

THE ADVANCED PHOTON SOURCE

The 2010 APS/EMC Users Meeting

Celebrating the 20th anniversary of groundbreaking, and “20 Years of Groundbreaking Science,” for the Advanced Photon Source (APS), the program for the APS portion of the 2010 APS/EMC Users Meeting focused on past discoveries, innovations, and “firsts,” and the extraordinary research opportunities ahead.

Pedro Montano, representing the Department of Energy’s (DOE’s) Office of Science, affirmed the Department’s approval of mission need for an APS upgrade, the first in a series of important decisions about the scope and timeline for this project. Murray Gibson, APS Director and Argonne Associate Laboratory Director for Photon Sciences, expressed his pleasure at this decision and commented, “The scientific vision which drove upgrade planning is the need to image real materials under real conditions in real time, with resolution far better than is available today...The upgrade will allow the Advanced Photon Source to meet the needs of today’s and tomorrow’s scientists without building an entirely new facility.”

Dean Miller and Amanda Petford-Long, directors of Argonne’s Electron Microscopy Center (EMC) and Center for Nanoscale Materials, respectively, stressed the opportunities available to APS users for collaboration and interdisciplinary research with users and staff from their facilities, highlighting new instrumentation and accomplishments.

Keynote addresses included an insightful retrospective by Gopal Shenoy of Argonne (“Conceiving and Realizing APS: A Symphony of Fresh Vision and Extraordinary Challenge”), and talks by Wayne Hendrickson of Columbia University (“Synchrotron Crystallography in Biological Discovery”), J. Kent Blasie of the University of Pennsylvania (“Interfacial Structure of Biological and Biomimetic Films”), and John Parise of Stony Brook University (“Understanding the Composition and Structure of Crystallographically Challenged Materials”).

User science highlights included talks by Antonino Miceli of Argonne, a DOE Early Career Award winner (“My Perspective on Future X-ray Detectors”), Ka Yee Lee of The University of Chicago (“Beyond Wrinkles: Stress Relaxation in Lipid Monolayers and Other Elastic Thin Films”), Ross Harder of Argonne (“Coherent X-ray Diffraction Imaging of Strain on the Nanoscale”), and Robert Fischetti of Argonne (“Macromolecular Crystallography and Observations of Reduced Radiation Damage with Micro-beams”).

An overview presentation, by Argonne Deputy Associate Laboratory Director for Photon Sciences Dennis Mills, on the APS Upgrade Project set the stage for a number of talks directed toward current and future science using instrumentation that will be developed as part of the upgrade. Gerald Seidler of the University of Washington (“X-ray Spectroscopies and Hard Problems in Energy Science: One Size Doesn’t Fit All”) led off, followed by Malcolm Guthrie of the Carnegie Institution of Washington (“Extreme Environments, Multiple Length Scales”), Roy Clarke of the University of Michigan (“Interfaces in Complex Systems”), and Maxim Boyanov of the University of Sofia (“X-ray Biogeochemistry: Elucidating Bacterial-Mineral-Contaminant Interfaces at the Molecular Scale”). A Town Hall Meeting, moderated by APS Users Organization Steering Committee Chair Paul Fuoss (Argonne) concluded this session of the meeting. Users expressed opinions and asked questions related to the Upgrade Project and Mills pointed users to the Upgrade Project web site (<http://www.aps.anl.gov/Upgrade/>) for the most current information.

Final meeting highlights included seven workshops and two award presentations and talks. Lili Gao of the University of Illinois at Urbana-Champaign presented an invited student talk entitled “Pressure Dependence of Atomic Structure, Magnetism, and Elastic Properties of Fe₃C: A Combined Synchrotron X-ray Diffraction and Nuclear Resonant Scattering Study.” The 2010 Rosalind Franklin Young Investigator Award was presented to Rafael Jaramillo, now a Postdoctoral Appointee at Harvard University. The award recognized Jaramillo’s graduate work at The University of Chicago investigating the effect of pressure on the phase transition of chromium into a spin-density-wave state at lower temperatures.

More information on the 2010 APS/EMC Users Meeting program, workshops, and abstracts can be found at <http://www.aps.anl.gov/Users/Meeting/2010/>.

Photos at right (top to bottom):

Part of the opening-session throng at the 2010 APS/EMC Users Meeting.

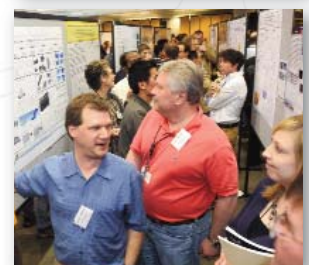
Pedro Montano presenting the DOE perspective.

Presentation of the Rosalind Franklin Award:

Paul Fuoss (l.) Rafael Jaramillo, and Murray Gibson.

Lili Gao giving the invited student talk.

One (crowded) aisle of the poster session.



CALL FOR APS GENERAL-USER PROPOSALS

The Advanced Photon Source is open to experimenters who can benefit from the brightest hard x-ray beams in the Western Hemisphere.

General-user proposals for beam time during Run 2011-1 are due by Friday, October 29, 2010.

Information on access to beam time at the APS is at http://www.aps.anl.gov/Users/apply_for_beamtime.html or contact Dr. Dennis Mills, DMM@aps.anl.gov, 630/252-5680.

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