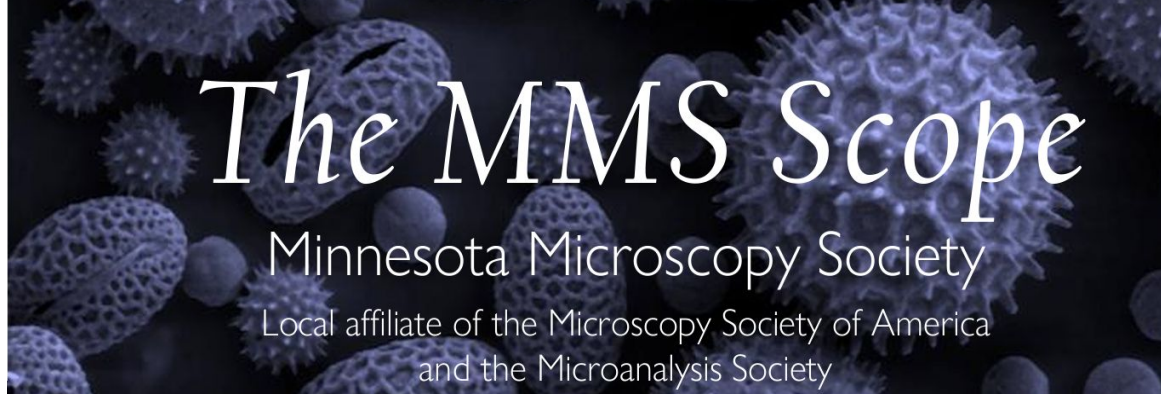




The MMS Scope

Minnesota Microscopy Society

Local affiliate of the Microscopy Society of America
and the Microanalysis Society

Fall 2026 Issue

About this issue

MMS Events

Click [HERE](#) to go to MMS Events page

Upcoming Events

MMS Fall Kickoff
Oct. 9, 5:30-7:30 pm
College of St. Scholastica
→ David Burge

Inside this edition

- A Letter from the President
- M&M Summary
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- MMS Corporate Sponsors

MMS Member Dues

Please remember to submit your membership dues for 2026 calendar year.
[Click HERE](#) to submit

MMS Fall Kickoff

SPEAKER

David Burge

Phytoplankton Associate Scientist with the UMN Duluth Natural Resources Research Institute

TOPIC

"Through the lens of the frustule"



DATE

Friday, Oct. 9, 2026

LOCATION

The College of St. Scholastica, Science Building
1200 Kenwood Ave, Duluth, MN 55811

Note: Park in Lot 7 and enter Building 10 (Science). See links below and building map on next page

[Google Maps Directions](#) [Campus Map](#)

REGISTRATION

[MMS Events](#)

Registration required. Deadline: Tue. Oct 6th
Please register so we have an accurate head count for dinner!

COST

FREE - Includes dinner and talk

SCHEDULE

5:30-6:30 pm Social, and Dinner (in Benedictine Commons)

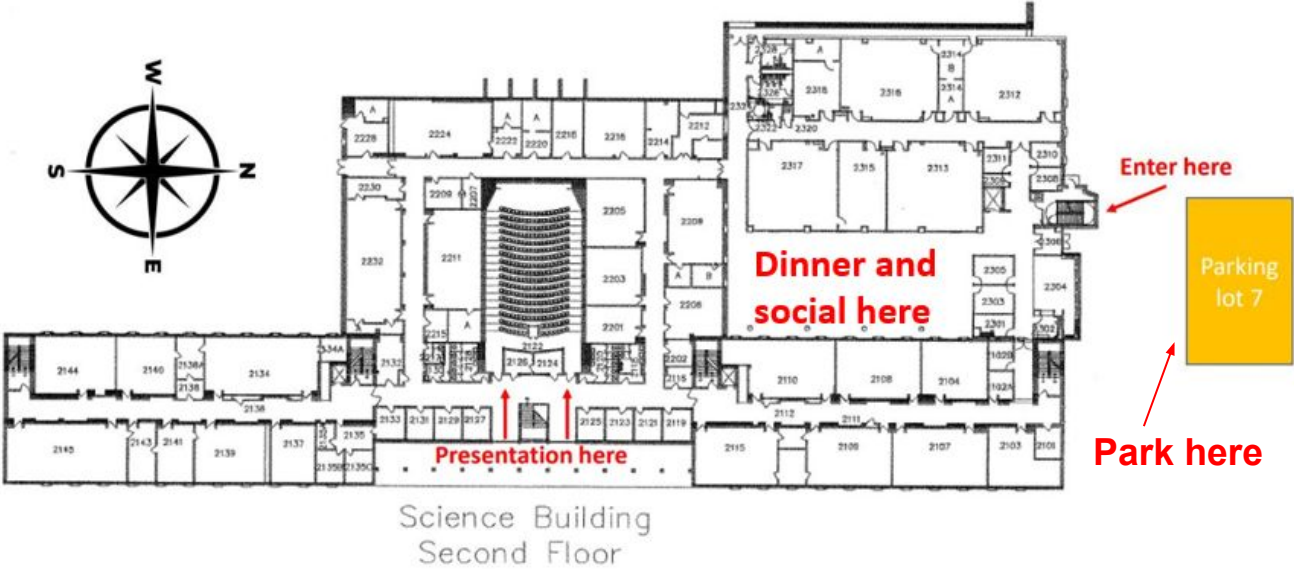
6:30-7:30 pm Speaker David Burge (in Science Auditorium)



