

NATIONAL ENERGY TECHNOLOGY LABORATORY – DOE --EDUCATIONAL INITIATIVES

<http://www.netl.doe.gov/about/educational.html>

NETL provides a wide range of educational activities and resources for K-12 students and teachers.

- 2006 Earth Day Poster Contest Winners
- Education Department Announces Teacher-to-Teacher Initiative
- For primary and intermediate students: Through the NETL Scientist and Engineer Resource Volunteers for Education (SERVE) program, volunteer scientists and engineers from the technical staff act as math and science experts, teacher consultants, and classroom lecturers and demonstrators. SERVE volunteers visit with students from approximately 50 elementary and intermediate schools each year. NETL's Tulsa office has adopted Bryant Elementary School, an at-risk elementary school in the city. NETL volunteers also offer demonstrations and presentations to other youth-oriented organizations such as Cub Scouts.
- **For secondary students.** NETL works with young men and women in local high schools through a variety of internships, shadowing experiences, and assignments with mentors. NETL's SERVE program provides students with educationally-related work assignments, giving students a basis for making realistic decisions regarding their future careers. Students are assigned a mentor and participate in a shadowing exercise. The Pawhuska Teaching Academy in Oklahoma provides young people a closer look at science teaching through an innovative, hands-on program. High school students and college freshmen present science lessons to elementary students under the guidance of selected master teachers. The 2-week workshop curriculum was developed to be discovery-based and integrates science and math. NETL volunteers work in partnership with the Pittsburgh Federal Executive Board and the FBI's "Adopt a School" initiative as mentors to high school students. Goals of the initiative include improving students' performance and attendance, encouraging students to become responsible and accountable citizens, and providing good role models.
 - **Career days.** SERVE volunteers act as representatives at career days, while other NETL employees speak with students about administrative-type careers. NETL employees stress the importance of seeking opportunities and challenges in the workforce, discuss diversity in the work place, and the importance of good work ethics.
 - **Facility tours.** Tours of NETL facilities for students and teachers are tailored to the visiting group. Each year approximately fifteen

schools take advantage of these tours. [Tours of the R&D facilities](#) focus on energy research and solving national environmental problems.

- **Science fairs.** NETL volunteers serve as mentors, coaches, and judges in local and regional science fairs, including the Junior Academy of Science, Regional Science and Engineering Fairs, and Math Counts.
- **Science Bowl.** The [National Science Bowl](#)® is a highly visible educational event and academic competition among teams of high school students who attend science seminars and compete in a verbal forum and answer questions in all branches of science and math. The regional and national events encourage student involvement in math and science activities, improve awareness of career options in science and technology, and provide an avenue of enrichment and reward for academic science achievement. NETL annually sponsors DOE Regional Science Bowls in western Pennsylvania, West Virginia, and Oklahoma. These high school competitions focus on science, mathematics, and energy-related topics. Regional winners compete for a national championship. Winning schools are awarded cash and equipment grants, and student champions earn trips to nationally and internationally renowned research centers.
- For primary and intermediate school teachers. NETL makes significant efforts to educate teachers about the services NETL can provide by hosting hands-on workshops and by taking displays and informational materials to education conferences. NETL also encourages employees to use its educational materials with their children and local schools.

NETL's annual *Triple E Seminar* --short for Energy, Environment and Economics – is a two-day workshop of lectures, demonstrations, hands-on activities, and tours conducted by NETL researchers, university professors, and innovative grade school teachers. Participants enjoy Triple E because of the innovative, low cost experiments they take back with them to interest students in science.

Hands-On, Minds-On Science is an initiative designed to address training needs identified by elementary teachers of math and science in Oklahoma. NETL, the Bartlesville Professional Development Center, a local foundation, and other private organizations have teamed to sponsor the initiative.

The *Excellence in Science Education Award* has been presented to one teacher in both Pennsylvania and West Virginia since 1999. NETL created the science education award to recognize area teachers who participate in education events and then apply those experiences to their science classrooms.

With the Spectroscopy Society of Pittsburgh (SSP) and the Society of Analytical Chemists (SACP) of Pittsburgh, NETL hosts *Light, Color & Spectroscopy for Kids*, a seminar for elementary and middle school teachers aimed at introducing children to the science of light. This seminar was developed by the SSP and is cosponsored by SACP.

NETL is proud to be a regional Program Partner with the Allegheny Schools Science Education and Technology (ASSET) Program. This program provides teachers with materials and continuing education for science curriculum instruction. In addition to providing volunteers and speakers for seminar programs, NETL provides Full Option Science System (FOSS) kits and other science instructional materials to schools and organizations that are not part of ASSET. NETL also makes available the New Explorer Video Series and various printed materials on energy and the environment. Some material is distributed nationally, while volunteer scientists travel to local schools to work with the students and their kits.

- For Secondary School Teachers. NETL hosts programs to assist high school teachers develop exciting science programs for their classrooms, including:
SACP's "Computer Software" workshop for high school chemistry and physics teachers.

The annual *Educator in the Workplace* experience. Partnering with the Mon Valley Educational Consortium and West Virginia University, NETL provides the opportunity for ten local high school teachers to work hands-on with NETL researchers during the summer on an experiment of timely interest. The aim is to give the teachers contemporary material that they can work into their science curricula.