Minnesota Microscopy Society

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

Newsletter

April 2001

Date:
Friday, May 4, 2001

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

FOCUS ON SCIENCE

Minnesota Microscopy Society
Spring Symposium

Investigative Microscopy

Schedule

8:15 - 9:00 AM	Registration, Breakfast and Vendor Displays
9:00 - 9:45 AM	Mona Harmann, Medallion Laboratories ***Microscopy and Food: Why Would You Want to Put Your Pizza under the "Scope"?***
9:45 - 10:30 AM	Valerie Woodward, BFGoodrich R&D Center ***"What the Heck Happened to This?" – Real Life Failure Analysis Using Microscopy and Microanalysis.***
10:30 - 11:00 AM	Break and Vendor Display
11:00 - 12:00 PM	Jim Hyzer, Hyzer Research ***Forensic Image Analysis for Crime Scene and Accident Reconstruction.***
12:00 - 1:00 PM	Lunch
1:00 - 1:30 PM	Business Meeting (Society electron, Project Micro, etc.)
1:30 - 2:30 PM	Randy Bresee, The University of Tennessee ***Textile Analysis in Forensic Investigations.***
2:30 - 3:00 PM	Break and Vendor Display
3:00 - 4:00 PM	Susan Thurston Myster, Hamline University ***Talking Bones: Forensic Anthropology and Its Contribution to Death Investigations.***
4:00 PM	Drawing for door prize

Registration

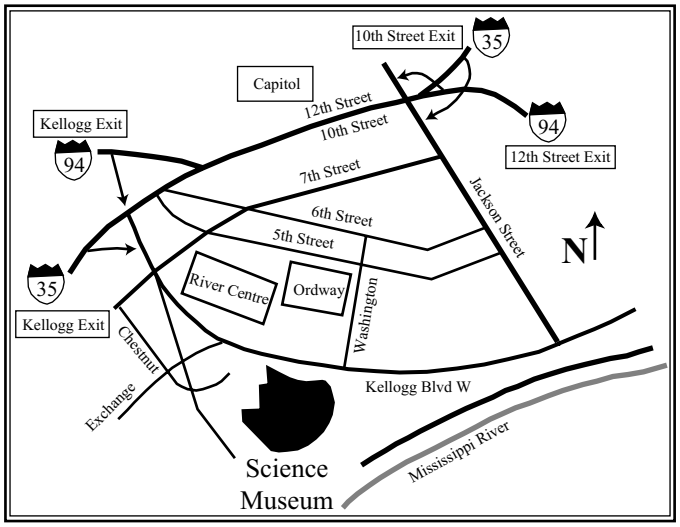
The cost of the meeting will be $75 for MMS members and $85 for non-members. This fee includes the meeting, buffet lunch, coffee breaks, and **a free pass to the Museum exhibits** (a $7 value). It also includes a chance to win the door prize, a digital camera donated by Leeds Precision Instruments. Registrants can pay at the door.

For students and K-12 teachers the registration fee is $25.

You must make your reservations by Friday April 27th, and can do so by contacting Mike Coscio, Medtronic, Inc., (mike.coscio@medtronic.com; 736-514-1331). Include your name, address, and phone number or e-mail address with your reservation. We will have to bill those who make reservations but do not show, due to the high cost to the Society.

Luncheon Buffet

> Platters of cold roast beef, roast turkey, and smoked ham.
> Slices of swiss, cheddar, and pepper jack cheeses.
> Fresh lettuce, sliced tomatoes, onions, and pickles.
> Freshly baked bread, rolls and petite croissants.
> Country potato salad, penne pasta salad primavera, and kettle chips.
> Fresh sliced fruits of the season.
> Columbian coffee, decaffeinated coffee, and tea.



Door Prize

At the Spring Symposium there will be a door prize of an Olympus Digital Camera - D340R (donated by Leeds Precision Instruments). All attendees of the Symposium are eligible, but you must be present when the drawing occurs to win. The camera's features include the following:

> 1.31 megapixel CCD, 1280 x 960 resolution.
> Macro focus as close as four inches.
> Crop images in the camera and review up to nine shots at a time with the built-in LCD.
> Superior f2.8, 5.5mm lens (36mm equivalent).
> 2x telephoto mode is equivalent to a 72mm telephoto lens in a 35mm camera.
> Shoot up to 10 photos automatically in half-second intervals with sequence mode.
> Download images and control camera functions easily from a computer.
> SmartMedia card is floppy-disk compatible with optional FlashPath adapter.

