

# MATERIALS RESEARCH SOCIETY®

## 2019 Board of Directors

### Officers

Michael R. Fitzsimmons, *President*  
Sean J. Hearne, *Past President*  
Matt Copel, *Vice President*  
Eric A. Stach, *Secretary*  
David J. Parrillo, *Treasurer*  
Todd M. Osman, *Executive Director*

### Directors

Shenda Baker  
Griselda Bonilla  
Li-Chyong Chen  
Dawnielle Farrar-Gaines  
Claudia Gutiérrez-Wing  
Sarah Heilshorn  
Frances A. Houle  
Monica Jung de Andrade  
Sergei V. Kalinin  
Kisuk Kang  
Lincoln Lauhon  
Paul C. McIntyre  
Christopher Schuh  
Rachel Segalman  
Molly M. Stevens  
Yusheng Zhao  
Ehrenfried Zschech

## 2019 Publications Committee

S.P. Baker, *Chair*  
W. Weber, *Editors Subcommittee*  
A.J. Hurd, *New Publication Products Subcommittee*  
R.J. Nemanich, *Publications Quality Subcommittee*

## 2019 MRS Committee Chairs

S. Mathur, *Academic Affairs*  
J. L. MacManus-Driscoll, *Awards*  
D. P. Norton, *Government Affairs*  
T. Aselage, *Meetings*

S.M. Haile, *Member Engagement*  
E. Kupp, *Public Outreach*  
S.P. Baker, *Publications*

## MRS Headquarters

T.M. Osman, *Executive Director*  
J.A. Dillen, *Director of Finance and Administration*  
D. Dozier, *Director of Government Affairs*  
P.A. Hastings, *Director of Meeting Activities*  
E.M. Kiley, *Director of Communications*

## Journal of Materials Research Founding Sponsors

Allied-Signal Inc.  
Xerox Corporation

## About the Materials Research Society

The Materials Research Society (MRS®) is a not-for-profit scientific association founded in 1973 to promote interdisciplinary goal-oriented basic research on materials of technological importance. Membership in the Society includes over 14,500 scientists from industrial, government, and university research laboratories in the United States and abroad.

The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-discipline professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing many topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts tutorials, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

Disclaimer: Authors of each article appearing in this Journal are solely responsible for all contents in their article(s) including accuracy of the facts, statements, and citing resources. Facts and opinions are solely the personal statements of the respective authors and do not necessarily represent the views of the editors, the Materials Research Society, or Cambridge University Press.

MRS journals maintain a proud tradition of editorial excellence in scientific literature. The *Journal of Materials Research*, the archival journal spanning fundamental developments in materials science, is published twenty-four times a year by MRS and Cambridge University Press. *MRS Bulletin* is a premier source for comprehensive research trends and a timely scan of professional activities. *MRS Communications* is a full-color letters and perspectives journal focused on groundbreaking work across the spectrum of materials research. *MRS Energy & Sustainability*—publishes reviews on key topics in materials research and development as they relate to energy and sustainability. *MRS Advances* is a peer-reviewed online-only journal featuring impactful and emerging research, designed to reflect the way materials researchers work, write, publish and share their results.

The *Journal of Materials Research* is free electronically to all MRS regular and student members. See inside front cover for subscription rates for *Journal of Materials Research*.

MRS is an Affiliated Society of the American Institute of Physics and participates in the international arena of materials research through associations with professional organizations.

For further information on the Society's activities, contact MRS Headquarters, 506 Keystone Drive, Warrendale, PA 15086-7573; telephone (724) 779-3003; fax (724) 779-8313.



Postmaster—Send change of address notice to:

Cambridge University Press  
One Liberty Plaza, 20th Floor,  
New York, NY 10006

A publication of the  
**MRS** MATERIALS RESEARCH SOCIETY  
*Advancing materials. Improving the quality of life.*

Periodical Rate Postage Paid at New York, NY  
and Additional Mailing Offices

ISSN: 0884-2914