MATERIALS RESEARCH SOCIETY
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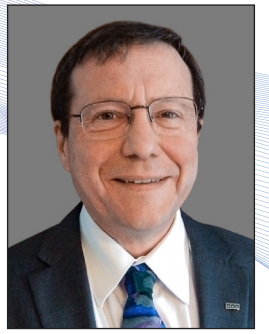

Hot topics provide value to MRS membership and the materials community

Matt Copel
2020 MRS President

For almost 47 years, the Materials Research Society (MRS) has been the leading association for the materials community. Members choose MRS because it is important to their work and their careers, and because in MRS they find an open environment for collaboration and the exchange of ideas across all relevant scientific disciplines. Our meetings and publications are designed to incorporate a high level of flexibility so that content can remain topical, and our members can count on presentations featuring cutting-edge research.

In keeping with the MRS tradition of empowering members, much of our meeting content is comprised of member-proposed symposia, and our publications have encouraged submissions covering a broad spectrum of materials topics. While this has served us well, there have been times when we felt the need to jump-start a new topic and build a core community that can then sustain a flow of papers and symposia. Recently, MRS introduced "hot-topic" areas—artificial intelligence (AI) for materials design, quantum materials, emerging biomaterials, sustainability, and responsive and adaptive materials—to forge new materials communities and guide content development at the frontier of materials research. These hot-topic areas have proved highly popular, with strong webinar attendance, heavily downloaded journal articles, packed symposium sessions, and more. In fact, in a relatively short time, they have permeated all Society activities. Using AI as just one example:

- The first symposium on Machine Learning and Data-Driven Materials Development and Design was introduced at the 2018 MRS Fall Meeting, and AI has been in the symposia lineup at every MRS Meeting since. If you're joining us at the 2020 MRS Spring Meeting, consider attending Symposium CT01—Artificial Intelligence for Material Design, Processing and Characterizations.
- The tutorial on Data-Driven Design of Sustainable Materials with Artificial Intelligence, Machine Learning and Assessment, offered at the 2019 MRS Spring Meeting, was standing room only!
- Two issues of *MRS Bulletin*, one in September 2018 and another in July 2019, focused on "Data-Centric Science for Materials Innovation" and "The Machine Learning Revolution in Materials Research," respectively. Various feature articles on AI were also published in *MRS Bulletin* throughout 2018 and 2019. *MRS Communications* published a Spring 2019 Special Issue on AI.
- The MRS OnDemand® Webinar Series has produced three webinars on AI/Machine Learning (ML). The most recent, in September 2019, garnered nearly 300 attendees. All are archived at mrs.org/on-demand.
- Two episodes of the new *MRS Bulletin* Materials News Podcast series have been devoted to AI/ML. Take a listen at mrsbulletin.buzzsprout.com.

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- Benji Maruyama, Air Force Research Laboratory, was featured as the first member of our "Expert Pitch" team. He will be a valuable resource to journalists and other members of the media interested in understanding more about AI and ML.
- MRS and the European Materials Research Society (E-MRS) are launching a collaborative educational workshop on Artificial Intelligence for Advancing Materials Science. The first workshop will run at the 2020 E-MRS Spring Meeting in Strasbourg, France. A second will follow at the 2021 MRS Spring Meeting in Seattle, Washington.
- In the area of advocacy, our volunteers and staff have been working with US Congressional staffers on bills supporting AI. Our Materials Voice campaign for federal support of basic and applied research in the areas of quantum and artificial intelligence has garnered 334 letters to lawmakers. If you would like to join in this effort, visit mrs.org/materials-voice, and send a personalized letter to your representatives on Capitol Hill.

While that sounds like a lot of activity, I remind you, it represents only the AI portion of the program. There are four other topical areas where we are making similar coordinated efforts. Our goal is to weave each one into the full fabric of the Society.

To further awareness of these new topics and their value to our members and the materials community, our first MRS Frontiers Reception was held during the 2019 MRS Spring Meeting. The goal was to bring together those interested in any of the hot-topic areas—whether expert or new to the field—in a casual, fun, interactive way. During the energetic brainstorming session, we shared refreshments, hors d'oeuvres, and ideas for building new materials communities. The inaugural reception was so well received, we repeated it at the 2019 MRS Fall Meeting in Boston, and this time it drew more than 400 attendees. So, we've decided to do it again! If you're attending the 2020 MRS Spring Meeting in Phoenix, I invite you to join us on Thursday evening for another round of rich and thought-provoking discussions. It's an excellent opportunity to connect with peers working in these critical areas of materials research. (Personally, I look forward to reading a paper or hearing a talk that acknowledges its genesis was the Frontiers Reception!) If you can't join us in Phoenix, please send your input on these or other emerging hot topics to Betsy Fleischer at fleischer@mrs.org. Either way, your input can help influence the direction of the Society, in which we all take great pride.

Matt Copel

The MRS Frontiers Reception–Building Communities, held at the 2019 MRS Fall Meeting and Exhibit, provided Meeting attendees with a valuable opportunity to engage with peers and leaders in hot-topic areas and contribute to the development of these and other strategically important communities.

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