OFFICERS OF ASM INTERNATIONAL

President and Trustee
Prof. C. Ravi Ravindran, FASM
Professor of Advanced Materials
Ryerson University; Toronto, ON, Canada

Vice President and Trustee
Dr. Sunniva R. Collins, FASM
Associate Professor
Mechanical and Aerospace Engineering
Case Western Reserve University; Cleveland, OH

Immediate Past President and Trustee
Dr. Gernant E. Maurer, FASM
Director, Research & Development (Retired)
Carpenter Technology Corporation; West Chester, PA

Secretary
Mr. Thomas S. Passek
Managing Director
ASM International; Materials Park, OH

Treasurer
Mr. Robert J. Fulton, FASM
President (Retired)
Hoeganaes Corporation; Avalon, NJ

Trustees
Dr. Iver Anderson, FASM
Senior Metallurgist
Ames Laboratory
Ames, IA

Mr. William J. Lenling, FASM
President
Thermal Spray Technologies, Inc.
Sun Prairie, WI

Mr. Mitchell Dorfman, FASM
Oerlikon Metco Fellow
Oerlikon Metco
Westbury, NY

Prof. Linda S. Schadler, FASM
Vice Provost and Dean for Undergraduate Education
Rensselaer Polytechnic Institute; Troy, NY

Dr. James C. Foley, FASM
Research & Development Manager
Los Alamos National Laboratory
Los Alamos, NM

Dr. Jeffrey A. Hawk, FASM
Materials Research Engineer
National Energy Technology Laboratory
U.S. Department of Energy; Albany, OR

Ms. Jacqueline (Jackie) M. Earle
Product Support Manager
Caterpillar, Inc.
Mossville, IL

Mr. John (Chip) R. Keough, P.E., FASM
Professor
Applied Process, Inc.
Livonia, MI

Dr. Zi-Kui Liu, FASM
Professor
Materials Science and Engineering
The Pennsylvania State University
University Park, PA

Mr. Anthony M. Lombardi
Ryerson University; Toronto, Ontario, Canada

Student Board Members
Ms. Virginia K. Judge
Colorado School of Mines, Littleton, CO

Ms. Myrissa N. Maxfield
Virginia Tech, Blacksburg, VA

Officers and Trustees - Elect
Mr. Jon D. Tirpak, FASM
Executive Director, FDMC and Senior Program Manager, FAST
Charleston, SC

Mr. Craig D. Clauer, P.E.
CCECI
West Chester, PA

Dr. Kathryn Dannemann
Principal Engineer
Southwest Research Institute
San Antonio, TX

Mr. Tirumalai S. Sudarshan, FASM
President and CEO
Materials Modification, Inc.
Fairfax, VA

Dr. David B. Williams, FASM
Dean, College of Engineering
The Ohio State University
Columbus, OH

Prof. David B. Williams, FASM
Dean, College of Engineering
The Ohio State University
Columbus, OH
1913 A group of heat treaters convenes in Detroit, forms Steel Treaters’ Club.
1915 Organization becomes Steel Treaters’ Research Club as technical members are admitted.
1918 Club becomes Steel Treating Research Society. Sections established in Chicago and Cleveland.
1919 Chicago group secedes and forms American Steel Treaters’ Society. First Metal Show held in Chicago.
1920 Two groups reunite as American Society for Steel Treating. Cleveland headquarters established. First issue of Transactions published.
1922 Society establishes first award, the Henry Marion Howe Medal.
1923 First Handbook debuts as looseleaf binder; data sheets are issued through 1928.
1929 First bound ASST Handbook published.
1930 First issue of Metal Progress published.
1933 Society name becomes American Society for Metals.
1939 ASM membership surpasses 10,000.
1945 Membership reaches 20,000.
1951 First World Metallurgical Congress held in Detroit.
1954 Metals Engineering Institute established as educational arm of the Society.
1955 Pilot operation for electronic searching of technical literature begins.
1957 Second World Metallurgical Congress held in Chicago.
1959 New World Headquarters at Metals Park completed.
1960 Full-scale operation of computerized information searching service announced.
1962 Member interest in materials other than metals becomes apparent.
1963 Society observes 50th anniversary.
1970 First class of ASM Fellows installed. First four technical divisions established.
1977 Nine technical divisions established. Metals Engineering Institute enrolls 50,000th student.
1981 First “Metals Week” held. Data Program for Alloy Phase Diagrams initiated.
1983 “Diamond Decade” strategic plan sets direction toward materials and international focus.
1985 Advanced Materials and Processes magazine debuts.
1988 World Materials Congress held in Chicago as ASM observes 75th anniversary.
1993 Vision 2000 strategy focuses on member needs and electronic services.
1995 First electronic product published.
1997 First ASM Materials Solutions Conference held as part of “The Complete Metals and Materials Experience.”
1998 Corporate supporters pledge $2 million in equipment for a new Training Center at Materials Park.
2000 First “Materials Camp” organized by ASM International Foundation.
2001 American Council on Education recommends ASM courses for college credit.
2002 ASM Harbouks Online and ASM Online Training launched.
2003 ASM introduces Alloy Center Online.
2004 ASM International® Strategic Plan developed and implemented.
2005 ASM Integrated Enterprise Solution launched.
2006 ASM hosts Materials & Medicine Summit with Cleveland Clinic, develops initiative to serve the industrial design community, and introduces the first online services based on the Integrated Enterprise.
2007 ASM introduces Global Community Information network, including Affiliate Society and Chapter website.
2008 First Chapter-developed websites launched as part of ASM Global Community.
2009 ASM introduces Solution Centers for corrosion and energy materials, the world’s most comprehensive and authoritative resources for researching, understanding, preventing, and solving corrosion and energy problems.
2010 ASM International Shaping the Vision with its Eye on the Future and Hand on the Past! Materials Park designated to the National Register of Historical Places. $6 million dollar renovation underway to be completed in July 2011.
2012 ASM launches Computational Materials Data Network (CMDN).
2013 ASM Celebrates 100 years of service to the materials science and engineering community.
2014 ASM debuts a new brand platform, logo, and identity.
In 1969, ASM established the Fellow of the Society honor to provide recognition to members for their distinguished contributions to materials science and engineering and to develop a broadly based forum of technical and professional leaders to serve as advisors to the society. Following are the members recognized by their colleagues for this year. Additional Fellows may be elected to this distinguished body in subsequent years. The solicited guidance, which the Fellows will provide to the Board of Trustees, will enhance the capability of ASM as a technical community of materials science and engineering in the years ahead.

Mr. John F. Clayton, FASM
Principal
FAMEX Engineering, Brampton, ON, Canada
“For technical excellence in the field of forensics and failure analysis, demonstrating a long and distinguished set of achievements in solving materials problems in a wide range of industries, while mentoring others and disseminating the fundamentals of materials failure analysis through publications and presentations.”

Prof. Zhigang Zak Fang, FASM
Professor
University of Utah, Salt Lake City, UT
“For sustained and high impact contributions to the hard metals industry through development of novel cemented carbide and polycrystalline diamond structures, processing and development of low cost titanium and of metal hydrides for energy applications.”

Dr. James C. Foley, FASM
Research & Development Manager
Los Alamos National Laboratory, NM
“For significant contributions to the research and development in the field of nonferrous materials, including: beryllium alloys, uranium alloys, amorphous alloys and lead-free solders.”

Dr. David R. Forrest, FASM
Technology Manager
Department of Energy, Washington, DC
“For outstanding technical leadership in emerging materials technologies such as nanomaterials and molecular manufacturing, with demonstrated technical expertise in material processing, computational modeling, and non-destructive testing.”

Dr. Michael T. Hahn, FASM
Engineer 5
Northrop Grumman Aerospace Systems, Redondo Beach, CA
“For outstanding contributions to a wide variety of metallurgical advancements for improving the performance and cost effectiveness of various aircraft alloys, including aluminum, titanium, and steel alloys as well as composites, ceramics, and coatings in the commercial and non-commercial aircraft industries.”

Mr. Don Hashiguchi, FASM
Manager, Process Engineering
Materion Corporation, Elmore, OH
“For the development of inert gas atomized beryllium and aluminum-beryllium alloys used in aerospace, space, and science applications.”

Prof. Hani Henein, FASM
Professor
University of Alberta, Edmonton, AB, Canada
“For scientific and engineering achievements in developing the understanding between structure and processing for a wide range of metallic alloys and processing methods targeting industrially relevant materials in the energy and aerospace fields while mentoring students and creating innovative teaching methodologies.”

Dr. Alan F. Jankowski, FASM
Professor
Texas Tech University, Lubbock, TX
“For pioneering the use and application of deposition technology to synthesize engineered nanostructures such as nanolaminates and metallic glasses in order to investigate physical properties, phase transformations and energy conversion.”

Dr. Mary C. Juhas, FASM
Associate Vice President
The Ohio State University, Columbus, OH
“For significant technical and scientific contributions to the physical metallurgy of the friction-stir welding in joining lightweight alloys, and for groundbreaking and sustained international leadership in promulgating engineering education.”

Prof. Leijun Li, FASM
Professor
University of Alberta, Edmonton, AB, Canada
“For contributions to our understanding of the welding metallurgy of steels and superalloys and of the fundamental mechanisms that explain ultrasonic consolidation in metal-matrix composites.”
Dr. Ivan E. Locci, FASM  
Principal Research Engineer  
The University of Toledo and NASA Glenn Research Center, Cleveland, OH  
“For significant contributions to high temperature materials and process development for the gas turbine engine industry through the use of advanced electron microscopy techniques.”

Mr. John J. Marcin, FASM  
Manager  
United Technologies-Pratt & Whitney, Marlborough, CT  
“For important contributions to investment casting of turbine airfoils and for developing new superalloy casting techniques to enable production of turbine airfoil designs with significantly higher temperature capability.”

Prof. Javad Mostaghimi, FASM  
Professor  
University of Toronto, ON, Canada  
“In recognition of pioneering developments related to thermal plasmas and thermal spray coatings.”

Dr. Ashim Kumar Mukhopadhyay, FASM  
Scientist G  
Defense Metallurgical Research Laboratory, Hyderabad, India  
“For sustained and significant technical and scientific contributions in the areas of physical and mechanical metallurgy of aluminum alloys, and for the development and commercial production of these materials for structural application.”

Dr. Mariappan P. Paranthaman, FASM  
Distinguished Research Staff and Group Leader  
Oak Ridge National Laboratory, TN  
“For the development of novel epitaxial buffer layers on textured templates, enabling high critical current density superconductor films, and developing mesoporous architectures destined for high performance energy storage applications.”

Dr. Bruce A. Pint, FASM  
Distinguished Research Staff  
Oak Ridge National Laboratory, TN  
“For groundbreaking contributions to the fundamental knowledge of high temperature oxidation mechanisms in alloys and coatings, and for contributions to heat resistant alloy design and development through the incorporation of minor elements to control and improve high temperature stability and overall oxidation resistance.”

Dr. Claudia J. Rawn, FASM  
Associate Professor  
University of Tennessee, Knoxville, TN  
“For significant technical contributions to the study of structure-property relationships of materials for energy related materials via in situ x-ray and neutron diffraction.”

Dr. Sergei A. Shipilov, FASM  
Senior Consultant  
Metallurgical Consulting Services Ltd., Toronto, ON, Canada  
“For continuous and international contributions to material science, particularly in the advancement of fundamental knowledge of corrosion science and engineering, environment enhanced cracking and understanding the interactions between the environment, a material’s microstructure, and the applied and residual stresses acting on a failing component.”

Dr. Jaimie S. Tiley, FASM  
Senior Materials Engineer  
Air Force Research Laboratory, Wright Patterson AFB, OH  
“For providing outstanding leadership and scientific support in the development and execution of complex materials-related research programs that have successfully created and transitioned new materials and technologies.”

Dr. William E. Vanderlinde, FASM  
Senior Technical Expert  
Laboratory for Physical Sciences, College Park, MD  
“For outstanding technical leadership and management and significant contributions to the development of next-generation tools for microelectronic circuit failure analysis and fault isolation.”

Prof. Haiyan Wang, FASM  
Program Director, Professor  
National Science Foundation/Texas A&M, Arlington, VA  
“For innovative research at the frontier of nanostructured materials and applications including high temperature superconductors, thin film solid oxide fuel cells, in situ transmission electron microscopy, and multifunctional ceramic composites, and for exceptional potential in inspired education and future leadership.”

Mr. Gregory J. Petrus, FASM  
President  
Forged Right First LLC, Hinckley, OH  
“For significant contributions to physical metallurgy through development of innovative solutions using simulation tools for enhancing metalworking and heat-treating, in order to exploit a wide array of materials structure-property-processing relationships.”
ASM International®, in 1969, established the honor of Fellow of the Society to provide recognition to members for distinguished contributions in the field of materials science and engineering, and to develop a broadly based forum for technical and professional leaders to serve as advisors to the Society.

An individual will be elected an ASM Fellow due to good personal reputation and outstanding accomplishments in some phase of materials science, engineering or manufacturing.

Dr. Priti Wanjara, FASM
Team Leader
National Research Council Canada, Montreal, QC, Canada
“For distinguished scientific and engineering contributions in the development and application of materials processing technologies for manufacturing materials in the aerospace, automotive, marine, and power generation industries.”

Mr. Michael J. Weimer, FASM
Chief Consulting Engineer-Materials
GE Aviation, Cincinnati, OH
“For outstanding and sustained achievements in materials science and engineering in the aerospace industry, with special recognition for the development and implementation of gamma-titanium aluminum alloys in gas turbine engines.”

Dr. Andrzej Wojcieszenski, FASM
Technical Director
ATI Powder Metals, Pittsburgh, PA
“For advances in powder metallurgy that resulted in the development of corrosion and wear resistant alloys for high performance applications.”

Dr. Dongming Zhu, FASM
Senior Materials Engineer
NASA Glenn Research Center, Cleveland, OH
“For technical achievements in the design and characterization of novel and advanced materials for gas turbine engine components, specifically in the areas of thermal and environmental barrier coatings.”

† Aaron, Howard B.
‡ Aaronson, Hubert I.
† Abbaschian, Reza
‡ Abkowitz, Stanley
‡ Abkowitz, Susan
‡ Aborn, Robert H.
‡ Abramovici, Eugen
‡ Adair, Atwell M.
‡ Adair, Robert V.
‡ Adams, Brent L.
‡ Adams, James B.
‡ Adams, Raymond G.
‡ Adamson, Martyn G.
‡ Agarwal, Avind
‡ Agarwal, D.C.
‡ Agarwal, Vinod S.
‡ Aggen, George
‡ Agrawal, Suphal P.
‡ Agren, John A.
‡ Ahn, Tae M.
‡ Akinc, Mufti
‡ Albers, Francis C.
‡ Albrect, Daniel
‡ Albright, Darryl L.
‡ Alexander, Kathleen B.
‡ Alexander, David J.
‡ Allan, Douglas M.
‡ Allen, Charles W.
‡ Allen, Samuel M.
‡ Allison, John E.
‡ Alman, David E.
‡ Almen, John O.
‡ Allen, Tayan
‡ Altstetter, Carl Joseph
‡ Altshuler, Thomas L.
‡ Amateau, Maurice F.
‡ Ames, Wayne L.
‡ Antharaman, T.R.
‡ Anderson, Edmund A.
‡ Anderson, Iver E.
‡ Anderson, Kevin R.
‡ Anderson, Robert C.
‡ Anderson, W. Earl
‡ Anderson, William A.
‡ Anderson, William E.
‡ Ando, Teiichi
‡ Andreason, Peter L.
‡ Anderson, Kevin R.
‡ Andrews, John V.
‡ Angelini, Peter
‡ Ankem, Sreeramamurthy
‡ Ansell, George S.
‡ Antes, Harry W.
‡ Antia, Dara Pfajshaw
‡ Antolovich, Stephen D.
‡ Anton, Donald L.
‡ Apelian, Dian
‡ Ardell, Alan J.
‡ Arata, Yoshihaki
‡ Arcilla, Frank G.
‡ Armstrong, Clo E.
‡ Armstrong, Ronald W.
‡ Armstrong, William M.
‡ Arnold, David B.
‡ Arnold, Jerry L.
‡ Arnold, Steven M.
‡ Arnold, Lynn E.
‡ Aronson, Arthur H.
‡ Aronson, Bertil S.
‡ Arsenault, Richard J.
‡ Asfahani, Reza
‡ Asghar, AazIZ
‡ Asthana, Rajiv
‡ AuKruist, Eglf
‡ Ault, Geh Mervin
‡ Aust, Karl T.
‡ Austin, James B.
‡ Austin, William W.
‡ Avedissian, Arthur A.
‡ Averbach, Benjamin L.
‡ Avery, Howard S.
‡ Ayer, Raghavan
‡ Babcock, Donald E.
‡ Babu, Prakash B.
‡ Backofen, Walter A.
‡ Badak, Robert P.
‡ Babu, Suresh S.
‡ Baensch, William J.
‡ Bal, Suresh P.
‡ Bagnall, Christopher
‡ Banks, William A.
‡ Bane, David F.
‡ Bane, Edgar C.
‡ Baker, Ian
‡ Baldwin, James F.
‡ Ballantyne, Stewart
‡ Banker, John G.
‡ Bannard, Waldron L.
‡ Bandypadhyay, Amit
‡ Banerjee, Bani R.
‡ Banerjee, S.
‡ Bania, Paul J.
‡ Bardes, Bruce P.
‡ Banerjee, Enrique V.
‡ Barnett, Charles S.
‡ Barsam, John M.
‡ Bates, Charles L.
‡ Bates, Harrold J.
‡ Bathias, Claude
‡ Battles, James E.
‡ Bayless, Ray T.
‡ Beachem, Cedric D.
‡ Bearding, Peter
‡ Beaver, Howard O., Jr.
‡ Bechtold, James H.
‡ Beck, Paul A.
‡ Beckwith, Elaine C.
‡ Behal, Victor G.
‡ Beingessner, Clare J.
‡ Beingessner, Clarence R.
‡ Beitscher, Stanley
‡ Beltran, Adrian M.
‡ Benn, Raymond C.
‡ Bennett, Lawrence H.
‡ Benscoter, Arlan O.
‡ Bens, Kenneth E.
‡ Benz, Mark G.
‡ Berg, Morris
‡ Berkley, Stanley G.
‡ Berlien, G. Ben
‡ Bernard, William J., Jr.
‡ Berndt, Christopher C.
‡ Bernstein, I. Melvin
‡ Bertossa, Robert C.
‡ Betterson, Jesse O., Jr.
‡ Bever, Michael B.
‡ Bever, Bernard P.
‡ Bhagat, Ram B.
‡ Bhat, Shok P.
‡ Bianco, Robert
‡ Bickman, George T.
‡ Biederman, Ronald R.
‡ Bill, Charles F.
‡ Bildstein, Hubert
‡ Bilenko, John C.
‡ Binczewski, George J.
‡ Bircham, C. Ernest
‡ Birks, Neil
‡ Birnbaum, Howard K.
‡ Bishop, Harry L., Jr.
‡ Biskup, William R.
‡ Blackwell, Richard A.
‡ Blau, Peter J.
‡ Blickensderfer, Robert
‡ Bloom, Donald J.
‡ Bloom, Everett E.
‡ Bloom, Craig A.
‡ Blumberg, Harry S.
‡ Boardman, Bruce E.
‡ Boatner, Lynn A.
‡ Bodeen, George H.
‡ Bodnar, Richard L.
‡ Boesch, William J.
‡ Boettinger, William J.
‡ Bohn, Harold N.
‡ Bohl, Robert W.
‡ Bollacavage, Ann
‡ Bommberger, Howard D.
‡ Bornemann, Alfred
‡ Bose, Amlesh
‡ Boulanger, Francis W.
‡ Bourds, Ardeny M.
‡ Bouet, William L.
‡ Bowden, David M.
‡ Boyd, J. Douglas
‡ Boyd, Walter K.
‡ Boyer, Charles B.
‡ Boyer, Rodney A.
‡ Boyle, Frank J.
‡ Bradbury, Terrence G.
‡ Brand, Amos A.
‡ Bradley, Elishu F.
‡ Bradley, George A.
‡ Bradley, Ronnie A.
‡ Bradley, Steven
‡ Bradley, Walter L.
‡ Bradt, Richard C.
‡ Brahms, Alan D.
‡ Brammitt, Bruce L.
‡ Brand, David
‡ Brands, Amrjit S.
‡ Brauns, Anton deS.
‡ Brazon, Michael B.
‡ Brey, Robert T.
‡ Breen, Dale H.
Mr. Michael B. Connelly, FASM  
Vice President  
Casey Products, Woodridge, IL

**Mr. Michael B. Connelly** is the Vice President of Casey Products, Woodridge, Illinois. Mike’s participation in ASM’s educational programs began in 1973 when he attended Chicago Chapter courses in heat treating and metallography. He became an ASM member in 1979 while attending a new class at the “Dome” called “Practical Interpretation of Ferrous Microstructures.”

