



The MMS Scope

Minnesota Microscopy Society

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

September 2023

In This Issue:

Fall Event

Join us Oct. 26th from 1:30 - 8:30 pm at The Hormel Institute for the MMS Fall Event! Register soon and plan to attend.

New Officers

View results of the election for board officers held at the Spring Symposium

MMS Member Dues

Please remember to submit your 2023 calendar year.

MMS President

Dr. Daniel Westholm introduces himself and shares his thoughts on the importance of student engagement with MMS.

MMS Fall Event

In-person in Austin, MN

Thursday, October 26th, 2023

TOPIC	Viral Infections and synthesis pathways focusing on high resolution macromolecular structure.	
SPEAKER	Dr. Susan Hafenstein, the new head of cryomicroscopy at The Hormel Institute.	
COST	\$25 for members, \$10 for students	
LOCATION	In-person at The Hormel Institute (801 16th Ave NE Austin, MN 55912). MMS has chartered a shuttle bus from the Twin Cities to The Hormel Institute in Austin, MN. The shuttle bus will leave from the shuttle area at the Mall of America (2141 Lindau Lane, Bloomington, MN 55425) promptly at 1:30pm. Parking guidelines for those traveling to The Hormel Institute on their own are provided on page 2.	
REGISTER	Registration Deadline: Tuesday, October 24th, 11:59 p.m. Registration Link: MMS Events	
SCHEDULE	Start time:	Schedule Item:
	1:30 pm	Parking at Mall of America, and shuttle loading
	3:30 pm	Arrival, Welcome and Introduction to The Hormel Institute
	3:45 pm- 4:45 pm	Tour of The Hormel Institute labs, visit to the Titan TEM Microscope
	5:30 pm- 6:45 pm	Dinner at the Hormel Institute, catered by Qdoba
	7:00 pm	Shuttle bus leaves The Hormel Institute
	8:30 pm	Approximate arrival of the shuttle back at the Mall of America

MMS Fall Event
In-person in Austin, MN

Thursday, October 26th, 2023

Shuttle area parking at the Mall of America



Parking at the Hormel Institute



MMS Fall Event
In-person in Austin, MN

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SPEAKER BIO

Dr. Susan Hafenstein, Ph.D.



Dr. Susan Hafenstein embarked on her academic journey at the University of Arizona, where she pursued her Ph.D. with a focus on bacteriophage phiX174 under the mentorship of Ben Fane. Her early research laid the foundation for her career in virology.

After completing her Ph.D., Dr. Hafenstein continued her academic pursuits as a post-doctoral researcher under the guidance of Dr. Michael Rossmann at Purdue University. During this phase, her research shifted towards exploring the intricate interactions between mammalian viruses and their hosts, delving deeper into the realm of virology.

Subsequently, she transitioned to Penn State's College of Medicine, where she led a dynamic research group. Her team's efforts were dedicated to unraveling the mysteries of virus entry mechanisms, offering valuable insights into the intricate processes of entry, host recognition, and antigenicity. Their work contributed significantly to the field of virology.

In 2017, Dr. Hafenstein relocated her laboratory to Penn State's main campus. This move allowed her to harness cutting-edge hardware for cryo-electron microscopy, marking her entry into the "atomic resolution revolution." Her research methodology evolved to encompass high-resolution mapping, in situ analysis, and localized reconstruction, enriching her studies and pushing the boundaries of structural virology.

Fast forward to August 2023, and Dr. Hafenstein embarked on a new chapter in her career as a Professor at the University of Minnesota, with her laboratory now situated at the Hormel Research Institute in Austin, Minnesota. Her ongoing research endeavors stand to benefit from the advanced computational resources and state-of-the-art tomography equipment available at Hormel. The Minnesota scientific community warmly welcomes Dr. Hafenstein and eagerly anticipates the exciting collaborations and innovative structural studies that her expertise in combining atomic resolution and in situ techniques will bring to the region. Minnesota is fortunate to have Dr. Hafenstein join its microscopy community, and her contributions are sure to leave an indelible mark on the field of virology.

From the President Daniel Westholm, Ph.D.

Greetings! My name is Dan Westholm and I am looking forward to serving you during my term as this year's MMS President. I am Department Chair in Biology at the College of St. Scholastica in Duluth, Minnesota where I teach microbiology-related courses. Although I likely don't have as extensive experience as most of you in the world of microscopy, the introduction to various microscopy techniques is central to the educational experience in the courses I teach. Throughout my educational journey and in my current role as college professor, I have experienced the power of microscopy to make science tangible and exciting as well as open doors to future opportunities.



Last year, our immediate past president, Jeff Salisbury mentioned the lasting impact that childhood gift of a microscope had on his scientific life. I had a similar experience as a child when my older sister was given a microscope for Christmas one year. Although I don't recall the make and model of that early scope like Jeff did, I resorted to borrowing my sister's scope often, as it revealed a world previously hidden to me. This experience helped cultivate a love of the natural world that later led to a major in microbiology in college. Under the guidance of my undergraduate research advisor Dr. Leslie Schiff, I was introduced to confocal microscopy during research on subcellular localization of viral proteins. This work produced figures and microscopy skills that I was able to share during a successful interview for a junior scientist position working for Dr. Grant Anderson at the U of MN Pharmacy School that later led to graduate work with him studying membrane transporters that also entailed more confocal microscopy. Following graduate school, I began my position at St. Scholastica in the fall of 2009.

