

# Friday, July 29

8:30 AM

**MSA Council**

# Saturday, July 30

8:30 AM

**MSA Council**

8:30 AM – 5:00 PM

**Pre-Meeting Congress**

**X60** - Pre-Meeting Congress for Students, Post-Docs, and Early Career Professionals in Microscopy & Microanalysis

# Sunday, July 31

8:30 AM – 5:00 PM

**Sunday Short Courses**

**X10** High Resolution Structure Determination by Cryo-EM

**X11** Explaining the New World Order of Biological Fluorescence Microscopy

**X12** Guidelines for Performing 4-D STEM Characterization from the Atomic to >Micrometer Scales: Experimental Considerations, Data Analysis and Simulation

**X13** SerialEM for EM Data Acquisition

**X14** *In situ* and *Operando* Approaches to TEM

**X15** Cryo-STEM and EELS for Material Sciences

**X16** Data Analysis in Materials Science

**X17** Biological EM Sample Processing

8:30 AM – 5:00 PM

**Pre-Meeting Congress**

**X61** Pharmaceutical, Biopharmaceutical, and Medical Health Products

**X62** Real-World Data Analytics and Quantitative Liquid and Gas Environmental Electron Microscopy

12:00 PM

**MSC-SMC Council Meeting**

3:00 PM

**Microscopy Today Editors**

6:30 PM

**Opening Reception**

# Monday, August 1

7:15 AM

**MSA Awards Committee**

7:15 AM

**Technologists' Forum Board**

7:15 AM

**M&M Meeting Award Committee**

8:30 AM – 12:00 PM

**M&M 2022 Plenary Sessions**

Opening Welcome

**Plenary Talk #1:**

**Stony Brook University | Alan Alda Center for Communicating Science**  
*Alda Science Communication Experience*

MAS Awards Presentation

MSC-SMC Awards Presentation

Coffee Break

MSA Awards Presentation

M&M Meeting Awards Presentation

# Monday, August 1 (Cont'd.)

8:30 AM – 12:00 PM	<b>M&amp;M 2022 Plenary Sessions cont'd.</b>  <b>Plenary Talk #2:</b> <b>Wendy Garrett, MD PhD</b> Harvard School of Public Health, Boston, MA  <i>Health Versus Disease: The Facts in the Case of the Microbiota</i>
12:00 PM – 1:30 PM	<b>Lunch Break in the Exhibit Hall</b>
12:00 PM – 5:30 PM	<b>Exhibit Hall Open</b>
12:15 PM	<b>MAS Meal with a Mentor</b>
12:15 PM	<b>FIG: Pharmaceuticals</b>
12:15 PM	<b>FIG: Diagnostic &amp; Biomedical Microscopy</b>
12:15 PM	<b>FIG: Focused Ion Beam</b>
12:15 PM	<b>FIG: Atom Probe Field Ion Microscopy</b>
12:15 PM	<b>FIG: Facilities Operation and Management</b>
12:15 PM	<b>International Committee</b>
1:30 PM – 3:00 PM	<b>P.M. Symposia &amp; Sessions</b>  <b>A01.1</b> Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences <b>A03.1</b> Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science <b>A05.1</b> Quantitative and Qualitative Mapping of Materials <b>B02.1</b> 3D Structures: From Macromolecular Assemblies to Whole Cells (3DEM FIG) <b>B07.1</b> 3D Volume Electron Microscopy in Biology Research <b>C03.1</b> Facilities Management Crucial Skills and Strategies <b>C04.1</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis <b>P01.1</b> Emerging Methods for Characterizing Hydrogen Effects in Metals and Alloys <b>P02.1</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices <b>P05.1</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing <b>P07.1</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments <b>P08.1</b> Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-Beam Sample Interactions <b>P09.1</b> Insights into Phase Transitions in Functional Materials by <i>in situ/operando</i> TEM: Experiment Meets Theory <b>P10.1</b> Advanced Imaging and Spectroscopy for Nanoscale Materials <b>P12.1</b> Memorial Symposium: John C. H. Spence
3:00 PM – 5:00 PM	<b>Monday Poster Presentations</b>  <b>A01.P1</b> Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences <b>A02.P1</b> Beyond Visualization with <i>in situ</i> and <i>operando</i> TEM <b>A03.P1</b> Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science <b>A05.P1</b> Quantitative and Qualitative Mapping of Materials

