



## EcoCAR Outreach Program Report # 1

*Instructions: Use this template to provide your team's outreach program progress. Report #1 is due January 15, 2009. Your report must be posted as a PDF or Word document to your team website under **OUTREACH** by the above date.*

**Team: Michigan Tech University**

**Name of Outreach Coordinator: Dennis Karttunen**

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**Date posted: 1/14/2009**

### I. Outreach Activity Detail

#### A. Media Relations - 1 point

*Please list each media hit since your last marketing report. Please provide copies of any media clips in the Appendix.*

<b>Media Type</b> <i>(Television, Radio, Print)</i>	<b>Media Outlet and Reporter's Name</b>	<b>Date</b>	<b>Location</b>	<b>Coverage Origin</b> <i>(List name of News Release or Event)</i>
Print	News Paper Layla Aslani	January 8th	Houghton Mi	Daily Mining Gazette
Television	News Jeni Jewell	January 14 <sup>th</sup>	Houghton MI	TV 6 News



Photos:



2. Activity name: Michigan Clean Transportation Expo Date/Time: Sept. 24<sup>th</sup> 2008  
Location: Detroit MI  
Team participants: Adam Kantor, Andrew Best, Mindy Saxton  
Audience: Local Media, Regional Media, Advanced Vehicle Industry  
Activity description/details: Spoke with CEOs of Advanced Technology companies pertaining to Advanced Vehicle Development as well as EcoCAR  
Key Messages Covered: Hybrid Vehicle Technology  
Any measurable results:



## Appendix: Copies of Media Clip.

*Daily Mining Gazette*

### Hybrid haven

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Tech team receives \$1.5 million [grant](#) for flex-fuel research

By LAYLA ASLANI, DMG Writer  
*POSTED: January 8, 2009*

HOUGHTON - Researchers at Michigan Technological University have received a \$1.5 million grant from the Michigan Public Service Commission to develop technologies for flex-fuel hybrid vehicles.

As part of the project, the team aims to design and build an efficient, four-cylinder, hybrid engine with a variable compression ratio that can run on flex-fuel and meet the Environmental Protection Agency's emissions standards.

"Our goal is to improve design capacities and develop technology to enable flex-fuel hybrid internal combustion engines, so that means we can operate engines efficiently and cleanly with high-ethanol concentrations," said lead investigator Jeff Naber, an associate professor of mechanical engineering-engineering mechanics and director of Michigan Tech's Advanced Power Systems Research Center.

Flex-fuel engines can burn pure gasoline and a blend of ethanol and gas, like E85. The properties of the two fuels vary tremendously, creating engineering challenges. If engines can't adapt to these very different fuels, emissions rise and mileage falls, Naber said. Starting and stopping the engine repeatedly worsens the problem, and that's what hybrid engines do many times during a single trip, whenever the vehicle switches from battery to internal combustion and back again.

U.S. ethanol is typically made from corn, but Naber said the technologies his team is developing would be applicable to all forms of ethanol. He said other researchers in Michigan Tech's Wood to Wheels program, of which his team is a part of, are looking to develop ethanol from non-food resources such as biomass and waste streams.

Naber said the work his team does will influence General Motors projects.

"That will come in a number of different ways, so the test results that we produce will help them understand how to design and control their engines better," he said. "We're working on software to help them understand combustion and emissions within this field of alternative fuels combustion."

However, it is not only GM that will benefit from the project. Several graduate students and undergraduate students are working on the project on campus, at GM and at Argonne National Laboratory's Transportation Technology Research & Development Center in Chicago, Naber said.

"We're producing students that are knowledgeable about this," he said. "This will help us get off petroleum, improve fuel mileage and help us get away from our dependency on foreign oil."

The MPSC grant builds on over \$1 million in support from GM, Sensors Inc. of Saline, Argonne National Laboratory and Michigan Tech.

Co-investigators on the project are Jay Meldrum, director of the Keweenaw Research Center; Donna Michalek and John Beard, associate professors of mechanical engineering-engineering mechanics; Seong-Young Lee, Scott Miers and Abhijit Mukherjee, assistant professors of mechanical engineering-engineering mechanics; and Jeremy Worm, staff engineer of the Advanced Power Systems Research Center, which is directed by Naber.

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