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ain is something we have always feared would happen on competition day and this year it did in a big way. A constant drizzle threatened to postpone the June 1 start of AUVSI's Fifth International Ground Robotics Competition at Oakland University, Rochester, Mich.

But most of the 21 student teams handled the rain as just another obstacle. Using quickly devised plastic covers to protect their more sensitive onboard sensors and computers, they managed to complete three runs as the rain gradually transformed the course from grass into mud.

While the weather may not have been great for the spectators, it did not seem to adversely affect the performance of the vehicles. Four teams' vehicles managed to autonomously navigate the 600-foot course, cross a wooden bridge, avoid several randomly placed five-gallon buckets, and make it through a sand trap to cross the finish line. "This is the first year we have had any team actually complete the course, so it's very exciting," said Oakland University Professor Ka C. Cheek, one of the event organizers.

The winning team traveled all the way from Tokyo, Japan to compete. In its second year of competition, Hosei University's vehicle ONEWAY captured first place, crossing the finish line in 4 minutes and 25 seconds. The University of Colorado-Denver took second place, just 15 seconds behind ONEWAY. Four-year veteran vehicle Coyote from Oakland University took third with a time of 6 minutes 44 seconds. Prize money of \$10,000, provided by AUVSI, was distributed to the top teams.

A design competition was again sponsored by the Society of Automotive Engineers. In this phase of the competition, three judges evaluated students on documentation, management and presentation of their robotic vehicle project. Virginia Tech teams CHRISTINE and IVAN swept first and second place, respectively. Rookie team MOSFET from University of Michigan-Dearborn captured third. Design competition rankings are compiled from a written report, oral presentation, and judges' review of each team's competition vehicle. "The reality of engineering requires an appropriate balance of textbook knowledge with compromises, management of resources and meeting of deadlines," said Cheek. "Students in this competition experience those realities."

In an attempt to quantify the level of performance being achieved by the robot vehicles, about 20 children, aged two to five, were recruited under the direction of graduate medical students of the university. The children were directed to drive an electric car around the same course that the robotic vehicles would navigate autonomously. Preliminary results indicated that a boy or girl around the age of four could successfully drive the car inside the lines, while avoiding the obstacles, and cross the finish line.

Other highlights included a pizza party sponsored by Ernst & Young, Inc., a Detroit consulting firm. Representative William Jenkins said he hoped to recruit some graduates. "Students like these hit the ground running," Jenkins said. "They seem to be better adapted to starting work right away."

Although wet and tired by the end of the day, students found some interest in holding an impromptu tug-of-war between their vehicles. West Virginia prevailed with the aid of rubber tracks on its vehicle. In all, the 1997 International Robotic Vehicle Competition will be remembered for mud, rain, and cheers.

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## Fifth International Ground Robotics Competition

# "Mud, Rain and Cheers"

By Paul Lescoe