CANDIDATE FOR VICE PRESIDENT

Nerissa Draeger

Lam Research

BIOGRAPHY

Dr. Nerissa Draeger is a senior innovation leader in the Office of the CTO at Lam Research, a semiconductor equipment company. Her vision of innovation lives at the intersection of emerging technologies, strategy, and people. As Director of Global University Engagements at Lam, she drives open innovation programs, guides external research collaborations, and builds academic partnerships to foster diversity in Lam's technology and talent pipelines. She has overseen university collaborations with more than 80 academic institutions across five continents to translate academic research into commercial impact.

With over 24 years of experience in the semiconductor industry, Dr. Draeger has managed pathfinding programs on materials for electronic devices and introduced new products for advanced deposition and etch processes at Lam Research and Novellus Systems. She worked in strategic business and intellectual property development to expand the technical direction of the company. She is experienced at directing programs and partnerships to catalyze new ideas, building a community of innovation champions, and nurturing research translation to commercialization. Her technical area of expertise is in thin film deposition and surface science, with a focus on atomic layer processes for nanoelectronics. She has authored over 30 patents and numerous technical publications. She earned her Ph.D. in materials science and engineering from the University of Illinois at Urbana-Champaign and her B.S.E. from the University of Michigan at Ann Arbor.

Dr. Draeger is currently serving on the Board of Directors of the Materials Research Society. She is the elected Chair of the Board of Directors for UIDP, where she contributes to their governance, strategic vision, and growth of their membership. As an industry advisory to academic research consortia, she seeks to promote interdisciplinary and cross-institutional collaboration and to connect students, faculty, and industry researchers to solve tomorrow's challenges.

CANDIDATE'S STATEMENT

Being members of the Materials Research Society enables us to connect, learn, innovate, and inspire across disciplines and boundaries. MRS has a fifty-year history of success in convening people and their ideas, sharing knowledge, and promoting interdisciplinary research.

MRS serves the needs of its members across their careers and my involvement with the Society has grown from my graduate student years through the transition to a corporate position and subsequent industry leadership. During that time, the research enterprise has become more complex and the demands on our attention have risen. Moving forward, the Society needs to continue to broaden participation, share learning through events and publications, and advocate for materials research to continue to provide benefit to members.

Ways to broaden our global membership include welcoming the next generation of students through university chapters and creating engagement opportunities for new professionals. We also need to improve retention of members throughout the full span of their careers. Finally, we must continue to be inclusive and egalitarian so that all feel welcome in our community.

MRS serves as a valuable platform for sharing materials knowledge. We must continue to expand communications through virtual, print and in-person channels. Increasing our webinars and virtual programming will reach more of our global membership while still maintaining the value of the in-person Spring and Fall Meetings. Increasing the impact of MRS journals should continue to be a focus as well as increasing the publication of research presented at meetings.

CANDIDATE'S STATEMENT (Nerissa Draeger cont'd)

Through all of the programs, events and communications, we must continue to advocate for the value of fundamental and applied materials research and its impact on the environment, our health and quality of life, and the economy.

With my current experience on the MRS Board of Directors (2022-2024) and my leadership roles across industry and the innovation ecosystem, I have broad skills to contribute to the Society. If elected as an officer of MRS, I will contribute to the Society's mission through understanding member needs, building engagement, and guiding the long-term vision.

I believe that MRS can promote materials solutions for the world's most pressing challenges, and I would be honored to serve the Society in this role.

CANDIDATE FOR VICE PRESIDENT

YOUNG-CHANG JOO

Seoul National University

BIOGRAPHY

Young-Chang Joo is a professor in the Department of Materials Science and Engineering at Seoul National University in South Korea. He received his BS and MS degrees in Metallurgical Engineering from Seoul National University in 1987 and 1989, respectively. He obtained his PhD in Electronic Materials from the Massachusetts Institute of Technology in 1995. He then joined the Max-Planck Institute for Metals Research in Stuttgart, Germany, in 1995, and continued his career at Advanced Micro Devices, Inc. (AMD) in California, USA, in 1997. He has been a professor in the Department of Materials Science and Engineering at Seoul National University since 1999. From 2020 to 2022, he served as the President of the Advanced Institute of Convergence Technology, an interdisciplinary research institute focused on regional scientific and technological issues, and during the same years, he served as an Outside Director for LG Innotek. Recently, he served as the Vice Minister for Science, Technology, and Innovation at the Korean Ministry of Science and ICT, which is in charge of strategies for science and technology innovation. He mainly worked on deliberating and adjusting budgets for and evaluating the outcomes of national R&D projects.

Young-Chang Joo has been active in several national and international scientific professional societies. He has served as a general chair, technical chair, and organizer of meetings for several organizations, including MRS, TMS, and IEEE. He has been involved in MRS since his graduate studies, organizing symposiums at the MRS S00, S06, and F03 meetings. He served as a Meeting Chair for the MRS F08. He also served on the MRS Board of Directors from 2016 to 2018. He received the Haedong Award from the Korean Electronic Packaging Society in 2010 and the LS Nikko Award from the Korean Institute of Metals and Materials in 2016. He is also a member of the National Academy of Engineering of Korea.

Young-Chang's research interests range from the fundamental understanding of mechanical behavior, atomic migration, and the structure of nanomaterials to applicable studies on the reliability and degradation mechanisms of devices and systems, including advanced interconnects and packaging for integrated circuits. His recent research focuses on developing new pathways for the synthesis of materials for energy devices based on nanoscale metallurgy. He is developing electrocatalysts for efficient renewable energy conversion, such as electrochemical carbon dioxide reduction. He has authored over 350 refereed scientific papers and patents.