# Monday, August 1 (Cont'd.)

3:00 PM – 5:00 PM	<b>Monday Poster Presentations cont'd.</b> <i>All Post-Deadline Posters will be presented on this day.</i>
	<b>B02.P1</b> 3D Structures: From Macromolecular Assemblies to Whole Cells (3DEM FIG)
	<b>C03.P1</b> Facilities Management Crucial Skills and Strategies
	<b>C04.P1</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis
	<b>P08.P1</b> Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-Beam Sample Interactions
	<b>P10.P1</b> Advanced Imaging and Spectroscopy for Nanoscale Materials
	<b>P12.P1</b> Memorial Symposium: John C.H. Spence
3:30 PM	<b>Technologists' Forum Business Meeting</b>
3:30 PM	<b>3D EM in the Biological Sciences FIG</b>
5:00 PM	<b>Student Poster Awards</b>
5:30 PM	<b>MSA Student Council Meeting and Student Mixer</b>
5:45 PM	<b>Vendor Tutorials</b> ( <i>Sign Up at MSA MegaBooth</i> )

# Tuesday, August 2

7:15 AM	<b>MSA Local Affiliated Societies &amp; MAS Affiliated Regional Societies</b>
7:15 AM	<b>Microscopy Today - Editorial Board Breakfast</b>
8:30 AM – 10:00 AM	<b>A.M. Symposia &amp; Sessions</b>
	<b>A01.2</b> Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences
	<b>A02.1</b> Beyond Visualization with in situ and operando TEM
	<b>A03.2</b> Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science
	<b>A05.2</b> Quantitative and Qualitative Mapping of Materials
	<b>B02.2</b> 3D Structures: From Macromolecular Assemblies to Whole Cells (3DEM FIG)
	<b>B07.2</b> 3D Volume Electron Microscopy in Biology Research
	<b>C04.2</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis
	<b>P01.2</b> Emerging Methods for Characterizing Hydrogen Effects in Metals and Alloys
	<b>P02.2</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices
	<b>P05.2</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing
	<b>P07.2</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments
	<b>P08.2</b> Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-Beam Sample Interactions
	<b>P09.2</b> Insights into Phase Transitions in Functional Materials by in situ/operando TEM: Experiment Meets Theory
	<b>P10.2</b> Advanced Imaging and Spectroscopy for Nanoscale Materials
	<b>P12.2</b> Memorial Symposium: John C.H. Spence
	<b>X94</b> STEM Roundtable: Building Skills for the Future
10:00 AM – 10:30 AM	<b>Coffee Break in the Exhibit Hall</b>
10:00 AM – 5:30 PM	<b>Exhibit Hall Open</b>
10:00 AM	<b>M&amp;M 2023 Program Planning Meeting</b>