Fall Meeting-2026 at The College of St. Scholastica

Dr. David Burge presenting "Through the Lens of the Frustrule"

 EVENT LOCATION



Dr. David Burge, University of Minnesota Duluth, Natural Resources Research Institute

Presentation: *Through the Lens of the Frustule: Water Quality Management, Education, and Taxonomy*

ABSTRACT

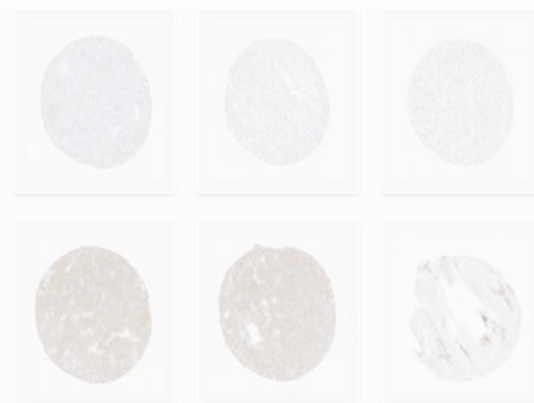
Diatoms are central to freshwater biomonitoring and environmental history, yet their utility depends on precise taxonomic identification and reliable imaging workflows. This presentation explores how high-resolution light and scanning electron microscopy underpin aquatic research across multiple scales—from regional monitoring to emerging molecular methodologies.

We will examine modern biomonitoring initiatives across U.S. National Parks and the Laurentian Great Lakes, alongside applied paleolimnological core studies, such as work on Red Lake, that inform long-term water quality management and historical baseline targets. Because long-term monitoring datasets require taxonomic consistency, we will address educational frameworks and analyst training through resources like Diatoms.org, the Diatom Taxonomic Certification Committee, and the Diatom Web Academy. Finally, we will look toward the future of diatom research: bridging classical morphology with eDNA studies using single-cell isolation to populate reference sequence libraries, and exploring resurrection ecology from resting stages in sediment records.

SPEAKER BIO

David R.L. Burge, PhD, is a phytoplankton researcher, paleolimnologist, and diatom taxonomist with the Natural Resources Research Institute at the University of Minnesota and the St. Croix Watershed Research Station of the Science Museum of Minnesota. He is an adjunct professor at the University of Iowa, where he teaches the Ecology and Systematics of Diatoms course at Iowa Lakeside Laboratory.

His research uses light and scanning electron microscopy to study diatom systematics, track historical environmental changes, and support freshwater management in Midwestern watersheds. He serves on the Editorial Review Board for Diatoms of North America (diatoms.org) and on the Diatom Taxonomic Certification Committee, where he has co-hosted the Diatom Web Academy for five years. His published work includes species descriptions, research on diatom life history and polymorphism, and paleolimnological sediment reconstructions.



A Letter from our MMS President

By Elise Imbertson

I'm pleased to join the MMS board and serve as president this year! I hope to continue the spirit of knowledge sharing and community built by our leadership team and members. I am a research scientist at 3M working in the Corporate Research Analytical Laboratory where I specialize in Scanning Probe Microscopy, also known as Atomic Force Microscopy (AFM).