CANDIDATE'S STATEMENT

The MRS stands as the most successful, interdisciplinary, and international society for researchers in the field of materials science and engineering. Over the past 50 years, MRS has shown that transforming from single-discipline to interdisciplinary research has been key in many different areas of science and technology.

CANDIDATE'S STATEMENT (Young-Chang Joo cont'd)

I have a profound personal connection to MRS and have been deeply enriched by its success over the years. My first MRS meeting in 1993 was a pivotal moment in my career, introducing me to some of the most talented individuals in the field. Through organizing symposiums, meetings, and serving as a Board member, I have collaborated with members from diverse backgrounds, all working together to shape a vision. It would be a heartfelt honor for me to contribute back to MRS, reciprocating the benefits I have received by actively supporting the ongoing achievements.

My educational and professional journey began in Asia and extended to the United States as well as Europe. Recently, I took a leadership role by serving as the Vice Minister for Science, Technology, and Innovation at the Korean Ministry of Science and ICT, overseeing resource allocation for national R&D. During this tenure, I facilitated cross-sector collaborations. Through countless cooperations and frequent partnerships with the government ministries, agencies, academies, and industries, I was able to expand my perspectives in government R&D policies for better establishing future national agendas on research directions. I believe that these experiences and epiphanies will be of help to MRS in this era with complex geopolitical situations at hand. My diverse background in corporate, academia, and national labs will be invaluable in advancing MRS with a strong emphasis on interdisciplinary research.

As we enter an era defined by rapid technological advancements and significant environmental challenges, the materials science and engineering must evolve to address critical global issues such as carbon emission, AI, cyber security, and healthcare innovations. To tackle these pressing concerns effectively, MRS must not only build on its strengths but also continuously evolve towards achieving innovations.

There is intensifying competition for science and technology leadership. To turn this competition into collaboration and cooperation instead, promoting diversity even further will be an essential building block. With 48% of its members being international, representing 79 different countries, MRS has a strong foundation for diversity and can be a foundation for global communication and collaboration. We should strive to build upon this foundation by expanding diversity and widely accommodating underrepresented groups of different ethnicity, geographical origins and career levels. By holding and co-sponsoring events worldwide and encouraging more international contributions, we can coherently integrate various perspectives and better serve the global materials research community. Additionally, we should engage undergraduates, high school students, policymakers, and others.

Navigating through a technology-driven and post-pandemic era, we must explore new methods of establishing our academic interactions. MRS, as the preeminent society in this field with global visionaries, should actively adopt new technologies that can efficiently engage individuals via both online and offline platforms. To continue to be successful in acting as the "mosaic" in encompassing all generations, and in playing a central role for introducing groundbreaking new findings, MRS should better utilize online platforms and social media. I truly hope MRS can become an avenue for young researchers to create vision and meet lifelong mentors

It is with great enthusiasm that I seek to contribute my experiences to the dynamic and transformative journey of MRS, ensuring that it remains at the forefront of materials science and engineering and proactively prepares solutions for the world in the age of great transformation.

CANDIDATE FOR BOARD OF DIRECTORS

ZAKARIA AL BALUSHI

University of California, Berkeley

BIOGRAPHY

Zakaria Al Balushi is an Assistant Professor in the Department of Materials Science and Engineering at the University of California, Berkeley since 2019. He received his B.S. (2011), M.S. (2012) in Engineering Science, and Ph.D. (2017) in Materials Science and Engineering from the Pennsylvania State University. After completing his Ph.D., Zakaria held the Resnick Prize Postdoctoral Fellowship in Applied Physics and Materials Science at the California Institute of Technology. At UC Berkeley, Zakaria leads a research group that focuses on the synthesis of electronic materials thin films and nanostructures using a variety of vapor phase and solution processing techniques. His team is dedicated to creating novel, large-scale, manufacturable crystal growth, processing, and integration schemes for emerging electronic and quantum materials for device applications.

Zakaria serves on the editorial board of Communications Materials and was previously a Principal Editor for the Journal of Materials Research (JMR). He also acted as a Guest Editor for the 2020 JMR Special Issue on "Heterogeneity in Beyond Graphene 2D Materials.". Zakaria has organized six MRS symposiums on the topic of "Beyond Graphene 2D Materials," and recently served as Meeting Chair for the International Materials Research Congress (IMRC) in 2023, held in Cancun, Mexico. His contributions to the field have been recognized with numerous awards, including the MRS Graduate Student Gold Award in 2016, the NSF CAREER Award, and the Micron Corporation Early Career Award in 2022.

CANDIDATE'S STATEMENT

As a candidate for the Board of Directors of the Materials Research Society (MRS), I am driven by a vision to expand our society's reach, foster interdisciplinary collaboration, and address the pressing challenges of our time through innovative materials science. The MRS has been an integral part of my journey since I joined as an undergraduate. Attending these conference meetings over the years has profoundly shaped me as a scientist, contributing significantly to my personal and professional growth.

Our society stands at a pivotal moment, and I believe that through our collective efforts, we can harness new frontiers in technology and sustainability. By focusing on solving the most urgent problems, such as addressing climate change through sustainable materials and technologies and leveraging the power of artificial intelligence to accelerate innovation in energy efficiency, carbon capture, and renewable energy sources, we can make significant strides in creating a more sustainable and resilient future.

