Minnesota Microscopy Society

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

Newsletter

April 2003

Date:
Friday, May 2, 2003

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

The Science of National Security

Schedule

8:15 - 9:00 AM	Registration, Breakfast, and Vendor Displays
9:00 - 9:50 AM	Greg Meeker, U.S. Geological Survey ***Microanalysis and materials characterization of dusts generated by the World Trade Center collapse***
9:50 - 10:40 AM	Karen Runyon, Forensic Document Examiner, ***Forgery and Fraud Detection***
10:40 - 11:15 AM	Break and Vendor Display
11:15 - 12:10 PM	Dr. Michael Osterholm, Director, Center for Infectious Disease Research and Policy, University of Minnesota ***Bio-terrorism, The Next Chapter***
12:10 - 1:15 PM	Lunch and Vendor Displays
1:15 - 1:45 PM	Business Meeting (Society elections, Project Micro, etc.) with Door Prize Drawings
1:45 - 2:35 PM	Jane Norbin, Director of Health Policy and Planning, Ramsey County ***Local and state readiness for biological attacks***
2:35 - 3:05 PM	Break and Vendor Display
3:05 - 3:55 PM	Michael Lewandowski, 3M Company ***Dirty Bombs: Weapons of Mass Disruption***
4:00 PM	Drawing for Door Prizes

Registration

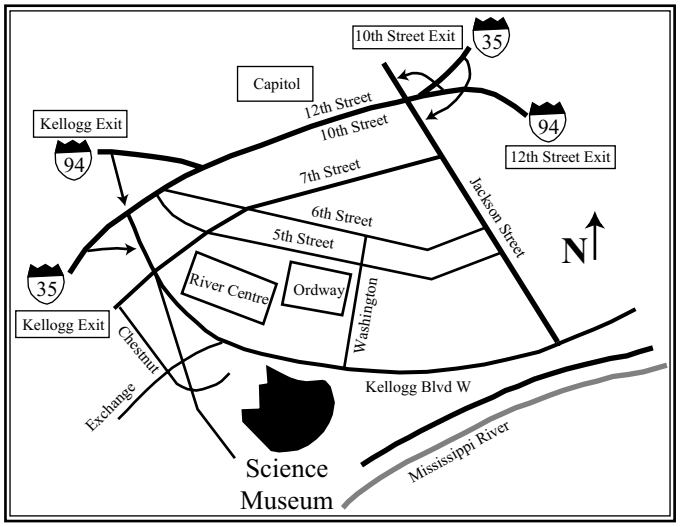
The cost of the meeting will be $90 for MMS members and $100 for non-members. This fee includes the meeting, buffet lunch, breakfast, coffee breaks, and **a free pass to the Museum exhibits** (a $7 value). It also includes a chance to win a Door Prize. Registrants can pay at the door.

For students and K-12 teachers the registration fee is $35.

You must make your reservations by Friday April 25th, and can do so by contacting Jacque Aguilera, 3M (jmaguilera@mmm.com; 651-737-4275). Include your name, address, and phone number or e-mail address with your reservation. Due to the high cost to the Society, we will have to bill those who make reservations but do not show.

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 Prizes

This year's Doors Prizes will consist of a digital camera, a DVD player, and 5 free dinners at the Olive Garden. Drawings will be held after the business meeting and at the end of the day. You must be present to win.

Registration Includes a Free Pass to the Science Museum

The Science Museum of Minnesota always has an exiting array of exhibits. In addition, right now they have a special exhibit entitled, "Vikings: The North Atlantic Saga," which runs until May 18th.

Featuring more than 300 artifacts from museums and collectors around the globe, this exhibit tells the story of the Vikings' travels throughout Europe, their settlements in Greenland and Iceland, and their journey to North America, where they came into contact with the native people here.

Location of the Science Museum and Meeting Room

The Science Museum is located at 120 W. Kellogg Blvd., St. Paul. The meeting will be held in Discovery Hall. If 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 Street. Enter the museum by taking the parking ramp elevator to the Lobby level. The River Centre ramp is an alternative to the Science Museum's ramp.

Speakers

Keynote Talk: *Bio-terrorism, The Next Chapter*

Dr. Michael Osterholm, Director, Center for Infectious Disease Research and Policy, University of Minnesota

Biography

Dr. Osterholm is the director, Center for Infectious Disease Research and Policy, University of Minnesota. He is also professor, School of Public Health. Following the September 11th terrorists' attacks, Dr. Osterholm was appointed to the Secretary's Advisory Council of Public Health Preparedness, Department of Health and Human Services (HHS). In addition, he currently serves as a Special Advisor to Secretary Tommy G. Thompson on issues related to bioterrorism and public health preparedness. On April 1, 2002, Dr. Osterholm was appointed by Secretary Thompson to be his personal representative on the interim management team to lead the Centers for Disease Control and Prevention (CDC). With the appointment of Dr. Julie Gerberding as director of the CDC on July 3rd, Dr. Osterholm has now been asked by the Secretary to assist Dr. Gerberding on his behalf during the transition period.

