



# M&M 2010

Microscopy & Microanalysis | August 1-5 | Portland, OR

## Welcome to the Pacific Northwest and the Microscopy & Microanalysis Meeting!

Come take a first-hand look at the region's stunning natural beauty, its bustling local scene, its delicious, varied dining, and welcoming accommodations, much of which can be accessed via the city's convenient and eco-friendly light-rail system. There is so much to see and do after attending the exciting Plenary Session, cutting-edge symposia, in-depth short courses, intensive workshops, and informative commercial exhibits and vendor tutorials.

Network with old and new friends and colleagues; keep up with your Society's business by attending member meetings and events, and check out all the fun activities that the Local Committee has arranged for you!

**REGISTER NOW! See inside for details.**



International  
Metallographic  
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## M&M 2010 Meeting Program Information & Schedule





### Registration Desk Hours in Portland:

<b>Thursday, July 29</b>	8:00 am – 4:00 pm <i>(exhibitors only)</i>
<b>Friday, July 30</b>	8:00 am – 4:00 pm <i>(exhibitors only)</i>
<b>Saturday, July 31</b>	8:00 am – 4:00 pm
<b>Sunday, August 1</b>	6:30 am – 8:00 pm
<b>Monday, August 2</b>	7:00 am – 6:00 pm
<b>Tuesday, August 3</b>	7:30 am – 5:00 pm
<b>Wednesday, August 4</b>	7:30 am – 5:00 pm
<b>Thursday, August 5</b>	7:30 am – 3:00 pm

### EXPO Hours:

<b>Monday, August 2</b>	Noon – 5:00 pm <i>(Vendor Tutorials 5:30 – 6:30 pm)</i>
<b>Tuesday, August 3</b>	9:30 am – 5:00 pm <i>(Vendor Tutorials 5:30 – 6:30 pm)</i>
<b>Wednesday, August 4</b>	9:30 am – 5:00 pm <i>(Vendor Tutorials 5:30 – 6:30 pm)</i>
<b>Thursday, August 5</b>	9:30 am – 3:00 pm

## M&M 2010 OPENING PLENARY SESSION

**Monday, August 2, 2010, 8:30 am**

**Oregon Convention Center - Oregon Ballroom**

The M&M 2010 Program committee is pleased to present the Opening Plenary Session. Two exciting talks are planned by internationally known scientists whose research is dominated by microscopy and microanalysis.

### Keynote Speaker #1:

**Professor Mark Welland**

The Nanoscience Centre, University of Cambridge, UK

Professor Mark Welland, FRS, FREng will present an intriguing talk on his research entitled: "What Microscopy Can Tell Us about Alzheimer's and Related Diseases." Prof. Welland's talk will focus on the ability of scanned probe techniques to quantify the properties of materials at the nanoscale. In particular, it will demonstrate how structural properties of protein aggregates, such as those deposited during diseases such as Alzheimer's, provide a basis for the elucidation of the underlying physical principles that characterize the progression of and challenges in treatment of Alzheimer's and related diseases.

*Visit the M&M 2010 Program Information page to read more about Prof. Welland's impressive career and credentials.*

### Keynote Speaker #2:

**Professor J. William Schopf**

Center for the Study of Evolution and the Origin of Life  
University of California, Los Angeles

Professor Schopf will present a talk entitled "The Early History of Life: Solution to Darwin's Dilemma." He will show how confocal laser scanning microscopy and Raman spectroscopy have elucidated the earliest history of life on Earth. The application of these techniques, now less than a decade old, has helped resolve a dilemma that Darwin faced in 1859, namely, that though evolution was supported by the fossil record of plants and animals, no earlier evidence of life was known. Such evidence has been unearthed. What was unknown and presumed unknowable, is no longer so to us.

*Visit the M&M 2010 Program Information page to read more about Prof. Schopf's impressive career and credentials.*

*MSA does not permit any type of recording (photography, video, audio, etc.) of lectures, posters, tutorials, workshops and commercial exhibits at the Microscopy & Microanalysis meeting without prior permission of MSA or the individuals concerned.*





# M&M 2010 Sessions & Symposia At-A-Glance

All Symposia and Educational Opportunities are located at the *Oregon Convention Center*. Actual session start times may vary throughout the meeting. Be sure to check EXPO onsite or the meeting website [www.microscopy.org/MandM/2010/program.cfm](http://www.microscopy.org/MandM/2010/program.cfm) for details.

