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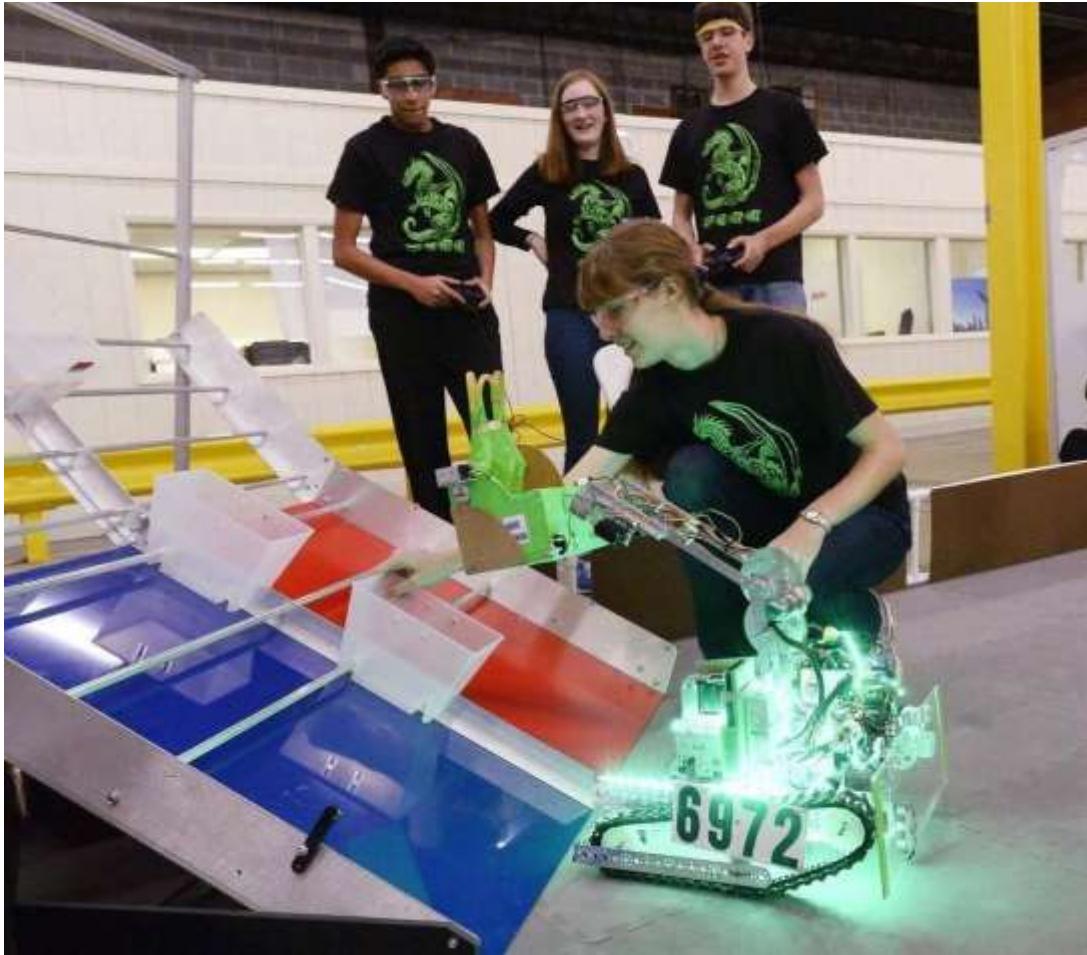
Robotics lab at Charlotte airport opens tech doors for students

Students from the Charlotte region can use power tools and computer design equipment

Permanent workshop gives students an edge on robotics contests and future jobs

Look for dedicated students, blue fur and green lights





FIRST Zone robotics lab opened recently, provides workshop space for teams competing in the national K-12 robotics challenge.

BY ANN DOSS HELMS

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At a warehouse tucked between runways at Charlotte Douglas International Airport, you'll find students from across the region hard at work on laptops and power tools, building robots that climb barriers, fling balls and – they hope – win contests.

FIRST Zone, which opened in December, provides workshop space for teams competing in the national K-12 robotics challenge (the name stands for “For Inspiration and Recognition of Science and Technology”). The immediate goal is a strong showing at the state championship at UNC Charlotte in April.