Mike transitioned from student to instructor in 1990 when he began teaching a course for ASM on the practical application of SPC in Heat Treating. This led to volunteer work in various ASM education committees. Mike has served as the Heat Treat Education and MEI Council Chair (1998) and the Education Committee Chair (2003–2005). In addition to committee work, he contributed to Heat Treating Progress as a columnist, a panelist in the “Seminars by Satellite” series of courses and served as a technical editor for the Practical Learning Series of Courses for Heat Treaters.

In 2000 Mike was asked if he wanted to participate in a new idea with other ASM instructors to create a camp to excite high school students about careers in materials science. Today that idea is called “Materials Camp” and for the past 15 years Mike has participated in the Eisenman Camp. He attended the first Teachers Materials Camp in Ann Arbor, developed the Chicago model for residential Camps and participated in the start-up of the Materials Explorer’s Camp in France. He has served on the ASM Materials Education Foundation Board and is currently involved in the “Fabulous Furnace Team Project” that awards Materials Camp Master Teachers a furnace for their classroom.

Mike’s other career path started in 1973 when he landed a job as a research laboratory technician for Lindberg, division of Sola Basic, a heat treat furnace manufacturer. The first
twenty years of his career had him involved in various commercial and captive heat treating facilities that supplied aerospace, automotive and construction equipment markets. For the past twenty-two years Mike has worked for Casey Products, a fastener importer-distributor with materials testing capabilities located in Woodridge, Illinois. He was promoted from quality assurance manager to vice president in 2002. Along the way he completed his degree in business administration and has achieved the American Society for Quality's Certified Quality Engineer accreditation. Mike was inducted into ASM's 2009 Class of Fellows and was awarded the Allan Ray Putnam award in 2011.

George A. Roberts ................................ 2003
Jack G. Simon ...................................... 2004
Aziz I. Asphahani .................................. 2005
Thomas G. Stoebe ................................ 2006
Alton D. Romig, Jr. ............................... 2007
Debbie A. Goodwin ............................... 2008

Kathy L. Hayrynen ................................. 2009
Edouard Duval ...................................... 2010
Daniel P. Dennies ................................. 2011
Frauke Hogue ...................................... 2012
Donald R. Muzyka ................................. 2013

Alpha Sigma Mu is the honor society which has the major purpose of recognizing the achievement of excellence in undergraduate education connected with materials. However, its interests do not end there. In order to raise the prestige of the Society and to recognize outstanding achievement in the careers of professionals connected with materials, it has organized an annual lecture to be given by a distinguished member of the materials community. This lectureship recognizes excellent scholarship and achievement in materials science and engineering.

The 2014 Alpha Sigma Mu Lecturer is:

Prof. Alexander McLean, FASM
Professor Emeritus
University of Toronto, ON, Canada


Prof. Alexander McLean graduated with degrees in Applied Chemistry and Metallurgy from the Royal College of Science and Technology and the University of Glasgow, Prof. McLean spent five years with the Metallurgy and Materials Science Department of McMaster University before moving to the Graham Research Laboratory of Jones and Laughlin Steel Corporation in Pittsburgh. In 1970 he joined the Department of Metallurgy and Materials Science at the University of Toronto where he served as Founding Director of the Ferrous Metallurgy Research Group, the American Iron and Steel Institute Distinguished Professor and Department Chair. In 2002 he was granted a life-time appointment as Professor Emeritus. He is a Senior Fellow of the Tenaris University Industrial School in Argentina and holds Adjunct Professorship positions at Ryerson University in Canada and Chiba Institute of Technology in Japan. Since 1998 he has served as an Invited Professor within the Faculty of Energy Science and Technology at Kyoto University. Much of his research has been conducted in collaboration with industry and has included activities pertaining to the physical chemistry of iron and steelmaking systems, the development of sensors for liquid metal processing, plasma treatment of materials and near-net-shape casting of directionally solidified metals and alloys. He has authored or co-authored over 350 publications and served as a consultant or as a board member for companies within North America and Europe. In 1985 Prof. McLean was elected President of the Iron and Steel Society of AIME. He is a Fellow of several professional organizations including the Royal Society of Canada, the Canadian Academy of Engineering and ASM International. He has received Honorary Doctorates from the University of Miskolc and the University of Strathclyde and is an Honorary Member of AIME, the Hungarian Mining and Metallurgical Society and the Iron and Steel Institute of Japan.
This award was established in 1971, to clarify the role of materials science and engineering in technology and in society in its broadest sense; to present an evaluation of progress made in developing new technology for the ever changing needs of technology and society; and to define new frontiers for materials science and engineering.

The 2014 Distinguished Lecturer is:

Dr. Robert E. Schafrik, FASM
General Manager (Retired)
GE Aviation
Cincinnati, OH

Lecture Title: “Materials for a Non-Steady State World.”

Dr. Robert E. Schafrik, Sr., FASM retired in April 2014 after 17 years as an executive at GE Aviation, serving as the general manager of the Materials and Process Engineering department. He was responsible for developing and qualifying materials for turbine engines, as providing production and field support for the materials and their supply chains. His tenure encompassed a dramatic increase in the number of new materials applied to aero-turbine engines that included new polymer composites, titanium aluminide turbine blades, new turbine disk alloys, new turbine blade alloys, hybrid ceramic main shaft engine bearings, ceramic matrix composites, and advanced coatings. Prior to joining GE in 1998, he served at the National Research Council (NRC) where he was staff director, National Materials Advisory Board for six years. Before joining the NRC, he was vice president of research and development at Technology Assessment & Transfer Inc., in Annapolis, Maryland. Dr. Schafrik also served in the U.S. Air Force for 20 years in a variety of R&D and advanced aerospace system acquisition capacities, retiring in 1988 as a lieutenant colonel.

Dr. Schafrik is a Fellow of ASM International and a member of the National Academy of Engineering. He has a Ph.D. in metallurgical engineering from The Ohio State University, a M.S. in aerospace engineering from the Air Force Institute of Technology, a M.S. in information systems from George Mason University, and a B.S. in metallurgy from Case Western Reserve University.

Harvey Brooks ........................................1971
Harvard University

James Boyd ...........................................1973
Executive Director
National Commission on Materials Policy

Sir Alan Cottrell ......................................1972
Chief Scientific Advisor
Cabinet Office, England

Cyril Stanley Smith .................................1974
Professor Emeritus
Massachusetts Institute of Technology
ASM INTERNATIONAL® AND THE MINERALS, METALS & MATERIALS SOCIETY DISTINGUISHED LECTURESHIP IN MATERIALS & SOCIETY

Michael Tenenbaum, President, Inland Steel Company

William O. Baker, President, Bell Laboratories

Sir H. Montague Finniston, FRS, Chairman, Sears Holdings Limited

Herbert H. Kellogg, Stanley-Thompson Professor of Chemical Metallurgy, Columbia University

Glenn T. Seaborg, Associate Director, Lawrence Berkeley Laboratory, University of California

Charles Crussard, Scientific Advisor, Pechiney Ugine Kuhlmann

The Honorable Dixy Lee Ray, Writer and Lecturer

Morris Cohen, Retired President, Massachusetts Institute of Technology

Raymond L. Smith, Retired President, Michigan Technological University

Nathan E. Promisel, Consultant, National Materials Advisory Board, National Academy of Sciences

Robert I. Jaffe, Senior Technical Advisor, Materials Support Group, Research & Development Staff, Electric Power Research Institute

Arden L. Bement, Jr., 1986
Vice President of Technical Resources, TRW, Inc.

James S. Kane, 1987
Special Assistant for Laboratory Affairs, University of California-Berkeley

Frank Press, 1988
President, National Academy of Sciences

Siegfried S. Hecker, 1989
Director, Los Alamos National Laboratory

Sir Robin Nicholson, 1990
Executive Director, Pilkington plc

Praveen Chaudhari, 1991
IBM Research Division, T.J. Watson Research Center

Frederick Seitz, 1992
President Emeritus, Rockefeller University

Donald R. Muzyka, 1993
President, Special Metals Corporation

Peter R. Bridenbaugh, 1994
Executive Vice President & Chief Technical Officer, Aluminum Company of America

Albert R.C. Westwood, 1995
Vice President, Research and Exploratory Technology, Sandia National Laboratories

Peter Cannon, 1996
Managing Partner, VRE Company

James C. Williams, 1997

General Manager
Engineering Materials Technology Labs
GE Aircraft Engines

Lyle H. Schwartz, 1998
Retired Director, National Institute of Standards & Technology

Dr. Mary Lowe Good, 1999
Managing Member, Venture Capital Investors, LLC

Prof. Merton C. Flemings, 2000
Toyota Professor of Materials Engineering, Massachusetts Institute of Technology

Dr. Bhakta B. Rath, 2001
Associate Director of Research, U.S. Naval Research Laboratory

Dr. Duncan T. Moore, 2002
Rudolf and Hilda Kingslake Professor of Optical Engineering, University of Rochester

Dr. Subra Suresh, 2011
Director, National Science Foundation, Arlington, Virginia

Julia Weertman, FASM, 2012
Walter P. Murphy Professor Emerita, Northwestern University, Evanston, IL

Tresa M. Pollock, FASM, 2013
Alcoa Professor, University of California, Materials Department, Santa Barbara, CA

Prof. Joel P. Clark, 2006
Professor, Massachusetts Institute of Technology

Dr. Alan I. Taub, 2007
GM Research and Development
General Motors Corporation

Dr. Leo Christodoulou, 2008
Program Manager, DARPA DSO

Dr. Jeffrey Wadsworth, 2009
President and Chief Executive Officer, Battelle Memorial Institute

Mildred (Millie) Dresselhaus, 2010
Institute Professor of Electrical Engineering and Physics, Massachusetts Institute of Technology

Dr. Alton D. Romig, Jr., 2012
Vice President, Nonproliferation and Assessments, Sandia National Laboratories

Prof. Diran Apelian, 2004
Howmet Professor of Engineering, Director, Metal Processing Institute, Worcester Polytechnic Institute

Dr. William J. Madia, 2005
Executive Vice President for Laboratory Operations, Battelle
This year’s lecture was inaugurated in 1926 in memory and recognition of the outstanding scientific contributions to the metallurgical profession by a distinguished educator who was blind for all but two years of his professional life. Despite this handicap, he contributed 77 papers to the scientific literature, the majority of which dealt with a correlation of the chemical constituents with the physical and mechanical properties of steels.

This lecture recognizes demonstrated ability in materials science and engineering. Professor Campbell, Honorary Member of ASM International, was born in Detroit, Michigan in 1863, and was educated at the University of Michigan. After serving as a chemist in various iron companies, he became an Assistant Professor at the University of Michigan in 1890 where he lost his sight at the age of 28 in an explosion during a laboratory examination of steel. For 20 years before his death in 1925, he was Head Professor of Chemistry and Metallurgy and Director of the Chemical Laboratory at the University of Michigan.

The 2014 Edward DeMille Campbell Memorial Lecturer is:

Dr. Ian M. Robertson, FASM
Dean, College of Engineering
University of Wisconsin, Madison, WI

Lecture Title: “Hydrogen Embrittlement Understood.”

Dr. Ian Robertson is the Dean of the College of Engineering and a professor in Materials Science and Engineering at the University of Wisconsin-Madison. Prior to this he was a faculty member in the Department of Materials Science and Engineering and a Donald B. Willett Professor of Engineering at the University of Illinois. He served as the Director of the Division of Materials Research at the National Science Foundation from 2011-2013. He joined the University of Illinois in 1982 as a post-doctoral fellow and was appointed as an assistant professor in 1984, associate professor in 1989, professor in 1995, and served as Head of the Department from 2005-2009. He received a B.Sc. degree (first class) in Applied Physics from Strathclyde University, Glasgow Scotland in 1978 and his D. Phil (Metallurgy) from the University of Oxford in 1982. He is a member of TMS, MRS, AAAS and a Fellow of ASM. His research focuses on the use of the electron microscope as an experimental laboratory in which dynamic experiments can be conducted to reveal the atomic processes responsible for the macroscopic response of a material. He has applied this technique to enhance our understanding of the reaction pathways and kinetics that occur during deformation, phase transformation, irradiation and hydrogen embrittlement of metallic materials. His insight to the mechanisms responsible for hydrogen embrittlement of metals was recognized by the Department of Energy in 1984 when he, along with Howard Birnbaum, received the DOE prize for Outstanding Scientific Accomplishment in Metallurgy and Ceramics. In 2011, he received the DOE EE Fuel Cell Program award for contributions to our understanding of mechanisms of hydrogen embrittlement. He was a Principal Editor for the Journal of Materials Research from 1995-2011, and in 2009 became a member of the editorial board of Microscopy Today and Editor-in-Chief of the review journal Current Opinion in Solid State and Materials Science.

Zay Jeffries......................... 1927  John P. Hirth......................... 1972
W.H. Hatfield....................... 1928  W. A. Backofen...................... 1973
Albert Sauveur...................... 1929  Donald J. McPherson.............. 1974
Marcus A. Grossmann................ 1930  Morris Tanenbaum.................. 1975
Charles H. Herty, Jr............... 1931  Jack H. Westbrook............... 1976
Herbert J. French................... 1933  Harold W. Paxton.................. 1978
Vsevolod N. Krivobok................ 1934  Morris E. Fine..................... 1979
Harry W. McQuaid.................... 1935  David Turnbull...................... 1980
James P. Gill....................... 1936  George T. Hahn..................... 1981
Wesley P. Sykes..................... 1937  John W. Christian................ 1982
Alfred L. Boegehold............... 1938  Robert A. Rapp.................... 1983
Edmund S. Davenport.............. 1939  Robert F. Hehemann.............. 1984
Samuel L. Hoyt...................... 1940  Raymond F. Decker............... 1985
Robert F. Mehling.................. 1941  Herbert H. Johnson............... 1986
John Chipman....................... 1942  Albert R. C. Westwood.......... 1987
C. H. Mathewson.................... 1943  Thaddeus B. Massalski........... 1988
Maxwell Gensamer.................. 1945  Morton C. Flemings............... 1990
James B. Austin..................... 1946  Gilbert Y. Chin................... 1991
Augustus B. Kinzel................. 1947  (Presentation by Dr. Kenneth L. Walker)
Morris Cohen....................... 1948  Peter Haasen...................... 1992
Edgar H. Dix, Jr................... 1949  Carolyn M. Hansson.............. 1993
Earle C. Smith..................... 1950  Michael F. Ashby................ 1994
Cyril Stanley Smith................ 1952  J. Keith Brimacombe............. 1996
Donald S. Clark.................... 1953  Paul G. Shewmon.................. 1997
Charles S. Barrett............... 1956  George Krauss..................... 2000
Earl R. Parker..................... 1957  Robert D. Pehlke............... 2001
Peter Paysyon....................... 1958  Doris Kuhlmann-Wiltsdorf...... 2002
Clarence Zener..................... 1960  Prof. Jagdish Narayan......... 2004
Lawrence S. Darken............... 1961  J. David Embury............... 2005
John C. Fisher..................... 1962  Gregory B. Olson................ 2006
Charles Crussard.................. 1964  Hael Mughabghab............... 2008
J. Herbert Hollomon.............. 1965  Subra Suresh..................... 2009
J. J. Gilman....................... 1966  Robert O. Ritchie.............. 2010
Pol Duwez.......................... 1967  Martin E. Glicksman......... 2011
Donald J. Blickwedde............. 1968  Herbert Gleiter............... 2012
Walter R. Hibbard, Jr............ 1969  Enrique J. Lavernia........... 2013
Mars G. Fontana.................... 1970

27  28
The Marcus A. Grossmann Young Author Award was established in 1960 in memory of an eminent metallurgist, research director and author, who was President of ASM in 1944, to honor the author (or authors) under 40 years of age whose paper has been selected as the best of those published in a specific volume of Metallurgical and Materials Transactions. Dr. Grossmann was born and raised in Youngstown, Ohio, where the steel mills lured him into metallurgy. He was interested in “pure” research and made eight trips across the Atlantic to keep abreast of continental steelmaking methods and metallurgical advances. In his later years he endeavored to strike an even balance between primary fundamental research and practical application. His technical papers and books, in addition to being notable contributions of important knowledge, inspired much further research by many others.

The 2014 Recipients of the Marcus A. Grossmann Young Author Award are:

Prof. Joo Hyun Park
Professor
Hanyang University
Seoul, Korea

For his paper: “Structure-Property Relationship of CaO-MgO-SiO2: Quantitative Analysis of Raman Spectra.”

