

## **APS WK#12: Multi-scale X-ray Fluorescence Microscopy Imaging Using Multiple APS Beamlines**

### **Thursday, May 13, Morning**

- 8:30 – 8:45 Olga Antipova and Lu Xi Li (Advanced Photon Source, Argonne National Laboratory)  
*Welcome from the Organizers*
- 8:45 – 9:05 Olga Antipova (Advanced Photon Source, Argonne National Laboratory)  
*X-ray Fluorescence Microscopy at APS Beamlines: Current and Post-APS-U*
- 9:05 – 9:25 Tatjana Paunesku (Northwestern University)  
*Examination of Nanoparticle-transfected HeLa cells Using Multi-scale X-ray Fluorescence Tomography*
- 9:25 – 9:45 Martina Ralle (Oregon Health and Science University)  
*Copper in Brain Pathology*
- 9:45 – 10:10 Joseph Jakes (University of Wisconsin-Madison)  
*Integrating Multiscale Studies of Chemically Modified Wood*
- 10:10 – 10:30 Break
- 10:30 – 10:55 Samuel Webb (Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory)  
*Muti-scale, Multi-beamline, and Multi-modal Imaging for Life Sciences at SSRL*
- 10:55 – 11:10 Elena Rozhkova (Center for Nanoscale Materials, Argonne National Laboratory)  
*Wireless Optogenetic Modulation of Cortical Neurons Enabled by Radioluminescent Nanoparticles*
- 11:10 – 11:30 Stuart Stock (Northwestern University)  
*Several Scales of the Structural Hierarchy of Mineralized Tissues*
- 11:30 – 11:50 Robin Pourzal (Rush University)  
*Characterization of Intra-cellular Metallic Debris from Total Hip Replacements within Periprosthetic Tissue*
- 11:50 – 12:15 Yulia Pushkar (Purdue University)  
*X-ray Imaging and Spectroscopy of the Brain*
- 12:15 Adjourn

### **Friday, May 14, Morning**

- 8:30 – 8:45 Welcome

- 8:45 - 9:05 Lu Xi Li (Advanced Photon Source, Argonne National Laboratory)  
*In Situ Visualization of the Phase Separation in Amorphous Solid Dispersion*
- 9:05 – 9:20 Peng Liu (University of Waterloo)  
*Algorithm for Attenuation Correction of Confocal Micro-X-ray fluorescence Imaging (CMXRFI) Data and an Application for Redox Mapping*
- 9:20 – 9:40 Sarah Wiegold (Center for Nanoscale Materials, Argonne National Laboratory)  
*Mapping Impurities and Elemental Distribution in Solar Cell Materials*
- 9:40 – 10:00 Grace (Yanqi) Luo (Advanced Photon Source, Argonne National Laboratory)  
*Real-time Image Registration Techniques for Correlative Analysis*
- 10:00 – 10:15 Matt Newville (Center for Advanced Radiation Sources, The University of Chicago, Argonne)  
*Multi-modal X-ray Measurements at the GSECARS Microprobe Beamline APS 13-ID-E*
- 10:15 – 10:35 Break
- 10:35 – 11:00 Michael Stuckelberger (Deutsches Elektronen-Synchrotron DESY)  
*Strategies for Scanning X-Ray Microscopy across Length Scales, Instruments, and Laboratories*
- 11:00 – 11:20 Yang Yang (National Light Source II, Brookhaven National Laboratory)  
*Multimodal X-ray Nano-imaging with Scanning Microscopy: Applications and Data Analysis*
- 11:20 – 11:40 Yijin Liu (Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory)  
*Multi-scale and Multi-modal X-ray Microscopy for Energy Material Science*
- 11:40 – 12:00 Tamas Varga (Pacific Northwest National Laboratory)  
*Phosphorus Solubilization in Trees Promoted by Endosymbiosis*
- 12:00 – 12:25 Jorg Maser (Advanced Photon Source, Argonne National Laboratory) and Michael Stuckelberger (Deutsches Elektronen-Synchrotron DESY)  
*Discussion: Future Directions for Multiscale Imaging*
- 12.25 Adjourn