

# Lawrence Tech Is Among Elite At Autonomous Vehicle Tests

By Derek Stark  
Staff Reporter

Nearly 30 teams from across the world recently competed in the U.S. Army Tank Automotive Research Development and Engineering Center (TARDEC) "Intelligent Ground Vehicle Competition (IGVC)".

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"We are also creating robotic advocates and ultimately bringing attention to their capability," Lane said.

"We have a number of less-intelligent, but more robust, robots in Iraq and Afghanistan right now looking for mines and [Improvised Explosive De-

competitor. Second place overall went to Hosei University from Tokyo, Japan. Hosei University's "Amigo 2004" circled the autonomous challenge course once then tried for two, traveling a total 1,019 feet before leaving the course, not making it a second time.

Johnny 5's robot teammate, Gemini, a double articulated chassis, took third overall by achieving the top design score

"It's a very tough competition, last year we were fourth and it seems we placed around sixth or seventh this year," said Chan-Jin Chung, faculty advisor, IGVC, Lawrence Technological University in Southfield.

Lawrence Tech, which entered four robots, joined Oakland University, Michigan Technological University and the University of Michigan at Dearborn as state universities at the competition.

"Several universities spend a lot of money. We didn't have a lot of money," said Chung, an associate professor of Math and Computer Science at LTU.

"Some spend more than \$10,000 for each robot, and we spent less than \$1,000.

"As far as productivity, we were the best," he said.

Robots from Lawrence Tech named AISSIG, Deep Blue, Challenger and Zenna competed against the likes of Oakland University's Proteus and Michigan Tech's Veronica II for more than \$22,000 in cash awards.

Lane reported that Michigan Tech and Oakland University experienced technical difficulties at the competition and that the University of Detroit-Mercy, a IGVC competitor in the past, sent a scout to check out the possibility of a return trip to the competition.

IGVC applications in the real world include: lane detection and following, such as adaptive cruise control; unmanned military weapons deployment and mine detection; automated highway systems; roadway obstacle detection and collision avoidance in Intelligent Transportation Systems; and material handling, mobile robots and machine operations.



**UNIVERSITY OF FLORIDA** student Don MacArthur watches Tailgator navigate an obstacle course during the U.S. Army's Intelligent Ground Vehicle Competition. — photo by Bruce A. Pollock

The 12th annual IGVC event, held at Oakland University in Rochester, helps develop future engineers and scientists. Perhaps more importantly, however, it helps raise the level of competent research in intelligent vehicles and broadens the academic competitive research base for the U.S. Department of Defense (DOD).

Other sponsors for the event include General Motors Corp., the Society of Automotive Engineers, the DOD and the Air Force Research Laboratory.

"This competition is a recruiting haven," said Jerry Lane, co-chair of the event and TARDEC's Science and Technology liaison.

"You can almost hire any one of these students without an interview. The natural born leaders jump right out," he said.

Lane said that the competition also broadens the number of schools eligible for DOD re-

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search funding. The IGVC included three areas: an autonomous challenge, where vehicles negotiate an outdoor obstacle course in full autonomous mode; a design competition, where students provide a written report and oral presentation; and a navigation challenge, where the vehicles maneuver using Global Positioning Satellite technology to target destinations.

Virginia Technological University's "Johnny 5" robot took top honors and a \$10,000 prize after earning first place in the autonomous challenge and second place finishes in navigation and design.

Johnny 5 set a new IGVC record by double looping the IGVC autonomous challenge course, navigating a total of 1,206 feet effortlessly before a judge's call terminated the seemingly tireless robot to make way for the next robot