Prof. Joo Hyun Park, formerly a faculty member of the Department of Advanced Materials Science and Engineering, the University of Ulsan for 5 years, recently joined Hanyang University in 2013 as a faculty member of the Department of Materials Engineering. He received his B.Sc., M.Sc., and Ph.D. degrees from Yonsei University, Korea and worked at Posco, for seven years as a Senior Research Scientist in the stainless steelmaking and continuous casting area including control of spinel inclusions, refining of impurities such as sulfur, nitrogen and carbon in AOD/VOD processes, and control of equiaxed solidification structure of cast slab.

Prof. Park serves on the board of review for Metallurgical and Materials Transactions B and as an active peer reviewer for academic journals including Metallurgical and Materials Transactions A & B, Journal of the American Ceramic Society, Calphad, ISIJ International, Metals & Materials International, International Journal of Materials Research and Steel Research International. He has published more than 180 peer-reviewed SCI papers and conference proceeding papers on high temperature physical chemistry of metals and slags. He has given more than 40 invited talks in academia and industries in Korea, Japan, China, Australia, USA, Mexico, Saudi Arabia, Ukraine, Belgium, Netherlands, Norway and Sweden.

His current research interests include control of spinel-type inclusions in various kinds of steel grades; reoxidation phenomenon in continuous casting tundish; melting and refining of stainless steels containing rare earth elements; control of solidification structure of casting and welding processes using inclusion particles; refining of impurities from Mn-ferroalloys; pyrometallurgical recovery of rare and precious metals from electronic printed circuit board wastes; recovery of iron from EAF slags, Cu slags, and mill scales; and understanding the viscosity-structure relationship of slags using vibrational spectroscopic methodologies.

Roger L. Whiteley (Vol. 52) ................................ 1961
Erhard Hornbogen (Vol. 53) ............................ 1962
Erhard Hornbogen (Vol. 55) ............................ 1963
E. T. Stephenson, G. H. Karchner, and Philip Stark (Vol. 57) ............... 1965
O. Johari and
Gareth Thomas (Vol. 58) ............................ 1966
William Oldfield (Vol. 59) ............................. 1967
H. W. Hayden, R. C. Gibson, H. F. Merrick and ....... (Vol. 60) ...................... 1968
J. H. Brophy (Vol. 60) ................................. 1968
Thomas H. Alden (Vol. 61) ............................ 1969
E. R. Thompson and
F. D. Lembey (Vol. 62) ............................. 1970
M. E. Glickman and
R. J. Schaefer (Vol. 1) ............................ 1971
M. Y. Solar and
R.J.L. Guthrie (Vol. 3) ............................. 1973
J. D. Miller and
J.W. Beckstead (Vol. 4) ............................. 1974
Gregory O. Garmon (Vol. 5) .......................... 1975
Amit K. Ghosh and Siegfried S. Hecker (Vol. 6A) ............... 1976
A. Grilli, K. Sorimachi and
J. K. Brimacombe (Vol. 7B) .......................... 1977
Michel Guttmann (Vol. 9A) .......................... 1978
Ronald M. Horn and Robert O. Ritchie (Vol. 9A) ...................... 1979
Thomas M. Devine, Jr. (Vol. 11A) .................... 1981
R. Sinclair, T. Yamashita and G. M. Michal (Vol. 12A) ............... 1982
Martin R. Bridge and Gary D. Rogers (Vol. 15B) ...................... 1985
Kwal S. Chan (Vol. 16A) ............................. 1986
David M. Kundrat (Vol. 17A) ........................ 1987
John G. Speer, Joseph R. Michael, and
Steven S. Hansen (Vol. 18A) ...................... 1988
Carlos G. Levi (Vol. 19A) ............................. 1989
Glenn S. Daehn and Gaspar González-Doncel (Vol. 20A) ............... 1990
Andreas Mortensen and
Véronique J. Michaud (Vol. 21A) ..................... 1991
Jyrki Miettinen (Vol. 22A) ............................. 1992
Kwai S. Chan (Vol 24A) ............................. 1994
Qiuhong Diao and Hai-Lung Tsai (Vol. 25A) ...................... 1995
C. Beckerman and Marc C. Schneider (Vol. 26A) ..................... 1996
Robert M. McDavid and Brian G. Thom as (Vol. 27B) .................... 1997
Ana Maria Garcia and Huseyin Sehitoglu (Vol. 28B) .................... 1998
Weidong Cai and Enrique J. Lavernia (Vol. 30A) ..................... 1999
Andrew J. Strutt and Kenneth S. Vecchio (Vol. 30A) ..................... 2000
Richard W. Fonda and George Spanos (Vol. 31A) ..................... 2001
David Dye, Oliver M. Hunziker, ...................... 2002
Roger C. Reed and S. Mark Roberts (Vol. 32A) ..................... 2002
Sridhar Seetharaman, Martin Valdez, and
Yan Wang (Vol. 33B) ............................. 2003
Kelly T. Conlon, Roger C. Reed, and
Christopher R. Hutchinson, Stéphane Gorse, and
Jian-Feng Nie (Vol. 35) ............................. 2006
An-Chou Yeh and Sammy Tin (Vol. 37A) ..................... 2007
Dale L. Atwell and Matthew R. Barnett (Vol. 38A) ..................... 2008
Michael D. Gross, Lauren M. Hafford, Elizabeth A. Sterling, and Jonathan D. Stolk (Vol. 40A) ..................... 2010
Brad L. Boyce and Henry A. Padilla, II .......................... 2012
Sung Suk Jung and Prof. Il Sohn ..................... 2013
Of the medal awards conferred periodically by ASM, the Henry Marion Howe Medal is the oldest; it was established in 1923 and is awarded in memory of a distinguished teacher, writer, metallurgist and consultant, to honor the author (or authors) whose paper has been selected as the best of those published in a specific volume of Metallurgical and Materials Transactions.

Henry Marion Howe, Honorary Member of ASM, whose memory is thus perpetuated, was born in Boston on 2 March 1848. With a preliminary education at the Boston Latin School, he graduated as A.B. from Harvard in 1869 and with a degree corresponding to B.S. from Massachusetts Institute of Technology in 1871. Harvard awarded him the degrees of A.M. in 1872 and L.L.D. in 1905. In the years 1872 to 1882, he held executive positions with a number of steel mills and with copper and nickel plants. In 1882, he opened an office in Boston as a consulting metallurgist and lectured on metallurgy at Massachusetts Institute of Technology from 1883 to 1897. He became Professor of Metallurgy at Columbia University in 1897, and held this position until 1913, serving as Professor Emeritus from 1913 until his death on 14 May 1922. Dr. Howe's chief contribution to the scientific world was his development of the science of metallography, as a result of his great powers of observation and deduction. His ability to correlate and interpret each discovery and investigation by others and supplement them by investigations of his own resulted in the establishment of a new science dealing with the constitution of iron and steel.

The 2014 Recipients of the Henry Marion Howe Medal are:

**Dr. Fabien Onimus**
Research Engineer
CEA French Atomic Energy Agency
Paris, France

**Dr. Jean-Luc Bechade**
Head of Laboratory
CEA French Atomic Energy Agency
Paris, France

**Dr. Didier Gilbon**
Project Manager
CEA French Atomic Energy Agency
Paris, France

For their paper: “Experimental Analysis of Slip Systems Activation in Neutron-Irradiated Zirconium Alloys and Comparison with Polycrystalline Model Simulations.”

Dr. Fabien Onimus received his Ph.D. from Ecole Centrale Paris, France in 2003, working in collaboration with CEA (French Atomic Energy Agency), on radiation effects in zirconium alloys used in the nuclear industry. He joined CEA as a research engineer in 2004. He is currently an expert researcher at CEA and also associate professor at the National Institute for Science and Nuclear Technology. He has worked at CEA for more than ten years in the field of radiation effects in structural materials used for nuclear applications and especially zirconium alloys, often in close collaboration with EDF and AREVA. He also serves on the board of review in Journal of Nuclear Materials.

Dr. Onimus has been acknowledged by receiving several awards for his contributions to the profession, the J. Schmel Award, 2007 from ASTM International, and the J. Rist Award, 2010 from the French Society for Metallurgy and Materials.

For their paper: “Experimental Analysis of Slip Systems Activation in Neutron-Irradiated Zirconium Alloys and Comparison with Polycrystalline Model Simulations.”
HENRY MARION HOWE MEDAL

B. I. Edelson and William Baldwin, Jr. .......................... 1963
W. A. Backofen, I. R. Turner, and D. H. Avery .......................... 1965
Raymond Grange ........................................ 1967
Kanji Ono and Masahiro Meshii .......... 1968
B. H. Kear, G. R. Leverant, and J. M. Oblak ......................... 1970
John S. Benjamin .................................. 1971
R. G. Davies and C. L. Magee .......... 1972
M. D. Rinaldi, R. M. Sharp, and M. C. Flemings .......................... 1973
R. A. Rapp, A. Eas, and G. J. Yurek ......................... 1974
C. J. McMahon, Jr., and Joseph R. Rellick .......................... 1975
R. L. I. Guthrie, R. Clift, and H. Henein ......................... 1976
Paul G. Shewman .............................. 1977
E. D. Hondros and Martin P. Seah .......... 1978
G. W. Simmons, P. S. Pao, and R. P. Wei .................................. 1979
J. K. Brimacombe, F. Weinberg, and E. B. Hawbolt ......................... 1980
H. Dolle and J. B. Cohen .......................... 1981
R. Mehrabian and C. G. Levi .......................... 1983
G. R. Speich, A. J. Schwoebel, and J. P. Huffman ......................... 1984
Eiichi Takeuchi and J. Keith Brimacombe ......................... 1985
Richard P. Gangloff .......................... 1986
Brent L. Adams .............................. 1987
William C. Johnson .......................... 1988
Daniel Y. C. Wei, Bakhtier Farouk, and Diran Apelian ......................... 1989
Andreas Mortensen, Lawrence J. Masur, James A. Cornie, and Merton C. Flemings .......... 1990
John W. Holmes and Frank A. McClintock ......................... 1991
Uday Mishra and Thomas W. Edgar .......................... 1992
Sadi Karagöz, Helmuth F. Fischmeister, Hans-Olof Andrén, and Guang-Jun Cai .......................... 1993
Brent L. Adams, Karsten Kunze, and Stuart I. Wright ......................... 1994
Frédéric Barlat, Kwansoo Chung, and Owen Richmond ......................... 1995
Rohit K. Trivedi .................................. 1996
Jong K. Lee .................................. 1997
Daniel E. Lawrynowicz, Bing Li, and Enrique J. Lavernia .......................... 1998
Hong-Sheng Fang, Xingcun Tong ......................... 1999
Terence G. Langdon and Yong Li .......................... 2000
Christopher A. Schuh .......................... 2001
Kwai S. Chan .................................. 2002
Ryosuke O. Suzuki, Koh Teranuma, and Katsutoshi Ono .......................... 2004
David M. Saylor, Anthony D. Rollett, Kee Jung Kun, Bassem S. El-Dasher, and Joseph Friby ......................... 2005
Peng Cao, Mark Easton, Zoé Hildebrand, Ma Qian, and David StJohn .......................... 2006
Cormac J. Byrne, Eric A. Theisen, Paul H. Steen, and Barry Reed .......................... 2007
Brent M. Capell, Gary Was .......................... 2008
Joel V. Bernier, Michael G. Glavicz, Matthew R. Miller, Jun-Sang Park, and Adam L. Pilchak .......................... 2009
Matthias Militzer and Yves Brechet .......................... 2010
Adam L. Pilchak, James C. Williams, and Robert E. A. Williams .......................... 2011
K. Sadananda and A. K. Vasudevan .......................... 2012
Chiyoko Horike, Kazuki Morita, and Toru H. Okabe .......................... 2013

JACQUET-LUCAS AWARD FOR EXCELLENCE IN METALLOGRAPHY

The ASM Metallographic Award was established in 1946 for the best entry in the annual ASM metallographic competition. In 1958, it became known as the Francis F. Lucas Metallographic Award and has been endowed since that date by Adolph I. Buehler. In 1972, ASM joined with The International Metallographic Society in sponsoring the Pierre Jacquet Gold Medal and the Francis F. Lucas Award for Excellence in Metallography. This award has been endowed by Buehler Ltd. since 1976.

Dr. Lucas, a Howe Medalist of ASM, was born in Glen Falls, New York in 1884, and received the honorary degree of Sc.D. from Lehigh University in 1931. For 47 years he was a staff member and research microscopist at Bell Telephone Laboratories and pioneered the use of microscopy in the study of metals and living cells.

The 2014 Recipient of the Jacquet-Lucas Award is:

Mr. Thomas Nizolek
Santa Barbara, CA

For his entry titled: “Deformation of Bulk Metallic Nanolaminates.”

Thomas Nizolek is a doctoral student at the University of California Santa Barbara, advised by Prof. Tresa Pollock, FASM. He received his B.S. in Materials Science and Engineering from Lehigh University in 2010 where he was a Dean’s Scholar and an active member of the local chapter of ASM. During his undergraduate studies Tom worked on a variety of research projects on topics including laminated steels, titanium nitride thin films, and titanium-tantalum shape memory alloys.

During the course of his Ph.D. research, Tom has worked at Los Alamos National Laboratory as part of a team focused on improving the deformation processing and properties of bulk bi-metallic nanolaminates. This group, led by Drs. Irene Beyerlein and Nathan Mara, employs both experimental and theoretical tools to investigate the properties of these novel structural materials. Tom’s primary research interests include deformation processing, strain localization, and the mechanical properties of nanocrystalline metals.

Tom is a previous Jacquet-Lucas recipient (2008), a Department of Defense NDSEG fellow, and has been a member of ASM since 2005.
JACQUET-LUCAS AWARD FOR EXCELLENCE IN METALLOGRAPHY

Ray H. Beauchamp, Natalio T. Saenz, and John T. Prater ........................................... 1984
Ulrike Taffner and Rainer Telle .................................................. 1985
Nabeel Hussain Alharthi ......................................................... 2013
George R. Kuhn .......................................................... 1946
R. H. Hays, M. Cain, Jr. .................................................. 1955
Donald Mannas .......................................................... 1956
T. K. Bierlein and B. Mastel ............................................. 1957
William C. Coons and Al Davinroy ............................... 1965
D. M. Maher and A. Eikum ............................................. 1966
John F. Kisiel .......................................................... 1967
M. S. Grewal, B. H. Alexander, and S. A. Sastri ............................................. 1973
M. P. Pinnel, D. E. Heath, J. E. Bennett, and G. V. McIlhargie ............................................. 1974
William C. Coons .......................................................... 1975
Lars E. Soderqvist ......................................................... 1976
Ray H. Beauchamp, Natalio T. Saenz, and John T. Prater ........................................... 1984
Ulrike Taffner and Rainer Telle .................................................. 1985
Nabeel Hussain Alharthi ......................................................... 2013

BRADLEY STOUGHTON AWARD FOR YOUNG TEACHERS

This award, accompanied by $3,000, was established in 1952 in memory of an outstanding teacher of metallurgy and dean of engineering who was President of ASM in 1942. The award recognizes a young teacher of materials science, engineering, design and processing technology who is making substantial contributions in the field. The recipient must be 35 years of age or younger by 1 May of the year in which the award is made.

Bradley Stoughton died in 1959 at the age of 86. Professor Stoughton taught at the School of Mines, Columbia University, for 35 years. Prior to his teaching career, Professor Stoughton was a consulting metallurgist for 21 years.

He gave his time without stint to his students, helping them to decide the directions in which their career should lie. His intimate knowledge of the theoretical and practical problems in the manufacture of steel made him an outstanding figure with his students and led him to an international reputation in this field.

Dr. Amber Genau
Assistant Professor, Materials Science and Engineering
University of Alabama at Birmingham, AL

"For outstanding classroom instruction, excellence in student recruiting and strong support of student chapters of technical societies."

Dr. Amber Genau has been an assistant professor of materials science and engineering at the University of Alabama in Birmingham (UAB) since 2010. She received her B.S. and M.S. from Iowa State University in 2004, and her Ph.D. from Northwestern University in 2008, all in materials engineering. Before coming to UAB, she worked for two years as a guest scientist at the German Aerospace Center (DLR) in Cologne, Germany. Her research is in the area of metal solidification and microstructure characterization. As a teacher, she is particularly interested in broadening participation in engineering and providing international experiences to undergraduate students.
BRADLEY STOUGHTON AWARD FOR YOUNG TEACHERS

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>Joseph Spretnak</td>
</tr>
<tr>
<td>1955</td>
<td>Robert D. Stout</td>
</tr>
<tr>
<td>1958</td>
<td>Robert F. Hehemann</td>
</tr>
<tr>
<td>1959</td>
<td>Walter A. Backofen</td>
</tr>
<tr>
<td>1960</td>
<td>Harold W. Paxton</td>
</tr>
<tr>
<td>1961</td>
<td>Richard E. Grace</td>
</tr>
<tr>
<td>1962</td>
<td>Edward E. Hucke</td>
</tr>
<tr>
<td>1963</td>
<td>John Price Hirth</td>
</tr>
<tr>
<td>1964</td>
<td>Robert M. Rose</td>
</tr>
<tr>
<td>1965</td>
<td>Robert A. Rapp</td>
</tr>
<tr>
<td>1966</td>
<td>George S. Ansell</td>
</tr>
<tr>
<td>1967</td>
<td>R. W. Heckel</td>
</tr>
<tr>
<td>1968</td>
<td>William D. Nix</td>
</tr>
<tr>
<td>1969</td>
<td>Henk I. Dawson</td>
</tr>
<tr>
<td>1970</td>
<td>Gordon H. Geiger</td>
</tr>
<tr>
<td>1971</td>
<td>H. R. Piehler</td>
</tr>
<tr>
<td>1972</td>
<td>William M. Boorstein</td>
</tr>
<tr>
<td>1973</td>
<td>John K. Tien</td>
</tr>
<tr>
<td>1974</td>
<td>John L. Olson</td>
</tr>
<tr>
<td>1975</td>
<td>John W. Morris, Jr.</td>
</tr>
<tr>
<td>1976</td>
<td>John H. Perepezko</td>
</tr>
<tr>
<td>1977</td>
<td>David K. Matlock</td>
</tr>
<tr>
<td>1978</td>
<td>Joseph Spretnak</td>
</tr>
<tr>
<td>1979</td>
<td>Bruce R. Palmer</td>
</tr>
<tr>
<td>1980</td>
<td>J. Barry Andrews</td>
</tr>
<tr>
<td>1981</td>
<td>Stephen W. Stafford</td>
</tr>
<tr>
<td>1982</td>
<td>George M. Pharr</td>
</tr>
<tr>
<td>1983</td>
<td>Ronald Gronsky</td>
</tr>
<tr>
<td>1984</td>
<td>David L. Bourell</td>
</tr>
<tr>
<td>1985</td>
<td>Jeffrey C. Gibeling</td>
</tr>
<tr>
<td>1986</td>
<td>Llewellyn K. Rabenberg</td>
</tr>
<tr>
<td>1987</td>
<td>John C. Bravman</td>
</tr>
<tr>
<td>1988</td>
<td>Helen M. Chan</td>
</tr>
<tr>
<td>1989</td>
<td>Enrique J. Lavernia</td>
</tr>
<tr>
<td>1990</td>
<td>Tresa M. Pollock</td>
</tr>
<tr>
<td>1991</td>
<td>Wole O. Soboyejo</td>
</tr>
<tr>
<td>1992</td>
<td>James B. Adams</td>
</tr>
<tr>
<td>1993</td>
<td>Linda S. Schadler</td>
</tr>
<tr>
<td>1994</td>
<td>Darrell G. Schom</td>
</tr>
<tr>
<td>1995</td>
<td>Nikhilesh Chawla</td>
</tr>
<tr>
<td>1996</td>
<td>Richard P. Vinci</td>
</tr>
<tr>
<td>1997</td>
<td>Chrysanthé Demetry</td>
</tr>
<tr>
<td>1998</td>
<td>Diego Mantovanii</td>
</tr>
<tr>
<td>1999</td>
<td>David F. Bahr</td>
</tr>
<tr>
<td>2000</td>
<td>Nikhilend Chawla</td>
</tr>
<tr>
<td>2001</td>
<td>Kenneth Gall</td>
</tr>
<tr>
<td>2002</td>
<td>Christopher Li</td>
</tr>
<tr>
<td>2003</td>
<td>Thomas J. Balk II</td>
</tr>
<tr>
<td>2004</td>
<td>Megan E. Frary</td>
</tr>
<tr>
<td>2005</td>
<td>Mathieu Brochu</td>
</tr>
<tr>
<td>2006</td>
<td>Ryan O’Hayre</td>
</tr>
<tr>
<td>2007</td>
<td>Erica L. Corral</td>
</tr>
<tr>
<td>2008</td>
<td>Russell J. Holmes</td>
</tr>
<tr>
<td>2009</td>
<td>Michele Viola Manuel</td>
</tr>
</tbody>
</table>

ALBERT EASTON WHITE DISTINGUISHED TEACHER AWARD

This award was established in 1960 in memory of an outstanding teacher and research engineer, who was a founding member and President of ASM in 1921. It recognizes unusually long and devoted service in teaching as well as significant accomplishments in materials science and engineering and an unusual ability to inspire and impart enthusiasm to students.

