
Minnesota Microscopy Society

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



Newsletter

November 1999

MMS December Meeting

Thursday, December 9, 1999

Laser Capture Microdissection: Single Cells from Fixed Tissue

Speaker: John J. Trumbull, Sales Specialist
Arcturus Engineering, Inc.
847-726-0382

John Trumbull is a Chicago-based sales representative for Arcturus Engineering of Mountain View, California. He earned his bachelor's degree in biology at the University of Illinois, followed by graduate work at the University of Southern California. John has been selling research instruments in the midwest for the last thirteen years.

Program: 5:30-6:00 PM Wine & Cheese Social
6:00-7:00 PM Dinner
7:00-7:15 PM Business meeting
7:15-8:15 PM Speaker

The dinner will be a choice of either baked walleye or vegetable stir fry. Dinner includes salad, bread, and beverages.

Cost of dinner:

Members:	\$15 (with reservations in advance) \$20 (without reservations)
Non-members:	\$20 (with reservations in advance) \$25 (without reservations)
Students:	\$10

The talk and business meeting are free to everyone.

Location: Earle Brown Center, Rm 155
University of Minnesota, St. Paul Campus
1890 Buford Ave., St. Paul
(see map on page 2)

To make reservations contact Mark Sanders at 612-624-3454 or msanders@biosci.cbs.umn.edu **by Monday, December 6.** Please indicate dinner choice.

The Society is forced to pick up the cost of meals for people who make reservations but do not show up. Therefore in the future, the Society will start billing no-shows for those dinners.

Abstract:

Because tissues are complex structures comprising many cell types, molecular analysis of such heterogeneous cell populations may yield spurious results. Since the cell sub-population of interest often comprises a small fraction of the total tissue volume, a method for accurately selecting and removing specific cells from tissue is desired -- so that molecular analysis may be performed on homogeneous populations of cells.

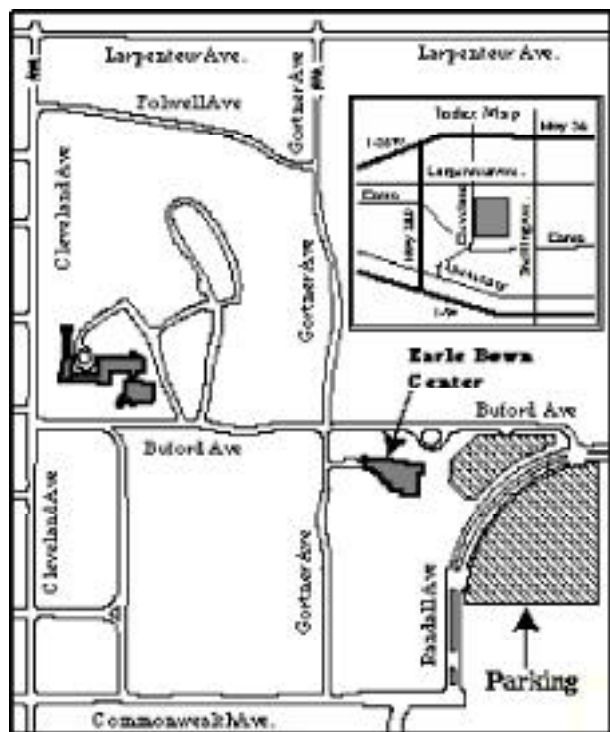
(Abstract continues on page 2)

Abstract (continued from page 2)

Laser Capture Microdissection (LCM) has been developed to provide a fast, robust method for capturing specific cells from tissue for subsequent molecular analysis.

In LCM, a transparent thermoplastic film is placed on the surface of a fixed tissue specimen or cytological smear. The tissue region of interest is visualized with a standard inverted microscope. An infrared laser is pulsed through the film, causing the specific cell(s) beneath to adhere to the film, while the tissue morphology remains intact. The film (attached to a "cap") is lifted off of the sample and placed onto a 0.5 ml microcentrifuge tube that contains extraction buffer for molecular analysis.

LCM, with its unique capability for routine and reproducible sampling of specific cells, enables the study of pure populations of nucleic acids and proteins.



Location map for Earle Brown Center.

Upcoming MMS Meetings

- February 17** Digital imaging workshop in the afternoon, and a talk by a Kodak representative in the evening.
- March ??** To be announced.
- May 4** Spring Symposium

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

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

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 Community News

New Oxford Representative for the Midwest Region

Oxford Instruments (formerly Link Analytical) has a new representative for the midwest, Ruth Murry. Ruth has been with Oxford for over 12 years in the Applications Group, running the lab in California and later in Boston. She has recently relocated into the region and is now living in the Cincinnati area.

