



PHOTOS: JASON BRIDGE | TRIB TOTAL MEDIA

Butler Area High School senior John Yannatty places his team's robot, "Poseidon," into a portable pond for the sea portion of the Armstrong County Sea, Air, and Land Challenge at the Northpointe business park in South Buffalo Saturday.

Problem-solvers face off

High school robot builders put their skills to the test in Sea, Air, Land Challenge

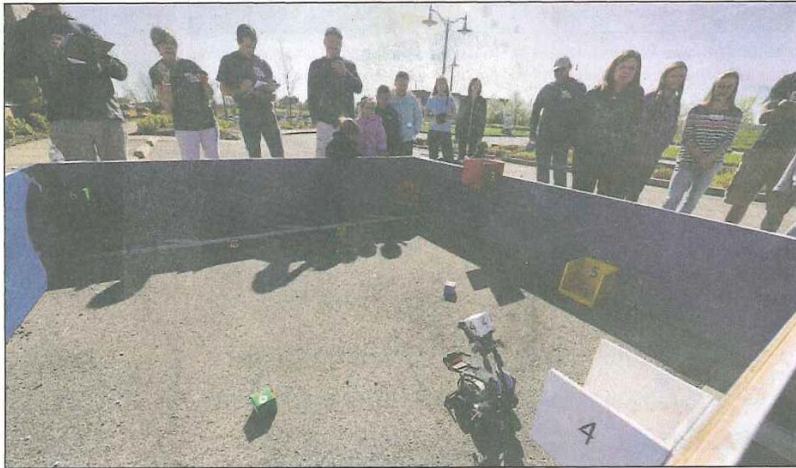
BY LIZ HAYES

When "Rex" failed on his first try to drop two wooden blocks into elevated boxes, the Freeport Area students operating the robot weren't discouraged.

They immediately began brainstorming ways to improve their device before the final run Saturday afternoon at the Armstrong County Sea, Air and Land Challenge at the Northpointe Industrial Park in South Buffalo.

Katie Zingaro, a 10th-grader, believed they needed to adjust Rex's center of gravity with a counterweight. Eleventh-grader Tyler Lucas was considering alternate locations for the tiny video camera that allowed them to track Rex's movements.

Their adviser, Freeport Area math



The Freeport Area land robot "Rex" lifts a wooden block toward its matching box. The students (not pictured) used a tiny video camera mounted on the robot to steer it.

teacher Samantha Veights, said making the on-the-fly adjustments was part of the problem-solving experience the event is

intended to give students.

"You guys did great — so close," said

Robot builders put their skills to the test

ROBOTS • FROM A1

Veights, who noted it was the team's first time participating in the 3-year-old event and they weren't sure what to expect.

Other high schools participating included Kiski Area, Lenape Tech, Butler Area and Seneca Valley. Schools can enter teams in one or all of the sea, land and air challenges.

Students had to build robots that would move through a land or underwater course, pick up objects and place them in specified locations within a certain time.

Some teams chose to participate in the air challenge, which involved creating devices that would hook onto a remote-controlled helicopter or airplane.

All the teams had to navigate using the footage from video cameras mounted on their devices — they couldn't directly watch what they were doing.

Bill Kiser, senior director at the Penn State Electro-Optics Center at Northpointe, said the event is aimed at encouraging students to pursue engineering and technology fields, giving them hands-on experience of the engineering process and showing them

Challenge results

The high school teams recognized at Saturday's Armstrong County Sea, Air and Land Challenge include:

Sea challenge

Winner: Butler Area (Team Squid)

Runner-up: Butler (Team Odyssey)

Air challenge

Winner: Lenape Tech

Runner-up: Seneca Valley

Land challenge

Winner: Lenape Tech

Runner-up: Seneca Valley

some real-world engineering possibilities.

"We can never find enough good engineers that can solve problems," Kiser said.

The event is sponsored by the Electro-Optics Center, the Office of Naval Research and the Armstrong County Industrial Development Council, which owns the business park.

Kiser said they want to expose students to the "tremendous career" opportunities with the Department of Defense.

To that end, the event organizers asked several retired members of the military special forces to join the engineers and other mentors assisting the students.

Frank Hoagland, a retired

Navy SEAL senior chief from Ohio, said the event gave students a taste of the problem-solving and limited resources military teams often encounter in the field.

Hoagland said he enjoyed seeing the students outside, using their hands and not inside playing on electronic devices: "It's showing them there's something else on the other side of these walls."

"I've never done anything like this," said Freeport 10th-grader Ben Dupstadt as he offered suggestions for how duct tape could improve the design.

"It's a lot of fun, though."

Henry Gamble, a Freeport 10th-grader, said he enjoyed the design aspects: "I'm not much of an engineer, but I like art and engineering."

Jordan Johns of Kittanning, an 11th-grader at Lenape Tech, was helping his team reconfigure its submersible robot to make it sink better and to upgrade the wiring.

"All was going well until it started to smoke," said Johns, a computer information technology student.

Heather Simpson, a Lenape computer-aided drafting and pre-engineering instructor, said the school had teams entered in all four challenges.

She said the event gave students the opportunity to work through the whole engineering process — from designing and building to troubleshooting.

"It's a great opportunity for the students," she said.

Liz Hayes is a staff writer for Trib Total Media. She can be reached at 724-225-4680 or lhayes@tribweb.com.

Are you considering a total joint replacement of your hip or knee?

