cambridge, in 1998. She earned her master's degree and Ph.D., also in mechanical engineering, from Stanford University, Califor-

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Sia Nemat-Nasser Early Career Award (cont.)

nia, in 2001 and 2004, respectively. She was a research scientist at Sandia National Laboratories (Livermore, Calif.) for three years before joining the mechanical engineering department at The Johns Hopkins University, Baltimore, as an assistant professor in 2007.

The broad theme of Nguyen's research is the mechanics of soft adaptive materials and includes the remodeling of soft tissues and the stimuli-responsive behavior of polymers. Her work in biomechanics integrates the development of novel experimental methods and microstructure-based theoretical and computational models to study the structure, property and function of soft collagenous tissues and their alteration with age and disease, providing insights for new diagnostic and treatment strategies. In the area of stimuli-responsive polymers, her research develops models to investigate the physical mechanisms underlying shape memory behavior in polymers and provides mechanistic understanding for improving the material response.

Particularly noteworthy is her work on the mechanics of the eye. Nguyen has worked collaboratively to investigate the role of the sclera and cornea in the development of glaucoma, and to develop a biomechanical model of the sclera and its effects on glaucoma.

She has published nearly 40 journal papers and three peer-reviewed papers in conference proceedings; and she has given nearly 30 invited presentations.

An ASME member, Nguyen has served the Applied Mechanics Division as recording secretary of the Executive Committee (2005–07); and secretary/vice chair (2009–10) and chair (2010–11) of the Committee on Soft Materials. She is currently theme co-organizer, Solid Mechanics-Other for the Society's Bioengineering Division.

Nguyen is also a member of the Society of Engineering Science, the Materials Research Society, the Association for Research in Vision and Ophthalmology, and the Society of Experimental Mechanics.

Her honors include a Presidential Early Career Award for Scientists and Engineers (2008) for work on modeling the thermomechanical behavior of shape memory polymers; a National Science Foundation CAREER Award (2013) to investigate the micromechanisms of growth and remodeling of collagenous tissues; and the inaugural Eshelby Mechanics Award for Young Faculty (2013) from the University of Houston.



Sia Nemat-Nasser Early Career Award

TING ZHU

*Conferral at the Materials Division Reception,
2013 International Mechanical Engineering Congress and Exposition*

THE SIA NEMAT-NASSER EARLY CAREER AWARD recognizes research excellence in experimental, computational or theoretical aspects of mechanics of materials by a young investigator within 10 years following receipt of their Ph.D. degree. Established by the Materials Division in 2008, it was elevated to a Society award in 2012.

TING ZHU, Ph.D., associate professor, Georgia Institute of Technology, Atlanta, *for outstanding research contributions to the nanomechanics of advanced engineering and energy materials through the synergistic application of fundamental theory, mechanics, materials physics and multiscale modeling.*



Dr. Zhu joined the Georgia Institute of Technology, Atlanta, as an assistant professor in the George W. Woodruff School of Mechanical Engineering in 2005, following his postdoctoral fellowship at Harvard University (Cambridge, Mass.). He is currently an associate professor in the Woodruff School and holds a joint appointment in the School of Materials Science and Engineering at Georgia Tech.

Zhu's research is focused on the nanomechanics of engineering and energy materials, and encompasses the fundamental theory, modeling and application to advanced materials and nanotechnology. He has published more than 50 peer-reviewed journal papers in these areas. Among his notable contributions,

Zhu has developed a nanomechanics theory that is synergistically integrated with the novel atomistic reaction pathway modeling for elucidating the ultra-high strength behavior in metallic nanomaterials. He also developed a multiscale model to elucidate the controlling deformation mechanism that governs the unusual combination of ultra-high strength and high ductility in nanotwinned metals. Recently he and his collaborators established a multiscale chemomechanics framework for simulating the electrochemically-induced mechanical degradation in high-capacity electrodes for lithium-ion batteries, which are crucially important to the mass market of electric vehicles; this research provides novel mechanistic insights and design guidelines for the development of durable energy storage materials.

An ASME member, Zhu has served on the Applied Mechanics Division's committees on Computing in Applied Mechanics and on Fracture and Failure Mechanics. He has co-organized ASME minisymposia on Small-Scale Fracture; Multiphysics Simulations and Experiments for Solids; and Mechanics of Electrochemical Energy Storage Materials.

Zhu is also a member of the Materials Research Society; The Minerals, Metals and Materials Society; the Society of Engineering Science; and the United States Association for Computational Mechanics.

Among his honors, Zhu was ranked among the Top 10 Outstanding Students (1998) at Tsinghua University, China. He received a Presidential Fellowship (1999) from the Massachusetts Institute of Technology (MIT), Cambridge; and was named a Woodruff Faculty Fellow (2010) at Georgia Tech.

Zhu earned his bachelor's degree in engineering mechanics and a Ph.D. in solid mechanics from Tsinghua University in 1995 and 1999, respectively. He earned a Ph.D. in mechanical engineering from MIT in 2004.

Burt L. Newkirk Award

TAE HO KIM

*Conferred at the World Tribology Congress,
Torino, Italy, September 2013*

THE BURT L. NEWKIRK AWARD was established in 1976 and is presented to an individual who has made a notable contribution in tribology research or development, as evidenced by important tribology publications prior to his or her 40th birthday.

TAE HO KIM, Ph.D., assistant professor, Kookmin University (Seoul, South Korea), for significant contributions to the development of viable gas foil bearings for micro turbomachinery applications, particularly for computational models and comprehensive experimental data to improve the design and operation of gas bearings in oil-free machinery systems.

Dr. Kim received his bachelor's and master's degree in mechanical engineering from Hanyang University (Seoul, South Korea) in 2000 and 2002, respectively. For his master's thesis, he researched the dynamic characteristics and durability of gas foil bearings. In 2007 he earned his Ph.D. in mechanical engineering from Texas A&M University, College Station, having completed original and independent research on side end pressurized bump type gas foil bearings with analytical and experimental developments.

From September 2007 to May 2009, Kim worked in the mechanical engineering department of Texas A&M University as a postdoctoral research associate. He was also an adjunct lecturer, teaching an undergraduate dynamic and vibrations class, in the fall of 2008. In June 2009 he joined the Energy Mechanics Research Center of the Korea Institute of Science and Technology (Seoul, South Korea) and worked as a senior research scientist until August 2012. In September 2012 Kim was appointed as an assistant professor at the School of Mechanical Systems Engineering of Kookmin University (Seoul, South Korea). His research focuses on the computational modeling of gas foil bearings with experimental performance validation.

During his research career, Kim has co-authored 32 international and nine domestic (Korea) journal papers; and 33 international and 25 domestic (Korea) conference papers. He has peer-reviewed numerous papers for various journals including the Society of Tribologists and Lubrication Engineers' (STLE) *Tribology Transactions*; and *Tribology International*, the *International Journal of Rotating Machinery* and *Advances in Tribology*. Kim holds two registered U.S. patents; and five registered Korean patents, with four pending.

An active ASME member, Kim has peer-reviewed papers for the *Journal of Tribology* and *Journal of Engineering for Gas Turbines and Power*, and for ASME Turbo Expo. He served as technical session organizer and session chair for the Bearings and Seals sessions at the ASME Turbo Expo in 2010 and 2011. He earned *Journal of Tribology* Best Paper awards (2010 and 2012) from ASME's Tribology Division; the ASME International Gas Turbine Institute's Best Technical Paper Award at Turbo Expo 2009; and a Finalist Certificate at the Tribology Division's Young Engineer Paper Contest in 2006.

He is also a member of STLE and the Korean Society of Tribologists and Lubrication Engineers (KSTLE).

Kim's honors include an Outstanding Quality Paper Award at IFToMM's (International Federation for the Promotion of Mechanism and Machine Science) 2002 International Conference on Rotordynamics and a Best Paper Award at KSTLE's 2013 Spring Conference.



Old Guard Early Career Award

JARED B. GARRISON

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE OLD GUARD EARLY CAREER AWARD was established in 1994 to help the young engineer bridge the gap between college and professional life. Its intent is to bring that individual closer to the activities of ASME by providing encouragement for graduating student members to upgrade to member and actively become involved in the work of the Society.

JARED B. GARRISON, graduate research assistant, mechanical engineering department, The University of Texas at Austin, *for outstanding service and leadership in both the ASME Student Section at the University of Texas at Austin and the Central Texas Section; and for contributions to society through community outreach and research in alternative energy systems.*



Mr. Garrison earned his bachelor's and master's degrees in mechanical engineering from The University of Texas at Austin (UT) in 2007 and 2009, respectively. Currently a graduate research assistant in UT's mechanical engineering department, Garrison is working toward his Ph.D., which he hopes to earn in May 2014. He has maintained an excellent academic record while devoting a significant amount of time and energy to his numerous leadership, volunteer, research and publication activities.

Garrison's research involves modeling of electricity grids and incorporation of large scale energy storage to aid in higher penetration of renewable energy resources. He has published five articles in peer-reviewed technical conference proceedings and one peer-reviewed article in the American Institute of Physics' *Journal of Renewable and Sustainable Energy* (July 2011 edition).

He has participated in, planned, and led many community service activities including Introduce a Girl to Engineering Day, Explore UT, Encounter with Engineering, Engineering Day at the Mall and Engineering Day at the Museum, all of which involved hands-on activities to foster excitement about science, technology, engineering and mathematics (STEM) concepts.

An ASME member, Garrison was UT's Student Section community service coordinator (2005–07), vice president (2007–08), and president (2008–09). As vice president, he began reaching out to the Central Texas Section (CTS) to build a more sustainable and mutually beneficial relationship. As president, he envisioned and helped develop both a student paper contest and a student scholarship hosted and funded by the CTS. Garrison served on the CTS Executive Committee and as college relations chair. Starting in July 2010, he advanced to CTS secretary, vice chair and chair, a position he currently holds. In January 2011, he became the official liaison between the UT Student Section and the national ASME organization. Garrison won first place in the Central Texas Student Paper Contest in 2009, was named Young Mechanical Engineer of the Year in 2010 by the CTS, and received Honorable Mention for his research poster at the 2011 International Mechanical Engineering Congress and Exposition.

Garrison is also a member of Tau Beta Pi, the Engineering Honor Society; Pi Tau Sigma, the International Mechanical Engineering Honor Society; Kappa Theta Epsilon, the National CO-OP Honor Society; UT's section of Engineers for a Sustainable World and the Society of Fire Protection Engineers; UT's Engineering Leadership Team; Central Texas Discover Engineering; and the National Society of Collegiate Scholars.

(continued)

Old Guard Early Career Award (cont.)

Among his other honors, Garrison received the UT mechanical engineering department Graduate Recruitment Service Award (2010) and a Cockrell School of Engineering Graduate Student Leadership Award (2011). He has received several fellowships including the Thrust 2000 Fellowship from the UT Cockrell School of Engineering.

Rufus Oldenburger Medal

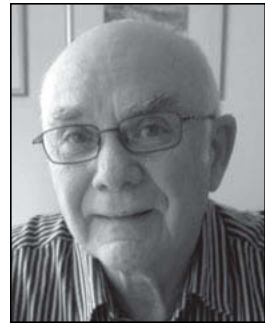
GRAHAM CLIFFORD GOODWIN

*Conferred at the Dynamic Systems and Control Conference,
Palo Alto, Calif., October 2013*

THE RUFUS OLDENBURGER MEDAL was established in 1968 and is given in recognition of significant contributions and outstanding achievements in the field of automatic control through any of the following: education, research, development, innovation and service to the field and profession.

GRAHAM CLIFFORD GOODWIN, Ph.D., laureate professor, School of Electrical Engineering and Computer Science, The University of Newcastle (New South Wales, Australia), *for pioneering contributions to adaptive control of time-varying and uncertain systems, to discrete time and stochastic adaptive control solutions, and to digital control solutions for real-world systems using the delta operator.*

Since joining the faculty at The University of Newcastle (New South Wales, Australia), in 1974, Dr. Goodwin has held various academic positions including lecturer and professor of electrical engineering. He also held administrative positions such as head of the electrical and computer engineering department; dean of the Faculty of Engineering; director for the centres for Industrial Control Science and for Complex Dynamic Systems and Control; and chairman of UNAC Automation Pty. Ltd., Australia, a university spin-off company focused on commercializing advanced process control technology. Currently he is laureate professor in the School of Electrical Engineering and Computer Science.



