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New Jersey Herald

Newton team gears up for robotics competition



Photo by Daniel Freel/New Jersey Herald - Matthew Sullivan, 5, and Olivia Cross, of Newton, take a closer look at the Newton robotics team's robot during the STEM Night Open House Feb. 23 at Newton High School.



Photo by Daniel Freel/New Jersey Herald - Newton High School students Josh Virtell, left, and Brian Hoskins drive their robot as they demonstrate its capabilities during the STEM Night Open House on Feb. 23 in Newton.

By Katie Moen New Jersey Herald

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NEWTON -- The square, flat robot zipped across the carpeted floor, snatching up a wooden gear and delivering it to a post on the other side of the room.

Then, its mission complete, it hitched itself to a pulley and climbed a 3-foot rope, swinging back and forth for a moment before lowering itself back down and starting all over again.

To the casual observer, the scene would admittedly make no sense. For the members of the Newton High School robotics team, however, everything was going according to plan.

"Every year, we get a new objective," said Liam Oates, a senior and co-captain of the robotics team. "We have six weeks to design and build a robot that can complete as many parts of the assignment as possible."

The Newton robotics team has been participating in the For Inspiration and Recognition of Science and Technology (FIRST) competition for eight years. The students and their mentors recently demonstrated their creation and all that they had learned in front of their parents, teachers and peers during a science, technology, engineering and math (STEM) demonstration.

"This is actually about a lot more than robots," senior Katie Nelson said. "This is more like a business, and the robot is our product. We have to market our program to sponsors, network with other teams, and figure out how to troubleshoot and solve problems. I honestly have to admit this was a lot more exciting than I thought it would be."

Nelson, who has been a part of the team for three years, said that one of the biggest things she has learned by participating in the competition is to keep an open mind.

"I had some serious preconceived notions about joining the team," she said. "I wasn't sure what to expect, but the image I had in my head was closer to a bunch of nerds sitting around eating pizza than what I really found here. I almost let myself get stopped by that. I'm so glad I didn't."

According to the FIRST website, students like Nelson are exactly whom the program hopes to reach.

"The mission of FIRST is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including

self-confidence, communication, and leadership," the organization's mission statement reads.

While the robots are not the only reason to join the team, watching this year's model in action is a pretty incredible experience.

"The goal of the competition is to get as many different points as possible in a short amount of time," said senior Brian Hoskins, steering the robot around the demonstration area via remote control. "You can get points by launching balls into a hopper, delivering a gear from one part of the course to another, and making it climb a rope. We decided to skip the launching component this year to focus more on performance."

A tiny camera mounted to the front of the robot lets drivers like Hoskins navigate the machine from across the room with speed and precision.

"It's really important to be able to see what the robot sees," Hoskins said. "We spent a lot of time on this thing, and it would be pretty awful if we crashed it into a wall just because we couldn't get a good view of the course."

For Hoskins, being a part of the team has given him a taste of what he hopes will be a long career.

"This is exactly what I want to do," he said, naming companies such as Disney and Lego as potential future employers. "I want to work with animatronics. Technology is changing so fast that I can't wait to see what this field will look like in a few years. Everyone should try something like this. There is something so satisfying in knowing that you helped make something that actually works. I mean, we made a lot of stuff that didn't work first, but that was half the fun."

The team will be in action on Saturday, March 11, when it enters into the first phase of competition, going head to head with other local high school teams in the regional event at Mount Olive High School. From there, if things go well, the team will advance to another level of competition in Bridgewater and could go on to another at Lehigh University.

The team's work is also on display each August at the New Jersey State Fair/Sussex County Farm and Horse Show.

"The team has been taking their robots to the fair for years," team adviser and coach Jim Hofmann said. "It's always a lot of fun. If you've been to the fair, you've probably been greeted by a Newton High School robot at least once or twice."

In addition to gaining some good publicity for the program, Hofmann said that having the team at the fair has also been a great way to attract sponsors.

"When Anthony and Tina Miragliotta, who own Mira Plastics in Fredon, heard that the kids were standing around in a wet tent last year, they decided to sponsor our wish to build a STEM Barn at the fairgrounds to eliminate that particular safety concern."

Hofmann presented Anthony Miragliotta with a plaque of appreciation during the demonstration.

"This is an incredible program, and I want to do anything I can to support it," Miragliotta said. "The fact that these kids are so engaged in what they are doing speaks volumes to what this team can accomplish."

For more information about the FIRST competition, including competition dates and locations and the instructional video with this year's guidelines, visit www.firstinspires.org.