



april 2021

In this Issue:

Spring Symposium:

Join us for the free virtual Spring Symposium this year on May 7 from 12:00pm to 4:00pm.

Past 2021 events:

View snapshots from February's N.E.R.D. Jam Session online which examined bio-inspired design, plus March's 18th Annual MinnTS webinar focused on wearable technologies.

Remember to vote!

Election of new officers will take place during the virtual Spring Symposium.

MMS Dues:

Please remember to submit your annual 2021 membership dues. (Students are free in 2021.)

The MMS Scope

Minnesota Microscopy Society

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

MINNESOTA MICROSCOPY SOCIETY SPRING SYMPOSIUM

FRIDAY, MAY 7, 2021



SCHEDULE for VIRTUAL VENDOR SYMPOSIUM

12:00 p.m.	Welcome
12:10 p.m.	Dehua Yang, Ebatco <i>Chemical mapping using microscopic spectroscopy</i>
12:30 p.m.	Vern Robertson, JEOL <i>High Spatial Resolution, Low kV Microanalysis with an FEG SEM and FEG EPMA</i>
12:50 p.m.	Mark Kelsey, Bruker <i>μ-XRF: A technique so versatile it is even being done on Mars</i>
1:10 p.m.	Break
1:20 p.m.	Business meeting
1:25 p.m.	John Yorston, Thermo Scientific <i>Chemically Guided Rapid Failure Analysis</i>
1:45 p.m.	Andrew Lawson, Leica Microsystems / NCI <i>General workflow requirements in the EM lab</i>
2:05 p.m.	Stefan Mastel / Tobias Gokus, DMS <i>Correlation nanoscopy for organic, inorganic and hybrid material characterization</i>
2:25 p.m.	Break
2:35 p.m.	Mark Weiss, ESI <i>FTIR Imaging via FPA in the Characterization of Environmental Effects on Polymers</i>
2:55 p.m.	Barnaby Levin, Direct Electron <i>Novel direct detectors for state-of-the-art electron microscopy</i>
3:15 p.m.	Raffle and Social Time



ABOUT THE ONLINE MMS SPRING SYMPOSIUM

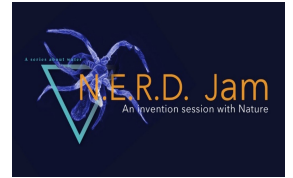
This year's symposium is free to attend, please participate at the link below.

► [Click to register and join on Zoom](#)



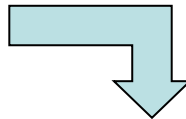
RECAP: N.E.R.D. Jam Online Invention Session

On February 4th, we held a N.E.R.D. Jam (**N**ature **E**xperience **R**adical **D**esign), an exploration of nature "from the wild to the invention table."