His distinguished appointments include honorary professor at Northeastern University, China (1998); distinguished professor at the Universidad Técnica Federico Santa María, Chile (2004); honorary professorship at Harbin Institute of Technology, China (2006); and honorary professor at Zhengzhou University, China (2009).

He has supervised 38 Ph.D. students, and they now hold senior positions in major international universities and industry. He currently holds several research grants covering diverse areas including power electronics, 3G and 4G mobile communications, ambulance scheduling and artificial pancreas development. He holds 16 international patents covering rolling mill technology, telecommunications, mine planning and mineral exploration.

Since 2010, Goodwin is a member of NICTA's (National Information and Communications Technology Australia) Research Evaluation Committee. Previously he was an NICTA board member (2003–05) and a Federation Fellow of the Australian Research Council (2002–06).

(continued)

Rufus Oldenburger Medal (cont.)

Goodwin is the co-author of nine books, 218 international journal papers and 322 refereed international conference papers; and he has edited four books. His h-index is 33 (ISI) and 48 (Google Scholar). He has presented 60 keynote addresses at major international conferences.

He is a Fellow of IEEE, the International Federation of Automatic Control (IFAC), the Australian Academy of Science, the Australian Academy of Technological Sciences and Engineering, and the Royal Society, UK. He is also an Honorary Fellow of the Institution of Engineers, Australia; a member of the International Statistical Institute; and a foreign member of the Royal Swedish Academy of Sciences. He served as International Programme Committee chairman for the 1993 IFAC World Congress in Sydney and was a member of the IEEE Control Systems Society's (CSS) board of governors (1995–96).

Among Goodwin's honors are IEEE CSS's Hendrik W. Bode Lecture Prize (1999) and Control Systems Field Award (2010); IFAC's Harold Chestnut Textbook Prize (1984 and 2005) and Giorgio Quazza Medal (2008); a Best Paper Award (2002) from the *Asian Journal of Control*; the Nordic Process Control Award (2010) from the Nordic Process Control Working Group; and the Wook Hyun Kwon Education Award (2011) from the Asian Control Association.

Goodwin earned his three degrees at the University of New South Wales, Australia: a bachelor's degree in physics in 1964; a bachelor's degree in electrical engineering, with first-class honours and the University Medal, in 1966; and his Ph.D. in electrical engineering in 1970. He received an honorary doctorate from Lund University, Sweden, and from Technion-Israel Institute of Technology, Haifa, in 2003 and 2006, respectively.

Performance Test Codes Medal

PATRICK M. MCHALE

*Conferred at a Luncheon in Knoxville, Tennessee
October 2013*

THE PERFORMANCE TEST CODES MEDAL, established in 1981, is awarded to an individual or individuals who have made outstanding contributions to the development and promotion of ASME Performance Test Codes, including the Supplements on Instruments and Apparatus.

PATRICK M. MCHALE, P.E., vice president, McHale & Associates, Inc. (Redmond, Wash.), for significant contributions to the development of numerous test codes to improve the efficiency of electrical generation; and for serving ASME and the profession during the past several decades with exemplary dedication on performance test code committees and on the board.

Mr. McHale is a registered professional engineer with more than 50 years of management and engineering experience in performance testing, startup, plant betterment, operation and maintenance, and life extension of cogeneration, fossil- and nuclear-fueled, geothermal and hydroelectric generating stations, as well as U.S. Navy nuclear and marine power plants. He is an experienced power plant startup and testing manager, and manager of all architect engineer home office startup support activities.

He has ASME performance test code-level experience, testing plant components and overall plants since 1971. Testing efforts have included numerous simple and combined cycle plants, oil-fired and coal-fired units ranging from 15 MW to over 2,200 MW, a dual pressure geothermal station, several wood-fired cogeneration facilities and two landfill gas recovery power stations.

(continued)

Performance Test Codes Medal (cont.)

Currently McHale is vice president of McHale & Associates, Inc. (Redmond, Wash.), which provides performance testing, performance monitoring and engineering consulting services internationally. He served as president from 1995, when the company was formed, until 2008. Presently, McHale & Associates has more than 75 employees. McHale directed the development of a turnkey performance testing program, which includes client support of contractual performance guarantees during project contract negotiations, standard test plans, performance test models, on-site execution of performance testing, and test reports.



His prior experience includes Ebasco Services/ Raytheon Engineers & Constructors (1967–95), where he last held the position of general manager for plant performance testing (1990–95). Earlier, he was a nuclear quality control and qualified Navy nuclear test engineer (1962–67) at General Dynamics' Electric Boat Division (Groton, Conn.); and test engineer and field service engineer (1961–62) at Ingersoll Rand Company's Cameron Pump Division (Phillipsburg, N.J.).

McHale is a member of the ASME Board on Performance Test Codes (PTCs). He currently serves on two PTC committees: PTC 46–Overall Plant Performance and PTC 4.4–Gas Turbine Heat Recovery Steam Generators. Previously he served on PTC 23–Atmospheric Water Cooling Equipment and PTC 30–Air-Cooled Heat Exchangers.

He earned his bachelor's degree in marine engineering from the United States Merchant Marine Academy (Kings Point, N.Y.) in 1961. In 1985 he earned a master's degree in business administration from the University of Washington, Seattle. McHale is a registered professional engineer in Connecticut and Wyoming.

Pi Tau Sigma Gold Medal

RANDY H. EWOLDT

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE PI TAU SIGMA GOLD MEDAL was established in 1938 by Pi Tau Sigma in coordination with ASME to recognize outstanding achievements by a young engineering graduate in mechanical engineering within 10 years following receipt of the baccalaureate degree.

RANDY H. EWOLDT, Ph.D., assistant professor, University of Illinois at Urbana-Champaign, *for outstanding achievements in mechanical engineering within 10 years of graduation.*

Dr. Ewoldt is assistant professor of mechanical science and engineering at the University of Illinois at Urbana-Champaign. He joined Illinois in 2011, following a postdoctoral fellowship (2009–11) at the Institute for Mathematics and its Applications at the University of Minnesota, Minneapolis (with Dr. C.W. Macosko).

His research group studies fluid mechanics and rheology, with applications to energy, advanced manufacturing, and bioinspired design including soft robotics. The group is developing design methods for rheologically-complex materials and

(continued)

Pi Tau Sigma Gold Medal (cont.)



reverse engineering techniques for complex fluids and soft matter using macroscopic rheological measurements to infer molecular, nanoscale and microscale structure.

Earlier work experience includes positions at Boeing Company (Huntington Beach, Calif.) and Shive-Hattery Engineers and Architects (Moline, Ill.), and consulting work as a design engineer.

Ewoldt has published 22 articles in journals and conference proceedings, and has given nearly 30 invited lectures.

An ASME member, Ewoldt has served the Society as a journal reviewer. He has attended the International Mechanical Engineering Congress and Exposition, and International Design Engineering Technical

conferences.

Ewoldt is also a member of the American Physical Society; the American Society for Engineering Education; The Society of Rheology; Pi Tau Sigma, the International Mechanical Engineering Honor Society; and Tau Beta Pi, the Engineering Honor Society.

His honors include a National Science Foundation graduate research fellowship (2004–07); a Pride @ Boeing Award (2002); Iowa State's Robert C. Fellingner Prize in Thermal Science, recognition as the Top Graduate in the College of Engineering, and induction in the Cardinal Key Honor Society (2004); a Best Student Poster award at The Society of Rheology's Annual Conference (2005); and TA Instrument's Distinguished Young Rheologist Award (2013).

Ewoldt received his bachelor's degree in mechanical engineering from Iowa State University, Ames (research with Drs. M.G. Olsen and D.E. Chimenti) in 2004. He earned his master's degree and Ph.D. in mechanical engineering from the Massachusetts Institute of Technology (MIT), Cambridge (advised by Drs. G.H. McKinley and A.E. Hosoi) in 2006 and 2009, respectively. At MIT he was recognized for his theses with a Wunsch Foundation Award for Outstanding Thesis in Fluid Mechanics (2006) and a Luis de Florez Award for Outstanding Ingenuity and Creativity (2009).

James Harry Potter Gold Medal

S.A. KLEIN

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE JAMES HARRY POTTER GOLD MEDAL was established in 1980 in recognition of eminent achievement or distinguished service in the application of the science of thermodynamics in mechanical engineering.

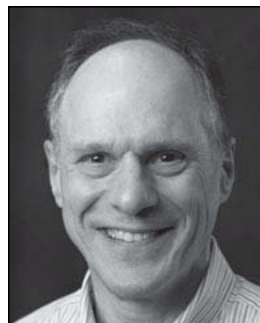
S.A. KLEIN, Ph.D., Bascom Oweneel professor of mechanical engineering, University of Wisconsin–Madison, *for eminent achievements in the development of a computer-aided analysis tool that has transformed thermodynamics education, supported research in complex systems across engineering disciplines and enabled efficient engineering product development.*

Dr. Klein joined the faculty at the University of Wisconsin–Madison in 1977. He is currently the Bascom Oweneel professor of mechanical engineering and the director of the Solar Energy Laboratory.

(continued)

James Harry Potter Gold Medal (cont.)

Much of his research effort has been devoted to the development of computer tools for analysis and design of thermal energy systems. Klein developed the F-Chart method and associated computer tools for sizing solar energy systems. He is the primary author of the TRNSYS (TRaNsient SYStem) simulation program that is widely used for solar energy system studies. He developed FEHT, a finite element heat transfer program. For the past 20 years Klein has focused on the development of EES, a general engineering equation solving program that has had a major impact on the teaching of energy-related courses at UW–Madison and elsewhere.



He is the author/co-author of more than 160 publications relating to energy systems; and the co-author (with Dr. Gregory F. Nellis) of recent books titled *Heat Transfer and Thermodynamics* (Cambridge University Press; 2009 and 2012, respectively) and *Mastering EES* (F-Chart Software, 2012).

An ASME Fellow, Klein is also a Fellow of the American Society of Heating, Refrigerating and Air-Conditioning Engineers; the American Solar Energy Society; and the International Building Performance Simulation Association.

His honors include the Charles G. Abbot Award from the American Section of the International Solar Energy Society (1989) and the Hoyt Clarke Hottel Award from the American Solar Energy Society (2013). He has received numerous award from UW–Madison including the Chancellor’s Award for Excellence in Teaching (1990); the College of Engineering’s Polygon Outstanding Teacher Award (1991 and 1992), Alumni Teaching Quality Award (1992), Benjamin Smith Reynolds Award for teaching excellence (1993) and Byron Bird Award for Excellence in a Research Publication (2006); and the department of mechanical engineering’s Pi Tau Sigma Outstanding Teacher Award (1991, 1992 and 2003).

Klein received his bachelor’s degree in chemical engineering from the University of Illinois at Chicago in 1972; and his master’s degree and Ph.D. in chemical engineering from UW–Madison in 1973 and 1976, respectively. He received a doctor honoris causa from the University of Liege, Belgium, in 2007.

Prime Movers Committee Award

**ARUN PURI
JOHN DIBIASE**

*Conferred at the ASME Power Conference,
Boston, July–August 2013*

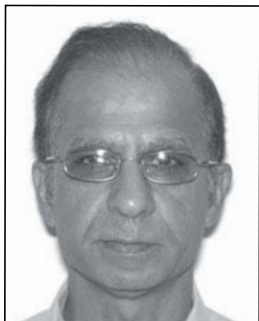
THE PRIME MOVERS COMMITTEE AWARD, established in 1954, recognizes outstanding contributions to the literature of thermal electric station practice or equipment which are available through public presentation and publication.

ARUN PURI, senior project manager, ESG-USA, LLC (Chattanooga, Tenn.); and JOHN DIBIASE, director, project management, Constellation Energy (Ontario, N.Y.), for the paper titled “Main Generator Life Cycle Management.”

Mr. Puri began his career at Combustion Engineering (Windsor, Conn.) in the 1970s, participating in the design, development and testing of the Advanced System

(continued)

Prime Movers Committee Award (cont.)



80 Reactor. This work was highlighted by patents awarded for design enhancements of the reactor internals. In 1983, at Nuclear Energy Services (Danbury, Conn.), he introduced the process for in situ ultrasonic examination and assessment of the generator retaining rings. This process mitigated the need for removal of the rings and provided an alternative to retaining rings replacement.

