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JULY 2025
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ABOUT THE COVER

The July issue of *JOM* highlights the experiences of participants in the TMS Young Leaders International Scholar Program and provides first-hand accounts from TMS scholars who attended conferences in PyeongChang, Republic of Korea, and Tokyo, Japan, as indicated on the map. Pictured, from top to bottom, are scholars: **Yue Fan,** University of Michigan; **Anne Campbell,** Oak Ridge National Laboratory; **Eva Zarkadoula,** Oak Ridge National Laboratory; **Gi-Dong Sim,** Korea Advanced Institute of Science & Technology; and **Shutaro Karube** of Kyoto University. Read more about the program beginning on page 17. Cover designed by David Rasel, Senior Manager, Brand and Digital Assets.

Access Technical Journal Articles

TMS members receive free electronic access to the full library of TMS journals, including *JOM*. Technical articles published in *JOM*: The Journal are available on the Springer website. TMS members should log in at www.tms.org/Journals to ensure free access.

About *JOM: The Magazine*:

This print publication is excerpted from the publication of record, *JOM*, which includes both The Magazine and The Journal sections. *JOM: The Magazine* includes news and insights about TMS, its members, and the professions it serves. To access the publication of record, visit www.tms.org/JOM.

About TMS:

The Minerals, Metals & Materials Society (TMS) is a professional organization that encompasses the entire range of materials science and engineering, from minerals processing and primary metals production to basic research and the advanced applications of materials. Learn more at www.tms.org.

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IN THE FINAL ANALYSIS

JOM THE MAGAZINE

"[The Chair] has failed to uphold the strategic goals valuing ideas and individualism, failed to uphold the Principles of Conduct of [Society] Officers, failed to uphold the Acknowledgement of Responsibilities for [Society] Members, failed to run meetings in an honest and businesslike manner, and such conduct has brought disrepute to [Society] and undermined member confidence in its operations."

—Recent Membership Society Mail Ballot to Recall a Board Chair

I belong to several membership organizations, including the American Society of Association Executives and the Council of Engineering and Scientific Society Executives. They are great stewards of the unique profession in which I have spent my career—association management. These organizations define and propagate "best" practices, convene meetings and exhibitions, publish must-reference literature, provide professional development, and . . . well, do a lot of things very much like the services provided by TMS.

While many association professionals think that they have "seen it all," they haven't. Count me vividly reminded of that fact when I received a mail ballot from a membership society (not TMS) to which I belong. The ballot was the result of a petition to recall the board chair—the equivalent of "president" in other societies. An excerpt from the petition is above. A rebuttal by the board chair says that the "recall isn't about accountability, it's about retaliation. Former board members broke the rules, faced the consequences, and now want someone to blame. . . . This recall is an attempt to punish me."

Having many more questions than answers, I found the society's website and social media to be effectively silent on the matter while the society's generally moribund discussion boards became argumentatively alive with firefights between advocates and detractors. Professional curiosity drove me to dig deeper. I learned that 8 of 15 society board members had been dismissed leading up to the recall. Vanquished board members have filed a lawsuit against the society for having acted unlawfully. The society is spending $30,000 to conduct the recall vote.

I am reminded of dialog within Cormac McCarthy's *No Country for Old Men*: Paraphrasing, "If this ain't a mess, it will do until a mess gets here."

The nucleus of this mess, I opine, is failure at the most fundamental responsibility of any membership society (and any business enterprise for that matter): It is imperative to establish and sustain a responsible, comprehensible, and honorable governance structure and then engage qualified people committed to the best interests of the organization in its leadership.

Why spotlight this society? Because it is a reminder that the process of good governance can never be taken for granted. Within TMS, effective, ethical, and engaged governance characterizes every Board meeting as well as the election of new Board members. As you will read in this issue, high-quality candidates and dedicated TMS members are being advanced for Board positions that will open at the conclusion of TMS2026. The full slate of candidates presented in this issue are all endorsed by the TMS Board of Directors, and the Board encourages you to view each candidate with favor and confidence in their ability to represent you and the materials community's interests via service on the Board.

While I am not naming the messy society, I do share that it is a well-established organization with a strong reputation and household-name status. I expect better from their leadership. Conversely and perhaps parochially, I don't expect better leadership from TMS, I simply expect TMS leaders to continue to lead with excellence. I see it firsthand: Our Board has been delivering accomplished governance for decades.

James J. Robinson
Executive Director

James Robinson

"While many association professionals think that they have 'seen it all,' they haven't."

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JOM TECHNICAL TOPICS

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Find peer-reviewed technical articles covering the full range of minerals, metals, and materials science and engineering in the July issue of *JOM:* The Journal. Each issue features several technical topics presenting a series of related articles compiled by guest editors. Below is a sample of articles that will appear in the July issue, based on information available at press time. TMS members can log in to **www.tms.org/Journals** for full access to technical articles from *JOM:* The Journal and additional TMS journals. For the most up-to-date article listing, visit **www.tms.org/JOM**.

// JULY 2025

2D Materials – Preparation, Properties, Modeling & Applications

Guest Editors: **Nuggehalli M. Ravindra,** New Jersey Institute of Technology**; Madan Dubey,** DEVCOM ARL**; Hesam Askari**, University of Rochester**; Ritesh Sachan,** Oklahoma State University**; Joshua Young,** New Jersey Institute of Technology
Sponsor: Thin Films and Interfaces Committee

"A Mini-Review on Useful Strategies for Improving the Electrochemical Performance of Graphene for Supercapacitor Application," **Agnes C. Nkele**, et al.

"Fabrication of 3D Flexible Electrode Derived from Biomass Material for Hybrid Supercapacitor via Electrospinning," **Gulnaz Amin**, et al.

"Tailoring Etching Conditions to Unlock the Electrochemical Potential of 2D Ti_3C_2Tx MXene," **Madhu Yadav**, et al.

"Layer Number Identification of MoS_2 by the Raman Integrated Area Ratio of its Vibration Modes to Substrate," **Zusong Zhu**, et al.

"Zinc Chloride-Activated N-Doped Super-Activated Carbon Derived from ZIF-8 with Optimized Pore System for Electrochemical Supercapacitor with Enhanced Energy Density." **Shijie Wu**, et al.

"Graded Al Component AlGaN Heterojunction Nanowire Array Photocathode," **Yingdong Pi**, et al.

Advancing Biomaterial Surfaces: Experimental and Simulation Studies

Guest Editors: **Gargi Shankar Nayak,** Universitätsmedizin der Johannes Gutenberg-Universität Mainz**; Prateek Sharma,** Saarland University
Sponsor: Thin Films and Interfaces Committee

"Borate Glasses Doped with Multiferroic $BiNi_{0.5}Fe_{0.5}O_3$ Nanoparticles: Preparation, Physical, Optical Properties and γ-ray Attenuation Competence," **Norah A.M. Alsaif**, et al.

"Hierarchical Design and Finite Element Analysis of Hierarchically Structured Composite Materials for Femur and Tibia Bone Implants Scaffolding." **Dinesh Babu**, et al.

"Fabrication, Physical, Linear and Nonlinear Optical Characteristics of Borophosphate Glasses Reinforced with Gadolinium Oxide: Potential Use in Optical Applications," **Nada Alfryyan,** et al.

"Study of Friction and Wear Properties of Magnetron Sputtered Composite Ceramic SiO_2/C Coating in Hip Prosthesis," **Chao Ding,** et al.

Innovations in Biofunctionalization: Bridging Materials and Biology

Guest Editors: **Laura Maria Vergani,** Politecnico di Milano**; Federica Buccino,** Politecnico di Milano
Sponsor: Thin Films and Interfaces Committee

"Advancing Orthopedic Surgical Tools: With Global Metal Dependency Trends Shifting Toward Sustainable Bioceramic Alternatives," **Phanindra Addepalli**, et al.

"Enhancement of $AgFeO_2$ Delafossite by Substitution of Double and Half Iron Ions to be Applied in Biomedical Applications," **Hisham Abdelsalam**, et al.

"Investigating Early-Stage Mineralization Behavior and Bioactivity of Acid-Free Bioactive Glass 45S5 with Enhanced Dissolution Kinetics," **Melisa Tüncer**, et al.

"Degradation of Polyethylene Plastics by Microbial Action of *Rhizobium* spp. BM Isolated from Soil," **Hui Wu**, et al.

Methods in Computational Thermodynamics and Kinetics

Guest Editors: **Cormac Toher,** The University of Texas at Dallas**; Damien Tourret,** IMDEA Materials Institute**; Hesam Askari,** University of Rochester**; Jorge Munoz,** The University of Texas at El Paso**; Homero Reyes Pulido,** Johns Hopkins University
Sponsor: Chemistry and Physics of Materials Committee

"Molecular Dynamics Simulation of Cu/Ti Heterogeneous Interface Evolution and the Elemental Diffusion Behavior," **Yingming Tu**, et al.

