



Benson Tolle leads MRS Board of Directors for 2014

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On January 1, **Tia Benson Tolle** (The Boeing Company) assumed the presidency of the Materials Research Society for 2014, after serving as vice president/president-elect for 2013. She succeeded **Orlando Auciello** (University of Texas at Dallas), who now serves MRS as immediate past president.

In last fall's annual election of officers and directors, **Oliver Kraft** (Karlsruhe Institute of Technology) was elected vice president/president-elect. **Sean J. Hearne** (Sandia National Laboratories) was re-elected as MRS secretary and **Michael R. Fitzsimmons** (Los Alamos National Laboratory), appointed by the Board of Directors, continues to serve as MRS treasurer.

The newly elected members to the MRS Board of Directors are **Alexandra Boltasseva**, Purdue University; **C. Jeffrey Brinker**, Sandia National Laboratories and University of New Mexico; **Hideo Hosono**, Tokyo Institute of Technology; **Kornelius Nielsch**, University of Hamburg; and **Loucas Tsakalacos**, General Electric-Global Research Center. They join continuing Board of Directors **Shenda M. Baker**, Synedgen, Inc.; **David Cahen**, Weizmann Institute of Science; **Stephen J. Eglash**, Stanford University; **Chang-Beom Eom**, University of Wisconsin-Madison; **Susan Ermer**, Lockheed Martin Advanced Technology Center; **Eric Garfunkel**, Rutgers University; **Sossina M. Haile**, California Institute of Technology; **Andrea M. Hodge**, University of Southern California; **Fiona C. Meldrum**, University of Leeds; **Eric A. Stach**, Brookhaven National Laboratory; and **Stephen K. Streiffer**, Argonne National Laboratory.

Tia Benson Tolle President



Tia Benson Tolle is Director of Advanced Materials in Boeing Commercial Airplane's Innovation Center & Technology. In this position she has responsibility for a targeted technology portfolio spanning metals, composites, finishes, and assemblies for Product Development. Previously, she held the position of Technology Director of the Nonmetallic Materials Division at the Air Force Research Laboratory's Materials and Manufacturing Directorate. Her research focus has been on advanced polymeric composite materials, and has spanned basic research through transition to aerospace weapons systems, working with academia, industry, government, and international collaborations. Prior to this, she has held several technical leadership positions within Air Force Research Laboratory's Materials and Manufacturing Directorate and before joining the Directorate, she worked as a composites structures engineer at the Composites Advanced Development Program Office, Flight Dynamics Laboratory, Wright Laboratory, and prior to that as an instructor in the Space Shuttle Flight Training Division, Johnson Space

Center, NASA. She holds a BS degree in mechanical engineering from the University of Washington and MS and PhD degrees in materials engineering from the University of Dayton. Benson Tolle has been active on several MRS committees and has served as a symposium organizer. She is also a Fellow in the Society for the Advancement of Material and Process Engineering (SAMPE). She served as SAMPE Executive Cabinet Officer (1998–2005) and as the International President (2005–2006). In 2013, Tolle served as MRS vice president/president-elect.

Oliver Kraft Vice President/President-Elect



Oliver Kraft is Director at the Institute for Applied Materials and jointly Robert Bosch Professor for Nanostructured Functional Materials at the Karlsruhe Institute of Technology (KIT) in Germany. Since 2011, Kraft is co-speaker of the Helmholtz-Program Science and Technology of Nanosystems. His research interests focus on studying deformation and degradation mechanisms in nanomaterials for a wide range of applications from microelectromechanical systems and microelectronics to energy conversion and storage. Kraft graduated from the University of Stuttgart in 1995 in physical metallurgy. From 1996 to 1997, he was a postdoc at Stanford University. He also worked as a research scientist at the Max-Planck-Institut für Metallforschung in Stuttgart from 1997 to 2002. He has authored or co-authored more than 200 articles. Kraft is active in several national and international materials science

societies. He has co-organized more than 20 international symposia and meetings and is currently one of the coordinators of the committee for Functional Materials of the German Materials Research Society (DGM). Since 2008, he is one of the elected referees for the DFG (German Research Foundation) in the area of materials science and engineering. For MRS, he served as Meeting Chair for the 2005 MRS Spring Meeting and has been a member of the Board of Directors since 2011.