Since 2013 I have worked to develop my expertise in imaging techniques at 3M and have had the opportunity to collaborate with a group of incredibly supportive and talented researchers. One of the most meaningful aspects of my experience has been the mentoring I have received along the way. It has played an important role in shaping my path and helping me continue to grow in this field. I have learned that, regardless of career stage or experience level, everyone has something valuable to teach and something valuable to learn. We have all seen how diverse perspectives are especially powerful in microscopy. Another set of eyes can make all the difference in changing how we understand an image or solving a longstanding problem.

During my time with MMS, I have greatly enjoyed connecting with microscopists from a wide range of backgrounds and learning about techniques beyond those I use in the lab. I am excited for the year ahead and look forward to our upcoming events and continued opportunities to build connections across our microscopy community.



M&M 2026 Summary from "The Cream City"

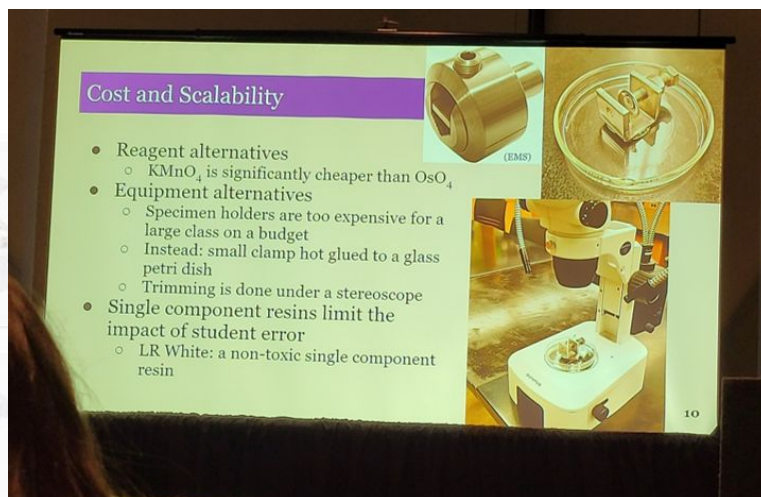
By Gail Celio, MSA representative

The 2026 Microscopy & Microanalysis (M&M) meeting on August 2-6 took place a stone's throw away in Milwaukee, WI. Many of the onsite meals highlighted the city's dairy and brewing history. The Student Council especially leaned into the state's "cheese-head" accessories. Fun fact: Milwaukee's "Cream City" nickname actually comes from the light-yellow color of the bricks produced from the local clay!

The first Plenary speaker, Wah Chiu from Stanford University, took the audience through the improvements in resolution of cryogenic transmission electron microscopy over the years.

The next speaker, Thomas F. Kelly of Steam Instruments, discussed the development of atomic-scale microscopy over time, and its use to determine the microstructure and properties of materials. For the symposia, 4D-STEM continues to be a hot topic, as well as the use of artificial intelligence for data collection, automation, and analysis. Also, Board member Sue Okerstrom gave both a presentation and a poster featuring research that Spring Symposium attendees had gotten a preview of this past May.

Fortunately there was mostly good weather throughout the conference. Next year I'll be gearing up for the 2027 meeting in Pittsburgh – I hope to see MMS folks there!



Election Results and Upcoming Events

MMS officer election results from the 2026 Spring Symposium:

- President Elect – Christina Foley
- Secretary – Patti Sanft
- Treasurer – Dave Burleson

Upcoming Events:

- MMS Annual Spring Symposium, April 23rd, 2027, at the Landscape Arboretum

2027 MMS Spring Symposium

Date: April 23, 2027
Location: Minnesota Landscape Arboretum, Chaska, MN





Project MICRO Update

By Jeff Payne

We had a couple of Project Micro events this past Spring and Summer.

Lincoln Elementary School of the Arts:

Project MICRO volunteers Andrew Francis, Steve Axdal, and Jeff Payne participated in Lincoln Elementary School of the Arts' STEM Night in Anoka on April 23, 2026. About 75 students and their families took part in the microscope activities---it was a busy room the entire evening!



