

# Self-navigating Robots Compete at Oakland

By Phil Foley  
Staff Writer

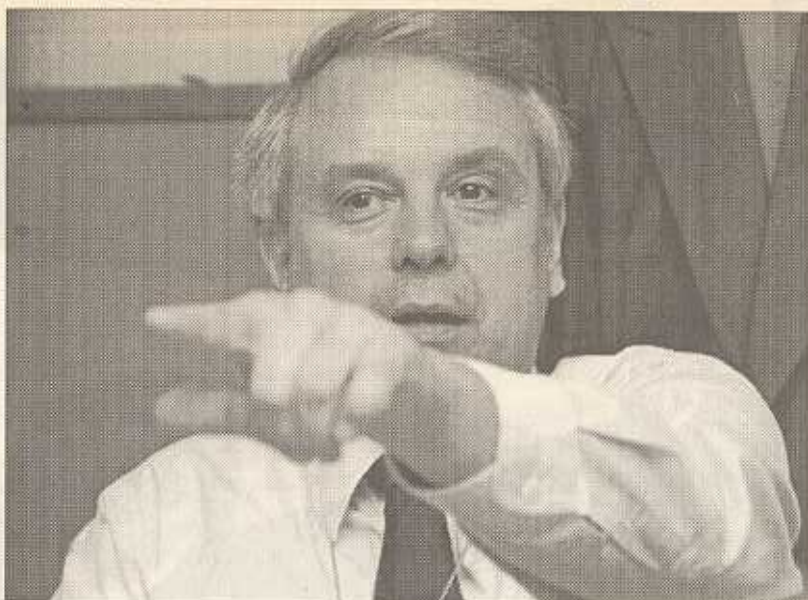
In the 1986 Steve Guttenberg, Ally Sheedy comedy, "Short Circuit," Johnny Five was a military robot with a mind of its own.

Jerry Lane, a researcher at the U.S. Army's Tank-automotive and Armaments Command in Warren, sees a world where robots may be less sophisticated than Johnny Five or "Star Wars'" C3PO, but decidedly more advanced than the material handlers and welders found on today's factory floor.

That's why he's a supporter of the sixth annual International Ground Robotics Competition, slated for June 1 at Oakland University in Rochester Hills.

The competition will see 18 teams from 13 universities in the United States, Canada and Japan field self-propelled, self-navigating vehicles vying for \$10,000 in prize money.

According to Ka C. Cheok, a professor of engineering at OU, while most robotics competitions involve remote-controlled vehicles, "this one is an autonomous computer taking off with no human intervention." He said the unmanned vehicles have to climb hills, go over bridges, forge through sand traps and make navigational decisions like picking the right fork in the road on a 700-foot course.



**JERRY LANE** sees a world where advanced computer technology is used for robotic security guards and collision avoidance systems in automobiles.  
—photo by Joshua Kristal

It's more difficult than it sounds. Last year, only a third of the machines crossed the finish line, down from half the year before. Last year's competition was hampered by rain.

Lane said the collegiate teams marry computers to video and sonar sensors on vehicles ranging from golf carts to children's toys to wheelchairs.

While Lane's vision of intelligent vehicles finding their way around the parking lot or battlefield by themselves is still years off in the future, he noted NASA's "Mars Rover has a version of our computer-aided driving sitting up there. That's how they can control something that has a 15-minute round-trip communications delay."

The Army is interested in intel-

ligent robot vehicles for what it refers to as force multiplier. Lane said while the Army finds the idea of a small number of soldiers controlling a large number of scout or weapons vehicles appealing, bandwidth or the number of radio frequencies required to handle that is a severely limiting factor.

On the civilian side, Lane said the same subsystems that will help a combat vehicle make its way through the battlefield could be adapted to help cars and trucks navigate through the minefields of modern urban traffic.

Cheok predicted some of the systems being tried on unmanned ground vehicles today may make their way into the auto industry within a decade.

He said the Army is currently working on a collision avoidance system for the Humvee and Mercedes-Benz recently offered adaptive cruise control as a \$2,000 option on one of its European models.

"I think for the automated highways, where they're going to go and optimize the amount of traffic in a given amount of road infrastructure, this technology is absolutely essential," Lane said.

He said the International Ground Robotics Competition is a good place for people in the auto industry to get a firsthand look at the young engineers who will be on the cutting edge of navigation technology.

For more information on the competition, visit Oakland University's website at [www.oakland.edu](http://www.oakland.edu) or call Lane at (810) 574-6683.

## Festival Exhibits Rochester's History

The Rochester Municipal Park will host the annual Heritage Festival on Memorial Day week-

Re-enactment groups this year include the Clinton River Muzzle Loaders, the First Foot Guard of

Rhinestone Rodeo Rockers, who will be teaching line dancing.

More than 50 crafters will