Location of the Science Museum for the Spring Symposium. After entering the Museum from Kellogg Blvd, 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.

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. Parking is $1/hour or $9 for up to 12 hours. The River Centre ramp is an alternative to the Science Museum's ramp.

Speaker Abstracts

"What the Heck Happened to This?" – Real Life Failure Analysis Using Microscopy and Microanalysis, by Valerie Woodward,
Supervisor of the microscopy, x-ray diffraction and x-ray fluorescence laboratories,
BFGoodrich R&D Center, Brecksville, Ohio

Most industrial service lab microscopists are faced with solving manufacturing and applied R&D problems on the fly with broad-use, commercially available, and sometimes outdated equipment using routine analytical methods. Although the questions about why materials fail (or work!) aren't always answered at the most fundamental levels, we do need to provide the best reasonable answers in the shortest reasonable times to our "customers" so that they can relate the problem to a specific process or material. Many times, a combination of analytical methods, including outsourcing work to labs that have the needed instrumentation, is necessary, and the microscopist has to be well versed in those methods, and the materials and the processes, in order to determine what analyses are needed and to pull together all of the results in order to solve the problem. This talk will present some approaches to failure analysis, and a number of case studies that have required the use of multiple hierarchies of microscopy, microanalysis, microsampling, and multiple analytical techniques in order to provide timely and useful results to the customers.

Valerie Woodward is a research and development chemist in the Microscopy and X-ray Analysis Section of the BFGoodrich Performance Materials Segment. She graduated from West Virginia University with a bachelors degree in biology and from the University of Akron with a bachelors degree in chemistry, and has two years graduate study in polymer science at the University of Akron. She has been an electron microscopist and x-ray spectrometrist since 1976, starting in electrical ceramics and since venturing into rubber, polymers, aerospace materials and plastics and polymer additives. She is currently supervisor of the microscopy, x-ray diffraction and x-ray fluorescence laboratories at the BFGoodrich R&D Center in Brecksville, Ohio.

Forensic Image Analysis for Crime Scene and Accident Reconstruction,
by Jim Hyzer,
Engineering Science Consultant,
Hyzer Research, Janesville, WI

Case histories are used to demonstrate how forensic image analysis techniques are applied to measure and identify such things as the time and/or place an image was exposed from the orientation of shadows cast at the scene by the sun, the linking of images of pattern injuries on violent crime victims to weapons traceable to an alleged suspect, and the analysis of a fraudulent and misleading computer-modified photograph of an alleged bank robbery suspect.

James B. Hyzer, Ph.D., is a consulting forensic engineer in Janesville, Wisconsin, specializing in forensic accident reconstruction and the scientific analysis of photographs, videos, and human visibility. He has bachelor and master degrees in engineering mechanics from UW-Madison and a Ph.D. in mechanical engineering from the University of Strathclyde in Glasgow, Scotland. His graduate research both in Madison and in Scotland involved the development and application of techniques in optical metrology to study deformations in engineered materials. He is a fellow of the American Academy of Forensic Sciences, and a past chairman of the Engineering Sciences Section. He has published more than 25 scientific papers on his work, has lectured throughout the United States, in Europe and in Japan, and has testified nationally as an expert witness in US federal, civil and military courts.

(Abstracts, cont.)

Microscopy and Food: Why Would You Want to Put Your Pizza under the "Scope"?

by Mona Harmann,
Medallion Laboratories
Minneapolis, MN

The history of food microscopy goes back almost as far as the history of the microscope. In more recent times systematic studies of food structures have aided in product development, quality assurance, and foreign material identification. Light microscopy, SEM, FTIR, X-ray Microanalysis, and image analysis are just some of the techniques used to understand foods. Case studies using these techniques and others will be discussed.

Mona received her Masters of Science in Food Science from the University of Minnesota. She has worked 23 years in the field of microscopy of foods including research, quality control and foreign material identification.

Talking Bones: Forensic Anthropology and its Contribution to Death Investigations.

by Susan Thurston Myster,
Hamline University

Anthropologist Susan M.T. Myster earned a B.A. from Hamline University in Anthropology and an M.A. and Ph.D. in Physical Anthropology from the University of Tennessee at Knoxville. She is currently an Assistant Professor of Anthropology at Hamline University. Since 1991, Dr. Myster has been involved in a growing number of forensic cases involving skeletonized (or nearly so) human remains. She has become an active member of a consulting team comprised of medical examiners, law enforcement officers, dentists, and entomologists. Her work has contributed to the positive identification of unknown victims and the conviction of accused perpetrators.