While working at Tennessee Valley Authority (TVA), Knoxville, in the 1990s, Puri facilitated the development of turbine-generator (T-G) assessment and upgrade processes critical to improving TVA's T-G fleet availability. Technologies such as generator digital wedge mapping, generator core assessment using a low voltage system, and turbine blade failure

assessment and upgrade using Blade Code significantly improved TVA's T-G fleet performance. He also established T-G rotor welding and generator rotor rewind programs at TVA's Power Service Shop that provided a cost-effective approach to fleet rehabilitation. In 1994, under the sponsorship of the U.S. Agency for International Development, Puri led a team of TVA and industry specialists conducting an assessment of the Chandrapura Thermal Power Station, which introduced assessment, rehabilitation and upgrade processes in India.

While at Constellation Energy (Ontario, N.Y.), Puri implemented assessment and rehabilitation strategies for the main generator at the Ginna Nuclear Power Plant. This successful effort supported deferment of the generator replacement or rewind for the near future.

Currently a senior project manager at ESG-USA, LLC (Chattanooga, Tenn.), Puri is engaged in the implementation of major projects and the deployment of flexible strategies to cope with beyond-design base external events (Fukushima projects).

Puri has published eight papers and holds five patents.

An ASME member, Puri is a charter member of the American Society for Non-destructive Testing and ASM International. He served as TVA's representative on the Edison Electric Institute (1991-99); was chairman of the Electric Power Research Institute's (EPRI) Blade Failure Assessment Subgroup (1989-95); was chairman of the Westinghouse BB73 Low-Pressure Turbine Users Group (1989-92); and was advisor to EPRI's Utility Retaining Ring Investigation Advisory Group (1989-91).

Puri received his bachelor's degree in mechanical engineering from Bangalore University (Karnataka, India) in 1969. He earned his master's degree in mechanical engineering at the Washington State University, Pullman, in 1971.



Mr. DiBiase has held various positions within Rochester Gas and Electric, N.Y., and Constellation Energy (Ontario, N.Y.) including manager of nuclear computer systems, electrical engineering design supervisor and director of turbine generator services. He is now director of project management at Constellation Energy.

DiBiase is currently engaged in scope, schedule and budget development for major capital projects at the Ginna Nuclear Power Plant including implementation of Fukushima and NFPA-805 (Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generator Plants) initiatives.

His career focus on power distribution and bulk power equipment has included assignments as

(continued)

Prime Movers Committee Award (cont.)

system engineer for the 125 VDC and 120 VAC power distribution systems; design engineer responsible for the specification, procurement and replacement of battery chargers, inverters, transformers and motors on the 480 V and 4160 V power distribution systems; design engineer responsible for load studies and analysis of the 120 V, 480 V, 4160 V, 34 kV and 115 kV distribution systems; and design and construction engineer for the replacement of a generator step-up transformer and standby diesel generators. As design and construction engineer for the Extended Power Uprate Project at the Ginna Nuclear Power Plant, DiBiase's scope included margin assessment of the electrical power distribution system; modification of the main generator, the generator step-up transformer and the station's protective relay scheme; and voltage regulator setpoint changes.

He is a member of IEEE.

DiBiase earned his bachelor's degree in electrical engineering and his master's degree in business administration from Rochester Institute of Technology, N.Y., in 1991 and 1995, respectively.

Dixy Lee Ray Award

ANÍBAL L. TABOAS

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

THE DIXY LEE RAY AWARD, established in 1998, recognizes significant achievements and contributions in the broad field of environmental protection. It honors not only those who have contributed to the enhancement of environmental engineering, but also those who have contributed to disciplines outside environmental engineering where accomplishments have indirectly impacted environmental protection.

ANÍBAL L. TABOAS, president and CEO, ASPIRA Inc. of Illinois, Chicago, *for advancing closure of the nuclear fuel cycle, and for internationally recognized leadership in regulatory engineering and sustainable environmental management.*

Mr. Taboas' early interest in space and time, and concepts such as energy and force – more broadly the analysis of the logic of nature – led him to develop instrumentation and control systems for advanced fossil and nuclear power reactors, which progressed into nuclear/mechanical engineering directly involved with the defense nuclear fuel cycle.

His work experience ranges from research and development at the University of Chicago and Argonne National Laboratory to a career at the U.S. Department of Energy (DOE) from which he retired, followed by consulting on strategic leadership, risk management and the defense fuel cycle.

His DOE assignments, from senior technical advisor in Defense Programs to Argonne Area Office manager (in the career Senior Executive Service), facilitated close relationships with intellectual leaders such as A. Alan Moghissi, Goetz Oertel and Rosita Lopez, as well as the late Dixy Lee Ray, Edward Teller, Margaret Mead, Ken Gablin and "Moose" Hardin-kindred spirits willing to tackle hard issues, all in the public good.

Taboas is known to focus on delivering desired outcomes, which facilitated timely controversial assignments such as radioactive airborne emissions (Three Mile



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Dixy Lee Ray Award (cont.)

Island), multimedia emissions trading (NAFTA), nuclear waste policy (congressional) and accident investigations (media); as well as major projects including the Advanced Photon Source (energy research), Pit Disassembly and Conversion Facility (fissile materials), Remediation of the Brookhaven Superfund Site (environmental), Continuous Wave Deuterium Demonstration (space defense) and External Regulation of DOE Nuclear Facilities (policy).

Among his significant contributions, Taboas has the vision and tenacity to establish a defensible technical basis for regulations governing the categorization, management and disposal of hazardous materials according to practicability and risk, rather than by origin. Subsequent statutory and regulatory acceptance has served as the solid foundation for numerous developments, such as the waste acceptance criteria for the Waste Isolation Pilot Plant.

Taboas has been involved in a wide range of voluntary activities including: distinguished advisor to Associated Universities for Research in Astronomy; the Boy Scouts of America (Eagle, Order of the Arrow); independent peer review (e.g., IAEA, National Science Foundation and Environmental Protection Agency); advising on educational leadership and diversity; technical publications (e.g., *The Decommissioning Handbook*); service on boards of directors (e.g., Center of Excellence for Hazardous Materials Management, Institute for Regulatory Science, ASPIRA Inc. of Illinois); and as trustee of Governors State University.

As part of his advocacy that diversity, education and inclusion strengthen national security, Taboas agreed to be president and CEO of ASPIRA Inc. of Illinois, headquartered in Chicago, in July 2012 — thereby undertaking the “turnaround” of a Hispanic nonprofit organization with a rich history of leadership development and education of highly underserved populations. ASPIRA also operates a charter school network in Chicago, which Taboas is aligning toward data-driven student-centered decision making, educational excellence, transparency and accountability.

Taboas is an ASME Fellow who served in various roles on the Environmental Engineering Division’s Environmental Communication and Executive committees. He also served on the Honors and Awards Committee and as chair of the International Conference on Environment Management series (e.g., in Belgium, U.K. and Japan). He received ASME’s Dedicated Service Award in 2010.

Taboas is a charter member of the Association of Energy Engineers (AEE) and received AEE’s Energy Engineer of the Year award in 1988.

His honors include the nuclear industry’s Broken Knuckle Award; the Secretary of Energy’s Gold Medal and Excellence in Hispanic Education Award; Vice President Gore’s Hammer Award; a Certificate of Recognition from the Secretary of Defense; and various Distinguished and Exceptional Service medals (including from the National Nuclear Security Agency), and recognitions from others including the University of Chicago.

Taboas earned a B.S. in physics at the University of Dayton, Ohio, in 1971; a M.S. in physics at Indiana State University, Terre Haute, in 1972; and a M.S. in mechanical/nuclear engineering from Northwestern University (Evanston, Ill.) in 1978. He was awarded a Ph.D. honoris causa by the Universidad Popular Autónoma del Estado de Puebla, Mexico, in 1995.

Charles Russ Richards Memorial Award

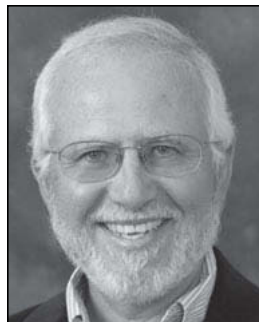
A. GALIP ULSOY

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE CHARLES RUSS RICHARDS MEMORIAL AWARD, established in 1944, was named in honor of a founder of Pi Tau Sigma. It is given to an engineering graduate who has demonstrated outstanding achievements in mechanical engineering for 20 years or more following graduation.

A. GALIP ULSOY, Ph.D., C.D. Mote Jr. distinguished university professor of mechanical engineering and William Clay Ford professor of manufacturing, University of Michigan, Ann Arbor, for *outstanding achievements in mechanical engineering for 20 years or more following graduation.*

Dr. Ulsoy is the C.D. Mote Jr. distinguished university professor of mechanical engineering and the William Clay Ford professor of manufacturing at the University of Michigan (UM), Ann Arbor. Since joining the faculty at UM in 1980, he has served in a number of positions including chair of the mechanical engineering department, founding director of the Ground Robotics Reliability Center and deputy director of the Engineering Research Center for Reconfigurable Manufacturing Systems. He also served as director of the National Science Foundation's (Arlington, Va.) Division of Civil and Mechanical Systems (2003–05).



Ulsoy has made research contributions to the mechanics of axially moving elastic systems (e.g., translating bands, rotating shafts) and to control system design (e.g., adaptive control, state derivative feedback, co-design of an artifact and its controller, time delay systems). He has also made research contributions to manufacturing systems (e.g., reconfigurable manufacturing, robotics, sawing, turning, milling, drilling, stamping), automotive systems (e.g., accessory drive belts, active suspensions, vehicle lateral control) and other engineering systems (e.g., disk drives, mineral processing).

His research has had significant impact in industry. He has been a principal investigator/co-investigator for research projects funded at more than \$90 million. He is co-inventor on three patents.

Ulsoy is co-author of two textbooks and a research monograph, and more than 300 articles; and his published work is highly cited.

An ASME Fellow, Ulsoy has served in numerous leadership roles including the editor of the *Journal of Dynamic Systems, Measurement and Control*, founding editor of the *Dynamic Systems and Control Magazine*, chair of the ASME Dynamic Systems and Control Division (DSCD), and general chair of the 2008 ASME Dynamic Systems and Control Conference and the 2000 American Control Conference. He received DSCD's Michael J. Rabins Leadership Award in 2002 and Henry M. Paynter Outstanding Investigator Award in 2004; the 2003 Rudolf Kalman Best Paper Award from the *Journal of Dynamic Systems, Measurement and Control*; and the Society's Rufus Oldenburger Medal in 2008.

Ulsoy represented ASME on the American Automatic Control Council (AACC), the U.S. national member organization of the International Federation of Automatic Control (IFAC). He served on the AACC board of directors and as council president.

He is a member of the National Academy of Engineering; a Fellow of the Society of Manufacturing Engineers (SME) and IFAC; a senior member of IEEE; and a member of the American Society for Engineering Education, the Research Club of UM and Sigma Xi, the Scientific Research Society.

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Charles Russ Richards Memorial Award (cont.)

In 2012 Ulsoy received the Presidential Special Award from Turkey's Scientific and Technological Research Council (TÜBİTAK). His other honors include SME's Outstanding Young Manufacturing Engineer Award (1986) and Albert M. Sargent Progress Award (2008); AACC's O. Hugo Schuck Best Paper Award (1993); and UM's College of Engineering Service Excellence Award (1997) and Stephen S. Attwood Award (2011).

Ulsoy received his bachelor's degree in engineering from Swarthmore College, Pennsylvania, in 1973. He earned his master's degree in mechanical engineering from Cornell University (Ithaca, N.Y.) in 1975; and his Ph.D. in mechanical engineering from the University of California at Berkeley in 1979.

Ralph Coats Roe Medal

G. WAYNE CLOUGH

*Conferral at the Honors Assembly,
2013 International Mechanical Engineering Congress and Exposition*

THE RALPH COATS ROE MEDAL, established in 1972, recognizes an outstanding contribution toward a better public understanding and appreciation of the engineer's worth to contemporary society.

G. WAYNE CLOUGH, P.E., Ph.D., secretary, Smithsonian Institution, Washington, D.C., *for numerous contributions to both higher education policy and U.S. technology policy; and for demonstrating, through distinguished leadership of the Smithsonian Institution, that an accomplished engineer can be the guardian and primary advocate for preserving and promoting our national cultural heritage.*



Dr. Clough is the secretary of the Smithsonian Institution in Washington, D.C. The Smithsonian, the world's largest museum and research complex, includes 19 museums and galleries, 20 libraries, the National Zoo and numerous research centers. The Smithsonian has activities in nearly 100 countries and reaches Americans in all 50 states through traveling exhibitions, media and the Internet.

