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MSU among eight universities selected for new autonomous vehicle competition

Michigan State University is among eight North American universities selected for the upcoming AutoDrive Challenge – a new autonomous vehicle design competition to develop and demonstrate a fully autonomous passenger vehicle.

SAE World Congress Experience, SAE International, and General Motors announced details for the three-year challenge today, April 5, at the SAE World Congress Experience in Detroit.

GM will provide each team with a Chevrolet Bolt EV as the vehicle platform. The competition’s technical goal is navigating an urban driving course in an automated driving mode as described by SAE Standard (J3016) level 4 definition by Year 3.

The universities are:

- Kettering University
- Michigan State University
- Michigan Tech
- North Carolina A&T University
- Texas A&M University
- University of Toronto
- University of Waterloo
- Virginia Tech

“SAE International is excited to expand our partnership with GM to build the future STEM workforce through the
AutoDrive Challenge™,” said Chris Ciua, director of Pre-Professional Programs at SAE International. “Building on our success through programs like Formula SAE, the AutoDrive Challenge™ launches a new platform to engage industry and academia in working towards a common goal of preparing the brightest young minds for the future of autonomous technologies.”

Throughout the three-year competition, students will focus on autonomous technologies and allow for modification and testing. They will work with real-world applications of sensing technologies, computing platforms, software design implementation and advanced computation methods such as computer vision, pattern recognition, machine learning, artificial intelligence, sensor fusion and autonomous vehicle controls.

Hayder Radha, director of MSU's Connected and Autonomous Networked Vehicles for Active Safety (CANVAS), said students will have a select opportunity to conduct research in the area of autonomous driving.

“This competitive program represents an intriguing intersection of research and education in autonomous vehicle engineering,” Radha said. “And this intersection of research and education is becoming quite essential for the emerging area of autonomous driving.”

Radha said there is also an urgent need to train the engineers and scientists who will lead this new era in automotive engineering.

“One of our core missions here at MSU, and especially under the CANVAS initiative, is to address both the research and education aspects of autonomous vehicle engineering. The AutoDrive Challenge is an example of a compelling program that enables us to achieve this mission,” he added.

Ken Kelzer, GM vice president of Global Vehicle Components and Subsystems, said General Motors is excited to work closely with the eight universities over the next three years.

“The students and faculty at these schools bring deep knowledge and technical skills to the competition. We are proud to help offer these students the hands-on experience necessary for them to make an immediate impact on the automotive world when they graduate.”

Along with the Chevrolet Bolt EV that GM will provide each team, strategic partners and suppliers will aid the students in their technology development by providing vehicle parts and software. Throughout the AutoDrive Challenge™ competition cycle, students and faculty will be invited to attend technology-specific workshops to help them in their concept refinement and overall autonomous technical understanding.

Beginning in fall 2017, Year 1 will focus on concept selection for university teams by having them become familiar with sensing and computation software. They will be tasked with completion of a concept design written paper as well as simple missions for on-site evaluation. These simple missions can include straight roadway driving and object avoidance/detection. The Year 1 final competition will
be hosted at GM's Desert Proving Ground in Yuma, Arizona.

In Year 2 the teams will refine their concept selections into solid system developments and will have more challenging dynamic events for testing on-site, including dynamic object detection and multiple lane changing.

Year 3 will culminate with final validation of design and concept refinement. They will navigate complex objectives of on-site testing, including higher speeds, turnabouts and moving object detection.

Related Website: Story and photos courtesy of General Motors.

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