

PMCx60

7th Pre-meeting Congress

For Students, Postdocs, and Early-career Professionals

Saturday July 22, 2023

**Minneapolis Convention Center, Minneapolis, MN
Room M100D**

What's Next?

Navigating opportunities for your future in science



Organized by:



PMCx60 schedule

Friday, July 21, 2023

6:00 – 8:00 pm

Welcome Reception at [Lakes and Legends Brewery](#): 1368 Lasalle Ave

Saturday, July 22, 2023

Welcome

8:15 – 9:00 am

Breakfast provided

9:00 – 9:15 am

Opening remarks

Introduction to MSA StC

Patrick Camus, MAS President

Louisa Mezache, StC President

Andres Marquez-Rossy, StC President-Elect

Opening Sessions

In Focus Talks – M&M Award-Winning Abstracts

9:15 – 9:30 am

Samantha Berry, Pennsylvania State University

Diving into COVID-19: Visualizing SARS-CoV-2 Patient Proteins using Liquid-Electron Microscopy

9:30 – 9:45 am

Jason Manassa, University of Michigan

Dose and Sampling Requirements for Fused Multi-Modal Electron Tomography

9:45 – 10:00 am

Katherine Sytwu, Lawrence Berkeley National Laboratory

Understanding Bias in Machine Learning Analysis of Nanoparticle TEM Images

Exploring New Avenues of Thought

10:05 – 10:20 am

Jordan Hachtel, Oak Ridge National Laboratory

The Monochromated Smörgåsbord: New Applications for Electron Energy-Loss Spectroscopy at Ultrahigh Spatial and Spectral Resolution

10:20 – 10:35 am

Sandhya Susarla, Arizona State University

Magic of Unit Cell Averaging to Extract Low Loss EELS Data Out of Nothing

10:35 – 10:50 am

Rengasayee Veeraraghavan, The Ohio State University

Discovering [through] Microscopy: A Scientific Metamorphosis Story

11:00 – 11:30 am

Poster Session and Break, refreshments provided

Optimizing Multi-Use Microscopy

Tools to Span Physical and Biological Sciences Applications

11:30 am – 12:05 pm

John Donlon, **Zeiss**

Company History and Research Solutions for Life Sciences and Materials Microscopy

12:10 pm – 12:45 pm

Austin Wade, **Thermo Fisher Scientific**

Latest Advances in TEM Sample Preparation for Materials Science and Life Sciences Applications

12:45 – 1:45 pm

Lunch provided



Advantages of Society Membership for Career Advancement

1:45 – 2:30 pm

Patrick Camus, **Microanalysis Society**

2:30 – 3:00 pm

Poster Session and Break: refreshments provided

Career Workshop

3:00 – 5:00 pm

Career Session with group photo to end

Dinner

6:00 – 9:30 pm

Saturday night banquet at **Paradise Charter Cruises: 2150 West River Pkwy**
Directions can be found here:



Poster Presentations

Morning Poster Session

Jacob Garcia

A Comprehensive Examination of Aluminum Oxide (Al_2O_3) Using Extreme and Near Ultraviolet Laser-Assisted Atom Probe Tomography

Thomas Marchese

Multi-Dimensional Characterization of Precision Deposited Material Interfaces

Huiming Guo

A Correlated STEM/APT Study of Multidimensional and Interconnected Multi-element Nanostructures Derived from a Complex Concentrated Oxide

Sai Ayyagari

Characterization of High Entropy Oxide Thin Films by High-Resolution STEM-EELS

Yuxi Zhang

Damage Mechanism and Defect Evolution of Hybrid Perovskite FAPbI₃ Under a Variable Dose Electron Beam

Cuauhtemoc Valencia

Heat Transport Properties of Au-Nanoparticles Supported by TiO₂: Insights from E(3)-Equivariant Machine Learning Potentials



Saurabh Vishwakarma

Growth and Characterization of Boron Nitride/Diamond Heterostructures:
Surface Preparation and Film Nucleation

Afternoon Poster Session

Tuğçe Üstünel

Single-Atom Sn-Loaded Exfoliated Layered Titanate Shows Photocatalytic
Activity in Hydrogen Generation