Dr. Osterholm served for 24 years (1975-1999) in various roles at the Minnesota Department of Health (MDH), the last 15 years as state epidemiologist and chief, Acute Disease Epidemiology Section. While at the MDH, Osterholm and his team were leaders in the area of infectious disease epidemiology. He has led numerous investigations of outbreaks of international importance, including foodborne diseases, the association of tampons and toxic shock syndrome, the transmission of hepatitis B in health care settings and human immunodeficiency virus infection in health care workers. In addition, they conducted numerous studies regarding infectious diseases in child day care, vaccine-preventable diseases, particularly *Haemophilus influenzae*, type b and hepatitis B virus vaccines, Lyme disease, and other emerging infections. Osterholm's team was one of the first to call attention to the changing epidemiology of foodborne diseases. Recently, Dr. Osterholm has been a national leader detailing the growing concern regarding the use of biological agents as catastrophic weapons in civilian populations. In that role, he served as a personal advisor to the late King Hussein of Jordan. Dr. Osterholm provides a comprehensive and pointed review of America's current state of preparedness for a bioterrorism attack in his New York Times best selling book, *Living Terrors: What America Needs to Know to Survive the Coming Bioterrorist Catastrophe*, published by Delacourte Press.

Osterholm is the author of more than 285 papers and abstracts including 18 book chapters regarding infectious disease epidemiology. He is a frequently invited guest lecturer around the world on numerous areas of infectious disease epidemiology. He serves on the editorial boards of five journals including *The Infection Control and Hospital Epidemiology,* and *Microbial Drug Resistance: Mechanisms, Epidemiology and Disease*, and is a reviewer for 24 additional journals, including *The New England Journal of Medicine, Journal of the American Medical Association,* and *Science*. He is past president of the Council of State and Territorial Epidemiologists (CSTE) and served on the National Center for Infectious Diseases, Centers for Disease Control and Prevention (CDC) Board of Scientific counselors from 1992 to 1997. He serves on the National Academy of Sciences, Institute of Medicine (IOM), Committee on Emerging Microbial Threats to Health in the 21st Century and the IOM Forum on Emerging Infections. He has also served on the IOM Committee on Food Safety, Production to Consumption, and as a reviewer for the IOM report on chemical and biological terrorism. As a member of the American Society for Microbiology, he serves on the Public and Scientific Affairs Board (where he chairs the Public Health Committee), the Task Force on Biological Weapons and the Task Force on Antibiotic Resistance. He is a frequent consultant to the World Health Organization, the National Institutes of Health (NIH), the Food and Drug Administration (FDA), the Department of Defense and the CDC. He is a Fellow in the American College of Epidemiology, and the Infectious Diseases Society of America (IDSA).

(Speakers, cont.)

Microanalysis and materials characterization of dusts generated by the World Trade Center collapse

G.P. Meeker, S.J. Sutley, G.A. Swayze, T.M. Hoefen, R.N. Clark, I.K. Brownfield, G.S. Plumlee, C.A. Gent and H.A. Lowers
U.S. Geological Survey, Denver, Colorado

Abstract
Thirty-six sweep samples of dusts deposited in lower Manhattan by the September 11, 2001, collapse of the World Trade Center (WTC) towers were analyzed by scanning electron microscopy (SEM), energy dispersive and wavelength dispersive spectroscopy (EDS, WDS) and x-ray diffraction (XRD) at the USGS analytical Laboratories in Denver.

XRD analyses indicate that most of the samples contain varying amounts of crystalline quartz, gypsum, calcite, anhydrite and amorphous material. Other phases identified by XRD in small amounts include: muscovite, feldspar, magnesiohornblende, lizardite, dolomite, bassanite, illite, portlandite, larnite, polymorphs of calcium silicates, possible chrysotile, and others.

SEM, EDS and WDS analyses were performed on unprocessed dust samples, primarily to look for the presence of asbestos and phases containing heavy, or potentially toxic metals. Components of the dusts, as seen by SEM, include glass fibers (which are x-ray amorphous, and occur in levels as high as 40 by volume), concrete phases including calcium hydroxide, and gypsum. The chemical composition of the majority of glass fibers (and glass spheres) in all samples is consistent with slag wool (Nomenclature Committee of TIMA Inc., 1991), however glass fibers with other compositions are present. Amphibole asbestos was not detected in any of the dust samples. However, trace amounts (generally < 1wt.% by XRD) of chrysotile asbestos have been identified in most of the samples. A large variety of other materials are present at major and trace levels including, organic fibers, paper, vermiculite, and particles enriched in Fe, Zn, Pb, Sr, Bi, Cu and other metals.

