



Microanalysis Society Officers

Established 1968

MAS 2016 COUNCIL – OFFICERS

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Strategic Planning	Rhonda Stroud
Sustaining Membership	Lucille Giannuzzi
Topical Conferences	Paul K. Carpenter

PAST PRESIDENTS

1968	L.S. Birks
1969	K.F.J. Heinrich
1970	R.E. Ogilvie
1971	A.A. Chodos
1972	K. Keil
1973	D.R. Beaman
1974	P. Lublin
1975	J.E. Colby
1976	E. Lifshin
1977	J.I. Goldstein
1978	J.D. Brown
1979	D.F. Kyser
1980	O.C. Wells
1981	J.R. Coleman
1982	R.L. Myklebust
1983	R. Bolon
1984	D.C. Joy
1985	D.E. Newbury
1986	C.G. Cleaver
1987	C.E. Fiori
1988	W.F. Chambers
1989	D.B. Wittry
1990	A.D. Romig, Jr
1991	J.T. Armstrong
1992	D.B. Williams
1993	T.G. Huber
1994	J.A. Small
1995	J.J. McCarthy
1996	D.E. Johnson
1997	J.R. Michael
1998	R.B. Marinenko
1999	J.J. Friel
2000	C.E. Lyman
2001	R.W. Linton
2002	G.P. Meeker
2003	E.S. Etz
2004	P.K. Carpenter
2005	I.H. Musselman
2006	R. Gauvin
2007	P.G. Kotula
2008	I.M. Anderson
2009	C. Johnson
2010	E.P. Vicenzi
2011	J.H.J. Scott
2012	J.F. Mansfield
2013-14	K.L. Bunker

DUNCUMB AWARD FOR EXCELLENCE IN MICROANALYSIS

David Muller

David Muller is a professor of Applied and Engineering Physics at Cornell University, and the co-director of the Kavli Institute at Cornell for Nanoscale Science. He is a graduate of the University of Sydney, received a PhD from Cornell University and worked as a member of the technical staff at Bell Labs for six years before returning as faculty to Cornell. His current research interests include developing the hardware and algorithms for high-speed pixelated detectors, and the atomic-scale control and characterization of matter for applications in energy storage and conversion.



Historically his work has focused on the development of scanning transmission electron microscopy and spectroscopy as quantitative tools for atomic-resolution materials analysis, and its application to unraveling connections between electronic-structure changes on the atomic scale and the macroscopic behavior of materials, including identifying physical limits to transistor scaling by the first direct observation of interface phases in gate oxides, and the structure of dopant complexes. He has developed quantitative imaging and characterization methods to explore the chemistry, electronic structure and bonding inside objects as diverse as fuel cells, batteries, transistors, and two-dimensional superconductors. To help others adopt these new methods, he has also worked on the underlying challenges to turn a one-time science experiment into a wide-spread and routinely useful technique. As aberration-correctors correct aberrations and not instabilities, he has made a science of room design and environmental remediation to people setting up microscopy laboratories, improved and simplified the tripod polishing specimen preparation method to the point where a beginning student can be trained in the method in a few afternoons. His group has developed freely available software and web resources for EELS and tomographic analysis that have over 3,000 downloads to date.

David is a fellow of both the American Physical Society and the Microscopy Society of America. He was named one of the top 100 young innovators in 2003 by Tech Review Magazine, is the recipient of the MSA Burton Medal, and at 3 atoms thick, and according to the Guinness Book of Records, had the world's thinnest sheet of glass. He has 5 patents, and has published more than 200 papers, with over 21,000 citations.

Previous Awardees

2007	D.B. Williams
2008	J. I. Goldstein
2009	D.E. Newbury
2010	D.C. Joy
2011	J.R. Michael
2012	J. Bentley
2013	E. Lifshin
2014	O. L. Krivanek
2015	P. J. Statham

KURT F.J. HEINRICH AWARD

Julien M. Allaz University of Colorado Boulder (USA)

Dr. Julien Allaz obtained an MSc and a PhD in Geology at the Universities of Lausanne and Bern (Switzerland), respectively. During his early career, he focused on structural geology and metamorphic petrology in the Swiss Alps, which required a large dose of electron microprobe analysis, a zest for isotopic work (Ar-Ar dating and stable oxygen isotopes), all served over a generous bed of fieldwork. His attraction to the EPMA led him to the University of Massachusetts-Amherst in 2009, where he pursued a post-doc on trace element analysis and monazite dating by EPMA. He currently is a Research Associate at the University of Colorado-Boulder and manages the electron microprobe laboratory.



