

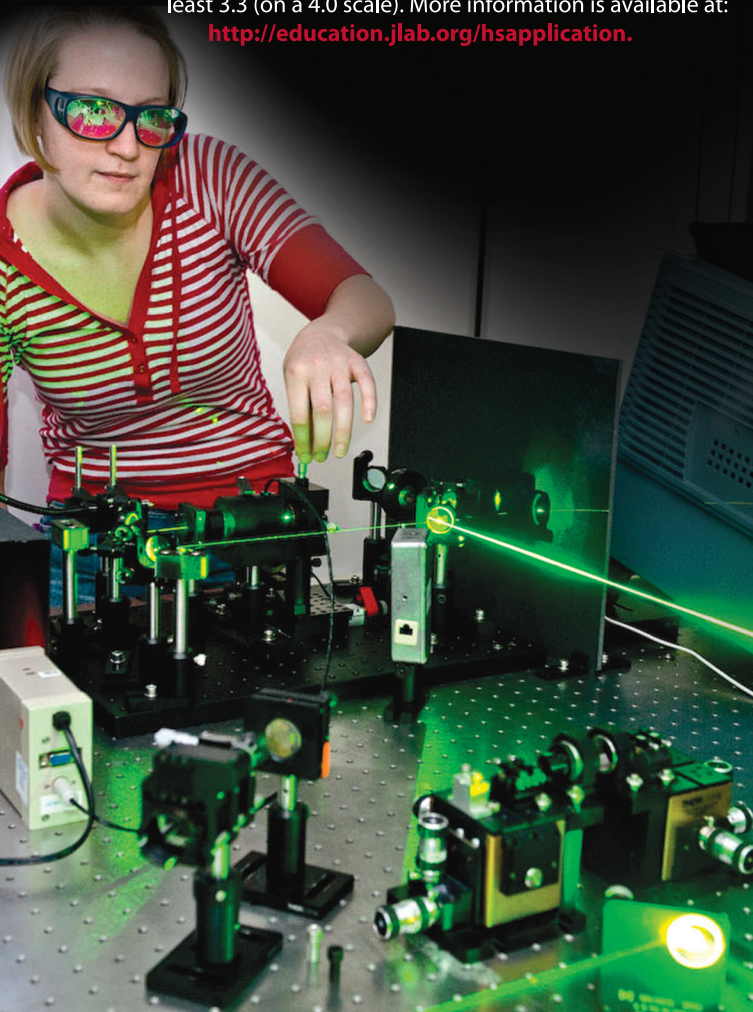
STUDENT INTERNSHIP PROGRAMS

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 nationwide and work with scientists or engineers for 10 weeks on projects related to Jefferson Lab research. SULI prepares students to pursue their academic and professional interests in science and provides long-term research relationships with Jefferson Lab scientists and engineers. Students can apply online at: <http://science.energy.gov/wdts/suli>.

HIGH SCHOOL SUMMER HONORS PROGRAM (HSSHP)

The six-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. Students must be at least 16 years old and in good academic standing 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>.



ABOUT JEFFERSON LAB



The Thomas Jefferson National Accelerator Facility (Jefferson Lab) is a world-leading nuclear physics research facility funded by the U.S. Department of Energy's Office of Science. Jefferson Lab's unique and exciting mission is to expand our knowledge of the universe by studying sub-atomic particles known as quarks and gluons. Scientists know that these building blocks of matter combine to form the protons and neutrons found in the nucleus of the atom, but they don't fully understand how these particles build our world and universe.

To learn more, scientists conduct experiments using Jefferson Lab's Continuous Electron Beam Accelerator Facility (CEBAF). CEBAF acts like a giant microscope, providing an unprecedented view that enables scientists to "see" things a million times smaller than an atom. CEBAF does this by directing an electron beam, at nearly the speed of light, into a target nucleus, such as hydrogen, carbon or gold. As the beam smashes into the target, detectors collect and record information about the scattered particles. By studying the speed, direction and energy of the particles, scientists learn more about how the nucleus is put together.

Jefferson Lab is located on 206 acres in the Hampton Roads area of Virginia and is managed and operated by Jefferson Science Associates, LLC. In addition to DOE funding, the lab also receives support from the City of Newport News and the Commonwealth of Virginia.

In addition to its science mission, the lab provides programs designed to help educate the next generation in science and technology, and to engage the public. Jefferson Lab's goals in science education are to:

- Expand its strong relationship with the local community through lab events and partnerships that promote math and science education;
- Make a tangible difference in the quality of instruction by providing lab-related resources for K-12 teachers; and
- Immerse undergraduate and high school students in a world-class facility research environment to mentor the nation's next generation of leaders.

WANT TO KNOW MORE?

Contact Information:

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Jefferson Lab

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THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

SCIENCE EDUCATION

TEACHER DEVELOPMENT PROGRAMS

JLAB SCIENCE ACTIVITIES FOR TEACHERS (JSAT)

JLab Science Activities for Teachers is an initiative funded by Jefferson Science Associates to improve teaching skills in the physical sciences. The JSAT program is for 5th, 6th, and 8th grade teachers and designed to build content knowledge in the physical sciences and introduce engaging and advanced teaching methods that help students develop critical thinking skills.

Teachers attend 16 after-school sessions throughout the school year. Each session includes a JLab-related activity, project, and/or lecture. Topical material is relevant to the teaching curriculum for the year so that participants can immediately apply new teaching strategies to their lesson plans. In addition, teachers are given the educational materials necessary to implement new teaching strategies.

JSAT teachers participate in the annual Teacher Night at Jefferson Lab. Teachers from local schools attend this event and benefit from having JSAT participants enthusiastically share new teaching strategies and educational materials for the classroom. For more information on JLab's Teacher Night, including dates and times, visit:

<http://education.jlab.org/teachernight>.

All JSAT program components address the Virginia Standards of Learning and are aligned with the National Science Education Standards. Teachers can apply online at:

<http://education.jlab.org/jsat>.



JEFFERSON LAB SCIENCE EDUCATION WEBSITE (<http://education.jlab.org>)



The Jefferson Lab Science Education website is an outstanding resource for students, teachers and people having a general interest in the physical sciences.

Visitors to the site can view and download educational information and activities, instructions to build science equipment for classroom demonstration, and a wide range of science education videos. Jefferson Lab also produces Frostbite Theater, a collection of entertaining videos that demonstrate various science applications, including liquid nitrogen, radioactivity, and electricity. Viewers are given the opportunity to study characteristics of specialized materials not readily accessible.

<http://education.jlab.org/frost>

Through the Science Education website, people can access information about atoms, learn about upcoming public events and programs and play a myriad of science and math educational games. The most popular game is based on the Virginia Standards of Learning test items and provides students with opportunities to enhance their knowledge and test-taking skills. To further benefit teachers and students, many questions are organized to promote learning in specific areas of need.



EDUCATION EVENTS

PHYSICS FEST

Throughout the school year, groups of students may attend a science 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>.

SCIENCE BOWLS

Science Bowls are highly visible educational events. Teams of students compete in a verbal forum to answer questions in all branches of science and math. These events engage students in math and science activities, improve awareness of career options in science and technology, and provide an avenue of enrichment and reward for academic 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 has all expenses paid to represent the Commonwealth of Virginia at the National Science Bowl®, held in late April in Washington, D.C. To register, please send an e-mail to: 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>.

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 a K-12 science education program 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 who have completed one year of the JSAT program. More information on the BEAMS program can be found at: <http://education.jlab.org>.