

## MeetingReport

## Microscopy &amp; Microanalysis 2016



**MICROSCOPY & MICROANALYSIS**  
July 24-28, 2016 • Columbus, Ohio

## Joseph Michael, Program Chair

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Microscopy & Microanalysis 2016 (M&M 2016) was held in Columbus, Ohio, July 24–28, 2016. The meeting was co-sponsored by the Microscopy Society of America (MSA), the MicroAnalysis Society (MAS), and the International Metallographic Society (IMS). The conference had an exceptional program that attracted more than 1,100 scientific papers (604 platform presentations and 538 posters) and a total of 2,650 attendees (1,616 scientific and 1,034 exhibitor) representing 39 different countries. The exhibition again showcased state-of-the-art instruments and support equipment as well as service companies from around the world. There were 119 companies and 368 booths.

The well-attended plenary session opened the conference with two captivating presentations. Drew Berry of the Walter and Eliza Hall Institute of Medical Research in Melbourne, Australia, opened the session with “Beyond the limits of microscopy: Revealing the unseeable through Hollywood visual effects” (Figure 1). Drew showed remarkable animations of biological processes informed by microscopy results. Some of his animations can be found at <http://www.wehi.edu.au/wehi-tv/wehitv>. During his talk he described some of the techniques employed and how such short animations were being used for educational purposes. Our second plenary lecture was delivered by Prof.



**Figure 1:** Drew Berry enthralled the attendees with his amazing animations of unseen processes.

Mark Miodownik titled “Materials for the 21<sup>st</sup> Century” (Figure 2). Mark is a materials engineer and Professor of Materials and Society at University College London where he leads the Institute of Making (<http://www.instituteofmaking.org.uk>). Mark’s thought-provoking lecture introduced his views of materials and sustainability for the future. Judging by the number of people waiting to ask each presenter questions, these lectures were very successful.

The awards portion of the plenary session honored George Smith (Oxford University) and Kenneth Downing (Lawrence Berkeley National Laboratory) with the MSA Distinguished Scientist Award in Physical and Biological Sciences, respectively. Eight of our colleagues, Helmut Gnaegi, Earnest Hall, David Mastronarde, Stuart McKernan, Renu Sharma, George

Smith, Kenneth Taylor, and James Wittig were installed as MSA Fellows in 2016. The Burton Medal was awarded to Miofang Chi of Oak Ridge National Laboratory, and Ryo Ishikawa received the Albert Crewe Award. Amanda Lawrence received the Morton D. Maser Distinguished Service Award for her tireless work with the student bursary/volunteer program at many M&M meetings, Dmitry Lyumkis received the George Palade Award, and Frank Macaluso received the Hildegard H. Crowley Outstanding Technologist Award for Biological Sciences. The nearly 40 student and post-doctoral fellow travel awards were jointly sponsored by MSA and MAS. Best poster awards were given out each day of the meeting. Dr. Frank Muecklich received the Henry Sorby Award from IMS and presented his lecture “From Correlative Microscopy to 3D Understanding of Material Microstructures.



**Figure 2:** Prof. Mark Miodownik explains how materials will influence how we live in the twenty-first century.

This year there were two well-attended pre-meeting congresses. “Exploiting the Diffractive Properties of Electrons for Solving Materials Problems” was an excellent review of SEM and TEM methodologies based on electron diffraction and included the latest advances and applications of diffraction methods. The other pre-meeting congress, “Essentials of Atom Probe Tomography,” presented the basics of atom probe tomography (APT) in an introductory overview followed by advances in APT instrumentation, experimental design, theory, specimen preparation, data analysis, and applications.

The technical program of the meeting proper consisted of 36 symposia on analytical science, biological science, and physical science. There were many interesting posters presented each day during the meeting (Figure 3). One of the highlights of the meeting was the Prof. Gareth Thomas Memorial Symposium. This symposium was an opportunity to understand the impact Prof. Thomas had on his students and on the microscopy enterprise in general. In addition, it was a great opportunity to meet some of the leaders in materials microscopy who were in attendance. Another highlight was the symposium on “3D Structures of Macromolecular Assemblies, Cellular Organelles, and Whole Cells.” An analytical sciences symposium of note was “New Frontiers

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Figure 3: A well-attended poster session during M&M 2016.

in Monochromated EELS.” All of the submitted papers are available at: [http://journals.cambridge.org/fulltext\\_content/supplementary/MAM22\\_S3\\_minisite/index.html](http://journals.cambridge.org/fulltext_content/supplementary/MAM22_S3_minisite/index.html).

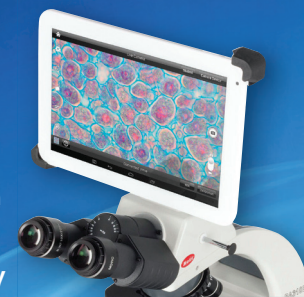
Columbus, Ohio, was welcoming and proved to be an excellent host city for M&M 2016. There was no lack of good restaurants and evening gathering places for continued discussion of the day’s presentations. After this great success, it is time to look forward to 2017 when we hope to see you at M&M 2017 in St. Louis, Missouri, August 6–10, 2017.

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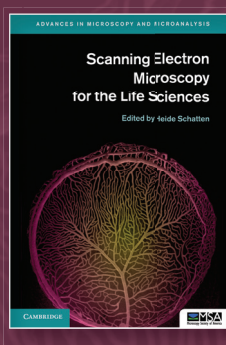
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### About the series

The Press currently publishes the Microscopy and Microanalysis (MAM) journal in conjunction with the MSA, which reaches 4,000 microscopists and is affiliated with 12 international microscopy societies. The series would be a natural development from this journal, and will take a broad view of the discipline, covering topics from instrumentation to imaging, methodology and analysis across physical science, materials science, biology and medicine. Books commissioned for the series will range from advanced undergraduate textbooks through to research and practitioner oriented monographs for researchers. The series aims to produce a coherent source of material, encouraging the communication and exchange of ideas across these divergent fields, ensuring that the series appeals to a broad community in the physical and life sciences.

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