Sean J. Hearne Secretary



Sean Hearne is currently Manager of the Grid Electrical Energy Storage Department at Sandia National Laboratories, where he is deeply involved in managing a vast array of programs from fundamental materials science through the deployment of commercially viable systems to the electric grid. His research has primarily focused on the sources of intrinsic stress creation and evolution during thin-film deposition, and has been well cited in the area of metal–organic chemical vapor deposition growth of GaN and in the fundamental mechanisms inducing stress during Volmer–Weber thin-film growth. This work led him into other research topics including micro-/nanofabrication and nano-enabled devices for electrical energy storage. Hearne's current interests focus on enabling new programs to develop novel *in situ* techniques for the study of high energy and power density systems. He received a PhD degree in solid-state physics from Arizona State University in 2000. He

worked from 2000 to 2001 at Intel Corporation, where he was a Senior Process Engineer in the Components Research Group in Hillsboro, Oreg. Since 2001, Hearne has worked for Sandia National Laboratories. He has been active in the MRS community since attending his first MRS Meeting in 1995 as a graduate student. Over the years, he has presented, organized symposia, and served on a number of committees and task forces, and he has chaired the (former) MRS Information Services Committee, which oversaw all of the MRS print and online publications, including the *MRS Bulletin*, *Journal of Materials Research*, and the *MRS Symposium Proceedings*.

Michael R. Fitzsimmons Treasurer



Michael Fitzsimmons is a research scientist in the Lujan Neutron Scattering Center at Los Alamos National Laboratory. He is responsible for operating the user program for the polarized neutron reflectometer/diffractometer Asterix, and pursues research in nanostructured magnetic materials using neutron and x-ray scattering. He received a BA degree in physics from Reed College (1982) and a PhD degree from Cornell University (1988) in materials science and engineering. After graduation, he pursued studies of nanostructured materials with synchrotron radiation in the group of J. Peisl, Ludwig Maximilians Universität in München as a Fulbright Junior Research Fellow. In 1990, Fitzsimmons joined Los Alamos. He is a Fellow of the American Physical Society and recipient of the Los Alamos Lab Director's

Distinguished Performance Award and the LANSCE Director's Award. He has authored more than 100 papers and collaborates with more than 200 scientists in fields of hard and soft matter, and x-ray and neutron scattering. Fitzsimmons has given numerous invited lectures including neutron scattering tutorials. He co-authored a book chapter/tutorial on polarized neutron reflectometry and recently organized a neutron scattering school focused on magnetic materials and nanomagnetism. Fitzsimmons was a Meeting Chair for the 2008 Materials Research Society Fall Meeting and served as a member-at-large on the executive committee for the American Physical Society Topical Group on Magnetism and its Applications. He has served as the MRS treasurer since 2010.

Orlando Auciello Immediate Past President



Orlando Auciello is the Endowed Chair Professor in the Materials Science and Engineering Department and Bioengineering Department of the University of Texas at Dallas. Previously, he was an Argonne Distinguished Fellow at Argonne National Laboratory (ANL), where he shared his time between the Materials Science Division and the Center for Nanoscale Materials. His work until 1996 expanded the science and technology of ion, plasma, and laser interaction with solids, and high-temperature superconducting, high-K dielectrics, electro-optic and ferroelectric thin films. At ANL, Auciello continued his work on multicomponent oxide films. He earned MS (1973) and



PhD (1976) degrees from the Physics Institute “Dr. Balseiro” (National University of Cuyo, Argentina). He did his postdoctorate tenure (1977–1979) at McMaster University, Canada; and he was a scientist in the Institute for Aerospace Studies at the University of Toronto (1979–1984), on faculty at North Carolina State University (1985–1988), and a Senior Scientist at the Microelectronics Center of North Carolina (1988–1996). He joined ANL in 1996. Auciello is co-author in approximately 400 publications and 14 patents. He is co-editor of 19 books and two book series. He has been a guest scientist in several institutions worldwide. Auciello has held several offices and contributed to many activities in MRS, including member of the governing council, Volume Organizer for *MRS Bulletin*, and Associate Editor for the *Journal of Materials Research*, co-organizer of several symposia, and served as co-chair of the 2012 International Materials Research Congress held in Cancun, Mexico. His honors include Argonne Distinguished Fellow, and he is a Fellow of AAAS and MRS. In 2013, Auciello served as MRS president.