Since becoming secretary in July 2008, Clough has taken the Smithsonian in new directions. A comprehensive strategic plan—the first of its kind for the Smithsonian—provides a new cross-disciplinary framework for goals, enterprises and operations, with a focus on four grand challenges: unlocking the mysteries of the universe, understanding and sustaining a biodiverse planet, valuing world cultures and understanding the American experience.

Clough is responsible for an annual budget of \$1 billion, 6,400 employees and 6,200 volunteers. The Smithsonian receives about 65 percent of its funding from the federal government while generating additional funding from private contributions and business revenues. Since his arrival the Smithsonian has raised more than \$766.5 million in philanthropic gifts through January 2013, and more than 400 exhibitions have opened across the institution.

Clough has emphasized the development of collaborations with universities and other organizations including the Global Tiger Initiative with the World Bank, accessioning of the Space Shuttle Discovery with NASA and the Haiti Cultural Recovery

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Ralph Coats Roe Medal (cont.)

Project with the State Department. In 2012, the Smithsonian opened the Smithsonian-Mason School of Conservation in Front Royal, Va., in partnership with George Mason University; as part of a degree program, students conduct research on endangered species with Smithsonian scientists.

Before his appointment to the Smithsonian, Clough was president of the Georgia Institute of Technology, Atlanta (1994–2008). In 2012, Georgia Tech opened the G. Wayne Clough Undergraduate Learning Commons Building to honor his commitment to undergraduate students. Earlier, he was a member of the faculty at Duke University (Durham, N.C.) and Stanford University, California, before joining Virginia Polytechnic Institute and State University, Blacksburg. He was head of the department of civil engineering and dean of the College of Engineering at Virginia Tech before serving as provost and vice president for academic affairs at the University of Washington, Seattle.

Clough has served as chair of the National Academy of Engineering/National Research Council Committee on New Orleans Regional Hurricane Protection Reconstruction, a six-year term as member of the National Science Board, and seven years as a member of President's Council of Advisors on Science and Technology. He currently serves on the American Academy of Arts and Sciences' (AAAS) Commission on the Future of Humanities and Social Sciences.

He has published more than 130 papers and reports. His most recent publication is *Increasing Scientific Literacy: A Shared Responsibility*, a 2011 monograph on the nation's urgent need to improve the scientific literacy of its citizens and the key role the Smithsonian can play toward that goal.

Clough is a member of the National Academy of Engineering (NAE) and AAAS, an honorary member of the American Society of Civil Engineers (ASCE), a member of the American Society for Engineering Education and the American Association of Engineering Societies, and a national honor member in Chi Epsilon, the Civil Engineering Honor Society.

His other recognitions include the Foreign Policy Association Medal (2011); the American-Russian Cultural Cooperation Foundation Award (2011); induction into the Technology Hall of Fame of Georgia (2009); Georgia Tech's Joseph M. Pettit Alumni Distinguished Service Award (2009); NAE's Arthur M. Bueche Award (2008); and nine ASCE awards including the OPAL Lifetime Achievement Award (2004) and the Presidents' Award (2010).

Clough received his bachelor's and master's degrees in civil engineering from Georgia Tech in 1964 and 1965, respectively. He earned his Ph.D. in civil engineering from the University of California, Berkeley, in 1969. Clough has received nine honorary doctorates from universities in the U.S. and abroad. He is a registered professional engineer in California.

Safety Codes and Standards Medal

ANDREW P. JUHASZ

*Conferred at the A17 Standards Committee Meeting,
Boston, May 2013*

THE SAFETY CODES AND STANDARDS MEDAL was established in 1986 to recognize contributions to the enhancement of public safety through the development and promotion of ASME safety codes and standards or through ASME safety accreditation activity.

ANDREW P. JUHASZ, manager of codes and standards, KONE Inc. (Moline, Ill.), for more than 35 years of dedicated service in the development and promotion of safety codes and standards for elevators and related equipment; for technical expertise and leadership within ASME's A17 community including 11 years as chair of the Electrical Committee; and for continuing to represent the elevator industry's interests within ASME as well as other organizations.



Mr. Juhasz is manager of codes and standards at KONE Inc. (Moline, Ill.). His responsibilities include coordinating the activities of the firm's diverse code committee members; and acting as a central focus for the dissemination of code related information and for code interpretation, and as company contact with code writing and enforcement organizations.

Prior to assuming his current position in 1998, Juhasz was a senior electrical engineer in research and development at Montgomery Elevator Co./KONE Inc., working on elevator motor drive development and control system servo analysis. Other major responsibilities included leading task groups analyzing printed circuit board failure, testing procedures and manufacturing processes; and he participated in

safety design reviews of new and older elevators and escalator control systems using failure mode effects analysis.

Earlier, he was with Houghton Elevator Company/Schindler Elevator Corporation (1971–89) and Reliance Electric Company (1969–71) in Cleveland. At Houghton/Schindler, he directed the evolution of motion controls into static power drives including control system servo design and analysis, and he provided administrative and technical support for new product design and application. At Reliance, he was in the Drives and Systems Division, with primary responsibilities in the design of machine tool industry drives and systems as well as control systems for the paper industry.

Juhasz is a member of ASME's A17 Standards Committee for Elevators and Escalators (1986–90, 2000–present); and the A17 Solid State Committee/Electrical Committee (since 1978), A17 International Standards Committee (since 1999) and A17 New Technology Committee (since 2003). He served as chair of the A17 Electrical Committee (1999–2012) and the A17 Ad Hoc Committee on Machine Room-Less Elevators (1999–2005), and has been a member and chair of several other A17 committees and task groups. He drafted revisions to A17.1 Parts VIII and IX—Electrical and Control Requirements; and he contributed to several editions of the A17.1 Handbook—Safety Codes for Elevators and Escalators, including the current edition.

He serves on the National Elevator Industry, Inc.'s Central Code Committee (1988–90, 1995–present). He is a member of National Fire Protection Association (NFPA) and an associate member of the International Association of Electrical Inspectors.

Among his code related contributions, Juhasz participated in the re-write of Article 620 (electrical design and installation requirements for elevators, escalators

(continued)

Safety Codes and Standards Medal (cont.)

and related equipment) of NFPA 70—The National Electrical Code, 1996; served as member of NFPA 70 Panel 12; and contributed to IEEE Standard 241-1990—IEEE Recommended Practice for Electric Power Systems in Commercial Buildings. He served as a member of the state of California’s Advisory Committee for Elevators and Escalators, and as chair of the city of Chicago’s Elevator Advisory Committee.

Juhasz is also a member of the Tau Beta Pi, the Engineering Honor Society; and IEEE-Eta Kappa Nu.

He earned his bachelor’s degree in electrical engineering from the University of Toledo, Ohio, in 1969.

R. Tom Sawyer Award

ANTHONY J. STRAZISAR

*Conferred at the ASME Turbo Expo 2013,
San Antonio, June 2013*

THE R. TOM SAWYER AWARD, established in 1972, is bestowed upon an individual who has made important contributions toward the advancement of the gas turbine industry, as well as the ASME International Gas Turbine Institute (IGTI), over a substantial period of time.

ANTHONY J. STRAZISAR, Ph.D., *for sustained outstanding contributions in experimental turbomachinery fluid dynamics that have had a major impact on gas turbine technology; and for dedicated service and lasting contributions to IGTI.*

Dr. Strazisar retired from the NASA Glenn Research Center, Cleveland, in 2012 after 36 years of service. He was an active researcher in the area of gas turbine compressor aerodynamics for 27 years and collaborated on 40 publications in areas such as experimental validation of computational fluid dynamics methods, compressor stability and the impact of compressor blade geometry on performance. In 2003 he was appointed chief scientist of the Glenn Research Center, NASA’s lead center for air breathing propulsion research. Between 2008 and 2012, Strazisar also served in several project management roles for the Aeronautics Research Mission Directorate at NASA Headquarters in Washington, D.C., including three years as the senior technical advisor for aeronautics.



His renowned contributions include pioneering work on laser Doppler anemometry measurements in turbomachinery; and innovative work on the effect of roughness on transonic fan performance, the study of compressor stall and its management, and the experimental investigation of fluid injection and stall delay. He has given invited lectures at various venues throughout the years.

An ASME Fellow, Strazisar has served ASME and IGTI in several leadership roles including chair of the IGTI Turbomachinery Committee, member on the IGTI board of directors and as ASME vice president for IGTI. He currently represents the Institutes Sector on the ASME Nominating Committee. Previously he was an associate editor of the *Journal of Turbomachinery*.

Strazisar is a member of the editorial advisory board for the American Institute of Aeronautics and Astronautics’ (AIAA) *Journal of Propulsion and Power*.

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R. Tom Sawyer Award (cont.)

His honors include NASA's Exceptional Engineering Achievement Medal (1988), AIAA's Air Breathing Propulsion Award (2006) as well as Best Paper awards from IGTI, NASA and AIAA.

Strazisar earned his bachelor's degree, master's degree and Ph.D. in mechanical engineering from Case Western Reserve University, Cleveland, in 1971, 1973 and 1975, respectively.

Milton C. Shaw Manufacturing Research Medal

I. S. JAWAHIR

*Conferred at the Manufacturing Science and Engineering Conference,
Madison, Wis., June 2013*

THE MILTON C. SHAW MANUFACTURING RESEARCH MEDAL, established in 2009, recognizes significant fundamental contributions to the science and technology of manufacturing processes.

I. S. JAWAHIR, Ph.D., professor of mechanical engineering and James F. Hardy-mon chair in manufacturing systems, University of Kentucky, Lexington, *for significant contributions to the advancement of manufacturing science and engineering through the development of predictive performance models and optimization techniques for machining operations such as turning, milling and drilling; and through the introduction of environmentally benign, sustainable dry, near-dry and cryogenic methodologies.*



Dr. Jawahir is an internationally recognized researcher in predictive modeling and optimization of machining operations. He is currently a professor of mechanical engineering, James F. Hardy-mon endowed chair in manufacturing systems and the director of the Institute for Sustainable Manufacturing at the University of Kentucky (UK), Lexington.

His current research interests are in modeling and optimization of sustainable manufacturing, focusing on developing predictive performance models for products, processes and systems. Jawahir has directed the research of 33 Ph.D. candidates and more than 70 master's students. He has also served as external examiner for 42 Ph.D. theses and dissertations worldwide.

He has received significant research funding from U.S. federal agencies including the National Science Foundation, the National Institute for Standards and Technology, and the Department of Defense; and from major manufacturing companies such as General Motors, Ford, General Electric, Toyota, Sandvik Coromant, Kennametal and Semicon Associates.

Prior to joining UK in 1990, Jawahir spent a year at Carboloy, Inc. (Warren, Mich.) as manager for carbide product design. Earlier, he held a faculty position at the University of Wollongong, Australia, following receipt of his Ph.D. from the University of New South Wales, Sydney, in 1986.

Jawahir has produced over 280 publications including 120 journal papers and four U.S. patents. He delivered 36 keynote papers at international conferences and more than 160 invited presentations in 28 countries. He is editor-in-chief of the *International Journal of Sustainable Manufacturing* and technical editor of the *Journal of Machining Science and Technology*.

(continued)

Milton C. Shaw Manufacturing Research Medal (cont.)

An ASME Fellow, Jawahir has served as a volunteer in various capacities during the last 12 years. Since 2001 he has been a member of the Board on Research and Technology Development (BRTD), and recently served as a member of the Executive Committee and as vice chair (2008–11). He was founding chair of the BRTD's Research Committee on Sustainable Products and Processes (2005–11) and technical program coordinator for the BRTD at the International Mechanical Engineering Congress and Exposition (2004–12). He also served on the ASME Nominating Committee (2004–06). Other roles include symposium/session organizer, symposium co-chair and committee member.

Jawahir is also a Fellow of CIRP–The International Academy for Production Engineering and the Society of Manufacturing Engineers. He served as chairman of CIRP's Collaborative Working Group on Surface Integrity and Functional Performance of Components (2007–11). He founded the CIRP conference series on Modeling of Machining Operations in 1998; the series continues, with the 14th conference held in Turin, Italy, in June 2013.

Ben C. Sparks Medal

**ROBERT WARRINGTON
SCOTT G. DANIELSON
ALLAN T. KIRKPATRICK
WALTER W. LAITY**

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE BEN C. SPARKS MEDAL, established in 1990, recognizes eminent service by an individual or collaborative team in promoting innovative, authentic, practice-based, engineering design/build experiences in undergraduate mechanical engineering or mechanical engineering technology education.

