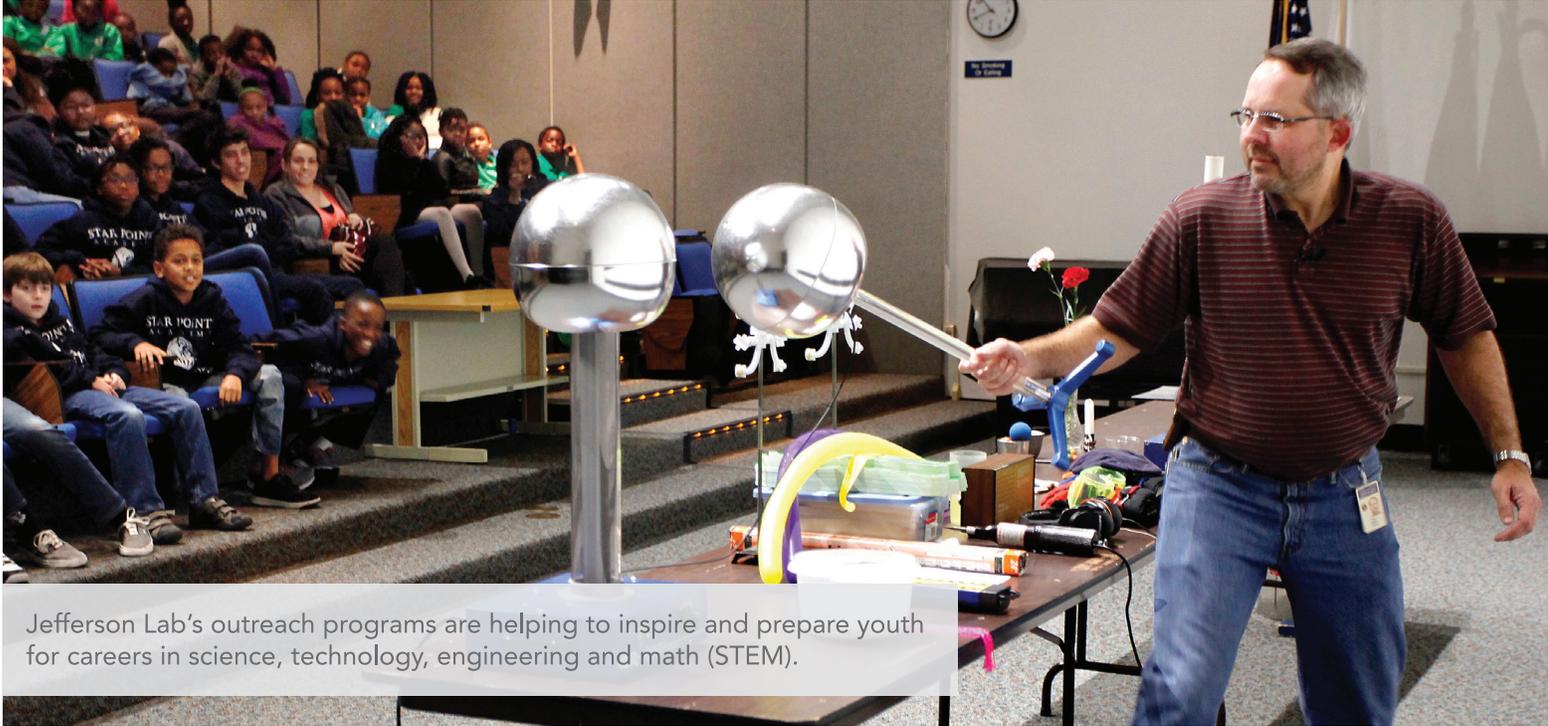


# STEM OPPORTUNITIES

Nurturing Tomorrow's Workforce



Jefferson Lab's outreach programs are helping to inspire and prepare youth for careers in science, technology, engineering and math (STEM).

Each year,  
 Jefferson Lab staff  
 reaches more than  
 13,000 students  
 and 1,200 teachers  
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 STEM programs.

Jefferson Lab outreach programs provide people of all ages with information about the lab, as well as how the lab's mission complements and supports research efforts at other Department of Energy national laboratories. Each year, Jefferson Lab staff reaches more than 13,000 students and 1,200 teachers through the lab's STEM programs. Interacting with our scientists, engineers and technical staff, they gain insight into the research carried out at the lab, how this research is impacting us today, and what it could mean for the future.

Outreach efforts include educational, informational and career-development opportunities. As the need for a

highly skilled, high-tech workforce grows, Jefferson Lab is helping to inspire and prepare the next generation of scientists and engineers, emphasizing the value of STEM careers and the importance of pursuing research.

## PASSION AND PURPOSE

The goals of Jefferson Lab's outreach programs are to expand the lab's strong relationship with local and regional communities, to advance awareness of the range of research carried out within the DOE national laboratory system, to increase interest in STEM career paths for women and minorities, and to encourage students to become a part of the next-generation STEM workforce.

## INSTILLING AN INTEREST IN SCIENCE

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Jefferson Lab's K-12 outreach program serves as a model of excellence within the national laboratory system. The Becoming Enthusiastic About Math and Science (BEAMS) program brings classes of elementary- and middle-school students to the lab, giving them the opportunity to participate in hands-on, interactive learning with researchers, engineers and technical staff. Physics Fest, another lab outreach program, engages, entertains and informs audiences of all ages as they explore the lab's scientific mission and the science and technology needed to conduct that research – all while gaining a better understanding of the four phases of matter. Likewise, the lab's Science Education website provides access to scientific information and learning resources, including Virginia Standards of Learning Math and Science practice tests and a host of STEM games and activities. These resources are used by students – as



Design challenges encourage teamwork and communication.

YouTube videos – demonstrates aspects of scientific principles and applications in an easy-to-understand format. In many cases, these videos allow students to see and experience science that otherwise would be inaccessible.

## PREPARING TOMORROW'S SCIENTISTS & ENGINEERS

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Competitive, immersive summer internships at Jefferson Lab provide students with meaningful work and research experiences under the guidance and supervision of a mentor, allowing them to apply academic

knowledge, learn critical job skills, and gain valuable insight into a world-class research environment. Each summer, dozens of students participate in internship opportunities. Over the years, many of these students have been accepted into prestigious science Ph.D. programs and earned recognition for their work while at the lab.

## Lab staff share their passion for research and mentor tomorrow's scientists and engineers.

well as teachers and parents – across Virginia, around the country and even around the world. For many, the website is an integral part of their classroom science curriculum, attracting about 250 million page views per year.

Additionally, with more than a million views each year, Jefferson Lab's Frostbite Theater – a collection of



The lab helps teachers advance their science knowledge and instruction skills.

## MAXIMIZING RESOURCES

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The Jefferson Lab Science Activities for Teachers (JSAT) program aims to improve teaching skills in the physical sciences. The program is designed to assist 5th, 6th and 8th grade teachers in developing engaging methods and activities related to science that will help students with critical thinking, team building and communication skills. By working to deepen teachers' knowledge in the physical sciences, and helping them hone their instructional skills, a larger number of students benefit from the resources expended by Jefferson Lab.

THOMAS JEFFERSON  
NATIONAL ACCELERATOR FACILITY

12000 Jefferson Avenue, Suite 15,  
Newport News, Virginia 23606  
(757) 269-7100  
jlabinfo@jlab.org • www.jlab.org  
<http://education.jlab.org>

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