



**EcoCAR Coverage Report
Year Two Finals 2010**

Overview of Account Activity: Finals 2010 Summary

The following captures work that the Greenough team handled during May and early June 2010, related to Year Two Finals.

Finals Key Activities

The first important activity during Finals that Greenough supported was hosted media at GM Desert Proving Grounds in Yuma on Thursday, June 20. The attending journalists were as follows:

- Jim Motavalli, Mother Nature Network, New York Times, etc.
- Jerry James Stone, Treehugger
- Liane Yvkoff, CNET Autoblog
- Danny King, Green Car Advisor (Edmunds)

In preparation, the team created personalized media packets with a schedule outlining their day in Yuma. On-site support was provided by Jennifer Eberline who handled the majority of transportation and logistics with the group, and escorting of the media through the Proving Ground (with additional team support). The group was extremely engaged with the teams and stayed at DPG until after 3 p.m., even though we had only anticipated the visit to go until 1 p.m. So far, a total of seven pieces of coverage have appeared authored by hosted media. Additionally, most of the journalists had a green editorial focus, an important objective in 2010 media relations. Overall, one-third of journalists who covered Finals strictly cover green/alternative energy issues (see chart on p.4). We are still anticipating coverage from Jerry James Stone of Treehugger that will consist of 16 individual video vignettes with each team.

On Friday, May 21, local Yuma media were invited to visit DPG and meet the teams. Out of a small pool of local media, almost every outlet attended local media day in Yuma:

- (NBC) KYMA-TV News 11, Maria Hechanova
- KSWT (CBS-13)
- *The Yuma Sun*, James Gilbert

The event resulted in an in-depth article on the Yuma activities in the *Yuma Sun* and broadcast segments.

The final major media event during Finals was the Ride event in San Diego on Wednesday, May 26. Confirmations did not come from local media until the 11th hour, but turnout was exceptional. The following media outlets attended the Ride event:

- San Diego Union-Tribune, Onell Soto
- Sandiego.com, Jeff Murray
- KGTV-ABC10, Alejandra Cerball
- San Diego 6 (CW)
- KMFB-TV, CBS8

The attendance resulted in a lengthy and well-written article on the cover of the Union-Tribune Business section, including three color photographs. ABC10 also aired an in-depth and creatively shot segment on the teams, after the reporter spent nearly two hours interviewing each of the "ride" teams.

Media Relations

Throughout Finals, Greenough maintained a tight schedule of media outreach to ensure national and regional media received the right news, at the right time. The team managed four separate news notices during a two week period:

- Thursday, May 13: Media advisory for local media day sent it to Yuma outlets, which was the initial touchpoint to secure their attendance

- Wednesday, May 19: The team distributed an SMR release about the work at DPG in Yuma, which was complete with recent photos, a time-lapse video from the pits and social media links and tools.
- Monday, May 24: Media advisory for Ride event in San Diego sent to San Diego and Los Angeles media, including general news, automotive and green reporters in the area.
- Thursday, May 27: Finalized the Finals press release on Wednesday night and submitted to GM to issue over PRNewswire. Greenough also emailed it to national media and all journalists that we had made new contact with during Finals.

Throughout outreach efforts, the team sent regular reports and updates to Kimberly to keep informed of key coverage and confirmed media lists. In addition, Greenough managed and assembled press kits for local media day and the Ride event.

Inside the Green Garage Blog

The blog had an extremely successful month and blog traffic peaked and hit a high plateau during Finals. Posting a **record high of 29 posts** related to Finals, the site maintained a high level of traffic with **9,751 page views** during Finals. The highest days of traffic were May 27 and 28 with an average of 900 daily views. Posts during this period included Finals winners information, Q&A with the winning team, recap video from Finals and complete awards list.

The success of the blog during Finals was made possible by careful coordination between Greenough, Kimberly DeClark, Kristen de la Rosa, supporting EcoCAR coordinators, Roy Feldman and the video crew from MCCI. The Greenough team managed the blog schedule, revised and posted all content, but was greatly supported by the on-site organizers who made certain photos and written materials was sent in on time.

Webchat

The Year Two winners webchat was held on Friday, June 4 at 3:00 p.m. and the team helped promote the event through email to automotive and other reporters that have a relationship with EcoCAR. We also heavily promoted the webchat on the GG blog, Twitter and Facebook. Greenough participated in webchat planning and provided back-up questions for the discussion which we entered into the pool of questions during the live chat.

Miscellaneous

Greenough compiled statistics about university-generated coverage since March 2009, which indicated a steady increase in editorial coverage and a consistent percentage of overall EcoCAR coverage.

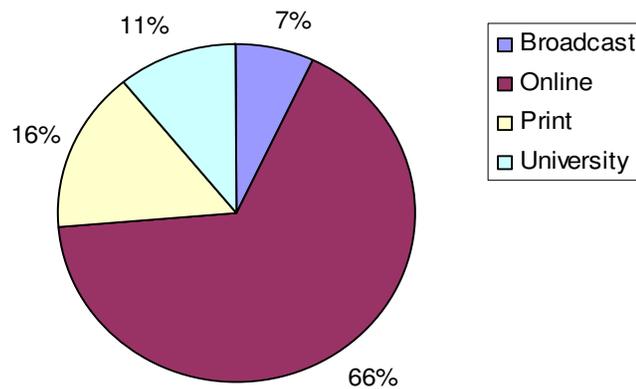
The team also compiled a spreadsheet summary of team-generated blog posts, indicating the media type for each post i.e. photo, video, etc. and sent to Kimberly in early May, with an updated tally sent in mid-May.

EcoCAR Year Two Finals Coverage Summary

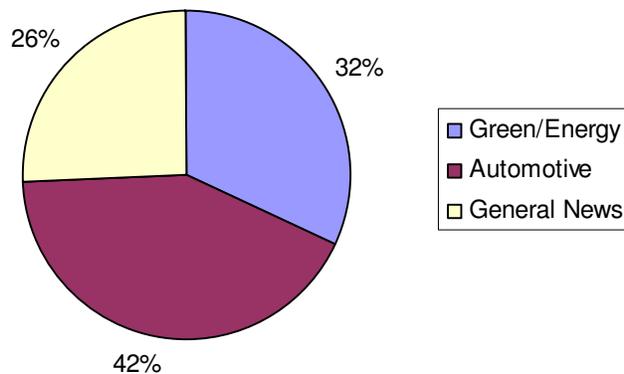
Finals coverage includes a total of **83 pieces*** equating to **38,260,050 impressions**

- ❑ **Online:** 55 online EcoCAR stories; generated more than 35,645,634 impressions
- ❑ **Print:** 15 published stories; generated more than 1,743,920 impressions
- ❑ **Broadcast:** 6 local and national broadcast hits; generated more than 252,525 impressions
- ❑ **University:** 9 EcoCAR University-created pieces of content; generated more than 617,971 impressions

Media Type



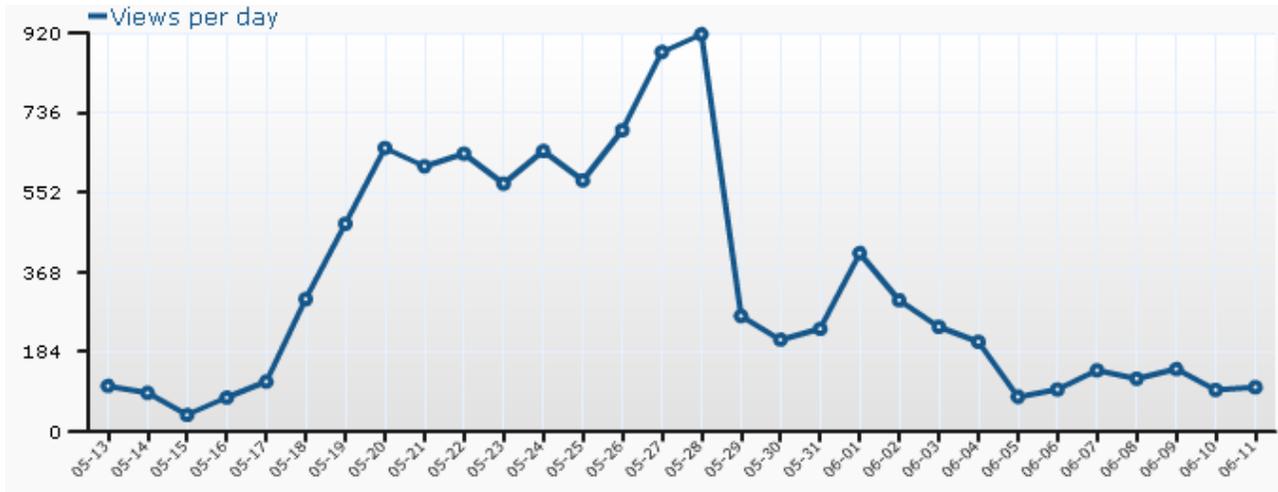
Reporter Coverage Category



**Figure includes multiple pick-ups of editorial stories*

Inside the Green Garage Blog

- Total Blog Posts to-date: 227
 - **Total Finals Posts:** 29
- Total Views (May 2009 – May 31): **37,986**
- Total Views during Finals: **9,751**



Key Posts

5/20: *Yuma Confessionals 1: Behind the Scenes*

5/21: *Day Five – Testing and Judging, Update From The Pits: Safety/Tech Inspection Progress, University of Wisconsin is Half-Way There and UOIT Focuses on Teamwork at the Year 2 Competition*

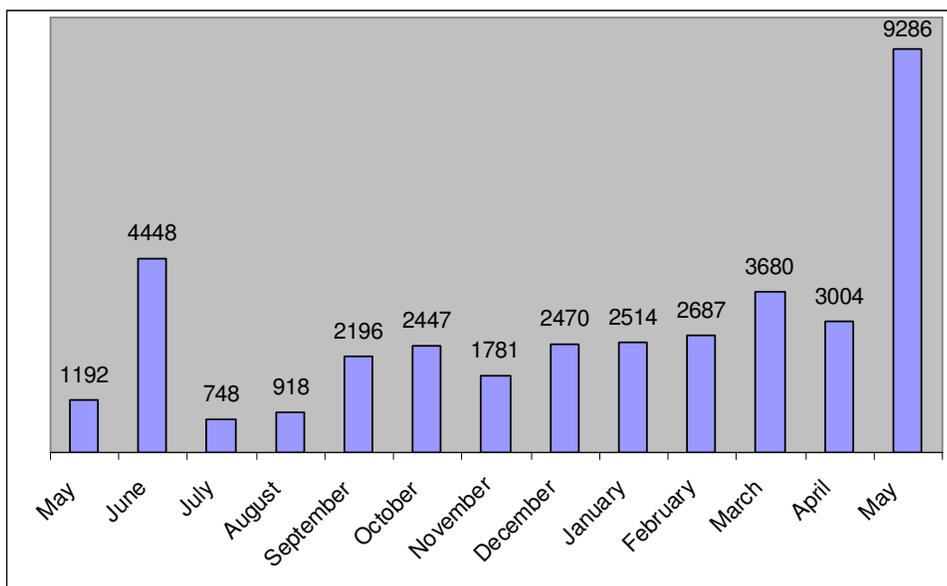
5/22: *Local and National Media Visit EcoCAR at DPGY, Acceleration & Anxiety and PSU's Yuma Confessional*

