

APS is X-ray Classroom for Students

Eleven advanced placement physics students from Riverside-Brookfield High School gained a hands-on introduction to innovative x-ray science at the Advanced Photon Source (APS). The students spent the better part of March 7 at the APS sector 15 facility operated and managed by ChemMatCARS (the chemistry and materials beamlines of the Consortium for Advanced Radiation Science). ChemMatCARS and APS staff members guided the students through a curriculum that ranged from basic scientific principles to the finer points of experimentation.

The workshop was designed to introduce the students to a typical scientific environment found at forefront research facilities such as the APS. The ChemMatCARS national synchrotron resource at the APS is available to researchers from a variety of scientific fields. It is managed by The University of Chicago Center for Advanced Radiation Sources and jointly funded by the National Science Foundation and the U.S. Department of Energy.

The students had access to the microcrystallography facility located in station 15-ID-C of the ChemMatCARS facility. First, the group attended an overview session on x-ray science and beam physics and participated in the experimental orientation required for researchers who use the APS beamlines.

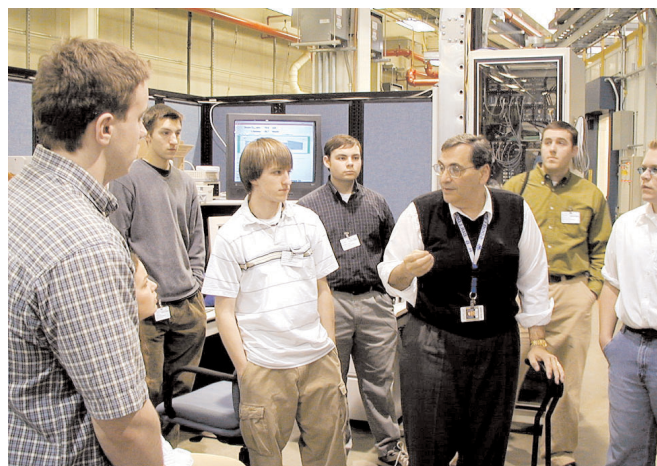
Next, the students used the APS x-ray beam to determine the molecular structure of a zeolite compound employed in the production of gasoline. Monochromatic x-rays from a high-brilliance APS undulator source were used in conjunction with the x-ray beam delivery system and the ChemMatCARS experimental facility.

The experiment demonstrated to the participants the current tools available for research with high-brilliance x-ray beams. These included the actual beamline instrumentation as well as sample mounting and data analysis. The procedures the students followed and the overall experience were identical to those encountered in an actual experiment carried out by full-fledged users of the APS facility.

For more information on school tours, call the Division of Educational Programs at ext. 2-4114.



David Cookson (second from left) of ChemMatCARS watches R-BHS students try their hand at data gathering on the ChemMatCARS beamline.



Jim Viccaro (third from right, ChemMatCARS) with RBHS students