"Non-Isothermal Kinetic Analysis of UHMWPE Sheet," **Jagriti Jagriti**, et al.

"Molecular Dynamics Simulation of Effect of Grain Boundary on Mechanical Properties and Deformation Mechanism of M50NiL Steel," **Changchang Li**, et al.

"An Atomistic Study on Sintering Mechanisms of Metal Nanopowders: Case Study of Cu-Ag Nanoparticles," **Bassam A. Mohammed**, et al.

"Impact of Lance Bending Failure on Bath Dynamics of Top-Submerged Smelting Furnace for Non-ferrous Metals," **Zhong-yu Du**, et al.

Phase Transformation and Microstructural Evolution during Minerals Processing

Guest Editor: **Zhiwei Peng,** Central South University
Sponsor: Materials Characterization Committee

"Mineral Processing Technology of Fluorite: A Review," **Peng Gao**, et al.

"Effect of Heat Treatment on the Color of Yellow-Green Sphene and Its Color-Causing Mechanism," **Zi-Xiong Song**, et al.

"Optimization of High-Pressure Acid Leaching for Nickel and Cobalt Recovery from Ultralow-Grade Laterite Ores," Irwan Syah Bana, et al.

"Basic Research on Dynamic Adsorption and Desorption of Vanadium and Gallium in Bayer Mother Liquor," **Hongyu Lu**, et al.

"A Novel Approach for the High-Value Reclamation of Acid Leaching Residues from Clay Vanadium Ores: Synthesis and Functionalization of White Carbon Black," **Xuanxiong Kang**, et al.

"Electrochemical Leaching Behavior of Tellurium in Precious Metal Tellurides under Alkaline Systems," **Wei Yang**, et al.

"Comparative Kinetics of Complex Copper Oxide Ore Dissolution: Insights from Ball Grinding and IsaMill Grinding," **Gairong Wang,** et al.

"Investigation on Kinetic Mechanism and Oxidation Behavior of Magnesium High-Silicon Magnetite Pellets," **Kaikai Bai**, et al.

"Suspension Magnetization Roasting Kinetics and Microstructural Evolution of Hematite in CO-CO_2 Atmosphere," **Jianwen Yu**, et al.

"Structural and Liberation Effect of Vanadium Titano-Magnetite by Microwave Pretreatment," **Junpeng Wang**, et al.

"Investigation of Throughput, Energy, and Crushing Efficiency for High-Pressure Grinding Roller Through Piston Ballast Testing and the Discrete Element Method," **Le Zheng**, et al.

"Flotation Performance of Coal: Investigating the Synergistic Effects of Particle Size and Shape, and the Influence of Geometric Elements," **Guihua Zheng**, et al.

"Effect of Nanoclay Addition on Mechanical and Microstructure Properties of E-Glass Fiber and AA2022 Metal Skin Reinforced Epoxy Laminates," **S. Prashanth Raja**, et al.

"Investigation of Molybdenum Leaching Mechanisms in Ferromolybdenum Smelting Dust," **Wei Yang**, et al.

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Sponsor: Thin Films and Interfaces Committee

"Review of Advanced Coatings for Metallic Implants: A Study/Proposal on Yttria-Stabilized Zirconia and Silver-Doped Hydroxyapatite," **E. Lorena Medina**, et al.

"Enhancing Osseointegration Properties through Bioactivation of a PCL Porous Scaffold Fabricated via Fused Deposition Modeling Process," **Gabriel Roulhac De Rochebrune**, et al.

"Post-Fatigue Residual Strength of Abrasiveless Waterjet-Treated Ti6Al4V as a Biomaterial," **Jing Xie**, et al.

"Effects of Micro-/Nano-Textured and HA/CS Coating Composite Structures on Ti6Al4V Surfaces' Biological Properties," **Yaoran Cheng**, et al.

"Synthesis and Characterization of Hydroxyapatite from Grouper Bone Fish (Epinephelus polyhekadion) and Its Potentials for Bone Implant Applications," **Febrianti Mahrani Kolly**, et al.

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TMS MEMBER NEWS

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Beyerlein Elected to American Academy of Arts and Sciences

Irene Beyerlein

TMS member **Irene Beyerlein** has been elected to the American Academy of Arts and Sciences, which has honored excellence and convened leaders from across disciplines and divides to examine new ideas, address issues of importance, and work together "to advance the interest, honor, dignity, and happiness of a free, independent, and virtuous people" since 1780, according to the academy's website.

Nearly 250 members were elected to the academy in five classes in 2025; Beyerlein was selected in the Mathematical and Physical Sciences class, Engineering and Technology section.

As a professor at the University of California, Santa Barbara, Beyerlein leads pioneering research in mechanics and materials science, advancing the design of resilient, high-performance materials through multiscale modeling and experimentation. She is a lifetime member of TMS, who joined the Society in 2005. Her TMS awards include: 2023 Fellow Award, 2019 Brimacombe Medal, 2019 AIME Champion H. Mathewson Award, and 2018 Materials Processing & Manufacturing Division Distinguished Scientist/Engineer Award. In 2024, she was elected to the U.S. National Academy of Engineering.

Laurencin Honored as Knight of the Order of St. Lucia

TMS member **Cato T. Laurencin** was named a Knight Commander of the Order of St. Lucia under the auspices of His Majesty King Charles III. The Order was established in 1986 by Her Majesty Queen Elizabeth II and is one of the highest national honors, recognizing individuals "for achievement, acts of bravery, or meritorious service." His citation reads: "For exceptional and outstanding service of national importance to Saint Lucia."

Laurencin is the University Professor and Albert and Wilda Van Dusen Distinguished Professor of Orthopaedic Surgery at the University of Connecticut (UConn). Additionally, he is a professor of chemical and biomolecular engineering, materials science and engineering, and biomedical engineering, and is chief executive officer of The Cato T. Laurencin Institute on Regenerative Engineering. With degrees in chemical engineering, medicine, and biochemical engineering/biotechnology, Laurencin is the first surgeon to be elected to all four U.S. National Academies—Sciences (NAS), Engineering (NAE), Medicine (NAM), and Inventors (NAI). He has also received the National Medal of Technology and Innovation, the NAM's Walsh McDermott Medal, the NAE's Simon Ramo Founder's Award, and the Presidential Award for Excellence in Science, Math, and Engineering Mentoring. Throughout his career, Laurencin has been elected as a fellow of the American Academy of Arts and Sciences (AAAS), the Indian National Academy of Sciences, the Indian Academy of Engineering, the African Academy of Sciences, and The World Academy of Sciences.

Sir Cato T. Laurencin, left, was named Knight Commander of the Order of St. Lucia on February 22, 2025, St. Lucia's Independence Day. (Photo credit: University of Connecticut)

In 2018, Laurencin gave the American Ceramic Society (ACerS) Edward Orton Jr. Memorial Lecture at the Materials Science & Technology Conference. His presentation, "Regenerative Engineering: Materials in Convergence," kicked off the plenary session, which was comprised of talks from each of the meeting's organizing societies, TMS, ASM International, and the Association for Iron & Steel Technology (AIST).

Ritchie Elected to NAS

Robert O. Ritchie

Congratulations to TMS member **Robert O. Ritchie** on his election to the U.S. National Academy of Sciences. Ritchie is one of 120 U.S. members elected in 2025. Election to the NAS is one of the highest honors for scientists, recognizing "distinguished and continuing achievements in original research."

Currently, Ritchie is the H.T. & Jessie Chua Distinguished Professor of Engineering in the Departments of Materials Science and Engineering and Mechanical Engineering at the University of California, Berkeley (UCB). He is also a senior faculty scientist in Berkeley Lab's Materials Science Division.

As a TMS member since 1976, Ritchie has been active in technical committees within both the Structural Materials Division (SMD) and Functional Materials Division (FMD). He has also served as a member of the review committee for the TMS journal, *Metallurgical and Materials Transactions A.*

His work, focused on investigating the mechanical behavior of materials and ceramics, composites, and biological materials, has earned him many accolades throughout his career. Within TMS, those honors include: 1985 AIME Champion H. Matthewson Award; 1997 SMD Distinguished Scientist/Engineer Award; 2004 Fellow Award; 2010 Institute of Metals/Robert Franklin Mehl Award; 2014 Acta Materialia Gold Medal Award; 2017 Morris Cohen Award; and 2020 William D. Nix Award. He is also a member of the National Academy of Engineering and is a Fellow of the American Association for the Advancement of Science, the Materials Research Society, American Ceramic Society, the American Society of Mechanical Engineers, the Institute of Physics, the Royal Academy of Engineering, ASM International, and the Institute of Metals.

TMS Members Elected to African Academy of Sciences

Two TMS members were among the 88 scientists and scholars recently elected to the African Academy of Sciences (AAS), comprising the classes of 2023 and 2024. These distinguished scholars, elected through a rigorous and merit-based process, have demonstrated excellence in their respective fields and have significantly contributed to the advancement of science, technology, and scholarship in Africa and globally, according to the academy. AAS Fellows are recognized for their outstanding contributions to the advancement of science and their role in shaping policies that drive sustainable development across the continent.