Makoto Schreiber

Lensing charged particles with the magnetic vector potential

Mai Tan

Seeing Cation Dopants in Gd-doped Ceria with STEM-EELS

Ramandeep Mandia

Characterization of polycrystalline diamond/Si heterostructures using
STEM-EELS

Lizbeth Sandoval

SEM and EDS Analysis of Ti-13Ta-1Cu Alloy Obtained by Mechanical
Alloying

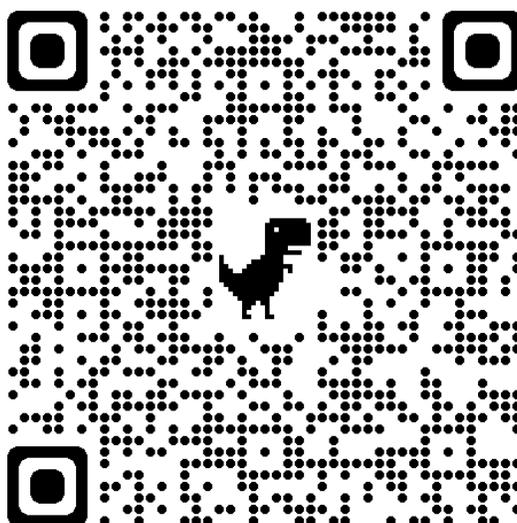
Blake Dorame

Visible Light Photocatalysts: Studying Dopant Heterogeneity in Rhodium
Doped Strontium Titanate

Solange Steadman

Age and Hormonal Stimulation Affect Tyramine Enrichment and Smooth
Muscle Modulation within the Male Mouse Reproductive System

Vote for your favorite posters:



Career Workshop

Relocating for Your Career

Anette von der Handt, MAS - 2023 M&M CoChair

Effective Grant Writing

Rodey Batiza, MAS - Former NSF Program Director

Jill Karsten, MAS - Former NSF Program Director

Industry Interview Preparation - The Dos and Don'ts

John Donlon, Zeiss - Material Research Sales Specialist

Academic Interview Preparation

Rengasayee (Sai) Veeraghavan, MSA - Associate Professor, The Ohio State University

General Professional Development Q/A

Jordan Hachtel, MAS - R&D Associate, Oak Ridge National Laboratory

Patrick Camus, MAS - MAS President

Get involved with the Student Council

Become a member of MSA Student Council

Join the Student Council (StC) on Monday, July 24th at 5:30 pm in the conference center for the annual meeting. The StC is a platform for students to collaborate with their peers, network with professionals from around the world, collaborate, and share award-winning research. Explore new and exciting opportunities as an integral part of the microscopy society. Join us and share your ideas, so together we can build the future of MSA StC! To get involved, email studentcouncil@microscopy.org using subject: "I want to get involved with StC"



The QR code on the left will show you the different positions in the MSA Student Council. You can also find the call for applications for appointed positions on this site. **We encourage you to consider joining the Student Council!**

 @MSAStudentCouncil

 @Microscopy Society of America- Students

 @msastudentcouncil

 @MSAStudent



PMCx60 Programming Committee | 2022 – 2023

Louisa Mezache
Andres Marquez-Rossy
Yifan Wang
Ayanthi Thisera
Neerja Zambare

The Ohio State University
University of Tennessee, Knoxville
Arizona State University
University of Kentucky
Pacific Northwest National Lab

StC President
StC President-Elect
Physical Sciences Co-chair
Social Chair
Post-doc Liaison

A note from the organizers

Thank you for attending this year's PMCx60! Our mission for this event is to provide an opportunity for students, post-docs, and early career scientists to expand their professional network, share knowledge and learn about different career paths. We welcome attendees from all backgrounds, professional and personal, and hope that this event serves as a fun, energetic start to a productive week at M&M 2023! We would like to acknowledge our generous donors who have contributed to the MSA Student Council during the 2023 membership renewal drive.

M&M additional activities at a glance

Friday | July 21

6:00 – 8:00 pm

PMCx60 Welcome Reception *

Saturday | July 22

8:15 am – 5:30 pm

6:30 – 9:00 pm

PMCx60 Technical Program *

PMCx60 Banquet *

Monday | July 24

12:15 – 1:15 pm

5:30 – 7:00 pm

MAS Meal with a Mentor **

MSA Student Members' Meeting and Student Mixer

Tuesday | July 25

5:30 – 7:00 pm

MSA Postdoctoral Researchers' Reception

* PMCx60 registration required, visit <https://www.microscopy.org/students/x60.cfm>

** Advance registration required, contact MAS



Learn more about our sponsors

Iridium Level



**We welcome you to join the
Microanalysis Society!**

Student Benefits of membership in the Microanalysis Society

- Reduced registration rates at our meetings
- Meal with a Mentor held at M&M
- Invitation to MAS Social and other networking opportunities
- Early Career Scholar travel awards to attend MAS Topical Conferences and international meetings
- Castaing Award for Best Student Paper Presented at M&M
- M&M Student Awards (10 student and 5 post doc)
- *Goldstein Scholar Award*: \$1000 each will be granted each year

