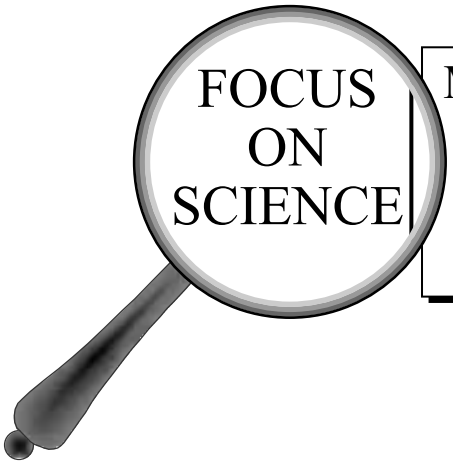
Minnesota Microscopy Society

Local affiliate of the ***Microscopy Society of America***
and the ***Microbeam Analysis Society***

Newsletter

April 2000



Minnesota Microscopy Society Spring Symposium

Minnesota Science Museum,
Education, Applications

Date: **Friday, May 19, 2000**

Location: **Science Museum of Minnesota**
120 W. Kellogg Blvd., St. Paul
Discovery Hall (www.sci.mus.mn.us)

Registration

The cost of the meeting will be $45 for those making their reservations by **May 9th**. After May 9th and at the door, the cost will be $55. This includes the meeting, buffet lunch, coffee breaks, and **a free pass to the Museum exhibits** (a $7 value).

For students and K-12 teachers the registration fee is $20 in advance (by May 9th).

To make reservations send your check to: Mike Coscio, Medtronic, Inc., 6700 Shingle Creek Parkway, Brooklyn Center, MN 55430 (736-514-1331; mike.coscio@medtronic.com). Make the check payable to the Minnesota Microscopy Society.

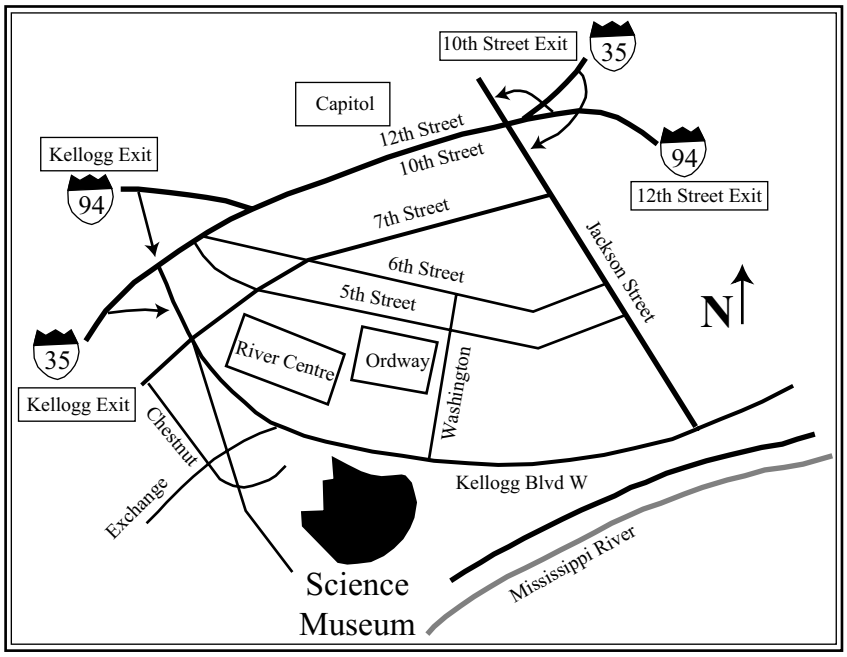
This year's Minnesota Microscopy Society Spring Symposium will be held at the newly constructed Science Museum of Minnesota. The new museum overlooks the Mississippi River, and has opened to rave reviews, for both its new building and the new exhibits. It will be a great location for our millennium meeting.

The Symposium will bring together microscopy education and various types of applications (see page 2 for the program). We will be covering a broad range of subjects, so there will be something for everybody. Talks will range from light microscopy to the basics of electron beam microanalysis. It should be an exciting meeting. Don't miss it!