The MRS has long been a leader in advancing materials research, but we must now take bold steps to engage the broader global community. By expanding our membership to include diverse groups, for example, extending MRS chapters to community colleges and technical trade schools, as well as fostering cross-collaborations with other research societies and foundations, we can tap into a wealth of untapped potential. This diversification will not only enrich our scientific endeavors but also strengthen our global impact as a community. Moreover, managing the costs of our conferences and other activities is crucial, particularly to ensure we can continue to welcome new members from communities all over the world. I am committed to exploring innovative solutions to make our society more

CANDIDATE'S STATEMENT (Zakaria Al Baushi cont'd)

sustainable in all aspects—from our meetings to our publications. By adopting eco-friendly practices and leveraging technology, we can lead by example in the scientific community.

Our community has the expertise to address sustainability through materials design and function. Additionally, we must prioritize environmental sustainability, material-human interplay, and enhancing human health and happiness through advanced materials. As a member of the Board of Directors, I will champion these initiatives and work tirelessly to position the MRS as a leader in addressing global challenges through materials design. Together, we can pave the way for a brighter, more sustainable future.

CANDIDATE FOR BOARD OF DIRECTORS

DERYA BARAN

King Abdullah University of Science and Technology

BIOGRAPHY

Dr. Derya Baran is an Associate Professor at King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, with joint appointments in the Departments of Materials Science & Engineering, Chemistry, and Computer & Electrical Engineering. She earned her Ph.D. in Materials Science & Engineering from Friedrich-Alexander University Erlangen-Nürnberg in Germany, and her M.Sc. and B.Sc. in Chemistry from Middle East Technical University in Turkey.

Dr. Baran's distinguished academic career began with postdoctoral research at Jülich Forschungszentrum in Germany, followed by a prestigious Helmholtz Postdoctoral Fellowship at Imperial College London in 2015. She joined KAUST as an Assistant Professor in 2017 and was promoted to Associate Professor in 2021. Her research focuses on advanced organic and hybrid materials for energy harvesting and conversion, with an emphasis on low-energy printing techniques. She is particularly interested in understanding the structure-property relationships in these materials to enhance their performance and stability.

In addition to her academic endeavors, Dr. Baran is a successful entrepreneur focused on positive global impact. She co-founded ‘iyris’, where she serves as the Chief Engineer, advancing materials for sustainable agriculture technologies for hot climates. Her entrepreneurial achievements have been widely recognized; she received the Boston Consultancy Group V60 Innovators Award in 2024 and was named one of the Top Three Women Entrepreneurs in Tech in the Middle East by Forbes in 2023. Iyris (previously RedSea) has been featured in the NetZero Future50 report as part of COP28 and won the prestigious Agricultural Engineers AE50 Davidson Prize. Additionally, she was elected a Fellow of the Royal Society of Chemistry in 2022 and selected as one of the ‘Talented 12 Chemists’ recognized by C&EN.

Dr. Baran's professional involvement extends to various esteemed editorial advisory boards. Her contributions and innovations in the field of materials science have been widely recognized, with numerous high-impact publications and several patents to her name. She is selected as a member of the Global Young Academy, an international organization with early career scholars around the world, and served as executive committee member in 2021 overseeing the governance of the organization. She is part of Scientific Excellence working group to assess the meaning of scientific excellence in academia and work towards a fair evaluation of academic promotion globally.

Her extensive involvement with the Materials Research Society (MRS) through organizing and co-chairing several symposia over the years, co-chairing in Fall 2023 and most importantly being part of MRS Focus on Sustainability team are testament for her scientific citizenship and commitment to MRS. Her leadership, successful entrepreneurial ventures, diverse background spanning from chemistry to materials science, along with her interactions with several different nations and stakeholders as well as her positive attitude and grit to make a change underscores her expertise in governance and management. These attributes make her a strong candidate for the MRS Board of Directors.

CANDIDATE'S STATEMENT

I am honored to present myself as a candidate for the Board of Directors of MRS. As a motivated and dedicated member of the society, the inspiration for my candidacy is based around three key themes: 'The Future, Diversity and Equity and Sustainability'.

The future of MRS lies in its members, volunteers and its staff. Engaging with its stakeholders requires proactive and enthusiastic members who would call MRS home to grow from their early career stage. As a scientist who has been involved in MRS since undergraduate, I found my mentors, colleagues, life-long friends and a belonging community in which to grow myself. Now that I am in my early-mid career, I believe I can contribute by connecting the future generations of MRS with its existing scientists and innovators, to build the Society's thriving future. Further, staying ahead in materials science requires innovation and adaptability for the future. MRS has already begun multidisciplinary initiatives, which I would build upon and accelerate. I intend to encourage a cross-disciplinary approach, by facilitating collaborations between different scientific disciplines to foster innovative solutions. This approach is also crucial for another important area: bridging the gap between academic research and industrial applications. I plan to build upon my own experiences of entrepreneurship, founding and building a company, to present a plan that includes establishing collaborative platforms, promoting translational research initiatives and engaging with industry leaders.

Diversity and equity are fundamental to the success of the MRS and the broader scientific community. My commitment to these values is reflected in my personal career, actions and initiatives. In my role as an executive committee member in Global Young Academy I advocated for policies that ensure equal opportunities for all members. I have supported developing programs and scholarships for underrepresented groups and building a culture of respect and inclusivity within the MRS, where every member feels valued and supported.

The MRS is a global thought leader and positioned at the forefront of materials science and research. As a board member, my goal is to contribute to the Society's mission by promoting sustainable research, sustainable growth and encouraging technological advancements that consider long-term positive impact on humanity. In today's world, it is essential to recognize the importance of thoughtful and deliberate progress. My approach to advancing materials science involves not just accelerating research but also ensuring that our developments are achievable and can be sustained. This includes advocating for slow science, which prioritizes quality and long-term impact over rapid, short-term gains.

