

Microscopy & Microanalysis 2015 in Portland

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The Microscopy Society of America (MSA), the Microanalysis Society (MAS), and the International Metallographic Society (IMS) invite you to Microscopy & Microanalysis 2015 in Portland, Oregon. Portland has



earned plenty of awards, such as: "Best Place to Live"; Best Walking Town in America"; Best Running Town"; Best Cycling City in the U.S." and now Portland, also known as the "City of Roses", will be the perfect late summer host for our annual M&M meeting. Certainly many of you fondly recall previous visit there in 2010 and some may even recall our 1999 stint!

The United Nations General Assembly proclaimed 2015 as the "International Year of Light and Light-Based Technologies" which nicely highlights the interdisciplinary symposia that reflect the current environment of collaboration between scientists in different disciplines synonymous with our annual M&M meeting. Our overarching theme this year is correlative imaging, with light-based technologies being a significant part of the five-day meeting.

Once again the latest and most innovative applications and instrumentation developments will be on show pushing the boundaries of analysis and discovery in the biological and physical sciences. The M&M 2015



meeting will feature two plenary lectures, 40 symposia covering a broad range of Biological, Physical and Analytical topics, two memorial symposia, numerous educational opportunities in the form of single day and full week courses and tutorials, multiple pre-meeting events including nine short courses, and a pre-meeting workshop on Measuring Materials' Functionalities

and Dynamics in Liquid and Gaseous Environments in the TEM. Participating societies will all announce their awards recognizing scientific contributions that span the range from talented undergraduates to a lifetime of leadership.

Nobel Prize winner, Professor Roger Tsien, of The University of California, San Diego, will be our first of two plenary speakers. He is a member of the National Academy of Sciences and the Royal Society. Dr. Tsien is best



known for designing and building molecules that either report or perturb signal transduction inside living cells. These efforts led to a Nobel Prize in Chemistry (shared with O.

Shimomura and M. Chalfie) in 2008. During his long and fruitful career, Prof. Tsien received several international awards in recognition of his accomplishments, including the Artois-Baillet-Latour Health Prize (1995), Gairdner Foundation International Award (1995), Award for Creative Invention from the American Chemical Society (2002), Heineken Prize in Biochemistry and Biophysics (2002), Wolf Prize in Medicine (shared with Robert

Weinberg, 2004), Rosenstiel Award (2006) and the E.B. Wilson Medal of the American Society for Cell Biology (shared with M. Chalfie, 2008). Professor Tsien's talk on "*New Molecular Tools for Life and Electron Microscopy*" will be given Monday morning, Aug. 3, in the Oregon Ballroom.

Our second plenary speaker will be NASA astronaut, Dr. Don Pettit who will be enlightening our meeting participants on the challenges of doing microscopy in space. Dr. Pettit is a veteran NASA astronaut who has spent a total of 370 days in space over three separate spaceflights. He received a Bachelor of Science in Chemical Engineering from Oregon State University in 1978 and a Doctorate in Chemical Engineering from the University of Arizona in 1983. Selected by NASA in April 1996, Dr. Pettit reported to the Johnson Space Center in August 1996. Dr. Pettit completed his first spaceflight as NASA International Space Station (ISS) Science Officer aboard the station, logging more than 161 days in space, including over 13 EVA hours. During their five and one-half months aboard the ISS, the crew worked on numerous U.S. and Russian science experiments. Dr. Pettit will present "*Some Unexpected Difficulties in Microscope Operation in Microgravity*" following Prof. Tsien's talk in the Oregon Ballroom.



Two symposia will honor the memory of leaders in the biological and physical sciences of microscopy. The late Dr. Robert P. Apkarian (1953 – 2006) will be recognized for his life; his work in the field of biological electron microscopy; and his service to MSA and other microscopy societies. The symposium is entitled "The Robert P. Apkarian Memorial Symposium on Advances in High Resolution Scanning Electron Microscopy." The second memorial symposium is dedicated to the memory of Dr. Peter Swann, noted researcher and inventor of many microscopy accessories, and the first President of Gatan, Inc. "Bringing the Real World in to the Electron Microscope" will be the physical sciences symposium in his honor.