5/25: *Day 7: Outreach Presentations*

5/27: *Year Two Winners Announcement*

6/1: *EcoCAR 2010 Recap: the Full List of Year Two Winners!*

Blog Views by Month



Finals 2010 Coverage					
#	Date	Outlet	Title	Impressions	Media Type
1	5/7/2010	WeAreCentralPA.com	PSU Team Preps for EcoCar Challenge	43,692	Online
2	5/11/2010	Terre Haute Tribune-Star	EcoCAR, Rose-Hulman engineering team bound for first leg of a three-year, national competition	73,702	Print
3	5/14/2010	WVU College of Engineering and Mineral Resources	EcoCAR Team Heads to Year Two Finals	293,088	University
4	5/17/2010	UOIT site	UOIT EcoCAR team heads to Arizona	5,836	University
5	5/20/2010	EcoSeed	Schools compete in G.M.'s green car contest	28,159	Online
6	5/20/2010	le blog auto	Premiers essais des véhicules du EcoCar Challenge	13,608	Online
7	5/21/2010	Caradisiac.com	La compétition EcoCAR bat son plein aux Etats-Unis	49,396	Online
8	5/21/2010	MNN.com (Mother Nature Network)	Dude, hand me that wrench: EcoCar trains young engineers to make green vehicles	573,346	Online
9	5/21/2010	The Yuma Sun	Students go green under the hood at YPG	168,256	Print
10	5/21/2010	KSWT-TV (Yuma)	Eco Friendly Cars Hit The Desert	31,528	Broadcast
11	5/23/2010	KCBD-TV 11 (Lubbock, TX)	TTU students among those at Desert Proving Ground for EcoCAR	46,220	Broadcast
12	5/24/2010	Phoenix Business Journal	EcoCARs turn desert green	72,036	Print
13	5/24/2010	Edmunds Green Car Advisor	EcoCAR Challenge Teams Hit Home Stretch In Collegiate Alt-Fuel Contest	58,348	Online
14	5/25/2010	BNET	EcoCar Inspires College Car Engineers, But Maybe Some Could Major in Nukes	358,913	Online
15	5/25/2010	The Daily Green	At the EcoCar Summit: Green Car Challenges for Young Engineers	960,061	Online

16	5/26/2010	San Diego Union-Tribune	Engineering teams graded on fuel efficiency	973,867	Print
17	5/26/2010	OzarksFirst	Missouri S&T Team Competing in EcoCAR Challenge	78,317	Online
18	5/26/2010	KGTV San Diego - 10News San Diego*	Engineering Students Show Off Fuel-Efficient Cars	174,777	Broadcast
19	5/27/2010	Forbes.com	Harnessing Youth To Build EcoCars	9,217,910	Online
20	5/27/2010	Automobiles.com	EcoCAR Challenge Year Two: University Students Develop Green Car	3,946	Online
21	5/27/2010	NextGenBlog	#EcoCar Winners in--Mississippi Wins Again!	N/A	Online
22	5/27/2010	Ohio State University Center for Automotive Research	Final Report from EcoCAR, The NeXt Challenge, CAR Buckeyes are bringing home some awards!	839	University
23	5/27/2010	Edmunds Green Car Advisor	Mississippi St. Wins Year Two Segment of GM- and DOE-Sponsored Alt-Fuel Contest	58,348	Online
24	5/27/2010	MotorTrend	Biodiesel Extended-range Hybrid SUV is Winner of GM's EcoCAR Competition	76,159	Online
25	5/27/2010	Domestic Fuel	Biodiesel, Ethanol Vehicles Win EcoCAR Challenge	4,898	Online
26	5/27/2010	NEMS360.com	MSU EcoCar wins first place	58,594	Online
27	5/27/2010	Mississippi State University	By Robbie Ward MSU EcoCAR student team wins big in California	139,769	University
28	5/27/2010	WeAreCentralPA.com	Penn State Wins Again	43,692	Online
29	5/27/2010	WITF.org	PSU competes in Eco Car Challenge	14,254	Online
30	5/28/2010	The Dispatch (MSU University Relations)	MSU students roll to EcoCAR victory	20,661	University
31	5/28/2010	CNET Car Tech Blog	Mississippi takes top prize in EcoCar challenge	5,204,310	Online

32	5/28/2010	San Diego.com (San Diego Union-Tribune)	Eco Car Challenge Finishes up in San Diego	352,119	Online
33	5/28/2010	Green Car Congress	Mississippi State University Takes First in Year Two of EcoCAR Competition With Biodiesel EREV	35,666	Online
34	5/28/2010	WXVT	MSU students tops in 'EcoCAR' competition	11,158	Online
35	5/28/2010	NEMS360.com	MSU drives to top awards in EcoCar competition	58,594	Online
36	5/28/2010	AutoEvolution	MSU Wins GM's EcoCAR Competition	65,298	Online
37	5/28/2010	Earth Techling	Mississippi State Takes Top Green Dog At EcoCar Challenge	25,081	Online
38	5/28/2010	Auto Blog Green	MSU students win stage 2 of EcoCAR challenge with 118 MPGe plug-in hybrid	206,297	Online
39	5/28/2010	Eco Auto Ninja	Plug-in Hybrid Wins EcoCAR Challenge Stage 2 for MSU Students	5,199	Online
40	5/28/2010	Alternative Energy Newswire	Biodiesel, Ethanol Vehicles Win EcoCAR Challenge	673	Online
41	5/29/2010	Starkville Daily News	MSU takes top spot in EcoCAR vehicle challenge's 2nd year	20,919	Print
42	5/29/2010	The Green Car Website.co.uk	Students' biodiesel electric car takes first place	6,468	Online
43	5/29/2010	CentreDaily.com (Centre Daily Times)	PSU team places third in EcoCar competition	138,937	Print
44	5/29/2010	Gizmag	EcoCAR Challenge gets students scrambling in Arizona desert	N/A	Online
45	5/30/2010	Daily Collegian	Penn State EcoCAR team wins third place at competition	95,623	University
46	5/30/2010	CleanMPG.com	Mississippi State takes Top Honors for the second year in a row at EcoCAR Competition	21,168	Online
47	5/31/2010	Canadian Driver	Mississippi team places first in EcoCAR Challenge	76,126	Online

48	5/31/2010	ZDNet – Green Tech	Mississippi State drives home with year-two EcoCAR trophy	620,968	Online
49	5/31/2010	SUNfiltered	Next green car technology hub: Starkville, Mississippi?	93,449	Online
50	5/31/2010	Mike's Hybrid Cars & Alt Fuels Blog	College Kids Build a 118 mpg SUV	15,738	Online
51	6/1/2010	Exchange Morning Post	UOIT automotive engineers turn heads in Arizona and San Diego during second phase of EcoCAR Challenge	71,000	Online
52	6/1/2010	UR Northumberland	UOIT automotive engineers turn heads in Arizona and San Diego during second phase of EcoCAR Challenge	1,367	Online
53	6/1/2010	Automotive Fleet	Mississippi State Wins EcoCAR Competition	9,249	Online
54	6/1/2010	Wired	Mississippi State Wins Big at EcoCAR With 118 MPG	3,696,479	Online
55	6/1/2010	ABC7chicago.com	Mississippi State University wins EcoCAR competition	20,905	Print
56	6/1/2010	Embedded.com	Modeling the way with academia and industry	34,356	Online
57	6/2/2010	The Green Building Inspector	Mississippi State University Wins Year Two of the EcoCAR Competition	N/A	Online
58	6/2/2010	Alternative Energy	Mississippi State University Wins Year Two of the EcoCAR Competition	N/A	Online
59	6/2/2010	WardsAuto.com*	Mississippi State Wins 2010 EcoCAR Competition	81,823	Online
60	6/2/2010	Penn State Live	Penn State team finishes third in national EcoCAR contest	56,868	University
61	6/2/2010	SustainableBusiness.com	Weekly Clean Energy Roundup: June 2, 2010	35,850	Online
62	6/3/2010	Gantdaily.com	Penn State Team Finishes Third in National EcoCAR Contest	24,437	Online

63	6/3/2010	BNET	Battery Maker Dow Kokam's Ambitious Goal: 300-Mile Range for EVs	358,913	Online
64	6/3/2010	ZDNet	GM EcoCar Challenge (photos)	620,968	Online
65	6/3/2010	The Virginia Engineer	2010 EcoCAR Competition Winner Announced	1,571	Online
66	6/3/2010	Computer Shopper/CNET	Virginia Tech - GM EcoCar Challenge (photos)	212,966	Online
67	6/4/2010	The Car Tech Blog – CNET	Peeking under the hood at the EcoCar Challenge	5,204,310	Online
68	6/4/2010	EnergyBoom	Mississippi State University Wins EcoCar Competition	33,179	Online
69	6/4/2010	Oye! Times	Ottawa congratulates the Ecocar challenge winners	2,350	Online
70	6/7/2010	Canadian Driver	Canadian teams win awards in EcoCAR Challenge	76,126	Online
71	6/7/2010	570 News	Local winners at EcoCAR Challenge	6,264	Online
72	6/7/2010	Epoch Times	Canadian Team Places Fourth in International Ecocar Competition	198,313	Print
73	6/7/2010	HybridMile.com	Mississippi State University Takes First in Second Stage of EcoCar Challenge	766	Online
74	6/8/2010	Terre Haute Tribune-Star	Rose-Hulman's EcoCAR team earns Top Vehicle Appearance & Outreach Presentation Awards	73,702	Print
75	6/8/2010	North Carolina Solar Center	EcoCAR Year 2 Results	5,287	University



PSU Team Preps for EcoCar Challenge

WeAreCentralPA.com

By Adam Paluka

May 7, 2010

http://wearecentralpa.com/fulltext/?nxd_id=173095

UNIVERSITY PARK, CENTRE COUNTY - In ten days the Penn State Advanced Vehicle Team will head out to the West Coast where they will compete with 16 other universities to see who can make the most marketable and environmentally friendly hybrid car.

It is a contest sponsored by the Department of Energy and General Motors, and there are bragging rights at stake for anyone with ties to PSU.

After finishing in seventh place last year, the Penn State Advanced Vehicle Team is ready to take this year's EcoCar Challenge by storm.

"This year we're actually taking the vehicle out the first six days are out in Yuma, Arizona, we do a lot of vehicle testing road work, making sure it's consumer acceptable," Dana Bubonovich, the team's Outreach Coordinator, said.

While they are on the road the team will have to prove to judges that they can decrease emissions, increase gas mileage, and make a marketable car for consumers, and the EcoCar Challenge is shaping up to be a familiar gridiron battle on wheels.

"The biggest competition is Ohio State. They won first place last year, and this year they just received word that they're allowed to ship the vehicles. That's always our biggest competition," Bubonovich said.

Friday, the team made its final tweaks in hopes of beating the team from Columbus, and even if they do not come home with the blue ribbon, they are excited to see their hybrid hit the road.

"It'll be great just to see something that I spent two years designing and building competing in these events. It'll be great just to see that," Team member Benjamin Koch said.

The Penn State car uses the same type of hybrid technology as the Chevy Volt. It can travel 25 miles on a single charge without using any gas.

