

# Governor's STEM Academy Brief



Office of Career, Technical, and Adult Education

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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

The XLR8-Lynchburg Regional Governor's STEM Academy offers the Project Lead the Way (PLTW) pre-engineering program, including the specialty course Computer Integrated Manufacturing (CIM). The curriculum provides opportunities for representatives from local manufacturing companies (AECOM, AREVA, AMTI, BWX Technologies, CAER, Harris Corporation, Moore's Electrical and Mechanical, and TRAX International) to speak to students and share information about their companies, the types of career opportunities available, and the types of manufacturing they do. During the presentations, speakers share examples of items produced by their companies, provide activities, and allow students to use computer simulation software. The students engage with the speaker, ask questions, and determine whether they would be interested in an internship or potential career with the company. Many of the academy's business partners provide internship opportunities for students during the spring semester, providing students with opportunities to participate in a variety of professionally related activities and to gain real-world experience.

## CURRENT DEVELOPMENTS IN MANUFACTURING

[The Biggest Cybersecurity Problems Facing Manufacturing In 2016](#): an interview with Andrew Ginter, vice-president at Waterfall Security Solutions, examining cybersecurity issues facing the manufacturing industry

[Cybersecurity is Manufacturing's Biggest Risk Factor](#): an abstract from Engineering.com providing a link to the 2016 BDO Manufacturing Risk Factor Report, which examines some of the largest publicly traded U.S. manufacturing companies and the cybersecurity risks they face

[Yushin shows off robots to spur interest in advanced manufacturing](#): an article focusing on the use of robots to stimulate interest in the field of manufacturing

[Should Young People Consider Manufacturing as a Career?](#): an article from IndustryWeek exploring the perception of manufacturing and why parents try to direct their children into other fields

[How to Connect to Younger Manufacturers on Social Media? Try Humor](#): a blog explaining why companies should use social media to connect with younger manufacturers

[Manufacturing.gov](#): a national website providing news about advanced manufacturing

[Innovation](#): section of the IndustryWeek website that provides news about the latest developments in the business of manufacturing

[Shielding Intellectual Property from 3-D Printing's Paradigm Shift](#): article from IndustryWeek about legal issues surrounding 3-D printing

[Manufacturing Technician 1 Skills Standards](#): from the Manufacturing Skills Institute's Manufacturing Technician I certification

[Advanced Tissue Biofabrication](#): an innovative manufacturing industry segment at the intersection of biology-related research, computer science, materials science and engineering

[NextFlex Reaches Out to Future Leaders](#): potential applications are virtually limitless

[Investing in Manufacturing Communities Partnership](#): there is more to manufacturing than processes

## INSTRUCTIONAL STRATEGIES—MANUFACTURING

[Types of Production Processes](#): class notes presented in a slideshow

[National STEM Guitar Project](#): provides learning activities, videos, and information about the program and summer institutes

[Manufacturing Teacher Resources](#): lesson plans and worksheets from Lesson Planet

[Lesson Plan - Careers in the Manufacturing Industry](#): a lesson plan for ninth grade, combining technology, English language arts, and library media

[Manufacturing Lesson Plans](#): lesson plans for teachers focusing on manufacturing

[The four factors of production](#): a social studies lesson for ninth and tenth grade through which students learn about land, labor, capital, and entrepreneurship

[Energy Production](#): a lesson for middle and high school students about energy production and the role of energy in our daily lives

[Glossary of Advanced Manufacturing Terms](#): from materials to processes, the terms are here

[Technology Today Newsletter](#): searchable by topic

[Teaching Lean Manufacturing by Learner-centered Methods](#): a research project

## CAREERS IN MANUFACTURING

[Dream it. Do it. Virginia](#): a website where students can explore advanced technology careers including manufacturing

[What Does a Quality Technician Do?](#): provides an overview of a career as a quality technician in manufacturing and other fields of work

[Manufacturing Careers](#): provides facts about manufacturing and tools for researching careers

[Production Engineer Duties](#): overview of a production engineer's career

[Got skills? Think manufacturing](#): a comprehensive overview of careers in manufacturing

[Jobs in Manufacturing and Their Titles](#): links to information about a variety of manufacturing occupations

[Consider a Career in Manufacturing](#): a manufacturing career exploration site for students and educators

[Manufacturing occupations](#): data from O-Net

[Biomufacturing](#): information about careers in the biotech industry, along with related articles

[Logisticians](#): U.S. Bureau of Labor Statistics' Occupational Outlook Handbook entry

[Duties & Responsibilities of Quality Assurance Managers](#): detailed overview of a quality assurance worker's career

[General Maintenance and Repair Workers](#): U.S. Bureau of Labor Statistics' Occupational Outlook Handbook entry

[Production Supervisor Responsibility](#): detailed overview of a production supervisor's career

[Health, Safety and Environmental Assurance Pathway](#): information about careers in this pathway

[Welders, Cutters, Solderers, and Brazers](#): U.S. Bureau of Labor Statistics' Occupational Outlook Handbook entry

[Industrial Engineering Technicians](#): data from O-Net

[Electrical Engineering Technicians](#): Occupational Outlook Handbook

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