The following TMS members were recently elected to the AAS:

- **Hanadi A.G. Salem,** The American University in Cairo, Egypt, was elected as part of the 2024 class. Salem has been a TMS member since 1994.
- **Martin M. Thuo,** North Carolina State University, United States, was elected for the 2023 class. Thuo is a lifetime member of TMS.

The AAS says that the election of these new Fellows expands the Academy's network of leading scientists, enhancing its capacity to foster knowledge-sharing, mentorship, and collaboration to drive impactful research in Africa.

Asle Zaeem Joins UT as MSE Department Head

Mohsen Asle Zaeem

The University of Tennessee, Knoxville (UT) announced in April 2025 that TMS member **Mohsen Asle Zaeem** has joined UT as its new head and Cook Eversole Endowed Professor of the Department of Materials Science and Engineering in the Tickle College of Engineering. Prior to this appointment, Asle Zaeem was professor of mechanical engineering and materials science, Fryear Endowed Chair for Innovation and Excellence, and director of the Postdoctoral Affairs and Professional Development Program at Colorado School of Mines. He also spent several years as program director for Designing Materials to Revolutionize and Engineer our Future with the National Science Foundation.

Since joining TMS in 2011, Asle Zaeem has been actively involved in many functional and technical committees and has frequently organized symposia for TMS Annual Meetings. He has distinguished himself within TMS as a 2015 Materials Processing & Manufacturing Division (MPMD) Young Leader, the 2017 TMS/Federation of European Materials Societies (FEMS) Young Leader International Scholar, and one of the 2024 Brimacombe Medalists. Additionally, he served as a member of the organizing committee for the 8th World Congress on Integrated Computational Materials Engineering (ICME 2025), part of the TMS Specialty Congress held in June 2025.

Asle Zaeem is also a fellow of the American Society of Mechanical Engineers and has received two Faculty Research Excellence Awards—one from Colorado School of Mines in 2021 and one from Missouri University of Science and Technology, Rolla in 2016.

Tasan Appointed Director of Research Lab at MIT

C. Cem Tasan

In March 2025, **C. Cem Tasan** was appointed the new director of the Materials Research Laboratory (MRL) at the Massachusetts Institute of Technology (MIT). Tasan is also the POSCO Associate Professor of Materials Science and Engineering in MIT's Department of Materials Science and Engineering.

According to MIT, the MRL "unites researchers across disciplines, fosters industry and government partnerships, and drives advancements that shape the future of technology." Tasan's appointment follows Lionel C. Kimerling, 1994 TMS President and 2000 TMS Fellow, who served as interim director of the MRL since August 2023.

As a TMS member since 2012, Tasan has been involved with the Structural Materials Division (SMD) and has organized several symposia for TMS Annual Meetings. He has shared his expertise as an organizer and instructor for several TMS online courses focusing on high entropy alloys (HEAs). He was the lead organizer of the 2nd World Congress on High Entropy Alloys (HEA 2021) and later served on the organizing committee for the third congress, HEA 2023.

In 2020, Tasan received the TMS Early Career Faculty Fellow Award and in 2024, he was named a TMS Brimacombe Medalist.

TMS at OTC 2025

TMS members attended technical presentations, networked in the Exhibit Hall, and planned future events at the Offshore Technology Conference 2025 (OTC 2025), held May 5–8, 2025, in Houston, Texas. As one of 12 sponsoring organizations of OTC, TMS members played a role in planning the sessions, panels, and other programming events held throughout the conference.

Scott Pisarik
(Photo courtesy of OTC 2025.)

Scott Pisarik, Lead Materials Corrosion Engineer at Chevron, was honored as one of the 2025 OTC Emerging Leaders. Pisarik represented TMS in 2025, as each recipient is a member of one of the OTC sponsoring, endorsing, or supporting organizations. He has been a TMS member since 2025, having previously been involved in the Society through the Material Advantage student program. The Emerging Leaders program recognizes individuals with "less than 10 years of experience in the energy industry who have demonstrated exceptional talent, commitment, and promise as future leaders in the offshore sector."

Members of the TMS OTC Programming Subcommittee met to start planning TMS-sponsored programming for future conferences on Tuesday, May 6. They were then joined by representatives from the overarching OTC Program Committee for an update on their goals. Attendees (pictured, left to right) included: **Eric Gagnon**, Aspen Aerogels; **Hoss Shariat**, KBR and OTC 2026 Program Committee Chair; **Huyen Bui**, Shell and OTC 2026 Program Committee Vice Chair; **Miranda Gomes**, Baker Hughes; **Joseph Gomes**, Telops and TMS Vice Chairperson; **Thomas Shattuck**, Clifford Chance; **Indranil Roy**, DAMORPHE and TMS Chairperson; and **Chase Tanner,** Aspen Aerogels.

OTC will return to Houston from May 4–7, 2026. Learn more about the event and make your plans to submit a paper or attend at **2026.otcnet.org**.

The TMS OTC Programming Subcommittee members gathered at OTC 2025.

TMS Expands Member Discount on Publications

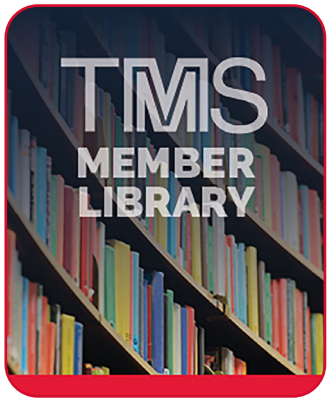
SPRINGER NATURE

TMS members have long enjoyed a 40% discount on TMS proceedings volumes. Now, that discount is being expanded to all TMS publications and to all other Springer Nature books available at **Springer Nature Link (https://link.springer.com/).**

To access the discount code, members should log in to the **TMS Bookstore (www.tms.org/Bookstore)** where the code will display in the yellow box. Enter the discount code during your checkout on the Springer Nature Link website.

New Content Added to TMS Member Library

More than 240 papers from past installments of the International Conference on Composite Materials are now available at no charge to TMS members through the TMS Member Library. The papers are from three proceedings volumes from the conference held in 1975, 1978, and 1985. Last year, the TMS Member Library was updated to include more than 600 papers published as part of the Materials Science & Technology (MS&T) conference series from 2017, 2018, and 2019.



In total, nearly 4,000 technical articles from TMS publications are now available to members through the online TMS Member Library. The collection can be searched by paper title, keyword, or author name. To access these resources, members can log in to **www.tms.org/MemberLibrary**.

TMS members also have free access to the AIME Digital Library, a collection of more than 550 technical documents from the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) archive, as well as the option to subscribe to the Light Metals Digital Library or OneMine Library. Access these benefits and more at **members.tms.org**.

JOM Article Wins Gold Quill Award

"A fascinating look at the intersection of materials science and art curation." That's how one judge described "Melting Before Our Eyes: A Materials Art Mystery," a feature article published in the January 2025 issue of *JOM: The Magazine.* The article has been recognized with a **2025 IABC Gold Quill Award of Merit** in the writing category. This award is administered by the International Association of Business Communicators (IABC).

The article explored the materials mystery behind artist Andy Warhol's dripping *Oxidation* painting and highlighted efforts underway at The Andy Warhol Museum in Pittsburgh, Pennsylvania, to conserve this unique artwork. It was written by **Kaitlin Calva,** a former editor for *JOM* who now contributes articles to the magazine as a freelance writer, and designed by **David Rasel,** TMS Senior Manager, Brand and Digital Assets.

Click on the QR code to read the full article through Springer Nature link (no log in required).

Share Your News in *JOM*

Contact Kelly Zappas, ***JOM: The Magazine*** editor, at kzappas@tms.org to share your professional accomplishments in the pages of ***JOM***. Please note that only news submitted by current TMS members will be considered.

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TMS Presents the 2026 Board of Directors Nominees

Kelly Zappas

The following individuals are the nominees for the open positions on the 2026–2029 TMS Board of Directors.

David L. Bourell

Presidential Cycle

David L. Bourell is the Temple Foundation Professor Emeritus at The University of Texas at Austin. He is a leading expert in additive manufacturing, having worked in this area since 1988. He holds ten primary patents and has published 290 papers. Bourell served on technical and administrative committees within TMS over his entire professional career. From 2019 to 2022, he served on the TMS Board of Directors as the director of Professional Development. He is an active member and former chair of the Additive Manufacturing Bridge Committee and the Powder Materials Committee. Bourell currently serves on a TMS society-level awards committee. He was a member since 1998 of the TMS Professional Registration Committee, and as chair in 2023, he successfully transitioned the committee to its host organization, The National Council of Examiners for Engineering and Surveying. In 2016, he was the founding chair of the first TMS Bridge Committee, the Additive Manufacturing (AM) Committee. This included service as the chair of the ad hoc AM Committee through which the bridge committee structure and bylaws were created.