EcoCAR, Rose-Hulman engineering team bound for first leg of a three-year, national competition

Terre Haute Tribune-Star

By Brian Boyce

May 11, 2010

<http://tribstar.com/features/x1700428680/EcoCAR-Rose-Hulman-engineering-team-bound-for-first-leg-of-a-three-year-national-competition>

Also on [OregonLive](#).

TERRE HAUTE — The race for the future of alternative energy is under way, and Rose-Hulman students have a car at the line.

“In a competition, you always wish you were further along than you are, but looking at the progress we’ve made, I’m very proud of this team,” Rose-Hulman Institute of Technology professor Zac Chambers said Friday afternoon at the unveiling of the EcoCAR project.

The car, and its engineering team are bound for Yuma, Ariz., and then San Diego, Calif., for the first leg of a three-year, national competition.

Dozens of students, faculty and staff gathered outside the school’s student union, where a home-grown hybrid-electric car set parked for display.

Spectators who had gathered inside the school’s Advanced Transportation Development Facility south of town on a rainy December afternoon hardly recognized that blue, General Motors production vehicle.

Six months of sleepless nights later, it’s a hybrid-electric sport utility vehicle with a 1.3-liter Fiat diesel engine using B-20 diesel fuel, a four-speed automatic GM transmission, two TM4 electric motors arranged in a parallel pre-post transmission architecture and an innovative, high-performance battery system provided by advanced lithium-ion battery maker EnerDel Inc. out of Indianapolis.

Rose-Hulman was one of 17 universities invited to compete in the EcoCAR project, a three-year contest where students convert a GM production vehicle into one using alternative energy systems. Rose-Hulman was the only school from Indiana invited.

Chambers, a professor of mechanical engineering, and Marc Herniter, professor of electrical and computer engineering, will accompany the team which produced the vehicle out to Yuma and San Diego, where they will compete in a series of performance-based demonstrations.

“I’ve probably put in 80 hours over the last few weeks,” senior mechanical and electrical engineering student Cameron Hazel said while munching on a celebratory slice of pizza.

The stock production vehicle issued to Rose-Hulman and every other team was quickly dismantled to the bare shell, the EcoCAR team leader explained, adding the students customized much of the newly formed car. “It took a lot of work to make things match up,” he said.

Each team has unique engineering, design and system architecture, he explained. The trip out west will involve acceleration tests, towing-power demonstrations and other performance contests. Over the next two years, the team will continue to advance and improve their vehicle, eventually bringing it up to “showroom” quality, Hazel said.

The EcoCAR project is jointly-sponsored by General Motors and U.S. Department of Energy, and Rose-Hulman gathered up a number of other sponsorships along the way. The 600-pound lithium-ion battery used in the vehicle was produced by EnerDel, the president of which, Rick Stanley, is a 1978 graduate of Rose-

Hulman.

Team member Zack Brune, a senior mechanical engineering major, said he was looking forward to this morning's send-off. "Things are looking really good, and I'm looking forward to the competition," he said.

The vehicle itself will be transported to Arizona this morning. The EcoCAR Year II Competition Finals will be conducted May 17-27 at the GM Desert Proving Ground in Yuma, as well as locations throughout San Diego.

EcoCAR Team Heads to Year Two Finals

WVU College of Engineering and Mineral Resources

May 14, 2010

<http://www.pnge.cemr.wvu.edu/news/news-details.php?item=1406>

West Virginia University's EcoCAR team is preparing for a trip to Yuma, Arizona, and San Diego, California, to attend the Year 2 EcoCAR Challenge Finals, which will take place from May 17 to 27.

WVU students from the College of Engineering and the Perley Isaac Reed School of Journalism will compete against 15 North American universities for the Year 2 title.

Over the past year, the WVU team has been re-engineering a General Motors-donated vehicle as part of EcoCAR, a three-year national competition sponsored by GM and the U.S. Department of Energy.

The competition challenges university teams to make their vehicles more fuel efficient and reduce emissions while maintaining performance, reliability and consumer acceptability.

The WVU team has worked hard to develop an eco-friendly vehicle that will be tested in more than a dozen technical events at this year's finals. Competition events will take place at the General Motors Desert Proving Ground in Yuma and at several locations throughout San Diego.

The first leg of competition will take place May 18-23 in Yuma, where EcoCAR vehicles will be judged by a variety of standards including a safety and technical inspection, dynamic consumer acceptability, highway stability, braking, acceleration, autocross, and emissions and energy consumption testing.

"I believe our strong work ethic will lead to success in Yuma" said Brody Conklin, the WVU engineering team leader.

While primarily an engineering competition, the WVU EcoCAR team also includes five public relations students from the Perley Isaac Reed School of Journalism. Outreach team members have been organizing numerous presentations at area schools and media events to educate the community about renewable resources and its benefits to the environment.

"I believe all our efforts this past year will impress the judges, said Catherine Mihelic, a senior public relations student and team member. "We've exceeded all the outreach requirements of this competition and are proud of what we've accomplished."

Both the engineering and outreach teams will be judged on their presentations during the second leg of the competition which takes place May 23 - 27 in San Diego.

The Year Two Competition Finals will conclude with a ceremony at the San Diego House of Blues where awards totaling nearly \$100,000 will be handed out, and the first, second and third place winners will be announced.

For more information on the WVU EcoCAR Team, please visit ecocar.wvu.edu.



UOIT EcoCAR team heads to Arizona

UOIT.com

May 17, 2010

http://www.uoit.ca/EN/special/connect/announcements/20100517_1.html

Call it more than just your average road trip. The ambitious and innovative collection of automotive engineering students that comprises the University of Ontario Institute of Technology's (UOIT) EcoCAR team is in the Arizona desert this week to put their cutting-edge, eco-friendly electric vehicle to another key test.

UOIT is just one of 16 North American universities competing in the EcoCAR: The NeXt Challenge automotive engineering design competition sponsored by General Motors (GM) and the U.S. Department of Energy. Each team of engineers is aiming to be the one that creates the most environmentally-friendly car while maintaining the performance standards expected by modern consumers. The gathering of all teams in Yuma, Arizona from May 17 to 22 represents the second-phase of the three-year competition. Teams will put their cars through a series of more than a dozen dynamic tests at the GM Proving Grounds similar to those the automaker uses on its production cars in the arid Arizona climate.

UOIT's EcoCAR is a hybrid vehicle generously donated by GM Canada. As part of its innovative approach to the competition and effort to earn high marks for reducing greenhouse gas emissions, the UOIT team opted to make its vehicle a fully-electric model. In addition to increasing energy efficiency through its advanced technology design, the team is also striving to maintain consumer acceptability in the areas of performance, reliability and safety.

Following the tests in Arizona, the UOIT EcoCAR team will head to San Diego, California for five days to make presentations to industry experts and expand the team's outreach efforts.

UOIT is one of just three Canadian universities to qualify for the prestigious EcoCAR competition. UOIT owns Canada's largest electric vehicle fleet at a university, which includes electric buses, pickup trucks, bicycles and even a hydrogen hybrid electric wheelchair.

For more information about UOIT's EcoCAR, please visit the team's website by [clicking here](#).



Schools compete in G.M.'s green car contest

EcoSeed

May 20, 2010

<http://www.ecoseed.org/en/home/7196>

Sixteen teams from universities across North America will test their vehicle's strength in the final dash of G.M. and the Department of Energy's EcoCAR contest. EcoCAR challenges each team to re-engineer a G.M.-donated vehicle using a range of alternative technologies. The EcoCAR vehicles fall into one of the following four categories: extended-range electric vehicle, plug-in hybrid electric vehicle, fuel cell plug-in hybrid electric vehicle and full-function electric vehicle. The final judging will be done at G.M.'s 2,400-acre Desert Proving Ground, where the cars will be put into a series of pit tests that range from braking to drive quality.

Premiers essais des véhicules du EcoCar Challenge

le blog auto

By Frederic Papkoff

May 20, 2010

<http://www.leblogauto.com/2010/05/premiers-essais-des-vehicules-du-ecocar-challenge.html>



Le Challenge EcoCAR entre dans sa dernière phase avec le début des derniers essais des véhicules par les juges. Ces tests qui se déroulent sur les pistes d'essai de [GM](#) à Yuma décideront des finalistes de cette seconde année du Challenge.

Le Challenge EcoCAR est organisé par le Département de l'énergie américain, avec le

support de [GM](#). Le but pour les équipes est de développer un système de propulsion pour un véhicule existant, fourni par GM. Quatre catégories sont créés : Véhicule [électrique](#) à prolongateur d'autonomie (RE-EV), [hybride](#) Plug-In (PHEV), [hybride](#) plug-in à pile à combustible (PFCEV) et véhicule électrique (BEV). Les tests ont pour but de montrer que ces véhicules répondent au cahier des charges du concours, qui est de réaliser un véhicule compatible avec les règlements et besoins de véhicules commercialisables en matière de sécurité, performance ou facilité d'utilisation.

Le but final du concours qui se déroule sur trois ans est d'aider au développement de carrières d'ingénieurs et scientifiques dans le domaine des énergies alternatives. 16 équipes issues de différentes universités américaines sont engagées dans la seconde année du concours.

Les gagnants seront annoncés le 27 mai à San Diego.

La compétition EcoCAR bat son plein aux Etats-Unis

Séverine Alibeu

May 21, 2010

<http://www.caradisiac.com/La-compétition-EcoCAR-bat-son-plein-aux-Etats-Unis-56912.htm>



Aux [Etats-Unis](#) a été lancée une épreuve dédiée aux véhicules dotés de technologies environnementales, ouverte aux équipes d'étudiants des universités du Canada, du Mexique et des États-Unis (proposant un programme d'ingénierie agréé) : elle est baptisée « EcoCAR : The NeXt Challenge ».

Le but est de transformer un véhicule classique [General Motors](#) en un véhicule écolo (soit [électrique](#), électrique à prolongateur d'autonomie, [hybride](#) rechargeable ou hybride rechargeable à pile à combustible).

Cette compétition auto écolo, d'une durée de trois ans, est une initiative du Département de l'Energie américain et du constructeur américain General Motors. Elle a démarré en avril

2008.

Ce mois-ci, à Yuma (État de l'Arizona), 16 équipes nord-américaines testent leurs véhicules qu'elles ont développés pendant deux ans. Le 27 mai 2010, les juges choisiront les finalistes de cette 2^e année du Challenge qui tiennent la route avec leur projet. Les critères pris en compte ? Consommation de carburant peu élevée, faibles rejets de CO₂, sécurité et performances.

Il s'agit d'un véritable tremplin et d'une belle expérience pour ces futurs ingénieurs spécialisés dans les innovations technologiques.

Retrouvez toutes les informations à ce sujet sur le [site Internet officiel](#).

Dude, hand me that wrench: EcoCar trains young engineers to make green vehicles

By Jim Motavalli

May 21 2010

<http://www.mnn.com/transportation/cars/blogs/dude-hand-me-that-wrench-ecocar-trains-young-engineers-to-make-green-vehic>

Also on [Humanitarian News](#) and [Homeostasis blog](#).

Sixteen university teams competed in the EcoCar Challenge in Arizona, building plug-in hybrids, battery electric vehicles and even hydrogen fuel-cell cars.