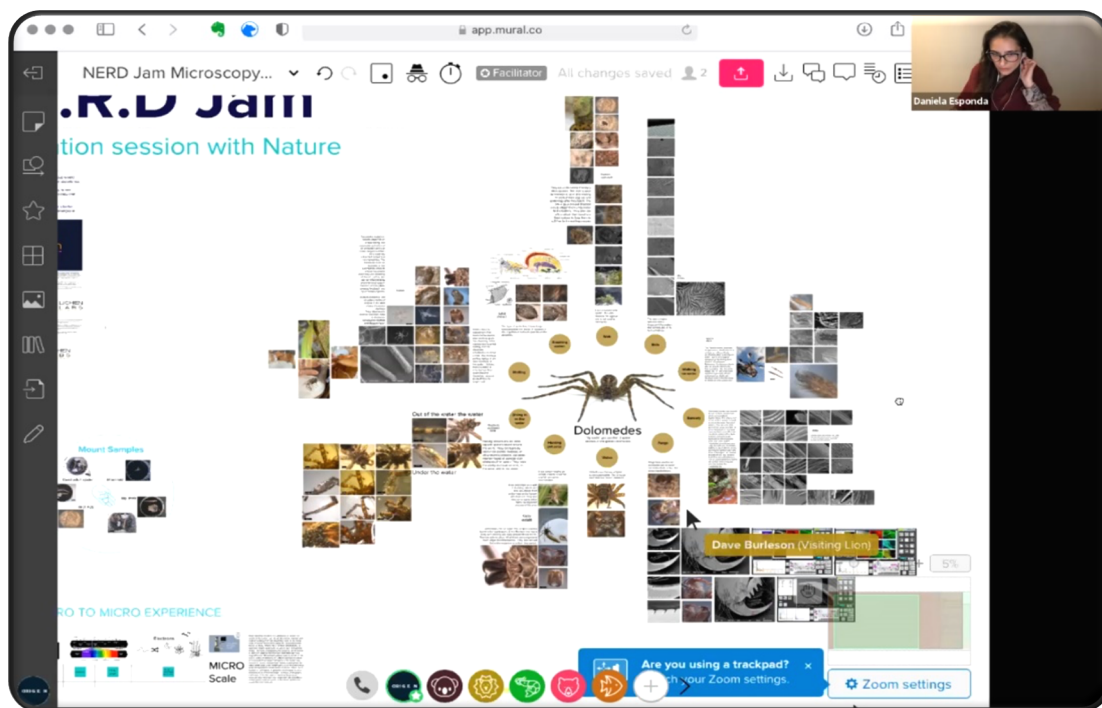
SPEAKERS

ATTENDEES

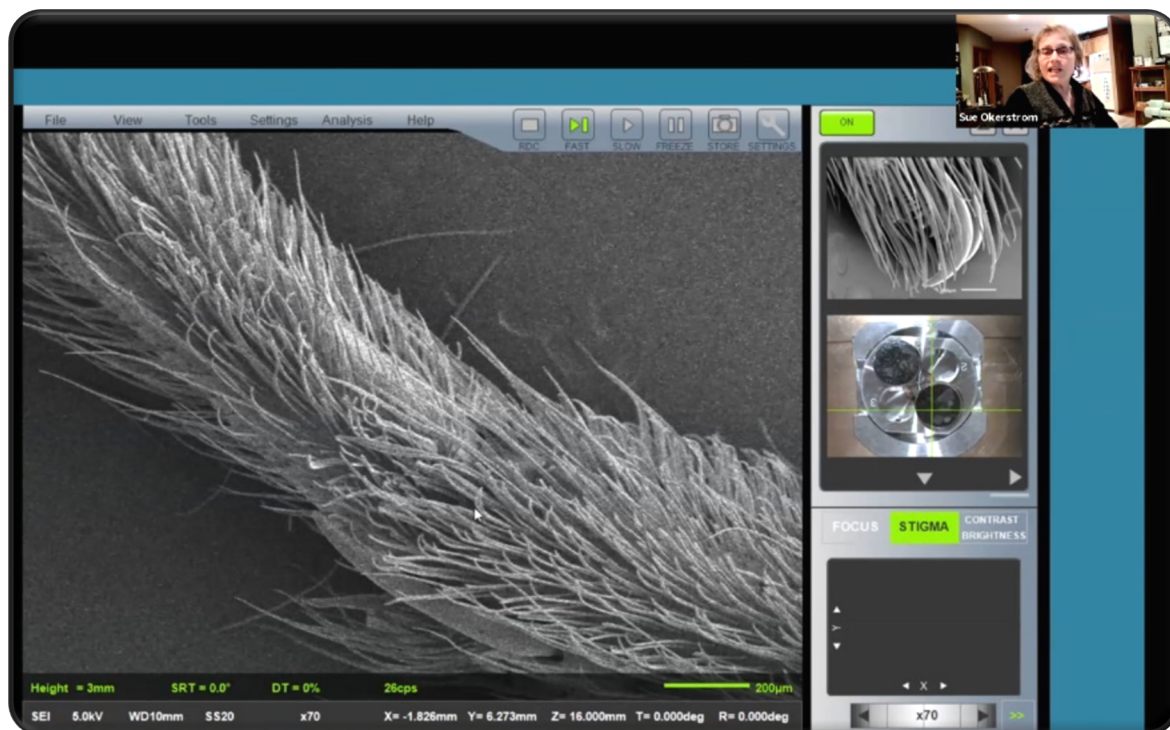




N.E.R.D. Jam Session - 2



We introduced “Charlie” the fishing spider with its fascinating structural adaptations seen live virtually in the light and electron microscopes. Thinking of the fishing spider as a device engineered by nature, teams brainstormed design ideas from super-hydrophobic spider skin-inspired phone cases that stay dry even under water, to bacteria-shedding surfaces for medical devices and fang-inspired super-light, sharp, strong and flexible cutting tools.





