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23rd annual IGVC hosted at Oakland University

Engineers from around the world visited Oakland University in Rochester, Mich. to compete in the 23rd annual **Intelligent Ground Vehicle Competition**.

Started in 1993, groups that participate in IGVC are judged for the navigation and design of their unmanned vehicle.

This year, 26 teams competed, including students from as local as Lawrence Technological Institute in Southfield to as far away as colleges from Australia, Japan and Wales.

“The levels (of the unmanned vehicles) always improve over the years as technologies advance — computers, sensors, actuators, software,” said **KaC Cheok**, co-chairman and co-founder of IGVC, OU engineering professor and Oakland Robotics Association adviser.

Each year, OU not only hosts the event, but the Oakland Robotics Association competes as well.

“This year’s IGVC was the most competitive that I’ve been a part of,” said Brian Neumyer, ORA president.

“Many teams made drastic improvements to their programming and robots which allowed them to perform very well. For me it was also the most satisfying. This year I was able to see my mostly new team come together and manufacture a world-class robot. Seeing the veterans work with the newcomers to figure out problems is just as satisfying as the robot that gets created.”

Their robot, the award-winning “Mantis,” made a return this season with some modifications.

Mantis saw some software upgrades — updating Robot Operating System (ROS) to Indigo, the ability to detect potholes on the ground and the addition of an artificial neural network (ANN) to detect lines with two new cameras.

The robot placed third place overall, landing second to qualify, third place in the basic Auto-Nav course, sixth place in the advanced Auto-Nav course, second place in the design competition and winning the Lescoe Award.

To put on IGVC, OU partners with the **Association for Unmanned Vehicle Systems International (AUVSI)** and the **U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC)** to host the event.

Sponsors of the event include **Continental, NDIA -Michigan (National Defense Industrial Association of Michigan), FEV, Magna Electronics, Valeo, BAE Systems, American Elements, Math Works** and **General Dynamics Land Systems**.

“The IGVC emphasizes on student education, development and hands-on experience in integration engineering systems and technologies,” Cheok said. “This robotics and team experience is very relevant to the automation, automated active safety and autonomous cars of the future.”



Oakland University students discuss strategy during the 2015 IGVC competition held at OU.

-Story and photo by Stephanie Sokol for Oakland University's School of Engineering and Computer Science