Professor White was distinguished for his long service to the University of Michigan as a teacher and as director of its Research Institute. He was also noted for his metallurgical accomplishments, especially in the field of high-temperature properties of metals and alloys for service in steam power plants.

The 2014 Recipient of the Albert Easton White Distinguished Teacher Award is:

† Dr. Gary M. Michal, FASM
Professor of Metallurgy
Case Western Reserve University, Cleveland, OH

“For dedicated and inspirational service as teacher and mentor, sharing wisdom, humor, the love of finding things out, and the joy of materials with students of the last four decades.”

Dr. Gary M. Michal was an LTV Steel Professor of Metallurgy in the Case School of Engineering’s Department of Materials Science and Engineering, at Case Western Reserve University in Cleveland, Ohio. He joined the department as an assistant professor in 1983 and later became department chair from 1996 through 2007. His courses included the popular Materials in Sports, which looked both at bodies and equipment. But his commitment to his students was so great he insisted on reviewing their last exams, assessing their final projects and, three days before he died, determining final grades. Gary Michal passed away in May 2012 after a four-year battle with mesothelioma at the age of 58.

Dr. Michal never let his illness dim his enthusiasm for his life or his work. He found great joy in sharing concepts and continued to teach, advise and even present groundbreaking addresses all the way to the end. In the month before he died, he gave the honorary Zay Jeffries Lecture for the ASM Cleveland Chapter. The talk was described as “masterful,” and an audience member reflected the feelings of many when he opened his question with the words, “Gary, you have always been a visionary!”

Dr. Michal was renowned internationally for his expertise in steel metallurgy, and often called upon by industry leaders for his insights. He was known within his department as a “deep thinker,” someone who regularly went beyond individual experiments and projects to see potential for larger breakthroughs—and then realize them.

Throughout his career Dr. Michal’s work with students won him multiple teaching awards from disciplinary organizations and nominations from those on campus. He also received
the Meritorious Award from the Iron and Steel Society for Bar Product Physical Metallurgy, the NASA Certificate of Recognition for Creative Development of a Copper Alloy for High Temperature Use, and a National Science Foundation Presidential Young Investigator Award. He received his endowed chair in 1990, and in 1995 was elected Fellow of ASM International. In 1998 the Case Alumni Association presented him with an award for meritorious service.

He earned a B.S. in Metallurgical Engineering at Case Western Reserve University in 1975, and a M.S. and Ph.D. degrees at Stanford University in 1977 and 1980 respectively, both in Materials Science and Engineering. In 1979, he joined Republic Steel in Independence as a project leader in cold rolled steels.

Dr. Michal wrote about 120 technical papers and gave approximately invited 30 lectures. Over the course of his teaching and research career, he advised over 50 M.S. students, and 25 Ph.D. and post-doctoral students.

Dr. Michal was the Managing Director of ASM between 1959 and 1983. He was the Society’s most visible spokesman for those many years and “Mr. ASM” to many. Mr. Putnam’s unique talents were apparent to all those who came in contact with him and were of invaluable worth to the society.

The Allan Ray Putnam Award was established in 1988 to recognize the exemplary efforts of various outstanding members of ASM International on behalf of the Society to further its objectives and goals. The vitality and success of ASM depends on its members and their willingness to contribute their time and talents for the good of the Society. The purpose of this award is to recognize those individuals whose contributions have been especially noteworthy and to whom the Society owes a particularly great debt of appreciation.

Allan Ray Putnam was the Managing Director of ASM between 1959 and 1983. He was the Society’s most visible spokesman for those many years and “Mr. ASM” to many. Mr. Putnam’s unique talents were apparent to all those who came in contact with him and were of invaluable worth to the society.

The 2014 Recipient of the Allan Ray Putnam Service Award is:

Mr. David J. Fitzgerald, FASM
President
Precision Surfaces International, Inc.
Houston, TX

“For quiet, consistent generosity, serving the Houston Chapter, ASM International, and the affiliated International Metallographic Society, in appointed and elected offices, providing personal and financial support for education at every level, and enriching materials science by his work with industrial superfinishing.”

Mr. David J. Fitzgerald, FASM is the President and co-owner of Precision Surfaces International, Inc., an international distribution company of consumables and equipment for the metallographic laboratory and industrial superfinishing market. Mr. Fitzgerald’s career has been focused in the industrial sales area since his graduation from the University of Texas in 1972, with a BBA, Engineering Route to a Management Degree. In 1983, Mr. Fitzgerald and his wife and partner Dale purchased a small portion of a business which supplied lab consumables to the Houston market. Over the next 30 years, Mr. Fitzgerald has built and expanded the company from a local focused enterprise, to one with national and International markets.

Mr. Fitzgerald has been a member of the ASM Houston Chapter since that beginning, working his way through volunteer positions in Education, Teachers Material Camp Chair, and through the officer positions to his Chairmanship in 1994-1995. He currently serves the local chapter of ASM as a Trustee for both the C. F. Lewis and Wayne Quanz Scholarship Funds. He is also involved with the International Metallographic Society, an affiliate society of ASM. His first task as an IMS Board Member was to reactivate the Corporate Sponsorship
ALLAN RAY PUTNAM SERVICE AWARD

Program, followed by many other tasks. Mr. Fitzgerald served as President of the IMS in 2007-2009, and has attended every IMS Conference with his wife since 1990. David and Dale were awarded the IMS President’s Award in 2009, the first time a couple achieved this distinction. He also served on the ASM Finance Committee from 2003 to 2013, and the Investment and ASM Materials Education Foundation Committee from 2010 through 2013.

J. WILLARD GIBBS PHASE EQUILIBRIA AWARD

The 2014 Recipient of the J. Willard Gibbs Phase Equilibria Award is:

Prof. Zi-Kui Liu, FASM
Professor of Materials Science and Engineering
The Pennsylvania State University
University Park, PA

“For his contributions in computational thermodynamics through integrated first-principles calculations and the CALPHAD method and for the advancement of phase equilibria theory, database development, materials design and promotion of thermodynamics.”

Dr. Zi-Kui Liu, FASM is a professor of materials science and engineering at The Pennsylvania State University. He obtained his B.S. from Central South University (China), M.S. from the University of Science and Technology Beijing (China), and Ph.D. from the Royal Institute of Technology (Sweden). He was a research associate at the University of Wisconsin-Madison and a senior research scientist at Questek Innovation, LLC. He has been at the Pennsylvania State University since 1999 and the editor-in-chief of CALPHAD journal since 2001. Dr. Liu is a Fellow and a member of the board of trustees of ASM International and was a member of the TMS board of directors. He received the TMS Brimacombe Medalist Award, and the ACers Spriggs Phase Equilibria Award.

Dr. Liu’s current research activities are centered on first-principles calculations, modeling of thermodynamic and kinetic properties, and their integration in understanding defects, phase stability, and phase transformations, and designing and tailoring materials processing and properties. He is the founder and the director of Center for Computational Materials Design and has published more than 330 papers in peer-reviewed journals.
The William Hunt Eisenman Award was established in 1960, in memory of a founding member of ASM, and its first and only secretary for 40 years. It recognizes unusual achievements in industry in the practical application of materials science and engineering through production or engineering use.

Mr. Eisenman concentrated his great abilities on the creation of services that would increase the importance of the ASM member to industry. He was acutely aware of the need for suitable recognition and communication of the practical aspects of metallurgy. His capacity for vision and execution are exemplified by the imaginative World Headquarters structure of the Society shown on the award plaque which stands today at Materials Park, Ohio.

Mr. Eisenman was totally dedicated to the Society and its work and in that connection set forth this creed: “To create and accomplish, we must have faith in ASM as an instrumental-ity through which all of us, recognizing that the security and welfare of our civilization depend increasingly on the advancement of scientific knowledge, will have an opportunity to serve humanity, our industry and our country.”

The 2014 Recipient of the William Hunt Eisenman Award is:

Dr. Robert E. Schafrik, FASM
General Manager (Retired)
GE Aviation
Cincinnati, OH

“For outstanding contributions to the aerospace industry in the application of materials science and engineering and the introduction of revolutionary materials through design, development, production, and system application in turbine engines.”

Dr. Robert E. Schafrik, Sr., FASM retired in April 2014 after 17 years as an executive at GE Aviation, serving as the general manager of the Materials and Process Engineering department. He was responsible for developing and qualifying materials for turbine engines, as providing production and field support for the materials and their supply chains. His tenure encompassed a dramatic increase in the number of new materials applied to aero-turbine engines that included new polymer composites, titanium aluminide turbine blades, new turbine disk alloys, new turbine blade alloys, hybrid ceramic main shaft engine bearings, ceramic matrix composites, and advanced coatings. Prior to joining GE in 1998, he served at the National Research Council (NRC) where he was staff director, National Materials Advisory Board for six years. Before joining the NRC, he was vice president of research and development at Technology Assessment & Transfer Inc., in Annapolis, Maryland. Dr. Schafrik also served in the U.S. Air Force for 20 years in a variety of R&D and advanced aerospace system acquisition capacities, retiring in 1988 as a lieutenant colonel.

Dr. Schafrik is a Fellow of ASM International and a member of the National Academy of Engineering. He has a Ph.D. in metallurgical engineering from The Ohio State University, a M.S. in aerospace engineering from the Air Force Institute of Technology, a M.S. in information systems from George Mason University, and a B.S. in metallurgy from Case Western Reserve University.

Harry B. Knowlton...............................1960 Robert B. Herchenroeder.......................1987
Theodore W. Bossert............................1961 Alfonso L. Baldi.................................1988
Harley A. Wilhelm...............................1962 John B. Giacobbe.............................1989
Glen Riege........................................1963 Nicholas P. Milano..........................1990
Howard Scott....................................1966 Stanley Abkowitz..........................1993
George Harrison...............................1972 Merle L. Thorpe...............................1999
Max W. Lightner...............................1973 Gaylord D. Smith...........................2000
Muir L. Frey......................................1974 Christopher L. Magee......................2001
Paul G. Nelson.................................1975 Martin J. Blackburn........................2002
Chester T. Sims................................1976 Brij B. Seth....................................2003
Donald J. Blickwede............................1977 Harry W. Antes................................2004
Benjamin Lustman.............................1978 Herbert L. Eiselstein.......................2005
Clyde A. Furgason..............................1979 R. Viswanathan..............................2006
Francis M. Richmond.........................1982 Richard L. Kennedy..........................2009
G. Bruce Kiner................................1983 Suresh M. R. Pai...............................2010
Michael Korchynsky............................1984 Mark G. Benz.................................2011
Norman O. Kates...............................1986 Philip J. Maziasz.............................2013
This award, established in 1934 in honor of a distinguished teacher, metallographer and metallurgist, recognizes pioneering materials science and engineering achievements that have stimulated organized work along similar lines to such an extent that a marked basic advance has been made in the knowledge of materials science and engineering.

Dr. Sauveur, Honorary Member of ASM, was born in Louvain, Belgium, in 1863, educated at Athenée Royal in Brussels, the School of Mines in Liège, and finally at MIT, graduating in 1889. Later he conducted his own laboratory and published the now famous Metallographist, a quarterly which carried most of the important metallographic literature of the day. In 1899, he joined the staff of Harvard University where he established the first metallographic laboratory in any university. From 1924 until his death in 1939 he was Gordon McKay Professor of Mining and Metallurgy at Harvard. Affectionately known throughout the metallurgical world as the “dean of American metallurgists,” Dr. Sauveur’s pioneering work produced the first photomicrographs of steel made in the United States. His book on “Metallography and Heat Treatment of Iron and Steel,” first published in 1912, was a standard textbook for a quarter of a century.

The 2014 Recipient of the Albert Sauveur Achievement Award is:

Prof. Yuntian Zhu, FASM  
Distinguished Professor  
North Carolina State University  
Raleigh, NC

“For pioneering work on the fundamental understanding of deformation physics in nanocrystalline materials.”

Prof. Yuntian Zhu, FASM is a distinguished professor in materials science and engineering at North Carolina State University (NCSU). In recent years he has worked extensively on crystal defects, deformation physics, and the irradiation damage of nanocrystalline metals and alloys. His group experimentally verified partial dislocation emission from a grain boundary and three twinning mechanisms in nanocrystalline Ni and Cu. He and his colleagues also experimentally observed, for the first time, a new twinning mechanism in nanocrystalline face-centered and cubic metals that does not generate macroscopic strain and an inverse grain size effect on twinning. In addition, his group recently developed several strategies to simultaneously increase the strength and ductility of nanostructure/ultrafine-grained metals and alloys, which is a significant breakthrough because previous attempts to improve ductility always sacrifice the strength. He recently received the 2012 TMS SMD Distinguished Scientist/Engineer Award and the NCSU Alumni Distinguished Research Award. He was also elected a Fellow of ASM International, a Fellow of American Physical Society (APS) and a Fellow of the American Association for the Advancement of Science (AAAS).
ENGINEERING MATERIALS ACHIEVEMENT AWARD

Established in 1969, this award recognizes an outstanding achievement in materials or materials systems relating to the application of knowledge of materials to an engineering structure or to the design and manufacture of a product. The recipient may be an individual, a team, or entire organization if that is the smallest group sharing in the development.

In this age of advancing technology, many outstanding accomplishments result from the work of interdisciplinary teams consisting, in many instances, of unsung individuals. The purpose of this award is to seek out and recognize outstanding developments in the application of materials in products or in engineering structures and to honor the organization or individuals responsible for them.

The 2014 Engineering Materials Achievement Award is presented to:

Ms. Marie Cole
Distinguished Engineer
IBM Systems & Technology Group
Hopewell Junction, NY

Ms. Marie Cole is a distinguished engineer in the Integrated Supply Chain Engineering organization within the IBM Systems and Technology Group. Ms. Cole joined IBM in 1984 after completing a B.S. in chemical engineering from RPI and also has an M.S. in materials science from Columbia University. She is responsible for the strategy to qualify and introduce new card assembly and interconnect technologies throughout the IBM server and storage system portfolio. Her recent focus has been on the transformation to lead-free solders driven by world-wide environmental legislation and initiatives for more environmentally friendly processes and products. She is an internationally recognized expert on microelectronic packaging assembly and reliability for her earlier development accomplishments in IBM microelectronics. Ms. Cole currently represents IBM on the board of directors of the High Density Packaging User Group. She previously served two terms on the Surface Mount Technology Association’s board of directors and has been recognized as one of their distinguished speakers for her numerous conference presentations and publications. She is the recipient of a 2013 Best of IBM Award, an IBM 2013 Corporate Technology Award and the IBM 2013 Chairman’s Environmental Award.

Mr. Matt Kelly is a senior technical staff member in the Integrated Supply Chain Engineering organization within the IBM Systems and Technology Group. Mr. Kelly holds a B.S. in chemical engineering from McMaster University, is a licensed professional engineer in the province of Ontario, and has received his MBA in strategic management from Sir Wilfrid Laurier University.

He is responsible for helping lead technology development, design, prototyping, integration, and bringing up IBM’s next generation storage and server hardware. His technical contributions to the industry include over 70 publications and 10 United States patent disclosures. Mr. Kelly remains active within numerous industry initiatives. He is a member of the SMTA board of directors and Technical Committee, an iNEMI TIG working group chairman, and is involved in various IPC and JEDEC standards councils. He is winner of six best paper awards since 2007, the recipient of an IBM 2013 Corporate Technology Award and the IBM 2013 Chairman’s Environmental Award.

Dr. Jim Wilcox, recently retired from the IBM Systems and Technology Group, has held numerous engineering and management positions over a 30-plus-year career. His responsibilities as a member of the IBM senior technical staff most recently included the resolution of server processor board assembly manufacturing challenges, including those posed by the elimination of lead. Dr. Wilcox earned B.S. and M.S. degrees in metallurgical engineering from Michigan Technological University and a Ph.D. in materials science from Cornell University. As an IBM Master Inventor, he holds 35 United States patents covering a range of electronic packaging technologies and processes. Throughout his career, Dr. Wilcox has been active in industry collaborations, serving for many years on technical advisory boards for the Integrated Electronics Engineering Center and the Semiconductor Research Corporation, on the board of directors for the High Density Packaging User Group, and as chair of the Binghamton Chapter of the IEEE CPMT Society.