RECAP: 18th Annual MinnTS: Wearable Technologies

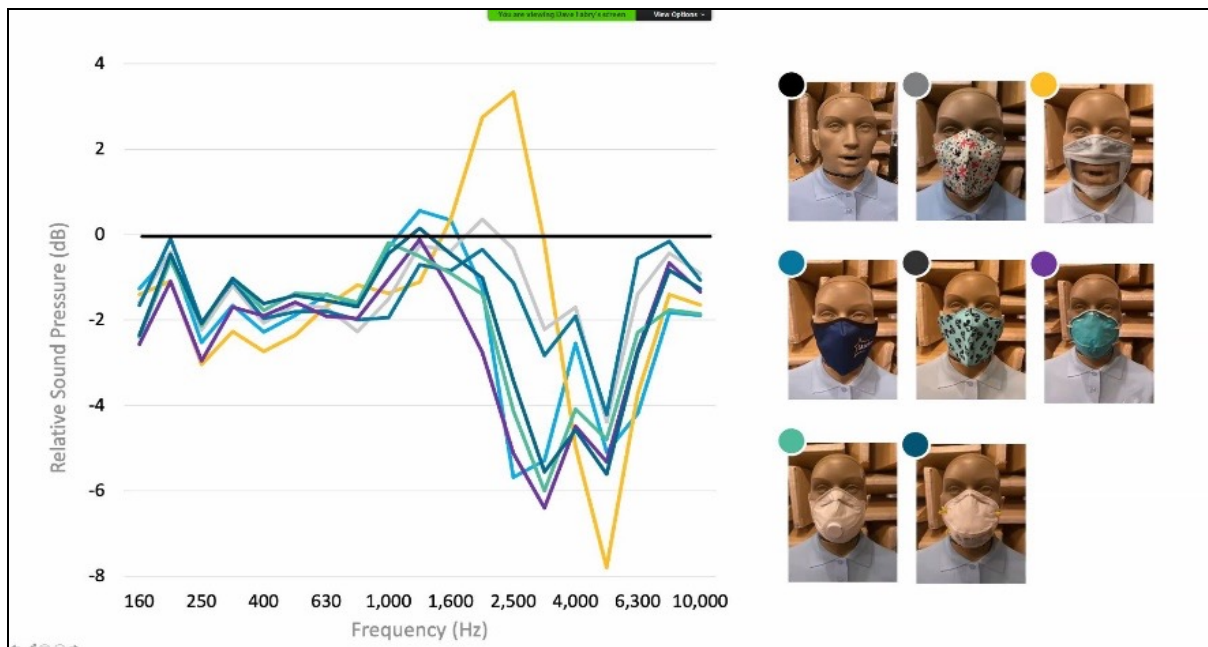
After a year delay due to COVID, we gathered virtually on March 10th for the 18th Annual Minnesota Technical Symposium (MinnTS) where we heard Professor Lucy Dunne and Dr. David Fabry talk about the current state and future of wearable technologies.



Lucy Dunne

Professor, Director of the Apparel Design Program, University of Minnesota

Moving Beyond Smart Wristbands: Future Directions for Wearable Technology and Smart Clothing





18th Annual MinnTS: Wearable Technologies - 2



Dave Fabry

Chief Innovation Officer,
Starkey Hearing
Technologies

*Reimagining Hearing Aids by
Providing a Gateway to Health
and Wellness*





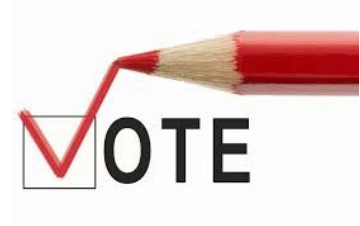
DON'T FORGET!

Election of MMS officers for 2021/2022 will be conducted during the virtual Spring Symposium.

Candidates proposed by the board:

- President Elect – Jeff Salisbury
- Secretary – Patti Sanft
- Treasurer – Dave Burleson

(Learn more about the candidates on pages 11-12.)



MEMBER DUES



The Society is collecting 2021 membership dues but students will be free for 2021.

All non-students, please remember to submit your 2021 calendar dues. Thank you.

MMS Officer Candidates | 2021-2022

The vote for MMS officers will take place during the virtual Spring Symposium meeting. Be sure to remember to cast your vote. For more information on the candidates running for next year's positions, please review the following biographies.



