

Monday May 2

- 8:00 – 5:00 Exhibits:
Bldg. 402, Gallery; Bldg. 401, Atrium
- 7:30 – 5:00 Registration
Bldg. 401, Atrium
- 12:20 – 1:30 Lunch
Tent
- 12:20 – 1:30 Postdoc Luncheon/Job Fair
Bldg. 401, A1100
- 12:30 – 1:30 CNM Users Executive Committee Meeting (C4200, Building 401)

A lunchtime talk will focus on postdoctoral opportunities at Argonne National Laboratory. Please bring a brown bag lunch or purchase lunch ticket. The web page for the Argonne postdoctoral program is <http://www.dep.anl.gov/Postdocs/>.

Opening Session – Bldg. 402 Lecture Hall

- 8:45– 8:50 David Tiede, Moderator (APSUO Chair, Argonne National Laboratory)
Welcome
- 8:50 –9:05 Eric Isaacs (Director, Argonne National Laboratory)
Welcome from the Laboratory
- 9:05 –9:30 Dr. Linda Horton (Director, Materials Sciences and Engineering Division, Office of Basic Energy Sciences, DOE)
Office of Science Perspective
- 9:30– 9:35 David Tiede, Moderator (APSUO Chair, Argonne National Laboratory)
Introduction of Matthew Tirrell
- 9:35 – 10:00 Matthew Tirrell (Founding Pritzker Director of the Institute for Molecular Engineering, University of Chicago)
- 10:00 – 10:05 Eric Isaacs (Director, Argonne National Laboratory)
Introduction of The Honorable Randall M. Hultgren
- 10:05 – 10:30 The Honorable Randall (Randy) M. Hultgren, U.S. House of Representatives, IL 14th District
A Washington Perspective
- 10:30 – 11:00 Coffee Break
Gallery and Atrium

- 11:00 – 11:20 Brian Stephenson (Interim Director, Advanced Photon Source)
Update on the Advanced Photon Source
- 11:20 – 11:40 Amanda Petford–Long (Director, Center for Nanoscale Materials)
Update on the Center for Nanoscale Materials
- 11:40 – 12:00 Dean Miller (Director, Electron Microscopy Center)
Update on the Electron Microscopy Center
- 12:00–12:20 Simon Bare (UOP LLC)
National User Facility Organization (NUFO) Report
- 12:20 – 1:30 Lunch (Tent) + Postdoc Luncheon (Bldg. 401, A1100)

Parallel Plenary Sessions

APS (Bldg. 402, Lecture Hall)

- 1:30 – 2:10 Richard Prum (Ecology and Evolutionary Biology, Yale University)
Optics and Self-Assembly of Color Producing Biological Nanostructures
- 2:10 – 2:40 Arthur H. Compton Award: Ed Stern, Farrel Lytle, the late Dale Sayers, and John Rehr
- 2:40 – 3:00 Dooshaye Moonshiram (Department of Physics, Purdue University)
Spectroscopic Characterization of the Water Oxidation Intermediates in the Blue Dimer Ru-based Catalysts for Artificial Photosynthesis
- 3:00 – 3:30 Coffee Break
Gallery and Atrium
- 3:30 – 4:10 Brandt Eichman (Center for Structural Biology, Vanderbilt University)
Structural Studies of Proteins that Repair Alkylated DNA
- 4:10 – 4:50 Tom Duffy (Geosciences, Princeton University)
Mineralogy at the Extremes

CNM (E1100-1200)

- 1:30 – 2:30 Keynote: Paul Weiss (UCLA, Director of the California NanoSystems Institute, and Editor-in-chief of *ACS Nano*)
New Dimensions in Patterning: Placement and Metrology of Chemical Functionality at All Scales
- 2:30 – 3:05 Weida Wu (Rutgers University)
Multiferroic Vortices in Hexagonal Manganites

- 3:05 – 3:25 Coffee Break
Gallery and Atrium
- 3:25 – 4:00 Paulo Monteiro (University of California at Berkeley)
High-resolution Nanotomography of Green Cements
- 4:00 – 4:35 Sarah Hurst (CNM NanoBio Interfaces Group, Argonne National Laboratory)
Biological Applications of Metal Oxide Nanoparticles
- 4:35 – 4:50 Prashant Deshlahra (University of Notre Dame, Chemical and Biomolecular Engineering)
Polarization-dependent MEIRAS Study of CO Adsorption on Pt Nanowire Catalysts

EMC (A1100)