“Mr. Matt Kelly is a senior technical staff member in the Integrated Supply Chain Engineering organization within the IBM Systems and Technology Group. Mr. Kelly holds a B.S. in chemical engineering from McMaster University, is a licensed professional engineer in the province of Ontario, and has received his MBA in strategic management from Sir Wilfrid Laurier University.

He is responsible for helping lead technology development, design, prototyping, integration, and bringing up IBM’s next generation storage and server hardware. His technical contributions to the industry include over 70 publications and 10 United States patent disclosures. Mr. Kelly remains active within numerous industry initiatives. He is a member of the SMTA board of directors and Technical Committee, an iNEMI TIG working group chairman, and is involved in various IPC and JEDEC standards councils. He is winner of six best paper awards since 2007, the recipient of an IBM 2013 Corporate Technology Award and the IBM 2013 Chairman’s Environmental Award.

Dr. Jim Wilcox, recently retired from the IBM Systems and Technology Group, has held numerous engineering and management positions over a 30-plus-year career. His responsibilities as a member of the IBM senior technical staff most recently included the resolution of server processor board assembly manufacturing challenges, including those posed by the elimination of lead. Dr. Wilcox earned B.S. and M.S. degrees in metallurgical engineering from Michigan Technological University and a Ph.D. in materials science from Cornell University. As an IBM Master Inventor, he holds 35 United States patents covering a range of electronic packaging technologies and processes. Throughout his career, Dr. Wilcox has been active in industry collaborations, serving for many years on technical advisory boards for the Integrated Electronics Engineering Center and the Semiconductor Research Corporation, on the board of directors for the High Density Packaging User Group, and as chair of the Binghamton Chapter of the IEEE CPMT Society.

Ms. Marie Cole is a distinguished engineer in the Integrated Supply Chain Engineering organization within the IBM Systems and Technology Group. Ms. Cole joined IBM in 1984 after completing a B.S. in chemical engineering from RPI and also has an M.S. in materials science from Columbia University. She is responsible for the strategy to qualify and introduce new card assembly and interconnect technologies throughout the IBM server and storage system portfolio. Her recent focus has been on the transformation to lead-free solders driven by world-wide environmental legislation and initiatives for more environmentally friendly processes and products. She is an internationally recognized expert on microelectronic packaging assembly and reliability for her earlier development accomplishments in IBM microelectronics. Ms. Cole currently represents IBM on the board of directors of the High Density Packaging User Group. She previously served two terms on the Surface Mount Technology Association’s board of directors and has been recognized as one of their distinguished speakers for her numerous conference presentations and publications. She is the recipient of a 2013 Best of IBM Award, an IBM 2013 Corporate Technology Award and the IBM 2013 Chairman’s Environmental Award.

Mr. Matt Kelly is a senior technical staff member in the Integrated Supply Chain Engineering organization within the IBM Systems and Technology Group. Mr. Kelly holds a B.S. in chemical engineering from McMaster University, is a licensed professional engineer in the province of Ontario, and has received his MBA in strategic management from Sir Wilfrid Laurier University.

He is responsible for helping lead technology development, design, prototyping, integration, and bringing up IBM’s next generation storage and server hardware. His technical contributions to the industry include over 70 publications and 10 United States patent disclosures. Mr. Kelly remains active within numerous industry initiatives. He is a member of the SMTA board of directors and Technical Committee, an iNEMI TIG working group chairman, and is involved in various IPC and JEDEC standards councils. He is winner of six best paper awards since 2007, the recipient of an IBM 2013 Corporate Technology Award and the IBM 2013 Chairman’s Environmental Award.

Dr. Jim Wilcox, recently retired from the IBM Systems and Technology Group, has held numerous engineering and management positions over a 30-plus-year career. His responsibilities as a member of the IBM senior technical staff most recently included the resolution of server processor board assembly manufacturing challenges, including those posed by the elimination of lead. Dr. Wilcox earned B.S. and M.S. degrees in metallurgical engineering from Michigan Technological University and a Ph.D. in materials science from Cornell University. As an IBM Master Inventor, he holds 35 United States patents covering a range of electronic packaging technologies and processes. Throughout his career, Dr. Wilcox has been active in industry collaborations, serving for many years on technical advisory boards for the Integrated Electronics Engineering Center and the Semiconductor Research Corporation, on the board of directors for the High Density Packaging User Group, and as chair of the Binghamton Chapter of the IEEE CPMT Society.
Matt Kelly — Senior Technical Staff Member, Electronic Card & Interconnect, Integrated Supply Chain Engineering, IBM
Jeff Taylor — Printed Circuit Board Qualification, Integrated Supply Chain Engineering, IBM
Wayne Rothschild — Printed Circuit Board Qualification, Integrated Supply Chain Engineering, IBM (Retired)
Mark Hoffmeyer — Senior Technical Staff Member, Electronic Packaging Integration, Systems and Technology Group, IBM
Tom Finck — Electronic Card Technical Program Manager, Integrated Supply Chain Engineering, IBM
Jim Bielick — Electronic Card & Interconnect, Integrated Supply Chain Engineering, IBM
Marie Cole — Distinguished Engineer, Electronic Card & Interconnect, Integrated Supply Chain Engineering, IBM
Larry Pymento — Senior Technical Staff Member, Electronic Card & Interconnect, Integrated Supply Chain Engineering, IBM
PK Pu — Electronic Card Assembly Procurement Engineering, Integrated Supply Chain Engineering, IBM
Jim Wilcox — Senior Technical Staff Member, Electronic Card & Interconnect, Integrated Supply Chain Engineering, IBM (Retired)

1970
For broad engineering achievements, including metals, fluids, and non-metallics, to achieve aircraft innovations through teamwork with many companies.

LOCKHEED AIRCRAFT CORPORATION
Clarence L. (Kelly) Johnson

1971
For pioneering efforts in the development of pelletized iron ore.

ARMCO STEEL CORPORATION
C. William Verity, Jr., Harry Holiday, Jr., Kenneth M. Haley

BETHLEHEM STEEL CORPORATION
Steward S. Cort, P. L. Steffensen

THE CLEVELAND CLIFFS IRON COMPANY
H. Stuart Harrison, Louis Erck

FORD MOTOR COMPANY (FORD STEEL DIVISION)
Henry Ford II, Robert Bodor

UNIVERSITY OF MINNESOTA
Malcolm Moos, Edward W. Davis

OGLEBAY NORTON COMPANY
John J. Dwyer, Henry K. Martin

PICKANDS MATHER & COMPANY
Robert S. Carey, Fred DeVaney, Herbert C. Jackson

REPUBLIC STEEL CORPORATION
W.B. Boyer, Charles M. White, William Kelley, Fred Darner

1972
For the development of Zircaloy alloy systems and their contributions to nuclear energy.

WESTINGHOUSE BETTIS ATOMIC POWER LABORATORY
W.E. Shoup, Kenneth M. Goldman, Robert B. Gordon, William A. Johnson, Donald E. Thomas

1973
For the development and application of man-made diamonds and borazon.

GENERAL ELECTRIC COMPANY

1974
For the development of the high silicon aluminum alloy, 390, for the Vega engine.

GENERAL MOTORS CORPORATION, CHEVROLET MOTOR DIVISION
James McLernon

REYNOLDS METALS COMPANY
William G. Reynolds, Sr.

1975
For contributions to the materials engineering aspects of gas turbine engines as exemplified by the development of directional solidification and an early total commitment to the introduction of titanium.

PRATT & WHITNEY AIRCRAFT DIVISION OF UNITED TECHNOLOGIES CORPORATION
R. J. Coar, Elihu F. Bradley, Francis L. VerSnyder

1976
For the development of the zincrometal coil-coated materials system in direct response to an automotive industry need for a corrosion-resistant, weldable and formable carbon steel for exterior, highly visible components. Diamond Shamrock conceived the idea, developed
the chromate undercoat and established coil coating parameters. Wyandotte Paint Products developed the required zinc-rich paint topcoat. Ford Motor supported the material’s development and conducted numerous tests to confirm its properties. Inland Steel recognized the material’s merits and was the first steel producer to offer it commercially.

DIAMOND SHAMROCK CORPORATION
C.A. Cash, J. Lynn Fordham

FORD MOTOR COMPANY
Robert B. Alexander

INLAND STEEL COMPANY
Derrick L. Brewster, Henry P. Leckie, Peter F. Connor

WYANDOTTE PAINT PRODUCTS COMPANY
C.A. Brethen, Thurlow Geeck

1977
For the development and commercialization of an argon-oxygen decarburization process for stainless and high-alloy steels.

JOSLYN STAINLESS STEELS DIVISION, JOSLYN MANUFACTURING & SUPPLY COMPANY
Alan M. Smith, Edwin E. Hodgess

LINDE DIVISION, UNION CARBIDE CORPORATION
Frank Death

1978
For the development and application of Kevlar aramid fiber.

E. I. du PONT de NEMOURS & COMPANY INCORPORATED
David K. Barnes
Herbert Blades, Robert L. Hunter
Stephanie L. Kwolek, Paul W. Morgan

1979
For the invention of hot isostatic pressing (HIP) and the development of basic HIP furnace technology.

BATTelle MEMORIAL INSTITUTE
Sherwood L. Fawcett, Charles B. Boyer

1980
For development and commercialization of monolithic catalyst technology for control of automotive emissions.

ENgLeHArd INDUSTRIES DIVISION, ENgLeHArd MINerals & CHEMICALS CORPORATION
Milton F. Rosenthal, Carl D. Keith

COrrING GLASS WORKS
Thomas C. MacAvoy, Rodney D. Bagley

TECHnICAL CERAmICS PRODUCTS DIVISION/3M
E. Wayne Bollmeier, James R. Johnson, William M. Brown

1981
For the development and commercialization of the Lucalox® High Pressure Sodium Lamp.

GENERAL ELECTRIC COMPANY LIGHTING BUSINESS GROUP
Ralph D. Ketchum, Charles I. McVey

1982
For the Sikorsky S-76 Civil Helicopter. High performance is largely attributable to the innovative application of advanced materials. Contributions to technology include the successful application to a commercial aircraft of relatively large amounts of advanced composites; contributions to society include the aircraft’s fuel economy, low noise and economical use in offshore oil operations.

SIKORSKY AIRCRAFT DIVISION
UNITED TECHNOLOGIES CORPORATION
Robert Zincone, A. Albert

1983
For development of materials processing technology capable of producing low optical loss, silica waveguide fibers, permitting introduction of lightwave systems into telecommunications applications.

COrrING GLASS WORKS
Richard Dulude, Donald B. Keck, Robert D. Maurer, Peter C. Schultz

WESTERN ELECTRIC COMPANY and its subsidiary BELL TELEPHONE LABORATORIES, INC.
Donald E. Procknow, John B. MacChesney, Fred Partus

1984
For the development of, and subsequent contributions to Winchester Magnetic Recording Technology for computer disk file storage systems.

INTERNATIONAL BUSINESS MACHINES CORPORATION
John E. Bertram, Jack D. Kuehler, John M. Harker, Kenneth E. Haughton

1985
For the innovative combination of materials technologies utilized in the development and manufacture of the Pontiac Fiero.

PONTIAC MOTOR DIVISION
GENERAL MOTORS CORPORATION
Hulki Aldikacti

1986
For the innovative combination of alloying materials and processing techniques developed for producing and implementing single crystal superalloy gas turbine airfoils.

PRATT & WHITNEY ENGINEERING DIVISION, UNITED TECHNOLOGIES CORPORATION
Irwin Mendelson, Maurice Gell

1987
For the development and application of ferromagnetic amorphous metal alloys to distribution transformers representing a major advance in the efficiency of electric power distribution systems.

GENERAL ELECTRIC COMPANY
Eugene J. Kovarik, Larry Lowdermilk, Lyman A. Johnson

METGLAS PRODUCTS DIVISION OF ALLIED SIGNAL, INC.
Frederic M. Poses, David C. Hill

ELECTRIC POWER RESEARCH INSTITUTE
Floyd Culler, Narain G. Hingorani

EMPIRE STATE ELECTRIC ENERGY RESEARCH CORPORATION
George E. Watkins, Herbert M. Kaufman

1988
For the development and implementation of a 33-layer metal and ceramic thermal conduction module and large printed circuit board technologies for high performance computer systems.

IBM CORPORATION
P.A. Toole, George A. Walker
Donald P. Seraphim

1989
For the development and application of sol-gel technology involving heterogeneous nucleation (seeding) in a new and innovative way to produce ceramic abrasives of exceptional strength, hardness and density.
NORTON COMPANY
John M. Nelson, Joseph E. Patchett

1990
For the development and implementation of transoceanic optical fiber communication systems providing increased use of data and video communications across oceans, thereby contributing to the unifying of the global community.

AT&T BELL LABORATORIES
John E. Berndt, Raymond D. Tuminaro, Kenneth L. Walker

1991
For a multifaceted, innovative application of materials engineering and precision process technology resulting in the development and manufacture of disposable thermal ink jet printheads.

HEWLETT-PACKARD COMPANY
David Packard, Frank Cloutier

1992
For innovative development and manufacture of a revolutionary combination of electronic packaging materials for high performance computers based on glass-ceramic/copper multilayer substrate.

IBM CORPORATION
Michael Attardo, Shakil Ahmed, Rao Tummala

1993
For the development and application of an innovative optical design and a unique combination of material and process technology resulting in a high performance engineered materials system, Scotchlite Brand Reflective Sheeting Diamond Grade Products, for safer traffic control.

3M CORPORATION
M. George Allen, Roger H. Appeldorn

1994
For the invention, development and commercialization in electric devices of an entirely new class of high performance permanent magnets based on a novel rare earth-iron-boron compound produced by rapid solidification--Magnequench.

GENERAL MOTORS CORPORATION
John G. Larson, John J. Croat

1995
For the development and commercialization of aluminum coated ferritic stainless steels for automotive exhaust applications extending exhaust system life and providing significant economic and environmental benefits.

ARMCO INC.
Stephen W. Gilby

1996
For the development of the first commercial, positive deep-UV photoresist with outstanding resolution for the manufacture of Very Large Scale Integrated Circuits used in a new generation of electronic components for computers and telecommunication systems.

LUCENT TECHNOLOGIES, BELL LABORATORIES
William F. Brinkman, Elsa Reichmanis

OLIN MICROELECTRONIC MATERIALS
Steven T. Warshaw

1997
For the materials selection, surface engineering and commercialization of the Multi-layer IR Reflective Lamp Coating, a breakthrough in energy efficiency in incandescent lighting technology.

GENERAL ELECTRIC COMPANY
Frederic (Fred) Ahlgren, John F. Ackerman

1998
For the development, implementation, and commercialization of a non-chromated anodizing process, providing significant environmental benefits and enhanced corrosion protection of aluminum parts and products.

THE BOEING COMPANY
Mr. Robert A. Davis

1999
For the innovative development, commercialization, and successful application of CARILON® aliphatic polyketone polymers as a new family of engineering materials.

SHELL CHEMICAL COMPANY
Dr. Dale R. Holecek, Mr. Richard L. Danforth

2000
For the development of a new family of electronic packaging materials for high performance computers based on glass-ceramic/copper multilayer substrate.

THIXOMAT, INCORPORATED
Dr. Raymond F. Decker, FASM, Dr. Robert D. Carnahan, FASM, Mr. David C. Dawson

2002
For the development and application of new aluminum alloy products with properties and strength weight ratios that make possible the design of future aircraft with improved payload and design safety margins.

ALCOA INC.
Mr. John W. Collins, III, Dr. William A. Cassada, III

2003
For development and application of injection-moldable plastics with exceptionally high thermal conductivities that enable new applications and opportunities for commercial use of thermoplastics.

COOL POLYMERS, INC.
Mr. Kevin McCullough, Dr. James D. Miller, Mr. Mikhail Sagal

2004
For development and application of amorphous thin-film hinge materials with superior mechanical and metallurgical properties for digital light processor (DLP) applications.

TEXAS INSTRUMENTS, INC.
Mr. John Van Scoter, Mr. James Baker

2005
For the development of Oxinium™ Oxidized Zirconium for use as a joint replacement material to improve the performance and increase the service life of total joint replacement systems.

SMITH & NEPHEW ORTHOPAEDICS
Mr. William L. Griffen
Dr. Gordon Hunter

2001
For the development, application and commercialization of semi-solid injection molding of metals known as Thixomolding.
ENGINEERING MATERIALS ACHIEVEMENT AWARD

2006
For the development and commercialization of low-temperature colossal supersaturation (LTCCS), a novel surface hardening method for the carburization of austenitic stainless steels.

SWAGELOK COMPANY
Mr. Carl E. Meece, Dr. Sunniva Collins, Mr. Peter Williams

2007
For leadership in the development of Commercial High Superconductor Wire for use in solving key challenges related to the electric power grid and also enabling for major advances in military capability.

AMERICAN SUPERCONDUCTOR CORPORATION
Dr. Steven Fleshler, Dr. Alexander Otto

2008
For the development and commercialization of the Dow Corning® Active Protection System, a “Smart” Impact Protection Textile with Superior Defense and Comfort.

DOW CORNING CORPORATION
Christian A. Velasquez

2009
For the development of technology and manufacturing methods for Novel silver based nano-structured anti-microbial and anti-inflammatory coatings with significant and wide ranging clinical and patient benefits.

NUCRYST PHARMACEUTICALS
Dr. Robert E. Burrell
University of Alberta

2010
For the Development of Material for an AOTF (Acousto-Optic Tunable Filter) based Hyperspectral Imager for Homeland Defense Applications.

NORTHRUP GRUMMAN CORPORATION
Narsingh Bahadur Singh, Patrick M. Antkowiak, John C. Johnson

2011

PALL CORPORATION
Dr. Daniel P. Henkel

2012
For the development of crucibles for directional solidification of silicon and allied technologies to make multi-crystalline silicon a reality for photovoltaic applications.

ARC Energy
Chandra P. Khattak

2013
For the world’s first successful implementation of TiAl in aero engines.

GE AVIATION
Mr. David L. Joyce

SILVER MEDAL AWARD

Established in 2010, the honor of Silver Medal of the Society, is to provide recognition to members who are in mid-career positions (typically, 5 to 15 years of experience) for distinguished contributions in the field of materials science and engineering, and the Society. The purpose of this award is to recognize leadership at an early stage and encourage individuals to grow, nurture, and further contribute to the growth of the profession as well as the society.

An individual in mid-career and of the age of 40 years or younger will be elected to be an ASM Silver Medalist due to personal reputation and outstanding accomplishments in some phase of materials science, engineering, production, manufacturing, management, marketing, design, technology transfer, application of technology, and development research or education, and service to the society.