# Tuesday, August 2 (cont'd.)

10:30 AM – 12:00 PM

## A.M. Symposia & Sessions

**A01.3** Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences

**A02.2** Beyond Visualization with in situ and operando TEM

**A03.3** Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science

**A05.3** Quantitative and Qualitative Mapping of Materials

**A06.1** Expanding the Limits of Atom Probe Tomography

**B01.1** Microcrystal Electron Diffraction (MicroED)

**B02.3** 3D Structures: From Macromolecular Assemblies to Whole Cells (3DEM FIG)

**B07.3** 3D Volume Electron Microscopy in Biology Research

**B09.1** Memorial Symposium: Shinya Inoué

**C04.3** Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis

**P01.3** Emerging Methods for Characterizing Hydrogen Effects in Metals and Alloys

**P02.3** Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices

**P05.3** *In situ* TEM Characterization of Dynamic Processes During Materials Synthesis and Processing

**P07.3** Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments

**P08.3** Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-Beam Sample Interactions

**P09.3** Insights into Phase Transitions in Functional Materials by in situ/operando TEM: Experiment Meets Theory

**P10.3** Advanced Imaging and Spectroscopy for Nanoscale Materials

**P12.3** Memorial Symposium: John C.H. Spence

12:00 PM – 1:30 PM

## Lunch Break in the Exhibit Hall

12:15 PM

**Microscopy Today Editorial Board Meeting**

12:15 PM

**FOM FIG Lunch Meeting**

12:15 PM

**MSA Distinguished Scientist Awardee Lectures**

12:15 PM

**FIG: Cryo-Preparation**

12:15 PM

**FIG: Electron Microscopy in Liquids and Gases**

12:15 PM

**FIG: Electron Crystallography**

12:15 PM

**FIG: MicroAnalytical Standards**

1:30 PM – 3:00 PM

## P.M. Symposia & Sessions

**A01.4** Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences

**A02.3** Beyond Visualization with in situ and operando TEM

**A03.4** Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science

**A04.1** Developments of 4D-STEM Imaging - Enabling New Materials Applications

**A05.4** Quantitative and Qualitative Mapping of Materials

**A06.2** Expanding the Limits of Atom Probe Tomography

**B01.2** Microcrystal Electron Diffraction (MicroED)

**B03.1** Technical Advances in Cryo-EM

**B07.4** 3D Volume Electron Microscopy in Biology Research

# Tuesday, August 2 (Cont'd.)

2:00 PM – 3:15 PM	<b>P.M. Symposia &amp; Sessions (Cont'd.)</b>	
	<b>B09.2</b> Memorial Symposium: Shinya Inoué	
	<b>C04.4</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis	
	<b>P01.4</b> Emerging Methods for Characterizing Hydrogen Effects in Metals and Alloys	
	<b>P02.4</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices	
	<b>P05.4</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing	
	<b>P07.4</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments	
	<b>P08.4</b> Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-Beam Sample Interactions	
	<b>P09.4</b> Insights into Phase Transitions in Functional Materials by in situ/operando TEM: Experiment Meets Theory	
	<b>P10.4</b> Advanced Imaging and Spectroscopy for Nanoscale Materials	
2:00 PM – 3:00 PM	<b>P.M. Symposia &amp; Sessions (Cont'd.)</b>	
	<b>X42 Biological Sciences Tutorial</b> - Indirect Correlative Light and Electron Microscopy (iCLEM)	
3:00 PM – 5:00 PM	<b>Tuesday Poster Presentations</b>	
	<b>A01.P2</b> Advances in Focused Ion Beam Instrumentation, Applications and Techniques in Materials and Life Sciences	
	<b>A02.P2</b> Beyond Visualization with in situ and operando TEM	
	<b>A03.P2</b> Advanced 3D Imaging and Analysis Methods for New Opportunities in Material Science	
	<b>A04.P1</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications	
	<b>A05.P2</b> Quantitative and Qualitative Mapping of Materials	
	<b>A06.P1</b> Expanding the Limits of Atom Probe Tomography	
	<b>B02.P2</b> 3D Structures: From Macromolecular Assemblies to Whole Cells (3DEM FIG)	
	<b>B07.P1</b> 3D Volume Electron Microscopy in Biology Research	
	<b>C04.P2</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis	
	<b>P01.P1</b> Emerging Methods for Characterizing Hydrogen Effects in Metals and Alloys	
	<b>P02.P1</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices	
	<b>P05.P1</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing	
	<b>P07.P1</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments	
	<b>P08.P2</b> Electron Microscopy of Beam Sensitive Samples: The Trials and Tribulations of Electron-beam Sample Interactions	
	<b>P09.P1</b> Insights into Phase Transitions in Functional Materials by in situ/operando TEM: Experiment Meets Theory	
	3:30 PM	<b>FIG Business Meeting</b>
	3:30 PM	<b>MSA Education Committee</b>
5:00 PM	<b>Student Poster Awards</b>	
5:30 PM	<b>Post-Doctoral Researchers' Reception</b>	
5:45 PM	<b>Vendor Tutorials</b> ( <i>Sign Up at MSA MegaBooth</i> )	
6:30 PM	<b>Presidents' Reception</b> ( <i>Invitation Only</i> )	