A map showing the location of the Science Museum and information about parking is on page 2. From the museum's main entrance on Kellogg, go through the Lobby, angle left just after the Box Office, and continue to the stairs/elevators. Discovery Hall is one floor down. You can pick up your pass to the Museum exhibits at the MMS registration table.

Program

8:00 - 9:00	Registration and refreshments
9:00 - 9:45	*Ion Beam Milling Materials, with Applications to TEM Specimen Preparation.* Ron Anderson, IBM, MSA speaker
9:45 - 10:30	*Microanalysis in Electron Beam Instruments.* Charlie Lyman, Lehigh University
10:30 - 11:00	Break and Vendor Displays, "What IS it ??" Photo contest, refreshments
11:00 - 11:45	*Analytical Microscopy in the Real Semiconductor Processing World.* Ron Anderson, IBM, MSA speaker
11:45 - 1:00	Lunch, "What IS it ??" Photo contest
1:00 - 1:30	MMS Business Meeting (Election of Officers, Project Micro, photo contest winners)
1:30 - 2:15	Speakers from the Science Museum of Minnesota *Displaying Minnesota's Ordovician Conodonts.* Doug Hanks and Scott Haire *Tops are Tops.* Marcia Houtz and Jane Copes
2:15 - 2:45	Break and Vendor Displays, refreshments
2:45 - 3:30	*Teaching Fundamentals of Polarized Light*. David Stoney, McCrone Research Inst.
3:30 - 4:15	*Introduction to the SEM using Power Point Animation*. Ove Thompson, FEI
4:15 - >>>	Vendor Displays, Museum touring



Science Museum of Minnesota Location Map

Parking

The Science Museum's parking ramp can be accessed from either Kellogg Boulevard or Chestnut. Enter the museum by taking the parking ramp elevator to the Lobby level.

Normally a prepaid parking voucher can be purchased from the Box Office at a rate of $3.00 for members of the Science Museum, and $3.50 for nonmembers. For the Symposium, we are trying to work out an arrangement with the Science Museum regarding parking. Check at the MMS registration desk before paying for a parking voucher.

The River Centre ramp should be considered as an alternative if the Science Museum's ramp is full.

What IS it ?? Photo Contest

This year at the Spring Symposium we are going to try something new. There will be a photo contest entitled, "What IS it ??" All attendees are asked to bring in their favorite (best/worst) photomicrographs representing **ordinary** objects or products (guessable). The photos can be either color or black and white, and can be any size from 4"x5" to 8.5"x11". Be sure to include your name, company, address and phone number on the back of the photo, as well as an explanation of the photo's contents and imaging method. There is no limit to the number of photos one may submit. During the breaks and lunch, the symposium participants will be asked to guess the subject matter of each photo. Prizes will be awarded to the person with the most correct guess and to the microscopist whose photomicrograph receives the least number of correct guesses.

Of course as in any contest there is always a lot of fine print. Here is the fine print for this one. No photomicrograph can be graphically modified or enhanced. There will be a panel of judges appointed by the MMS Board to decide what are correct and incorrect guesses. Their decisions are final and under no circumstance can they be intimidated into changing their decision nor even be bribed to do so.

Vendor Exhibit Tables

As in past years at the MMS Spring Symposium, there will be room for vendor displays. The cost is $25 per table for non-sustaining members, and no charge for sustaining members. If you are interested in reserving a table contact: Diana Kittleson, Pillsbury Technology East, 737 Pelham Blvd., St. Paul, MN 55114, 651-917-5859; 651-917-5850 (fax).

Get the Word Out

Help publicize the Minnesota Microscopy Society and its upcoming meeting. Whenever possible, post the MMS newsletter at work so that others get a chance to see it. For those of you who get the newsletter via the Web, we now have a pdf version that can be downloaded and printed from Adobe Acrobat (which can be downloaded free off the Web).

Speakers

Ron Anderson

Microscopy Society of America, President-Elect, IBM Analytical Services, Poughkeepsie, N.Y.

Topics:

(1) *"Ion beam milling materials, with applications to TEM specimen preparation."*

(2) *"Analytical microscopy in the real semiconductor processing world."*

Doug Hanks

Science Museum of MN, Fossil Preparator

Scott Haire

Science Museum of MN, Youth Program Manager

Topic:

"Displaying Minnesota's Ordovician Conodonts."

