Advances in AI and Machine Learning in Microscopy

Oct. 9, 2025 (Thursday)

10:30 Registration Opens
11:00-12:00 1. *TESCAN, Live Micro CT demo from Belgium Lab*
1:00-3:30 2. **Andrew Lawson**: Leica, *UC Enuity Volume SEM Workflow & AIVIA for AI Driven segmentation*
3. **Gerd Duscher:** UT, *Smart Remote Control of STEMs*
3:30-5:30 4. **Elijah Davis & Khalid Hattar:** *Practical In-situ TEM Techniques and Methodologies*
5:30-6:30 Social/Student Poster Session
6:15-7:30 Dinner
7:30-9:00 Banquet Speaker - **Dr. James Martinez** (NASA Kennedy Space Center)
Portable Spectroscopic SEM Facility on the International Space Station (ISS)

AREMS web link

Oct. 10, 2025 (Friday)

8:30-8:45 Welcome/Introductions to Officers & Attendees
8:45-9:15 **Sergei V. Kalinin:** UT, *AI, Automated Microscopy, and Making Better Materials*
9:15-9:45 **Michael Zachman**: ORNL, *Pairing Cryogenic EM with ML for Analysis of Energy Materials and Devices.*
9:45-10:15 **Zach Russell**: ASU, Stop making your classifier work so hard!" Adapting your microscope to work better with AI/ML
10:15-10:45 Coffee Break, Vendor Introductions/Exhibits
10:45-11:15 **Kory Burns**: UVA, *The Inconceivable Marriage between in situ TEM, A-C STEM, and Deep Learning*
11:15-11:45 **Ray Unocic:** NCSU, *Understanding and Controlling Atomic Transformations in 2D Materials using in situ STEM methods*.
11:45-12:15 **Andres Marquez Rossy**: ORNL, (*MSA Student Council President, 2023-2024}*
Learnings and Recommendations
12:15-12:30 Business Meeting/Voting
12:30-1:00 Awards Ceremony
1:00-1:30 Lunch Break (on your own)
1:30 ORNL Tour (Van Transport Provided)

AReMS Awards

1. $60 - First 15 Student Posters
2. $250 - Best Physical & Biological Posters
3. $500 - McGill Award for Most Innovative Poster
4. $500 - Russell Education Award