https://doi.org/10.1038/s41563-023-01575-4

Half a century of the Materials Research Society

The Materials Research Society, which celebrates its 50th anniversary this year, has long been a central hub for the materials community.

Materials science has always been inherently disciplinary, and it is this feature that motivated the formation of the Materials Research Society (MRS) in the United States 50 years ago. Like many successful organizations, the MRS has progressed from origins as a loose and makeshift affiliation of dedicated individuals into a professionally staffed entity with a broad portfolio of interests, activities and awards. In doing so, the society has become a core presence in the materials community. Its biannual American meetings in the spring and fall are now diary highlights for researchers, where new discoveries are disclosed, new collaborations sparked and old friendships renewed.

The MRS was founded in 1973 by Rustum Roy of Pennsylvania State University, Ken Jackson of AT&T Bell Laboratories and Harry Gatos of the Massachusetts Institute of Technology. Despite the academic affiliations of two of this trio, the initial impetus came largely from industry and government laboratories. It was not until the mid-1980s that universities began to dominate the society, by which time materials research departments were becoming widespread. The Defense Advanced Research Projects Agency (DARPA) and the US National Science Foundation started creating such centres at universities, that at Northwestern University being arguably the first. The MRS was not the sole catalyst for these developments, but it surely facilitated them.

In its early years, the MRS relied largely on the goodwill and energy of volunteers. Even by the early 1980s there was no formal organization, no headquarters and no logo. Some felt that was how it should be. When the MRS headquarters (now in Warrendale, Pennsylvania) were established in Pittsburgh in 1983, with John Ballance as executive director, Roy expressed scepticism about the wisdom of employing permanent staff. All the same, he considered that the MRS would never be a proper society until it had its own journals. The first of these, *MRS Bulletin*, evolved from a collection of photocopied and stapled pages to a glossy publication, produced monthly from 1986. In that same year, the *Journal of Materials Research* was launched: a determinedly cross-disciplinary journal that included engineering as well as more academic research. MRS publications now include *MRS Communications* and *MRS Advances*, and in 2021 the MRS publications entered an alliance with Springer Nature.

In 1977, the society introduced its first and still most prestigious award, named for its first recipient Arthur von Hippel, a pioneer of electronic materials. Others that followed include the Outstanding Young Investigator Award, first given to Stuart Parkin in 1991, the David Turnbull Lectureship (1992), and the Kavli Lectureship, first awarded in 2007 to chemistry Nobel laureate Harry Kroto.

The model established by the MRS was soon emulated elsewhere. Woody White, MRS president for 1984, helped to establish the European Materials Research Society, which held its inaugural meeting in 1983, and another president, Bob Chang (1989), was instrumental in spreading the model to China, Japan and South Korea in the 1990s. White, Chang and 1985 president Elton Kaufmann were among those who created the International Union of Materials Research Societies in 1991 to foster global interactions between the regional organizations (which now include Brazil, Australia, Singapore and Mexico). Despite this formative role, the MRS itself eventually left the union, partly on the grounds that it was already international: the omission of 'US' from the name was an explicit choice of the founders, and around half of members and meeting attendees reside outside the United States. But now the MRS is making renewed efforts to strengthen ties with other societies, for instance in Asia and Africa, through partnerships, joint activities, and hybrid and virtual meetings. The 2023 MRS Fall meeting includes a workshop jointly organized with the African Materials Research Society.

Despite its increased professionalization, the bottom-up philosophy of the MRS has persisted — evident, for example, in the way no topic at an annual meeting is guaranteed a place at the next, so that the focus of the field has been allowed to evolve organically. There is still opportunity for volunteers with good ideas to make things happen, according to 1995 president Julia Phillips, then at AT&T Bell Laboratories — making it a magnet for young, energetic researchers.

The society advocates for materials research in the wider world, its public outreach including the 2010 television series *Making Stuff*, developed in connection with Nova and for which the society provides an online activity guide for schools. Materials360 provides weekly news on materials science, and MRS OnDemand and MRS TV offer interviews and live-streamed video. The itinerant interactive exhibition Strange Matter has toured to science museums and centres in many countries, while the society increasingly sees social-media channels as an important avenue to attract and engage younger scientists. Diversity, equity and inclusion have been core MRS values for decades, and its current programmes include investment in Student and Early Career Programs, the newly launched Diversifying Materials Special Interest Groups, and the Inclusive Graduate Education Network alliance.

Since its inception, the MRS has occupied a position at the intersection between research, applications and society. Current president Sabrina Sartori of the University of Oslo says that materials scientists are focusing ever more on how their work may affect society, the planet and its resources, and how it can support sustainable and equitable development. The first half-century is just the beginning.

Published online: 1 June 2023

CREDIT: MATERIALS RESEARCH SOCIETY (MRS)