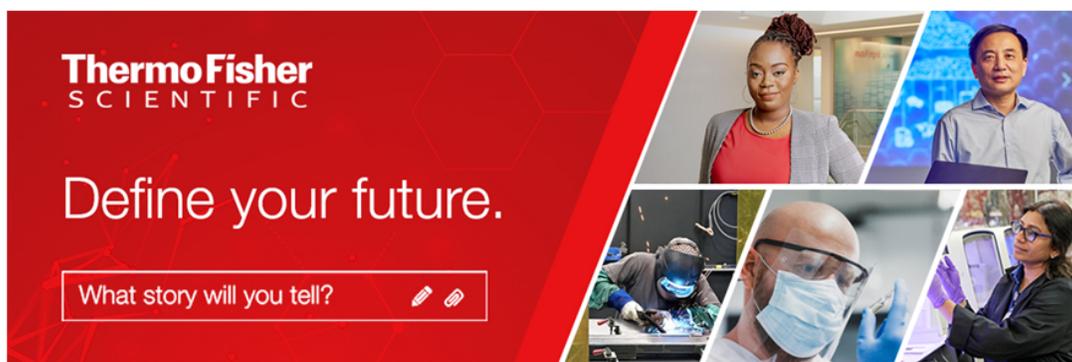


<https://the-mas.org>



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The banner features a red background with a white hexagonal pattern. On the right side, there is a collage of four images: a woman in a red top and grey blazer, a man in a light blue shirt, a scientist in a lab coat and mask working with equipment, and a woman in a lab coat and mask working with a device.

You're driven, passionate and ready to take the next step in your journey. So what's next? The world's at your fingertips, so why not make it a better place? At Thermo Fisher Scientific, you'll be part of a global, industry-leading organization that encourages your professional development and gives you the opportunity to make an impact. Every day you can look forward to contributing to our Mission – to enable our customers to make the world healthier, cleaner and safer.

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Everyone is welcome!



Join us at the MSA Diversity, Equity, and Inclusion Mixer

*Wed. July 26
5:30-6:30pm
at Seasons
Level Two,
Convention
Center*

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Your science
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Discover the Power of Possibilities

As researchers, you wield curiosity to create an ever-changing world. On your path to discovery, we are your partner. With an eye on sustainability, we are providing product demonstrations either virtually or in-person via our new ZEISS Microscopy Customer Center. Both provide exactly what you need to know, by testing your samples in real world workflows.

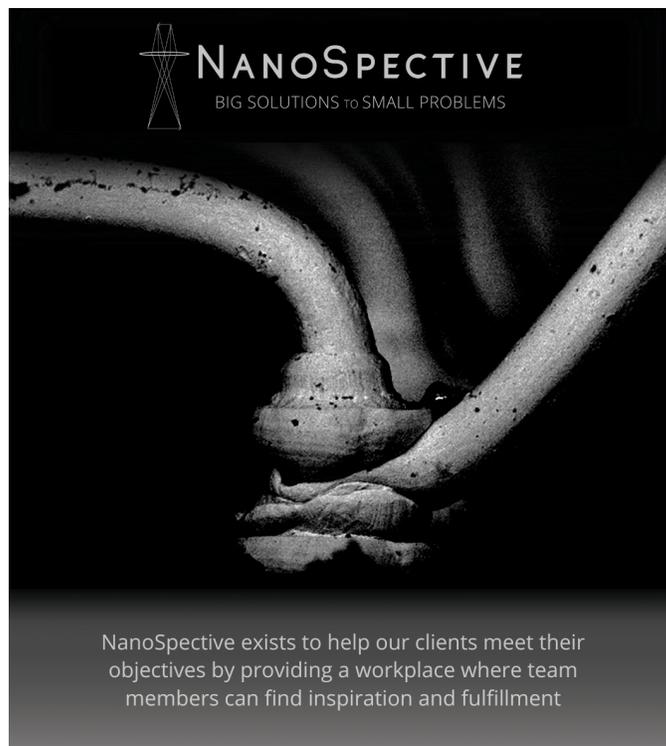
See a preview at M&M 2023, booth #519.

www.zeiss.com/ZMCC-Bay-Area



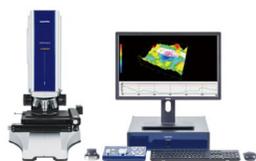
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Don't miss these instruments



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Benchtop Micromanipulator

MicroSupport



Raman Microscopes

Hands on Tutorials

Tuesday - 5:45pm

Wednesday - 5:45pm

Booth #1038

Barnett Technical Services



Barnett-Technical.com



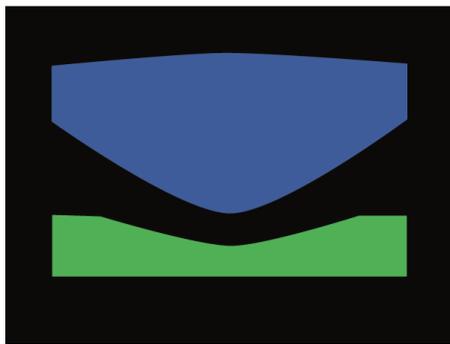
Thank you to our 2023 sponsors!

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