How an Intel QX3 digital microscope, high school and junior high youths from the Museum's Youth Science Center, and shale from three upper Midwest locations combine in an investigation of microfossils.

Marcia Houtz

Science Museum of MN, Director of School Services

Jane Copes

Science Museum of MN, Exhibit Researcher

Topic:

"Tops are Tops."

Build some tops and see how long they spin. We'll show you an inquiring approach to a fascinating toy you can take home.

(Speakers continued on page 4)

(Speakers cont.)

Charles Lyman

Professor of Materials Science and Engineering at Lehigh University.
Past-President of the Microscopy Society of America.
President of the Microbeam Analysis Society.
Editor-in-Chief for the journal Microscopy and Microanalysis.

Topic:

"Microanalysis in Electron Beam Instruments"

We usually think of "microanalysis" as "composition determination in homogeneous regions of matter." If a body of matter is greater than about 1 μm in extent, we call the analysis a bulk analysis. In the SEM and EPMA, the analysis method is most likely to be either x-ray microanalysis or backscatter electron diffraction. For x-ray microanalysis there are two regimes of spatial resolution: 0.5-10 μm and 50-500 nm for beam energies in the ranges 15-30 keV and 0.5-10 keV, respectively. These regimes are significantly different and impose special requirements on the schemes used to correct x-ray intensities to elemental compositions. If the homogeneous body of matter is less than 50 nm in extent, we call this piece of matter a "nanoparticle." Instruments based on the TEM, namely the TEM/STEM and the dedicated STEM, are often called analytical electron microscopes (AEMs). AEMs can be subdivided into two categories based on the type of electron beam used. Flooding beam instruments employ a near-parallel beam of up to several micrometers in extent, and images are passed through lenses to be displayed in parallel. The best of these instruments combines high resolution imaging, phase identification from lattice images, EELS for chemical analysis, and x-ray spectra for elemental analysis. In scanning beam instruments, a finely focused electron beam is deflected across the specimen in a defined raster as in the SEM. Such STEM instruments are usually configured for special applications, either for x-ray detection or high-resolution imaging. This presentation will put these "microanalysis" and "nanoanalysis" techniques in perspective, provide real-world examples, and describe teaching methods for these topics used at Lehigh University.

David Stoney

McCrone Research Institute

Topic:

"Teaching Fundamentals of Polarized Light Microscopy at the Professional Level"

Intensive professional-level courses in polarized light microscopy have been taught at McCrone Research Institute for more than 40 years. The courses are 4 and 1/2 days long, stressing the fundamentals of proper microscopical illumination and the capabilities of polarized light microscopy to identify and characterize materials. Although the subject matter is presented at a graduate school level, the students have widely varying backgrounds. Accommodating this variety requires careful selection of the essential topics and their cohesive presentation. We will review the sequence of topics presented, the equipment used in the instruction, and the integration of the lectures and laboratory exercises.

Ove Thompson

Senior Applications Scientist, Center Manager
Philips Electron Optics

Topic:

"*Introduction to the SEM using Power Point Animation*."

A demonstration of Power Point animation as a tool for explaining beam/specimen interaction and SEM operations, and how to customize such presentations for each user's application or need.

Upcoming National Meetings

Scanning 2000

Date: May 9 - 12, 2000
Location: Sheraton Four Points Riverwalk Hotel San Antonio, Texas
Sponsor: FAMS, Inc. (Foundation for the Advances in Medicine and Science) and *SCANNING, The Journal of Scanning Microscopies.*
Contact: Mary K. Sullivan, SCANNING 2000 201-818-1010; scanning@fams.org, or www.scanning.org

IUMAS 2000

Date: July 8-15, 2000
Location: Kona, Hawaii
Sponsor: International Union of Microbeam Analysis Societies
Contact: David B. Williams, Lehigh University, 215-758-4224; DBW1@lehigh.edu

Microscopy and Microanalysis 2000

Date: August 13 -17, 2000
Location: Philadelphia, Pennsylvania
Sponsor: Microscopy Society of America and Microbeam Analysis Society
Contact: MSA Business Office: 800-538-3672 www.msa.microscopy.com

Microscopy Community News

New Home for Old Microscopist

For those wondering where John Humenansky went, he has recently accepted a position as staff scientist in the analytical laboratory at Physical Electronics (also known as PHI). The analytical laboratory has recently acquired a JEOL 6300 FEG which will complement the existing array of surface analysis instrumentation including, ESCA, SIMS, AES, and XPS. John will develop the FEG-SEM laboratory and provide contract analyses.

