

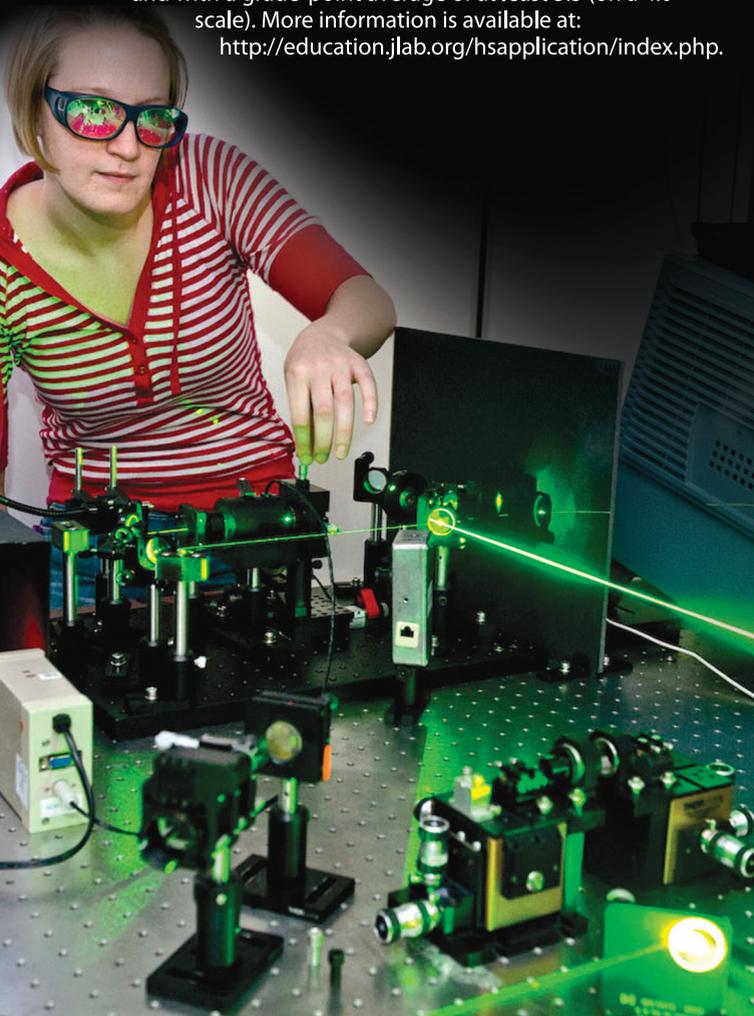
# STUDENT INTERNSHIP PROGRAMS

## SCIENCE UNDERGRADUATE LABORATORY INTERNSHIP (SULI)

The Science Undergraduate Laboratory Internship program supports the advancement of undergraduate students interested in careers in scientific and engineering fields. Students are selected from a competitive, nationwide pool and work with scientists or engineers for 10 weeks on projects related to Jefferson Lab research. SULI prepares students to pursue professional careers and graduate school opportunities as they become part of the lab's research community and establish long-term research relationships with Jefferson Lab scientists and engineers. Students can apply online at: [www.scied.science.doe.gov](http://www.scied.science.doe.gov).

## HIGH SCHOOL SUMMER HONORS PROGRAM (HSSHP)

The eight-week High School Summer Honors Program offers work experience in physics and engineering under the guidance of a Jefferson Lab mentor to the highest achieving high school students in the Hampton Roads area. This program is for high school students who are least 16 years old and in good academic standing and with a grade-point average of at least 3.3 (on a 4.0 scale). More information is available at: <http://education.jlab.org/hsapplication/index.php>.



# ABOUT JEFFERSON LAB



Jefferson Lab is a U.S. Department of Energy nuclear physics research facility that provides an international user community with a scientific instrument and research opportunities that are unique in the world.

Managed and operated by Jefferson Science Associates, LLC, the lab's primary research mission is to expand the understanding of the structure of matter and the forces that hold the atom's nucleus together.

The Department of Energy is dedicated to training the next generation of scientists and engineers to maintain U.S. scientific and technological leadership. Jefferson Lab's mission includes helping to educate the next generation in science and technology. The lab is a valued contributor to science education and a major resource to the local, regional and national education communities.

In partnership with the local public school districts, the lab also designs and offers programs to enhance the quality of K-12 science, math and technology education. Jefferson Lab's long-term commitment to science education is focused on:

- Increasing the number of teachers with a substantial background in math and science;
- Strengthening the motivation and preparation of K-12 students;
- Addressing the serious under representation of minorities and females in science, math, engineering and technology careers.