Bourell was, from 1995 through 2022, the chair of the organizing committee for the International Solid Freeform Fabrication (SFF) Symposium, an annual topical meeting in additive manufacturing. He has, in this capacity, gained extensive meeting organization experience, including direct experience with timeline management, government and industrial sponsorship, meeting space contracting, food and beverage coordination, hotel room arrangement, abstract solicitation, meeting gridding, program preparation, social event planning, manuscript review, and proceedings preparation/distribution. TMS has provided conference management services for the SFF Symposium since 2016.

TMS recognition includes the following: Fellow (2011), Lifetime Member (2012), Materials Processing & Manufacturing Division Distinguished Scientist/Engineer Award (2009), and keynote speaker for two division luncheons at TMS Annual Meetings. Bourell is a Titanium-level donor to the TMS Foundation.

The individuals highlighted in this article have been nominated to fill seven open positions on the 2026 TMS Board of Directors. These candidates, if elected by the TMS membership, will be installed at the conclusion of the TMS 2026 Annual Meeting & Exhibition (TMS2026), scheduled for March 15–19, 2026, at the San Diego Convention Center and Hilton San Diego Bayfront in San Diego, California, USA.

Additional nominations for these positions may be submitted for Board consideration by any 25 TMS members by August 15, 2025. Nominations for qualified individuals should be sent to James J. Robinson, TMS Executive Director, at robinson@tms.org and should include the nominee's name, biography, and written consent to serve if elected.

If additional candidates are proposed, a majority vote of TMS members will determine who fills the position. If no new nominations are received, the individuals named in this article will be automatically elected on August 16, 2025.

Mark R. Stoudt

Financial Planning Officer

Mark R. Stoudt has been a member of the scientific staff at the National Institute of Standards and Technology since 1986. He earned undergraduate degrees in Chemical Engineering and Metallurgical Engineering from Penn State and an MSE and PhD in Materials Science and Engineering from Johns Hopkins University. He has published over one hundred articles in refereed journals and has been awarded four patents. His current research focuses on evaluating the structure/property/performance relationships associated with the complex microstructures produced via additive manufacturing. He also studies the environmentally assisted cracking resistance of AM-processed nickel-based superalloys and high-strength stainless steels.

A TMS member since 1983, Stoudt is currently a member of the TMS Financial Planning Committee and the chair of the subcommittee on standards development in AM materials. He recently served as the chair of the Materials Processing & Manufacturing Division (MPMD) Council, chair of the TMS Technical Division Council, and as a member of the TMS Executive Committee. He is a member of the Additive Manufacturing, Mechanical Behavior of Materials, and Steels committees. He has also served as the chair of the Shaping and Forming Committee. Stoudt represented the MPMD council as a member of the Programming Committee from 2012 to 2025. He has organized numerous symposia and has served as a guest editor and advisor to *JOM*. Stoudt received the MPMD Distinguished Service Award in 2016.

Roger Narayan

Content Development and Dissemination Director

Roger Narayan is a distinguished professor in the Joint Department of Biomedical Engineering at the University of North Carolina and North Carolina State University. He is an author of over three hundred publications, as well as several book chapters on the processing of biomedical materials. He currently serves as an editorial board member for several academic journals, including as associate editor of *Applied Physics Reviews* (AIP Publishing). Narayan has also edited several books, including the textbook *Biomedical Materials, Second Edition* (Springer), the handbook *Materials for Medical Devices* (ASM International), the *Encyclopedia of Sensors and Biosensors* (Elsevier), and the *Encyclopedia of Biomedical Engineering* (Elsevier). He has previously served as director of the TMS Functional Materials Division, the ASM International Emerging Technologies Awareness Committee, and the American Ceramic Society Bioceramics Division.

Professional Development Director

Janelle P. Wharry

Janelle P. Wharry is professor of Mechanical Science & Engineering at the University of Illinois at Urbana-Champaign. Her research group focuses on understanding structure-property-functionality relationships in irradiated materials, with an emphasis on deformation mechanisms and mechanical behavior at the nano/microscale. The group's active projects span nuclear structural and cladding alloys, advanced manufacturing and joining methods, metallic nuclear fuels, and electroceramic materials. She has mentored 28 graduate and post-doctoral researchers and has published 100+ peer-reviewed journal articles and refereed conference papers. She is also an editor of *Materials Science & Engineering A* and *Materials Today Communications*.

Wharry has been a TMS member since 2009 and has volunteered in numerous capacities within the society, primarily within the Professional Development, Nuclear Materials, Phase Transformations, and Education committees. She was also general chair of the inaugural 2019 Materials in Nuclear Energy Systems (MiNES) Conference, co-organized by TMS and the American Nuclear Society (ANS). In addition, Wharry serves as chair of the U.S. Department of Energy (DOE) Nuclear Science User Facilities Scientific Review Board. Wharry is a recipient of the TMS Brimacombe Medal, the DOE Early Career Award, National Science Foundation CAREER Award, and ANS Landis Award. Prior to joining the University of Illinois, she was on the faculty at Purdue University.

Public and Governmental Affairs Director

Richard Otis

Richard Otis is the principal computational engineer at Proteus Space, Inc., where he leads the software development team for MERCURY™, the company's flagship automated satellite design and model-based systems engineering (MBSE) platform. Prior to his current role, he worked for eight years (2016-2024) at NASA's Jet Propulsion Laboratory (JPL) as a computational materials scientist and advanced manufacturing technologist. Otis is the creator and co-lead of the open-source CALPHAD-based computational thermodynamics software library PyCalphad, a software for which his team received the NASA JPL Software of the Year Award in 2019, and for which he was individually awarded the NASA Early Career Achievement Medal in 2023. Beyond his JPL duties, he also taught thermodynamics and phase transformations of materials as adjunct faculty in the Department of Chemical Engineering at the California State Polytechnic University, Pomona, for five years (2017-2022).

Otis has been an active member of the TMS Public and Governmental Affairs (P&GA) Committee since 2018. As a member of P&GA, he has led or contributed to multiple initiatives related to the Society's strategy for public outreach and engagement. Otis has served as a symposium organizer for multiple topics related to alloy design, computational materials, and additive manufacturing. He also co-organized the first TMS symposium addressing The Future of Work in Materials Science. He is a past invited contributing author to *JOM* and, in 2021, was recognized with the TMS Light Metals Division (LMD) Young Leaders Professional Development Award. Otis holds a PhD in Materials Science and Engineering from Pennsylvania State University and has experience working across scientific disciplines, with over 40 peer-reviewed publications in advanced manufacturing, physical chemistry, numerical methods, and Bayesian uncertainty quantification. His current research focus includes the bridging of materials design to the design of complex systems.

John Carpenter

Image Courtesy of Samantha D'Anna Photography.

Extraction & Processing Division Chair

John Carpenter has been a scientist in the manufacturing and metallurgy division at Los Alamos National Laboratory since 2012. Over that time, his research has focused on enabling adoption of novel manufacturing techniques in defense and nuclear energy applications. To achieve this, he employs his expertise in metal process-structure-property relationships across a wide variety of manufacturing techniques including welding, additive manufacturing, casting, forming, rolling, and spraying. He holds three degrees in Materials Science and Engineering, including his MS and PhD from Ohio State University and his BS from Virginia Tech.

He joined TMS in 2010 and has served as a technical committee chair for both the Extraction & Processing Division (EPD) and Structural Materials Division (SMD). In addition, Carpenter spent six years as a division representative on both the Program Committee and the Content Development and Dissemination Committee. Other TMS activities include serving as both a member and chair of the *Metallurgical and Materials Transactions* Joint Commission as well as a MS&T programming representative since 2019. He received the TMS EPD Young Leader Award in 2012, the American Welding Society's McKay-Helm Award in 2021, and three Awards of Excellence from the National Nuclear Security Administration.

Soumendra Basu

Functional Materials Division Chair

Soumendra Basu is a professor of Mechanical Engineering and a professor and associate division head of Materials Science and Engineering at Boston University. After receiving his PhD in Materials Science and Engineering from the Massachusetts Institute of Technology (MIT), Basu was a postdoctoral researcher at Los Alamos National Laboratory, prior to joining Boston University.

Basu has been an active TMS member for many years, taking on leadership roles of increasing significance. He was elected as the Functional Materials Division (FMD) vice chair in 2023 and is currently a member of the Materials Innovation Committee. Previously, he served as the chair of the Energy Conversion and Storage Committee (ECSC) from 2020 to 2022. Basu has also served as *JOM* advisor for the ECSC and as the guest editor for several *JOM* topics. He is also a member of the Energy Committee. Basu has been a co-organizer of eight TMS symposia on Advanced Materials for Energy Conversion and Storage and was the lead organizer of an honorary symposium in 2024.