# Wednesday, August 3

7:15 AM	<b>MaM Editorial Board</b>
7:15 AM	<b>MSA Certification Board</b>
7:15 AM	<b>MSA Membership Committee</b>
8:30 AM – 10:00 AM	<p><b>A.M. Symposia &amp; Sessions</b></p> <p><b>A02.4</b> Beyond Visualization with in situ and operando TEM</p> <p><b>A04.2</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications</p> <p><b>A05.5</b> Quantitative and Qualitative Mapping of Materials</p> <p><b>A06.3</b> Expanding the Limits of Atom Probe Tomography</p> <p><b>A09.1</b> Ultrashort Pulse Lasers: Microscopy, Simulations, and Material Interactions</p> <p><b>A10.1</b> Advanced Imaging and Spectroscopy for Nanoscale Materials</p> <p><b>B03.2</b> Technical Advances in Cryo-EM</p> <p><b>B05.1</b> Challenges and Advances in Electron Microscopy Research and Diagnosis of Diseases in Humans, Plants and</p> <p><b>B08.1</b> From Images to Insights: Working with Large Multi-Modal Data in Cell Biological Imaging</p> <p><b>B10.1</b> Development, Challenges and Biomedical Applications of Tissue Clearing, Expansion Microscopy and Volumetric Imaging</p> <p><b>C04.5</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis</p> <p><b>C05.1</b> Vendor Symposium</p> <p><b>P02.5</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices</p> <p><b>P05.5</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing</p> <p><b>P07.5</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments</p> <p><b>P09.5</b> Insights into Phase Transitions in Functional Materials by in situ/operando TEM: Experiment Meets Theory</p> <p><b>P10.5</b> Advanced Imaging and Spectroscopy for Nanoscale Materials</p>
10:00 AM – 10:30 AM	<b>Coffee Break in the Exhibit Hall</b>
10:00 AM – 5:30 PM	<b>Exhibit Hall Open</b>
10:30 AM – 12:00 PM	<p><b>A.M. Symposia &amp; Sessions (Cont'd.)</b></p> <p><b>A02.5</b> Beyond Visualization with in situ and operando TEM</p> <p><b>A04.3</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications</p> <p><b>A05.6</b> Quantitative and Qualitative Mapping of Materials</p> <p><b>A09.2</b> Ultrashort Pulse Lasers: Microscopy, Simulations, and Material Interactions</p> <p><b>A10.2</b> Advanced Imaging and Spectroscopy for Nanoscale Materials</p> <p><b>B03.3</b> Technical Advances in Cryo-EM</p> <p><b>B05.2</b> Challenges and Advances in Electron Microscopy Research and Diagnosis of Diseases in Humans, Plants and Animals</p> <p><b>B08.2</b> From Images to Insights: Working with Large Multi-Modal Data in Cell Biological Imaging</p> <p><b>B10.2</b> Development, Challenges and Biomedical Applications of Tissue Clearing, Expansion Microscopy and Volumetric Imaging</p> <p><b>C04.6</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis</p> <p><b>C05.2</b> Vendor Symposium</p> <p><b>P02.6</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices</p> <p><b>P05.6</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing</p>