PRESIDENT ELECT

Jeff Salisbury, Mayo Clinic

At age 14, I inherited a Gilbert Microscope from a cousin and after viewing cytoplasmic streaming in an aquarium *Elodea* leaf and the contractile spasms of the stalked protozoan *Vorticella* – I was hooked on discovery through the microscope. During my M.S. thesis work at Rutgers University, my mentor Gary Floyd and I acquired a Siemens 1A Electron Microscope that had been in pristine storage in its original shipping containers for the past two decades. Not long after we assembled and got the instrument operational, I took electron micrograph images for my first two publications, and the hook was set. During my post-doc years at Albert Einstein College of Medicine in the Bronx, I was fortunate to have Drs. Peter Satir, John Condeelis, and Alex Novikoff as outstanding leaders in Cell Biology, Histology and Pathology as mentors.



Throughout my academic, research, and service career, I have focused on a central tenant that decoding biological mechanisms in health and disease lies, in part, on understanding the relationship between structure and function – a concept that has served well to address fundamental questions and discovery in biology. My research program has employed advanced optical and electron microscopy imaging techniques, comparative proteomics, reverse genetics, and molecular and cell biology methods to define the cellular and molecular mechanisms governing centrosome dynamics, centriole duplication, and centrosome amplification and genomic instability in breast cancer. I discovered the centrosome and DNA repair protein – centrin – which has been a primary research focus of mine.

In my role as Scientific Director of the Mayo Microscopy and Cell Analysis Core, I have fostered growth in productivity and technical sophistication in microscopic imaging over the past three decades. Beginning with a staff of three, a single electron microscope, and imaging a few hundred specimens during 1989, productivity has grown to a staff of 24, 14 high-end electron and optical microscopes, and imaging more than 10,000 EM and 5,000 optical specimens in 2020. Important milestones of this success have been, first – the incorporation of state-of-the art instrumentation and mastery of forefront imaging techniques and digital image analysis largely for research. And second, these services have been directly translated into clinical pathology for disease diagnosis at the Mayo Clinic.

If appointed as the Society's President-Elect, I will employ my cumulative experience in research, education, and microscopy to advance the professional relationships, camaraderie and goals of the MMS.

MMS Officer Candidates | 2021-2022

continued



TREASURER

David Burleson, Ecolab

David Burleson is a Program Leader on the Laboratory Information Management Systems (LIMS) team at Ecolab. Before joining the LIMS team in 2016, Dave worked in Ecolab's Egan Analytical Services for 12 years as an analytical chemist and microscopist. Dave has served in various roles on the MMS board since 2015, including President in 2016-2017, and Treasurer since 2018. David received his Ph.D. in chemistry from the University of Minnesota. 2019. In his free time, he likes to run, hike, camp, travel, and drink craft beer.



Dave Burleson



SECRETARY

Patti Sanft, Uponor

Patti Sanft is running for the position of Secretary on the MMS board. She is an Analytical Chemist at Uponor in Apple Valley that makes cross-linked polyethylene pipes for the plumbing industry. Patti has been with Uponor for four years. Prior to this she was an Analytical Chemist at H.B. Fuller Company in Vadnais Heights working with adhesives. She specializes in material properties testing including rheology, thermal analysis, and imaging with all types of microscopes. Patti has been Secretary on the MMS board for the past 14 years.



Patti Sanft



MMS CORPORATE SPONSORS

Corporate Sponsors 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. 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.

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Dehua Yang	Ebatco	952-334-5486
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If any sponsors are missing from this list, please contact Jason Heffelfinger (763-514-1021, jason.r.heffelfinger@medtronic.com).



MMS SUSTAINING & PATRON MEMBERS

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

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Ev Osten	retired, St. Paul		

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MSA Representative: Stuart McKernan, retired, St. Paul, MN; stuart.mckernan@gmail.com

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MINNESOTA MICROSCOPY SOCIETY | MEMBER INFORMATION FORM

All microscopists are urged to support their Society at one of the membership levels offered below. 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.

Dr Mr Mrs Ms First Name _____ Last Name _____

Affiliation _____ Phone (____) _____

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City _____ State _____ ZIP _____

E-mail address _____

(Newsletter notifications will be e-mailed to the address above.)

Are you an MSA member? MAS Member?

Student (\$5-\$9) Basic (\$10-\$24) Patron (\$25-\$99) Corporate/Sustaining (≥ \$100)

Payment: Check PayPal

(Please go to mnmicroscopy.org/membership to make your payment via PayPal.)

Make checks payable to MMS and mail to our Treasurer:

David Burleson, MMS Treasurer
 846 Arlington Ave. W, Saint Paul, MN 55117
 E-mail: treasurer@mnmicroscopy.org

We are asking for membership dues for the 2021 calendar year; however, student memberships will be free for 2021.