Basu's research interests include solid oxide cells for electricity and hydrogen generation; optical fibers for mid-IR transmission; wide bandgap materials for solid state lighting; thermal barrier and environmental barrier coatings for gas turbine applications; understanding the effects of interfacial structure and segregation on interfacial strength; high temperature oxidation and corrosion of alloys; and characterization of structure and phase transformations in materials using electron microscopy techniques. Basu has about 200 peer-reviewed publications and has presented about 200 talks nationally and internationally. To support his research efforts, Basu has raised around $14M of federal and industrial research funding as principal investigator (PI) and co-PI. Basu was the corresponding author on a 2023 Light Metals Division (LMD)/Extraction & Processing Division Energy Best Paper Award–Professional, a corresponding author of a *JOM* paper selected as the Editors Choice in 2021, and a co-author on a 2013 LMD Energy Best Paper–Student Award.

View the 2025 TMS Board of Directors

Visit **www.tms.org/BOD** to view a complete listing of the current TMS Board of Directors and their biographies.

Remembering Robert Wagoner

Kaitlin Calva

The TMS family lost a visionary leader, dedicated mentor, and generous friend in Robert H. Wagoner, who passed away on January 28, 2025. At 73, Wagoner was in Cusco, Peru, spending his retirement on an around-the-world adventure with his wife, Robyn—a "TMS social member" who attended many TMS annual meetings and social events with her husband over the years.

Wagoner first got involved with TMS in the 1970s—when it was still The Metallurgical Society of the American Institute of Mining, Metallurgy, and Petroleum Engineers (AIME) and he was still an undergraduate student at The Ohio State University (OSU)—and never looked back. He was actively involved in shaping the future of the Society for the rest of his life.

Upon earning his B.S., M.S., and Ph.D. in metallurgical engineering from OSU, Wagoner accepted a National Science Foundation Postdoctoral Fellowship at the University of Oxford in the United Kingdom. When he returned to the United States, he joined General Motors in Warren, Michigan, as a staff research scientist. Here he met Robyn, and they began a family before returning to Columbus, Ohio, where Wagoner began his academic career at OSU in 1983.

Wagoner's decorated tenure at OSU was marked by several College of Engineering Research Awards, the Harrison Faculty Award for Excellence in Engineering Education, and the OSU Distinguished Scholar Award. He served as director of the OSU Research Foundation from 1990 to 1994, became chair of the Materials Science and Engineering Department in 1992, and was named the George R. Smith Chair in Engineering in 2001. While he "officially" retired in 2013, Wagoner remained an active member in the materials science community over the years, holding several international research positions, serving as an expert witness in many U.S. court cases, and authoring more than 250 articles and several books and proceedings.

In addition to his involvement with TMS, Wagoner's work earned him recognition from several professional organizations. He was elected to the National Academy of Engineering, received the Society of Automotive Engineers (SAE) Melbourne Award, and was a Fellow of SAE, ASM International, and the American Society of Mechanical Engineers (ASME).

Within TMS and AIME, Wagoner shared his time, resources, and knowledge generously. His roles spanned every level of the Society, including on the Board of Directors as chair of the Materials Design & Manufacturing Division (later renamed the Materials Processing & Manufacturing Division or MPMD, for short). His second term on the board—this time in the presidential rotation—came at a crucial time for the Society. As the 1997 President, Wagoner orchestrated major initiatives, such as navigating a multi-society agreement for a new fall meeting; coordinating with the Iron & Steel Society (now the Association for Iron & Steel Technology) on a building agreement for a new headquarters in Pennsylvania; and expanding the Society's international reach by helping to form the International Organization of Minerals, Metals & Materials Societies (IOMMMS) and representing TMS at several international gatherings.

Wagoner (standing, center) served as chair of the TMS Foundation Revitalization Committee, pictured here at the TMS 2013 Annual Meeting & Exhibition.

Sharing Memories of Rob

"I first met Rob Wagoner when I joined the Department of Materials Science and Engineering at Ohio State in 1988. We shared many fun times at the Varsity Club Restaurant and Bar on Friday evenings that ranged across many of Rob's favorite subjects: plasticity, spring back in sheet metals forming, finite element simulations, and of course, cars, and more specifically, Corvettes. Rob was a leader in many ways, especially in developing standards and consistency in finite element simulations. He organized round robin gatherings of different teams from around the world that produced refinements to spring back forming simulations and constitutive laws for plasticity."

*—**Peter Anderson**, The Ohio State University*

"I was Rob's thesis advisor, colleague, and friend. He was a brilliant scientist with many seminal contributions. Throughout his life, he was an active and excellent tennis player. He was witty, demanding of excellence from his students and peers, and quick to detect and point out nonsense. We will miss him."

*—**John Hirth**, Washington State University*

"I first met Rob at TMS in about 2008. Since 2013, we have written 15 journal papers together. We've been meeting almost weekly over Zoom for the past few years, with students, postdocs, and collaborators. I'll always remember Rob with a smile. He was a tough taskmaster with high expectations for any students on the projects, but he genuinely wanted them all to succeed. One thing that always inspired me was that Rob had great relationships with people. He would go on cruises and long vacations with neighbors and friends who had completely opposite political or other views. I expected that he would lay down the law relating to political truth as he did with scientific truth; but he did not do that. He put his friendships above opinions, or the need to be right. For the past few years, he tenaciously went after the investigation of directional hardening/internal stresses in metals, to understand what made them tick: what caused the nonlinear response and memory effects (see his TMS2023 talk). He observed something and was determined to explain it—whether or not it was the current buzz word in the community. More than the insights that came out of it, he shared his motivation to keep digging. He was never worried that the data might contradict his theory—he would always follow observational truth."

*—**David Fullwood**, Brigham Young University*

"Though I knew Rob almost exclusively via TMS board meetings, committees, or social events at the annual meeting, I don't think I got to know him well until we both served together on the search committee to find a new executive director when Alex Scott retired. Rob was the chair of that committee, and it was clear that he was well prepared. I think he gave multiple members of the committee a crash course in how a nonprofit organization like TMS was required to operate. He asked every candidate a question about who was ultimately responsible for making decisions, the executive director (ED) or the Board? Not all applicants answered correctly that it is always the Board of Directors. The Board may delegate some decisions to the ED but that can be changed by the Board. I was most impressed and grateful that Rob took on the chair role for the TMS Foundation and led it through the revitalization process. He was the perfect person to move our Foundation from a state of slow decline to a growing, thriving endeavor. Rob was very active in getting the ball rolling and was a generous contributor."

*—**Garry Warren**, University of Alabama, 2011 TMS President, and past chair, TMS Foundation Board of Trustees*

"I met Rob through MPMD Council meetings in the early 1990s. At the Annual and Fall Meetings, Rob would organize breakfast meetings on Monday mornings to assign tasks for the week. His organization and topical focus impressed me. Rob wanted to make sure we got things done. Rob became a trusted mentor, friend, and confidant for me in my career. His ability to streamline tasks to make progress was impressive. He taught me to temper my 'passion' for getting my own tasks done, and how to work within a system to achieve accomplishments. I will always remember what he taught me and pass along this wisdom to others. From my perspective, Rob helped our profession the most with his leadership within AIME. With others of course, he helped recognize AIME and provide a fiscally sound model for the future. The details and challenges were significant, but true to his style, he worked through the tasks and presented logical pathways and consensus. TMS and our profession is truly better because of Rob's dedication and vision."

*—**Dan Thoma**, University of Wisconsin-Madison, 2003 TMS President, and past member, TMS Foundation Board of Trustees*

Left: Robyn and Rob Wagoner supported the TMS Foundation from the very start. They are pictured here at the 2020 TMS Foundation annual donor recognition dinner.

Right: As a founding member of the Foundation's Gold Society for Lifetime Giving, Wagoner received the first commemorative pin during the 2014 TMS Foundation annual donor recognition dinner.

Having joined TMS prior to its incorporation as a separate member society, Wagoner remained engaged with AIME, serving as a Trustee (1997 to 1999) and President of the Institute (2003). Notable accolades from AIME and TMS include the 1981 AIME Robert Lansing Hardy Award; the 1981 and 1983 AIME Rossiter W. Raymond Memorial Award; the 1988 AIME Champion H. Matthewson Award; the 2003 TMS Fellow Award; the 2007 AIME Presidential Citation; and the 2008 AIME Honorary Membership Award. Upon receiving the 2004 TMS Alexander Scott Distinguished Service Award, Wagoner remarked: "It has been and continues to be an honor and privilege to serve with the distinguished staff and volunteers of TMS."

And, of course, as friends and colleagues remember Wagoner, they will undoubtedly recall his passion for philanthropy, as he leaves behind a remarkable legacy with the TMS Foundation. Since the Foundation's inception in 1993, Wagoner was instrumental in its success, acting as both a donor and trustee in the 1990s. Over time, support for the Foundation waned, but Wagoner's dedication persisted.

