

## *EcoCAR: The NeXt Challenge North America's Premier Collegiate Automotive Engineering Competition*

On May 21, 2008, the teams for the student competition, EcoCAR: The NeXt Challenge, were announced in Washington, D.C. Seventeen teams were selected from the U.S. and Canada to participate in this prestigious event.

EcoCAR is the latest in a 19-year series of Advanced Vehicle Technology Competitions sponsored by the U.S. Department of Energy (DOE), an automotive manufacturer, and managed by Argonne National Laboratory. The goals of the competitions are to stimulate the development and demonstration of advanced propulsion and alternative fuel technologies and to train the next generation of engineers to lead the industry in the 21st century.

A three-year competition, EcoCAR challenges students to re-engineer a Saturn Vue donated by General Motors. The EcoCAR teams will design and build fully functional electric, hybrid, plug-in hybrid or fuel cell hybrid vehicles based on the California Zero Emission Vehicle regulations. The student teams will integrate advanced-technology drivetrains, lightweight materials, aerodynamic improvements, and will use various alternative fuels such as ethanol, biodiesel and hydrogen into their vehicles.



*EcoCAR teams will modify a car like this to create a more efficient vehicle using new hybrid technology.  
Photo courtesy of Roy Feldman.*

At the end of the competition, each team is expected to have developed a fully-functional, production prototype vehicle that has higher fuel economy and lower greenhouse gas and criteria emissions while still retaining the utility and customer acceptability of the stock vehicle.

The seventeen teams are from:

- Embry-Riddle Aeronautical University (Dayton Beach, FL)
- Georgia Tech (Atlanta, GA)
- Howard University (Washington, DC)
- Michigan Technological University (Houghton, MI)
- Mississippi State University (Starkville, MS)
- Missouri University of Science and Technology (Rolla, MO)
- North Carolina State University (Raleigh, NC)
- Ohio State University (Columbus, OH)
- Pennsylvania State University (University Park, PA)
- Rose-Hulman Institute of Technology (Terre Haute, IN)
- Texas Tech University (Lubbock, TX)
- University of Ontario Institute of Technology (Oshawa, Ontario, Canada)
- University of Victoria (Victoria, British Columbia, Canada)
- University of Waterloo (Waterloo, Ontario, Canada)
- University of Wisconsin (Madison, WI)
- Virginia Tech (Blacksburg, VA)
- West Virginia University (Morgantown, WV)

## EcoCAR: The NeXt Challenge

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The selection of schools for the EcoCAR Challenge was based on the quality of their proposal, available facilities, school and financial support, technical expertise and experience, and geographic diversity. Teams receive seed money, a wide range of powertrain components, a Saturn Vue vehicle donated by GM, and technical and mentoring support from the competition sponsors. In turn, schools provide matching funds, class credit, faculty advising, and logistical and promotional support for their teams.

In Year One, teams will focus on vehicle design using Argonne's Powertrain System Analysis Toolkit (PSAT), sophisticated software-in-the-loop and hardware-in-the-loop simulation techniques, and rapid control system prototyping.

In Years Two and Three, students will install drivetrain components and controllers developed in Year One. Students will build the vehicle they modeled in Year One and continue to refine their simulation, testing and hardware control efforts while improving vehicle efficiency and functionality.

At the end of each of the three EcoCAR years, there will be a week-long competition at a GM vehicle proving ground or other appropriate location in North America.

EcoCAR Challenge is funded by the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Vehicle Technologies Program.

### For further information, contact

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EcoCAR web site:  
[www.ecocarchallenge.org](http://www.ecocarchallenge.org)

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Bringing you a prosperous future where energy  
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