(For links see the MMS web site.)

Attention Undergraduates: MSA Undergraduate Scholarship Program

The MSA Undergraduate scholarship is open to Junior and Senior college students interested in doing research using ANY microscope technique as the principal investigative tool. Awards up to \$2,500 per student/proposal are available. Students should be sponsored by a member of MSA. If interested, submit an application and a brief research proposal by December 31, 1999.

Applications can be obtained from the MSA Business Office by calling 800-538-3672 or by e-mail at BusinessOffice@MSA.Microscopy.com

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

An Integrated System from EDAX and TSL Combined EDS and Electron Backscattered Diffraction (EBSD)

As the complexities of the problems that microscopists must deal with increase, many wish to combine related analytical techniques and the resulting data into a comprehensive analytical system. The combination of data from various technologies related to a single sample, allows the microscopist to obtain a more comprehensive picture of the material being investigated.

Along this line, EDAX and TSL have designed an integrated EDS and electron backscattered diffraction (EBSD) instrument in Pegasus, which enables users to obtain conventional EDS spectra and images, along with crystallographic information. This makes it possible to determine the elemental constituents and map their locations with the EDS system, while being able to identify the crystallographic phases and map their orientations across the same sample area as the EDS system acquires its data.

The advantage of using the combination of these techniques is becoming well known. For example, the combined data sets provide users with better answers regarding the stress or fatigue characteristics of alloys, ceramics, or composite materials. This approach is applicable for designing better microelectronic devices and superconductor engineering, as well as for characterization of fine-grain geologic materials.

Pegasus combines the conventional elemental identification with the crystallographic information to enhance the user's ability to better understand the characteristic properties of the sample in question.

(For links see the MMS web site.)

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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Ove Thompson	FEI Company	612-382-5321
Jo Ellen Tison	Mager Scientific, Inc.	800-521-8768
John Treadgold	LEO Electron Microscopy Inc.	847-290-9566

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@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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Dave Lindman, Minneapolis Police Crime Lab
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Dan Schaub, Philips Electron Optics, Inc., Ononoco
Jerry Tangen, JEOL USA, Inc., Monticello, MN
Walter Thatcher, Chanhassen, MN
Rae Vigeant, Random Microscopy Services, St. Paul

MMS BOARD and OFFICERS 1999- 2000

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President-Elect: Jean Schlosser, Crane Engineering and Forensic Services, 3905 Annapolis Lane N., Plymouth, MN 55447, (612) 557-9090, Fax (612) 557-0710, tcrane@skypoint.com

Past President: Sue Okerstrom, Medtronic Inc., 7000 Central Ave. NE., Minneapolis MN 55432 (612) 514-4678, sue.okerstrom@medtronic.com

Secretary: Mary Swierczek, 3M Center, Bldg. 201-BE-16, St. Paul, MN 55144; (651) 736-5087, FAX (651) 733-0648, mjswierczek@mmm.com

Treasurer: Dwight Erickson, 3M Center, Bldg. 251-1A-03, St. Paul, MN, 55144; (651) 736-2830, FAX (651) 736-7496, usmmm214@ibmmail.com

Corporate Liaison: Diana Kittleson, Pillsbury Technology East, 737 Pelham Blvd., St. Paul, MN, (651) 917-5859, dkittleson@pillsbury.com

Webmaster: Stuart McKernan, CIE Microscopy Center, University of Minnesota, Minneapolis, MN, 55455; (612) 624-6009, FAX (612) 626-7530, stuartm@tc.umn.edu

Newsletter Editor: Peter McSwiggen, University of Minnesota, Dept. of Geology & Geophysics, Minneapolis, MN 55455; (612) 624-7370, mcswi001@tc.umn.edu

MAS Representative: Michael Coscio
Program Committee: Mark Cavaleri, Peter McSwiggen

Education Committee: Tina Schwach,
They Also Serve: Ev Osten, Rodney Rappe, Rae Vigeant, Gib Ahlstrand, Jeff Payne

Emeritus: Ron Youngquist

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

Peter McSwiggen, MMS Editor

University of Minnesota

310 Pillsbury Drive, SE,

Minneapolis, MN 55455

December 9, 1999:

"Laser Capture Microdissection:
Single Cell from Fixed Tissue"

Forwarding and Address

Correction Requested