

ADVANCED PHOTON SOURCE

LOOKING AHEAD DURING USER WEEK 2009

The future of the Advanced Photon Source (APS) looked bright for attendees at User Week 2009, the annual meeting of researchers who use the Department of Energy, Basic Energy Sciences (DOE-BES) national research facilities at Argonne National Laboratory.

The meeting opened on Monday, May 4, 2009, with a welcome by Larry Lurio (Northern Illinois U.), Chair of the APS Users Organization Steering Committee. Lurio noted that, "Two themes of the meeting workshops are intended to focus on the APS renewal. Increasing the brightness of the APS will improve length-scale dependent studies of hierarchical materials. Increased flux will remove the need to control sample environments carefully, so that we can look at a broad range of materials over a range of environments, which is important when fulfilling the second renewal theme: studies of real materials in real time. Science has been asked by the President and the Congress to meet critical needs in energy and many other areas of importance to society. We, as a community, should reward the confidence that's been placed in us by our government," Lurio said.

APS Director Murray Gibson followed with an overview of the past year that included APS research highlights, from energy (fuel sprays, metal-organic frameworks, lithium behavior under realistic conditions) to the environment (how sea organisms might capture carbon, understanding free radicals in the atmosphere), infrastructure (deformation of materials at the subgrain level for lightweight and strong materials, how reducing oxide scale aids hydrogen processing), and human health (cancer-attacking viruses, migration of mercury in the teeth to the bloodstream, and the side effects of obesity).

"The number of APS users continues to increase, attributable to growth in the number of remote users," Gibson said. "The machine is operating efficiently and reliably. We are excited about the prospects for research using new instruments at the BioCARS and Life Sciences Collaborative Access Team sectors, the HERIX detector at XOR/IXS Sector 30, and the nanoprobe at CNM/XOR Sector 26. The success to date of the Linac Coherent Light Source at the SLAC National Accelerator Laboratory is an exciting event and we're proud of the role Argonne played in developing and delivering the undulator system that is a critical component; this has been a great collaboration... We are being well supported by the Administration, Congress, and the DOE-BES. We anticipate that this support in the coming years will enable the APS to define the state of the art in x-ray science."

The "DOE Perspective" was provided by Pedro Montano, Director of the Scientific User Facilities Division in DOE-BES, who observed that the positive science funding outlook "places tremendous demands on the scientific community; we must deliver significant accomplishments, and I think we can do it."



Above: Presentation of the Compton Award; l. to r.: Larry Lurio, Murray Gibson, Mark Sutton, Simon Mochrie, and Gerhard Grübel. Right: Argonne Director Eric Isaacs. Below: A scene from the poster session.



Argonne Director Eric Isaacs emphasized the importance of looking five to ten years into the future in the interest of keeping Argonne user facilities at the cutting edge. "We must do great science and nurture partnerships in order keep science at Argonne vital and healthy," Isaacs said.

A high point of the meeting was the presentation of the semi-annual Compton Award to Gerhard Grübel (HASYLAB/DESY), Simon Mochrie (Yale U.), and Mark Sutton (McGill U.) for their pioneering efforts in x-ray photon correlation spectroscopy.

Rounding out the meeting was a series of talks that offered the symmetry of in-depth reviews of 2008 experimentation across several disciplines and a look ahead at new research avenues that will be enabled by the APS Renewal.

CALL FOR APS GENERAL-USER PROPOSALS

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

General-user proposals for beam time during Run 2010-1 are due by October 30, 2009.

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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