Biography
Greg Meeker is a research scientist and manager of the Electron Microbeam Laboratory at the U.S. Geological Survey in Denver, Colorado. Greg's research involves the application of microanalytical techniques to the fields of geochemistry, mineralogy, volcanology, and environmental geology. Prior to joining the USGS in 1989, he worked for Charles Evans & Associates in Redwood City, California as a Senior Research Analyst. Greg began his career at the California Institute of Technology in the Department of Earth and Planetary Sciences where he studied meteorites and lunar materials with the SEM, electron microprobe, and ion microprobe.

Forgery and Fraud Detection

Karen Runyon, Forensic Document Examiner,

Biography
Karen S. Runyon has twenty-two years of experience as a Forensic Document Examiner, working on both criminal and civil cases. She received a BA degree in The Administration of Criminal Justice and Sociology from Anderson University in Indiana, and apprenticed at the Indiana State Police from 1978 through 1982. Ms. Runyon has received adjunct specialized training through the U.S. Secret Service, FBI, Rochester Institute of Technology, and The Institute of Paper Chemistry. Since 1982, Ms. Runyon has provided testimony in approximately 190 cases including criminal and civil trials, arbitration, and NASD hearings and depositions. Ms. Runyon consults with various groups, including law enforcement agencies, prosecuting and defense attorneys, law firms, and corporations. She has provided training and lectures to many organizations, including the University of Minnesota, Hamline University, the Minnesota Bar Association and the Minnesota chapter of the International Association for Identification. She serves as adjunct faculty for Hamline University, regularly teaching in their Forensic Science program. Active in professional groups, Ms. Runyon is a member of the American Academy of Forensic Sciences and the Midwestern Association of Forensic Scientists (MAFS).

(Speakers, cont.)

Bioterrorism Preparedness: Are We Ready?

Jane Norbin,
Ramsey County Department of Public Health

Abstract
Local and State government has been heavily involved in planning and preparedness for a bioterrorism event. This work involves many different aspects and includes public health, hospitals, emergency management, public safety, elected officials, Red Cross, Salvation Army and many others. This talk will discuss how all these players fit together to protect our citizens, families and communities from a bioterrorism or large scale communicable disease event.

Biography
Jane Norbin is the Director of Health Policy and Planning for the Ramsey County Department of Public Health. Jane received a BS from the University of Wisconsin and an MS from the University of Minnesota. She has over 20 years of public health experience and has been involved in state/local bioterrorism preparedness planning for the past 4 years. Jane has participated in many of the local and state planning groups dealing with the various issues around our readiness for a bioterrorism event. With a nursing background, Jane works on this issue from a systems perspective but always keeps in mind the impact on individuals, families and communities.

Dirty Bombs: Weapons of Mass Disruption

Michael Lewandowski, 3M Company

Abstract
In June 2002, with the arrest of Jose Padilla, a new threat to America became part of the public vocabulary: the Dirty Bomb. A dirty bomb consists of radioactive material dispersed via a conventional explosive. Terrorists take advantage of public confusion and fear of radiation to make the threat of radioactive contamination from a dirty bomb a horrifying consideration. Recent publications by scientific organizations and academic institutions review the actual hazards associated with dirty bombs, the likelihood and consequences of detonation of a dirty bomb, and the actions appropriate for the public and private sectors to counter this threat.

Biography
Michael Lewandowski is a health physicist employed by 3M Company as a Health Physics Specialist and Manufacturing Plant Team Leader. Mike's current responsibilities include oversight of the corporate radiation protection program for 3M manufacturing facilities inside the United States, primary technical support for several 3M facilities, and technical advisor for training, nonionizing radiation safety, and ionizing radiation dosimetry. Previous work experience includes serving as a radiological engineer at a US Department of Energy-owned disposal facility for nuclear weapons program radioactive waste and as a health physicist on a US Department of Energy-sponsored environmental restoration project which remediated uranium milling facilities in the western United States. Mike received a bachelor's degree in physics and mathematics from the University of Wisconsin - River Falls and earned a master's degree in health physics at Purdue University as a US Department of Energy Nuclear Engineering and Health Physics Fellow. In 1998 the American Board of Health Physics certified Mike in the comprehensive practice of health physics. Mike has been an active member of the Health Physics Society since 1991 and currently sits on the Advisory Panel to the Health Physics Society's Board of Directors.

Sustaining Corporate 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 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, complete and return the MMS membership form at the end of the newsletter.

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The Minnesota Microscopy Society would like to express a sincere thanks to our Patron Members. These members provide financial support to the organization above the standard membership fee. This type of added support makes it possible for MMS to maintain its financial well being. To become a Patron Member, complete and return 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.

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Correction Requested

May 2, 2003:

MMS Spring Symposium:
The Science of National Security