Board of Directors

Shenda M. Baker (2014)

Baker is a Professor of Chemistry at Harvey Mudd College, on leave, and the President and Chief Operations Officer of Synedgen, Inc., a small biotechnology company that optimizes modified biopolymers to treat and prevent bacterial infection, reduce bacterial biofilms, and stimulate wound healing. She served as a Meeting Chair of the 2008 MRS Fall Meeting. Active in the public outreach, Baker chaired the committee that designed, built, and tested the traveling exhibition *Strange Matter* and served on the Public Outreach Committee that developed the PBS NOVA four-part series *Making Stuff*, narrated by David Pogue.

Alexandra Boltasseva (2016)

Boltasseva is currently an associate professor in the School of Electrical and Computer Engineering and Birk Nanotechnology Center, Purdue Univer-

sity. She specializes in nanophotonics and nanotechnology focusing on optical metamaterials, nanoscale optics, plasmonics and plasmonic materials, nanofabrication, and material growth. Boltasseva has been a member of MRS since 2005, featuring six MRS meetings' presentations including three invited talks, 2013 MRS Outstanding Young Investigator lecture, and two invited contributions to the *MRS Bulletin* (including a special issue on Plasmonics).

C. Jeffrey Brinker (2016)

Brinker is currently Distinguished and Regent's Professor of Chemical Engineering and Molecular Genetics and Microbiology, Co-Director of the Center for Micro-Engineered Materials, and Member of the Cancer Center at the University of New Mexico; Fellow, Sandia National Laboratories; and Distinguished Affiliate Scientist at the Sandia/Los Alamos National Laboratories Center for Integrated Nanotechnologies (CINT). His research focus is on processing, characterization, and understanding of porous and composite nanostructured materials, and the development of novel functional bio/nano interfaces for applications in environmental microbiology and drug delivery. Brinker has co-organized over a dozen MRS symposia, where he introduced the interdisciplinary idea of “Better Ceramics Through Chemistry,” and co-chaired the 1990 MRS Spring Meeting.

David Cahen (2015)

Cahen is a professor in the Materials and Interfaces Department of Weizmann Institute of Science, having chaired it between 2007 and 2012. His research focus is on bio-molecular electronics, hybrid organic–inorganic interfaces and materials, and photovoltaic devices. He has served as a Volume Organizer for *MRS Bulletin*, as well as the chair of the magazine's Energy Quarterly department; with David Ginley, he edited the MRS/Cambridge University Press textbook on *Fundamentals of Materials for Energy and Environmental Sustainability*; and co-founded the *MRS Energy & Sustainability—A Review Journal*,

which will debut in 2014. Cahen serves on the Sustainability Task Force and he co-chaired the 2011 International Materials Research Congress.

Stephen J. Eglash (2015)

Eglash is Executive Director of the Energy and Environment Affiliates Program at Stanford University, industry liaison of the Bay Area Photovoltaic Consortium, and staff member in the Precourt Institute for Energy. He brings to his position at Stanford a background in renewable energy, business, technology, and finance. Eglash co-invented a new mid-infrared laser and developed an award-winning business plan for creation of a spin-off company to commercialize this device.

Chang-Beom Eom (2014)

Eom is the Theodore H. Geballe Professor and a Harvey D. Spangler Distinguished Professor at the University of Wisconsin–Madison. His research focuses on heteroepitaxy of complex oxide thin films and nanostructure fabrications of novel materials. He has served as a chair for the 2011 Spring Meeting and a member of the Meeting Quality Subcommittee.

Susan Ermer (2014)

Ermer is Senior Manager of Fundamental Research for the Advanced Materials and Nanosystems Directorate of Lockheed Martin Space Systems Company's Advanced Technology Center in Palo Alto, Calif. Her research interests are in nanostructured materials for electronics and structures. She was first elected to the MRS Board of Directors in 2006, where she served on multiple Board committees including External Relations, Nominating, Governance, and Planning.

Eric Garfunkel (2014)

Garfunkel is a professor at Rutgers, the State University of New Jersey. His research focuses on complementary metal oxide semiconductor nanoelectronics and organic materials for electronics and photonics. Within MRS, he served as a chair of the 2002 MRS Fall Meeting and in 2008 as a co-chair of the first International Materials Research Con-



ference. Garfunkel served on the MRS Partnership Assessment Task Force and on the Africa Subcommittee of the MRS International Relations Committee.