Overall, the field of materials science is at a pivotal moment, with the potential to address some of the most pressing challenges facing our world today. As a candidate for the MRS Board of Directors, I bring a unique blend of entrepreneurial experience, collaborative expertise, and a forward-thinking vision, centered on sustainability and societal impact. I am excited about the opportunity to contribute to the continued success and growth of the MRS.

CANDIDATE FOR BOARD OF DIRECTORS

ION BITA

Google

BIOGRAPHY

Ion Bita is currently Head of New Technology Introduction for Pixel Displays Hardware at Google. He graduated from the Massachusetts Institute of Technology, receiving a PhD in Materials Science in Engineering in 2005 for interdisciplinary research in photonics and nanofabrication, and dual BSc in Chemistry and in Chemical Engineering in 2000. While at MIT, he was a recipient of the Beckman Scholar award from the Arnold and Mabel Beckman Foundation, Graduate Fellowship from the interdepartmental Program in Polymer Science and Technology, and an MRS Graduate Student award (2004). He also served as President of the local MRS Student Chapter during 2001-2005.

Ion's career path over the past 20yrs has been shaped by a passion for developing new device technologies at the intersection of novel materials-architectures-manufacturing and for commercializing new innovative products for consumer electronics improving visual and interactive experiences (including mobile displays, optical, optoelectronic and sensing components). After MIT, he worked at Qualcomm and then at Apple, in both cases joining new entrepreneurial divisions formed after Silicon Valley startup acquisitions, helping build teams, R&D infrastructure, technology & product development programs, IP portfolios, fabs, and industry partnerships across US, Asia and Europe. Examples include low power, reflective displays based on capacitive switch interferometric MEMS, plastic and glass-based planar light-extracting waveguides, touch sensors, microLED displays and hybrid optoelectronic devices using hetero-integrated semiconductor micro-devices. Most recently at Google, his work expanded to both component and system development, working with global suppliers, leading display technology roadmap development, display architecture for new mobile devices (phones, foldables, smartwatches) and multi-functional integrations (optical sensors, fingerprint scanners, RF antennas, imaging, etc.).

Ion is an active member of the international display community, involved across industry and academia. He served as invited Guest Editor for the Information Display Magazine typically highlighting advances in materials and processing (2011-2017), and over the years has been involved with the Society of Information Displays in various capacities - as Chair of the Display Manufacturing Committee (2012-2016), organizing the first MicroLED Symposium (2018), and as General Program Chair (2024). He has 89 issued US patents, multiple publications, and also started and co-edited the current "Flat Panel Display Manufacturing" reference book (Wiley 2018).

CANDIDATE'S STATEMENT

I am honored by the opportunity to be a candidate for the 2025 MRS Board of Directors. The mission to advance interdisciplinary materials research and technology for improving the quality of life encapsulates far-reaching goals and deeply resonates as my own path has been shaped by a passion for enabling materials innovations for improving, so far, visual and interactive experiences in new electronic products.

CANDIDATE'S STATEMENT (Ion Bita cont'd)

I've spent the last 20 years in Silicon Valley, and have been fortunate to experience and contribute to multiple successful ventures built on materials innovations. It's been formative to have seen first hand the power of combining interdisciplinary research, diverse teams inclusive of all levels of experience and individual backgrounds, within organizations truly nurturing excellence, entrepreneurial culture and empathetic leadership with a clarifying vision. It helped that these ventures were supercharged by $B level investments as they grew from early stages, and all these factors combined enabled accelerating breakthroughs through fast-paced problem solving of hard technology, manufacturing and commercial challenges. I share this to reinforce my strong belief in the critical role of Materials Science and Engineering (MS&E) for creating tomorrow's technologies that can reach everyone to help live healthier, more productive, and in a safer environment we safeguard for future generations.

I would be honored to contribute my experience helping the MRS Board in its activities aimed at fulfilling the Society's mission, strategic and DEI aspirations, at strengthening its values, and at new opportunities in the next 3 years. I am very passionate about connecting fundamental research in academia with the fast-track development enabled by industry for win-win-win benefits in (1) growing research infrastructure and our next generations of professionals, (2) growing new industries for "tomorrow's technologies", and (3) scaling to reach everyone with affordable, globally accessible technologies. The Society's portfolio of meetings, exhibits, publications, and variety of programs across awards, DEI, advocacy and government relations create an effective framework I would strive to further amplify in operation and impact.

Serving on the MRS Board would also be a way to give back - MRS played a very important role in my development, having pivoted to MS&E for graduate school after realizing the beauty of designing material structures to enable new properties and functions. It was a steep learning curve coming from different undergraduate fields, and I was lucky to find the local MRS student chapter early on. Attending its seminars and later the MRS Boston Meetings allowed me to quickly ramp up learning about state of the art materials research and to meet others that helped me grow. Later, as president of the MIT MRS chapter, I myself sought to strengthen our materials community by bringing together students and faculty from across MS&E, ChemEng, Physics, EE, MechE and other departments, sharing intellectual curiosity and celebrating big and small discoveries. I've been amazed over the years how many technical challenges encountered during my industry journey had solutions connected to fundamental science work I recall from those years. These experiences, connections and opportunities opened by MRS left a lifelong mark I will forever cherish, and are reasons for which I'd be honored to have the opportunity to help the MRS Board of Directors in its mission for the global materials community.