ID#	Title (Actual session start times may vary throughout the meeting.) Room Name	Sun 8:30a– 5p	Mon 8a– 12p	Mon 1–5p	Tue 1:30– 3:30p	Tue 1–5p	Wed 8a– 12p	Wed 1–5p	Thu 8a– 12p	Thu 1–5p	Session Type
<b>ADDITIONAL-FEE Educational Opportunities – See Registration form for details at <a href="http://www.microscopy.org/MandM/2010/program">www.microscopy.org/MandM/2010/program</a></b>											
X-22	Basic Confocal Light Microscopy (Four afternoons M/T/W/Th - 1:00 pm – 5:00 pm) C-120			x		x		x		x	In-Week Intensive Workshop
X-23	Introduction to SEM Imaging and X-ray Compositional Analysis (Four afternoons M/T/W/Th - 1:00 pm – 5:00 pm) C-121			x		x		x		x	In-Week Intensive Workshop
X-24	Nanomaterial Microscopy & Microanalysis: Tools & Preparation (Four afternoons M/T/W/Th - 1:00 pm – 5:00 pm) C-122			x		x		x		x	In-Week Intensive Workshop
X-10	Cryo-preparation for TEM B-110	x									Short Course
X-11	Immunolabeling Technology for Light & Electron Microscopy B-111	x									Short Course
X-12	3D Electron Microscopy of Macromolecular Assemblies B-112	x									Short Course
X-13	Live Cell Imaging Using Fluorescence Methods B-113	x									Short Course
X-14	Electron Tomography in Life & Materials Sciences B-114	x									Short Course
X-15	Scientific Digital Imaging: Ethics & Execution B-115	x									Short Course
X-16	Imaging & Analysis with Variable Pressure or Environmental SEM B-116	x									Short Course
X-17	Scanning Cathodoluminescence Microscopy & Spectroscopy B-117	x									Short Course
X-18	Advanced Topics in the Theory & Use of Focused Ion Beam Tools B-118	x									Short Course
X-19	High-Resolution TEM & STEM B-119	x									Short Course
X-20	Microstructural Analysis Techniques & Interpretation for Electronic Devices – C-120	x									Short Course
X-21	Microscopy & Nanomechanical Characterization C-121	x									Short Course

A = Instrumentation & Techniques Symposia									
ID#	Title <small>(Actual session start times may vary throughout the meeting.) Room Name</small>	Mon 1:30– 3:30p	Tue 8a– 12p	Tue 1:30– 3:30p	Wed 8a– 12p	Wed 1:30– 3:30p	Thu 8a– 12p	Thu 1:30– 3:30p	Poster Day
A-01	Vendor Symposium: Creating the Tools for Science <i>B-115</i>	X		X		X			Monday
A-02	Aberration-Corrected EM: Exploring Materials Through New Eyes <i>C-124</i>				X	X	X	X	Wednesday
A-03	FIB Science and Applications in Materials and Biology <i>B-110/111</i>			X	X	X			Tuesday
A-04	Computational Aspects of Data Visualization and Quantitative M&M <i>B-114</i>	X	X						Tuesday
A-05	Transmission EM and Spectroscopy at or Near Realistic Conditions <i>C-124</i>	X	X	X					Monday
A-06	Surface Microscopy and Microanalysis in Materials and Biological Sciences <i>B-113</i>		X	X	X	X	X		Tuesday
A-07	Scanned Probe Microscopies: Probing Advanced Material Properties on the Micro- and Nano-scale <i>B-114</i>				X		X		Wednesday
A-08	Ultrafast EM and the Effects of Ultrafast Events on the Structure & Chemistry of Materials <i>C-125/126</i>		X	X					Tuesday
A-09	TEM Phase Contrast Imaging in Biological & Materials Science <i>C-123</i>					X	X	X	Wednesday
A-10	Imaging Fields with Holography <i>C-125/126</i>						X	X	N/A
A-11	Slow Electrons, Fast Ions: How Well Do We Image and What Do We Image With Scanning Beam Microscopy? <i>B-110/111</i>	X	X						Monday
A-12	M&M and Image Analysis in the Pharmaceutical Sciences <i>B-112</i>	X	X						Tuesday
A-13	Specimen Preparation for SEM and EBSD <i>B-117</i>				X	X			Wednesday
A-14	Image Analysis & Quantitative Microscopy <i>B-117</i>						X	X	Wednesday
A-15	Failure Analysis: Practical Microscopy, Metallography & Fractology from Real-World Applications or Research Case Studies <i>B-117</i>		X	X					N/A
A-16	Scanning Cathodoluminescence Microscopy & Spectroscopy <i>B-110/111</i>						X		Wednesday
A-17	3DEM: A Real Bridge Between Light & X-Rays <i>B-116</i>			X	X				Tuesday
A-18	Compositional X-Ray Imaging <i>B-118/119</i>	X	X	X					Monday

