



# Midwest Microscopy and Microanalysis Society

## Newsletter

### News

We had a good response to the electronic voting process, and I would like to congratulate the newly elected members of the 2012 Executive Council:

- Ke-Bin Low, (UIC) President
- Alan Nicholls, (UIC) President Elect, Secretary and Newsletter Editor
- Robb Mierzwa, (JEOL) Materials Science Director
- Heather Owen, (University of Wisconsin Milwaukee) Biological Science Director
- Elaine Schumacher, (McCrone Associates) Program Coordinator
- Chris Russin, (Northwestern University) Treasurer
- Samantha Strasser (Northwestern) - Student Liaison
- Mike Kamrath (Nalco) - Past President

We would like to welcome back Robb Mierzwa to the Executive Council. We also had a write in candidate for the vacant Vendor Liaison position and following agreement at the first council conference call, I am pleased to inform members that Steve Nagy (Gatan) will join M3S Council as Vendor Liaison.

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### 2011 M3S Meeting Report

The first meeting of 2011 was held at Northwestern University, in conjunction with the Biological Imaging Facility on March 25<sup>th</sup>, 2011. The topic this year was "*Ordering Off the Menu: Novel Microscopy Methods*", Bill Russin had invited a number of interesting speakers on a wide range of techniques. The first speaker was Max Diem from Northeastern University who talked about the use of Raman Spectral Imaging as a confocal, label free, non-invasive imaging technique for **M<sup>3</sup>S 2012 - 55<sup>th</sup> Year**

biological systems. This was followed by Niels de Jonge from Vanderbilt University who presented his interesting work on imaging eukaryotic cells with liquid and 3D STEM. During the lunch break attendees were also able to visit vendor displays from companies who had supported the meeting.

The afternoon started with Na Ji (Janeilia Farm Research Company) who talked about using adaptive optics. Amy Oldenberg

(University of North Carolina) then talked about bridging the gap to the tissue scale using optical coherence tomography. The final talk of the meeting was by Jerome Metz from Boston University who talked about several new techniques in optical microscopy including active illumination.

The next meeting or 2011 was the Fifth Annual Optical Workshop held at the Hooke College of Applied Sciences on August 31<sup>st</sup>, 2011 and organized by Elaine Schumacher.



*Elaine Schumacher introduces John Delly at the beginning of optical workshop.*

This years topic was "Basic Contrast Methods" and attendees were able to listen to John Delly (Hooke College of Applied Sciences) discuss and demonstrate various contrast methods including phase contrast, darkfield, differential interference contrast (DIC) and fluorescence. The rest of the day was spent with demonstrations and hands-on exercises designed to illustrate these techniques using the well equipped teaching facilities at HCAS.

The final meeting of 2011 was held on November 4<sup>th</sup>, 2011 at Baxter Healthcare Corporate HQ in Deerfield. The Fall workshop has typically been our largest crowd puller of the year and we were not disappointed this year with nearly 80 members present!



*John Delly helps Linda Fox with Joe Schlupe looking on during the hands-on part of the workshop.*

The topic was "Spectroscopy Techniques for Materials and Biological Electron Microscopy" and Ke-Bin Low and Robert Klie (both UIC) arranged the program with Jim DiOrio (Baxter) involved with local arrangements. The first invited speaker was Robert Simmons (Georgia State University), the MAS touring speaker, who gave a fascinating presentation entitled "Microorganisms and You: A Tale of Cohabitation". In particular his comments about microscopy of microorganisms on contact lenses gave food for thought to many attendees!



*Attendees at the Baxter Workshop wait for the first speaker to start.*

After the coffee break during which attendees could visit the many vendor displays, Nestor Zaluzec (Argonne National Lab) talked about advances in spectroscopic characterization of nano-particles in electron optical instruments. He discussed the improvements in electron optics (aberration correctors) and improved detectors (SDD) with higher solid angles and better resolution, which allow atomic resolution analysis by EELS and XEDS. The last speaker before lunch, also from Argonne, was David Gosztola who talked about his work on optical characterization of nanomaterials using temporal and spatial spectroscopic techniques.



***M3S 2011 president Mike Kamrath (Nalco) talks to members before the start of the afternoon session.***

After lunch, and more time with the vendors, David McComb, who has recently moved to Ohio State University, talked on probing interfaces and structures using analytical electron microscopy. In particular he was applying typical materials science analysis techniques to life science problems such as metal nanoparticles from metal joint

transplants and looking at the interface between apatite and collagen in ivory dentine. Ray Twesten (Gatan) then gave us an update on recent advances in EELS instrumentation and analysis specifically in high speed spectroscopy with extended energy and dynamic ranges. The final speaker was Chris Jacobsen (Northwestern University and ANL) who talked about his groups work on X-ray absorption and fluorescence spectrum imaging of biomaterials and brought attendees up to date with the improvements in X-ray microscopy over the past 20 years. For soft X-ray imaging 40nm resolution is now possible for 2D imaging, 70nm for 3D imaging and 100ppb analysis of Zn in biological specimens.

