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**NEWS**

**Two Virginia Tech Teams Advance in DARPA Robotics Challenge**  
July 19, 2013

Two Virginia Tech College of Engineering teams have advanced to the second phase of the futuristic Robotics Challenge sponsored by the Defense Advanced Research Projects Agency, or DARPA, a subsidiary of the U.S. Department of Defense dedicated to high-tech research. The goal: Create rescue robots that can easily maneuver disaster scenes and save lives.

Each team within the competition — one based in the Department of Computer Science, the other in the Department of Mechanical Engineering — combines both a strong partnership with additional university research groups and private companies, and includes alumni of the College of Engineering.

Team ViGIR — short for Virginia-Germany Interdisciplinary Robotics, a collaboration between College of Engineering spin-off company TORC Robotics – based at Virginia Tech’s Corporate Research Center; computer science’s Center for Human-Computer Interaction, and German-based Technische Universität Darmstadt, a longtime student-exchange partner with the College of Engineering. ViGIR built software and control tools for use in the simulation-based Virtual Robotics Challenge. From 26 total competitors in this track, ViGIR was one of seven teams to advance and receive a robot that will be supplied by DARPA.



Team THOR from Virginia Tech tests its DARPA-bound robot. Image courtesy Virginia Tech.

The team is headed by TORC’s David Conner, a two-time Hokie graduate of mechanical engineering with bachelor’s and master’s degrees, and an adjunct assistant professor in the Bradley Department of Electrical and Computer Engineering. Co-leading the team is Doug Bowman, professor of computer science and director of the Human-Computer Interaction center; and Oskar Von Stryk, professor of computer science and director of a robotics lab at Darmstadt. TORC engineer and two-time graduate of the College of Engineering Jesse Hurdus serves as project manager for the team.

The second Virginia Tech-based team to advance in the two-year DARPA Robotics Challenge is Team THOR, an international team of academic and private roboticists headed by Dennis Hong of the Robotics and Mechanisms Laboratory, or RoMeLa for short. The team’s advancement to the second round of the robotics competition’s physical portion was announced today in Boston at a DARPA-sponsored event, with five other teams moving onward from a total seven.

Team THOR must design and build a new, semi-autonomous robot that will be tasked with driving a jeep-like vehicle, and then exiting the vehicle, walking over rubble, clearing objects blocking a door, and entering a building. The robot then must locate and shut off a leaking valve, install a hose, and climb an industrial ladder. Finally, it must use a power tool and break through a concrete wall.

Teaming with Hong’s lab is The University of Pennsylvania’s robotics lab, named GRASP, which previously worked with Hong for three continuous championship wins at the international autonomous robot soccer competition RoboCup; ROBOTIS, a Seoul, Korea-based robotics company that partnered to develop an open-platform version of Hong’s 18-inch soccer-playing humanoid robot, DARwIn-OP; and Harris Corp. headquartered in Melbourne, Fla.

According to DARPA, recent disasters such as the March 2011 earthquake in Japan that led to the meltdown of a nuclear engineering plant highlighted the limited responses humans could perform in highly dangerous environments. The agency, citing the Defense Department’s Humanitarian Assistance and Disaster Relief mission, believes robotic response units can allow humans to quickly respond to such disasters, but from a remote, safe location.

Article reprinted from [materials](#) provided by Virginia Tech that contains more details about the two teams and the DARPA Robotics Challenge.

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