

## Microscopy and Microanalysis In-Week Workshops

ORGANIZER: JOHN MACKENZIE

Beginning with Microscopy and Microanalysis 2007, the Education Committee of The Microscopy Society of America began a new series of workshops that run during the week of Microscopy and Microanalysis meetings. These workshops will supplement the traditional pre-meeting Short Courses and in-meeting Tutorials. The initial workshop will focus on a very basic introduction to the subject area in question, although workshops in subsequent years may feature more advanced treatments of a variety of topics.

*An additional fee applies for workshop attendance.*

### **X-19 THEORY AND TECHNIQUES OF ABERRATION-CORRECTED MICROSCOPY**

LECTURERS: HARALD ROSE, MICHAEL O'KEEFE,

ANDREW LUPINI, AND EDGAR VOELKL

MONDAY–THURSDAY, 8:30 AM, JIMEZ ROOM

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Imaging and analysis of materials structures at near-1-Ångstrom spatial resolutions provide characterization solutions for high-tech problems that cannot be otherwise addressed. These capabilities are provided to increasing numbers of R&D scientists worldwide by recent advances in aberration-corrected electron microscopy. Aberrations are corrected either directly by hardware, such as special lens elements interfaced to modern field-emission electron microscopes, or by software-based methods, such as focal-series reconstruction and electron holography techniques. These capabilities were until recently the province of a few specialists; this in-week tutorial will provide to the attendees, for the first time, a comprehensive overview of the range of techniques, from world-renowned experts.

### **X-20 JAY AND SILENT BOB DO BASIC BIOLOGICAL CONFOCAL MICROSCOPY, AGAIN**

LECTURERS: JAY JEROME AND BOB PRICE

MONDAY–THURSDAY, 8:30 AM, ISLETA ROOM

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Confocal microscopy has become a primary method for visualizing structure in three dimensions. The technology is rapidly evolving with new instruments, lasers, detectors, and spectral imaging capabilities. We will instruct beginning and intermediate researchers on carrying out successful biological confocal microscopy experiments. Emphasis

will be on practical aspects of specimen preparation, instrument setup and operation, and enhancement and analysis of the digital images collected by confocal microscopy. A general knowledge of optical microscopy is helpful, but no prior knowledge of confocal microscopy is necessary to benefit from the workshop.

### **X-26 WORKSHOP: TOOLS OF MICRO- AND NANOSCALE IMAGING AND ANALYSIS**

LECTURERS: DONOVAN LEONARD AND

PHILLIP RUSSELL

MONDAY–THURSDAY, 8:30 AM, NAVAJO ROOM

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With the wide variety of analytical instrumentation available, the selection of the correct “tool” for analysis of nanomaterials is critical. By introducing various microscopy and microanalysis methods this workshop should provide a solid foundation for nanomaterial characterization for the beginning to intermediate investigator. The importance of choosing the proper preparation technique, to minimize artifacts and ensure that representative samples are identified for subsequent analysis, will also be discussed.

Topics to be covered:

- SEM/ESEM
- FESEM
- FIB: Sample Prep and Nanofabrication
- TEM/HRTEM
- STEM/EELS Nanoanalysis
- X-ray Microanalysis
- AFM: Imaging and Nanofabrication
- How to Choose and Use the Best Techniques

## Special Events

### **MSA AND MAS PRESIDENTIAL HAPPENINGS**

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The Presidents of the sponsoring societies will offer special events throughout the week. These events will include keynote speakers and awards for various competitions such as the student Presidential Scholarships, Diatome Award, MSA Traveling Poster Awards and MAS Distinguished Scholar Awards. All attendees are strongly encouraged to attend these events to congratulate award winners and listen to the keynote presentations. Times for all events are listed on pages 76 and 78.

### **IMS HENRY CLIFTON SORBY AWARD AND LECTURE**

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The winner of the IMS Henry Clifton Sorby Award is McIntyre R. Louthan, Jr., Consulting Scientist in the Savannah River Technology Center of the Westinghouse Savannah River Company. The prize will be awarded and the winner will present a lecture on the morning of Monday, August 6th in advance of the Metallographics Techniques and Materials Characterization symposium. Please check the meeting schedule for the exact time and location of this event that will honor the outstanding achievements of the award recipient.

### **ART EXHIBIT**

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As at Microscopy and Microanalysis in previous years, we will have an exhibit of crystal photographs by T. H. Saunders. The images will be for sale with 100% of the net proceeds donated to the MSA Undergraduate Scholarship Fund. The main display of images will be in the exhibit area. Selected images will also be on view at the *Microscopy Today* desk in the society Megabooth where all of the images may be purchased.

### **IT'S A FAMILY AFFAIR!**

*ORGANIZERS: ELAINE HUMPHREY, GRACIE BURKE, AND FRAUKE HOGUE*

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This session is aimed at children of all ages, including those of us that still consider ourselves children. Speakers will present a number of interesting images, ranging from insects to atoms and plants to metals, that will demonstrate the wide range of science. Hands-on activities and demonstrations will prove that science is fun! Following the presentation, children will have the opportunity to participate in a guided tour of the exhibit floor and view the microscopes and see how they work. Please check the Daily Newsletter for changes to the scheduled time of this exciting session designed to pique the scientific interest of children of all ages (1:30–3:30 PM, Tuesday, August 5, 2008, Santa Ana Room).