ROBERT WARRINGTON, Ph.D., director, Institute for Leadership and Innovation, Michigan Technological University, Houghton; SCOTT G. DANIELSON, P.E., Ph.D., associate dean, Arizona State University, Mesa; ALLAN T. KIRKPATRICK, P.E., Ph.D., professor of mechanical engineering, Colorado State University, Fort Collins; and WALTER W. LAITY, P.E., Ph.D., *for outstanding leadership and service on the Vision 2030 project, which has reshaped the strategy of ASME Education and sparked a move toward a more flexible, creative, industry-practice-oriented mechanical engineering; and accented the inherent value of mechanical engineering technology education in the broad-spectrum mechanical engineering field.*

Dr. Warrington joined Michigan Technological University, Houghton, in 1996 as dean of engineering and served in that capacity until 2007. He is currently the director of the Institute for Leadership and Innovation, which houses the highly interdisciplinary and innovative Enterprise program, the High School Enterprise program and the Pavlis Institute for Global Technological Leadership.

Among his prior experience, Warrington served in the U.S. Army for two years and on the faculty at Montana State University (MSU), Bozeman, for eight years. In 1983 he became the head of the mechanical and industrial engineering department at Louisiana Tech University, Ruston, and was the founder and first director of the Institute for Micromanufacturing (1991–96).

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Ben C. Sparks Medal (cont.)



His research interests include microelectromechanical systems (particularly micro heat transfer and fluid flow), micromanufacturing, energy scavenging at the microscale, and micromechanical machining processes. He has received 49 research grants from foundations, government and industry.

Warrington is chair of the Education Committee for the Pan American Federation of Engineering Societies (UPADI). He is the founder of the Commercialization of Microsystems Conference and a past founding president of the Micro and Nanotechnology Commercialization Education Foundation (MANCEF); he currently serves on the executive board for MANCEF. He was an associate director for the Center for Wireless Integrated Microsystems, a National Science

Foundation Engineering Research Center (2000–10).

Warrington has authored/co-authored more than 150 technical publications, and has given numerous presentations including 35 invited talks.

An ASME Fellow, Warrington is chair of the Vision 2030 Task Force: Creating the Future of Mechanical Engineering Education. He has served the Society in numerous capacities ranging from Student Section advisor at MSU (1978–83) and chair of the Advanced Energy Systems Division (1994–95) to member on the ASME Board on Engineering Education (1992–93, 1999–2003) and vice president of education in the ASME Centers Sector (2006–09). He is currently a member of the Heat Transfer Division's K-8 Committee on Theory and Fundamental Research, member at large on the ASME Council on Education, member of the Committee on Engineering Accreditation and member of the board of directors of the ASME Nanotechnology Institute. He was an associate editor (now emeritus) for the ASME/IEEE *Journal of Microelectromechanical Systems*.

Warrington is a Fellow of the American Association for the Advancement of Science; and a member of the American Society for Engineering Education, UPADI and ABET.

His honors include a Sigma Xi Outstanding Research Award (1988) from Louisiana Tech and induction into the Pan American Academy of Engineering (2011).

Warrington received his bachelor's degree in aerospace engineering from Virginia Polytechnic Institute and State University, Blacksburg, in 1968. He earned his master's degree in mechanical engineering from the University of Texas at El Paso in 1971, and his Ph.D. in mechanical engineering from MSU in 1975.



Currently an associate dean at Arizona State University (ASU), Mesa, Dr. Danielson is a registered professional engineer with broad-based experience encompassing both industry and academia. Past industrial experience includes design of machinery, machine installation, engineering management and plant start-up. Academic experience includes serving as department chair at North Dakota State University (NDSU), Fargo, and ASU; and developing new academic programs, obtaining external grants and contracts, publishing and teaching. Danielson has been with ASU since 1999.

Research interests have included effective teaching, engineering education, mechanics education, engineering databases, engineering uses of geographic information systems, and fluid dynamics.

(continued)

Ben C. Sparks Medal (cont.)

Danielson's service to the profession has included leadership roles in four national professional organizations: ASME, ABET, the Society of Manufacturing Engineers and the American Society for Engineering Education (ASEE).

Within ASME, the Vision 2030 project and ABET-related activities have been major areas of endeavor. He currently serves on the ASME Vision 2030 Task Force, charged with updating the body of knowledge for both mechanical engineering and mechanical engineering technology (MET). He serves as co-editor, along with Dr. Allan T. Kirkpatrick (professor of mechanical engineering at Colorado State University), of the group's written materials. He also serves on the MET Leadership Committee (previously MET Department Heads Committee) and Committee for Engineering Technology Accreditation. Among current ABET activities representing ASME, Danielson serves as an elected member of the Engineering Technology Accreditation Commission's Executive Committee (2013–16). He received ASME's Ben C. Sparks Medal in 2009.

His honors include an ASU College of Science and Technology's Faculty Excellence in Service Award (2006); Best Presentation (2003) and Best Paper (1999) awards from ASEE's Manufacturing Division and Mechanics Division, respectively; NDSU's College of Engineering and Architecture Teacher of the Year Award (1995–96); selection by NDSU students as Mortar Board Preferred Professor (1992); and the University of Wyoming's Honor Book Award for outstanding senior in the mechanical engineering department (1976).

Danielson earned his bachelor's and master's degrees in mechanical engineering from the University of Wyoming, Laramie, in 1976 and 1977, respectively. He earned his Ph.D. in engineering (mechanical engineering concentration) from NDSU in 1990. He is a registered professional engineering in Virginia.

Dr. Kirkpatrick has been a faculty member in the mechanical engineering department at Colorado State University (CSU), Fort Collins, since 1980. Currently a professor of mechanical engineering, he served as department head for 10 years and as the accreditation coordinator for the CSU College of Engineering for five years.

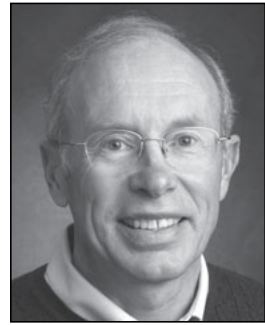
His research and teaching interests are in the applied thermal sciences (fluid jets, internal combustion engines) and engineering education (cultural foundations of learning) areas. He has advised more than 40 graduate students, and is a program evaluator for ABET. He has published two books, and more than 100 conference papers and journal articles.

An ASME Fellow, Kirkpatrick is presently a member of the ASME Council on Education. He is co-editor, along with Dr. Scott G. Danielson (associate dean at Arizona State University), on the ASME Vision 2030 Task Force on Mechanical Engineering Education. He has been active in the Society's Solar Energy and Internal Combustion Engine (ICE) divisions, and was associate editor of the *Journal of Solar Energy Engineering* (1995–2001). He received Best Paper awards from the Solar Energy and ICE divisions in 2001 and 2003, respectively.

Kirkpatrick is a member of the American Society for Engineering Education and the American Institute of Aeronautics and Astronautics.

His honors include CSU's Pennock Distinguished Service Award (2000) and College of Engineering Abell Economic Development Award (2010); and an Engineering Classics Award for Exemplary Online Resources from the MERLOT (Multimedia Educational Resource for Learning and Online Technology) Society (2004).

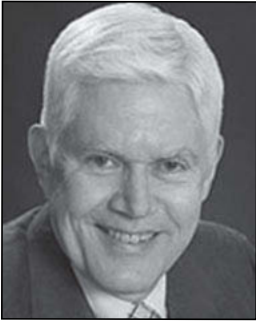
Kirkpatrick earned his bachelor's degree in mechanical engineering at the Massachusetts Institute of Technology (MIT), Cambridge, in 1972; his master's degree in



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Ben C. Sparks Medal (cont.)

applied science at the College of William and Mary (Williamsburg, Va.) in 1974; and his Ph.D. in mechanical engineering at MIT in 1981. He is a registered professional engineer in Colorado.



Dr. Laity (1940–2013) attended the University of Washington, Seattle, on a Navy ROTC scholarship and graduated in 1962 with a bachelor's degree in mechanical engineering. He subsequently served on active duty from 1962 to 1967 with the Naval Nuclear Propulsion Program, working primarily in Washington D.C. Following active duty, Laity attended graduate school at Oregon State University (OSU), Corvallis, where he earned his master's degree and Ph.D. in mechanical engineering in 1969 and 1977, respectively. He then moved to Richland, Wash., to commence his career as a research engineer and engineering manager at Pacific Northwest National Laboratory (PNNL).

At PNNL, Laity had major responsibilities in environmental management, materials, and chemical sciences. He served in a number of positions including manager, Tritium Target Qualification Project; manager, Nuclear Safety and Technology Product Line; and research and development liaison, Capability Replacement Laboratory. Groups and centers under Laity's management developed technologies that received R&D 100 awards from *R&D Magazine*. He retired from PNNL in 2008.

Laity was an active volunteer leader with ASME for nearly 20 years, including serving as vice president for Engineering Education (2003–06). He represented ASME on the Engineering Technology Accreditation Commission and board of directors for ABET, and served on engineering advisory boards for OSU and Walla Walla College (College Place, Wash.). Under his leadership as chair of the ASME Board on Education, through the Mechanical Engineering Education Body of Knowledge Task Force, the foundation was laid for the current ASME Board on Education's Vision 2030, Mechanical Engineering Education Project. Laity received an ASME Dedicated Service Award in 2008.

Among his honors, Laity was inducted into OSU's Academy of Distinguished Engineers in 1998 and was named Tri-Cities Engineer of the Year (Kennewick, Pasco and Richland, Wash.) in 2001. He was a registered professional engineer in Oregon.

Ruth and Joel Spira Outstanding Design Educator Award

DOUGLASS J. WILDE

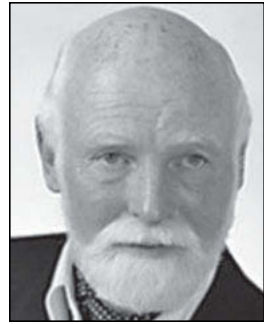
*Conferred at the International Design Engineering Technical Conferences,
Portland, Ore., August 2013*

THE RUTH AND JOEL SPIRA OUTSTANDING DESIGN EDUCATOR AWARD was established as a division award in 1998. The award was elevated to a Society award in 2001 to recognize a person who exemplifies the best in furthering engineering design education through vision, interactions with students and industry, scholarship and impact on the next generation of engineers, and a person whose action serves as a role model for other educators to emulate.

DOUGLASS J. WILDE, Ph.D., professor emeritus of mechanical engineering and, by courtesy, chemical engineering, Stanford University, California, for pioneering educational contributions in design optimization, computational geometry, and the application of personality theory to design team formation and organization through numerous books and the mentoring of several generations of influential academics.

After seven years of manufacturing and marine engineering experience mixed with graduate education, Dr. Wilde entered academia with short appointments in France, Texas and Connecticut before joining the chemical engineering department at Stanford University, California, in 1963.

At Stanford, he developed a new course in optimization theory based on *Foundations of Optimization* (Prentice-Hall, 1967), which he co-authored with Dr. Charles S. Beightler. After a decade, Wilde directed optimization toward design problems, more nonlinear than those in manufacturing but with special monotonic structures that could find critical constraints without wasteful algorithmic searching. This is when he moved to the mechanical engineering design group and, with Dr. Panos Y. Papalambros, wrote *Principles of Optimal Design: Modeling and Computation* (Cambridge University Press, 1988; second edition, 2000), which is still in wide use.



Since 1991, Wilde is professor emeritus of mechanical and, by courtesy, chemical engineering at Stanford University. After his formal retirement from teaching, he developed a novel, indeed radical, application of personality theory to design team formation and organization. The practice of this, summarized in *Teamology: The Construction and Organization of Effective Teams* (Springer, 2009), and the associated theory, later expanded in *Jung's Personality Theory Quantified* (Springer, 2011), has significantly improved the performance of Stanford teams, both at the graduate level in the mechanical engineering department focused on product design, and at the sophomore general education level in an annual postretirement seminar devoted to team behavior and personal development. His examination of the underlying personality theory accidentally turned up two major and two minor theoretical errors that effectively set back the basic theory of the famous psychologist Carl Jung. *Teamology's* success may indeed be due to its avoidance of these errors, exposed in the 2011 book. Wilde is currently preparing a third book, a manual with much simpler, although rigorous, post-Jungian team construction techniques and organization approaches, which is intended for more general team-based enterprises.

An ASME member, Wilde participated as an author, reviewer, and panelist in ASME conferences for more than three decades. He received the Society's Design Automation Award (1988) and Design Automation Merit Award (2009).