YUMA, [ARIZONA](#) -- I have been attending college green car and truck competitions for more than 15 years, and the chaos is so specific you'd think it was choreographed. In a series of contests sponsored by auto companies and the federal government, university-based engineering teams -- all charged with the daunting task of turning standard vehicles into environmentally friendly paragons -- descend on some remote proving grounds.

Do they come with their cars fully formed, ready for testing by judges from the auto industry and federal agencies? Not at all. Invariably, the cars arrive with long "to do" lists, and the grad students and their frantic faculty advisers spend days with their decal-festooned cars in pieces, working in a welter of tools, abandoned hoses and spare bolts, fast food and laptop computers spewing analytical data. And that's just what I found when I covered the second year of [the three-year EcoCar Challenge](#). Here's the video view from the garage floor in Arizona, featuring a competitor from the Missouri Institute of Science and Technology:

Last year was all planning, working not with wrenches but with computers, designing plug-in hybrids, battery electrics and even fuel-cell cars, all as variations of the small Saturn Vue SUV. It's kind of ironic that students built the cars of the future from a defunct marquee, isn't it? The students took delivery of the cars in January, and since then it's been a mad scramble to turn dreams into reality. Here are some snapshots from the shop floor, a vast garage that is part of the General Motors Proving Grounds in one of America's hottest places (it's not hell, we were told, but you can see it from there):

- **University of Waterloo:** No car company has yet envisioned anything as outlandish as a fuel cell plug-in hybrid, but EcoCar has two teams with similar approaches (the other is the [Missouri](#) Institute of Science and Technology). How did Waterloo manage to pry a very valuable fuel cell out of General Motors? "We asked them very, very nicely," said grad student and team leader Alexander Koch. The cell under Waterloo's hood is the same one in [GM's Project Driveway Chevrolet Equinoxes](#) (100 are on the road in test programs), but the GM versions don't offer 30 to 60 miles of all-electric range, plus another 200 miles with the fuel cell pumping out electricity. But the Waterloo car was not yet ready to actually do that: During my visit, the car was half dismantled and a student was deep into its bowels, installing hydrogen lines for the fuel cell.

- **Virginia Tech:** A past winner of the Challenge X and Future Car versions of these contests, Virginia Tech is the team to beat. For EcoCar, it's fielding an extended-range plug-in hybrid that can travel 35 to 40 miles on its batteries and twin electric motors alone, then the 2.4-liter engine running on E85 ethanol kicks in for hundreds of more miles. The Virginia Tech team seemed to have it fairly well together -- the car was not quite ready to roll, but faculty advisor Doug Nelson said it wasn't facing any insurmountable obstacles, either.
- **Embry Riddle Aeronautical University:** These determined students from Daytona Beach are newcomers to the contest (an automotive engineering program is new), but already formidable competitors. Their car uses a tiny 1.3-liter diesel engine sourced from a European Opel Corsa. Like the Chevrolet Volt, the Embry Riddle car uses its internal-combustion engine as a generator. The car can travel 25 miles on its lithium-ion battery pack. According to team leader Vincent Sabatini, the team's big challenge is not hardware but software -- getting the car's controller to unite all its disparate parts. A Euro diesel (running on biofuels) was never designed to work with an American two-mode transmission. "The mechanics are peachy keen," Sabatini said. "The computers are the issue." But the team's Ryle Maxson notes proudly that, after a year's design work, the car works as designed. "It all fit in just like it was supposed to," he said.



This year's competition ends in San Diego next week, and an interim winner will be announced. But there's another year to go in the competition, with consumer acceptance trials to come, and there are no safe bets as to who will get the gold.

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Students go green under the hood at YPG

The Yuma Sun

By James Gilbert

May 21, 2010

<http://www.yumasun.com/news/ypg-61150-green-yuma.html>



YUMA PROVING GROUND — Engineering students from Texas Tech University were busily working on trying to solve a recurring coolant leak problem they've been having with their EcoCAR vehicle on Friday morning, before the day's testing, inspections and judging got underway.

Team member Joey Garnsey said the EcoCAR vehicle that he and his teammates have built is designed as a front-wheel drive 2-mode hybrid, powered by a 1.6L GM Europe engine, two 55 kw electric motors and a four module battery pack.

"We wanted to have the lowest emission possible," Garnsey said. "We also used larger electric batteries to increase the range and power."

Garnsey added that, ideally, their EcoCAR vehicle would operate solely on electric power at low speeds and blend with a combustion engine for power at high speeds.

"This is the third time we have had a coolant leak," Garnsey said.

Although they haven't actually road tested their EcoCAR yet, team leader Carl Gabriel said they have run it for up to 640 miles during simulations.

"We want to see how long we can go before having to recharge the batteries," said Gabriel, who graduated last Friday and has accepted a job at GM.

For the past week, the Texas Tech team, along with 16 other collegiate engineering teams have been taking part in the EcoCAR: The Next Challenge finals, which got underway Monday at GM's 2,400-acre test track at Yuma Proving Ground.

As part of the competition, GM engineers at the proving ground have put the student-built vehicles through several days of rigorous testing, ranging from safety and technical inspections to towing, autocross, drive quality and emissions and energy consumption.

After each test the students would take their EcoCARs back to the garages and continue to refine and work to fix any problems they may have encountered.

The engineering tests are similar to those conducted by the automotive industry to determine the readiness of a prototype for production.

The EcoCAR Challenge is a three-year competition sponsored by the U.S. Department of Energy and General Motors that challenges the participating student teams from universities across the country to re-engineer a GM-donated vehicle using a range of alternative eco-friendly technologies and integrate them together to make their own unique design.

The goal of the competition, said Aaron Sullivan, an engineer with General Motors, is to increase fuel efficiency and minimize emissions while retaining performance and customer appeal.

"All the vehicles are built a bit differently, so they are all unique in their own ways," Sullivan said. "We also do require the vehicles be well-rounded because we don't want to produce a vehicle that is unrealistic for the consumer."

Sullivan said the EcoCAR vehicles being tested in the competition fall into one of the following four categories: extended-range electric vehicle (EREV), plug-in hybrid electric vehicle (PHEV), fuel cell plug-in hybrid electric vehicle and full function electric vehicle.

"This year the students have been putting their cars together and getting them to run," Sullivan said.

The other participating colleges are Embry-Riddle Aeronautical University, Georgia Tech, Michigan Technological University, Missouri University of Science and Technology, North Carolina State University; Ohio State University, Pennsylvania State University, Rose-Hulman University of Technology, University of Ontario Institute of Technology, University of Victoria, University of Waterloo, University of Wisconsin, Virginia Tech and West Virginia University.

This is the second year of the EcoCAR Competition, which began in 2008. The first year of the competition, the students spent designing their vehicles.

Now in the second year of the competition, teams have turned the designs they engineered during Year One, into their prototype vehicles. Next year the students will refine their EcoCAR vehicles into near-showroom quality cars.

The Year Two Competition Finals continues next week in San Diego where teams will highlight their efforts from throughout the year with presentations on the following categories: mechanical, electrical, controls, outreach and other various sponsored awards.

The competition concludes on May 27 with an Awards Ceremony at the House of Blues San Diego where awards totaling nearly \$100,000 will be handed out and the first, second and third place winners for this year will be announced.

The Texas Tech team wasn't the only team having problems with their EcoCAR's design on Friday, so was the University of Wisconsin team.

"We have been having trouble with the rear motor working," said team member Will O'Connor. "Actually it has never worked so we don't have the ability to run our series architecture."

He added, "we have had engineers from GM working on it this week also, but still no luck so far."

O'Connor said the University of Wisconsin team's vehicle design is considered to be an extended electric range vehicle (EREV).

It has a 60 kw electric motor, coupled with a 750 cc turbo charged Weber engine, that powers the front wheels and also has the capability to generate electricity to recharge the battery pack.

Included in the design of the vehicle is a 55 kw motor to power the rear wheels. The vehicle is capable of traveling approximately 20 to 25 miles on full electric.

O'Connor said the team will continue trying to figure out why the rear motor, which is half the size of the front motor, doesn't work, or eventually replace it.

O'Connor, who had no background in automotive engineering said being in the competition has been a huge learning experience, not just for him, but everyone on the team.

"Now I feel like I know everything, but obviously that isn't true," said O'Connor, who joined the team as a freshman. "I have always wanted to get into green automotive technology and now I have the ability to do so."



Eco Friendly Cars Hit The Desert

KSWT-TV

May 21, 2010

<http://www.kswt.com/Global/story.asp?S=1252455>

The 2010 Eco Car Challenge roared its way through the Yuma desert today. Engineering students from more than a dozen universities from around the country gathered at the Yuma Proving Ground's g-m test track for the event.

The challenge is to build vehicles using the latest eco-friendly technology, then put the cars through six days of grueling tests including emissions tests, safety inspections and towing challenges.

Some of the students who participated in the event have been working on their cars for more than three years. At the end of the challenge the car that performs the best gets to take home a trophy, and some major bragging rights.



TTU students among those at Desert Proving Ground for EcoCAR

KCBD-TV, Lubbock, TX

By James Clark

May 23, 2010

<http://www.kcbd.com/Global/story.asp?S=12529502>

LUBBOCK, TX (KCBD) – Texas Tech students this week are in the Desert Proving Ground. The Tech team is one of 16 teams in the EcoCAR competition sponsored by the U.S. Department of Energy and General Motors. Cars range from hybrid to electric only. The winner will be announced this coming Thursday.

EcoCARs turn desert green

Phoenix Business Journal

By Cathy Luebke

May 24, 2010

http://www.bizjournals.com/phoenix/blog/motor_mondays/2010/05/ecocars_turn_desert_green.html#ixzz0orP1r1Yi

A dusty swath of desert near Yuma has taken a decidedly green turn this month as the end of year two approaches in EcoCAR: The NeXt Challenge.

Sponsored by General Motors and the U.S. Department of Energy, the program challenged 100 college students to re-engineer a GM vehicle using alternative technologies from extended-range electrics to plug-in hybrids, fuel cells and fully electric vehicles. Students also have incorporated lightweight materials to improve aerodynamics and are tapping alternative fuels such as ethanol, biodiesel and hydrogen.

The 16 teams are wrapping up year two of the three-year program with a series of tests at General Motors Desert Proving Ground.



“The students spent two years designing and building these innovative vehicles and it’s thrilling to see them come to life here at our Desert Proving Ground,” said John Haraf, director of hybrid vehicle integration and controls for General Motors. “These young engineers must pass the toughest inspections and undergo the same tests we perform on our own prototypes. This challenging process gives them invaluable experience and preparation for careers in the industry.”

But this contest is about more than just cars. The Penn State team, for example, created LiveGreen campaign earlier this year to promote sustainability at the school.

The teams now move to California where the Year Two competition winners will be announced May 27 at the San Diego House of Blues.

Follow the progress and see the latest photos at <http://greengarageblog.org/>.



EcoCAR Challenge Teams Hit Home Stretch In Collegiate Alt-Fuel Contest

Edmunds' Green Car Advisor Blog

By Danny King

May 24, 2010

<http://blogs.edmunds.com/greencaradvisor/2010/05/ecocar-challenge-teams-hit-home-stretch-in-collegiate-alt-fuel-contest.html>

Also on [DallasNews.com](http://dallasnews.com) and [3000 Mile Oil Change](http://3000mileoilchange.com).

