The U.S. Department of Energy's
Advanced Photon Source
Argonne National Laboratory

The 2004 APS Users Meeting

The 2004 Users Meeting for the APS, held on May 4-6, was one of superlatives and firsts. Not only did this meeting attract more attendees (over 650 people attended all or part of the week's events) than any previous APS user meeting, it also featured the most posters (140), the largest student population (more than 50 registered, with 41 submitting posters), the most adjunct workshops (8), and the largest number of exhibitors (40). The 2004 APS user meeting also coincided with the inaugural user meeting of the Center for Nanoscale Materials (CNM), the first example of what promises to be a long and fruitful collaboration between the APS and the CNM.

Scientific sessions at the APS user meeting included Gene Ice (ORNL) on the life of the late synchrotron pioneer Cullie Sparks, a charter member of the APS user community; Richard Reeder (SUNY Stony Brook) on Mineral Surfaces: Bridging Adsorption and Co-Precipitation; Ronald Ruth (Lyncean Technologies, Inc.) on plans for a compact light source; George Flynn (SUNY Plattsburgh) on chemical analysis and preparation of interplanetary dust particles; Dinshaw Patel (Memorial Sloan-Kettering Cancer Center) on Molecular Recognition Events in RNA Interference and Glycolipid Transfer Processes; Jonathan Greer (Abbott Laboratories) on progress in structure-based drug discovery; Wei-Jen Tang (The University of Chicago) on anthrax adenylyl cylase toxin; and Thomas Duffy (Princeton University) on the role of synchrotron experiments in understanding deep planetary interiors. The sessions ended with the presentation of student-poster prizes to Jennifer Jackson for "(Mg,Fe)SiO3 Perovskite to 120 GPa Using Synchrotron Mössbauer Spectroscopy"; Jason Key for "Time-Resolved Crystallographic Studies of the Heme-Based Sensor Protein FixLH"; and Mark Pfeifer for "3-D Mapping of Strain Using Coherent X-ray Diffraction." The final presentation of the morning was the invited talk by Alexis Templeton, recipient of the first APSUO Rosalind Franklin Young Investigator Award (see story at right).

The APSUO Rosalind Franklin Young Investigator Award

The APS and the APS Users Organization (APSUO) have established the APSUO Rosalind Franklin Young Investigator Award to recognize an important technical or scientific accomplishment by a young investigator that depended on, or is beneficial to, the APS. The award, which is open to senior graduate students and those whose Ph.D. degree was awarded no more than two years prior to nomination, consists of a plaque plus $1,000.

The APSUO chose **Dr. Alexis S. Templeton** (right) to receive the first APSUO Rosalind Franklin Young Investigator Award. Dr. Templeton received the award on May 6 at the closing session of the 2004 APS User Meeting (story at left). Templeton's work as a graduate student at Stanford University and more recent studies as a Postdoctoral Research Associate at Scripps Institution of Oceanography, University of California, San Diego, centers around the influence of micro-organisms in the speciation of heavy metals in environmental systems, as well as the role of bacteria in the weathering of basaltic glasses in deep ocean environments. Her current work involves a multidisciplinary investigation focused on identifying key microorganisms in ocean floor environments that survive through oxidation of Fe(II) and Mn(II) in basaltic glasses. She has developed a protocol combining x-ray reflectivity, total reflection x-ray fluorescence, grazing-angle XANES, and x-ray diffraction measurements. These methods can be used to determine the thickness and density of reacted surface layers, identify surface-associated weathering products, and measure the redistribution and redox trans-formation of metals in the weathered surfaces. This work is an exciting application of synchrotron methods to a complex problem and is likely to have a major impact on our understanding of fundamental biological processes in the deep ocean.

In her brief professional career, Templeton has authored or co-authored 16 peer-reviewed publications and received a number of prestigious awards. The APS and the APSUO are happy to add the Rosalind Franklin award to that number.

About Rosalind Franklin: The brilliant chemist Rosalind Franklin played a critical but largely unacknowledged role in the discovery of the structure of DNA. Franklin went on to work on the tobacco mosaic virus and the polio virus before her untimely death in 1958 at age 37. More information on Franklin is at http://www.sdsc.edu/ScienceWomen/franklin.html.

At the APS, our door is open to experimenters, from all scientific disciplines, whose research requires the highest-brilliance hard x-ray beams in the Western Hemisphere.

General-user proposals for beam time during Run 2004-3 (October-December 2004) are due by Friday, July 16, 2004. Information on access to beam time at the APS is at:
http://www.aps.anl.gov/user/beamtime/get_beam.html
or contact Dr. Dennis Mills, DMM@aps.anl.gov, 630/252-5680.

Information on APS research techniques and beamline capabilities is at:
http://www.aps.anl.gov/user/beamtime/get_beam.html

APS annual report & APS activity reports

Copies of the newest APS annual report, *APS Science 2003*, are now available. To receive a copy, send a request, with your name and mailing address, to apsinfo@aps.anl.gov. Be sure to specify the APS annual report in your request.

More than 300 new APS activity reports are available for download in PDF format from our searchable database at:
http://beam.aps.anl.gov/pls/apsweb/apsact_2002_search_pkg.start_page

Search the comprehensive listing of publications derived from APS research in our publications database at:
http://beam.aps.anl.gov/pls/apsweb/pub_V2_OPEN_0006.review_start_page

Office of Science
U.S. Department of Energy

**Argonne National Laboratory,
a U.S. Department of Energy Office of Science laboratory,
is operated by The University of Chicago.
The Advanced Photon Source is funded by the U.S. Department of Energy,
Office of Science, Office of Basic Energy Sciences.**