CANDIDATE FOR BOARD OF DIRECTORS

JOSHUA CALDWELL

Vanderbilt University

BIOGRAPHY

Joshua D. Caldwell is currently the Director of the Interdisciplinary Materials Science Graduate Program and a Professor of Mechanical Engineering at Vanderbilt University, with joint appointments in Chemistry and Electrical and Computer Engineering. He received his Ph.D. in Physical Chemistry from the University of Florida in 2004. Following graduation, he accepted an American Society of Engineering Education (ASEE) Postdoctoral Fellowship to perform research at the Naval Research Laboratory, converting to permanent staff there in 2007. Prior to graduate school, he also served as a manufacturing engineer at ITT Night Vision in Roanoke, VA. During his tenure at NRL he was awarded a Long-Term Training (sabbatical) grant to work at the University of Manchester (UK) along side 2010 Nobel Laureate Kostya Novoselov in 2013-2014, won the 2014 Thomas Edison Best Patent Award, was a four-time winner of the NRL Alan Berman Best Pure Science Paper Award, and a three-time winner of the highly competitive NRL Nanoscience Institute (NSI) grants.

In 2017 he accepted a tenured Assoc. Professorship at Vanderbilt University. He was named the Flowers Family Faculty Fellow for a period of 3 years in 2020 and was promoted to Full Professor in 2022. He also serves as a Summer Faculty member at Naval Surface Warfare Center–Crane, is the founder and CTO-North America of Sensorium Technological Laboratories, a startup company that was spun out of his research group at Vanderbilt. He is also a Fellow of the MRS, as well as Optica and SPIE.

Caldwell has been a long-time advocate, volunteer, and proponent for MRS throughout his professional career, dating back to his time as a postdoc. Over his professional career he has served and continues to serve the MRS in numerous ways:

- Chair MRS Government Policy Working Group, 2021-present
- Chair MRS Government Agency Subcommittee, 2010-2013; Vice-Chair 2017-2019; member 2010-present
- Vice-chair of the MRS Congressional Visits Day (CVD) Subcommittee, 2019-2021; member 2008-present
- Member MRS Government Affairs Leadership Committee, 2010-2014
- Lead organizer for the MRS Government Agency Summit, 2011, 2012, 2013, 2024
- Symposium Organizer at MRS Fall and Spring meetings in 2014, 2015, 2018, 2022
- Has attended at least the Spring or Fall MRS meeting every year other than 2013 (sabbatical year) and 2020 (COVID)

BIOGRAPHY (Joshua Caldwell cont'd)

Caldwell also served as an Associate Editor for the Journal of Electronic Materials, as a member of the Electronic Materials Committee, and co-organizer for multiple workshops and conferences, as well as symposia within ECS, SPIE, and ACS. He believes strongly in volunteerism in his professional and personal life, giving science demonstrations to K-12 students in the Metro Nashville Public School system and for Youth Villages. He is also a trustee for a 501(3)c.

Caldwell's research focuses on infrared nanophotonics, spectroscopy, and their applications towards novel optical components, light sources, metrologies for wide bandgap semiconductors, art restoration, and quantum optics. His group's work seeks to understand the role of atomic-scale confinement in modifying the electronic and optical properties of materials and how these effects can be leveraged for next generation technologies. He has published over 190 peer-reviewed papers, which have received >13,000 citations and has 12 patents.

CANDIDATE'S STATEMENT

The Materials Research Society continues to punch above its weight, on par in its productivity and prestige with larger societies such as ACS and APS, while having a lower membership number. This is the result of a dedicated staff and volunteer base that allows the MRS to remain nimble in its approach to governance, leadership, and advocacy, while offering meetings that meet the needs of its domestic and international membership across academia, industry, and government. This impact is critical as materials touch just about every aspect of engineering and science, as well as our daily lives. As such, the MRS mission statement states that it is focused on '… the advancement of interdisciplinary materials research and technology to improve our quality of life." As such it is well placed to continue to lead, and absolutely critical that it does so.

From my career and especially from my volunteerism for the MRS Government Affairs Committee (GAC), I have learned that effective and efficient communication is critical for science and engineering to continue to advance our quality of life and to build bridges across communities and cultures. As part of the GAC, I have had the opportunity to see first hand the tremendous impact that MRS advocacy has in advancing and directing Federal funding of fundamental and early applied materials research.

As a member of the board, I would work tirelessly to expand the already exemplary communications by expanding membership education and training opportunities, revamping the MRS journals, and enhancing public knowledge of materials science. The former can be achieved through advancing our webinars and workshops on critical topics. In the context of journals, it is crucial for the MRS to reevaluate the roles they play in our community and make sure that the publication and reviewing process is fair and equitable to all, extending from the author, to the reviewer, and to the publisher. Finally, we need to work to empower our membership to become the most effective public advocates for science through training, expanded public outreach, and continued government advocacy. This last point is critical if we are to overcome the current misperceptions of science and engineering in the modern world and to train a diverse and talented younger generation of materials scientists and engineers as they are the future of our global scientific community, and the future leadership and membership of the MRS.

CANDIDATE'S STATEMENT (Joshua Caldwell cont'd)

For over sixteen years I have had the distinct pleasure of serving the MRS in a variety of roles within the Government Affairs Committee and within meeting planning. During this time, I have developed a deep admiration for the structure of the Society, its leadership, and members. I am honored to now be considered to take on a bigger role in the MRS, which if elected I would use to actively expand and grow the MRS and its impact as a member of the Board of Directors.