The spotless, 31,000-square-foot air-conditioned garage was supposed to shield them from an unrelenting desert near Yuma, Ariz., where daytime heat can reach 115 degrees Fahrenheit.



The AC wasn't enough, though and temperatures still occasionally rose as teams from 16 North American colleges competing in the EcoCAR Challenge alternative-fuel car-building contest worked on their vehicles last week, racing against time to get their cars road-ready for the judging of stage two of this three-year event co-sponsored by General Motors and U.S. Energy Dept.

Winners of the Year Two segment will be decided in ocean-cooled San Diego this Thursday.

"Any team has its arguments, and things can get heated," said Virginia Tech graduate student and team leader Lynn Gantt, whose team is converting a conventional Saturn Vue crossover into an extended-range hybrid vehicle that will have a 40-mile electric-only cruising range and will be able to use E85 fuel in its combustion engine.

"But when we get the vehicle running, we're buddies again."

Larger U.S. and Canadian schools such as Ohio State and the University of Victoria are competing against smaller institutions such as Indiana's Rose-Hulman Institute of Technology.

They are vying for a share in the \$100,000 Year Two prize money pool - not to mention bragging rights - to be awarded to the teams that rebuild their donated Saturn Vues to combine increased fuel economy and reduced emissions with elements such as safety, on-road performance and drive quality.

In Year One, the teams developed their plans and strategies and designed the cars and the electronic control systems they'd need to make them work.



The Ohio State University team won that stage and \$16,000 of the \$50,000 in prize money that was awarded.

For Year Two, the contest and its sponsors will award almost \$100,000 in cash prizes, including first- through third-place awards for the top all-around teams and individual prizes for the team cars with the lowest fuel

consumption, least well-to-wheel greenhouse-gas emissions, lowest tailpipe emissions, best technical report and best driving quality.

In the 12 months since GM gave the teams their Saturns, the students have been building and rebuilding powertrains, transmissions, electrical systems, interiors and anything else necessary to transform the cars into road-worthy (although not market-ready) alt-fuel vehicles for this week's Year Two judging.

It wasn't unusual for the 250 or so students to log 100-hour weeks before the cars were shipped to GM's 2,400-acre hot-weather testing facilities in the Arizona desert for last week's final touches.

Of the 16 vehicles entered, eight are extended-range plug-in vehicles (EREVs) whose combustion-engine generators can run on either biodiesel or ethanol and provide power to keep the electric drive motor going when the initial; battery charge is depleted.

There are two plug-in hybrids (PHEVs) that use hydrogen fuel-cells instead as on-board power supplies for the electric drive motors after the rechargeable battery packs are depleted, and two PHEVs that augment their electric motors and grid-rechargeable batteries with engines that burn blends of gasoline and ethanol.

One entry is a biodiesel-burning PHEV; one's an ethanol-burning conventional hybrid (its batteries are not rechargeable from the commercial power grid); another is a conventional hybrid using biodiesel; and one's a battery-electric vehicle.

As the teams tried to make the most of their allotted hours on site, judges from GM, the DOE, Argonne National Laboratories and A123Systems (the company that donated the lithium-ion battery packs used in most of the cars) examined and road-tested the vehicles at GM's test tracks.

Meanwhile, contest officials tracked progress in a checklist drawn on the garage's huge white dry-erase board that listed each team and the 18 judging criteria - including safety, towing capacity, acceleration and cargo capacity (many of teams removed the rear seats to make room for the new drivetrain components)



A passing mark of "P", such as the first ones given out to teams like Penn State and Mississippi State during the teams' third day in the garage, helped ease the stress on students who'd been tackling a constant stream of challenges ranging from the highly technical to the mundane.

"A three-hour project took about seven hours after I dropped a washer into the engine," 23-year-old Penn State team member Benjamin Koch recalled with a chuckle. "We had about 10 people with magnets in there."

Despite the competition, some teams tried to help each other get over technical humps involved in configuring electric-and-combustion-engine combinations that many established automakers have yet to attempt.

"We're bouncing ideas back and forth," said University of Waterloo team leader Alexander Koch, pointing to nearby Missouri University of Science & Technology. the two are the only ones using hydrogen fuel-cell systems. "I'd be working on something in the engine bay," Koch recalled, "and they'd say, 'You may leak there if you don't move your gasket.'"

While many of the cars share drivetrain technology, some teams are using unique approaches to get ahead in the competition.

Florida's Embry-Riddle Aeronautical University is using weight-reducing materials such as Kevlar and copper mesh to help offset the additional weight from its EREV's diesel engine, electric motor and battery pack.

Meanwhile, the University of Ontario Institute of Technology is banking on its use of an all-electric drivetrain as a way to avoid the gas-electric dual powerplant control issues perplexing many of the teams with hybrids last week.

Team members said they also hope that judges will be impressed by their daring in going all -electric and that it will help offset the negative impact on cargo space and vehicle-handling that have resulted from the need to install a 1,100-pound battery pack where the vehicle's back seat used to be.

In a nod to its northern roots, the University of Wisconsin team paired its EREV's electric motor with a 750 cc turbocharged Weber snowmobile engine that powers the vehicle's front wheels and can run on ethanol-blended fuel.

After the Year Two winner is announced Thursday, the teams will spend the final year of the competition tucking away all of the electrical, technical and mechanical components added during the so-called "mule" stage and fine-tuning the vehicles - looks and performance - to approach what contest organizers call "near-showroom quality."



In the meantime, the Emory-Riddle Aeronautical University team's 24-year-old co-leader, Ryle Maxson, made no bones about what a Year Two victory would mean for him and his fellow builders of the team's biodiesel-burning EREV.

"Hopefully, good jobs," Maxson said.



EcoCar Inspires College Car Engineers, But Maybe Some Could Major in Nukes

BNET

By Jim Motavalli

May 25, 2010

<http://industry.bnet.com/auto/10005047/ecocar-inspires-college-car-engineers-but-maybe-some-could-major-in-nukes/>

Also on [Texas Tech University News](#) and [Yuma Talk](#).

YUMA, ARIZONA — It's an open secret that the U.S. has lost its edge in nuclear technology — how could it be otherwise, when the last big nuke plant construction boom was in the 1960s, and it's been 40 years since a new plant was commissioned? One of the main reasons nukes stayed on the drawing boards during eight years of a very nuke-friendly Bush Administration is that the U.S. lacks trained nuclear engineers.

If we're not going to cede this high-tech field to the French and Asians, we'd need to inspire students to go into a field they've largely abandoned for other forms of clean tech. Interestingly enough, I'm in Arizona because the U.S. government and carmakers are collaborating on [a three-year collegiate engineering project](#) called EcoCar that has 16 university-based teams competing to build the best green vehicle in terms of fuel economy and greenhouse gas emissions. The enthusiasm of the teams is absolutely inspiring, and many graduate students with wrenches in hand told me they planned to become auto engineers.

I'd like to think we could do something similar that would get young minds thinking about designing safer nuclear plants that solve the intractable waste storage problem.

I talked to Kristen De La Rosa, who is directing the EcoCar effort for the Department of Energy. "There are nuclear engineers," she said. "But they're mostly working on submarines. The DOE sponsors this kind of competition for solar design, for energy-efficient buildings, and for environmental cars. There's talk of a geothermal competition. We would do a nuclear program with the aim of seeding the industry with young engineers if we thought there was demand in the nuclear field, but we don't think there is now."

That's kind of amazing, isn't it? All this talk of new nukes and no demand for nuclear engineers? The Tennessee Valley Authority will tell you that nuclear power accounts for 70 percent of U.S.-based emission-free energy, and that polls show 62 percent of Americans favoring the technology. The Obama administration, which to the dismay of some environmentalists likes both "clean coal" and nukes, has proposed tripling federal loan guarantees for new nuclear construction (to \$57.5 billion).

Because nuclear plants emit no greenhouse gas, some environmentalists have abandoned decades of opposition to support new nuke construction. Others are on the fence, because nuclear power still has huge drawbacks, not the least of them being extremely high construction costs, drawn-out licensing processes and NIMBY opposition. The Yucca Flats nuclear storage facility in Nevada is no closer to opening than it ever was. The more optimistic scenarios say it will take 10 to 15 years before plants can get online.

All of that is precisely why we need to bring some young engineering talent into the fold, and EcoCar provides a good model. The competition kicked off in 2008, with the teams receiving identical Saturn Vue SUVs (I know, a defunct brand now.) The teams are from both technical colleges like Texas Tech, Georgia Tech and Missouri University of Science and Technology and mainstream schools such as the University of Wisconsin and Ohio State.

A model for measuring greenhouse gases and transportation energy use developed at Argonne National Laboratory will be used to make a “well to wheels” analysis of the college teams’ vehicles in what is the second year of a three-year program. In Arizona, the cars are being assessed for production readiness. Some of the cars will be rough, but others will offer innovative engineering solutions to problems that have baffled the OEMs. That’s how progress happens!

The teams I talked with have built battery cars, hybrid electrics, extended-range cars like the Chevrolet Volt and biodiesel burners. Tomorrow I’ll offer a report from the field on the technology on display, but I’m optimistic about America’s young engineering talent and what they’ll come up with.

At the EcoCar Summit: Green Car Challenges for Young Engineers: Highlights from the EcoCar Challenge.

The Daily Green

By Jim Motavalli

May 25, 2010

<http://www.thedailygreen.com/living-green/blogs/cars-transportation/ecocar-challenge-0525#ixzz0pF5IKX90>

Also on [Go 4 Green Earth](#).



YUMA, ARIZONA—David Koch experienced both ecstasy and panic on the same day. The graduate student is a member of Penn State's EcoCar team, [which is competing with 15 other collegiate teams to build the cleanest, most consumer-friendly vehicle on the road](#). The competition is helping create career goals for hundreds of engineering students, and providing innovative employees for the auto skunkworks of the future. At many mechanical and electrical engineering departments, clean cars are where the action is.

The worst part of the day for Koch was when he dropped a washer into the power inverter of his team's biodiesel-fueled extended-range electric vehicle. Like the Chevrolet Volt, it uses its small internal-combustion engine (in this case a 1.3-liter diesel from the European Opel Corsa) not to turn the wheels but to power a 75-kilowatt generator to provide electricity for the 120-kilowatt motors. That washer could have caused a lot of mischief, so work ground to a halt for several hours as the team fished around in a two-inch by two-inch hole. They found it.

Despite that delay, Penn State passed its safety inspection with only minor issues and was running in first place as its vehicle (a Vue SUV from defunct Saturn, like all the others) made its way through a day of rigorous tests. That was the ecstasy part. "We're way ahead of everybody, and it's been a fun journey," said Koch, belying the early mornings and late nights the team has been putting in, both in Yuma and back at Penn State. Many are putting in 40-hour weeks on the cars, despite many other commitments.

The teams are not, as one might expect, all-male bastions. It was heartening to see that perhaps 10 percent of the competitors (mostly grad students but some undergrads) were women, and that some of them were standouts among their peers.