He advocated for the Foundation's programs and those who benefitted from them, spearheading an examination of the Foundation's financial health and fundraising strategies. From 2012 to 2013, Wagoner chaired the TMS Foundation Revitalization Committee, helping to secure a more sustainable future and foster a culture of giving within the TMS membership. As the governance of the Foundation was restructured, Wagoner was appointed chair of the Board of Trustees, serving from 2013 to 2016. During this time, the TMS Foundation flourished. In 2013, Robyn and Rob Wagoner became founding members of the TMS Foundation Gold Society for Lifetime Giving and in 2019, they progressed to the Diamond Society. Because of Wagoner's steadfast support and fiscally sound guidance, the TMS Foundation has been able to expand its portfolio of programs and help hundreds of students and early career professionals.

As Wagoner himself said in a January 2014 *JOM* interview, "TMS is a great Society and it needs a great Foundation." His efforts have ensured just that, and his legacy will not be forgotten.

Through the Years

1. As MPMD Chair, Wagoner (right) attends a Technical Division Council Meeting in 1994. **2**. Wagoner (back row, center) represented TMS at a meeting of several leading materials societies in Australia during his presidential term in 1997. **3**. Wagoner (back row, center) joined TMS colleagues to represent the Society at the EUROMAT 2001 conference in Italy. **4**. As chair of the TMS Foundation Board of Trustees, Wagoner presented recommendations regarding the restructuring of the TMS Foundation during a 2013 TMS Board of Directors meeting. **5**. Wagoner (center) at a meeting of the TMS Foundation Revitalization Committee in 2013. **6**. Wagoner (back row, center) at a TMS Foundation Board of Trustees meeting in 1996. **7**. Wagoner stopped to smile at the TMS Fellows Reception at the TMS 2018 Annual Meeting & Exhibition. **8**. Wagoner (back row, second from left) gathered with his fellow past presidents at the TMS 2023 Annual Meeting & Exhibition.

Kaitlin Calva is an independent contributor and a former editor of *JOM: The Magazine.*

TRAVELS WITH TMS SCHOLARS

Kelly Zappas

Gaining a global perspective on science and engineering research can be an invaluable experience for any materials professional, but international travel is often out of reach for those in the early stages of their careers. The **TMS Young Leaders International Scholar Program** creates that opportunity for early-career professionals, while building bridges between TMS and international partner societies.

TMS partners with three societies on this exchange program that allows early-career professionals, or scholars, to travel to each others' international conferences, where they deliver presentations on their work. The participating societies are TMS, the Federation of European Materials Society (FEMS), the Japan Institute of Metals and Materials (JIMM), and the Korean Institute of Metals and Materials (KIM).

Meet the Newest TMS Scholars

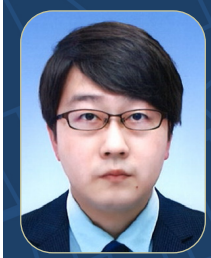
Yue Fan | Anne Campbell | Eva Zarkadoula

This July issue of *JOM: The Magazine* features two first-hand accounts of the TMS International Scholars' experiences traveling to JIMM and KIM conferences. **Yue Fan**, University of Michigan, attended the 2025 JIMM Spring Meeting in Tokyo in March, and **Anne Campbell**, Oak Ridge National Laboratory, attended the 2024 Fall Conference of KIM in PyeongChang in October 2024. **Eva Zarkadoula**, Oak Ridge National Laboratory, will attend FEMS EUROMAT 2025 in September in Granada, Spain. Her story will appear in a future issue.

JIMM AND KIM INTERNATIONAL SCHOLARS AT TMS2025

Just as TMS representatives traveled to Japan and South Korea to attend conferences, scholars from JIMM and KIM traveled to Las Vegas, Nevada, to present their work at the TMS 2025 Annual Meeting & Exhibition, March 23–27.

Gi-Dong Sim, Korea Advanced Institute of Science & Technology, represented KIM at TMS2025. He delivered his presentation, "Aluminum-Carbon Thin Films with High Strength and Ductility," as part of the Nanostructured Materials in Extreme Environments III symposium, part of the Materials Degradation and Degradation by Design topic track at TMS2025.



JIMM was represented by **Shutaro Karube** of Kyoto University. He gave his talk, "Spin Current Generation Driven by Altermagnetism and Its Spintronic Applications," at the Functional Nanomaterials symposium, which was part of the Electronic, Magnetic, and Energy Materials topic track at TMS2025.

Apply to be a 2026 TMS Scholar

Applications are now being accepted for the TMS Young Leaders International Scholar to JIMM and KIM; the deadline to apply is **August 15, 2025**. Award recipients will be notified by November 2025 and will travel to events taking place in 2026. Applications for the FEMS award will be accepted in 2026 to attend the FEMS EUROMAT event in 2027.

Applicants must be active members of TMS who are 40 years of age or younger and should be participants in TMS activities for early-career professionals. Each applicant will be required to submit the following:

- Completed award application form
- CV or resume
- One-page statement describing the applicant's society activities, special achievements, honors or awards, leadership qualities, and reason for applying to the program
- A 150-word abstract of the paper to be presented
- Letter of recommendation from the applicant's immediate supervisor or employer

A full list of criteria and award requirements can be found on the awards web pages for each scholar award, found at **awards.tms.org**, under Young Professionals Awards.

A Change to JIMM Meeting Timing for 2026

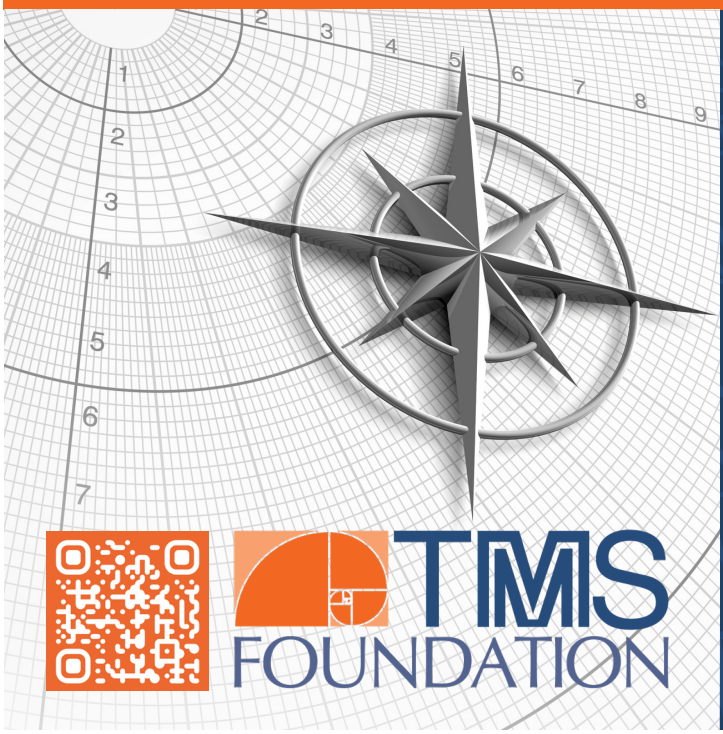
Traditionally, TMS scholars have traveled to the Spring Meeting of JIMM, usually held in March. Beginning in 2026, however, TMS scholars will instead travel to the JIMM Fall Meeting, which is typically held in September. Anyone considering applying for this award should mark their calendar accordingly.

More TMS Programs for Early-Career Professionals

The TMS Young Leaders Professional Development Award Program is also accepting applications through August 15. This program, which provides travel funding and offers leadership opportunities associated with TMS meetings, is one of many offered by TMS to assist early-career professionals.

Learn more about these programs and how to participate in TMS activities for emerging professionals at **www.tms.org/YoungLeaders**.

Support Programs for Emerging Professionals Through the TMS Foundation



The TMS Foundation provides funding for the TMS Young Leaders International Scholar Award and other programs designed to assist early-career professionals, including the TMS Young Leaders Professional Development Award, Early Career Faculty Fellow Award, and Emerging Leaders Alliance Program. In addition, the TMS Foundation provides scholarships and travel funding for undergraduate and graduate students and more.

Learn about the good work of the TMS Foundation at www.TMSFoundation.org (or click on the QR code) and consider making a donation today to support future participants in these programs.

INTERNATIONAL SCHOLAR EXPERIENCE OPENS NEW DOORS IN JAPAN

Yue Fan

I was deeply honored to receive the 2025 TMS-JIMM Young Leaders International Scholar Award. This recognition not only celebrates individual research achievements but also fosters meaningful cross-cultural academic engagement. As part of this award, I was invited to deliver a talk at the 2025 Japan Institute of Metals and Materials (JIMM) Spring Meeting in Tokyo and visit another institution in Japan. This experience offered a rare opportunity to immerse myself in Japan's vibrant research ecosystem while also building lasting connections with esteemed colleagues in the field of materials science.