Long term, organizers and sponsors of the Queen City Robotics Alliance hope to develop a cadre of youth with the skills to thrive in college and high-tech careers. That includes not only the obvious – things like computer programming, mechanical design and electronics – but softer skills such as teamwork and problem-solving.

“It’s not just building and programming,” said Ushab Dahal, a Phillip O. Berry Academy of Technology sophomore and a Bots of War team member. “It’s marketing and safety.”

Having a permanent robotics workshop places Charlotte among a handful of cities, including Detroit, Los Angeles and Seattle, where students no longer have to scramble for space in schools and family garages. Central Piedmont Community College’s engineering department had been helping, but the teams needed more room, said Lia Schwinghammer, the alliance’s executive director.

The 10,000-square-foot space was secured with a grant from the [Argosy Foundation](#), a Milwaukee-based foundation that supports the FIRST competition. It includes a computer lab, an array of tools and supplies and a 27-by-54-foot mock-up of the competition field for high school teams. FIRST North Carolina parks its mobile workshop there, giving the Charlotte-area competitors access to an additional trailer full of power tools.

The shared space means competitors – including about 90 high school students on four teams – see each other’s work. But they say that’s fine, and it builds bonds among public, private, charter and home-schooled students. Two of the teams, the Yetis and the Bots of War, pull from multiple schools, while the other two are affiliated with Olympic High in Charlotte and Pine Lake Prep, a Mooresville charter school.

“This is basically a second family for everybody here,” said Steven Gaudio, a Berry senior and Bots of War member.

“Even though we are competing, we share parts,” said Mitch Berthelot, Yeti team captain and a senior at Hickory Grove Christian School. “It’s called gracious professionalism.”

With the first round of competition coming in early March, the high school students are averaging 30 hours a week on robotics, including weeknights and Saturdays, adult mentors say. They like to compare robotics with sports.

“Instead of becoming an athlete, we’re building our athlete,” Berthelot said with a grin.

Rohan Paul, a banker and team dad, notes that the chances of a high school athlete going pro are slim, but the chances for a student who designs and builds robots to get a lucrative technology job are high.

Jerry Schwinghammer, a Yeti mentor and Lia Schwinghammer’s husband, says that in his day job as the airport’s chief operating officer, he sees resumes from young adults who lack practical skills.

“There’s a couple of students here that I would hire in an instant,” he said.

Building robots is costly – there’s a \$4,000 cap on materials for high school robots, but teams generally raise about \$30,000 each to cover all expenses, including registration fees and travel to competitions. The teams raise money to hold down family costs, which vary from team to team.

“It’s not an elitist thing by any means,” Jerry Schwinghammer said.

Queen City Robotics takes pride that more than 30 percent of its participants are female, above the national average. Delaney Dunlap, a Yeti team member and home-schooled sophomore, remembers joining a team where everyone else was male: “It was uncomfortable. I was being treated differently.”

That’s why the alliance started the “pink pipeline” of all-girl teams in elementary and middle schools.

“We all went through it,” said Tanisha Paul, a Charlotte Country Day School sophomore who’s one of several young women on Team Yeti. “We have confidence and ideas. We know what we’re talking about.”

This year’s competition ends in April, but there’s plenty of work ahead. Alliance organizers want to use the new space to host summer camps for younger students. They’re asking corporate supporters to provide real-world challenges that the older students can tackle. And they hope to find sponsors who will pay the \$48,000-a-year rent to keep the Zone open after the grant runs out.

Meanwhile, students are putting their robots to the test and adding flourishes, from the blue fur that’s a Yeti team signature to the green lights that illuminate

Fire team's robot. In a less than two weeks, it will be time to pack everything up and prepare for the first round of competition.

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MORE ABOUT FIRST

- Competitions include Lego leagues for elementary and middle school students, and more advanced robotics challenges for middle and high school students. Details: firstinspires.org
- The Queen City Robotics Alliance was formed by mentors from four Charlotte-area high school teams about five years ago.
- FIRST Zone, at 5800 Tunnel Road in Charlotte Douglas International Airport's cargo area, provides space for teams at all levels. The alliance hopes to expand its reach and encourage additional schools to form teams. Details: queencityrobotics.org or contact Lia Schwinghammer, 704-604-2105 or lia@queencityrobotics.org

Read more here:

<http://www.charlotteobserver.com/news/local/education/article61646902.html#storylink=cpy>