Textile Analysis in Forensic Investigations,

by Randy Bresee, Professor, Textile Science
The University of Tennessee

I will briefly discuss the capabilities provided by our optical image laboratory. Then, I will briefly discuss evidence from actual criminal cases to illustrate the process of textile analysis in forensic investigations. Types of cases to be discussed will include murder, sexual assault and drug smuggling.

Specific cases to be discussed may include the following (if time permits):

>> Georgia vs Wayne Williams, the "Atlanta Child Murder" case,
>> California vs Angelo Buono, the "Hillside Strangler" case,
>> Australia vs Lindy Chamberlain, the "Dingo Baby" case,
>> Jesus of Nazareth, the "Shroud of Turin," and
>> Abraham Lincoln, his coat from Fords theater.

Randy Bresee received his B.S. and M.S. degrees in Chemistry and later a Ph.D. in Clothing and Textiles at Florida State University. He taught at Kansas State University from 1978 until 1987, and moved to The University of Tennessee, where he has been since. Randy's work has focused on "analysis." His group has developed a laboratory devoted entirely to image acquisition, processing and analysis. They have focused on studying the melt blowing process, understanding fabric wear and forensic analysis. He also does consulting work involving textile analysis for murder, sexual assault and drug smuggling criminal cases. Notable cases include Georgia vs Williams ("Atlanta Child Murder" case), California vs Buono ("Hillside Strangler" case), Australia vs Chamberlain ("Dingo Baby" case) and Pennsylvania vs Smith ("Main Line Murder" case). He also have analyzed fibers from the fabric believed to be Christ's burial shroud (Shroud of Turin) and a fabric believed to be from the coat Abraham Lincoln wore the night he was assassinated.

Local and Regional Meetings

Seminar: Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectroscopy (EDS) with Applications at Various Pressures and Atmospheres.

Date: Friday, April 27, 2001
Location: Motorola Galvin Center - Schaumberg, IL

Instructors: Vern Robertson, JEOL USA, Inc., and Nestor Zaluzec, Argonne National Lab.

Program:

8:30 - 9:00 AM	Check-in at Galvin Center
9:00 - 12:30 PM	Morning Session
1:30 - 5:00 PM	Afternoon Session

Registration:
Members of ASM-International and of the Midwest Microscopy and Microanalysis Society - $30; Non-members - $50; Students - $10. This includes lunch and refreshments at breaks. Deadline for registration is April 20, 2001 (no walk-ins). Questions - contact:
Charles W. Allen, Argonne National Laboratory
allen@aaem.amc.anl.gov; 630-252-4157

Food Structure & Functionality Symposium 2001

Dates: May 13-16, 2001,
Location: Minneapolis Convention Center, Minneapolis, Minnesota, USA.

The symposium has two themes:
* New and novel approaches (including microscopy, rheology and spectroscopy) to the study of structure-function relationships in foods;
* Food system studies covering any part of the processing chain - from the raw material to the final product, and including trouble shooting.

For more information:
http://www.aocs.org/member/division/fsff/index.htm,
or e-mail:
meetings@aocs.org

Midwestern Association of Forensic Scientists (MAFS) 30th Annual Meeting
2001: A FORENSIC ODYSSEY

Dates: September 24-28, 2001
Location: Radisson Hotel South, Minneapolis, MN.

The purpose of MAFS is to encourage the exchange of ideas and information within the forensic sciences by improving contacts between people and laboratories engaged in forensic science. MAFS supports and stimulates research and development of new and/or improved techniques, and works to promote the improvement of professional expertise of persons working in the field of forensic science through education, scientific seminars and research grants.

Program Chair:
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For more information check out the MAFS website at:
http:\\www.mafs.net

Upcoming National Meetings

Microscopy and Microanalysis 2001

Dates:	August 5-9, 2001
Location:	Long Beach, California
Sponsor:	Microscopy Society of America and Microbeam Analysis Society
Contact:	MSA Business Office: 800-538-3672 www.msa.microscopy.com

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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 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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If any 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@umn.edu).

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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 fee. 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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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_____

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

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

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

Make checks payable to MMS and mail to our treasurer:
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