The 2014 Recipients of the Silver Medal Award are:

Dr. James G. Hemrick
Research Staff, Materials Science & Technology Division
Oak Ridge National Laboratory
Oak Ridge, TN

“For his world class reputation as an expert in refractory ceramics and insulation materials and leadership in the refractory community, as well as contributions to his local chapter and leadership roles in other materials related professional societies.”

Dr. John Nychka
Associate Professor and Associate Chair
University of Alberta
Edmonton, AB, Canada

“For innovative and substantial contributions to the pedagogy, style, and structure of education and professional stewardship in materials science and engineering.”

Dr. James G. Hemrick has been involved in research regarding refractory and advanced ceramics, thermal management and materials characterization for the past 12 years at Oak Ridge National Laboratory as a post-doctoral fellow, a member of the High Temperature Materials Laboratory (HTML), and for the last ten years as part of the research staff. During that time he has led projects related to characterization of refractories for the glass industry, refractories for containment and thermal management in the molten metal industries,
and material development and selection for high temperature/high alkaline environments including lime kilns and gasification. Dr. Hemrick has also been the primary or co-investigator on projects regarding nano-scale interpenetrating phase composite (IPC) materials, concrete materials, mechanical testing of insulation material for space applications, mechanical characterization and analysis of nuclear fuel clad materials, materials development for heat exchangers in microturbine and fuel cell systems, and materials selection for black liquor gasification. He has been primary or co-author on over 50 refereed journals and proceedings papers, edited one book and holds two U.S. patents. He holds a Ph.D. and B.S. from the University of Missouri, Rolla and a M.S. from the Georgia Institute of Technology.

Professor Nychka received his B.S. from the University of Alberta in Metallurgical Engineering, his MEng in Materials Science and Engineering from McMaster University, and his Ph.D. in Materials from the University of California, Santa Barbara. He is an associate professor in chemical and materials engineering, associate chair undergraduate studies, and an adjunct associate professor in the school of dentistry.

Professor Nychka has been active in professional societies such as TMS and ASM through organization of symposia, serving in various executive positions, chairing committees, and providing student mentorship as a faculty advisor of Material Advantage. He has also served as a guest editor of special issues in the journals JOM and MSE C.

Professor Nychka’s “Materials at the Interface” lab group centers on research concerning materials processing and characterization of structural materials, degradation and failure, and biological materials science. He investigates metals and alloys, ceramics and glasses, coatings, and polymer composites. He gets great enjoyment by pioneering new forays into other disciplines with his MS&E toolbox in tow. Key to his effort is visual communication, which has garnered a number of ceramographic and poster awards.

Be it in the classroom, lab, or outreach opportunity he loves teaching, and he has been graciously recognized with many teaching awards and honors. His teaching trademarks “Room with A VUE” pedagogy and “What’s in the Box?” style continue to provoke interest in MS&E and engage students of all ages and backgrounds.

Dr. Tresa Pollock, FASM is the Alcoa professor of materials and chair of the materials department at the University of California, Santa Barbara. She graduated with a B.S. from Purdue University in 1984, and a Ph.D. from MIT in 1989. Dr. Pollock was employed at General Electric Aircraft Engines from 1989 to 1991, where she conducted research and development on high temperature alloys for aircraft turbine engines. She was a professor in the department of materials science and engineering at Carnegie Mellon University from 1991 to 1999 and the University of Michigan from 2000 to 2010. Her current research focuses on the processing and properties of structural materials and coatings and on the use of ultrafast lasers for microfabrication and materials diagnostics. Professor Pollock was elected to the U.S. National Academy of Engineering in 2005, is a Fellow of TMS and ASM International, associate editor of Metallurgical and Materials Transactions, presented the 2013 ASM/TMS Distinguished Lectureship in Materials and Society, and was the 2005-2006 president of The Minerals, Metals and Materials Society.
Distinguished Life Membership was established in 1954 and is conferred on those leaders who have devoted their time, knowledge, and abilities to the advancement of the materials industries.

2014 Distinguished Life Membership is conferred on:

Mr. Henry M. Rowan
Chairman
Inductotherm Group.
Rancocas, NJ

“For distinguished lifetime contributions to the advancement of design and manufacture of induction melting and heat treating equipment worldwide, and to enhancing educational opportunities in engineering.”

Henry M. (Hank) Rowan is founder and chairman of Inductotherm Group, the worldwide leading manufacturer of melting, thermal processing and production systems for the metals and materials industry. Headquarters are located in Rancocas, New Jersey.

Hank and his wife, Betty (deceased 1997) started their company in 1953 when they built Inductotherm’s first furnace in their backyard. From that modest beginning, Inductotherm Group has become a global industrial organization of more than 40 companies, with more than 2,500 employees, facilities in more than 15 nations, and customers all around the world. As Hank built his company over the years, his main goal was—to enable foundries to reduce the cost of melting metal with induction. On the way to making his dream a reality, Hank and his staff became true innovators, changing the face of the entire industry.

During Inductotherm’s formative years, Hank spearheaded the acquisition of a group of unique, diverse and often time’s non-induction affiliated manufacturing companies, now known as the Diversified Technology Group. He is chairman of this group of about 20 companies, which together with the Inductotherm Group, make up Rowan Technologies Inc.

As a business leader, Hank has also contributed in other ways, particularly in southern New Jersey and the Delaware Valley, and particularly in the area of education. He not only made a significant donation to a local state college, known today as Rowan University, for the establishment of an engineering school, but he also provides scholarships at Rowan University for children of Inductotherm Group and Diversified Group employees both in the United States and abroad.

Hank’s commitment to the industry has not gone unnoticed, and he has been the recipient of a number of awards, including—the George Washington Medal Award from the Engineer’s Club of Philadelphia (1992); Outstanding Engineer of the Year Award (1994), and a Lifetime...
DISTINGUISHED LIFE MEMBERSHIP

Achievement Award (1995) from the Professional Engineering Society of Southern New Jersey Inc.; the AFS William J. Grede Award (1995); a Distinguished Service Award from the Consulting Engineers Council of New Jersey (1997); the William Hunt Eisenman Award, Philadelphia Chapter, ASM International (1997); induction into the prestigious National Academy of Engineering (1998); and in 2003, he was inducted into the Hall of Honor, Foundry Management & Technology Magazine's highest award.

A native of Raphine, Virginia, Hank Rowan grew up in Ridgewood, New Jersey, and graduated from Deerfield Academy. His studies at Williams College and the Massachusetts Institute of Technology (MIT) were interrupted by World War II, and his enlistment in the Army Air Corps in 1943. He piloted B-17s and B-29s, earned silver pilot wings and a second lieutenant's commission, and began a lifelong love of aviation. At the end of the war, he returned to MIT where he earned a bachelor of science degree in electrical engineering (BSEE) with honors.

Hank lives in Langhome, Pennsylvania with his wife, Lee. His daughter and son-in-law, both work in the company, as do his two grandchildren.

Kenneth Headlam-Morley ...................... 1955
Secretary
British Iron and Steel Institute

S. C. Guillan ................................. 1955
Secretary
British Institute of Metals

Sir Charles Bruce-Gardner ...................... 1955
President
British Iron and Steel Institute

Maurice Cook .................................. 1955
President
British Institute of Metals

Kurt Thomas ................................. 1955
Secretary
Verein deutscher Eisenhuttenleute

Herman Schenck ...................... 1955
President
Verein deutscher Eisenhuttenleute

P. Brenner .................................. 1955
President
Deutsche Gesellschaft fur Metallkunde

Bernard Trautmann ...................... 1955
Secretary
Deutsche Gesellschaft fur Metallkunde

Pierre Coheur ............................. 1955
Director
Centre National de Recherches Metallurgiques

 Francois Perot .............................. 1955
President
Centre National de Recherches Metallurgiques

Raoul de Vitry .............................. 1955
President
Societe Francaise de Metallurgie

Eugene DuPuy .............................. 1955
Secretary
Societe Francaise de Metallurgie

Aldo Dacco ................................. 1955
President
Associazione Italiana di Metallurgia

Sancho-Plana .............................. 1955
President
Spanish Iron and Steel Institute

Howard Biers .............................. 1955
President
Union Carbide & Carbon Corporation

S. Fernander .............................. 1955
Jernkontoret, Sweden

Charles M. White ...................... 1956
Board Chairman
Republic Steel Corporation

J. L. Mauthet ............................. 1956
President
Youngstown Sheet & Tube Company

William E. Umstattd ...................... 1956
President
Timken Roller Bearing Company

R. L. Gray ................................. 1956
President
Armco Steel Corporation

W. L. Munford .............................. 1956
President
American Steel & Wire Division, United States Steel Corporation

Joel Hunter .............................. 1957
President
Crucible Steel Company of America

R. M. Blough .............................. 1957
Board Chairman
United States Steel Corporation

J. L. Block ................................. 1957
Inland Steel Company

I. W. Wilson .............................. 1957
Board Chairman
Aluminum Company of America

J. F. Thompson .............................. 1957
Board Chairman
International Nickel Company

E. G. Grace ................................. 1957
Board Chairman
Bethlehem Steel Corporation

Avery C. Adams ...................... 1958
President
Jones & Laughlin Steel Corporation

Hiland G. Batcheler ...................... 1958
Board Chairman
Allegheny Ludlum Steel Corporation

Aaron E. Carpenter ...................... 1958
Board Chairman
E. F. Houghton Company

Thomas E. Milsop ...................... 1958
President
National Steel Corporation

I. M. Melville Stein ...................... 1958
President
Leeds and Northrup Company

T. F. Patton .............................. 1959
President
Republic Steel Corporation

Edward G. Budd, Jr. ...................... 1960
President
The Budd Company

Sir Charles Goodeve ...................... 1961
President
Iron and Steel Institute and Director
British Iron and Steel Research Association

George M. Humphrey ...................... 1961
Board Chairman
National Steel Corporation

R. R. Kappel .............................. 1962
Board Chairman
American Telephone and Telegraph Corporation

Irwin M. Serota ...................... 1963
President
United States Steel Corporation

J. L. Mauthe .............................. 1966
President
Youngstown Sheet & Tube Company

Frank R. Milliken ...................... 1966
Board Chairman
Republic Steel Corporation

Edward G. Budd, Jr. ...................... 1966
President
Youngstown Sheet & Tube Company

J. M. Bresee .............................. 1967
President
Deutsche Gesellschaft fur Metallkunde

L. C. Mallet .............................. 1967
President
Kemmerer Copper Corporation

Sancho-Plana .............................. 1967
President
European Institute of Iron and Steel

John P. Roche .............................. 1967
President
American Iron and Steel Institute
DISTINGUISHED LIFE MEMBERSHIP

Bertram D. Thomas .............................................1967
President
Battelle Memorial Institute

James H. Binger .............................................1968
Chairman of the Board
Honeywell Incorporated

C. William Verity, Jr. ............................................1968
President
Armco Steel Corporation

E. N. Cole .....................................................1969
President
General Motors Corporation

Ian K. MacGregor ..............................................1973
Chairman
American Metal Climax, Inc.

Thomas J. Ready ..............................................1973
Retired Chairman of the Board
Kaiser Aluminum and Chemical Corporation

Horace A. Shepard ............................................1973
Chairman and Chief Executive Officer
TRW, Inc.

W. F. Rockwell, Jr. .............................................1972
Chairman of the Board and Chief Executive Officer
North American Rockwell

William Blackie .............................................1970
Chairman and Chief Executive Officer
Caterpillar Tractor Company

Edwin H. Gott .............................................1970
Chairman & Chief Executive Officer
United States Steel Corporation

John Moxon .....................................................1970
President
Carpenter Technology Corporation

R. Buckminster Fuller ........................................1970
University Professor
Southern Illinois University

Donald C. Burham .............................................1971
Chairman
Westinghouse Electric Corporation

George G. Zipf ...............................................1971
President
Babcock & Wilcox Company

Joseph R. Carter .............................................1972
President
Wyman-Gordon Company

James C. Hodge .............................................1972
Chairman of the Board
The Warner and Swasey Company

Soichiro Honda .............................................1972
President
Honda Motor Company, Ltd.

Shintaro Tabata .............................................1979
Executive Director
The Iron and Steel Institute of Japan

Earle M. Jorgensen ...........................................1980
Chairman and Chief Executive Officer
Earle M. Jorgensen Company

James H. Doolittle ..........................................1981
Lieutenant General, Retired
United States Air Force

Charles H. Smith, Jr. ........................................1981
Chairman & Chief Executive Officer
Stelco Industries, Inc.

Frank H. Sherman ...........................................1981
President & Chief Executive Officer
Dominion Foundries & Steel Ltd.

J. Peter Gordon ...........................................1982
Chairman & Chief Executive Officer
Stelco Inc.

Frederick C. Langenberg ....................................1982
President & Chief Executive Officer
Interlake, Inc.

Robert O. Wilder ...........................................1982
Chairman & Chief Executive Officer
National Forge Company

Pierre Gousseland ...........................................1982
Chairman of the Board, AMAX Inc.

Gerald R. Heffernan ........................................1982
President, Co-Steel International Ltd.

W. H. Krome George ........................................1983
Chairman of the Executive Committee
Aluminum Company of America

Joseph R. Carter .............................................1983
Chairman, Mitsubishi Metal Corporation

Donald L. Ritter ...........................................1983
Congressman
U. S. House of Representatives

Shawood L. Fawcett ........................................1984
Chairman & Chief Executive Officer
Battelle Memorial Institute

Thomas O. Mathies ...........................................1984
Vice President, Current Engineering and Manufacturing Services Staff
General Motors Corporation

Cornell C. Maier ............................................1984
Chairman & Chief Executive Officer
Kaiser Aluminum and Chemical Corporation

Richard J. Coar .............................................1985
Executive Vice President-Power
United Technologies Corporation

Robert E. Kirby .............................................1985
Retired Chairman and Chief Executive Officer,
Westinghouse Electric Corporation

Richard P. Simmons .......................................1985
Chief Executive Officer
Allegheny Ludlum Steel Corporation

Frank W. Luerssen ........................................1985
Chairman & Chief Executive Officer
Inland Steel Company

Adolph J. Lena .............................................1985
Retired Chairman of the Board and Chief Executive Officer
ALTech Specialty Steel Corporation

William C. Wingard ......................................1985
Member of Parliament, Guelph

F. Kenneth Iverson .......................................1986
Chairman & Chief Executive Officer
Nucor Corporation

George P. Peterson .......................................1986
Retired Director, Materials Laboratory
Air Force Wright Aeronautical Labs

Aeronautical Systems Division

Wright-Patterson Air Force Base

Lloyd Reuss ..................................................1987
Executive Vice President
North American Automotive Operations
General Motors Corporation

Prof. William T. Hogan, S. J. ..........................1987
Professor of Economics & Director, Industrial Economics
Research Institute

Fordham University

Howard O. Beaver, Jr. ..................................1988
Retired Chairman of the Board
Carpenter Technology Corporation

Werner Breitschwerdt .................................1988
Retired Chairman of the Board
Daimler-Benz AG
Robert P. Bozzone ..................................... 1994
Vice Chairman of the Board
Allegheny Ludlum Corporation

Gordon E. Forward ..................................... 1994
President and Chief Executive Officer
Chaparral Steel

Quentin C. McKenna .................................. 1994
Chairman of the Board, Kennametal Inc.

John A. Milane ......................................... 1994
President
Tinus Olsen Testing Machine Company, Inc.

Brian T. Lotton ........................................... 1996
Chairman
The Broken Hill Proprietary Company Ltd.

Robert D. Halverstadt ................................ 2002
Chairman of the Board Emeritus
Special Metals Corporation

John H. Buckingham ................................. 2003
Director, Defense Technology Agency
New Zealand Defense Force

Helmut G. Hadrys ..................................... 2003
Chief Executive Officer
ThyssenKrupp Stainless GmbH

John T. Mayberry ..................................... 2003
Chairman of the Board and CEO (retired)
Dofasco, Incorporated

Dr. Craig Barrett ..................................... 2009
President, President (Retired), ATI Allvac

Kyocera Corporation

Alumni Ray Putnam ..................................... 1988
Retired Managing Director
ASM International

E. Daniel Albrecht ..................................... 1989
Chairman, President & CEO
Buehler International, Inc.

Dieter Spethmann ..................................... 1989
Chairman of the Management Board
Thyssen AG

Norman R. Augustine .................................. 1990
Chairman and Chief Executive Officer
Martin Marietta Corporation

David S. Hollingsworth ................................ 1990
Chairman and Chief Executive Officer
Hercules Incorporated

Bernhard Liebmann .................................... 1990
Retired Executive Vice President
and Member, Executive Board
Degussa AG

Don Fuqua ............................................... 1991
President and General Manager
Aerospace Industries Association of
America, Inc.

Mary L. Good .......................................... 1991
Senior Vice President - Technology
Allied-Signal Inc.

Hans K. Jucker ......................................... 1991
Chairman of the Board of Directors
Alusuisse-Lanza Holding Ltd.

S.J. (Sam) Whalen ...................................... 1992
Retired Chairman and CEO
Aero braze Corporation

Rudolf Machenschalk .................................. 1993
Chairman of the Executive Board and CEO
Plansee MetallAG

Edouard Duval ......................................... 1993
General Manager, Aubert et Duval

George N. Hatsopoulos ................................ 1993
Chairman of the Board and President
Thermo Electron Corporation

Robert P. Bozzone ..................................... 1994
President, horpe Thermal Technologies, Inc.

Merle L. Thorpe ....................................... 2001
Chairman, Defense Technology Agency
New Zealand Defense Force

Mr. Robert J. Fulton .................................. 2007
President, Hoeganaes Corporation

Mr. David E. Bahrenfeld .............................. 2007
President and CEO, Ellwood Group LLC

Mr. Thomas E. Williams .............................. 2008
President (Retired), ATI Allvac

Mr. Kevin J. Woody .................................... 2008
President and CEO, Ladish Co., Inc.

Dr. Jack W. Shilling ................................... 2009
Chairman and COO, President Strategic Initiatives &
Technology Chief Technology Officer (Retired)
INTEL CORPORATION

Teruo Kishi ............................................. 2010
President, National Institute for Materials Science (NIMS)

Dr. James C. Williams ............................... 2011
Professor and Honda Chair Emeritus
The Ohio State University

Dr. Gregory J. Yurek ................................. 2012
Founder and Senior Advisor
American Superconductor Corporation

William J. Bemard, Jr. ............................... 2013
President and CEO
Surface Combustion, Inc.
Dr. Asphahani is a member of ASM International and NACE. He was a member of TMS, the Electrochemical Society, and the American Water Works Association. Dr. Asphahani served as NACE Director in 1983, as ASM president in 2001, and as ASM Materials Education Foundation chairman in 2004. He served as the chairman of the Corrosion Committee of MPC, on the ASTM-G1 Corrosion Committee, on the board of directors of the American Chemistry Council, the board of trustees of the Alpha-Sigma-Mu Honor Society, and the US National Academies ROCSE Committee, in charge of identifying “Research Opportunities in Corrosion Science and Engineering.” Dr. Asphahani is presently serving on the board of directors of the Goldin Institute, and the board of the MIT-AAA Association.