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Ruth and Joel Spira Outstanding Design Educator Award (cont.)

His honors include the Lanchester Prize (1967) from the Operations Research Society of America and H.B. Maynard Book of the Year Award (1967) from the American Institute of Industrial Engineers, both with Dr. Beightler.

Wilde earned three degrees in chemical engineering; his bachelor's from the Carnegie Institute of Technology, Pittsburgh, in 1948; his master's from the University of Washington, Seattle, in 1956; and his Ph.D. from the University of California, Berkeley, in 1960.

Spirit of St. Louis Medal

DAVID A. PETERS

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE SPIRIT OF ST. LOUIS MEDAL was established in 1929 by Philip D. Ball, ASME members and citizens of St. Louis. It is awarded annually for meritorious service in the advancement of aeronautics and astronautics. Contributions from Northrop Grumman have been made to supplement the Medal endowment.

DAVID A. PETERS, P.E., Ph.D., McDonnell Douglas professor of engineering, Washington University, St. Louis, *for outstanding foundational contributions to the development of accurate and tractable models that underlie the design and safety of helicopters, and the computational implementation of these algorithms in flight simulators used worldwide; and for fundamental contributions to modern helicopter design.*



Dr. Peters is the McDonnell Douglas professor of engineering at Washington University (WU), St. Louis, where he served as chair of mechanical engineering for 13 years.

Peters' career experience includes McDonnell Douglas Astronautics Corporation, St. Louis, where he performed the structural dynamics for the Skylab Space Station, including deployment of the telescope mount and docking with Apollo. Later, for the U.S. Army Research and Development Laboratory (Moffett Field, Calif.), he engaged in fundamental research on periodic-coefficient systems and on flag-lag stability; he also began a lifetime interest in unsteady aerodynamics, particularly in models of rotorcraft aerodynamics that are efficient enough to operate in

real-time flight simulators and control-system observers.

At the Georgia Institute of Technology, Atlanta, Peters was the founding director of the NASA Space Grant Consortium and still serves as the associate director of the Georgia Tech Center of Excellence for Rotorcraft Technology.

Peters is the author/co-author of more than 300 publications. He has served as editor-in-chief of the *Journal of the American Helicopter Society* (AHS) and is currently on the board of directors of the publisher, AHS International. He also serves on the National Academies Panel on Mechanical Science and Engineering.

An ASME Fellow, Peters was ASME Student Section advisor at WU (1975–80) and served on the St. Louis Section Executive Committee (1979–82). He received the Society's Pi Tau Sigma Gold Medal in 1978.

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Spirit of St. Louis Medal (cont.)

Peters is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA), AHS International and the American Academy of Mechanics; and a member of the American Society for Engineering Education. He is also a member of the National and the Missouri Society of Professional Engineers (MSPE) as well as the St. Louis chapter.

Among his honors, Peters received NASA's Scientific Contribution and Technology Utilization awards (1975 and 1976); was recognized as School of Engineering Professor of the Year (1980) and received a WU Distinguished Faculty Award (2006); was honored as Outstanding Engineering Educator (1984 and 2012) by MSPE; and received AHS International's Alexander A. Nikolsky Honorary Lectureship (2008) and AIAA's Reed Aeronautics Award (2011).

Peters earned his bachelor's and master's degrees in applied mechanics from Washington University 1969 and 1970, respectively. He earned his Ph.D. in aeronautics and astronautics from Stanford University, California, in 1974. He is a registered professional engineer in Missouri and Georgia.

Student Section Advisor Award

RICHARD A. MERZ

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE STUDENT SECTION ADVISOR AWARD, established in 1990 as the Faculty Advisor Award and renamed in 2000, is presented to an ASME member who is a current or former Student Section advisor whose leadership and service qualities have contributed, for at least three years, to the program and operations of a Student Section of the Society. The endowment for the award was provided by the Old Guard Committee.

RICHARD A. MERZ, P.E., Ph.D., associate professor of mechanical engineering, Lafayette College (Easton, Pa.), *for more than three decades of service advising Lafayette College's ASME Student Section, inspiring students through design projects and competitions, enriching education beyond the classroom and instilling a thirst for lifelong learning, fostering joint events with ASME's Anthracite-Lehigh Valley Section, and promoting continued membership and active participation in the Society.*

Dr. Merz joined the faculty at Lafayette College (Easton, Pa.) in 1981 and is an associate professor of mechanical engineering. He teaches fluid mechanics, heat transfer, thermodynamics, compressible flow, instrumentation and senior capstone design projects. He has served as head of the department.

Previously he was a member of the technical staff at the General Motors Research Laboratories (Warren, Mich.) and a member of the faculty at the Air Force Institute of Technology (Wright Patterson Air Force Base, Ohio). He served in the U.S. Air Force, rising to the rank of captain.

An ASME Fellow, Merz has been a member of the Society since 1969. He has held close to 40 positions at the local, regional/district and national levels including serving on the Board of Directors for Codes and Standard for 12 years



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Student Section Advisor Award (cont.)

(1997–2009); as vice president of Region III for three years (1995–98); as advisor to the Lafayette College Student Section for 32 years (1982–present); and in various leadership roles in the Anthracite-Lehigh Valley Section for 25 years (1989–present).

As ASME Student Section advisor at Lafayette, Merz constantly promotes the rewards of service to the Society and leads by example. He has stimulated student interest in engineering projects and lifelong learning, and promotes attendance at Student Professional Development Conferences and Student Leadership Seminars. He consistently fosters interaction between the Student Section and the Anthracite-Lehigh Valley Section, and has included neighboring Lehigh University in a number of events. Merz works with Lafayette students to create an annual calendar of events, including field trips, hands-on projects and technical sessions. Some of the facility tours arranged through his professional network have led to students obtaining internships/full-time employment. Merz received a Dedicated Service Award in 2000 and the Coleman-Touma District A Leadership Award in 2013.

He is also a member of the American Institute of Aeronautics and Astronautics; the American Society for Engineering Education; Tau Beta Pi, the Engineering Honor Society; and Pi Tau Sigma, the International Mechanical Engineering Honor Society.

Merz earned three degrees in mechanical engineering at Rutgers, The State University of New Jersey, Piscataway: his bachelor's in 1970, his master's in 1972 and his Ph.D. in 1975. He is a registered professional engineer in Pennsylvania, New Jersey and Ohio.

J. Hall Taylor Medal

DAVID L. BERGER

*Conferral at the Boiler and Pressure Vessel Committee Meeting on Power Boilers,
San Diego, February 2014*

THE J. HALL TAYLOR MEDAL was established in 1965 by the ASME Codes and Standards Board as a gift from Taylor Forge and Pipe Works to commemorate the pioneering work of J. Hall Taylor in the standardization of industrial products and safety codes for their usage. It is awarded for distinguished service or eminent achievement in the codes and standards area pertaining to the broad fields of piping and pressure vessels sponsored by ASME.

DAVID L. BERGER, senior staff engineer/scientist, PPL Generation, LLC (Allentown, Pa.), for extraordinary leadership and professionalism in consensus building and global recognition of ASME codes and standards for pressure equipment; and for dedication to the integrity of the ASME codes and standards development process.

Since graduating from Lehigh University (Bethlehem, Pa.) in 1978 with a bachelor's degree in mechanical engineering, Mr. Berger's career with PPL Generation, LLC (Allentown, Pa.) has focused on process safety in fossil power plants. His primary responsibility is to manage inspection of pressure equipment: boilers, pressure vessels and piping.

Early in his career Berger chose a path of managing PPL's ASME Quality Control System. During his tenure in that role, PPL obtained the Society's S and U certificates of Authorization, permitting the utility to engage in design and construction of power boilers and pressure vessels, respectively; and the National Board of Boiler and Pressure Vessel Inspectors' R Certificate to cover repair and alteration of licensed pressure equipment. During this period, Berger also developed nondestructive examination (NDE) procedures and acted as the main liaison with contrac-

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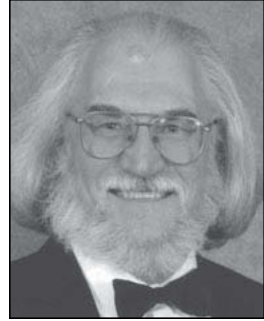
J. Hall Taylor Medal (cont.)

tors performing NDE services in PPL's plants. In the course of performing inspections of PPL-purchased equipment in vendors' shops, Berger learned about manufacturing practices that typically invoke different processes than those applied in field situations. This combination of shop and field experience prepared Berger for his current role as senior staff engineer/scientist at PPL.

Since 1992 Berger has engaged in predicting, detecting and monitoring deterioration in plant equipment to identify the need for repair or replacement. He describes his role as being responsible for "keeping the steam in the pipes," explaining that success requires the application of mechanical and materials behavior concepts, as well as some understanding of probability and consequence of hypothetical failure. Two mechanisms of special interest to Berger are creep and flow accelerated corrosion.

An ASME Fellow, Berger enjoys the synergy between his inspection work at PPL (since 1978) and his volunteer role on ASME committees (since 1986). He chairs the ASME Boiler and Pressure Vessel Committee on Power Boilers (BPV I) and has served as a member of the Post Construction Standards Committee since its inception in 1995. He has been a member of the Board on Pressure Technology Codes and Standards since 2003 and serves as an at-large director on the executive board of ASME's Anthracite-Lehigh Valley Section. His extensive list of Society activities includes past service on various committees, subcommittees and subgroups. He received an ASME Associate Membership Prize from Lehigh University (graduation award) in 1978.

Berger is a member of the American Society of Nondestructive Testing; Tau Beta Pi, the Engineering Honor Society; and Pi Tau Sigma, the International Mechanical Engineering Honor Society.



Technical Communities Globalization Medal

YOGI GOSWAMI

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

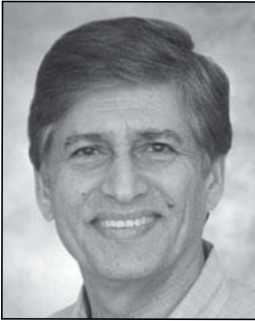
THE TECHNICAL COMMUNITIES GLOBALIZATION MEDAL, established in 2011, is awarded to an ASME member who has demonstrated a sustained level of outstanding achievement in the promotion of international activity related to mechanical engineering.

YOGI GOSWAMI, P.E., Ph.D., distinguished university professor, University of South Florida, Tampa, *for uniquely influencing the development and use of solar energy around the world through education, policy advice to various governments, the organization of international conferences, service as editor in chief of solar energy journals, and through keynote and plenary lectures on global energy topics at major international conferences.*

Dr. Goswami has made pioneering contributions in education, research and technology development in solar energy. He is currently distinguished university professor at the University of South Florida (USF), Tampa. Prior to joining the faculty at USF in 2005, he was professor and director of the Solar Energy and Energy Conver-

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Technical Communities Globalization Medal (cont.)



sion Laboratory at the University of Florida, Gainesville (1990–2005); and held teaching positions in the mechanical engineering department at the North Carolina Agricultural and Technical State University, Greensboro (1977–90).

Goswami has made significant and transformative contributions to the field of solar energy (thermodynamic power cycles, and solar detoxification and disinfection of air and water). His research on thermodynamic cycles has included supercritical organic rankine cycles and mixed working fluids for thermodynamic cycles. He developed a combined power and cooling cycle, now known as the Goswami Cycle, resulting in a new class of combined cycles. He also pioneered an interdisciplinary development of photocatalytic air disinfection as an outgrowth of his research on solar photocatalytic oxidation. His inventions in photocatalytic detoxification and disinfection are commercialized and available worldwide. His other research is on various aspects of solar thermal energy utilization, thermal energy storage and nano-scale antennae for direct energy conversion. He holds 18 patents.

He has given energy policy advice to leaders in many countries in the world, most notably India; and has given testimonies to the U.S. Congress and the United Nations. He has also served as a member of the Scientific Advisory Committee for numerous international energy conferences.

Goswami is the author/editor of 16 books on solar energy and energy conversion. His co-authored textbook, *Principles of Solar Engineering* (2nd edition, Taylor & Francis, 2000), is based on his classroom teaching of solar energy and is used worldwide. Goswami is editor in chief of the *Solar Energy* journal and *Progress in Solar Energy*. He has published more than 300 papers, and has delivered more than 50 keynote and plenary lectures at international conferences.

