BOLDLY RECONNECTING AND LOOKING TO THE FUTURE

Megan Enright and Ann Ritchie

Together again, TMS partnered with The American Ceramic Society (ACerS) and the Association for Iron and Steel Technology (AIST) to host the Materials Science & Technology (MS&T) Technical Meeting and Exhibition on October 17–20, 2021, in Columbus, Ohio. For many, it was the first opportunity to meet in person since the COVID-19 pandemic pivoted conferences to virtual platforms.

The nineteenth installment of MS&T offered an extensive technical program that included 75 symposia in 13 technical tracks. Technical programming took place primarily at the Greater Columbus Convention Center, while TMS social functions met at the Hyatt Regency Columbus. More than 1,500 people registered for the event, with 1,035 attending in person and 472 watching on demand. The exhibit hall and meeting rooms conveyed a celebratory vibe as scientists, engineers, researchers, exhibitors, and students reemerged and reconnected.

Technical Meeting and Exhibition

MS&T 21

MATERIALS SCIENCE & TECHNOLOGY

PLENARY SESSION

The plenary session took place on Tuesday morning and honored **Tresa Pollock**, the TMS 2021 Institute of Metals/Robert Franklin Mehl Awardee. Ellen Cerreta, 2021 TMS President, introduced Pollock, who is the Alcoa Professor of Materials at the University of California, Santa Barbara. Pollock's talk, "New Superalloys in the Co-Ni Design Space for 3D Printing," delved into the high-temperature history of nickel-based superalloys and cobalt superalloys for uses such as rocket engines, aircraft engines, and gas

turbines for power generation and then presented the opportunities and challenges of nickel-cobalt superalloys.

"Exploration of space has benefited a lot from new tools for alloy design. In the process of using these tools, I think we came to the conclusion that additive manufacturing was a good place for these materials to go," Pollock said.

Pollock discussed laser powder bed and electron beam additive manufacturing as promising options for metallic materials. She noted that

in the past five years, more than 1,300 companies formed worldwide with a focus on additive manufacturing. "I think everyone here knows about the excitement behind additive manufacturing and of the things it may enable in terms of design innovation, part reduction in complex platforms, and payoffs of sustainability in terms of energy and materials savings. While it is difficult, it's kind of like welding a structure. It seems like the tradeoffs need to be looked at," Pollock said.

The plenary session also featured **Anil Sachdev**, principal technical fellow and lab group manager at GM Global Research and Development, delivering the AIST Adolf Martens Memorial Steel Lecture, and **Clive Randall**, director of the Materials Research Institute at The Pennsylvania State University, giving the ACerS Edward Orton Jr. Memorial Lecture. Sachdev's "Iron – The Ubiquitous Element," told the story of iron's past and celebrated its potential for continued development in the future, while Randall's "Turning Down the Heat in Sintering to Enable the Unification of all Materials," explored the ceramic sintering process with a focus on the challenges and opportunities of cold sintering, including its role in a sustainable economy.

Tresa Pollock with the TMS Institute of Metals/Robert Franklin Mehl Award.

TMS YOUNG PROFESSIONAL TUTORIAL LUNCHEON AND LECTURE

Elizabeth Opila, University of Virginia, assures her audience at the TMS Young Professional Tutorial Luncheon and Lecture that having a complete map of their career path is not necessary for finding success.

Early career professionals and students were treated to a special luncheon on Tuesday spotlighting the career of Elizabeth Opila, University of Virginia. Opila is the Rolls Royce Commonwealth Professor of Engineering, professor of materials science and engineering, and director of the Rolls Royce University Technology center on Advanced Material Systems.

It's okay not to have a complete career plan, according to Opila, who gradually developed an impressive career one step at a time. She advised the audience on the secrets to her success in her talk, "Reflections on a Random Walk Approach to a Career in Materials Science."

Opila spent 19 years at NASA Glenn Research Center that included responsibilities such as examining the Challenger disaster, publishing her research, and being a project manager. Here, she discovered she had a knack for mentoring interns. "I found their curiosity in the lab really exciting," Opila said. Between her research, mentoring, and publishing activities, her experiences at NASA smoothed the way for her next "big adventure in academia" as a faculty member at the University of Virginia. At the university, she grew to love teaching but also was pleased to discover she could further her research interests, particularly through a sabbatical opportunity at the Max Planck Institute for Solid State Research.

She finds career success by making good decisions along the way as opposed to having a master plan. "This random walk [through my career] was not completely random because opportunities bias where you go," Opila said.

ADVANTAGE AWARDEES

The third day of MS&T21 offered the culmination of the student events with the Material Advantage Student Awards Ceremony.

TMS was honored to present Rafael Rodriguez de Vecchis, University of Pittsburgh, and Preston Nguyen, University of Pittsburgh, with the TMS International Symposium on Superalloys Scholarship, funded through the TMS Foundation and issued under the generosity of the TMS International Symposium on Superalloys Committee. These scholarships are available to undergraduate and graduate students majoring in metallurgical and/or materials science and engineering with an emphasis on all aspects of superalloys. Two scholarships are awarded annually, each valued at \$2,000.