The Penn State car, despite its radical layout, looked ready for consumer driveways. It gets an estimated 47 miles per gallon, travels 25 miles in battery mode and then another 225 miles when the generator kicks in. You wouldn't experience range anxiety. "It's very quiet on the road and there's a lot of power right off the bat," said David Fecek, another grad student and co-team leader.

Students were ecstatic when they got their cars out of the garage and into the hands of GM's test engineers. Here's a video view from the Mississippi State team:

The University of Ontario was offering the only pure battery electric in the competition, and it had a relatively radical solution, too—a huge 80-kilowatt-hour lithium-ion battery pack from Kokam. According to team leader Mike Maduro, it will have—or at least it has on paper—a range of about 240 miles. That's more than double that of the Nissan Leaf, a battery car that will be on the market (with a much smaller battery pack) by the end of the year.

Tesla Motors, which just announced that it will build its Model S sedan in the now-vacant NUMMI plant in Fremont, California that had been operated jointly by General Motors and Toyota, has a major challenge with that car. To get 300 miles of range from the Model S, which is much bigger and heavier than its current

Roadster, it will need a really big battery pack, bigger than any currently commercialized. Maybe Tesla will want to look at the U of Ontario students who have real-world experience shoehorning a humungous battery into a small space.

Andrew Meintz, a Ph.D candidate in electrical engineering at the Missouri University of Science and Technology (another fuel-cell car), said he's torn in his future career—academia or the car industry. Either way, he'll definitely have a role in building the car of the future.

Engineering teams graded on fuel efficiency

San Diego Union-Tribune

By Onell R. Soto

May 26, 2010

<http://www.signonsandiego.com/news/2010/may/26/fuel-efficiency-tests-graded/>



Take 220 engineering students from 16 universities in the United States and Canada. Give them hybrid sport utility vehicles. Ask them to make the vehicles more fuel-efficient.

What do you get?

A lot of sleepless nights, a variety of technologies for using less oil, and 220 engineering students who care about the environment. If you're General Motors or the U.S. Department of Energy, that's a win.

The 16 teams are in San Diego this week for the finals in the second round of a three-year competition, and today, a champion will be crowned.

The first year was about coming up with a design worthy of implementation. This year is about turning those ideas and engineering drawings into a working drivetrain. The coming year will be about refining the vehicles.

The competition is sponsored by GM, the Energy Department and many other entities, and the goal is to create a vehicle that customers might like, not squeezing efficiency from every last drop of fuel.

So these vehicles don't look like spaceships or airplanes. They look like the Saturn Vues they were when the project started. (Now that GM has killed the Saturn division, the SUVs are called Chevy EcoCARs.)

But look under the hood or in the spare-tire compartment and you'll see that this isn't your sister's Saturn. You'll see technology that drives the cars with electricity from a wall socket or a hydrogen fuel cell. You'll see cars that run on biodiesel or ethanol.

The teams got the SUVs in September and worked all semester putting in new engines; installing batteries, electric motors and controllers; and tweaking software and hardware to get the most out of the vehicles.

They gathered last week at GM's Yuma Proving Grounds in Arizona, where the vehicles were put through the paces the company uses to test its own prototypes.

This week, they've come together in San Diego to tell judges what they did, how they did it and what they thought of the results. The competition came to San Diego because it's close to Yuma and because the California Air Resources Board is a sponsor.

Some students say their designs get the equivalent of more than 100 mpg — counting the energy content of the electricity they use as well as the fuel.

The students were excited Wednesday as they showed off some of the SUVs atop a parking garage at Horton Plaza in downtown San Diego.

Virginia Tech's SUV is designed to run on battery power for 43 miles before needing its ethanol engine to kick in. It lurched for a moment as 25-year-old graduate student Patrick Walsh pulled out of a parking space. The reason is that a black box controlling power to the rear wheels doesn't operate as well as desired at very low speeds, he said.

"We have to make this one not do that," he said, laying out one of the big tasks in the coming year.

Walsh said he has been studying hybrid technology for a long time.

"The hands-on experience helps drive it home," he said.

Many of the technologies on display aren't new to GM, which until recently was the world's largest automaker, said Micky Bly, the company's head of hybrid vehicles and batteries.

The company has tested fuel cells and a variety of electrically powered cars and is coming out this year with the Chevy Volt, a plug-in hybrid that can run on batteries for 40 miles before its gasoline engine turns on.

The students sometimes do more research in an area where GM's engineers haven't gone, Bly said.

The real goal of the competition is to develop interest in green technologies and find passionate engineers, he added.

"We are opening whole new recruiting paths," Bly said. "We know the students by their first names."

He said GM is looking for talent as it focuses on its turnaround.

"We need engineers," Bly said. "We need lots of engineers."



Missouri S&T Team Competing in EcoCAR Challenge

OzarksFirst

May 26, 2010

http://ozarksfirst.com/fulltext?nxd_id=272896

After a year of hard work, some of the brightest students in the U.S. are putting their creations to a road test.

Students from colleges across the country are working to find a more fuel efficient car, that doesn't impact the environment.

Missouri S & T in Rolla is just one of the schools to send students to compete in the EcoCAR Challenge.

And joining us live this morning is Kevin Martin from Missouri S & T and Pat Davis from the Department of Energy He's out in San Diego competing in the challenge.

Sonya Kullmann: Pat, I want to start with you. Tell us what this whole EcoCAR Challenge is all about.

Pat Martin: The EcoCAR Challenge is a competition we run in partnership with General Motors. It's a three-year competition, in which we challenge 16 universities from across North America to improve the fuel economy of a GM vehicle and lower emissions. And they can do so any number of ways, where it is a battery-electric vehicle, fuel cell vehicle, an extended range hybrid. It's their pick, and it's their design. And that's the challenge.

Sonya: Kevin, what is your role on the team?

Kevin: I'm actually the team leader. We're designing a fuel cell hybrid electric vehicle. We'll be using the hydrogen fueling station that we built at Missouri S & T to then go and fuel the car we are building as part of the EcoCAR Challenge.

Sonya: That car has really been put through its paces, I understand, over the last several days. How well has it performed?

Kevin: We've been facing some challenges, and we are persevering through those challenges and are very excited for Year 3.

Sonya: Do you know yet how well you have done compared to the other universities that are competing?

Kevin: We knew roughly where we stood at the beginning, but there was only about 100 points out of 1000 points possible this year, so a lot of points up for grabs this year. We'll find out at the end where we stand at Year 2. Then they wipe the slate clean for Year 3 and we start all over again. We're really excited to see where we can come out next year.

Sonya: How many miles a gallon does your car get?

Kevin: We're looking at around 40 to 50 mile per gallon gasoline equivalent. So our car uses both - it's a plug in, so we're charging our batteries and also using hydrogen fuel cells to provide the additional power to get the extended range.

Sonya: You said you're already looking forward to the next challenge. I'm wondering if you're going to do something completely different or are you going to stay on the same track and fine tune what you've already done?

Kevin: EcoCAR is a three-year long program. The first year you design. The second year you build. We create a vehicle that is about 65% complete. The third year you refine and optimize that design.

Sonya: By next year we could have a really great car.

Kevin: That's the goal. So Missouri is going to be running with water vapor emissions.

Harnessing Youth To Build EcoCars

Forbes.com

By Jim Motavalli

May 27, 2010

<http://www.forbes.com/2010/05/26/hybrid-plugin-autos-technology-ecocars.html>

Also on [Free Energy Generators](#) and [Khabar24](#).



YUMA, ARIZ. - I have been attending college green car and truck competitions for more than 15 years, and the chaos is so specific you'd think it was choreographed. In a series of contests sponsored by auto companies and the federal government, university-based engineering teams--all charged with the daunting task of turning standard vehicles into environmentally friendly paragons--descend on some remote proving grounds.

Do they come with their cars fully formed, ready for testing by judges from the auto industry and federal agencies? Not at all. Invariably, the cars arrive with long "to do" lists. The grad students and their frantic faculty advisers spend days with their decal-festooned cars in pieces, working in a welter of tools,

abandoned hoses and spare bolts, fast food and laptop computers spewing analytical data.

That's just what I found when I covered the second year of the three-year EcoCar Challenge. ([Click here for the video view](#) from the garage floor in Arizona, featuring a competitor from the Missouri University of Science and Technology.)

Last year was all planning, working not with wrenches but with computers, designing plug-in hybrids, battery electrics and even fuel-cell cars, all as variations of the small Saturn Vue SUV. It's kind of ironic that students built the cars of the future from a defunct marquee, isn't it? The students took delivery of the cars in January, and since then it's been a mad scramble to turn dreams into reality. Here, some tidbits from the shop floor, a vast garage that is part of the General Motors Proving Grounds in one of America's hottest places (it's not hell, we were told, but you can see it from there):

University of Waterloo: No car company has yet envisioned anything as outlandish as a fuel cell plug-in hybrid, but EcoCar has two teams with similar approaches (the other is the Missouri University of Science and Technology). How did Waterloo manage to pry a very valuable fuel cell out of General Motors? "We asked them very, very nicely," said grad student and team leader Alexander Koch. The cell under Waterloo's hood is the same one in GM's Project Driveway Chevrolet Equinoxes (100 are on the road in test programs), but the GM versions don't offer 30 to 60 miles of all-electric range, plus another 200 miles with the fuel cell pumping out electricity. The Waterloo car, however, was not yet ready to do that: During my visit, the car was half dismantled and a student was deep into its bowels, installing hydrogen lines for the fuel cell.

Virginia Tech: A past winner of the Challenge X and Future Car versions of these contests, Virginia Tech is the team to beat. For EcoCar it's fielding an extended-range plug-in hybrid that can travel 35 to 40 miles on its batteries and twin electric motors alone, then the 2.4-liter engine running on E85 ethanol kicks in for hundreds of more miles. The Virginia Tech team seemed to have it fairly well together--the car was not quite ready to roll, but faculty advisor Doug Nelson said it wasn't facing any insurmountable obstacles, either.

Embry Riddle Aeronautical University: These determined students from Daytona Beach are newcomers to the contest (the school's automotive engineering program is new) but already formidable competitors. Their car uses a tiny 1.3-liter diesel engine sourced from a European Opel Corsa. Like the Chevrolet Volt, the Embry Riddle car uses its internal-combustion engine as a generator. The car can travel 25 miles on its

lithium-ion battery pack. According to team leader Vincent Sabatini, the team's big challenge is not hardware, but software--getting the car's controller to unite all its disparate parts. A Euro diesel (running on biofuels) was never designed to work with an American two-mode transmission. "The mechanics are peachy keen," Sabatini said. "The computers are the issue." But the team's Ryle Maxson notes proudly that, after a year's design work, the car works as designed. "It all fit in just like it was supposed to," he said.

This year's competition ends in San Diego this week, and an interim winner will be announced. But there's another year to go in the competition, with consumer acceptance trials to come. There are no safe bets as to who will get the gold.

Jim Motavalli blogs daily about the auto industry for the Mother Nature Network.



automobiles.com
Discover. Learn. Drive.