Other Instrumentation and Techniques symposia relate to both physical and life sciences. Examples include the following: “Imaging Mass Spectrometry”; “Fast and Ultrafast Imaging with Electrons and Photons”; “Advances



in FIB: New Instrumentation and Applications in Materials and Biological Sciences”; and “Scanning Probe Microscopy: New Methods and Applications”. The latest in additive manufacturing will be explored in “Microscopy of Additive Manufacturing and 3D Printing in Materials and Biology”. Data simulations and interpretation will be examined in “Combined Advances in Simulation and Experiment for Materials Characterization and Design”. Instrument developers and vendors will also have the opportunity to showcase new developments and improved products in the “Vendor Symposium: Latest Developments in Tools for Life and Materials Sciences.”

Featured among the life science symposia are those devoted to understanding basic concepts in cellular, molecular and structural biology, along with modern probes: “3D Structures of Macromolecular Assemblies, Cellular Organelles and Whole Cells”, and “Dynamic Fluorescence Microscopy”. The symposium “Microscopy, Microanalysis and Image Cytometry in the Pharmaceutical Sciences” presents a medical and pharmacological aspect to imaging and analysis. Two novel symposia exploring biological tissues and the role of microscopy and photo-manipulation include “Deep Tissue Imaging and Light Sheet Microscopy” and “Multiscale Biological Imaging: From Micro to Macro”.

Physical science symposia at M&M 2015 will showcase deep-rooted and modern materials. “Materials Problem Solving with Aberration-Corrected EM” and “Failure Analysis Applications of Microanalysis, Microscopy, Metallography & Fractography” Other physical science symposia will range from “Metallography and Microstructural Characterization of Metals” to “Microscopy and Characterization of Ceramics, Polymers, and Composites” to “Advances in Transmission Electron Microscopy and Spectroscopy of Energy Related Materials.”

You will not want to miss listening to MSA’s two Distinguished Scientist Awardees – Dr. Peter Hawkes, former Emeritus Research Director, CNRS in Toulouse, France; and Dr. Michael Davidson, Director, Optical Microscopy Division of the National High Magnetic Field Laboratory at Florida State University in Tallahassee, FL. Both scientists will be speaking at noon on Tuesday, Aug. 4. A box lunch will be provided.

Previous M&M meetings featured unique learning opportunities, which will be continued this year with pre-meeting and in-meeting courses taught by specialists in their fields. Sunday, Aug. 2, nine pre-meeting short courses are offered, ranging from immunolabeling technology for light and EM, to practical considerations for

quantitative image analysis for both biological and physical sciences. For more information go to <http://www.microscopy.org/MandM/2015/meetings/Schedule-at-a-Glance.pdf> and look at the Sunday Short Course list. In-meeting intensive courses will focus on these two topics: Introduction to SEM Imaging and X-ray Compositional Analysis, and Specimen Preparation for Biological Microscopy. We also will showcase our educational opportunities for broader audiences of all ages: Project Micro; Microscopy in the Classroom; and It's a Family Affair.

As is typical, M&M 2015 will have the largest microscopy instrument exhibition in the world. More than 100 companies will display their latest equipment and services. The social activities surrounding the opening of each day's poster and awards sessions have now become an afternoon tradition in the exhibition hall.



For a complete description of all the symposia, contributed sessions, educational opportunities, and the multiple award possibilities from the three organizing societies, please see the Advance Program & Pre-meeting Guide (distributed with the May *Microscopy Today*) or go to: <http://www.microscopy.org/MandM/2015/>.

If you are bringing family with you to Portland, be sure to check out the list of Social events that are coordinated by the Pacific Northwest Microscopy Society. They include walking tours, a pub crawl, and an evening dinner cruise on the Willamette River aboard the Portland Spirit. See the Social Events, Tours and Activities on the M&M 2015 website



(<http://www.microscopy.org/MandM/2015/meetings/social.cfm>) for more information.

The Executive Program Committee and the large number of symposia organizers have created the palette for Microscopy & Microanalysis 2015 and we thank them for their hard work. This M&M meeting promises to be the showcase meeting of the year for a view of the smaller worlds around us. On behalf of MSA, MAS, and IMS, we look forward to seeing you in Portland, Oregon!