Sossina M. Haile (2015)

Haile is the Carl F. Braun Professor of Materials Science and of Chemical Engineering at the California Institute of Technology. Her research broadly encompasses solid-state ionic materials and devices, with particular focus on energy technologies. She was a principal editor for the *Journal of Materials Research* (1997–2001), co-organized several symposia, and currently serves as the faculty advisor for the local MRS Student Chapter.

Andrea M. Hodge (2015)

Hodge is a professor and the Philip and Cayley MacDonald Early Career Chair in the Aerospace and Mechanical Engineering Department with a joint appointment at the Mork Family Department of Chemical Engineering and Materials Science at the University of Southern California. Her research interests range from processing of nanocrystalline and nanoporous materials to nanomechanics of metals and biomaterials. For MRS, Hodge has served as a symposium organizer and as a chair of the 2011 International Materials Research Congress.

Hideo Hosono (2016)

Hosono is a professor in the Frontier Research Center and Materials and Struc-

tures Laboratory of Tokyo Institute of Technology, and founding director of the Materials Research Center for Element Strategy at the institute. His research focuses on electro-active functionalities in transparent oxides. For MRS, he has been both an organizer and an invited speaker for various symposia.

Fiona C. Meldrum (2015)

Meldrum holds a Chair in Inorganic Chemistry at the University of Leeds, where her research centers on bioinspired materials chemistry. For MRS, she has served as a symposium organizer, a co-chair for the 2013 International Materials Research Congress, and as a Volume Organizer for *MRS Bulletin*, where she currently serves on the Editorial Board.

Kornelius Nielsch (2016)

Nielsch is currently a professor and vice speaker at the Institute of Applied Physics (IAP) at the University of Hamburg, Germany. His research focuses on thermoelectric materials, topological insulators, and magnetic nanostructures. He has been a co-organizer for MRS symposia, a co-chair of the 2011 Spring Meeting, and he served on the Program Development Subcommittee.

Eric A. Stach (2015)

Stach is the Group Leader for the Electron Microscopy Group at the Brookhaven National Laboratory's Center for Functional Nanomaterials, and the Chief

Technology Officer for Hummingbird Scientific, which he co-founded in 2004. Stach is a Principal Editor for the *Journal of Materials Research* and has served as a guest editor for *MRS Bulletin*, a symposium organizer, and as a chair of the 2012 Fall Meeting.

Stephen K. Streiffer (2014)

Streiffer is currently Deputy Associate Laboratory Director for the Physical Sciences and Engineering Directorate (PSE) at Argonne National Laboratory. His scientific expertise is in nanostructured oxides and nitrides and in structural characterization of materials. For MRS, he served as a Volume Organizer for *MRS Bulletin*, as a symposium organizer, and as a member of the Public Outreach Committee that developed the traveling exhibition *Strange Matter* and the PBS NOVA four-part series *Making Stuff*.

Loucas Tsakalacos (2016)

Tsakalacos is currently the manager of the Photonics Laboratory at the General Electric–Global Research Center in Niskayuna, N.Y. His research focuses on the integration of heterogeneous thin film and nanostructured materials systems for micro- and nano-device applications, as well as on the characterization of materials. For MRS, he co-organized several symposia and served as a co-chair of the 2013 Fall Meeting.

Alshareef, Goyal, Morell, Varela, Yoo to chair 2014 MRS Fall Meeting

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The 2014 Materials Research Society Fall Meeting in Boston, November 30–December 5, will be chaired by Husam N. Alshareef (King Abdullah University of Science and Technology, Saudi Arabia), Amit Goyal (Oak Ridge National Laboratory, USA), Gerardo

Morell (University of Puerto Rico, PR), José A. Varela (University of São Paulo State–UNESP, Brazil), and In Kyeong Yoo (Samsung Advanced Institute of Technology, South Korea). Updated information on the meeting is available at www.mrs.org/fall2014.

Husam N. Alshareef is a Professor of Materials Science and Engineering at King Abdullah University of Science and Technology (KAUST). His research interests are in emerging electronics, energy harvesting, and energy storage. After earning his PhD degree in materials science and engi-