EcoCAR Challenge Year Two: University Students Develop Green Car

Automobiles.com

May 27, 2010

<http://www.automobiles.com/index.php/2010/05/ecocar-challenge-year-two-university-students-develop-green-car/>

GM believes in developing advanced powertrains that reduce dependency on petroleum, improve fuel economy and lower emissions – which is why the students could explore a variety of solutions including electric, hybrid , plug-in hybrid , ... EcoCAR Challenge Year Two: University Students Develop Green Car Technologies was posted on Thursday, May 27th, 2010 at 2:16 pm and is filed under Cars & Trucks. You can follow any responses to this entry through the comments feed.

EcoCar Winners in – Mississippi Wins Again!

NextGenBlog

By R. Colin Johnson

May 27, 2010

<http://nextgenlog.blogspot.com/2010/05/ecocar-winners-in-mississippi-wins.html>

EcoCAR: The NeXt Challenge – a three-year "green car" competition was established by the United States Department of Energy (DOE) and General Motors (GM), and managed by Argonne National Laboratory. Look for commercial car designers to incorporate the innovations invented at these 16 universities over the next ten years.



Here's what Mississippi says about its victory: Mississippi State Takes Top Honors, VT and Penn State Come in Second and Third...It's official! Today Mississippi State earned the highest score of 844 out of a possible 1000 points and placed first in the 2010 EcoCAR Year Two Finals in San Diego this morning! Their exceptionally designed extended-range electric (EREV) vehicle utilizes biodiesel, UQM electric motors, and a battery pack provided by A123 Systems. Huge congratulations are also due to second-place winner Virginia Technological Institute, and third-place winner Pennsylvania State University.



Final Report from EcoCAR, The NeXt Challenge, CAR Buckeyes are bringing home some awards!

Ohio State University Center for Automotive Research

May 27, 2010

<http://car.eng.ohio-state.edu/node/192>

Dear Friends of the EcoCAR Team,

The EcoCAR Awards presentation was held this morning at the House of Blues in San Diego.

The Buckeyes finished in 5th place overall, a remarkable accomplishment considering the difficulties encountered at Yuma, received a total of nearly \$10,000 in prizes (including the Tuesday evening awards), and were recognized with the prestigious The MathWorks Crossover to Model-Based Design Award and with the dSpace Embedded Success Award.

The MathWorks award recognizes the team that exhibits the most creative application of The MathWorks software products, including Matlab and Simulink, to help achieve the overall objectives of the competition. Ohio State Electrical and Mechanical Engineering students used these software tools for plant modeling, control design and calibration, data analysis and implementation and hardware implementation. The winning presentation was delivered by Brad Cooley and John Kruckenberg. At the end of their presentation, MathWorks executive Paul Smith simply said "Wow..." A GM executive further indicated that the use of these tools by OSU students is well beyond the state of the art in the automotive industry.

The dSpace award is granted to the team that makes the most effective use of dSpace hardware-in-the-loop equipment to simulate vehicle performance and to develop and implement control strategies. OSU students demonstrated a very sophisticated understanding of these tools, which they used in conjunctions with the MathWorks software to produce the most sophisticated control architecture at the competition, including the realization of an engine controller implemented from scratch on a dedicated microcontroller (128-pin Woodward MotoHawk), using GTPower, ASM and Simulink code in the development of the control algorithms. Those of you who know a bit about engine control will understand the magnitude of this task alone.

First place overall went to Mississippi State, second place to Virginia Tech, third to Penn State (these were the only three vehicles that were fully functional). U. Victoria won 4th place and Univ. of Ontario Inst. of Technology finished 6th.

The team is eager to return to their garage and turn the vehicle into a fully functioning prototype, in preparation with next year's competition which is expected to take place between the GM Milford (MI) Proving Ground and Washington, DC.

Thank you for your support and Go Bucks!
Giorgio Rizzoni



Mississippi St. Wins Year Two Segment of GM- and DOE-Sponsored Alt-Fuel Contest

Edmunds Green Car Advisor

By Danny King

May 27, 2010

<http://blogs.edmunds.com/greencaradvisor/2010/05/mississippi-st-wins-year-two-segment-of-gm--and-doe-sponsored-alt-fuel-contest.html>

Mississippi State University beat out 15 other North America colleges and universities to win the second-year phase of the EcoCAR: The NeXt Challenge alternative-fuel car-building contest sponsored chiefly by General Motors and the U.S. Department of Energy.

Mississippi State's vehicle - an extended-range plug-in hybrid-electric vehicle that included a 1.3-liter GM turbodiesel engine - achieved a tested fuel economy of 118 miles-per-gallon equivalent in addition to winning best-acceleration and autocross honors, contest organizers said at the awards presentation in San Diego today.



Virginia Tech placed second with its extended-range plug-in vehicle, while Penn State finished third with its own EREV.



The three schools topped a group of universities that spent almost a year converting the Saturn Vue crossovers that GM donated to them into alternative-fueled vehicles that were tested for safety, fuel economy, drivability and other features at GM's hot-weather proving grounds near Yuma, Arizona, last week.

In addition to the top three teams, five entrants were EREVs, two were hydrogen fuel-cell plug-in electric vehicles, three were plug-in hybrids, two were conventional hybrids and one was a battery-electric vehicle.

"We're glad to know that two years of hard work is paying off," said Thomas Goddette, the 21-year-old team leader of Mississippi State, who added that his team likely benefited from having the vehicle's passenger and cargo area completely unimpeded by the rebuilt powertrain system. "If we weren't in class, we were working on the car."

For the contest's third year, the teams will fine-tune all of the electrical, technical and mechanical components added during the so-called "mule" stage to approach what contest organizers call "near-showroom quality."

Virginia Tech team leader Lynn Gantt said today that much of that focus will be on maximizing the electric-only range of the vehicle, while Goddette said Mississippi State will emphasize improving the vehicle's handling and balance to better account for all of the new components.





"One of the biggest things we can work on is drivability," said Goddette, who added that all but three members of the 20-member team will be returning for another year of competition. "There are definitely places for improvement."



Biodiesel Extended-range Hybrid SUV is Winner of GM's EcoCAR Competition

MotorTrend

By Zach Gale

May 27, 2010

<http://wot.motortrend.com/6652598/green/biodiesel-extended-range-hybrid-suv-is-winner-of-gms-ecocar-competition/index.html#ixzz0pEplbaAM>

Also on [TruckTrend](#), [DayLife](#), [Roadst3r](#), [BioFuelsDigest](#), [Car News Gossip](#), [BioDieselNow](#), and [Awake at the Wheel](#).



Mississippi State's Saturn Vue-based biodiesel hybrid is the winning vehicle for year two of General Motors' EcoCAR challenge.

[The EcoCAR challenge](#) started when GM donated an SUV to 16 universities and instructed engineering students to minimize emissions and [fuel consumption](#) while retaining as much utility as possible.

Mississippi State's team designed a Vue that has a 60-mile electric range before the 1.3-liter turbodiesel engine must kick in. GM claims the vehicle achieved the equivalent of 118 mpg. The school's entry also received nine awards including one for acceleration. Look closely at the winning vehicle, pictured in the top two photos, and you'll see that Saturn badges on the grille and wheels have been replaced by Chevrolet badges.



A total of about \$100,000 in award money will be distributed for these second-year finals, which were held this month in Yuma, Arizona and San Diego, California.

“Each team experimented with technologies and made great strides towards optimizing [fuel efficiency](#) and minimizing emissions. With critical and successful testing under their belts, we're excited to see the teams refine and improve their vehicles in the last leg of the EcoCAR competition,” said Karl Stracke, GM vice president, Global Vehicle Engineering.

Virginia Tech's entry, which had a 40-mile electric range, won second place. The team started with a 2.4-liter ethanol engine along with the [electric technology](#).

The third-place entry from Penn State used the 1.3-liter four-cylinder diesel, like Mississippi State. The extended-range [electric vehicle](#) (EREV in GM-speak) was rated for 57 mpg.

An online chat will be held with the top three teams on Friday, June 4 at 3 p.m. EDT at the EcoCAR's blog [here](#).



Biodiesel, Ethanol Vehicles Win EcoCAR Challenge

Domestic Fuel

By John Davis

May 27, 2010

<http://domesticfuel.com/2010/05/27/biodiesel-ethanol-vehicles-win-ecocar-challenge/>

Two biodiesel-powered and one ethanol vehicle took top honors in the latest EcoCAR competition.

[This press release](#) says a biodiesel extended-range electric vehicle (EREV) from Mississippi State University won first place in the General Motors and Department of Energy-sponsored EcoCAR: The NeXt Challenge finals in San Diego, with Virginia Tech earning second place with an ethanol-powered EREV design and Penn State coming in third building a biodiesel EREV vehicle:

The competition challenges university engineering students from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's fuel consumption and emissions, while maintaining its utility, safety and performance. The winning teams will answer questions about their work and vehicles during an online chat on Friday, June 4 at 3 p.m. EDT.



Mississippi State University's EcoCAR team accepts top honors at San Diego House of Blues

During the second year of the EcoCAR competition, the teams utilized cutting-edge automotive engineering processes, such as Hardware in the Loop (HiL) simulation, to move their designs into the physical vehicles. Once the vehicles were built and rolled out of their respective Green Garages – or design and construction shops – they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the cars was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

The Mississippi State EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle's fuel economy stood out, achieving 118 miles per gallon gas equivalent (combined city/highway cycle). In addition to the overall winner's award, Mississippi State won nine additional awards, including performance events in auto-cross and acceleration.

Virginia Tech's entry has a 40 mile electric range, and Penn State's EcoCAR vehicle includes a 4-cylinder 1.3 L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.

MSU EcoCar wins first place

NEMS360.com

By Dennis Seid

May 27, 2010

http://nems360.com/pages/bizbuzz_full/push?blog-entry-MSU+EcoCar+wins+first+place%20&id=7720584&instance=recent

Mississippi State University's EcoCar team won first place overall today in a ceremony in San Diego.

The point of the competition was to design a greener, more fuel-efficient vehicle.

MSU was among 16 universities competing for the prize.

Three years ago, the team finished first in ChallengeX, another advanced vehicle technology engineering competition.

Like ChallengeX, EcoCar was sponsored by General Motors and the Department of Energy.

[Read here](#) for more about the EcoCar competition.

The teams competing were:

• Embry Riddle Aeronautical University (Daytona Beach, FL) • Georgia Tech Atlanta, GA) • 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)

Read more: [NEMS360.com - entry MSU EcoCar wins first place](#)



MSU EcoCAR student team wins big in California

Mississippi State University

By Robbie Ward

<http://www.msstate.edu/web/media/detail.php?id=4901>

STARKVILLE, Miss.--Mississippi State is on its way for a possible repeat.

A university student team of some 20 members took first place overall Thursday [May 27] in the second round of the 2010 EcoCAR: The NeXt Challenge.

MSU was among 16 institutions represented at the San Diego finals in year two of the three-year competition sponsored by the U.S. Department of Energy, General Motors and the Canadian government, among others. The competition challenges North American engineering majors to "re-engineer" a GM-donated vehicle to minimize fuel consumption and emissions, while maintaining its utility, safety and performance.

In separate, but similar, vehicle redesign competitions several years ago, MSU was the overall international winner. Many of the students involved in that challenge went on to work with automotive and other related companies after graduation.

EcoCAR team leader Matthew C. Doude, a mechanical engineering graduate student from McCool, said preparing the vehicle for inspections made this year the most rigorous in the competition. The team designed and built a biodiesel extended-range electric vehicle, he added.