# Wednesday, August 3 (cont'd.)

10:30 AM – 12:00 PM	<b>A.M. Symposia &amp; Sessions (Cont'd.)</b> <b>P07.6</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments <b>P09.6</b> Insights into Phase Transitions in Functional Materials by <i>in situ/operando</i> TEM: Experiment Meets Theory <b>P10.6</b> Advanced Imaging and Spectroscopy for Nanoscale Materials
11:00 AM – 12:00 PM	<b>A.M. Symposia &amp; Sessions (Cont'd.)</b> <b>X44</b> <b>Physical Sciences Tutorial</b> - Precession Electron Diffraction: A Little Bit of History, Basics, and Recent Developments in Projected Crystal Symmetry Quantifications
12:00 PM – 1:30 PM	<b>Lunch Break in the Exhibit Hall</b>
12:15 PM	<b>MAS - ANSI Meeting</b> – <i>not confirmed</i>
12:15 PM	<b>MSA Members' Meeting</b>
1:30 PM – 3:00 PM	<b>P.M. Symposia &amp; Sessions</b> <b>A02.6</b> Beyond Visualization with <i>in situ</i> and <i>operando</i> TEM <b>A04.4</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications <b>A10.3</b> Advanced Imaging and Spectroscopy for Nanoscale Materials <b>B03.4</b> Technical Advances in Cryo-EM <b>B05.3</b> Challenges and Advances in Electron Microscopy Research and Diagnosis of Diseases in Humans, Plants and Animals <b>B10.3</b> Development, Challenges and Biomedical Applications of Tissue Clearing, Expansion Microscopy and Volumetric Imaging <b>C01.1</b> Microscopy Infrastructures: Architectures, Avenues and Access <b>C05.3</b> Vendor Symposium <b>P02.7</b> Quantum Materials Under Electron Beam: From Atomic Structures to Working Devices <b>P06.1</b> Nanoscale Optics with Electrons and Photons <b>P10.7</b> Advanced Imaging and Spectroscopy for Nanoscale Materials <b>P11.1</b> Planetary-Materials Characterization in the Era of Mission Returned Sample Analysis
3:00 PM – 5:00 PM	<b>Wednesday Poster Presentations</b> <b>A04.P2</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications <b>A05.P3</b> Quantitative and Qualitative Mapping of Materials <b>A09.P1</b> Ultrashort Pulse Lasers: Microscopy, Simulations, and Material Interactions <b>B03.P1</b> Technical Advances in Cryo-EM <b>B05.P1</b> Challenges and Advances in Electron Microscopy Research and Diagnosis of Diseases in Humans, Plants and Animals <b>C04.P1</b> Artificial Intelligence, Instrument Automation, and High-Dimensional Data Analytics for Microscopy and Microanalysis <b>P05.P2</b> <i>In situ</i> TEM Characterization of Dynamic Processes During Materials Synthesis and Processing <b>P03.1</b> Imaging Chemical Reactions Using High Speed Electron Microscopy (EM) <b>P07.P2</b> Correlative Microscopy and High-Throughput Characterization for Accelerated Development of Materials in Extreme Environments <b>P09.P2</b> Insights into Phase Transitions in Functional Materials by <i>in situ/operando</i> TEM: Experiment Meets Theory <b>P10.P1</b> Advanced Imaging and Spectroscopy for Nanoscale Materials
5:00 PM	<b>Student Poster Awards</b>
5:15 PM	<b>MAS Business Meeting</b>
5:30 PM	<b>Diversity and Inclusion Meet-up</b>
5:45 PM	<b>Vendor Tutorials</b> ( <i>Sign Up at MSA MegaBooth</i> )
6:30 PM	<b>MAS Members' Social</b> ( <i>See MAS Booth for Details</i> )