M3S supported the attendance of two students at the Microscopy & Microanalysis 2011 meeting in Nashville, TN with travel awards to offset the cost of attendance. The 2011 recipients were Eric Mattson (University of Wisconsin Milwaukee) and Qiao Qiao (University of Illinois at Chicago). We will be offering two scholarships for the 2012 M&M meeting, See the announcement on page 4.

We are always looking for members who would be willing to spend a little time to help on the Executive Council. If you are interested in helping keep the society active, or organizing a meeting, please get in touch with me at [nicholls@uic.edu](mailto:nicholls@uic.edu).

Members can renew their membership using the form on page 6, please post with check to Chris Russin, or at the first meeting they attend in 2012.

# PLANNED MEETINGS for 2012

Full details of M3S meetings will be e-mailed to members, or check the society webpages at:-

[www.midwestmicroscopy.org](http://www.midwestmicroscopy.org)

**23<sup>rd</sup> March 2012** - Northwestern University, Evanston IL  
- Quantitation, Image Capture and Analysis

**Meeting Host:** William Russin (w-russin@northwestern.edu)

**25<sup>th</sup> April 2012** - UIC, Chicago IL  
- Aberration Corrected STEM

**Meeting Hosts:** Robert Klie (rfklie@uic.edu) and Ke-Bin Low (kebinlow@uic.edu)

**30<sup>th</sup> July - 2<sup>nd</sup> August 2012** - Phoenix AZ

- **Microscopy & Microanalysis 2012:** National meeting of MSA, MAS & IMS

<http://www.microscopy.org/MandM/2012/index.cfm>

**See notice below about student travel awards available from M3S to attend M&M2012**

**Fall 2012** - MATC, Madison, WI  
- Topic to be decided

**Oct/Nov 2012** - Location to be decided, IL  
- M3S 55<sup>th</sup> Anniversary Meeting

**Meeting Hosts:** Robb Mierzwa (mierzwa@jeol.com) and Elaine Schumacher (eschumacher@mccrone.com)

## **Microscopy & Microanalysis 2012**

### **M3S Student Travel Awards**

For 2012 M3S will support student attendance at the M&M meeting in Phoenix, AZ by offering two **\$400** travel awards to undergraduate or graduate students who have submitted an abstract to the M&M2012 meeting.

A copy of their abstract should be sent to the M3S secretary ([nicholls@uic.edu](mailto:nicholls@uic.edu)) by March 30<sup>th</sup>, 2012, for consideration by the executive council.

## **M3S Executive Committee - 2012**

### **President**

Ke-Bin Low  
University of Illinois at Chicago  
kebinlow@uic.edu  
Tel: 312-355-2087

### **Past President**

Michael Kamrath  
Nalco Co.  
mkamrath@nalco.com  
Tel: 630-305-2372

### **Treasurer**

Christina Russin  
Northwestern University  
c-russin@northwestern.edu  
Tel: 847-467-4878

### **Student Liaison**

Samantha Strasser  
Northwestern University  
SamanthaStrasser2007  
@u.northwestern.edu

### **President Elect**

#### **Secretary & Newsletter Editor**

Alan Nicholls  
University of Illinois at Chicago  
nicholls@uic.edu  
Tel: 312-996-1227

#### **Biological Sciences Director**

Heather Owen  
University of Wisconsin Milwaukee  
owenha@uwm.edu  
Tel: 414-229-6816

#### **Materials Sciences Director**

Robb Mierzwa  
JEOL USA  
mierzwa@jeol.com  
Tel: 920-803-8945

### **Program Coordinator**

Elaine Schumacher  
McCrone Associates  
eschumacher@mccrone.com  
Tel: 630-887-7100

### **Corporate Liaison**

Steve Nagy  
Gatan Inc  
snagy@gatan.com  
Tel: 612 616 9557

### **Agent of Record**

Arvid Casler  
PO Box 394  
Mundelein, IL 60060  
metalgeek@uicalumni.org  
Tel: 847-566-7716

**M3S is a Local Affiliated Society of:**



**Microscopy Society of America**  
[www.microscopy.org](http://www.microscopy.org)



**Microanalysis Society**  
[www.microbeamanalysis.org](http://www.microbeamanalysis.org)

**We strongly urge that you join the National Societies**