An ASME Fellow, Goswami has been serving as chair of the Management Committee of ASME Innovation Technologies Institute, LLC since 2004. Previously he was ASME's senior vice president (2000–03) and governor (2003–06), a member of the Council on Public Affairs (1996–2000), and vice president (1989–91) and chair (1991–93) of the Energy Resources Board. He served as chair (1987–88) of the Solar Energy Division (SED) and chaired the Solar Testing and Measurements Committee (1981–84). He received SED's Best Paper awards (1993 and 1998) and John Yellott Award (1995), and the Society's Frank Kreith Energy Award in 2007.

Goswami is a Charter Fellow of the National Academy of Inventors; and a Fellow of the American Association for the Advancement of Science, ASHRAE and the American Solar Energy Society (ASES). He served as a member of the ASES board of directors (1995–97; 1998–2000). He is a member of the International Solar Energy Society (ISES), where he served as vice president (2002–04) and president (2004–05), and has been a member of the board of directors since 1999. He also served as vice president (1997–99) and president (2000–02) of the International Association for Solar Energy Education, and chair of the Steering Committee for the Intersociety Energy Conversion Engineering Conference (1993).

His extensive list of honors includes ASES's Charles Greely Abbott Award (1998) and Hoyt Clark Hottel Award (2007); ISES's Farrington Daniels Award (2007) and Special Service Award (2011); and the University of South Florida's Outstanding Research Achievement awards (2008 and 2011) and Theodore and Venette Askounes-Ashford Distinguished Scholar Award (2011).

Goswami received his bachelor's degree in mechanical engineering from the University of Delhi, India, in 1969. He earned his master's degree and Ph.D. in mechanical engineering from Auburn University, Alabama, in 1971 and 1975, respectively. Goswami is a registered professional engineer in Florida.

Robert Henry Thurston Lecture Award

JOHN A. ROGERS

*Conferral at the Thurston Lecture,
2013 International Mechanical Engineering Congress and Exposition*

THE ROBERT HENRY THURSTON LECTURE AWARD was established in 1925 in honor of ASME's first president. It provides an opportunity for a leader in pure and/or applied science or engineering to present to the Society a lecture that encourages stimulating thinking on a subject of broad interest to engineers. The Robert Henry Thurston Lecture Award was elevated to a Society award in 2000.

JOHN A. ROGERS, Ph.D., Swanlund chair professor, University of Illinois at Urbana-Champaign, *for fundamental and applied contributions to materials, mechanics designs and assembly techniques for stretchable/flexible electronic systems.*

After receiving his graduate degrees at the Massachusetts Institute of Technology (MIT), Cambridge, Dr. Rogers was a Junior Fellow in the Harvard University Society of Fellows from 1995 to 1997. During this time he initiated programs of research in soft lithography and founded a company that commercialized laser acoustic metrology techniques developed as part of his Ph.D. research. He joined Bell Laboratories (Murray Hill, N.J.) in 1997 as a member of the technical staff in the condensed matter physics research department, and served as director of this department from late 2000 to 2002. His work at Bell yielded commercialized products for fiber optic communications and the first flexible, paper-like displays.



Rogers joined the University of Illinois at Urbana-Champaign in 2003 as Founder professor of engineering. He is currently Swanlund chair professor, with appointments in the departments of materials science and engineering, mechanical science and engineering, electrical and computer engineering, bioengineering and chemistry. He is also director of the Seitz Materials Research Laboratory. From 2009 to 2012, he served as director of a National Science Foundation-funded Nanoscale Science and Engineering Center on nanomanufacturing. During his time at Illinois, he has established foundational knowledge and mechanical engineering capabilities for new classes of semiconductor devices, with applications in photovoltaics, biomedicine and solid-state lighting.

He is authored/co-author of more than 400 journal papers and has edited two books. Rogers has more than 80 patents/patent applications in areas ranging from acoustics to nanofabrication to stretchable electronics; more than 50 of these are licensed or in active use.

An ASME member, Rogers has been an invited speaker at Society conferences and has had numerous technical papers published in ASME journals including the *Journal of Applied Mechanics*.

Rogers is a member of the National Academy of Engineering; a Fellow of IEEE, the American Association for the Advancement of Science and the Materials Research Society (MRS); and a member of the American Chemical Society (ACS) and the American Physical Society.

Among his honors, Rogers received R&D 100 awards from *R&D Magazine* (2001 and 2002); a Team Innovation Award (2002) and Baekeland Award (2008) from ACS; a Daniel Drucker Eminent Faculty Award (2007) from the University of Illinois; a National Security Science and Engineering Faculty Fellow award (2008) from the Department of Defense, the George Smith Award (2009) from IEEE; a MacArthur Foundation fellowship (2009); a Green Photonics Award (2011) from SPIE—the International Society for Optics and Photonics; a Lemelson-MIT Prize (2011); and a Mid-Career Researcher Award (2013) from MRS.

Robert Henry Thurston Lecture Award (cont.)

Rogers received bachelor's degrees in physics and chemistry from the University of Texas at Austin in 1989. He earned master's degrees in physics and chemistry from MIT in 1992. In 1995 he earned his Ph.D. in physical chemistry from MIT. Rogers received a honoris causa doctorate from École Polytechnique Fédérale de Lausanne in 2013.

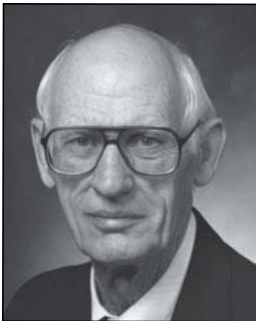
Timoshenko Medal

RICHARD M. CHRISTENSEN

*Conferral at the Applied Mechanics Dinner,
2013 International Mechanical Engineering Congress and Exposition*

THE TIMOSHENKO MEDAL was established in 1957 and is conferred annually in recognition of distinguished contributions to the field of applied mechanics. Instituted by the Applied Mechanics Division, it honors Stephen P. Timoshenko, world-renowned authority in the field, and it commemorates his contributions as author and teacher.

RICHARD M. CHRISTENSEN, D.Eng., professor research emeritus, Stanford University, California, *for numerous distinguished contributions to applied mechanics including the theory of heterogeneous solids, composite materials and laminated plates; the geometry of ultra low density materials; the viscoelasticity and rheology of polymers and non-Newtonian fluids; and the failure of isotropic and anisotropic materials.*



During his long career, Dr. Christensen has held positions of responsibility in industry at General Dynamics, Space Technology Laboratories and Shell Development; at the Lawrence Livermore National Laboratory; and in academia at the University of California (Berkeley and Davis), Washington University in St. Louis and, most recently, Stanford University, California.

He joined the Stanford faculty in the aeronautics and astronautics department in 1992 and is now professor research emeritus and still active. His responsibilities and technical activities have mainly been in the mechanics of materials for solids and structures. His research papers are on properties of polymers, composite materials, extremely low density materials,

micromechanics, kinetic crack growth, life prediction, durability, and failure criteria, as well as other fields. He holds five patents.

In addition to numerous single-authored archival papers, Christensen has written three books: *Theory of Viscoelasticity* (Dover, 2003); *Mechanics of Composite Materials* (Dover, 2005); and, his most recent book, *The Theory of Materials Failure* (Oxford University Press, 2013).

Christensen founded and runs a very active technical website (www.FailureCriteria.com) on materials failure, where critical evaluations are provided for materials yield and failure criteria that are considered to be of physical importance and usefulness.

An ASME Fellow, Christensen served as chair of the Applied Mechanics Division in 1980. He received the Society's Worcester Reed Warner Medal in 1988, Honorary Membership in 1992 and the Nadai Medal in 2006.

(continued)

Timoshenko Medal (cont.)

He is a member of the National Academy of Engineering, the American Institute of Aeronautics and Astronautics, and the American Institute of Physics. The Society of Engineering Science presented him with its William Prager Medal in 1988.

Christensen received his bachelor's degree in civil engineering from the University of Utah, Salt Lake City, in 1955. He earned his master's degree in engineering mechanics from Yale University (New Haven, Conn.) in 1956. After working two years in industry he returned to Yale for his D.Eng. degree, conferred in 1961.

George Westinghouse Gold Medal

YIANNIS A. LEVENDIS

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE GEORGE WESTINGHOUSE GOLD MEDAL was established to recognize eminent achievement or distinguished service in the power field of mechanical engineering. To perpetuate the value of the rich contribution to power development made by George Westinghouse, honorary member and 29th president of the Society, the Westinghouse Educational Foundation established the Gold Medal in 1952.

YIANNIS A. LEVENDIS, Ph.D., College of Engineering distinguished professor, Northeastern University, Boston, *for numerous in-depth contributions to the field of combustion of liquid and solid fossil and alternative fuels under conventional and oxy-fuel conditions, as well as to the formation mechanisms of generated pollutants and to their control; and for educating thousands of students in environmentally-benign power-generation-related subjects.*

Dr. Levendis joined the faculty at Northeastern University, Boston, in 1988 and is currently a College of Engineering distinguished professor in the department of mechanical and industrial engineering. He has consistently ranked among the best teaching and research faculty in the College of Engineering, having received both the Outstanding Research Award (2001) and the Outstanding Teaching Award (2005), the only faculty member at Northeastern with this dual distinction.

His current research deals with topics related to combustion, alternative energy sources, air pollution and acid rain prevention, incineration of municipal wastes, engine performance and emissions, combustion diagnostics and pyrometry, polymers, materials development and polymeric coatings. Levendis is a leading authority in combustion and emissions of/from diesel engines as well as coal-fired and alternative fuel-fired power plants (including biomass, waste tires, waste plastics, etc.). He has developed chemical/physical methods for reducing toxic emissions; has conducted combustion-based material synthesis, and has developed techniques for fire suppression and extinction. He has also conducted extensive research on oxygen-enhanced combustion of diesel fuel, coal and biomass.

Over the years, Levendis' work has been funded by the National Science Foundation, the Environmental Protection Agency, the Department of Energy and the Massachusetts Clean Energy Center as well as various industries.



(continued)

George Westinghouse Gold Medal (cont.)

Levendis has published 280 technical papers, and book and encyclopedia chapters. He holds 10 U.S. and several international patents.

An ASME Fellow, Levendis has participated as an author and speaker at ASME conferences. He has also been a reviewer for Society publications.

Levendis is a Fellow of SAE International and a member of The Combustion Institute. He is also a member of Tau Beta Pi, the Engineering Honor Society; and Pi Tau Sigma, the International Mechanical Engineering Honor Society.

Among his honors are SAE's Ralph E. Teetor Education Award (1993), Outstanding Faculty Advisor awards (1994 and 2005) and Outstanding Oral Presentation Award (2010); the Institute of Hazardous Materials Management's John J. McCambridge Award (2007); and the Brazilian Association of Automotive Engineering's AEA Environmental Award (2012). He was selected by Northeastern students as Outstanding Mechanical Engineering Professor five times (1993–2010) and received the Northeastern University Excellence in Teaching Award (1995).

Levendis earned his bachelor's and master's degrees in mechanical engineering from the University of Michigan, Ann Arbor, in 1981 and 1982, respectively. He earned his Ph.D. in environmental engineering science from the California Institute of Technology, Pasadena, in 1988.

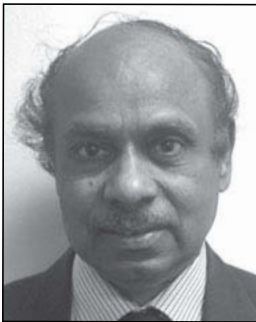
Worcester Reed Warner Medal

SINGIRESU SAMBASIVA RAO

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE WORCESTER REED WARNER MEDAL was established in 1930 and is awarded for outstanding contributions to the permanent literature of engineering. Contributions may be single papers, treatises or books, or a series of papers.

SINGIRESU SAMBASIVA RAO, Ph.D., professor, University of Miami (Coral Gables, Fla.), *for outstanding contributions to the permanent literature of engineering over the past 35 years, particularly for highly popular books on engineering optimization, reliability-based design, vibrations, finite element method, and numerical methods; and numerous trendsetting research papers.*



Dr. Rao is a professor in the department of mechanical and aerospace engineering at the University of Miami (Coral Gables, Fla.), where he served as chair of the department from 1998 to 2011. Previously he was a professor of mechanical engineering at Purdue University in West Lafayette, Ind. (1985–98); San Diego State University (1982–85); and at the Indian Institute of Technology, Kanpur (1972–84). Rao was a visiting research scientist at NASA Langley Research Center in Hampton, Va. (1980–81). He has been thesis adviser for 31 Ph.D. and 27 master's graduates.