The highlight of the trip was my participation in the JIMM Spring Meeting held at the Tokyo Metropolitan University. I presented an invited talk in the Metallic Glass/Amorphous Symposium titled "Insight Beyond Short-Range Order in Metallic Glasses Revealed by Machine Learning," which was based on several recent papers from my group on the subject (Figure 1). In this presentation, I shared a machine learning framework that deciphers the complex structure-energy relationships in metallic glasses. Using SOAP (smooth overlap of atomic positions) descriptors and gradient-boosting algorithms, our approach identified the most impactful local atomic motifs on global stability, revealing new insights into how medium-range order modifies the role of identical short-range orders. This work generated engaging discussions among the attendees, and I was pleased to see strong interest in data-driven methods applied to disordered systems. The session was chaired by Professor Hidemi Kato of Tohoku University, who also presented the award recognition to me following my talk (Figure 2).

Figure 1. Yue Fan delivers his talk at the JIMM Spring Meeting.

I would like to express special appreciation to Professor Akira Taniyama, Secretary of JIMM, who kindly helped coordinate my itinerary, including visa support and hotel arrangements, and provided orientation during the meeting. The hospitality I received was exemplary. In addition to interacting with researchers during the meeting, I also met Dr. Yoshinori Shiihara from the Toyota Technological Institute. We discussed our complementary research interests in metallic glasses and deformation modeling, and I was glad to invite him to participate in a symposium I am co-organizing at the upcoming Society of Engineering Sciences (SES) Annual Meeting in Atlanta. I look forward to potential collaborations growing from these conversations.

Following the JIMM meeting, I traveled by Shinkansen—the famous Japanese high-speed railway—to Osaka. This was my first experience on the bullet train, and it did not disappoint. The ride was smooth, fast, and quiet, offering a breathtaking view

of Mt. Fuji along the way (Figure 3). In Osaka, I visited Professor Shigenobu Ogata's group at Osaka University for a full-day academic exchange. The visit began with an overview of his group's cutting-edge research, including studies on metallic glasses, chemical short-range orders in high entropy alloys, and hydrogen embrittlement in steels. I then delivered a seminar to his group, followed by an in-depth group meeting where four of his postdoctoral scholars shared their current projects. These discussions were intellectually stimulating and mutually enriching, and I gained valuable new perspectives on emerging directions in structural materials research.

As part of my visit, Professor Ogata also gave me a brief tour of the Osaka University Museum. I learned about the institution's rich history and its pivotal role in shaping Japan's modernization. The exhibit that left the deepest impression on me was the enormous fossil of an ancient crocodile displayed near the museum entrance—a powerful reminder of the long natural and institutional heritage that surrounds the university's mission. Professor Ogata further introduced me to the cultural richness of Osaka through two wonderful meals. We had lunch in a beautifully renovated traditional Japanese garden restaurant near the university (Figure 4) and dinner at a Western-Japanese fusion restaurant in Osaka's vibrant downtown. These experiences, blending exquisite cuisine with warm hospitality, added a deeply personal dimension to the trip and left a lasting impression.

Figure 2. **Hidemi Kato**, professor, Tohoku University recognizes **Yue Fan** during the Metallic Glass/Amorphous Symposium.

Reflecting on this journey, I am sincerely grateful to JIMM and the TMS Foundation for offering this incredible opportunity. The visit expanded my scientific horizons, provided direct access to leading research environments in Japan, and helped initiate meaningful collaborations. I wholeheartedly encourage future young scholars to engage with this program—it is an experience that not only broadens professional networks but also enriches one's global perspective on materials research.

Yue Fan is currently an Associate Professor at the University of Michigan, Ann Arbor. He received his Ph.D. from MIT in 2013 and was a Eugene P. Wigner Fellow at Oak Ridge National Laboratory. His research aims to uncover the fundamental mechanics and microstructural evolution in complex materials systems through predictive modeling, with the goal of enabling new materials with exceptional performance. His honors include the NSF CAREER Award, TMS Materials Processing & Manufacturing Division Young Leaders Award, and the ASME Haythornthwaite Young Investigator Award.

Figure 3. Mt. Fuji shown from the window of the Shinkansen (bullet train) to Osaka.

Figure 4. **Shigenobu Ogata** (left), professor, Osaka University, and **Yue Fan** enjoy lunch at a renovated traditional Japanese garden restaurant.

NEWEST INTERNATIONAL SCHOLAR PROGRAM PROVIDING CONNECTIONS ACROSS CULTURES

Anne A. Campbell

I was honored to be selected as the inaugural recipient of the Korean Institute of Metals and Materials (KIM) and The Minerals, Metals & Materials Society (TMS) Young Leaders International Scholar Program. This award afforded me my first opportunity, but not my last, to visit the lovely Republic of Korea. The 2024 Fall Conference of the Korean Institute of Metals and Materials took place in PyeongChang, which also hosted the 2018 Winter Olympics, in October 2024. The meeting was held at the Alpensia Resort, which hosted the ski-jumping and Nordic combined events for the Olympics (Figure 1).

My travel to and within the Republic of Korea was a whirlwind, but the trip was nothing short of spectacular. After a slight hiccup (i.e., flight cancellation and a full-day delay in arriving) in getting to Seoul-Incheon, everything else was very smooth. I took full advantage of the amazing train system for traveling between the various cities during my trip. The first train ride was late night from Seoul Station to Changwon after a long day of travel, so not much sightseeing was done. But subsequent travel between Changwon, Ulsan, Seoul, and PyeongChang provided the most wonderful views of the seaside, the interior of the country, and the mountains. A layover in Seoul Station between Ulsan and PyeongChang afforded me time to do some shopping in a local market for small trinkets to bring home for family and friends.

While already visiting the Republic of Korea, I benefited from including additional meetings with colleagues from Korea Atomic Energy Research Institute (KAERI), Korea Advanced Institute of Science & Technology (KAIST), and Ulsan National Institute of Science and Technology (UNIST) about future collaboration efforts within the topical area of structural materials for advanced nuclear reactors. The original desire was to visit KAERI and KAIST colleagues at their respective campuses in Daejeon before the KIM meeting. But as luck would have it, the 2024 Fall Meeting of the Korea Nuclear Society (KNS) was being held at the same time I would be available to meet. So, instead of spending a few days on Daejeon, my first stop was Changwon, where I attended the KNS Fall Meeting and a joint meeting with colleagues from KAERI and KAIST to discuss continued and future collaborations in support of materials research for advanced nuclear reactors. I would like to especially thank Dr. Seong Sik Hwang, from KAERI, for coordinating this discussion.

Figure 1. Pictured, in the foreground, is the Olympic sculpture PyeongChang Brightens the World and, in the background, the ski jump tower from the 2018 Winter Olympics, as seen from the Alpensia Resort.

Next, my travels took me to UNIST in Ulsan on the Southeast coast. My host at UNIST was Assistant Professor Douglas Fynan, a colleague of mine from our graduate studies in the Nuclear Engineering and Radiological Sciences

Department at the University of Michigan. During my visit at UNIST, multiple discussions were held with Professor Fynan, Professor Sangjoon Ahn, and Drs. Il Soon Hwang and Hae Dong Chung of MicroURANUS a startup out of UNIST. Professor Ahn and I have a "nuclear is a small community" connection in that one of my undergraduate professors was his graduate advisor (Prof. Sean McDevitt). My visit to UNIST was on Friday, affording me with Friday evening and Saturday free for sightseeing activities. I would like to express my heartfelt thanks to Professor Fynan and his family for providing me with a rich visit to Ulsan. Thursday night, the Fynan family took me out sightseeing around their neighborhood and for a traditional Korean BBQ dinner. Friday night included dinner at the Ulsan Fish Market, where Prof. Fynan and I were able to select our desired fish from the various tanks for fresh preparation. This included freshly prepared octopus, which was still moving on the plate, amberjack, and fish head soup (Figure 2). Saturday included a driving tour of Ulsan, with a stop off at a wholesale fish market, a walking tour of the Jeongjahang North Breakwater Lighthouse, lunch at a seaside restaurant at Jujeon Mongdol beach, and sightseeing of the world's largest shipbuilding factories in Ulsan.

Figure 2. Anne Campbell (left) and **Douglas Fynan** (right), assistant professor at Ulsan National Institute of Science and Technology, enjoy freshly prepared (raw) seafood at the Ulsan fish market.

My trip concluded with attendance at the 2024 Fall KIM meeting. On Monday, I attended a special session titled "20th International Symposium on Metals and Nanostructured Materials Analysis Using Neutron and Synchrotron X-ray," because some of the talks included colleagues of mine from Oak Ridge National Laboratory as collaborators. I would like to thank the symposium organizers for inviting me along to their dinner Monday night. Tuesday afternoon I presented my invited talk titled "Materials Research in Support of Carbon-Free Nuclear Energy," and Tuesday night I attended the awards banquet where I received the Young Leaders International Scholar award from Se Don Choo, President of KIM (Figure 3). Wednesday morning started another long day of travel home so that I could be home in time for Halloween celebrations (an essential holiday for parents of young children like me).

My visit to the Republic of Korea was unforgettable and has already solidified a desire to return to visit this amazing country with my family. The people I met were most welcoming, travel was very smooth, and the food was amazing. I would like to express my gratitude to KIM, the TMS Foundation, the DOE Advanced Reactor Technologies program for additional travel expense support, and all my hosts for making this trip possible. I would encourage other early career members of TMS to consider applying for this once-in-a-lifetime opportunity.