# WANT TO KNOW MORE?

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## Jefferson Lab

Thomas Jefferson National Accelerator Facility (Jefferson Lab) is managed by Jefferson Science Associates, LLC for the U.S. Department of Energy's Office of Science



THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

# SCIENCE EDUCATION

# TEACHER DEVELOPMENT PROGRAMS

## ACADEMIES CREATING TEACHER SCIENTISTS (ACTS)

The Academies Creating Teacher Scientists program, funded by the U.S. Department of Energy's Office of Science, is a four-week summer classroom and research program for 5th–8th grade teachers designed to:

- Build teachers' content knowledge and skill base in the physical sciences;
- Equip teachers with more engaging and advanced teaching methods;
- Increase teachers' ability to positively influence student interest and understanding of the physical sciences; and
- Acknowledge the important role that teachers play in maintaining the educational "pipeline" that develops students with the critical-thinking skills needed to solve the nation's future challenges.

The ACTS program includes the following components: a rigorous course in basic science taught by an expert teacher from a local high school; lectures on current research by Jefferson Lab staff; workshops on effective teaching methods for the physical sciences; and experiential learning under the guidance of Jefferson Lab staff.

All ACTS components address the National Science Education Standards and the Virginia Standards of Learning. Teachers can apply online at: [www.scied.doe.gov](http://www.scied.doe.gov).

ACTS participants take a test on the first and last day of the program to measure science content knowledge. Teachers' average test score during the 2007 physics-based program increased 24 percentage points, and in 2008 an increase of 27 percentage points was achieved in the chemistry-based program. In 2009, the teachers' average score on the geophysics test increased 11 percentage points after completing the program.



## JLAB SCIENCE ACTIVITIES FOR TEACHERS (JSAT)

JLab Science Activities for Teachers is an initiative funded by Jefferson Science Associates designed to build teachers' skills in the physical sciences. JSAT, an after-school program for middle-school science teachers, is similar to the ACTS program in that both programs serve the same teacher populations and work toward the same goals.

Each teacher attends 16 sessions throughout the school year. Each session includes a JLab-related activity, project and/or lecture. Efforts are made to cover material that participants are teaching so that they can apply new strategies to their current lesson plans. In addition, teachers are given the materials necessary to implement these new strategies. Teachers who attend 80 percent of the sessions receive a stipend of \$400 at the end of the school year.



## BECOMING ENTHUSIASTIC ABOUT MATH AND SCIENCE (BEAMS)

Becoming Enthusiastic About Math and Science brings classes of 5th–8th grade students (1,000 per year) and their teachers to Jefferson Lab for science and math interactive activities. The goals of the BEAMS program are to:

- Provide teachers with classroom activities based on the science and technology at Jefferson Lab;
- Motivate students and strengthen their academic preparation; and
- Increase the representation of minorities and women in the science and engineering workforce.

Students and their teachers spend several days immersed in Jefferson Lab's research, interacting with scientists, engineers and technicians as they participate in science and math activities. As these students progress through middle and high school, additional Jefferson Lab-oriented education opportunities are provided.

BEAMS has been recognized by the National Academy of Science RISE (Resources for Involving Scientists in Education) project as one of only thirteen K-12 science education programs where scientists, engineers and other community members have especially effective roles.

Any teacher can apply to participate in BEAMS although priority will be given to teachers that have completed one year of the JSAT or ACTS programs. More information on the BEAMS program can be found at: <http://education.jlab.org>.

## EDUCATION EVENTS

### PHYSICS FEST

At least one day each month during the school year is set aside for groups of students to attend a presentation in Jefferson Lab's auditorium. This two-hour presentation includes a brief interactive summary of the science and technology at Jefferson Lab followed by the Deep Freeze (cryogenics) and Hot Stuff (plasmas) presentations. Seating is limited. More information can be found at: <http://education.jlab.org/physicsfest/index.php>.

### SCIENCE BOWLS

The Science Bowl is a highly visible educational event and academic competition among teams of students who compete in a verbal forum to answer questions in all branches of science and math. These 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. Jefferson Lab hosts two Regional Science Bowls, one for high school students (early February) and one for middle school students (early March). The winning team from each competition wins an all-expense paid trip to participate at the National Science Bowl®, held in late April in Washington, D.C. To register, please send an e-mail to: [education@jlab.org](mailto:education@jlab.org).

### SCIENCE SERIES

Science lectures for high school and middle school students, and the general public, are offered four times a year in the CEBAF Center auditorium at Jefferson Lab. The events are posted on the lab's website and are advertised in local newspapers. More information is available at: <http://education.jlab.org/scienceseries/index.php>.