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Texas Tech University  
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## Eco-Engineers from The Ohio State University Win Gold at 2009 EcoCAR Competition

### *Engineering Students Design 'Green' Vehicles of the Future University of Victoria and Mississippi State University Finish Second and Third*

TORONTO (June 12, 2009) Today university students from The Ohio State University earned top honors at the 2009 finals of the [EcoCAR: The NeXt Challenge](#) competition in Toronto, Canada for their design of a Extended Range Electric Vehicle (EREV).

The Ohio State University took first place out of 17 universities in the U.S. and Canada that competed in the first major milestone of this three-year competition which is sponsored by the U.S. Department of Energy, General Motors, and many others including the Government of Canada. The competition challenges university engineering students across North America to re-engineer a 2009 Saturn VUE to improve fuel efficiency and reduce emissions while retaining the vehicle's performance and consumer appeal.

During the past year, participating teams have logged countless hours working in their [Green Garages](#) to design the next generation of green vehicle technologies. For this first year of competition, students were tasked with creating innovative concepts for their vehicle design and given the opportunity to use advanced software and computer modeling tools which allowed for testing and refinement under the simulation of real-world conditions.

The winning team's EREV provides a practical solution that will increase energy efficiency and reduce environmental impacts. The Ohio State's design was powered by a 1.8 liter engine and fueled by E85 ethanol. The next-generation design predicts a 300% percent increase in fuel economy over the production 4 cylinder vehicle.

"My teammates and I are thrilled to be named this year's winner of the EcoCAR competition," said Eric Schacht, a student engineer and team leader from The Ohio State team. "The many long days and late nights spent perfecting our vehicle design paid off today, and we couldn't be more grateful for the opportunity to participate in such an important competition."

The second place vehicle design, engineered by students at the University of Victoria is also an EREV that runs on E85 ethanol. Mississippi State University was awarded third place for its EREV, B20 biodiesel.

"All 17 EcoCAR teams worked tirelessly, studying the available technologies, doing the necessary research, and formulating their incredible designs. I want to congratulate The Ohio State for their hard work and extraordinary concept – they have earned their first place honors," said John Lushetsky, U.S. Department of Energy. "Each of the EcoCAR projects displayed a superior quality of work and the innovative spirit that will be critical as these future eco-engineers lead the country towards a clean energy future."

"The vehicle designs that each team has created represent the kinds of technology that will drive our industry to a greener future. I commend all of the teams for their hard work and creative thinking," said Elizabeth A. Lowery, GM vice president, Environment, Energy and Safety Policy.

“At GM, we are reinventing the automobile and the company, and green technology solutions are key to that reinvention. The EcoCAR competition embodies the innovation and drive needed for our future success and we are proud to be a part of this program.”

In year two of the competition, teams incorporate their unique powertrains into the Saturn VUE. In the final year, teams must refine their vehicles to near-showroom quality.

“The Government of Canada is proud to support the development of commercially viable, cleaner vehicle technologies which will only help to improve our economy and the environment,” said the Honourable Lisa Raitt, Canada’s Minister of Natural Resources. “It is truly inspiring to see the dedication and innovative spirit every one of these teams has brought to the ecoCAR competition.”

Students were encouraged to explore a variety of solutions including hybrid, plug-in hybrid, fuel cell, electric, and extended range electric vehicles.

- **Extended Range Electric Vehicles (EREV):** Almost half of the EcoCAR teams, including Ohio State, University of Wisconsin, and Virginia Tech chose to design Extended Range Electric Vehicles, which, like GM’s Chevy Volt, demonstrate full performance with an electric powertrain for all electric driving and an optimized combustion engine that can extend the range of the vehicle with its on-board fuel storage. The other EREV teams are Embry-Riddle Aeronautical University, Mississippi State University, North Carolina State University, Penn State and University of Victoria.
- **Full Function Electric Vehicle (FFEV):** One team, University of Ontario Institute of Technology chose to design a Full Function Electric Vehicle, which emits zero emissions consuming no liquid or gaseous fuel.
- **Fuel Cell Plug-in Hybrid Electric Vehicle (FC-PHEV):** Two of the seventeen EcoCAR teams, University of Waterloo and Missouri University of Science and Technology, have designed a Fuel Cell Plug-in Hybrid Vehicle which uses an onboard hydrogen fuel cell to either propel the vehicle or recharge a battery pack.
- **Plug-In Hybrid Electric Vehicles (PHEV):** Six of the EcoCAR teams, including Texas Tech, West Virginia University, and Michigan Tech have designed Plug-In Hybrid Electric Vehicles which utilize a large lithium ion battery. The other PHEV teams include Howard University, Georgia Tech, Rose-Hulman Institute of Technology.

While each of the 17 *EcoCAR* designs is unique, the common attributes include:

- **Lithium Ion Battery Technology:** All of the EcoCAR designs use state-of-the-art lithium ion battery technology, so the vehicles are able to store more electric energy in smaller, lighter packages.
- **Plug-In Capability:** All of the EcoCAR vehicles have plug-in capability, which can significantly reduce on-road petroleum consumption and greenhouse gas emissions.
- **Renewable Fuels:** All of the EcoCAR vehicles that require liquid fuels use types that blend in a renewable energy source, biodiesel or ethanol. This further displaces petroleum which significantly reduces the amount of greenhouse gases emitted from the vehicle’s tailpipes.
- **Powertrain Diversity:** Many EcoCAR teams like The University of Victoria, Embry-Riddle Aeronautical University, and Howard University have innovative powertrains that let one vehicle operate in engine-only, hybrid-electric, and electric only modes to optimize efficiency and performance.

Additional information about the EcoCAR competition and photos are available on the Web at:

<http://www.ecocarchallenge.org>; <http://www.green-garage.org>; <http://archive.ecocarphoto.com/c/ecocarphoto>

#### **About EcoCAR**

EcoCAR is a three-year competition that builds on the 20-year history of DOE advanced vehicle technology competitions by giving engineering students the chance to design and build advanced vehicles that demonstrate leading-edge automotive technologies. General Motors provides production vehicles, vehicle components, seed money, technical mentoring and operational support. The U.S. Department of Energy and its research and development facility, Argonne National Laboratory provides competition management, team evaluation, technical and logistical support. Through this important partnership, EcoCAR aims to inspire and support the next generation of scientists and engineers to unite around the common goal of sustainable mobility.

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