

New Lancaster County camp gives high school students a chance to explore engineering careers in manufacturers



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Josh Horvath, right, President of Precision Form, Inc., shows Steven Phan, 17, Aiden Burgess, 17, and Bryan Perez, 17, a piece of machinery that is made at his company as they tour the facility during robotics camp with Mantec at Precision Cobotics in Lancaster on Friday, July 21, 2023.

SUZETTE WENGER | Staff Photographer

Millersville University senior Josh Greineder reached over the shoulder of McCaskey High School senior Bryan Perez as the 17-year-old tried to program a robotic arm to pick up bottle openers. Greineder pointed to ways to improve the bin picking program.

The robot had missed its mark. With a few tweaks, the pneumatic arm smoothly dropped the bottle opener in its correct slot. Perez and Aiden Burgess, 17, smiled, cracking the quiet intensity of the moment.

The exercise at Precision Cobotics in Manheim Township was a small part of the first two-week intensive career exploration camp aimed at helping teens explore careers in manufacturing coordinated by Mantec, a regional nonprofit manufacturing resource center. The McCaskey seniors also worked in a lab with Greineder, who is an intern at the company.

Perez and three other McCaskey seniors were invited to the free “Career Test Drive: Applied Engineering” camp because they had high level math skills. Some had taken a robotics class in school. Perez said he decided to go because it sounded like something fun and interesting.

“My general goal after high school is something to do with engineering, but I’m still not exact on what I want to do,” Perez said. “The camp kinda just made me want to go into engineering more after hearing about all the stuff I could do.”

Students participating in new STEM/Manufacturing camp [photos]



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Aiden Burgess, 17, and Bryan Perez, 17, watch Josh Greinder, a Millersville University student and intern at Precision Robotics, maneuver a robot during robotics camp with Mantec at Precision Robotics in Lancaster on Friday, July 21, 2023.

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Cindi Moses, a Mantec strategic partnership specialist, said the camp was created with a \$200,000 grant from the state Department of Community & Economic Development to help recruit manufacturing’s workforce of the future. The grant covers two years. Moses said next year there will be spaces for more students. In the future, she said she wants to develop “test drive” camps for other advanced manufacturing careers.

The camp included lab activities, an afternoon on a ropes course, career and personal profiles, multiple job shadows and company tours. It aims to give students a glimpse of the many skilled and professional career paths available to them in manufacturing, a foundation of south central Pennsylvania’s economy.

The need to reach Gen Z

According to the National Institute of Standards & Technology, manufacturers continue to report that recruitment and retention are their greatest workforce challenges.

Moses wrote in the application for the grant that funds this year’s and next year’s camps that the National Association of Manufacturers estimated that there will be 4.6 million unfilled manufacturing jobs by 2028.

Gen Z - those born between 1997 and 2012 - will account for 27% of the workforce by 2025, she wrote. Moses noted that Gen Z values salary less than every other generation.

If manufacturing industries expect to recruit and retain Gen Z, it needs to “rid itself of the persistent negative and outdated stereotypes as a last-ditch, dirty job for the uneducated,” Moses wrote.



Anna Ramos, director of the Lancaster County Workforce Development Board, wrote in a letter of support for the camp that it would fill an important recruiting need.

"It is imperative that we focus on attracting diverse talent to not only manufacturing but specifically for engineers and technologists," Ramos wrote. "Currently in this occupation in Lancaster County 29% are within one to eight years of retiring. Females only make up 18% of the occupation and less than 8% are non-white."

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A career outlook

At Precision Cobotics, a relatively new engineering firm based at longtime manufacturer PrecisionForm on West Airport Road, the teens met its president, John Bridgen.

Bridgen described a well-paying career that was accessible to the students. They did not have to go to an elite college or university, he told the teens. He contrasted learning about theory versus applied engineering.

Applied engineering solves real world problems such as the dirty, dull and dangerous jobs in manufacturing, Bridgen said. He noted that automation enables manufacturers to bring back jobs that were sent overseas.

Precision Cobotics grew from a 2018 PrecisionForm project to develop automation to solve the lack of workers. After success internally, in 2022, Precision Cobotics was founded to fulfill the rapidly emerging automation market. Cobotics has three open positions and employs five engineers who work with manufacturers to develop automation solutions in machine tending, metrology, quality inspection, bin picking, material handling and assembly.

"Applied engineering is a career that anyone can have," Bridgen said.

If you would like to attend or be involved with the Career Test Drive camp next year, contact Cindi Moses at cindi@mantec.org. Dates, costs and qualifications have not been determined.



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