B = Biological Sciences Symposia									
ID#	Title (Actual session start times may vary throughout the meeting.) Room Name	Mon. 1:30- 3:30p	Tue 8a- 12p	Tue 1:30- 3:30p	Wed 8a- 12p	Wed 1:30- 3:30p	Thu 8a- 12p	Thu 1:30- 3:30p	Poster Day
B-01	George E. Palade Memorial Symposium B-113							X	Wednesday
B-02	Imaging of Cytoskeletal Dynamics and Abnormalities in Disease B-115				X				Wednesday
B-03	Microscopy Continues to Lead Advances in Alzheimer's Disease B-113	X							Monday
B-04	Man, Machine, Microscope B-114					X			Wednesday
B-05	Atomic Force Microscopy for Cell Biology B-114			X					Tuesday
B-06	Microfluidic Devices: Emerging Platforms for Live Cell Microscopy B-115						X		N/A
B-07	3DEM: Cellular, Bacterial & Viral Surfaces: What is Out There? B-116	X	X						Monday
B-08	Clinical & Investigative Microscopy of Infectious Diseases B-112						X		Wednesday

P = Physical Sciences Symposia									
ID#	Title (Actual session start times may vary throughout the meeting.) Room Name	Mon. 1:30- 3:30p	Tue 8a-12p	Tue 1:30- 3:30p	Wed 8a- 12p	Wed 1:30- 3:30p	Thu 8a- 12p	Thu 1:30- 3:30p	Poster Day
P-01	Nanoscale Characterization of Next-Gen Photovoltaic Devices & Materials C-123		X	X	X				Tuesday
P-02	Imaging & Spectroscopy of Interfaces & Surfaces in Advanced Materials & Nanostructures A-106	X	X	X	X	X	X		Monday, Tuesday
P-03	Microscopy & Analysis in Forensic Science C-125/126				X				Wednesday
P-04	Structural & Chemical Analysis of Materials in the Nuclear Power Industry B-112			X	X				Tuesday
P-05	Particles, Pores & Composites – Nano to Micro A-105	X	X						Monday
P-06	Probing the Properties of Nanomaterials with Microscopy A-105				X	X	X	X	Tuesday, Wednesday
P-07	3DEM: Quantitative Analysis at the Nano and Micro-scale using Tomographic Techniques B-116					X	X		Wednesday
P-08	Inside Modern Micro-Devices at the Atomic Scale B-118				X	X			Wednesday

