



Photo provided

Mentors work with students on their robotics projects. The Camdenton High School robotics team will compete in the world championship of robotics in April after taking top honors in a regional contest in St. Louis in March.

By Rance Burger

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Some Camdenton High School students have a shot at being crowned best in the world when they compete in the world championship of robotics in April. The 31 students on Camdenton's LASER team took top honors at a regional contest in St. Louis in mid-March and will compete in the FIRST Championship in late April, also in St. Louis.

Every year, more than 2,300 teams from across the U.S. compete in FIRST robotics contests. The type of competition changes each year. In its rookie season, the Camdenton team built a robot that played soccer. This year, the robots pick up inflated inner tubes and hang them on pegs nine-and-a-half-feet off of the floor.

CHS senior Sierra Comer, also a standout in volleyball, said that robotics competitions are more intense than playing for the Lady Lakers.

"I actually would have to say (robotics) is a little more exciting," Comer said. "It's called the sports of the mind. The whole idea is 'how do we make something where you are using your brain fun?' The first thing they thought is sports."

The students and their mentors from the professional sector devoted over 5,000 hours of after school time to build Jenny II, Camdenton's prize-winning entry. The teams didn't learn about the nature of their competition until Jan. 8, allowing six weeks of time for designing, building and constructing robots.

"Within that first week it really gets to, 'oh my gosh, this is what we're doing,' and everyone just runs around like a chicken with their head cut off. That slows down, we kind of gather our thoughts and wits, get our designs down and build from there," builder and driver Connor Brady said.

Sophisticated hardware

The Camdenton LASER team received a total of \$16,000 in grants from 4-H and NASA. Engineers from Speedline Technologies and Lake Professional Engineering Services donated their time to oversee construction of Jenny II. Students designed the robots using CAD software.

Freshman Mitchell Woodside didn't know much about computerized drawing before he joined the robotics club, but proved to be a quick learner. He anticipates some intense competition at the FIRST Championship, held at the Edward Jones Dome in St. Louis.

"I think it's going to be really neat. I think it's going to be two times better than the regional. There are going to be so many different people there and so many different countries, it's just going to be insane and fun," Woodside said.

For the tube hanging event, robots could be no larger than 28 inches by 38 inches, and no taller than 60 inches. In order to hang tubes on the wall, the robots must have extending arms. The game takes place on a playing surface the size of a high school volleyball court.

Three CHS faculty members oversee the after-school program. This year, 21 professionals from the surrounding community gave their time to help with the design and construction of the Camdenton bot. They provide hands-on training in construction, design and computer programming.

"I had experience with computers but no experience with C++ before this," programmer and driver Jacob Harmon "One of the coolest parts about the program is you don't have to know how to build robots coming into it."

The students say their professional mentors offer advice beyond robot building.

"We call them guardrails because they keep you on track. They keep you from going off the deep end, they keep you on the road to success and it's a great thing," sophomore Brigitta Reth said of the professional mentors.

Thrill of victory

"You can definitely feel the tension in the air. You look up and the stands—it's always crazy to see

that many people,” Harmon said. “It’s tense until you walk up, until it starts, and once it starts it feels awesome.”

The robotic game is played in a 3-on-3 format. In preliminary rounds, teams are aligned at random, forcing students to foster quick alliances and strategies with other teams. The format offers quick lessons in team-building.

“Your time between matches can vary greatly. You can have two matches back-to-back and then you’ll have no more than five minutes to talk to your alliances or devise a strategy. But then the match after that you can have an hour and a half to devise a nice, strong strategy,” junior Dalton Labosky said.

The need to work with other teams creates a camaraderie that extends to the pit area, where teams can be seen lending tools and parts and forming game plans.

“You are all just like a big family instead of a bunch of people competing against each other, you’re all working together and you can all accomplish a goal,” Woodside said.

When preliminaries are done, teams make alliances for the championship rounds. Camdenton teamed with students from Hazelwood Central and University City for the championship run in St. Louis. The partner schools both have sponsorships from Boeing.

Competitors study video, take statistics and scout opponents like any other sport.

“Every little detail of the game is examined, all to help determine who we want to be in our alliance when that picking comes,” Labosky said.

Labosky handled electrical engineering duties, overseeing all of the robot’s wiring and electronic configurations. On competition days, he is part of the smaller team that makes Jenny II work in its matches.

A deeper meaning

FIRST also recognizes teams with awards for spreading the organization’s message of encouraging students to study science and mathematics, and for competing teams to cooperate with one another. The Camdenton students prepared a video, written report, and underwent interviews to explain how they treat competitors with respect.

“It’s our goal to get other kids interested in this stuff so that maybe they will think about pursuing one of those careers, because that’s where the demand is right now. We need people who are good in the science, technology, engineering and mathematics,” sophomore Katelyn Goodwin said.

At the regional event, the Camdenton team won the Underwriters Laboratories Industrial Safety Award and the Motorola Quality Award.

The World Championships will give the Camdenton high schoolers a chance to meet competitors from 61 different countries, who can offer cultural and technological exchanges.

“I’m excited to see all of the teams from different countries and all of the different designs—what these people thought of that maybe we haven’t seen yet in our regionals that we went to,” Goodwin said.

“No two robots are the same in this competition,” Brady said.

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Team 3284 by the numbers

31 students
21 mentors
3 school employees
6 weeks of preparation
3,000 student hours
2,000 mentor hours
FIRST Championship
Edward Jones Dome, St. Louis
April 27-30

Camdenton Team 3284 sponsors

Camdenton R-III After-school Services
4-H
Speedline Technologies
Lake Professional Engineering
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