Julien's affection for the WWW led him to the development of the "Database for electron Microprobe Analysis (De-MA)", which compiles essential information for EPMA users. In 2015, with the help of A. von der Handt and O.K. Neill, he initiated a Focused Interest Group on MicroAnalytical Standards (FIGMAS) under the umbrella of both MAS and MSA. This group aims to create an international database of standards and reference materials, and facilitate the development of tomorrow's reference materials. Julien has recently taken part in the organization of the EPMA TC 2016 in Madison, WI. Author or co-author on 11 papers in internationally-recognized journals, Julien has also presented at over 20 conferences including 6 invited talks. His current research interests include magmatic and metamorphic petrology, geochronology, ore deposits (REE), and the development of databases for the EPMA community to help acquire precise and accurate data.

Previous Awardees

1986	P.J. Statham	2001	C. Jacobsen
1987	J.T. Armstrong	2002	D.A. Wollman
1988	D.B. Williams	2005	M. Watanabe
1989	R.D. Leapman	2006	M. Toth
1990	R.W. Linton	2007	G. Kothleitner
1991	A.D. Romig, Jr.	2008	P.G. Kotula
1992	S.J. Pennycook	2009	D. Drouin
1993	P.E. Russell	2010	H. Demers
1994	J.R. Michael	2011	L.N. Brewer
1995	E.N. Lewis	2012	E.A. Marquis
1997	R. Gauvin	2013	J.M. LeBeau
1998	V.P. Dravid	2014	B.P. Gorman
1999	J. Bruley	2015	P. Pinard
2000	H. Ade		

PRESIDENTIAL SCIENCE AWARD

Michael J. Jercinovic
University of Massachusetts,
Amherst, MA (USA)



Mike Jercinovic is an Associate Professor in the Department of Geosciences at the University of Massachusetts and the director of the UMass Electron Microprobe/SEM Facility. Mike's general research focuses on EPMA in minor and trace element applications. Specifically, he works toward refinement of background characterization techniques in complex phases, the use of blanks and heterogeneous materials in the assessment of accuracy, and the evaluation of dynamic emission effects due to beam damage and contamination.

Applications for this research can be found in such diverse fields as meteoritics, climate science, and igneous and metamorphic petrology. Primarily, however, research at Mike's UMass facility has centered on the potential application of EPMA toward geochronologic problems associated with complex tectonic histories. This endeavor, in collaboration with colleague Michael Williams, has provided the impetus for significant instrumentation and technique development, and has motivated the NSF-sponsored development of the one-of-a-kind Cameca SX-Ultrachron to explore high spatial resolution analysis at high sensitivity. At this point, EPMA has evolved to become a critical and sometimes indispensable contributor in many tectonic/geochronologic evaluations, particularly as high spatial resolution and comprehensive geochemistry are becoming increasingly recognized as vital aspects of the characterization of the pertinent accessory phases. This research has led to the recognition that EPMA can establish evidence of reactions that result in the growth or breakdown of phases such as monazite in structural and petrologic (major phase evolution) context, therefore offering the potential to directly date the reactions themselves. The fine-scale of accessory phase polygenesis can be extraordinary, requiring equally extraordinary analytical methods to characterize. In two cases, sub-micron domains have been successfully dated, revealing new details of tectonic histories, and providing unique evidence for the interpretation of inconsistencies in some spatially coarser geochronologic datasets.

Mike received his PhD in geology from the University of New Mexico (1988). He was first introduced to electron probe micro-analysis by Klaus Keil Of UNM's Institute of Meteoritics, who greatly influenced him and encouraged pursuit of a career in geochemistry and microanalysis. After post doctorate work, Mike directed the MIT electron microprobe facility for several years where he continued to refine his analytical methods. After briefly working on microelectronic evaluation in the private sector, he returned to academia when he became research faculty at UMass in 1997.

Previous Awardees

1977	R. Castaing	1999	R.A. Sareen
1978	K.F.J. Heinrich	2000	R.F. Egerton
1979	P. Duncumb	2001	P.E. Batson
1980	D.B. Wittry	2002	K. Keil
1981	S.J.B. Reed	2003	P.E. Russell
1982	R. Shimizu	2004	J.T. Armstrong
1983	J. Philibert	2005	G. Slodzian
1984	L.S. Birks	2006	B.J. Griffin
1985	E. Lifshin	2007	R.D. Leapman
1986	R.L. Myklebust	2008	T. F. Kelly
1987	O.C. Wells	2009	J.R. Michael
1988	J.D. Brown	2010	J.J. Donovan
1989	J. Hillier	2011	P.J. Statham
1990	T.E. Everhart	2012	N.J. Zaluzec
1997	D.B. Williams	2013	P. Echlin
1998	F.H. Schamber	2014	H.L. Fraser
		2015	M.R. Keenan