# Thursday, August 4

8:30 AM	<b>M&amp;M Sustaining Members Meeting</b>
8:30 AM – 10:00 AM	<b>A.M. Symposia &amp; Sessions</b>
	<b>A04.5</b> Developments of 4D-STEM Imaging - Enabling New Materials Applications
	<b>A07.1</b> Science of Metrology with Electrons
	<b>A08.1</b> From <i>operando</i> Microcell Experiments to Bulk Devices
	<b>A10.4</b> Surface and Subsurface Microscopy and Microanalysis of Physical and Biological Specimens
	<b>B03.5</b> Technical Advances in Cryo-EM
	<b>B04.1</b> Correlative and Multimodal Microscopy and Analysis
	<b>B06.1</b> Imaging, Microscopy, and Micro/Nano-Analysis of Pharmaceutical, Biopharmaceutical, and Medical Health Products—Research, Development, Analysis, Regulation, and Commercialization
	<b>C01.2</b> Microscopy Infrastructures: Architectures, Avenues and Access of Cryo-EM
	<b>P03.2</b> Imaging Chemical Reactions Using High Speed Electron Microscopy (EM)
	<b>P06.2</b> Nanoscale Optics with Electrons and Photons
	<b>P10.8</b> Surface and Subsurface Microscopy and Microanalysis of Physical and Biological Specimens
	<b>P11.2</b> Planetary-Materials Characterization in the Era of Mission Returned Sample Analysis
	<b>X30</b> Technologists' Forum Roundtable: Image Data Analysis Software Review
<b>X91</b> Microscopy Explorations for Families and Kids of All Ages	
10:00 AM – 12:00 PM	<b>Coffee Break and Poster Session in the Exhibit Hall</b>
10:00 AM – 2:00 PM	<b>Exhibit Hall Open</b>
1:00 PM – 2:30 PM	<b>Thursday Poster Presentations</b>
	<b>A03.P1</b> Impact of Recent Advancement in Instrumentation/Detectors on Electron Energy Loss Spectroscopy for Physical and Biological Sciences
	<b>A09.P2</b> Advanced Imaging and Spectroscopy for Nanoscale Materials
	<b>A14.P1</b> Vendor Symposium
	<b>B02.P1</b> The Promise of Cryo-Electron Tomography
	<b>B05.P1</b> Microbes in Focus
	<b>B06.P1</b> Correlative and Multimodal Microscopy and Imaging of Physical, Environmental, and Biological Sciences
	<b>B08.P1</b> Biological Soft X-Ray Tomography
	<b>P03.P2</b> Energy and Soft Materials and the Development of Cryogenic Techniques for Studying Them
	<b>P05.P1</b> Advances in Microscopy for Quantum Information Sciences
	<b>P10.P1</b> Call of the Wild: Advances in Microanalysis and Microscopy of Geological and Extraterrestrial Materials
	<b>P12.P1</b> Collaborative Analysis Using Atom Probe Tomography Including TEM/APT Characterization of Metal Alloys and Other Material Systems
12:00 PM	<b>Student Poster Awards</b>
12:00 PM – 1:30 PM	<b>Lunch Break in the Exhibit Hall</b>
12:15 PM	<b>MSA Standards Committee</b>
12:15 PM	<b>MSC-SMC Business Meeting</b>
1:30 PM – 3:00 PM	<b>P.M. Symposia &amp; Sessions</b>
	<b>A04.6</b> Developments of 4D-STEM Imaging—Enabling New Materials Applications
	<b>A07.2</b> Science of Metrology with Electrons
	<b>A08.2</b> From <i>operando</i> Microcell Experiments to Bulk Devices



# Thursday, August 4 (Cont'd.)

1:30 PM – 3:00 PM

## P.M. Symposia & Sessions

- A10.5** Advanced Imaging and Spectroscopy for Nanoscale Materials
- B03.6** Technical Advances in Cryo-EM
- B04.2** Correlative and Multimodal Microscopy and Analysis
- B06.2** Imaging, Microscopy, and Micro/Nano-Analysis of Pharmaceutical, Biopharmaceutical, and Medical Health Products—Research, Development, Analysis, Regulation, and Commercialization
- P06.3** Nanoscale Optics with Electrons and Photons
- P10.9** Advanced Imaging and Spectroscopy for Nanoscale Materials
- P11.3** Planetary-Materials Characterization in the Era of Mission Returned Sample Analysis
- C01.3** Microscopy Infrastructures: Architectures, Avenues and Access of Cryo-EM
- X31** Technologists' Forum Symposia: 3D SEM Techniques
- X92** Project MICRO

3:00 PM – 3:30 PM

## Coffee Break in B/D Foyer

3:30 PM – 5:30 PM

## Late P.M. Symposia & Sessions

- A08.3** From *operando* Microcell Experiments to Bulk Devices
- A10.6** Advanced Imaging and Spectroscopy for Nanoscale Materials
- B03.7** Technical Advances in Cryo-EM
- B04.3** Correlative and Multimodal Microscopy and Analysis
- P06.4** Nanoscale Optics with Electrons and Photons
- P10.10** Advanced Imaging and Spectroscopy for Nanoscale Materials
- X32** Technologists' Forum Workshop—Tissue Clearing Tips and Techniques