

Workforce Development: Mentoring America's Future Scientists

Argonne's Vision

How can Argonne enrich science education and help prepare the next generation of scientists and engineers in the United States? The foundation for the success of research participation at Argonne National Laboratory is the individual scientist/engineer who provides guidance and supervision of the students (Figure 1). The overall purpose of this mentorship experience is to provide participants with opportunities to learn as much as possible about a specific area of scientific research or technology.



Figure 1. The mentors provide needed direction and overall guidance to ensure that the students have meaningful and productive experiences while being involved in real-life research assignments.

Approach

Argonne has maintained extremely productive and wide-ranging interactions with the academic community throughout its existence. Activities range from programs that support science education and community outreach at the K-12 level to mutually beneficial research partnerships between university faculty and Argonne research staff in virtually all of the Laboratory's scientific and technical areas.

Programs at the university level provide opportunities for research participation for undergraduates (Figures 2 and 3) and faculty, as well as for thesis research. Argonne participates in graduate programs involving strategic areas of interest to the U.S. Department of Energy (DOE), such as the Neutron and X-Ray Scattering School. The quality and value of these programs attract applicants from throughout the country. Overall, more than 360 undergraduates, 192 graduate students, and 98 visiting faculty served as research participants this year through educational appointments.



Figures 2 and 3. Students from colleges and universities across the country participate in the Laboratory's ongoing research projects.

Accomplishments

Argonne's collaboration with academia and students has resulted in the following programs and activities:

- The National Neutron and X-Ray Scattering School for graduate students (Figure 4)
- Faculty and student teams supported through the National Science Foundation
- Internships for pre-service science teachers, undergraduates, and graduate students
- An annual undergraduate symposium for young researchers
- Summer training programs for teachers from regional schools
- An instructional van that brings modern scientific equipment to 6,300 students in Chicago-area classrooms annually
- More than 3,000 pre-college students who visit the Argonne Information Center each year
- Science Careers in Search of Women Conference attended by 400 high school girls annually
- A nationwide electronic bulletin board system for teachers and students at any level, allowing them to "Ask a Scientist" questions about any scientific topic. The site has logged more than 1.2 million hits per month.
- Since 1989, a total of 224 former appointees to the Division of Educational Programs who have become full- and part-time Argonne employees.



Figure 4. National Neutron and X-Ray Scattering School, August 2001.

Benefits

Argonne's educational activities and programs contribute to strengthening the scientific workforce for the future.

Partners

Local School Districts
Community Colleges and Universities

Sponsors

U.S. Department of Energy
National Science Foundation
State of Illinois

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