He has received the following awards: Fellow, National Center for Education and Research on Corrosion and Materials Performance, University of Akron; Fellow, NACE International; Fellow and Honorary Member, ASM International; ASM Distinguished Life Member, Alpha Sigma Mu Honor Society; and the SF2M- Bastien/Guillet Gold Medal Award.

**MEDAL FOR THE ADVANCEMENT OF RESEARCH**

The Medal for the Advancement of Research was established in 1943 to honor an executive of an organization, one of whose important activities is the production, fabrication or use of metals and other materials. The recipient, over a period of years, shall have consistently sponsored research or development and by foresight and actions shall have helped substantially to advance the arts and sciences relating to materials science and engineering.

The 2014 Recipient of the Medal for the Advancement of Research is:

Dr. Aziz I. Asphahani, FASM
President and CEO
QuesTek Innovations LLC
Evanston, IL

“For the dedicated support and consistent sponsorship of research not only for new materials, but also for radically new applications of products in the process of commercialization.”

Dr. Asphahani retired in 2006, as President and CEO of Carus Chemical Co. (1995–2006), following 19 years (1975–1994) in the specialty metals industry with Haynes International/ Cabval, where he served as Cabval president, Haynes vice president, director of R&D, and corrosion engineer. He served on the board of directors of Haynes, Cabval, and Carus Corporation. He is currently chief executive officer of QuesTek Innovations and chairman of Advanced Motion Technologies.


Dr. Asphahani started in 1975 as a researcher/engineer focused on the development of corrosion-resistant nickel-based and cobalt-based alloys. He holds eight patents, authored 61 papers on high alloys and corrosion control, and contributed numerous technical presentations at major conferences. Two of his patents won the 1984 VAALER Award and the 1991 R&D-100 Award.

At present, Dr. Asphahani is an active participant in the ASM Materials Camp initiative, engaged in getting students interested in science and engineering careers, as well as supporting high school science teachers’ professional development and skill enhancement in communicating to their students about the exciting fields of materials/engineering careers.

Dr. Asphahani served as senior advisor/corrosion curriculum development at University of Akron, and assisted in establishing the first “Corrosion Engineering” degree in the United States.
Sherwood L. Fawcett ........................................... 1977
President
Battelle Memorial Institute

Lee A. Iacocca ........................................... 1977
President
Ford Motor Company

Arthur M. Bueche ........................................ 1978
Senior Vice President
Corporate Technology
General Electric Company

Michael Tenenbaum ....................................... 1979
Director
Inland Steel Company

Howard O. Beaver, Jr. ......................... 1980
Chairman and Chief Executive Officer
Carpenter Technology Corporation

Martin J. Caserio ......................................... 1982
Vice President and Group Executive
General Motors Corporation

Robert A. Charpie ....................................... 1983
President, Cabot Corporation

Pierre L. Gousseaud ...................................... 1984
Chairman, Chief Executive Officer
President, Operating Officer and Director, AMAX Inc.

Gordon E. Moore ........................................ 1985
Chairman of the Board and Chief Executive Officer
Intel Corporation

Charles W. Parry ......................................... 1986
Director
Chairman of the Board and Chief Executive Officer
Aluminum Company of America

William D. Manly ....................................... 1987
Executive Vice President (Retired)
Cabot Corporation

Ruben F. Mettler ........................................... 1988
Chairman of the Board (Retired)
TRW, Inc.
HONORARY MEMBERSHIP

Honorary Membership in the Society was established in 1919. It recognizes distinguished service to the materials science and engineering profession, service in areas of ASM strategic plan/initiatives and to the progress of mankind.

The 2014 Recipient of Honorary Membership is:

Dr. Chandra Shekhar Pande, FASM
Metallurgist
Naval Research Laboratory
Washington, DC

“For distinguished service to the materials science and engineering profession by his pioneering and seminal research and teaching and its promotion to the metallurgical community.”

Dr. Chandra Shekhar Pande, FASM obtained his Ph.D. in physical metallurgy, from Oxford University in 1970, and is currently a senior scientist at Naval Research Laboratory, Washington, D.C. He has previously taught materials science at the Indian Institute of Technology and the University of Maryland. He is a Fellow of ASM International, elected 1995; and the Burgess Award winner from ASM International for exceptional sustained research contribution over a five-year period, 1995. His main research interests are in materials characterization using electron X-rays and neutron scattering techniques. In addition he has also developed advanced modeling techniques to analyze the relationship between observed microstructure and material properties of many materials including nanomaterials and superconductors. He has held numerous elected offices in professional societies such as chair, Physical Metallurgy Committee of TMS (1990–1992); chair, Superconducting Materials Committee of TMS (1997–1999); chair, Bardeen Award Committee of TMS (1999); chair, Electrical, Magnetic and Optical Phenomena Committee of ASM (1995–1999); and chair, TMS Arora Award Panel (2000–2013). In addition he has held editorial responsibilities as associate editor, International Journal of Electronic Materials (1998–2000); and member, International Advisory Board of Review of Advanced Materials Science (Russian Academy of Sciences) (2000–2005) and is currently a member of the Board of International Materials Reviews.
In 1969, the ASM Historical Landmarks Designation was established to identify permanently the many sites and events that have played a prominent part in the discovery, development, and growth of metals and metalworking. In 1987, the scope of this award broadened to include all engineered materials.

The 2014 Historical Landmarks are:

ALUMINUM COMPANY OF CANADA LTD ................................................................. 2014
Kingston, ON, Canada

“At this site, men and women shaped aluminum from war-time need to peaceful use, learning its secrets, and developing new applications for the future.”

OERLIKON METCO .................................................................................................. 2014
Westbury, NY

“The first family of exothermically reacting; self-bonding intermetallic forming compounds used by the thermal spray industry for improved surface protection properties was developed at this site. Process and materials were commercialized between 1965-1972.”

Other Historical Landmarks:

ELECTRIC FURNACE ......................................................................................... 1972
Crucible Specialty Metals Division, Colt Industries, Syracuse, New York

“The first electric arc steelmaking furnace (1906) in the Western Hemisphere, which revolutionized specialty steel production in the U.S.A.”

GRAPHITE REACTOR ......................................................................................... 1973
Oak Ridge National Laboratory, Oak Ridge, Tennessee

“Initiation of the use of radioisotopes, neutron diffraction and radiation damage in the study of metals and alloys was made possible by this reactor 1943-63.”

FIRST CONTINUOUS SHEET ROLLING MILL ..................................................... 1975
Armco Steel Corporation, Ashland, Kentucky

“This mill built in 1923 at Ashland, Kentucky, revolutionized the art of economically rolling steel into sheets of uniform quality, which paved the way for America’s mass production of autos and other consumer sheet steel products.”

LOCATION OF THE FIRST STEEL CONVERTER (Kelly Steel Converter) ............... 1976
Bethlehem Steel Corporation, Johnstown, Pennsylvania

“First trial of the bottom-blown tilting converter took place in 1861.”

CORNWALL IRON MINE AND FURNACE ............................................................ 1976
Bethlehem Steel Corporation, Cornwall, Pennsylvania

“Starting in 1734, Cornwall Mine supplied iron ore continuously for 231 years.”

WESTERN ELECTRIC - ALLENTOWN WORKS .................................................... 1976
American Telephone and Telegraph, Western Electric Division, Allentown, Pennsylvania

“Produced the first commercial transistors in 1951.”

ALL-WELDED TEST BOILER DRUM ................................................................. 1976
Combustion Engineering, Inc., Metallurgical Laboratory, Chattanooga, Tennessee

“This drum was pressure tested to destruction on 30 May 1930, proving welded drums would withstand high pressure in service.”

TREDEGAR IRON WORKS .................................................................................. 1976
Ethyl Corporation, Richmond, Virginia

“Chartered in 1837, Tredegar Iron Works was a major supplier of armament to the Confederacy during the Civil War. The rolling mills turned out heavy iron plates for Confederate naval vessels, including the Merrimac.”

CLIMAX MINE AND MILL COMPLEX ................................................................ 1976
Climax Molybdenum Company, Division of AMAX Inc., Climax, Colorado

“Since 1917, this mine/mill complex has been the primary source of America’s molybdenum.”

TREMONT NAIL COMPANY ............................................................................. 1976
Tremont Nail Company, Wareham, Massachusetts

“Established in 1819, Tremont Nail Company has made nails continuously for more than 150 years and pioneered the production of heat treated nails.”

OLD NEW-GATE PRISON AND COPPER MINE .................................................... 1976
State of Connecticut Historical Commission, East Granby, Connecticut

“First copper mine chartered in America and is believed to be the first copper mine in the thirteen original colonies. Mining began in 1707 and continued through the 1850s.”

IRON RANGES OF MINNESOTA ........................................................................ 1976
Iron Range Interpretive Center, Chisholm, Minnesota

“High-grade iron ores of the ranges were instrumental in the development of America’s huge steel industry. Ore was first discovered in 1850 near Gunflint Lake.”

FORD TRI-MOTOR AIRPLANE ......................................................................... 1976
Island Airlines, Port Clinton, Ohio

“The first commercially successful all-metal aircraft, opened a new era in commercial aviation in the late 1920s.”

ATLAS STEEL CONCAST MACHINE ................................................................. 1977
Atlas Steels Company, Welland, Ontario, Canada

“In 1954, the first commercially successful unit in North America for continuous casting of steel billets.”

LES VIEILLES FORGES ST. MAURICE ............................................................... 1977
Quebec Historical Monuments Commission, Trois-Rivieres, Quebec, Canada

“Its establishment, in 1729, marks the beginning of the Canadian iron and steel industry.”

WATERBURY BRASS COMPANY MILL ............................................................. 1977
Waterbury, Connecticut

“Constructed in 1846, it was the largest brass mill of its type in the United States.”

BLAST FURNACE #1 ......................................................................................... 1978
Fundidora Monterrey, S.A., Monterrey, Mexico

“First blast furnace in Latin America, built in 1902.”
CRADLE OF ALLOY STEEL................................. 1978
Republic Steel Corporation, Canton, Ohio
“At this facility, constructed in 1907, United Steel Company (now LTV Steel Corporation) poured the first production heats of quality chromium-vanadium and chromium-molybdenum alloy steels.”

FIRST BASIC OXYGEN FURNACES IN WESTERN HEMISPHERE.......................... 1978
Dofasco Melt Shop, Hamilton, Ontario, Canada
“First basic oxygen furnaces erected in the western hemisphere and put into production in 1954 for the production of top-blown, basic oxygen steel.”

FIRST HYLSA SPONGE IRON PLANT ............................................................. 1978
HYLSA, S.A., Monterrey, Mexico
“The world’s first successful gas direct reduction plant for iron ore. It is the pioneer plant that opened an alternative route for economic steel making.”

GENERAL ELECTRIC COMPANY, RIVER WORKS .............................................. 1978
Lynn, Massachusetts
“The first American turbojet engine was built at this site and tested in April 1942.”

GRUMMAN AEROSPACE CORPORATION......................................................... 1978
Bethpage, New York
The primary developer and producer of the lunar excursion module which enabled U.S. astronauts to land on and explore the moon on 20 July 1969.”

#1 VACUUM INDUCTION MELTING FURNACE .............................................. 1978
Special Metals Corporation, New Hartford, New York
“In 1952, first commercial vacuum induction melting furnace for production of superalloys.”

AMERICA’S FIRST BESSEMER STEEL MILL .............................................. 1979
Wyandotte, Michigan
“Site of the Eureka Iron Works where the Bessemer converter was first used, in 1864, for the commercial production of steel in America.”

EADS BRIDGE .............................................................. 1979
St. Louis, Missouri and East St. Louis, Illinois
“World’s first alloy steel bridge, dedicated 4 July 1874.”

DISCOVERY OF FIRST ECONOMICAL PROCESS FOR ELECTROLYTIC EXTRACTION OF ALUMINUM ..................................................... 1979
Oberlin, Ohio
“Charles Martin Hall invented the first economical process for the extraction of aluminum and in December 1888, the process was first commercialized.”

PITTSBURGH WORKS OF THE PITTSBURGH REDUCTION COMPANY ............. 1979
Pittsburgh, Pennsylvania
“Charles Martin Hall invented the first economical process for the extraction of aluminum and in December 1888, the process was first commercialized.”

FREE INSTITUTE OF INDUSTRIAL SCIENCE ............................................. 1979
Worcester Polytechnic Institute, Worcester, Massachusetts
“In 1868, the first American academic institution combining the concept of classroom learning and shop practice to engineering education.”

SAUGUS IRON WORKS .......................................................... 1979
Saugus, Massachusetts
“During the period 1646-1675, the ironworks was the first in the western hemisphere to successfully engage in the integrated production of cast and wrought iron.”

EXPERIMENTAL BREEDER REACTOR I .................................................. 1979
Idaho Falls, Idaho
“In 1951, useful electric power was first generated from atomic energy.”

JOHN WINTHROP JR. BLAST FURNACE ................................................. 1980
West Quincy, Massachusetts
“The first commercial blast iron furnace in America was built in 1644 and produced iron from bog ore dug from the bottom of brooks and swamps.”

LUKENS STEEL CORPORATION ......................................................... 1981
Coatesville, Pennsylvania
“Founded in 1810 as Brandywine Rolling Mill. The Company’s pioneer efforts in plate rolling led to metallurgical and technical firsts directly related to plate production.”

ACHESON GRAPHITE COMPANY.............................................. 1982
Niagara Falls, New York
“The site of the first facility for production of graphite and graphite articles in 1899. Production of graphite made possible development of electric furnaces, motors and generators, and later, graphite fibers.”

NEW ALMADEN QUICKSILVER MINE .................................................. 1982
New Almaden, California
“Discovered in November 1845, it was the first workable quicksilver mine in North America and preceded the Coloma gold discovery of January 1848 by 27 months.”

PALACIO DE MINERIA .............................................................. 1982
Mexico City, Mexico
“The first school of metals in the New World, created in Mexico City in 1774.”

ARMY MATERIALS AND MECHANICS RESEARCH CENTER ...................... 1983
Watertown, Massachusetts
“Developed and applied numerous significant metallurgical processes, tests and materials to the benefit of national security.”

THE CAST ALUMINUM CAP ON THE WASHINGTON MONUMENT ............. 1983
Washington, D.C.
“This cap, installed on 6 December 1884, was the largest aluminum casting of its time.”

REED GOLD MINE ......................................................... 1983
Cabarrus County, North Carolina
“The site of the first major discovery of gold in the United States in 1799, and birthplace of the American gold mining industry.”

THE IRONBRIDGE ....................................................... 1984
Telford, Shropshire, England
“The first iron bridge, cast of iron smelted with coke, erected in 1779, leading to Britain’s renown for engineering and manufacturing innovations.”
<table>
<thead>
<tr>
<th>Historical Landmark</th>
<th>Year</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statue of Liberty</td>
<td>1986</td>
<td>New York</td>
<td>Represents exceptional engineering and metallurgical innovation in its use of copper and steel in the original design and construction in 1886 and the restoration in 1892.</td>
</tr>
<tr>
<td>Hashino Blast Furnace Relics</td>
<td>1984</td>
<td>Kamaishi City, Iwate, Japan</td>
<td>Represents an exceptional engineering and metallurgical innovation in its use of copper and steel in the original design and construction in 1886 and the restoration in 1892.</td>
</tr>
<tr>
<td>New York Harbor, New York</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sloss Furnaces</td>
<td>1986</td>
<td>Birmingham, Alabama</td>
<td>The Sloss Furnaces, which became operative in 1882, were instrumental in establishing the steel industry in the South.</td>
</tr>
<tr>
<td>Albany Research Center, United States Bureau of Mines</td>
<td>1984</td>
<td>Albany, Oregon</td>
<td>The first large-scale blast furnace in Japan succeeded in producing pig iron from iron ore in 1857, thus marking the birthplace of the modern Japanese steel industry.</td>
</tr>
<tr>
<td>World's First Hot and Cold-Wall Hot-Isostatic-Processing (HIP) Vessels</td>
<td>1984</td>
<td>Battelle Columbus Laboratories, Columbus, Ohio</td>
<td>A revolutionary process invented and developed in 1955-56.</td>
</tr>
<tr>
<td>Col. Frishmuth's Foundry</td>
<td>1985</td>
<td>Battelle Columbus Laboratories, Columbus, Ohio</td>
<td>The development of the Bessemer process, which was constructed and operated in the early 1870s.</td>
</tr>
<tr>
<td>Elwood Haynes Museum</td>
<td>1985</td>
<td>Kokomo, Indiana</td>
<td>This site commemorates the achievements of Elwood Haynes who invented the Cobalt Base Alloys called 'Stellite' in the period 1899 to 1915.</td>
</tr>
<tr>
<td>Forest Hills Research Laboratories</td>
<td>1986</td>
<td>E.I. duPont de Nemours and Co., Wilmington, Delaware</td>
<td>At this facility, Dr. Wallace H. Carothers and his associates invented and developed nylon.</td>
</tr>
<tr>
<td>Electric Arc Furnace</td>
<td>1986</td>
<td>Daido Steel Company, Ltd., Nagoya, Japan</td>
<td>The Electric Arc Furnace was developed in the 1880s.</td>
</tr>
<tr>
<td>Kure Beach Marine Atmospheric Test Facility</td>
<td>1988</td>
<td>LaQue Center for Corrosion Technology, Kure Beach, North Carolina</td>
<td>Designed and constructed in the early 1880s.</td>
</tr>
<tr>
<td>Metallurgy Division</td>
<td>1988</td>
<td>National Institute of Standards and Technology, Gaithersburg, Maryland</td>
<td>The Metallurgy Division was the first Federally established laboratory devoted to metals research.</td>
</tr>
</tbody>
</table>
HISTORICAL LANDMARKS

METALWORKING FURNACES ................................................................. 1988
Mission San Juan Capistrano, San Juan Capistrano, California
“The two furnaces at this site, circa 1790s, are the oldest existing metalworking structures in California.”

MICHIGAN COPPER COUNTRY ............................................................. 1988
Copperport Museum, Calumet, Michigan
“The Michigan copper country is the site of the earliest prehistoric metalworking in North America.”