CANDIDATE FOR BOARD OF DIRECTORS

LANE MARTIN

Rice University/Lawrence Berkeley National Laboratory

BIOGRAPHY

Lane W. Martin is the Robert A. Welch Professor of Materials Science and NanoEngineering, Chemistry, and Physics and Astronomy and the inaugural Director of the Rice Advanced Materials Institute, both at Rice University as well as a Faculty Senior Scientist in the Materials Sciences Division at Lawrence Berkeley National Laboratory. Lane received his B.S. in Materials Science and Engineering from Carnegie Mellon University in Dec. 2003 and his M.S. and Ph.D. in Materials Science and Engineering from the University of California, Berkeley in May 2006 and 2008, respectively. From 2008 to 2009, Lane served as a Postdoctoral Fellow in the Quantum Materials Program, Materials Sciences Division, Lawrence Berkeley National Laboratory.

From 2009 to 2014, Lane was an Assistant Professor in the Department of Materials Science and Engineering at the University of Illinois, Urbana-Champaign. Lane returned to the University of California, Berkeley as an Associate Professor from 2014-2018. He was promoted to Professor in July 2018 and served as Vice/Associate Chair from 2018-2021. From 2021 to 2023, Lane was a Chancellor's Professor and Chair of the Department of Materials Science and Engineering and served as both the Secretary and Chair (elected) of the Faculty of the College of Engineering at the University of California, Berkeley.

Lane has been active in MRS for more than 20 years and continuously throughout his professional career. His work with MRS has included organizing multiple symposia at the Fall and Spring MRS meetings and IMRC meetings, serving as a member of the Discovering Breakthroughs Inside Science (DBIS) Committee, serving on the Strategic Programming Planning Subcommittee, and serving as a reviewer for the Graduate Student Award selection committee at multiple meetings. More recently, Lane was a Meeting Chair for the Fall 2022 MRS meeting and is currently a member of the Topical Curation Subcommittee. Lane is also a member of other societies, including ACerS, APS, and IEEE-UFFC where he is active in numerous society committees. Lane also serves on numerous advisory boards for materials science programs, national user facilities, and large-scale research programs. He is also a member of the governing committee (the Ferroelectrics Standing Committee) for IEEE-UFFC and is a member of the International Advisory Board of *Advanced Materials*.

Lane's research focuses on the study of the synthesis, characterization, and utilization of emergent function (be that electronic, ferroic, multiferroic, etc.) in complex oxides. He applies innovative synthesis of highly controlled, epitaxial thin-film materials with special attention to accessing new states of matter, uses growth and epitaxy to access new insights about foundational materials physics, and pushes the edge of material response via strain, defect, and interfacial engineering. To date, Lane has published >285 papers, his work has been cited ~31,000 times (resulting in an h-index = 79; i10-index = 232), and

BIOGRAPHY (Lane Marrtin cont'd)

he has given ~190 invited/plenary/keynote talks. His work has garnered numerous honors including leading to him being named a Fellow of the Materials Research Society, the American Ceramics Society, and the American Physical Society. He is also a multiple-time Highly Cited Researcher and has won numerous other awards including the Presidential Early Career Award for Scientists and Engineers.

CANDIDATE'S STATEMENT

MRS is my professional society home and has played an important part in my career as an independent materials scientist. As a member of the Board of Directors, I will strive to maintain the sense of welcoming, belonging, and mutual respect that fosters the high-quality interdisciplinary interaction we expect from MRS and its meetings. This will keep the door open for the next generation of global materials scientists and engineers to find their own way in this critical field. We will build from our history of success to assure that MRS remains a premier, global professional society that values innovative thinking of scientists and engineers from around the world, provides them the opportunities to engage, and is seen, internationally, as the trusted resource in understanding and addressing societal challenges that touch on the field of materials.

To achieve this mission, I believe that MRS must:

- *Remain an organization by and for its members*: One's rich history does not absolve the leadership and members from visioning and adjusting to changes. For many years, MRS has expressed a justifiable desire to flex and adapt to the rapidly changing materials-science landscape. We must balance sustained support for traditional sub-disciplines of the community while welcoming new groups to the fold – a balance that comes from continued attention and the engagement of a broad community. My goal will be to streamline MRS decision making so that the Society can remain agile and relevant to member and community needs.

- *Maintain excellence*: To be the premier organization in materials requires that we never lose sight of a shared commitment to excellence in all the Society and its members do. This means assuring the quality of our meetings which should continue to be seen as *the* meetings to attend. This also means assuring that our publications are of the utmost quality and, when appropriate, making rational (and tough) decisions as to how to grow this impact or redirect resources to assure the health of the Society. I would welcome creative ideas on how to engage our Society's best assets – our members, volunteers, and staff – to re-envision these stalwarts and empower them to make needed changes to day-to-day operations.

- *Make global impact*: Topics at the heart of MRS from microelectronics, to the energy transition, to sustainability, to synthetic biology, and beyond are seen as societal challenges. MRS has a critical role to play in addressing these challenges and has the responsibility to bring together the diversity of minds required to make real and substantive impact herein. This means continuing to support the engagement of MRS' core membership (*e.g.*, academia, government-sponsored laboratories, etc.), but also moving beyond best intentions to actually serving as a conduit to other fundamental scientific communities, industry, and governments wherein there are opportunities to foster co-design and -education. MRS can and should be a catalyst to accelerate meaningful efforts that value innovation, engagement, and scientific action and should be prepared to expand upon its offerings (*i.e.*, meetings, publications, or both) to welcome other parts of society into the conversation.