Other Events & Educational Opportunities									
ID#	Title <small>(Actual session start times may vary throughout the meeting.) Room Name</small>	Mon 1:30– 3:30p	Tue 8a– 12p	Tue 1:30– 3:30p	Wed 8a– 12p	Wed 1:30– 3:30p	Thu 8a– 12p	Thu 1:30– 3:30p	Poster Day/ Session Type
C-01	Biological Sciences – General <i>Posters Only</i>								Monday
C-05	Biomedical Applications <i>Posters Only</i>								Monday
C-08	Botany <i>Posters Only</i>								Tuesday
C-28	Catalysts <i>B-110/111</i>							x	Wednesday
C-33	Geology/Mineralogy <i>B-112</i>							x	Wednesday
C-35	Magnetic & Superconducting Materials <i>Poster Only</i>								Tuesday
C-36	Metals & Alloys <i>B-114</i>							x	Wednesday
C-38	Nanostructured Materials <i>Poster Only</i>								Monday
C-66	X-Ray Spectrometry <i>B-115</i>							x	Wednesday
C-97	Core Facility Management <i>Posters Only</i>								Monday
X-30	Technologists' Forum Platform Session: Imaging Biomaterials <i>B-118/119</i>						x		Tech Forum
X-31	Technologists' Forum Special Topics Session: Materials Characterization of Nanomaterials: Health and Environmental Impact <i>B-118/119</i>							x	Tech Forum
X-32	Technologists' Forum Roundtable: Live Cell Fluorescence Imaging: Selecting Equipment and Designing Experiments <i>B-118/119</i>						x		Tech Forum
X-40 (1 hr.)	Biological Sciences Tutorial: Cryo-HRSEM Techniques for Biological & Soft Materials Specimens <i>C-125/126</i>	x							Tutorial
X-41 (1 hr.)	Biological Sciences Tutorial: Focused Ion Beam Techniques in Biology <i>C-125/126</i>	x							Tutorial
X-50 (1 hr.)	Physical Sciences Tutorial: EELS & EFTEM Imaging: Instrumentation, Applications & Artifacts <i>C-125/126</i>					x			Tutorial
X-51 (1 hr.)	Physical Sciences Tutorial: Principles & Practice of HREM & HAADF Imaging <i>C-125/126</i>					x			Tutorial
X-90	Microscopy in the Classroom: How to Use It and How to Teach It <i>B-115</i>		x						Special Free Session
X-91	It's A Family Affair! (Hands-on Session for All Ages) <i>B-112</i>					x			Special Free Session
X-92	Seeing with the Private Eye (a Project MICRO demonstration) <i>A-105</i>			x					Special Free Session
X-99	Henry Clifton Sorby Award <i>B-117</i>	x							Special Free Session





## M&M 2010 – Social Events

### Sunday Social Event – at the Oregon Zoo!

6:30 pm – 9:00 pm.

Adult Ticket - \$70 (Full Meeting Registration includes 1 ticket. See registration form for details.)



The Sunday evening reception this year will be held at the world-renowned Oregon Zoo, less than five miles from the Oregon Convention Center. Enjoy a delicious buffet supper, sample local craft beer and Oregon wine, and get a chance to see the oldest zoo west of the Mississippi while catching up with friends and colleagues.

In 1887, a local businessman who collected animals as a hobby donated his menagerie to the City of Portland. The Oregon Zoo is home to animals from all corners of the world, including Asian elephants, Peruvian penguins and Arctic polar bears. From the mist-filled Africa Rain Forest to the majestic Great Northwest exhibits, the zoo encourages visitors to understand and experience the natural world. Committed to conservation of endangered species and their habitats—both locally and around the globe—the zoo is a center for wildlife preservation and field research.

One (1) ticket is included with Full Meeting registration (see registration form for details). Additional tickets can be purchased separately for guests at the Registration Desk.

The Zoo will be providing school-bus shuttles to and from the event. See onsite signage at the convention center for detailed schedule. The Zoo is also easily accessible via the region's light-rail MAX line (red line). A one-way ticket is \$2.00 and the trip takes about 30 minutes one-way, including the short walk from the station to the zoo.

**LOOKING FOR YOUR MEETING? Go to [www.microscopy.org/MandM/2010](http://www.microscopy.org/MandM/2010) to view an updated meeting schedule.**



### MAS Social – for MAS Members Only!

Stop by the MAS booth in the lobby to check your membership status and pick up your ticket for the MAS social event on Wednesday evening, August 4 – immediately following the MAS Business Meeting.



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An Affiliate Society of ASM International

### IMS Awards Banquet

Be sure to purchase your ticket (available at Registration, subject to availability) and inquire at the IMS booth for additional

information on the IMS Awards Banquet on Wednesday evening, August 4.

### FROM THE LOCAL COMMITTEE - Portland-Area Tours & Activities – Just for M&M 2010 Attendees!

Log onto the local committee's web page to sign up for one or more of the fun and entertaining local tours and activities that they have put together for M&M attendees! Take a relaxing dinner cruise on the Willamette River...hop a Brew Bus for a fun and raucous tour of Portland-area brewpubs...participate in an Oregon Wine Tasting...find out how you can book your room on a fabulous cruise to Alaska! Go to [www.physics.pdx.edu/mmm2010/](http://www.physics.pdx.edu/mmm2010/) to register. Local committee also will have an onsite sign-up table at the Oregon Convention Center.

# Register Now!

It's Fast! It's Easy! It's Secure!

