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## Academic sport that works the brain

### Student-assembled robots compete, with the goal of attracting more youth into engineering and science.

By KIT WAGAR The Kansas City Star

Rock music blared from the speakers. People cheered and stomped their feet. Coaches and players hustled into position.

Suddenly, the robots lurched into action, barreling down the track and looking like crazed horror-movie lawnmowers outfitted with large pincers ready to seize anything in their paths.

The scene — part pandemonium, part wiz-bang electronic gadgetry — was part of the Cow Town Throwdown robotics competition Saturday on the North Kansas City campus of Cerner Corp.

The event attracted about 400 students on 26 teams from Missouri, Kansas and Arkansas. The goal is to attract more students into engineering and science fields.

With teams called “Bomb Squad,” “Project X” and “FBI — First Bots of Independence,” the event felt like a cross between a high school basketball game and a junior NASCAR race. That’s not an accident, said John Faulkenberry, principal of Lee’s Summit High School, which helped organize the event.

“We took what we’ve learned from sports marketing — the music, the excitement — and turned this into an academic sport to attract kids,” Faulkenberry said. “You’ve got 400 kids on a Saturday morning. Instead of sleeping in, they’re here, geeked on science and technology.”

The event featured robots that competed early this year in the Kansas City region of the national FIRST Robotics competition. FIRST is a program for high school students to design and build robots that motor around a track and compete at certain tasks.

Each robot contains a computer that the team programs to direct the robot during a brief opening phase. Then team members take control of their ‘bot, maneuvering it through radio signals sent from a joy stick.

Robots had to be driven around a track. They then had to dislodge exercise balls from an overhead rack. Teams scored by picking up the balls, carrying them around the track and tossing them over the rack.

Additional points could be scored by returning the ball to the rack. But opponents could negate the score by knocking the ball out of the rack after an opponent placed it there. All this is done at dizzying speeds as robots whiz by, spin around or lose control.

Every robot had a different design. One had a mechanism to fling the exercise ball over the bar. Another had a lift that raised the ball after it was grasped by two large rings. Thus, the ball could be “dunked” into the rack for extra points.

This year's competition was easier than last year's because the tasks were less complicated, said Barrek Roberts, a Blue Springs High School senior and leader of the Wildcat Robotics team, which was a finalist in regional competitions in Kansas City and in Denver. The team also won a quality award for the way the arms on its robot opened and closed to grasp the ball.

"This year we had to go forward only, so the drive train could be much simpler," Roberts said.

The teams, which often are coordinated by high school science teachers but include home-schooled students, receive mentoring from real engineers. Forty-five Honeywell engineers mentored 22 teams.

Laura Evans, who heads talent development programs at Cerner, said her company has sponsored the robotics competition for several years. Cerner hosted Saturday's competition as an extension of that role, she said.

"The challenge for business is not enough kids are going into these fields (of engineering, physics and industrial design)," Evans said. "Business is finding that you have to engage youths before college to get them interested."

Faulkenberry said he was impressed with the wide range of methods that teams devised to solve tasks. At the same time, the kids realize that science and design can be fun, said Lisa Keel, the regional director for FIRST Robotics.

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David Blank was appropriately attired with the symbol of his high school's Viking mascot as he directed the robot for Shawnee Mission West. FRED BLOCHER | THE KANSAS CITY STAR