Rafael Rodriguez de Vecchis, University of Pittsburgh, with the 2021 TMS International Symposium on Superalloys Scholarship.

Preston Nguyen, University of Pittsburgh, with the 2021 TMS International Symposium on Superalloys Scholarship.

is accompanied by a certificate and \$750 prize. Congratulations to all the award recipients!

WIKIPEDIA EDIT-A-THON

The MS&T Wikipedia Edit-a-Thon for Diversity in Materials Science and Engineering helped to give recognition where it was past due. Few realize that only 18.6% of English-language biographies on Wikipedia are about women. To address this, the 500 Women Scientists organization, the programming

partner for this event, pioneered the concept of Wikipedia Edit-a-Thons specifically focused on advancing diversity, equity, and inclusion in STEM.

MS&T participants met virtually to learn how to create, edit, and translate Wikipedia pages on researchers and scientists from underrepresented minorities. Presenter Farah Kaiser, director of research and policy at Evidence for Democracy, led the session.

Kaiser explained that one of the challenges to minorities being represented on Wikipedia is meeting the notability criteria that Wikipedia has established for the creation of new entries. Individuals meet notability criteria through publications and honors; however, women and minorities have yet to gain equal representation in recognition through media coverage and major awards. Through combined and concentrated efforts, such as edit-a-thons, participants are increasing the visibility of those accomplishments. It makes a difference by inspiring the next generation.

"Women and minorities are more likely to pursue STEM careers if they see more people who look like them in role model positions," Kaiser said.

Co-organized by AcerS, AIST, and TMS, the event served as the inaugural Annual MS&T Diversity, Equity & Inclusion Engagement Event.

Farah Kaiser, Evidence for Democracy, presented an introduction and tutorial for Wikipedia Edit-A-Thon attendees.

MIXERS AND RECEPTIONS

The MS&T Women in Materials Science Reception gathered students, professionals, and other conference attendees on Sunday to network and extend their support for underrepresented groups in the materials science and engineering field.

A representative from each of the partner societies shared some opening words on the importance of being inclusive organizations that honor and encourage all to participate in the field. Tom Battle, 2020 TMS President, highlighted this in his opening remarks, "As all of you in this room know, advancing diversity, equity, and inclusion is not easy, but I can tell you from experience, that by working together, we can make a difference...TMS has made being a

Tom Battle, 2020 TMS President, provides opening remarks on behalf of Ellen Cerreta, 2021 TMS President, and the TMS Board of Directors at the Women in Materials Science Reception.

highly inclusive society its number one strategic goal for more than a decade and, over that time, has been very intentional in trying to increase engagement of underrepresented groups in our membership."

Refreshments and lively conversation followed the opening remarks. With attendees excited to be back in person, they shared career advice, experiences, and stories. Battle summed up the atmosphere of the event: "As the president who presided during the darkest days of the pandemic, I am delighted to be able to gather in-person with you today."

Attendees engage in conversation, networking, and refreshments at the Women in Materials Science Reception.

In-person networking continued at several MS&T social events, ranging from interest-based gatherings, such as the TMS Pride Mixer and Student Networking Mixer, both on Sunday, to the large, all-conference Partners' Welcome Reception on Monday and Exhibitor Networking Reception on Tuesday.

TMS MEMBERS HONORED AT MS&T21

TMS applauds the following members who received recognition at MS&T21 for outstanding contributions to their fields from the American Ceramic Society (ACerS) at its Annual Honor and Awards Banquet and Reception, held on Monday, October 18, as a part of the ACerS 123rd Annual Meeting.

2021 Class of Fellows

Arvind Agarwal, *Florida International University*

Cato Laurencin, *University of Connecticut Health Center*

Federico Rosei, *Institut National de la Recherche Scientifique (INRS)*

Richard M. Fulrath Awards, American Academic

Surojit Gupta, *University of North Dakota*

ACerS/Education and Professional Development Council (EPDC)
Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture

Elizabeth Opila, *University of Virginia*

MS&T21 attendees mingled with colleagues and enjoyed hors d'oeuvres at the Partners' Welcome Reception.

MARK YOUR CALENDARS FOR MS&T22

MS&T21 was an event for the record books, not only for the honored speakers, advanced research, and student achievements, but also for the high sense of enthusiasm shared by the participants, simply for the opportunity to get together. Set to build upon this sense of renewal, MS&T22 will take place October 9–13, 2022 in Pittsburgh, Pennsylvania.

The call for abstracts is now open, with an extensive technical program featuring 80 symposia in 15 technical tracks, including a new Education track, for the 20th installment of MS&T. **Abstracts are due March 15, 2022.** Visit www.matscitech.org/MST22 for program details and to submit your work today.