- 1:30 – 2:10 Chongmin Wang (Pacific Northwest National Laboratory)
Transmission Electron Microscopy and Spectroscopy beyond Aberration Correction: In Situ TEM imaging and Spectroscopy of Energy Materials
- 2:10 – 2:50 Jian-Min Zuo (University of Illinois at Urbana-Champaign)
Electrons for Molecular Imaging, Exploring Oxide Interfaces and Ultrafast Science
- 2:50 – 3:20 Coffee Break
Gallery and Atrium
- 3:20 – 4:00 A. M'ndange-Pfupfu (Department of Materials Science and Engineering, Northwestern University)
Tribological Investigation of "N3FC" Diamond-like Carbon Films Using In Situ TEM
- 4:00 – 4:40 Benjamin McMorran (Center for Nanoscale Science and Technology, National Institute of Standards and Technology)
Electron Beams with Orbital Angular Momentum
- 5:00 – 8:30 Social Event: Taste of Argonne dinner (Tent) and "Baby Wants Candy" (Bldg. 402, Lecture Hall)

Tuesday May 3

- 8:00 – 5:00 Exhibits:
Bldg. 402, Gallery; Bldg. 401, Atrium
- 8:00 – 5:00 Registration
Bldg. 401, Atrium
- 12:20 – 1:30 Lunch
Tent

Cross-facility Thematic Workshops

Workshop A: Frontiers in Imaging & Spectroscopy -- APS 402 Lecture Hall

Workshop B: Emergent Interfacial Phenomena -- Bldg. 402, Rooms E1100/E1200

Workshop C: In Situ Phenomena in Catalysis -- Bldg. 401, Room A1100

4:40 – 7:00 Poster Session and Reception (TCS Building—shuttle bus service provided)

Wednesday May 4

8:00 – 5:00 Exhibits:
Bldg. 402, Gallery; Bldg. 401, Atrium

8:00 – 12:00 Registration
Bldg. 401, Atrium

12:20 – 1:30 Lunch
Tent

12:10 – 1:30 APSUO's Steering Committee Lunch (Bldg. 401, Fifth Floor Gallery)

Parallel Facility-specific Workshops (Workshops 1-9)

Workshop 1: Soft X-ray Crystallography - Bldg. 460 (Argonne Guest House), Conference Room A

Workshop 2: Beyond Decade 3: Synchrotron-based SAS in the Era of Complex Energy-related Materials - APS 402 Lecture Hall

Workshop 3: Opportunities in Magnetic, Atomic, and Molecular Dynamics with a Short Pulse Soft x-ray Source - Bldg. 402, Room E1100

Workshop 4: Intermediate-energy X-rays: A window into Collective Behavior in Interacting Electron Systems - Bldg. 402, Room E1200

Workshop 5: Advances in Resonant Inelastic X-ray Scattering (RIXS) - Bldg. 401, Room A1100

Workshop 6: Photoinduced Charge Transfer in Nanostructures - Bldg. 401, Room A5000

Workshop 7: Advances and Novel Applications of Focused Ion Beam Microscopy - Bldg. 440, Room A105/106

Workshop 8: Inelastic X-ray Scattering at APS-U New Ideas of Application and Methodology within the APS Upgrade - Bldg. 401, Room A1100

Workshop 9: EMC User Science - Bldg. 440, Room A105/106

4:15-5:30 APS Town Hall
 Bldg. 402, Lecture Hall

5:30-6:30 End-of-meeting Happy Hour for all UM participants
 Back of Lecture Hall

Thursday May 5

CNM Short Courses, CNM Building 440

8:30 - 12:00 Morning Sessions

A: *Electron Beam Lithography*, Instructor: Leo Ocola
Second Floor Gallery

B: *Synthesis and Characterization of Nanocarbon Materials*, Instructor: Ani Sumant
Room A201

C: *Introduction to Using the CNM Computing Cluster for Materials Modeling*, Instructors: Michael Sternberg
and Anders Blom (QuantumWise, A/S)
Room A105/106

1:30 - 5:00 Afternoon Sessions

D: *Focused Ion Beam Lithography*, Instructor: Il Woong Jung
Second Floor Gallery

E: *Introduction to Sputtering and PECVD Techniques*, Instructors: David Czaplewski, Liliana Stan
Room A201

F: *Fundamentals of Pattern Transfer*, Instructor: Ralu Divan
Room A215

G: *Fundamentals of Atomic Layer Deposition*, Instructor: Jeffrey Elam
Room A105/106