

Virginia Tech sweeps the 2000 IGVC Performance & Design Events

by Gerald Lane

Fifteen teams arrived at Coronado Springs Disney World to compete in the Intelligent Ground Vehicle Competition. Only ten were able to compete, since five experienced a variety of technical difficulties. Even though they didn't make it to the starting line, the field experience and field fixes/solutions gave these students unparalleled experience in real-life vehicle developmental situations.

The Society of Automotive Engineers sponsors this mandatory design competition each

year and pushes the teams to communicate and document everything. Following a precise set of rules; each team must submit a technical paper, present a design oriented briefing and discuss the design attributes of the vehicle during a static display. The four design judges apply a pre-

defined scoring criteria and pick the winners. The Virginia Tech Navigator took first place. Second place went to the University of Alberta, Canada. Michigan Tech was awarded a third place finish

Sponsorship for the event increased this year, as exposure to the automotive industry grew. Ford Motor Co. became a new cosponsor with expectations of this technology transitioning to Intelligent Transportation Systems. General Dynamics Land Systems also signed on as a sponsor based on the criticality of Intelligent/Unmanned Vehicle technology in the Army's Future Combat System. The IGVC initiated by AUVSI and co-hosted by Oakland University and the U.S.

Army Tank-automotive & Armaments Command had continued support from these sponsoring organizations: FANUC Robotics, United Defense Limited Partnership, Society of Automotive Engineers ITS Office, Department of Transportation, AUVSI Great Lakes Chapter and National Defense Industrial Association Michigan Chapter.

Spectator ranks swelled with new schools reconnoitering for next year. Visiting faculty this year were from: the US Military Academy-

West Point, University of Minnesota for a possible return, Florida State and University of Alabama at Huntsville

For the first time ever, in the eight year history of the IGVC, a single school swept all four events. The VA Tech



Virginia Tech's Artemis during the Road Debris

Artemis won first in the Autonomous Challenge, Road Debris and Follow-the-Leader (FtL). Not a surprise that it won FtL, since it won last year. Fine tuning and testing over this year paid off with three first place prizes. Artemis's teammate, the VA Tech Navigator, took first place in the Design Competition.

Right on the heels of Artemis in the Autonomous Challenge was the Hosei AMIGO vehicle. With its omni-direction vision, it came in second. AMIGO did have problems with a new challenge added to this year's event, simulated potholes. Two foot diameter solid white circles called simulated potholes were added based on interest by DoD and the automotive industry. The Hosei AMIGO vehicle drove over three of the four potholes it

encountered. Crossing or driving over a pothole resulted in the team becoming ineligible for grand prize money. The University of Cincinnati placed third. This eight year IGVC charter team dodged all three of the potholes it encountered, but went in the sharpest turn of the course. This was the best performance ever for Cincinnati.

The Road Debris course was especially challenging this year due to the tight turns dictated by the Coronado Springs landscape. VA Tech took first and third places with their two entries Artemis and Navigator respectively. The Hosei AMIGO entry took home a second place finish.

Follow the Leader in its second year, peaked the interest of the automotive community. Judged mostly by automotive Big Three engineers; Ford, DaimlerChrysler and General Motors, its technology is anticipated by sponsors to find its way onto the highways of the future. Artemis took first for the second year in a row but met some competition from the Hosei Nectar vehicle and the Navigator which tied for second place.

Next year mark your calendars and faculty set your curriculum: the 9th Intelligent Ground Vehicle Competition has been set for its home field at host school, Oakland University, Rochester Michigan, 2-4 June 2001.

See our website for this year's teams, technical papers, competition rules and application forms:

Visit IGVC at <http://www.igvc.org> or
http://www.secs.oakland.edu/SECS_prof_orgs/PROF_AUVSI/index.html



Virginia Tech's Navigator prepares for it's second place Follow-the-Leader run.

Best distances for the Autonomous Challenge and Road Debris:

<u>Autonomous Challenge</u>	
Team Name	Distance
Virginia Tech - ARTEMIS	232.5
Hosei University - Amigo	185.75
University of Cincinnati	180.0
University Of Colorado	136.75
Virginia Tech - Navigator	125.35
Hosei University - Nectar 2000	61.67
Embry Riddle Aeronautical Univ.	60.33
University of Tulsa	58.67
Michigan Tech. University	26.05
Bluefield State College	6.0
Oakland University	UnabletoCompete
University of Tulsa	UnabletoCompete
Devry Institute of Technology	UnabletoCompete
Trinity College	UnabletoCompete
Tennessee Tech	UnabletoCompete

<u>Road Debris Course</u>	
Team Name	Distance
Virginia Tech - ARTEMIS	78.58
Hosei University - Amigo	70.0
Virginia Tech - Navigator	46.75
Hosei University - Nectar 2000	36.33
University of Cincinnati	27.83
Embry Riddle Aeronautical Univ.	9.5



Univ. of Cincinnati's Bearcat II approaching the ramp in the Autonomous Challenge.