CANDIDATE'S STATEMENT (Lane Martin cont'd)

- *Support and foster an engaged membership*: MRS has published numerous commendable aspirations in the realm of diversity, equity, and inclusion that we as a community should continue to strive to achieve. The reality is that solving the challenges we face requires a diversity of perspectives that necessitates a wider community than has traditionally been engaged. MRS should evaluate the effectiveness of efforts in this regard and respond with action to opportunities to further progress or redirect efforts. For example, while virtual engagements offer some the opportunity engage with MRS in ways they might not have had before, there are further opportunities for MRS to support researchers from around the world to be part of MRS – including at the in-person meetings. I believe it is the responsibility of the MRS leadership to think creatively to support such opportunities and to be meaningful engagement opportunities for researchers around the world and at different points of their careers. This includes further bolstering support for student-lead efforts at and separate from the meetings.

MRS is being pulled in many directions and must balance the ways of the past and the opportunities of the future. The Society should not fear change or thoughtful experimentation and should not be content with the inertia of a large system delaying changes and innovation that are needed. The responsibility to assure the organization retains that responsiveness relies on the Society embracing agile decision making, maintaining passionate and engaged members and volunteers, and empowering those individuals to drive the Society towards the future. As part of the Board of Directors, I hope to guide MRS towards that future – embracing and growing upon our strengths, addressing areas of weakness, and all the while assuring we are focused on excellence, innovation, and unquestioned scientific and engineering quality. This will assure the Society is exciting and dynamic in all that we do.

CANDIDATE FOR BOARD OF DIRECTORS

IZABELA SZLUFARSKA

University of Wisconsin -- Madison

BIOGRAPHY

Izabela Szlufarska is the Harvey D. Spangler Professor of Engineering and Chair of the Department of Materials Science and Engineering at the University of Wisconsin – Madison. She received her Ph.D. in Physics from the University of Tennessee – Knoxville in 2002. After a postdoctoral appointment at the University of Southern California, she joined the faculty at UW-Madison in 2004, where she has worked since.

Szlufarska has served in multiple leadership positions, developing and implementing strategies for advancing and promoting the field of materials science and engineering and increasing engagement with diverse stakeholders. As Department Chair, Szlufarska established the first departmental External Advisory Board, significantly increased alumni engagement, and developed new fundraising strategies, leading to a quintupling of the annual fund and securing the first 10 major gifts to the department in many years. In 2021, Szlufarska was elected to the executive committee of the University Materials Council (UMC), a council of materials science and engineering chairs and heads in North America. She was elected by her peers to chair UMC for 2024/2025. As Editor-in-Chief of the Journal of Current Opinion in Solid State and Materials Science, Szlufarska has promoted new ideas and the latest advancements in materials science. She has served on multiple advisory boards and committees, including leading a panel for the DOE BES workshop on Basic Research Needs in Materials for Nuclear Energy.

Szlufarska has been dedicated to service to professional materials societies, including MRS. In the Spring of 2016, she was one of the meeting chairs, providing vision and guidance for the scientific content of the meeting. She represented MRS during Congressional Visit Days in 2017, organized multiple symposia, and has served on MRS Postdoctoral Award Committee and Materials Theory Award committee.

In her research, Szlufarska focuses on the fundamental understanding and design of materials for extreme environments, including the effects of mechanical stresses, corrosion, radiation, and high temperatures. Her research is driven by applications in nuclear energy, high-energy particle accelerators, and tribology. Szlufarska's primary expertise is in the development and application of theory and atomistic simulations, complemented by nanoscale and microscale experimental characterization. She has led multiple research teams, including Interdisciplinary Research Groups within the UW Materials Research Science and Engineering Center through renewals of the center in 2011 and 2023.

BIOGRAPHY (Izabela Szlufarska cont'd)

Szlufarska's contributions to materials science have been recognized with numerous awards, including the TMS Brimacombe Medalist and TMS Light Metals Subject Award – Aluminum Alloys, Outstanding Alumni Award from Wroclaw University of Technology, Poland, the Vilas Associate Award, and the H.I. Romnes Faculty Fellowship from the UW – Madison, as well as NSF CAREER and AFOSR Young Investigator Awards. Szlufarska was also placed on the National Academy of Engineering's list of Frontiers in Engineering.

CANDIDATE'S STATEMENT

MRS plays a pivotal role in promoting advances in materials research by fostering strong engagement within a diverse international community and providing a multifaceted platform for exchanging ideas, exploring new frontiers in materials science, and articulating the impact of materials on society to stakeholders. This inspiring mission aligns well with my own aspirations and values, and I would be honored to contribute my skills and expertise as a member of the MRS Board of Directors.

Modern technologies heavily rely on the innovation and advancement of materials. Materials are also critical to addressing current and future societal challenges, including climate change, the supply of energy and clean water, next-generation computing, and healthy ageing, to name a few. Consequently, MRS as a society has a vital role in helping bridge fundamental discoveries with translational research and technological applications. This is achieved by promoting fundamental technical content while simultaneously creating engagement opportunities with industrial partners and providing learning opportunities around entrepreneurship. Addressing technological challenges requires integration across multiple scientific and engineering disciplines, and materials science occupies a unique position in this space due to its inherently interdisciplinary nature. I believe, it is important for MRS to continue experimenting with interdisciplinary and cross-cutting research topics without compromising the essential objective of deepening knowledge in traditional areas.

MRS is a crucial player in communicating the message of the impact of materials on technology and society to the public, the government, industries, and future generation of scientists. In addition to the many highly effective outreach activities already in place, I believe MRS has an exciting opportunity to partner with materials-related Academic departments to inspire and inform the younger generation about pursuing degrees and careers in materials science and engineering and to increase participation of younger scholars in MRS meetings. I would leverage my position as the chair of the University of Materials Council (UMC) to experiment with collaborative activities between MRS and UMC members and I would promote successful examples to expand such activities beyond institutions in North America.

