

**MODERATOR AND SPEAKERS MEET AT 1:40 PM EST (AUDIO/SCREEN SHARING CHECK)**

**Day 1: Welcome from CNMS; Plenary Lecture; Invited Talks**

2:00 pm EST	<b>Monday, August 10</b>
2:00 pm EST	<b>Meeting Opens (<i>online</i>)</b> Moderator: Matt McDowell
2:05 pm EST	<b>User Executive Committee Welcome</b> Matt McDowell <i>User Executive Committee Chair, Georgia Tech</i>
2:15 pm EST	<b>Center for Nanophase Materials Sciences Update</b> Karren More <i>Director of the Center for Nanophase Materials Sciences, ORNL</i>
2:30 pm EST	<b>Plenary Lecture I</b> Yury Gogotsi, Drexel University <i>The Huge Variety of MXene Structures and Compositions - Opportunities in Applications and Challenges in Characterization</i>
3:20 pm EST	<b>Question and Answer Session for Plenary Lecture I</b> (Online submitted questions will be addressed) Moderator: Rafael Verduzco
3:30 pm EST	<b>Sara Skrabalak, Indiana University</b> <i>Strain Engineered Multimetallic Nanocatalysts</i>
3:55 pm EST	<b>Question and Answer Session with Sara Skrabalak</b> (Online submitted questions will be addressed)
4:00 pm EST	<b>Bianxiao Cui, Stanford University</b> <i>Nanoelectrodes for Intracellular Recording of Bioelectric Signals</i>
4:25 pm EST	<b>Question and Answer Session for Bianxiao Cui</b> (Online submitted questions will be addressed)
4:30 pm EST	<b>End of Day 1</b>

**Day 2: Theme Science at the CNMS; Joint access to the CNMS and SNS; Plenary Lecture II; Invited Talk; Graduate/Postdoc Research at the CNMS**

**ALL MODERATOR AND SPEAKERS MEET AT 11:00 AM EST (AUDIO/SCREEN SHARING CHECK)**

12:00 p m EST	<b>Tuesday, August 11</b>
12:00 - 1:00 pm EST	<b>“Get It Published”</b> <i>Panel discussion with ORNL Research Library &amp; ACS Journals</i> Tiffany Haynes, Jennifer Dionne, Lynn Kszos

**\*\*Special Virtual Roundtable Discussion for Students and Early Career Professionals\*\***

1:00 p m EST	<b>Tuesday, August 11</b>
1:00 - 2:00 pm EST	<b>“Opportunities for Students and Early Career Professionals at the CNMS”</b> Virtual Roundtable Discussion ( <i>online</i> ) Moderators: Tracy Whitaker and Zachary Hood

2:00 p m EST	<b>Tuesday, August 11</b>
2:00 p m EST	Meeting Opens ( <i>online</i> ) Moderator: Josh Agar
2:00 p m EST	Theme Science at the Center for Nanophase Materials Sciences Karren More <i>Director of the Center for Nanophase Materials Sciences, ORNL</i>
2:45 p m EST	Plenary Lecture II Susan Trolier-McKinstry, Pennsylvania State University <i>Domain Wall Functionality in Ferroelectric Films</i>
3:35 p m EST	Question and Answer Session for Plenary Lecture II (Online submitted questions will be addressed)
3:45 p m EST	James Rondinelli, Northwestern University <i>Designing Electronic Phase Transitions with Multiple Anions</i>
4:10 p m EST	Question and Answer Session for James Rondinelli (Online submitted questions will be addressed)
4:15 p m EST	Talks from the Top 5 Students who submitted “Virtual Poster Session” Moderator: Zach Hood
5:00 p m EST	End of Day 2