Go online to the M&M 2010 registration page: [www.microscopy.org/MandM/2010/register.cfm](http://www.microscopy.org/MandM/2010/register.cfm). You can register online, or download a PDF to fax/mail in. Check out the comprehensive scientific program on the meeting website, as well as the list of M&M vendors who will be in Portland.

Don't miss out on the largest microscopy-related exhibition and meeting in the world!



**SAVE THE DATE!!**

**M&M 2011**  
will be in  
**Music City, USA**  
**Nashville,**  
**Tennessee!**

**August 7-11, 2011**  
**Nashville Convention**  
**Center**

Music is the lifeblood of Nashville, but visitors will also find a city of culture and history, of haute cuisine, of pro sports, outstanding academics, natural beauty and pure Southern charm. A city representative will be on hand in Nashville to distribute travel and tourist information about the city and surrounding areas. Be sure to mark your calendars for next summer!

**M&M 2012** Phoenix, Arizona  
July 29 – August 2, 2012

**M&M 2013** Indianapolis, Indiana  
August 4-8, 2013

**M&M 2014** Hartford, Connecticut  
August 3-7, 2014

## EXHIBITOR LIST (AS OF APRIL 1, 2010)

COMPANY NAME	BOOTH#	COMPANY NAME	BOOTH#
Advanced MicroBeam, Inc.	449	Keyence Corporation of America	971
Advanced Microscopy Techniques Corp	945	K-Tek Nanotechnology LLC	956
Attocube Systems AG	1174	Ladd Research	651
BIGC	557	Leco Corporation	1037
BitPlane Inc.	873	Leica Microsystems	1165
Boeckeler Instruments Inc.	846	Microscopy Innovation	1239
Bruker AXS Inc.	544	Microscopy Society of America MegaBooth	752
Cambridge University Press	872	Nanofactory Instruments	431
Camtek USA, Inc.	1135	Nanoprobes Incorporated	1179
Carestream Health Inc.	1176	Nion Co.	452
Carl Zeiss SMT Inc.	1274	Olympus America, Inc.	871
CEDARLANE Laboratories Ltd.	1181	Olympus Soft Imaging Solutions	415
Chroma Technology Corp.	1177	Omniprobe, Inc.	972
Delaware Diamond Knives, Inc.	1079	ONAMI Inc.	1241
Delong America Inc.	553	Oxford Instruments	944
Denton Vacuum, LLC	646	Pfeiffer Vacuum	427
Direct Electron, LP	659	PNDetector GmbH	1142
Dune Sciences, Inc.	1077	PNSensor GmbH	1144
Duniway Stockroom Corp.	648	Probe Software, Inc.	1243
E. A. Fischione Instruments, Inc.	966	Protochips, Inc.	443
E. Fjeld Company, Inc.	560	PulseTor LLC	1036
e2v Scientific Instruments	657	Renishaw Inc	457
Edax Inc	875	ResAlta Research Technologies	413
Energy Beam Sciences Inc.	960	Royal Microscopical Society	554
ETs-Lindgren	1141	SAES Getters USA, Inc.	453
Evex	746	Scientific Instruments & Applications, Inc.	1038
FEI Company	1048	SII Nanotechnology USA Inc.	536
Gamble Technologies	878	SmarAct GmbH	1055
Gatan, Inc.	428	South Bay Technology	1183
HIROX-USA, Inc.	653	SPI Supplies	1271
Hitachi High Technologies America, Inc.	420	Springer Science+Business Media	1035
HORIBA Jobin Yvon, Inc.	658	Technical Manufacturing Corporation	1042
HREM Research, Inc.	1039	Ted Pella Inc.	635
Hummingbird Scientific	1051	TEMwindows.com (SimPore Inc.)	551
Integrated Dynamics Engineering IDE	558	Tescan USA	1072
International Centre for Diffraction Data (ICDD)	540	Thermo Scientific	436
Invitrogen, a Part of Life Technologies	982	Tousimis	947
Ionizing Radiation Imaging Systems	980	TVIPS GmbH	973
ION-TOF USA, Inc.	978	Wiley Blackwell	444
IXRF Systems, Inc.	745	WITec Instruments Corp	1172
JEOL USA, Inc.	636	XEI Scientific, Inc.	1044
		Xradia Inc	1178