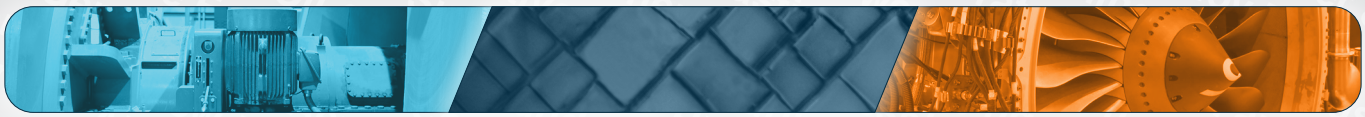
Figure 3. Se Don Choo (left), president of the Korean Institute of Metals and Materials, presents Campbell (right) with the International Scholar Award at the 2024 Fall Conference during the KIM awards banquet.

Anne Campbell is R&D staff in the Materials Science and Technology Division at Oak Ridge National Laboratory (ORNL). She was awarded her Ph.D., under the supervision of Gary S. Was, from the University of Michigan's Nuclear Engineering and Radiological Sciences department in 2014. She joined ORNL in 2014 as a post-doctoral research associate and transitioned to full-time staff in 2016. Campbell's research focuses on understanding the effects of irradiation, and other extreme environmental conditions, on materials properties. Her current research activities include understanding the effects of extreme environments, especially irradiation, high temperature, and stress (irradiation creep), on the materials properties of graphite, composites, and carbon-based materials, irradiation creep of steels, and development of novel materials for advanced nuclear applications. Within TMS, Campbell has been active with technical symposium organization for annual meetings, with three technical committees and one functional committee, and in the organization of TMS standalone conferences.

SUPERALLOY 718 & DERIVATIVES

Finds New Home at MS&T26

Megan Enright



The 11th International Symposium on Superalloy 718 and Derivatives 2026: Legacy, Innovations, and Future Directions (Superalloy 718 & Derivatives 2026) returns in 2026 with a new twist. Held every three to four years since its inception in 1991, the 2026 iteration will be co-located at the Materials Science & Technology Technical Meeting and Exhibition 2026 (MS&T26) at the David L. Lawrence Convention Center, in Pittsburgh, Pennsylvania, from October 4–7, 2026.

TECHNICAL SCOPE

Last held in 2023, the Superalloy 718 & Derivatives conference series is an industrial-focused meeting that provides an exciting opportunity to explore the latest advancements in metallurgical processing, materials behavior, and microstructural performance for 718-type superalloys and their derivatives. The specific technical topics for the 2026 meeting will include, but are not limited to:

- Applications of Superalloys 718 and Derivatives
- Applications of Legacy Alloys (Waspaloy, 617, Related Alloys)
- Alloy Development and Innovation
- Melting, Forging, and Wrought Processes
- Powder and Additive Manufacturing
- Welding and Repair
- Environmental Behavior and Protection
- Microstructure and Properties
- Modeling and Data Analytics

Abstracts are currently being accepted for this meeting, so present your recent innovations in alloy research, novel processing techniques, and applications in challenging environments. Submit an abstract by August 8, 2025, at **www.tms.org/Superalloy718-2026**.

If your abstract is accepted, you will be required to submit a manuscript for inclusion in the conference proceedings. The manuscript deadline is December 18, 2025.

BENEFITS OF CO-LOCATION

The MS&T meeting series is a longstanding forum for fostering technical innovation at the intersection of materials science, engineering, and application. Hosted annually by TMS, the American Ceramics Society (ACerS), and the Association for Iron and Steel Technology (AIST), MS&T is the perfect place to provide cross-disciplinary connections with Superalloy 718 & Derivatives 2026. Attendees will enjoy access to the full breadth of MS&T26 programming, as well as this symposium. The co-location of Superalloy 718 & Derivatives 2026 at MS&T26 allows attendees to maximize their learning and networking, while also saving time and money with just one registration fee. Learn more about the program and events planned for MS&T26 at **www.matscitech.org/MST26**.

EXPERT ORGANIZERS

Superalloy 718 & Derivatives 2026 is being organized by the following experts in the field:

- **Chair: Chantal Sudbrack**, U.S. Department of Energy National Energy Technology Laboratory
- **Co-Chair: Andrew Wessman**, The University of Arizona
- **Lead Editor: Eric Ott**, GE Aerospace
- **Past Chair: Joel Andersson**, University West

Organizing Committee

- **Zhongnan Bi**, Central Iron & Steel Research Institute
- **Ian Dempster**, Wyman Gordon/Precision Castparts Corp.
- **Martin Detrois**, U.S. Department of Energy National Energy Technology Laboratory
- **Michael Fahrmann**, Haynes International
- **Michael Kirka**, Oak Ridge National Laboratory
- **Jonah Klemm-Toole**, Colorado School of Mines
- **Daisuke Nagahama**, Honda R&D Co Ltd
- **Jérémy Rame**, NAAREA (Nuclear Abundant Affordable Resourceful Energy for All)
- **Kevin Severs**, ATI Forged Products
- **Kinga Unocic**, North Carolina State University

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TMS MEETING HEADLINES

JOM THE MAGAZINE

Meeting information is current as of May 1, 2025. For the most recent updates on TMS-sponsored events, visit www.tms.org/Meetings.

TMS Fall Meeting 2025 at Materials Science & Technology (MS&T25)

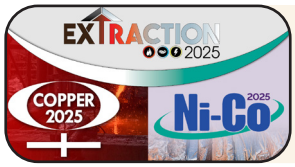
September 28–October 1, 2025
Columbus, Ohio, USA

Register Now

Learn from those who are on the cutting edge of their disciplines, share your work with the leading minds in your field, and build the valuable cross-disciplinary collaborations unique to this conference series at the TMS Fall Meeting at MS&T.

www.tms.org/TMSFall2025

Extraction 2025 Meeting & Exhibition (Extraction 2025)



November 16–20, 2025
Phoenix, Arizona, USA

Discount Registration Deadline: October 7, 2025

The 6th International Symposium on Nickel and Cobalt, featured at Extraction 2025, will convene operators, engineers, and researchers to exchange information about all aspects of current and future processing technologies for nickel and cobalt.

www.extractionmeeting.org/Extraction2025

Materials in Nuclear Energy Systems 2025 (MiNES 2025)

December 7–11, 2025
Cleveland, Ohio, USA

Discount Registration Deadline: October 27, 2025

MiNES 2025 brings the fission reactor materials community together in Cleveland, Ohio, for cutting-edge research, dynamic collaboration, and unmatched networking opportunities—all set at the Hilton Cleveland Downtown with convenient access to the city's renowned institutions, dining, and cultural attractions.

www.tms.org/MiNES2025

OTHER MEETINGS OF NOTE

TMS 2026 Annual Meeting & Exhibition (TMS2026)
March 15–19, 2026
San Diego, California, USA

www.tms.org/TMS2026

TMS Specialty Congress 2026
June 21–25, 2026
Anaheim, California, USA

www.tms.org/SpecialtyCongress2026

TMS Fall Meeting 2026 at Materials Science & Technology (MS&T26)
October 4–7, 2026
Pittsburgh, Pennsylvania, USA

www.tms.org/TMSFall2026

CO-SPONSORED MEETINGS

OTC Brasil 2025
October 28–30, 2025
Rio de Janeiro, Brazil
Co-sponsored by TMS

The 12th Pacific Rim International Conference on Advanced Materials & Processing (PRICM12)
August 9–13, 2026
Gold Coast, Australia
Co-sponsored by TMS

The 11th International Symposium on Lead and Zinc Processing 2026 (Pb-Zn 2026)
November 1–6, 2026
Sendai-city, Japan
Co-sponsored by TMS

TMS SPECIALTY CONGRESS 2026

JUNE 21–25, 2026 | ANAHEIM, CALIFORNIA, USA

FEATURING

AIM 2026
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ARTIFICIAL INTELLIGENCE
IN MATERIALS & MANUFACTURING

HEA 2026
4th WORLD CONGRESS ON
HIGH ENTROPY ALLOYS

RQSD 2026
WORLD CONGRESS ON
REPRODUCIBILITY, QUALIFICATION, AND STANDARDS DEVELOPMENT
ADDITIVE MANUFACTURING AND BEYOND

ENERGY MATERIALS 2026
4TH WORLD CONFERENCE ON
ENERGY MATERIALS
ORGANIZED BY CSM AND TMS

SUBMIT AN ABSTRACT

SUBMISSION DEADLINE: DECEMBER 1, 2025

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www.tms.org/SpecialtyCongress2026

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Present your work at the meeting that the global minerals, metals, and materials community calls home.

MARK YOUR CALENDAR

July 15, 2025: Extended Abstract Submission Deadline
March 15–19, 2026: Conference Dates
March 16–18, 2026: Exhibit Dates