Lake Maria State Park:

Volunteers Mary Buckett, Stuart McKernan, Steve Axdal, and Jeff Payne brought Project MICRO for a third annual event at Lake Maria State Park near Monticello, MN on June 13, 2026. About 45 park visitors of all ages spent time using the microscopes.

Volunteer:

If you are interested in volunteering with Project MICRO, please contact Jeff Payne via email (jeffrose.payne@gmail.com). No experience is necessary.



MMS Corporate Sponsors

Data Entry Data Entry

Corporate Sponsors are the backbone of financial support for MMS. These Members make it possible for the Society to support Project Micro and cover many expenses of regular meetings and the Spring Symposium. MMS gratefully acknowledges the corporate sponsorships provided by the following companies. To become a Corporate Sponsor, complete and return the MMS membership form at the end of the newsletter or go to <https://mnmicroscopy.org/membership>.

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Esi (*Crane Engineering now part of Esi*)

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If any sponsors are missing from this list, please contact Jason Heffelfinger (jason.r.heffelfinger@medtronic.com).

MMS Sustaining Members and Patrons

The Minnesota Microscopy Society sincerely thanks our Sustaining and Patron Members. These Members provide financial support to the organization above the standard membership. This additional support makes it possible for MMS to maintain financial well-being. To become a Patron or Sustaining Member, complete and return the MMS membership form at the end of the newsletter or go to <https://mnmicroscopy.org/membership>.

MMS Sustaining Members

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Jeff Haggerty	Haggerty Analytical	Bede Willenbring	Retired
Rachel Heussner	Boston Scientific		

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Gail Celio	U of MN	Mary Losure	Independent Researcher
Lifeng Dong	Hamline University	Michael Odlyzko	U of MN
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Christina Foley	3M	Jeff Thole	Macalester College
Chris Frethem	U of M (retired)	James Thompson	The Hormel Institute
Susan Hafenstein	The Hormel Institute	Daniel Westholm	The College of St. Scholastica
Elise Imbertson	3M		

MMS Board & Officers 2026-2027

President: Elise Imbertson, 3M Corporate Research Analytical Laboratory, eimberson@mmm.com

Past President: Rachel Heussner, Boston Scientific, rkheussner@gmail.com

President Elect: Christina Foley, 3M Corporate Research Analytical Laboratory, cfoley2@mmm.com

Secretary: Patricia Sanft, Georg Fischer, Apple Valley, MN; patricia.sanft@georgfischer.com

Treasurer & Website: David Burleson, Ecolab, St. Paul, MN; david.burleson@ecolab.com

MSA Representative: Gail Celio, University Imaging Centers, U of MN, St. Paul, MN; celio001@umn.edu

Project MICRO Director: Jeff Payne, retired, St. Paul, MN; jeffrose.payne@gmail.com

Corporate Liaison: Jason Heffelfinger, Medtronic, Brooklyn Center, MN; jason.r.heffelfinger@medtronic.com

Newsletter Editor: Danielle Westholm, Duluth, MN; dmwestholm@gmail.com

Other Board Members

Tony Anderson, Medtronic
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Mike Odlyzko, U of MN
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Dan Westholm, The College of St. Scholastica,
Duluth, MN dwesthol@css.edu

Join Or Renew Your Membership

Annual membership follows the January 1 to December 31 calendar year. To join or renew your membership, please visit <https://mnmicroscopy.org/membership>. There is also a membership information form on the webpage that we ask everyone complete once per year to ensure we have your latest contact information. If you would rather renew your membership via check, please complete the form below and mail it to our Treasurer.

All microscopists are urged to support their society at one of the membership levels below. Often supervisors will support MMS memberships out of department budgets because they recognize it is an inexpensive way to maintain and increase the skills of their microscopists. If you have been a member for a while and recognize the value of MMS to the microscopist community, consider upgrading your membership to Patron or Sustaining.

MINNESOTA MICROSCOPY SOCIETY | MEMBER INFORMATION FORM

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Business Affiliation _____ Phone _____

Street Address _____

City _____ State _____ Zip _____

Email _____ (newsletters will be emailed to this address)

Membership Level
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David Burleson, MMS Treasurer
846 Arlington Ave W
St. Paul, MN 55117
Email: treasurer@mnmicroscopy.org