Efforts at inclusion and diversity are not stand-alone activities, but they represent culture and values that need to be reflected across the many different functions and groups in an egalitarian organization such as MRS. Inclusion breathes life into diversity efforts, and the two cannot be separated. As the global landscape in materials research shifts and expands, MRS faces a challenge of keeping the increasingly multinational and multicultural community engaged and I would work to promote continued discussions on how to evolve and adapt to create a welcoming environment to all.

CANDIDATE'S STATEMENT (Izabela Szlufarska cont'd)

Strong participation in MRS meetings could become a challenge not only due to globalization of the materials community, but also because of the changes in expectations for virtual participation, and by the ever-increasing availability of data and information that can be accessed remotely. I would work to keep MRS the essential venue for meetings of the materials community by leveraging leadership roles played by its members. MRS meeting should not only be a place to showcase one's latest research, but also a place where thought leaders meet to map out future directions and provide guidance for navigating our rapidly changing technological landscape, as exemplified by the accelerated pace in which artificial intelligence and robotics are changing our lives and research, as well as the race to reliable quantum computing.

CANDIDATE FOR BOARD OF DIRECTORS

ASHLEY WHITE

Lawrence Berkeley National Laboratory

BIOGRAPHY

Ashley White is the Deputy Director for Strategy for the Advanced Light Source, a synchrotron x-ray user facility at Lawrence Berkeley National Laboratory. She is also an Advisor in the Energy Sciences Area Office, which oversees much of Berkeley Lab's materials and chemistry portfolio. In these roles, she draws on her background as a materials researcher and science policy advisor to inform science strategy and engage the research community, federal funders and policymakers, and the general public.

Prior to joining Berkeley Lab, she served as an MRS/Optica Congressional Science & Engineering Fellow in the U.S. Senate and as a AAAS Science and Technology Policy Fellow in the National Science Foundation's Division of Materials Research. She also previously managed the materials research program at the U.S. Green Building Council, the non-profit organization that develops and maintains the LEED green building rating system.

She received a PhD in materials science from the University of Cambridge and a BS and BA in materials science and engineering and music, respectively, from Virginia Tech. Although Ashley's research during her studies concentrated on ceramics for energy and biomedical applications, her focus shifted to materials sustainability during her professional career.

Ashley was the founding chair of MRS's Focus on Sustainability Subcommittee and has been involved with MRS's sustainability efforts and organizing sustainability programming at MRS meetings for more than a decade. She is an editorial advisory board member of *MRS Energy & Sustainability* and briefly served as its interim Editor-in-Chief, and has previously volunteered on the MRS Government Affairs Committee. A long-time advocate for diversity, equity, and inclusion, Ashley oversees these efforts for Berkeley Lab's Advanced Light Source and has been recognized with a Berkeley Lab Director's Award for building the foundations of the Lab's mentoring ecosystem. Ashley was honored to give the keynote address at the 2022 MRS Fall Meeting's Women in Materials Science and Engineering Breakfast. She was a Meeting Chair for the 2023 MRS Spring Meeting and was the 2018 recipient of the MRS Woody White Service Award. Ashley also served for three years on the Board of Directors for the Society for Science at User Research Facilities, a professional society that represents and supports the scientific communities associated with large-scale US user research facilities.

CANDIDATE'S STATEMENT

The Materials Research Society has been my home society for nearly twenty years. My relationship with MRS started as many members' do – presenting my research at a meeting as a graduate student. Following my studies, I was honored to be selected as an MRS/Optica Congressional Science & Engineering Fellow in the U.S. Senate, serving as a science policy advisor on Capitol Hill for a year.

CANDIDATE'S STATEMENT (Ashley White cont'd)

That experience launched my career in a direction I never expected, moving away from bench science but always toward roles aligned with MRS's mission: to advance interdisciplinary materials research and technology to improve the quality of life. In particular, I have been deeply committed to bringing together diverse disciplines and perspectives towards common goals and supporting diversity, equity, and inclusion in science. As my career evolved, from working at a federal agency to a non-profit to a government-sponsored national laboratory, MRS has been a constant, welcoming me as a volunteer and providing the opportunity to lead.

Sustainable development of materials requires cooperation among different scientific fields and practitioners, aligning well with MRS's mission. The urgent need to develop materials more sustainably, and for materials science to contribute to sustainable solutions, drew me to lead these efforts at MRS over the past decade. From AI/ML-driven materials discovery and characterization to harnessing synthetic biology to design and produce novel substances, materials advances are informed by an increasingly diverse array of disciplines. As a Board member, I will advocate for initiatives that promote interdisciplinary approaches and create platforms for knowledge exchange, ensuring that MRS remains at the forefront of fostering scientific discoveries that enable societal benefit.

MRS's strongest attribute is its members, a group that continues to increase in size and diversity. Engaging a broad and global scientific community is at the heart of my work at the Advanced Light Source, which offers synchrotron capabilities and expertise to researchers worldwide. For MRS to maintain its growth and reach its aspirations for global member engagement and career advancement, it must focus on inclusion. Only by pursuing novel ways to involve MRS's member base, provide value in a continually evolving set of scientific areas, and support diverse backgrounds and career paths, can MRS leverage the full potential of its membership. If elected, I will focus on initiatives that expand MRS's international outreach, increase engagement across the spectrum of members' institutions and career paths, and ensure our meetings and publications serve as forums for all. By creating an inclusive environment, we can nurture and retain innovative, passionate individuals who will drive the future of materials research.

I am honored to be considered for the MRS Board of Directors. Together, we can build a stronger, more inclusive MRS that continues to lead and inspire. Thank you for your support.