PRESIDENTIAL SERVICE AWARD

Heather Lowers



Heather Lowers received a BS in Geology from Mount Union College and a MS in Geochemistry from the Colorado School of Mines. Heather is the director of the Denver Microbeam Laboratory for the U.S. Geological Survey in Denver. The laboratory is equipped with two SEM/EDS systems with hyperspectral CL, an electron microprobe, and microCT. The laboratory serves USGS scientists and outside collaborators working on a variety of projects including, but not limited to, geologic and tectonic analyses, ore assessments, characterization of volcanic materials, environmental geochemistry related to natural disaster response, and evaluation of inorganic materials and biological tissue.

Heather joined the Microanalysis Society as a student member in 2003. Since that time, she has had various roles with the Society including session chair at M&M meetings, Director (2009-2012), MicroNews Editor (2009-2015), Secretary (2012-present), and co-organizer of the Microanalytical Reference Materials (2012) and EPMA (2016) Topical Conferences.

Previous Awardees

1977	P. Lublin	1997	J.A. Small
1978	D.R. Beaman	1998	J.J. McCarthy
1979	M.A. Giles	1999	T.G. Huber
1980	A.A. Chodos	2000	R.B. Marinenko
1981	R.L. Myklebust	2001	C.E. Lyman
1982	J. Doyle	2002	J.F. Mansfield
1983	D.E. Newbury	2003	I.H. Musselman
1984	J.I. Goldstein	2004	J.R. Michael
1985	M.C. Finn	2005	G.P. Meeker
1986	V. Shull	2006	H.A. Freeman
1987	D.C. Joy	2007	P.K. Carpenter
1988	C.G. Cleaver	2008	L.M. Ross
1989	W.F. Chambers	2009	V. Woodward
1990	C.E. Fiori	2010	S.A. Wight
1991	T.G. Huber	2011	D.T. Kremser
1992	E.S. Etz	2012	C. Johnson
1993	H.A. Freeman	2013	J.J. McGee
1994	J.L. Worrall	2014	I.M. Anderson
1995	R.W. Linton	2015	S. McKernan
1996	P. F. Hlava		

MAS OUTSTANDING PAPER AWARDS (2015)

These awards are presented annually to the authors of outstanding papers from the previous annual meeting in each of four categories.

RAYMOND CASTAING – STUDENT PAPER AWARD:

Atom-Probe Tomography Measurements of Isotopic Ratios of High-field Materials with Corrections and Standardization: a Case Study of the 12C/13C of Meteoritic Nanodiamonds

J. B. Lewis¹, D. Isheim², C. Floss¹, T. L. Daulton^{1,3}, D. N. Seidman²

1. Laboratory for Space Sciences, Physics Department, Washington University, St. Louis, MO, USA.
2. Center for Atom-Probe Tomography, and Dept. of Materials Science and Engineering, Northwestern University, Evanston, IL, USA.
3. Institute of Materials Science and Engineering, Washington University, St. Louis, MO, USA.

V.G. MACRES – SOFTWARE PAPER AWARD:

Dealing With Multiple Grains in TEM Lamellae Thickness for Microstructure Analysis Using Scanning Precession Electron Diffraction

A. Valery^{1,2}, E. F. Rauch², A. Pofelski¹, L. Clément¹, F. Lorut¹

1. STMicroelectronics, Crolles, France
2. SIMAP/GPM2 Laboratory, Saint Martin d'Hères, France

V.E. COSSLETT – INVITED PAPER AWARD:

Decomposing Electron Diffraction Signals in Multi-Component Microstructures

Alexander S Eggeman¹, Duncan Johnstone¹, Robert Krakow¹, Jing Hu², Sergio Lozano-Perez², Chris Grovenor², and Paul A. Midgley¹

1. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK
2. Department of Materials Science, University of Oxford, Oxford, UK

L.S. BIRKS – CONTRIBUTED PAPER AWARD:

Quantitative Phase Analysis of Rapid Solidification Products in Al-Cu Alloys by Automated Crystal Orientation Mapping in the TEM

K. W. Zweier¹, M. A. Gordillo¹, C. Liu¹, J. T. McKeown², G. H. Campbell², T. LaGrange³, B. W. Reed³, J. M. Wiezorek¹

1. University of Pittsburgh, Pittsburgh, PA, USA
2. Lawrence Livermore National Laboratory, Livermore, CA, USA
3. Integrated Dynamic Electron Solution, Inc, Pleasanton, CA, USA



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