Day 3: Track Sessions; User Group Town Hall; NSRC Update

**MODERATOR AND SPEAKERS MEET AT 10:40 AM EST (AUDIO/SCREEN SHARING CHECK)**

11:00 am EST	Wednesday, August 12	
<b>TRACK A: (online)</b> <b>Next-Generation Quantum Materials</b> Chairs: Shengxi Huang, PSU		<b>TRACK B: (online)</b> <b>Materials for Energy Storage and Conversion</b> Chairs: Veronica Augustyn, NCSU
11:00 am EST	Jon Camden, Notre Dame ( <i>Invited</i> ) <i>Infrared Plasmonics in the MAC STEM: From Plasmonic Fano Antiresonances to Tunable Infrared Plasmons in Nanocrystalline Doped Semiconductor Materials</i>	11:00 am EST Marta Hatzell, Georgia Tech ( <i>Invited</i> ) <i>Prospects and Challenges for Electrochemical Synthesis and Remediation</i>
11:30 am EST	Kai Xiao, CNMS <i>Defect-Mediated Phase Transformations in Highly Anisotropic 2D Quantum Materials</i>	11:30 am EST Nina Balke, CNMS <i>Imaging of Local Redox Reactions Based on Electro-Chemo-Mechanical Coupling</i>
12:00 pm EST	Piran Kidambi, Vanderbilt University ( <i>Invited</i> ) <i>Quantum Tunneling and Sub-Nanometer Scale Transport in Atomically Thin Membranes</i>	12:00 pm EST Partha Mukherjee, Purdue University ( <i>Invited</i> ) <i>Mesoscale Physics and Stochastics in Energy Storage</i>

**MODERATOR AND STUDENT SPEAKERS MEET AT 1:10 PM EST (AUDIO/SCREEN SHARING CHECK)**

1:30 pm EST	User Group Town Hall Meeting ( <i>online</i> ) Moderator: Matt McDowell <i>Including announcement of Best Student Presentation Award Winners and the Staff Appreciation Award</i>
2:10 pm EST	Nanoscale Science Research Centers Update George Maracas Program Manager, Nanoscale Science Research Centers Moderator: Matt McDowell
2:50 pm EST	Question and Answer Session for TBA (Online submitted questions will be addressed)

**MODERATOR AND STUDENT SPEAKERS MEET AT 2:50 PM EST (AUDIO/SCREEN SHARING CHECK)**

<b>TRACK C: (online)</b> <b>Research at the Bio/Nano Interface</b> Chairs: Rafael Verduzco, Rice U.	<b>TRACK D: (online)</b> <b>Multimodal <i>In situ</i> Methods at the Materials Interface</b> Chairs: Kelsey Hatzell, Vanderbilt U.	<b>TRACK E: (online)</b> <b>Emerging Transdisciplinary Concepts in Practical Machine-Learning</b> Chairs: Josh Agar, Lehigh U.
3:00 pm EST Joseph Najem, Pennsylvania State University ( <i>Invited</i> ) <i>Memory and Learning in Biomolecular Soft Matter for Low-Power, Brain-Like Computing</i>	3:00 pm EST Johanna Weker, SLAC ( <i>Invited</i> ) <i>Multimodal In Situ X-ray Characterization of Energy Materials</i>	3:00 pm EST Laura Waller UC-Berkeley ( <i>Invited</i> ) <i>End-to-End Learning for Computational Microscopy</i>
3:30 pm EST Miguel Fuentes-Cabrera, CNMS <i>Microbes In and Out: From Organelles to Bacterial Populations</i>	3:30 pm EST Olga Ovchinnikova, CNMS <i>Unravelling the Origins of Functionality through Correlative Multimodal Chemical Imaging</i>	3:30 pm EST Nathan Kutz U. Washington ( <i>Invited</i> ) <i>Applied Math of Deep-Learning in Physics - Viewing AI as Dynamical Systems</i>
4:00 pm EST Marco Rolandi UC-Santa Cruz ( <i>Invited</i> ) <i>Measuring Proton Conductivity of Organic Polymers, Biopolymers, and Ion Channels using PdHx Contacts</i>	4:00 pm EST Nikki Creange, NC State U. ( <i>Invited</i> ) <i>Insight into Resistance Degradation of Dielectric Oxides Through Multi-Length Scale Characterization Techniques</i>	4:00 pm EST Michael Mahoney UC-Berkeley ( <i>Invited</i> ) <i>Why Deep Learning Works: Heavy-Tailed Random Matrix Theory as an Example of Physics Informed Machine Learning</i>
		4:30 pm EST Seda Ogrencci-Memik Northwestern U. ( <i>Invited</i> ) <i>AI Hardware for Real-Time Machine Learning</i>
4:30 - 5:00 pm EST	Adjourn	