

Governor's STEM Academy Brief



Office of Career, Technical, and Adult Education

VOLUME 58 — SCIENCE, TECHNOLOGY, ENGINEERING,
AND MATHEMATICS (STEM) CLUSTER

NOVEMBER 17, 2016

The purpose of the monthly brief is to provide information, resources, and a networking vehicle to support the Governor's STEM (science, technology, engineering, and mathematics) Academies in Virginia.

GOVERNOR'S STEM ACADEMIES SPOTLIGHTS

Students from our Engineering Technology program at the Bridging Communities Governor's STEM Academy recently completed their senior project—designing and building a 3500-watt, mobile, solar-powered generator to help local citizens during times of emergency power outages. The students' solar-powered generator is safe, quiet, and easy to maintain and use. The solar generator is one of many student-generated ideas and projects that began with the question, "How can I help my community?"

Student projects such as this one have garnered the attention of local businesses and industry, thus providing the impetus for the formation of partnerships. Through these partnerships, the programs at the Governor's STEM Academy benefit by obtaining additional resources and valuable insight into current industry standards and real-world challenges. Students also benefit from these partnerships by gaining opportunities for mentoring, internships, and industry training.

CURRENT DEVELOPMENTS IN STEM

- [CIC receives grant to expand nation-wide cybersecurity education and training efforts](#): U.S. Department of Homeland Security provides grant to the Cyber Innovation Center (CIC), benefitting K–12 educators and solidifying relationships between the VDOE and the CIC.
- [Virginia governor signs budget, kicking off series of cybersecurity programs](#): Virginia receives funding for cybersecurity program series.
- [Could STEM Education Help Close the Skill Gap in the Federal Workforce?](#): an article exposing how cybersecurity is facing a shortage of employers, and how few universities are preparing students to fill that gap
- [What the heck is STEM? \(And eight other questions you might be too embarrassed to ask.\)](#): an article explaining what STEM is and how it is implemented in a school in Colorado
- [Local students learn about math and science careers](#): an article answering the question of why students need to learn STEM
- [More Underrepresented Students Pursue STEM Due to Research Mentoring](#): an article highlighting the success of students involved in a mentoring program
- [STEM programs give high school students a step up in life](#): an article about the success rate of students who intern during the summer.
- [STEM has a girl problem: Gender bias remains issue for girls pursuing science careers](#): an opinion piece from a female student on the viability of the argument that STEM has a "girl" problem
- [Why American Students Are Avoiding STEM Careers](#): an article about a study that uncovers how students might be encouraged to pursue STEM careers
- [Addressing the STEM crisis through career development](#): an opinion piece arguing that certain students are steered away from STEM careers
- [How one Colorado school district has embraced STEM as a way of life](#): an article detailing how the St. Vrain Valley School district created a thriving STEM program
- [Schools balance STEM courses with social sciences](#): an article exploring the theory that STEM doesn't have to exist at the expense of social sciences

INSTRUCTIONAL STRATEGIES—STEM

- [STEM Activities and Resources for K–12 Teachers and Students](#)
- [Education and Outreach — STEM Lesson Plans](#)
- [The Engineering Place](#)
- [Six Characteristics of a Great STEM Lesson](#)
- [New Orleans scientist hopes fun classes steer kids to STEM careers](#): an article spotlighting NOLA’s effort to introduce children to the fun side of STEM through Saturday activities
- [STEM Career Websites for Students](#): a list from Science Pioneers providing students with information about various fields and career opportunities
- [STEM Resources](#): NEA’s list of 10 curriculum and professional development resources for K–12 teachers
- [Resources and Downloads for STEM](#): from Edutopia, approaches and lessons, STEM projects and models, ideas for attracting underrepresented students, and more
- [Eight Great STEM Activities for Students](#): two for each category, from Education World
- [STEM Lessons From Space](#): NASA lesson plans for STEM activities
- [STEM Majors Scholarships for Undergraduate and Graduate Students](#): scholarship opportunities available for students interested in pursuing a major in the STEM fields with a discipline in cybersecurity

CAREERS IN STEM

- [Stem Career](#): website for students, counselors, teachers, and parents providing a variety of links, resources, and information on STEM careers
- [National Initiative for Cybersecurity Careers and Studies](#): U.S. Department of Homeland Security’s program for introducing cybersecurity into the classroom
- [Choosing a STEM Career](#): lesson from PBS Learning Media introducing students to various STEM careers
- [Career Cornerstone Center: Chemical Engineering](#) and [DiscoverE: Chemical Engineering](#): websites providing detailed overviews of a career as a chemical engineer
- [Cool Careers: Chemical Engineer](#): Two scientists explain why it’s “cool” to be chemical engineers in this YouTube video.
- [Mathematician: Job Outlook & Educational Requirements](#): websites providing detailed overviews of a mathematician’s career
- [Career Girls: Oceanographer](#): website offering interviews with female oceanographers as well as women in other STEM careers
- [What is an Environmental Biotechnologist?](#) an in-depth look at the benefits of becoming an environmental biotechnologist
- [Electrical Engineering Degrees & Careers](#): information about what it takes to become an electrical and/or electronics engineer
- [Careers in Marine Biology](#): NOAA Fisheries website, providing an overview of a marine biologist’s career and how to become one
- [Forensic Biologist](#): an in-depth look at the benefits and requirements of becoming a forensic biologist
- [Geoscientists](#): information from the Bureau of Labor Statistics about a career as a geoscientist

For more information, contact Dr. Lynn Basham, Editor, Office of Career, Technical, and Adult Education, at cte@doe.virginia.gov or by telephone at (804) 225-3119.