BUILDING “2-0-2” NORTHROP AIRCRAFT ........................................ 1988
El Segundo, California
“On this site, in the early 1930s, utilizing innovative metal fabrication, joining and design, Douglas Aircraft Company/Northrop Corporation created the cradle of Naval and Marine Corps Aviation.”

RADWERK IV BLAST FURNACE ......................................................... 1988
Vordernberg, Austria
“The Radwerk IV Blast Furnace, utilizing the technology of iron making with charcoal and water-power, continuously produced iron for Central Europe from medieval time, until the 20th Century. It developed the `Fillafer'-heating of the air blast and special ore roasting processes.”

PAUL REVERE’S COPPER ROLLING MILL ............................................. 1988
Plymouth Rubber Co., Inc.
Canton, Massachusetts

SUDSBURY DISTRICT ORE BODY ....................................................... 1988
Sudbury, Ontario, Canada
“The Sudbury District is the world’s greatest single source of nickel sulphide ores. Mined since 1886, these ores also contain large amounts of copper, iron, cobalt and the precious metals.”

RESEARCH INSTITUTE FOR IRON AND STEEL .................................... 1988
Tohoku University, Sendai, Japan
“Constructed in 1920, this site is considered to be the birthplace of physical and chemical science of metallic materials in Japan. KS and Sendust magnet materials were invented here.”

ZINC DISTILLATION FURNACE ......................................................... 1988
Zawar Mine, India
“At this site are preserved the zinc retort distillation furnaces and remnants of related operations.”

AC ROCHESTER DIVISION ................................................................. 1989
General Motors Corporation, Flint, Michigan
“Development of specially designed aluminum oxide refractory materials and electrically conductive glass-powdered metal seals has contributed greatly to automobile and aircraft internal combustion engine reliability.”

RESEARCH and DEVELOPMENT CENTER ........................................ 1989
Carpenter Technology Corporation, Reading, Pennsylvania
“The invention of the world’s first straight chrome and chrome-nickel free machining stainless steels, patented in 1931 and 1934, resulted in the use of stainless parts and fittings in almost every industry.”

DSV ALVIN .......................................................................................... 1989
Woods Hole Oceanographic Institution, Woods Hole, Massachusetts
“Deep Submergence Vehicle Alvin was accomplished by the imaginative use and development of advanced materials, including high yield strength steel, titanium, and special polymeric materials.”

THE EIFFEL TOWER ........................................................................... 1989
Paris, France
“The Eiffel Tower, erected in 1889 of puddled iron, is a distinctive architectural and engineering masterpiece.”

MILL FOR THE PRODUCTION OF NICKEL-BASE ALLOYS ........... 1989
Inco Alloy’s International, Huntington, West Virginia
“This facility placed in operation the first continuous bright annealing sheet furnace in the world, and is the first facility solely dedicated to the production of wrought nickel and nickel-base alloys.”

OLIVER CHILLED PLOW WORKS ....................................................... 1989
South Bend, Indiana
“The economical chilled iron plow was ideal for breaking the rich loam of the Great Plains.”

YTTERBY MINE ................................................................................. 1989
Rosarö Island, Stockholm Archipelago, Sweden
“Four periodic elements — Yttrium, Terbium, Erbium, and Ytterbium — were isolated from the black stone gadolinite mined here and were named after the Ytterby Mine.”

MANNESMANN PIERCING AND PILGER MILLS ............................ 1990
Mannesmann Rohren-Werke AG, Düsseldorf-Rath, Germany
“The first seamless steel pipe and tubing was manufactured by the Mannesmann piercing and pilger processes, circa 1890.”

ELECTRIC ARC FURNACE ............................................................... 1990
Deutsches Werkzeugmuseum, Remscheid, Germany
“This direct current electric arc furnace is the original furnace built according to the invention of Dr. Paul Herout in 1905. The first heat of steel was made in this furnace on 17 February 1906.”

 ALUMINUM RESEARCH LABORATORIES .................................. 1990
Aluminum Company of America, Alcoa Center, Pennsylvania
“Established in 1929, the Alcoa Aluminum Research Laboratories were the first research facilities in the aluminum industry. The laboratories have performed fundamental and applied research on aluminum alloys, corrosion mechanisms, welding technologies, and precision testing.”

CLYDACH REFINERY ................................................................. 1990
Inco, West Glamorgan, South Wales
“This refinery was the world’s first to produce, beginning in 1902, pure nickel by the Mond nickel carbonyl process.”

AIR FORCE MATERIALS LABORATORY .................................... 1990
Wright-Patterson Air Force Base, Dayton, Ohio
“Since 1917, the Air Force Materials Laboratory, formerly the Material Section of McCook Field, has pioneered research and development of advanced materials and manufacturing processes for aerospace systems.”
HISTORICAL LANDMARKS

RESEARCH CENTER, ARMCO INC. ................................................................. 1991
Middletown, Ohio
“Established in 1903, Armco’s Research Center is the first commercial iron and steel research facility in North America. Its many accomplishments include electrical steel sheet, Armco ingot iron and continuous rolling of sheet steel.”

AT&T BELL LABORATORIES ................................................................. 1991
Murray Hill, New Jersey
“AT&T Bell Laboratories has hastened our understanding of impurity effects in semiconductors and the fundamental properties of metal crystals by its invention of zone melting, including zone refining and zone leveling.”

RESEARCH LABORATORIES, CORNING GLASS WORKS ......................... 1991
Corning, New York
“The first industrial glass research laboratory in the United States was established by Corning Glass Works in 1908. Major inventions from this laboratory changed glass technology throughout the world.”

WATERVIET ARSENAL, U.S. ARMY .................................................. 1991
Watervliet, New York
“Major technological developments in the advancement of gun steel were made at the Watervliet Arsenal including autofrettage, guided boring, and chrome plating. Established in 1813, it is the oldest, continuously active arsenal in the United States.”

WATERVIET PLANT, AL TECH SPECIALTY STEEL CORPORATION ........ 1992
Colonie, New York
“Since 1907, this plant has been instrumental in the technical and commercial development of stainless steels, tool steels and other specialty metals and the processes for their manufacture.”

ELECTRIC ARC FURNACE, THE MUSEUM OF SCIENCE AND TECHNOLOGY 1992
Milano, Italy
“The first electric furnace of the indirect-arc type for melting steel was invented by Ing. Ernesto Stassano in 1898. Furnaces of this type were used to produce industrial quantities of steel in Europe and America.”

BETHFORAGE DIVISION, BETHLEHEM STEEL CORPORATION .......... 1992
Bethlehem, Pennsylvania
“In 1898 F. W. Taylor and M. White developed at this location a heat treatment practice which permitted the widespread use of high-speed tool steels.”

MOUND LABORATORY, EGAN&D MOUND APPLIED TECHNOLOGIES, U.S. DEPT. OF ENERGY ............................................. 1993
Miamisburg, Ohio
“Mound Laboratory’s pioneering efforts in applied materials research and development successfully supported the Manhattan Project and provided radiisotope thermoelectric generators for space exploration.”

MATERIALS SCIENCE AND TECHNOLOGY DIVISION, NAVAL RESEARCH LABORATORY .................................................. 1993
Washington, DC
“In this building, starting in 1927, pioneering work led to landmark developments in gamma ray radiography, defect-free steel castings, heavy section steel weldments and fracture mechanics concepts.”

TANNEHILL IRONWORKS ................................................................. 1994
Birmingham, Alabama
“Founded in 1830 and known as the birthplace of the Birmingham Iron Industry, Tannehill became a major supplier of iron for cannons and naval plate to the Confederacy.”

METALLURGICAL ENGINEERING LABORATORY .................................. 1994
Wayne State University, Detroit, Michigan
“In 1941, research conducted in the Old Main Building by Dr. E.O. Kirkendall led to the discovery that defects in the crystal lattice affect atomic diffusion in metals. This discovery established the foundation for worldwide understanding of solid-state diffusion.”

CHAMPION SPARK PLUG MINE (JEFFREY MINE) .................................. 1994
Mono County, California
“In 1919, discovery of andalusite at this mine led to the commercialization and development of advanced ceramic spark plug insulation for internal combustion engines and the growth of the world’s transportation industry.”

EDGAR THOMSON PLANT ................................................................. 1994
U.S. Steel Mon Valley Works, Braddock, Pennsylvania
“Built in 1873 by Andrew Carnegie, the Edgar Thomson Plant pioneered numerous technological advances in the production of quality steel products for the railroad, automotive and appliance industries.”

“LITTLE GIANT” UNIVERSAL TESTING MACHINE ................................ 1995
Tinius Olsen Testing Machine Co., Inc., Willow Grove, Pennsylvania
“The ‘Little Giant,’ invented by Tinius Olsen I, in 1880, was the world’s first truly universal testing machine, became the basis of all tensile testing machines later produced in the United States of America.”

METALS TECHNOLOGY LABORATORIES ....................................... 1995
Canada Centre for Mineral and Energy Technology, Ottawa, Ontario, Canada
“Established in 1942, the Laboratories are recognized for outstanding contributions to metallurgy and materials science in support of the Government of Canada and to promote the growth of the Canadian industries.”

GREENWOOD FURNACE ................................................................. 1995
Greenwood Furnace State Park, Greenwood Furnace, Pennsylvania
“Beginning in the 1830’s, Greenwood Furnace produced a superior grade of charcoal iron that was made into axles, wheels, and other locomotive parts. These products contributed to the industrial growth and westward expansion of America.”

48” GREY MILL ................................................................. 1996
Bethlehem Steel Company, Bethlehem, Pennsylvania
“The 48” Grey Mill, put into operation on January 9, 1908 at the Bethlehem Plant of Bethlehem Steel Corporation, was the first U.S. rolling mill to successfully produce large wide-flange steel beams as single sections rolled from ingots.”

FORGE OF FONTENAY ................................................................. 1996
Fontenay, Bourgogne, France
“The Forge of Fontenay, erected around 1220 as a part of the Abbey of Fontenay, is the first metallurgical factory in Europe and the place of the invention of the hydraulic hammer. This invention became the basis of industrial manufacturing of iron in Europe.”
 Freedon Forge ................................................................. 1996

Founded as a tiny frontier iron foundry and forge shop on the banks of the Kishacoquillas Creek, Standard Steel grew with the nation to become a leading producer of high quality machined steel forgings.

Covington-Cincinnati Suspension Bridge ................................................... 2000

Covington, Kentucky, Cincinnati, Ohio

“The Covington-Cincinnati Bridge, built to the design of John A. Roebling, epitomizes the best of mid-nineteenth century materials and fabrication technology, particularly in its use of wire rope for suspension cables and inclined stays.”

Hendricks Forge .............................................................................. 2000

Solingen, Germany

“The Hendricks Forge, founded in 1886, is representative of the drop forgings which revolutionized the cutlery trade in Solingen.”

Bettsis Atomic Power Laboratory ....................................................... 2000

West Mifflin, Pennsylvania

“The pioneering work carried out at Bettsis Atomic Power Laboratory provided new materials for nuclear and non-nuclear applications, developed naval nuclear pressurized water reactor plants, and made significant contributions to the creation of the commercial nuclear power industry.”

Ohio Crankshaft Company ........................................................................ 2001

Cleveland, Ohio

“Ohio Crankshaft is the site of the first production application for selective induction hardening of steel parts. Known as the TOCCO Process, its success spurred the growth of induction hardening technology.”

Outokumpu Flash Smelter ...................................................................... 2002

Helsinki-Espoo, Finland

“In 1949, Outokumpu Oyj introduced autogenous flash smelting of copper concentrates at their facility in Harjavalta, Finland. The process has become a primary means of copper and nickel production worldwide.”

The Eli Whitney Armory ......................................................................... 2003

Hamden, CT

“On this site between 1798 and 1825, Eli Whitney built the first significant independent American armory. The development of materials processing innovations began the tradition of precision production and interchangeable parts in America.”

L’Anse aux Meadows .............................................................................. 2003

Newfoundland, Canada

“Viking site of the first known metal smelting (iron from bog iron) and metal working (forging of iron into nails) that took place in North America.”

Populonia – Isola d’Elba ........................................................................ 2003

Tuscany, Italy

“Populonia and the Island of Elba are recognized as the sites of significant ferrous and non-ferrous mining and metalworking during the Etruscan (7th-3rd century BC) and Roman (2nd century BC-1st century AD) periods.”
THE CATERPILLAR TRACTOR AT HAGGIN MUSEUM .......................................................... 2004
Stockton, California
“Birthplace of the first useful Caterpillar tractor, an invention of Benjamin Holt of Stockton, California, that simulated the development of alloys for improved abrasion and wear resistance applications.”

BURDEN IRON WORKS .................................................................................................. 2005
Ballston Spa, NY
“Headquarters of a giant 19th century iron manufacturer. Burden’s patented horse-shoe making and concentric squeezing machines resulted in the automation and mass production of many essential iron products, a basis for the Industrial Revolution.”

LADISH COMPANY, INC., CUDAHY FORGE DIVISION .................................................. 2005
Cudahy, WI
“The location for substantial contribution to forging metallurgy and deformation processing technology.”

THE LIBERTY BELL ....................................................................................................... 2006
Philadelphia, PA
“The Liberty Bell is an international symbol of freedom whose history is as significant to metallurgy and casting technology as it is to American Heritage.”

THE PHOENIX IRON & STEEL COMPANY .................................................................. 2006
Phoenixville, PA
“Established in 1783, from a modified grist mill, the Phoenix Iron & Steel Works was the site of many metalworking firsts in America including rolling of iron nails, structural shapes and beams as well as invention and production of the spiral wrapped wrought iron Griffen gun and the hollow wrought iron Phoenix column.”

THE H.L. HUNLEY • North Charleston, SC ................................................................. 2007
“A context of naval warfare, H.L. Hunley changed the world. Its builders’ innovative use of materials, design and manufacturing techniques in the world’s first successful attack submarine.”

ATI-ALLVAC .................................................................................................................. 2007
Monroe, NC
“For pioneering achievement in vacuum induction melting of nickel-based superalloys, which began on September 19, 1957.”

COORSTEK, INC. ........................................................................................................... 2008
Golden, Colorado
“At this site in 1959, the first aluminum beverage can plant produced its first can, under the direction of William K. Coors and colleagues.”

BEEHIVE COKE OVENS ............................................................................................... 2008
Various southwestern Pennsylvania locations
“Beehive ovens marked a major advance in manufacturing coke, allowing the mass production of iron and steel. First built in the 1830’s in Fayette County, PA., there were almost 48,000 in operation by 1910.”

ASM INTERNATIONAL HEADQUARTERS BUILDING AND GEODESCIC DOME ............. 2009
Materials Park, Ohio
“Inspirational and visionary, the ASM International Headquarters Building and Geodesic Dome symbolize the enduring fellowship of materials professionals, advancing humanity’s progress through their work with engineered materials.”

METCUT RESEARCH, INC ......................................................................................... 2010
Cincinnati, Ohio
“This building constructed in 1951, was the first facility of Metcut Research Associates Inc. Here groundbreaking research was conducted in areas of machinability and surface integrity.”

CHERRY VALLEY COKE OVENS ................................................................................. 2010
Leetonia, Ohio
“The Leetonia Cherry Valley Coke Ovens enabled the burgeoning 19th century American steel industry fueled by coke transformed from coal in ovens in Pennsylvania and Ohio.”

USS MONITOR .............................................................................................................. 2010
Off the coast of Cape Hatteras, North Carolina
“With innovations such as a revolving gun turret, steam-driven propulsion, and it’s iconic ironclad construction, the USS Monitor heralded the arrival of the modern warship.”

THE MILK HOUSE, ELECTRON ENERGY CORP .......................................................... 2011
Landisville, Pennsylvania
“Site where Electron Energy Corp. produced the world’s first rare earth magnets in 1970. These high energy rare earth magnets based on samarium and cobalt made possible revolutionary improvements in performance and miniaturization of thousands of new systems and components for a broad range of industries worldwide.”

OPEN COIL ANNEALING (OCA OPERATIONS) AccelorMittal Dofasco ................................ 2011
Hamilton, Ontario, Canada
“In 1959 Dofasco pioneered Open Coil Annealing, a finishing process and technology, used to make high quality, specialty steels. Since then, Open Coil Annealing has been adopted worldwide and celebrated for its contribution to steelmaking and manufacturing of appliances and goods.”

SPONGE IRON POWDER PRODUCTION ........................................................................ 2012
Riverton, New Jersey
“Original site for the introduction of tunnel kiln manufacture used for the direct reduction of iron ore to ferrous metal powder for the global powder metal industry.”

THE DELHI IRON PILLAR ............................................................................................ 2013
New Delhi, India
“Delhi Iron Pillar—The rustless metallurgical marvel dedicated to ancient iron making traditions and blacksmiths of ancient India.”

U.S. DEPARTMENT OF ENERGY SAVANNAH RIVER SITE ............................................. 2013
Aiken, SC
“For advancing the materials technologies necessary to produce tritium, plutonium, and other isotopes for national defense, research, and medical applications.”
Nominations are now being accepted for the following awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Annual Nomination Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellow ASM</td>
<td>November 30</td>
</tr>
<tr>
<td>Edward DeMille Campbell Memorial Lecture</td>
<td>February 1</td>
</tr>
<tr>
<td>ASM/TMS Distinguished Lecture in Materials &amp; Society</td>
<td>September 1</td>
</tr>
<tr>
<td>Distinguished Life Member</td>
<td>February 1</td>
</tr>
<tr>
<td>William Hunt Eiseman Award</td>
<td>February 1</td>
</tr>
<tr>
<td>Engineering Materials Achievement Awards</td>
<td>March 1</td>
</tr>
<tr>
<td>Gold Medal</td>
<td>February 1</td>
</tr>
<tr>
<td>Historical Landmarks</td>
<td>February 1</td>
</tr>
<tr>
<td>Honorary Membership</td>
<td>February 1</td>
</tr>
<tr>
<td>Medal for the Advancement of Research</td>
<td>February 1</td>
</tr>
<tr>
<td>Allan Ray Putnam Service Award</td>
<td>February 1</td>
</tr>
<tr>
<td>Albert Sauveur Achievement Award</td>
<td>February 1</td>
</tr>
<tr>
<td>Bradley Stoughton Award for Young Teachers</td>
<td>March 1</td>
</tr>
<tr>
<td>Albert Easton White Distinguished Teacher Award</td>
<td>February 1</td>
</tr>
<tr>
<td>J. Willard Gibbs Phase Equilibria Award</td>
<td>February 1</td>
</tr>
<tr>
<td>The Silver Medal Award</td>
<td>February 1</td>
</tr>
</tbody>
</table>

Nomination forms and rules can be found at www.asminternational.org
Click on Membership & Committees – then Awards & Nominations.