

Midwest Microscopy and Microanalysis Society Spring Meeting
Frontiers in AI-ML and Computationally-Mediated Microscopy
Northwestern University: McCormick Auditorium-Norris Center
Friday, March 15th, 2024

Program Schedule

- 8:00 – 9:00 **Registration** : Continental Breakfast and Coffee
- 9:00 – 9:05 **Welcome and Opening Remarks**
- 9:05 – 9:30 **Roberto dos Reis, Ph.D. Northwestern University**
Mindshift: Multimodal Integration for Nanoparticle Data screening Using High-throughput Frameworks in Transmission Electron Microscopy
- 9:30 – 10:15 **Professor Qian Chen, UIUC**
Electron Videography and Machine Learning of Soft Matter
- 10:15 – 10:30 **Break & Visit with Vendors**
- 10:30 – 10:55 **Dr. Nestor J. Zaluzec, University of Chicago/Argonne National Laboratory**
Implementations of Computationally Mediated Microscopy and Workflows on the Analytical PicoProbe Instrument
- 10:55 – 11:15 **Panel Discussion on Handling of Big Data in Microscopy**
- 11:15 – 11:40 **R. A. W. Ayyubi, UIC**
Automated Defect Detection in Atomic Resolution STEM Images: A Machine Learning Approach with Variational Convolutional Autoencoders
- 11:40 – 12:15 **Will Harris, Zeiss**
Overcoming Practical Challenges in 3D X-ray Imaging Using AI-Based Approaches
- 12:15 – 12:30 **M:S Business Meeting**
- 12:30 – 14:00 **Lunch & Visit with Vendors**
- 14:00 – 14:45 **Tekin Bicer, Ph.D., Argonne National Laboratory**
Using artificial intelligence and machine learning methods to enhance x-ray microtomography at the Argonne synchrotron light source
- 15:45 – 15:10 **Rosa Diaz Rivas, Purdue**
Scalable Image Processing Protocols for Quantum Computing Materials Assessment
- 15:10 – 15:40 **Dr. Jie Chen, Northwestern University**
Automated crystal system identification from electron diffraction patterns using multiview opinion fusion machine learning
- 15:40 – 15:50 **Closing Remarks**

*Optional tour of NUANCE's facilities in the Technological Institute, AB-Wing