For the last 10 years in my teaching position, I have taught a series of lab courses where we isolate and characterize bacteriophages from soil. Phages are viruses that infect bacteria and are the most abundant biological entities on the planet. The undisputed highlight of the course is a field trip to Jeff's electron microscopy lab at Mayo to visualize our phages. As biologists, we spend so much time pipetting clear liquids into clear tubes and rarely get to actually see what we are working with. When students see their phage revealed on the monitor, they are energized for the rest of the semester. I experienced a similar transformative experience as an undergrad when my advisor trusted me to use the confocal microscope independently. After graduation, these skills continued to inspire and create opportunities for me. During my time as President, one of my priorities will be to engage students with the Society not only at my institution, but hopefully others in the state as well. By engaging with the Society, students will recognize the power and diversity of microscopy techniques and perhaps consider careers that utilize or are driven by this technique. Thank you for trusting me in this role, I look forward to working with you over the next year.

More about me:

Family-wife Danielle; kids Ben, Alaina, and Cate; dogs Junie, Maggie, and Louie

Hobbies: canoeing and skiing

MMS Updates

MMS officer election results from the 2023 Spring Symposium:

- **President Elect Erik Stephenson**
- **Secretary – Patti Sanft**
- **Treasurer – Dave Burleson**

Project Micro Update

No events are currently scheduled, but if you would like to volunteer to help out with future events, please contact Jeff Payne

@ jeffrose.payne@gmail.com.



Upcoming Events:

*Watch for information
on our*

**Annual
Trivia Night
Coming later this
fall!**

MMS Membership

Please remember to submit your [MMS membership dues](#) for the 2023 calendar year, we appreciate your participation and support!

MMS Corporate Sponsors

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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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>.

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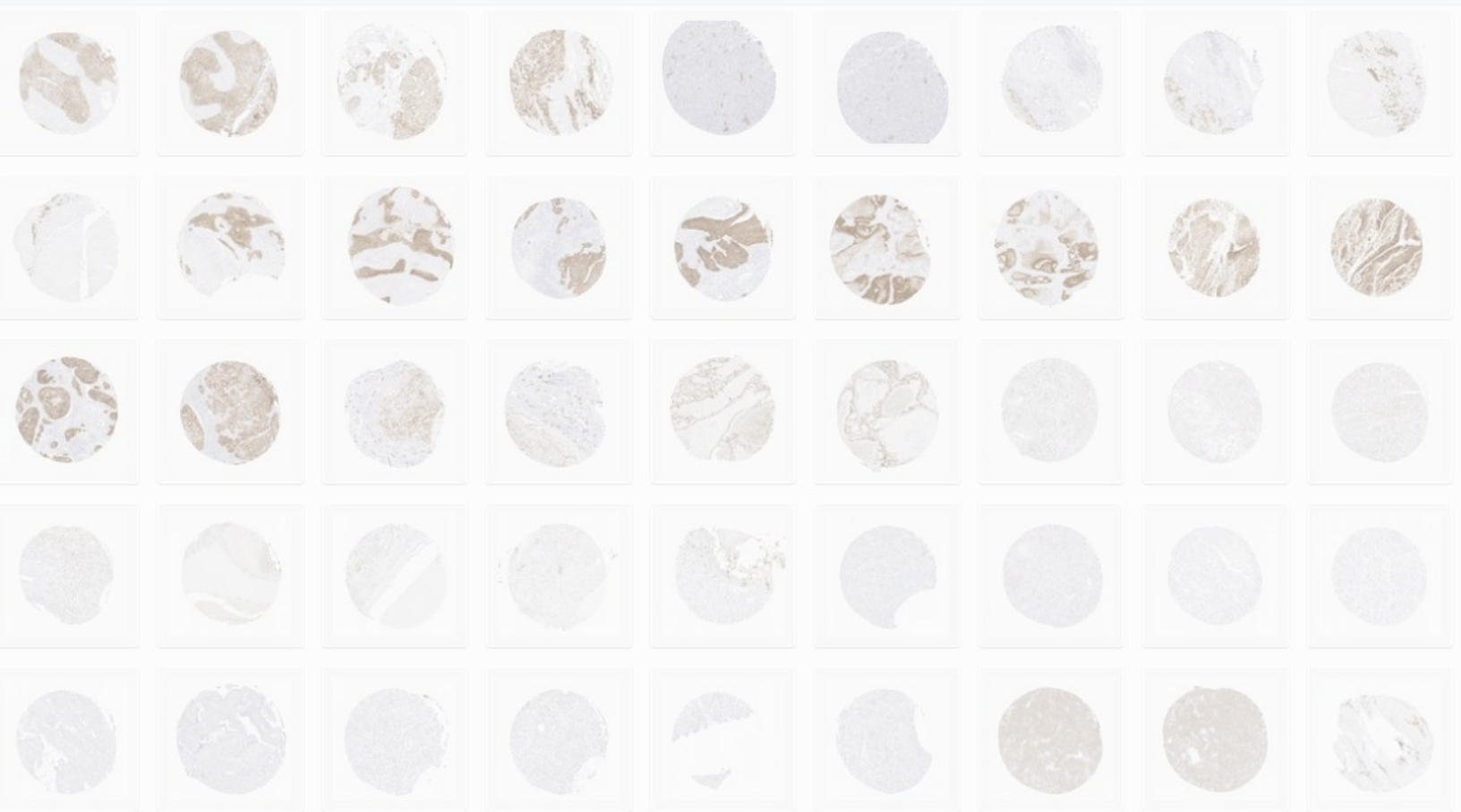
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Join Or Renew Your Membership

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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