Get Your News into this Space

The Minnesota Microscopy Society is looking for contributions for its newsletter. These contributions can be either news items or short articles on a technical topic that would be of general interest to the Society's members. Does your company have a new product or a new sales representative for this area? If you have news that would be of interest to MMS members, send it to the Newsletter Editor, Peter McSwiggen, University of Minnesota, Department of Geology & Geophysics, 310 Pillsbury Drive SE, Minneapolis, MN 55455, or e-mail it to: mcswi001@tc.umn.edu

MMS Board Members Needed

We are coming to the end of the MMS year. That means it's time to start thinking about next year. We hope to have a broad array of meetings and speakers, but we need help to plan events for the upcoming year. If you can help, become a MMS Board Member. We plan to have (approximately) monthly Board meetings next year to plot the Society's course. The meetings are usually over lunch. Our first Board meeting of the next year should be in June. If you are interested in becoming a member of the MMS Board, please contact either next year's President Jean Schlosser (612-557-9090; tcrane@skypoint.com), or the MMS Secretary Mary Swierczek (651-736-5087).

Sustaining Members

Sustaining members are the backbone of financial support for the Society. These members make it possible for the Society to support Project Micro, and to cover many of the expenses of the regular meetings and the Spring Symposium. We greatly appreciate the continued support of these individuals and corporations. To become a Sustaining member, fill out the MMS membership form at the end of the newsletter.

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George Scholes	*** FEI Company**	513-474-4168
Jo Ellen Tison	**Mager Scientific, Inc.**	800-521-8768
John Treadgold	**LEO Electron Microscopy Inc.**	847-290-9566
Steve Ziegler	*** Digital Instruments**	512-912-1615

*The Society apologizes to Sustaining members that have been inadvertently left off of this list in the past. If other Sustaining members are missing from this list, *please* contact either: Diana Kittleson (651-917-5859, dkittleson@pillsbury.com) or Peter McSwiggen (612- 624-7370, mcswi001@tc.umn.edu)

MMS Patron Members

The Minnesota Microscopy Society would like to express our thanks to our Patron members. These members provide financial support to the organization above the standard membership dues level. This type of continued support makes it possible for MMS to maintain its financial well-being. To become a Patron member, fill out the MMS membership form at the end of the newsletter.

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Jeff Payne, 3M Center, Bldg. 201-1E-16, St. Paul, MN 55144; (651) 733-2352, jjpayne@mmm.com

Your MMS Annual Membership dues are payable in September/October!

All microscopists are urged to support their Society at one of the membership levels offered below. The more dues-paying members we have, the more likely we are to attract sustaining corporate memberships which form the financial backbone of our Society. Often, supervisors will support MMS memberships out of their project budget because they recognize that it is a very inexpensive way to maintain and increase the skills of their microscopists. If you have been a member over the years and recognize the value of MMS to the community of microscopists it serves, consider upgrading your membership this year to the Patron or Sustaining level. Thank you.

Name_____ Dr____ Mr____ Ms____ Phone (_____)_____

Affiliation_____Position_____

Address_____ ZIP_____

Indicate the method by which you would like to receive the Newsletter: mail_____ e-mail/web_____ both_____

Check here____ if you do NOT want your name and address to appear in the Society directory.

Are you an MSA Member?_____ MAS Member?_____ Other Professional groups?_____

Area of interest: Bioscience _____ Materials Science _____ SEM _____ TEM _____ X-ray _____

Basic $10_____ Patron $25_____ Sustaining $100_____ Student $5_____

Make checks payable to MMS and mail to our Treasurer:
Dwight Erickson, MMS Treasurer, 3M Center, Bldg. 251-1A-03, Saint Paul, MN 55144-1000.

Minnesota Microscopy Society
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University of Minnesota
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Minneapolis, MN 55455

Forwarding and Address
Correction Requested

May 19, 2000:

"Focus on Science -
MMS Spring Symposium"