Rao has made several pioneering contributions in the areas of engineering optimization and reliability; and fuzzy, interval and evidence-based methods. In 1979 he introduced the application of game theory for the first time in engineering optimization. Between 1972 and 1982, Rao showed the application of probabilistic and reliability methods to mechanical and structural

(continued)

Worcester Reed Warner Medal (cont.)

design problems. He published the first papers on single and multiobjective optimization of fuzzy engineering systems in 1987; and introduced new fields of research known as fuzzy finite element analysis (1995), fuzzy boundary element analysis (2001) and fuzzy meshfree methods (2012) by publishing the first papers in these areas. He presented the first applications of interval methods to engineering analysis and optimization in 1997 and 2002, respectively. Since 1995, Rao has been demonstrating the application of evidence theory (Dempster-Shafer theory) to optimization and uncertainty analysis of engineering systems.

He has published several books that are being used as textbooks at hundreds of universities throughout the world. These include *Engineering Optimization: Theory and Practice* (fourth edition, John Wiley, 2009), *Mechanical Vibrations* (fifth edition, Prentice-Hall, 2011), *Applied Numerical Methods for Engineers and Scientists* (Prentice-Hall, 2002), *Vibration of Continuous Systems* (John Wiley, 2008), *The Finite Element Method in Engineering* (fifth edition, Elsevier, 2011) and *Reliability-Based Design* (McGraw-Hill, 1992). Many of these books were translated into Korean, Thai, Chinese and Portuguese languages. He co-edited a three-volume *Encyclopedia of Vibration* (Academic Press, San Diego, 2002).

Rao has published 180 journal papers, including 60 in ASME journals and 40 in American Institute of Aeronautics and Astronautics (AIAA) journals, as well as 150 papers in conference proceedings. He currently serves on the editorial board of several journals and as the editor-in-chief of the *Open Journal of Safety Science and Technology*.

An ASME Fellow, Rao has been very active on the Design Engineering Division's (DED) Design Automation Committee for several years. He served as the papers review chair and chair of the 1987 and 1988 Design Automation conferences, and edited conference proceedings. He has also been active on DED's Technical Committee on Vibration and Sound and co-edited theme proceedings of the 1995 Design Engineering Technical Conferences. Rao served as associate editor of *Journal of Mechanisms, Transmissions and Automation in Design* (1988–89). He received the DED's Design Automation Award in 2012.

Rao is an Associate Fellow of AIAA and a member of American Society for Engineering Education.

His honors include First Prize in the James F. Lincoln Arc Welding Foundation's national graduate-level Design Contest (1971), the Telugu Association of North America's Outstanding Researcher Award (1987), SAE International's Distinguished Probabilistic Methods Education Award (1999) and the University of Miami's Eliahu L. Jury Award for Excellence in Research (2002).

Rao received his bachelor's degree in mechanical engineering from Andhra University (Waltair, India) in 1965; he was honored with the Vepa Krishna Murthy Gold Medal for highest GPA among graduates in all branches of engineering and the Lazarus Prize for ranking first among graduating mechanical engineering students. Rao earned his master's degree in mechanical engineering from the Indian Institute of Technology, Kanpur, in 1968; and his Ph.D. in engineering mechanics and design from Case Western Reserve University, Cleveland, in 1972.

Arthur L. Williston Medal

CASSANDRA NICOLE HAWLEY

*Conferral at the Members and Students Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE ARTHUR L. WILLISTON MEDAL was established in 1954 and is presented to an ASME student member or member for the best paper submitted in the annual competition on a subject chosen to challenge their engineering abilities.

CASSANDRA NICOLE HAWLEY, student, United States Coast Guard Academy (New London, Conn.), for the paper titled "Tackling Transit Today."



Cadet Hawley has chosen a career in the United States military through the Coast Guard. Currently a student at the United States Coast Guard Academy (New London, Conn.), she plans to graduate in May 2014 as a commissioned officer with a bachelor's degree in mechanical engineering. Her future hope in the United States Coast Guard is to lead as an engineering officer and helicopter pilot.

To date, the Coast Guard has sent Hawley to many places including Washington, Alaska, Hawaii, the Bahamas and Guantanamo Bay, Cuba. She also had the opportunity to train with the United States Naval Academy for four weeks. Earlier this year she had the honor of being a company guidon bearer, the highest command position a junior can hold, and was

responsible for the training and well-being of 29 freshmen.

Hawley has earned her Pistol Qualification ribbon and Pepper Spray Qualification, and received a Meritorious Team Commendation ribbon for marching in the Presidential Inaugural Parade in January 2013. She was inducted into Alpha Lambda Delta, the National Honor Society for First-Year Students (2011). She made the Coast Guard Superintendent's List (both silver and gold stars) and Commandant of Cadets List—Silver Star (military excellence) in spring 2012, and spring and fall 2013; and the Dean's List—Gold Star (GPA higher than 3.15) every semester since the end of 2010.

She was a member of the NEWMAC (New England Women's and Men's Athletic Conference) 2011 and 2012 women's soccer all-academic team.

Hawley is a member of ASME and the Society of Women Engineers.

Henry R. Worthington Medal

STEVEN M. TIPTON

*Conferral at the President's Luncheon,
2013 International Mechanical Engineering Congress and Exposition*

THE HENRY R. WORTHINGTON MEDAL, established in 1980, is bestowed for eminent achievement in the field of pumping machinery including, but not limited to, research, development, design, innovation, management, education or literature.

STEVEN M. TIPTON, P.E., Ph.D., Frank W. Murphy distinguished professor of mechanical engineering, The University of Tulsa, Oklahoma, for *important achievements in developing experimental testing systems to reproduce the unique loading experienced by highly pressurized coiled tubing, and analytical models to characterize plasticity and fatigue behavior, both of which have promoted the acceptance of coiled tubing as a safe, efficient technology for worldwide oilfield operations.*

Dr. Tipton is the Frank W. Murphy distinguished professor of mechanical engineering at The University of Tulsa (TU), Oklahoma. For 29 years he has taught undergraduate and graduate courses in the areas of mechanical design, design projects, mechanics of materials, and fatigue and fracture.

He conducts research on fatigue, mechanical design and coiled tubing mechanics. He has conducted research on optimizing the fatigue life improvement provided by intentional overloads, such as proof loading, on engineering components. Tipton is currently conducting an industry-sponsored research project in that area to optimize the autofrettage process and investigate new procedures to improve the life of pumps used for well stimulation.

Tipton established a formal coiled tubing research program at TU in 1996 that grew into an ongoing consortium in 2000. He has developed a number of fatigue life prediction programs that are currently used to assure the structural integrity of coiled tubing strings in operation around the world. He has also designed and fabricated coiled tubing fatigue testing systems now considered standard in the industry.

He consults with many industries including petroleum, aerospace, sporting goods, finned tubing, and high pressure pumping. Tipton is the owner of T-Bird Engineering, LLC. He holds eight patents.

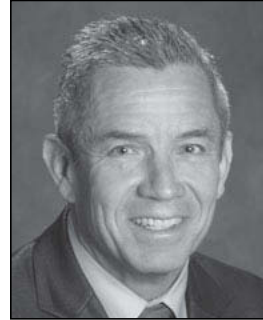
He has authored numerous technical papers and presented his research at conferences worldwide. He also has conducted numerous industry workshops for sponsors in Houston and Alaska. As 2010 distinguished lecturer for the Society of Petroleum Engineers (SPE), Tipton made 16 presentations on coiled tubing mechanics in the U.S., Canada, Indonesia, Malaysia, India, Norway, Austria and Croatia.

Tipton is a member of the Mid-Continent Section of ASME and participates regularly in ASME/AIAA symposiums held on a rotational basis at TU, the University of Oklahoma, Oklahoma State University and Oral Roberts University. He has publications in the *Journal of Mechanical Design*, *Journal of Engineering Materials and Technology* and *Journal of Pressure Vessel Technology*; and he routinely reviews paper submissions to ASME journals. Tipton served briefly as an ASME Student Section advisor at TU. He has advised eight ASME Old Guard Oral Presentation Competition contenders, including six first-place winners in Regional X and one national second-place winner.

He is a Fellow of the ASM International; and a member of SPE, SAE International, the American Society for Testing and Materials, and the Intervention & Coiled Tubing Association.

His honors include Tau Beta Pi Outstanding Professor (2005–06) and Teaching Excellence (2010–11) awards from the TU College of Engineering and Natural

(continued)



Henry R. Worthington Medal (cont.)

Sciences; Outstanding Engineer awards (2002) from the Oklahoma Society of Professional Engineers (OSPE) and Tulsa Chapter of OSPE; and SAE International's Ralph Teetor Engineering Educator Award (1993).

Tipton received his bachelor's degree in mechanical engineering from Oklahoma State University, Tulsa, in 1978. He earned his master's degree and Ph.D. in mechanical engineering from Stanford University, California, in 1979 and 1984, respectively. He is a registered professional engineer in Oklahoma.

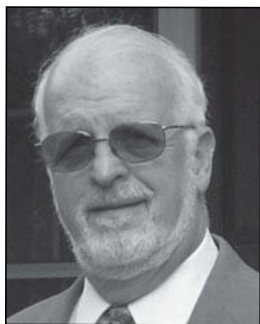
S.Y. Zamrik PVP Medal

WILLIAM J. BEES

*Conferred at the Pressure Vessels and Piping Conference,
Paris, July 2013*

The Pressure Vessel and Piping Medal was established in 1980. Renamed the S.Y. ZAMRIK PVP MEDAL in 2010, it is bestowed for outstanding contributions in the field of pressure vessel and piping technology including, but not limited to, research, development, teaching and significant advancements of the state of the art.

WILLIAM J. BEES, P.E., consultant, *for significant contributions to pressure vessel design technologies through career efforts, and through diverse ASME activities ranging from developing conference sessions and serving as Pressure Vessels and Piping Division chair to serving on ASME codes and standards committees, as group leader for the Pressure Technology Group and as a member of the Knowledge and Community Sector.*



Mr. Bees has been contributing to the pressure vessel design field for nearly 50 years. In 2006 he retired from The Babcock & Wilcox Company (Barberton, Ohio) after 43 years working in the nuclear equipment engineering department in capacities including project engineer, stress analyst and lead design engineer. Currently he provides consulting services to the Engineering Mechanics Group of Parsons (Aiken, S.C.); and to three Babcock & Wilcox (B&W) entities: Generation mPower (modular reactors), Diamond Power and Power Generation Group.

At Parsons, Bees is employed as a pressure vessel engineer, supporting technical documentation, and advising designers and analysts. He reviews technical specification packages, reports and drawings as well as proposal and bid packages, and vendor qualifications related to the Savannah River Salt Waste Processing Facility. At B&W's Generation mPower and Diamond Power he is supporting the effort for ASME N-stamp surveys. He is also providing consulting services to B&W Power Generation Group on The Ohio State University's Syngas Chemical Looping Reactor Vessel project. Bees previously provided design and fabrication support to NuScale Power (Corvallis, Ore.) for a modular reactor that is under development. In addition to reviewing design reports and drawings, he provided the technical content for a patent application.

Bees has authored a number of conferences papers, and he holds six patents.

An ASME Fellow, Bees developed a working knowledge of the Society's Boiler and Pressure Vessel (BPV) Code through his participation on various subcommittees and subgroups in the codes and standards sector. He has been a member of the BPV

(continued)

S.Y. Zamrik PVP Medal (cont.)

Committee on Pressure Vessels' (VIII) Subgroup on Fabrication and Inspection since 1994. He previously served on the Subgroup on Accreditation of Authorized Inspectors (1997–2012) and Subcommittee on BPV Accreditation (1998–2012). He was chair (2003–04) of the Pressure Vessels and Piping Division; trainer (2006–13) for ASME's Leadership Training Conference (formerly Technical Executive Conference); a member (2008–11) of the Society's Knowledge and Community Sector, and Conferences Committee; and group leader (2005–08) for the Pressure Technology Group. Bees received Board of Governors' certificates of Appreciation (2004, 2006), an ASME Dedicated Service Award (2007), and a number of certificates of Appreciation and Recognition for leadership roles at Pressure Vessels and Piping conferences.

He is also a Fellow of the American Society of Civil Engineers and a member of its Structural Engineering Institute.

Bees received his bachelor's degree in engineering from Youngstown State University, Ohio, in 1964. He earned his master's degree in civil engineering at The University of Akron, Ohio, in 1968. He is a registered professional engineer in Ohio.

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