"To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," Doude said, adding that, of 1,000 possible points, MSU scored 844. Virginia Tech University was second with 691, he added.

Upon learning of the achievement, MSU President Mark E. Keenum said, "We congratulate each student, the faculty advisers, and all those involved in this tremendous win.

"We know that Mississippi State students are among some of the brightest and best, and this team has made the university and our entire state proud with their accomplishments," Keenum said.

Overall, MSU's team brings home 20 trophies from California. It won first place in each of the three fuel economy events, as well as first in three of four major presentation competitions. (Follow the team at <http://twitter.com/MSSStateEcoCAR> and www.msuecocar.com.)

GM Vice President for Global Vehicle Engineering Karl Stracke commended students who excelled in the competition to experiment with technologies and optimize fuel efficiency and lower emissions.

"These students worked tirelessly in their Green Garages building the next generation of clean vehicles and their progress has exceeded our expectations," Stracke said.

During the second year of the competition, all teams used a "Hardware in the Loop" simulation, among various innovative automotive engineering processes, to move their designs from the drawing board to the actual vehicles. After moving their vehicles from the Green Garages--design and construction shops--teams then completed a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz.

Similar to production vehicle testing, each vehicle was evaluated on its ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

MSU faculty adviser Marshall Molen said he was pleased with the hard work, effort and ingenuity students dedicated to the competition.

"I've never been so proud," Molen said. "These are some of the finest young men and women you'll ever encounter."

MSU's EcoCAR team designed a plug-in hybrid vehicle with an electric range of 60 miles. During competition's testing, the vehicle achieved a 118 miles-per-gallon equivalent of combined city and highway mileage.

Tom Goddette, a senior mechanical engineering major from Pensacola, Fla., is a member of the team's electrical group. He said the competition has given him hands-on experience in what he and others could do when they graduate.

"It's nice to see how much work goes into these vehicles," Goddette said. "This is a real application to what we're taught in class."

"We look forward to the next chapter of the competition--with so much talent among the schools, it will not be an easy road to another victory," he said.



Penn State Wins Again

WeAreCentralPA.com

By Jody Gill

May 27, 2010

http://wearecentralpa.com/wtaj-news-fulltext/?nxd_id=179106

Also on StateCollege.com.

STATE COLLEGE-- Students from The Pennsylvania State University won Third Place at the Year Two Finals of the EcoCAR: The NeXt Challenge competition in Yuma, Arizona and San Diego, California.

The Penn State EcoCAR team placed third overall out of the 16 North American universities that competed in the second year of a three-year competition for their design of a 1.3L series hybrid extended range electric vehicle (EREV) that runs on B20 biodiesel.

“The Penn State team is thrilled to have won third place this year,” said faculty adviser Gary Neal. “The students worked countless hours to design and build the EREV vehicle that would exceed emissions standards and consumer acceptability. The team and sponsors couldn’t be happier to have done so well this year.”

Sponsored by General Motors and the Department of Energy, the competition challenges university engineering students across North America to re-engineer a GM-donated vehicle, with goals to improve fuel efficiency and reduce emissions while retaining the vehicle’s performance and consumer appeal.

For this second year of competition, students were tasked with implementing vehicle designs that were simulated in Year One into the Chevy EcoCAR and create a full-function vehicle. While in the first phase of the Year Two competition, teams were tasked with dynamic vehicle testing at the GM Desert Proving Grounds.

The Penn State’s vehicle design includes series architecture with an estimated electric range of 25 miles due to a 330V Li-Ion battery pack. The vehicle will use a 1.3L GM diesel engine to drive a 75kW electric generator that produces electricity to power the vehicle. Finally, a 120 kW electronic traction system will be used to propel the vehicle.

In addition to placing third overall, the team also won Best Social Media, Best AVL Drive Quality, Best Technical Report, placed third in Outreach, placed second in A123 Battery Design, and were runner’s up in Well-to-Wheel Greenhouse Gas Emissions, Best Tailpipe Emissions, and Best Fuel Consumption.

Mississippi State University took top honors with their design of an extended range electric vehicle that runs off of B20 Biodiesel. Virginia Tech won second place with their 2.4L Ecotec engine that runs off of E-85 ethanol.

For more information about the Penn State Advanced Vehicle Team and EcoCAR Challenge, please visit <http://www.ecocarchallenge.org> or www.hev.psu.edu.



PSU competes in Eco Car Challenge

WITF.org

By Tim Lambert and Radio Pennsylvania

May 27, 2010

<http://witf.org/news/regional-and-state/4033-psu-competes-in-eco-car-challenge>



[Penn State](#) is among 16 North American universities taking part in a three-year competition to build a working hybrid car that decreases emissions and reduces fuel consumption. This is the second year in the [Eco Car Challenge](#) and it's focused on the testing phase. [Penn State's team](#) has the architecture of a [Chevrolet Volt](#) and it's powered by a lithium ion battery as well as diesel and biodiesel fuel. Dana Bubonovich, outreach coordinator for PSU's Eco Car Team, says it underwent some successful test runs in Arizona. "One of our emissions testing that we did in Yuma...we ran 43 miles just on our electric battery alone. So, we far exceeded our original goals of 25," she says. "So, we're estimating, right now, that our vehicle could get about 40 miles just on electric." The Penn State car was one of only three in the competition to complete all of the dynamic testing. The second year of the competition, which is sponsored by the Energy Department and General Motors, is wrapping up today in San Diego. A [blog](#) chronicles the behind-the-scenes action at the event.



MSU students roll to EcoCAR victory

The Dispatch (MSU University Relations)

May 28, 2010

<http://www.cdispatch.com/news/article.asp?aid=6436>

Mississippi State is on its way for a possible repeat.

A university student team of some 20 members took first place overall Thursday in the second round of the 2010 EcoCAR: The NeXt Challenge.

MSU was among 16 institutions represented at the San Diego finals in year two of the three-year competition sponsored by the U.S. Department of Energy, General Motors and the Canadian government, among others. The competition challenges North American engineering majors to "re-engineer" a GM-donated vehicle to minimize fuel consumption and emissions, while maintaining its utility, safety and performance.

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"To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," Doude said, adding that, of 1,000 possible points, MSU scored 844. Virginia Tech University was second with 691, he added.

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"We look forward to the next chapter of the competition -- with so much talent among the schools, it will not be an easy road to another victory," he said.

Mississippi takes top prize in EcoCar challenge

CNET Car Tech Blog

By Suzanne Ashe

May 28, 2010

http://reviews.cnet.com/8301-13746_7-20006273-48.html



A member of the EcoCAR-winning team from Mississippi State University, Jenna Grantham, works on car modification in Yuma, Ariz., before the final competition in San Diego

Students from Mississippi State University placed first in the [2010 EcoCAR: The NeXt Challenge](#) finals in San Diego Friday after designing and building a biodiesel extended-range electric vehicle (EREV).

Teams from 16 universities competed in the Year Two Finals of the three-year competition sponsored by the U.S. Department of Energy and General Motors. The competition challenges engineering students to re-engineer a GM-donated vehicle to minimize the vehicle's fuel consumption and emissions, while maintaining its utility, safety, and performance. The teams have been preparing for the final [testing and inspection](#) of the competition for the past week.

"This was our most challenging year, and stakes were high to have our vehicle ready for inspections. To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," said Matt Doude from Mississippi State. "We look forward to the next chapter of the competition; with so much talent among the schools it will not be an easy road to another victory. But it's this rigorous, hands-on process that gives us the valuable experience we'll need in the workplace."

The Mississippi State EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123Systems battery pack, which provides an range of 60 miles. It's also equipped with a 1.3-liter GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle's fuel economy stood out, achieving 118 miles per gallon gas equivalent (combined city/highway cycle). In addition to the overall winner's award, Mississippi State won nine additional awards, including performance events in auto-cross and acceleration, GM said in a news release.

Virginia Tech earned second place with an ethanol-powered EREV design, and Penn State came in third place building a biodiesel EREV vehicle.

The Virginia Tech team designed an EREV vehicle with a 40-mile electric range. And Penn State's vehicle is also an EREV design, which includes a 12.8 kWh battery pack coupled with a GM 110 kW Electric Traction Motor and 75 kW UQM generator. It includes a four-cylinder 1.3 L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.



Eco Car Challenge Finishes up in San Diego

Energy Runs on Ethanol, Biodiesel, Electricity, and Passion

By Jeffery Murray

May 28, 2010

<http://www.sandiego.com/green/eco-car-challenge-finishes-up-in-san-diego>

Energy ran high on top of Horton Plaza Parking Garage Wednesday afternoon, as six of the sixteen participating North American Universities, including University of Victoria, University of Ontario Institute of Technology, Virginia Tech, Mississippi State University, Pennsylvania State University, and North Carolina State University, gathered to showcase their team's auto composition in the [Eco Car Challenge](#) sponsored by General Motors and the U.S. Department of Energy.

Eco Car Challenge, still young and only in it's second term of operation, exists as a 3 year-long competition, with a goal stated as being to "reduce the environmental impact for SUVs by improving fuel efficiency and reducing emissions, while retaining the vehicle's performance and consumer appeal." Ending it's second year of competition downtown, six of the contest's teams gathered to showcase and educated both media and the public on their developing projects.



"One of the greatest aspects of this competition" said Connie Bezanson, a contest judge and representative of the U.S. Department of Energy, "was bringing together a diverse range of teams and universities, and seeing how their cars develop from the early, original designs." The 16 participating universities were chosen from a pool of 60 university applicants across North America to participate in the competition. The Eco Car Challenge is organized into three individual stages; each stage lasting one year. Year one of the competition entailed designing the vehicle's architecture and hard/software systems, year two involved integrating the initial

team designs into functioning prototypes, and year three will continue with refining competition vehicles, in both structure and operation, until near-production status is achieved.

Each team was donated a car by General Motors to be redesigned, given a team mentor in order to help guide the students through various aspects of the project, and received sponsorship and funding from various university and outside companies in order to aid in the competition process.

After 24 months of designing, laboring, and constructing, the teams were sent to the [GM Proving Grounds in the desert of Yuma, Arizona](#), and their cars were examined through a week of a severe simulations; testing the car's capabilities and utilizing reviews and inspections that GM customarily reserves for observing their own prototypes, before they are put into production.

After a long, heated week in Arizona and over a dozen automotive tests, the sixteen trialed and wearied teams traversed to San Diego to showcase their cars and hold the stage two awards ceremony. Six of the teams featured their constructions and hosted local media Wednesday afternoon for a special presentation where correspondents were invited to ride in one of three selected cars designed by Penn State, Mississippi State, and Virginia Tech.

David Fecek, one of Penn State's co-leaders and the designated driver for their green car, "an extended range electric vehicle with an estimated electric range of 25 miles", bravely navigated his team's personalized vehicle around the coned, course of the garage's top level. "It was a long process for us," David commented, later admitting to staying up 72 hours straight in the garage working on the eco-creation.



The Penn State car boasts a 160-horse power electric motor, holds a 1.3 liter biodiesel fuel tank, and runs off of a revolutionary series engine. Different than customary hybrid cars that use a standard parallel engine (where the gas motor and electrical motor alternate when necessary in order to turn the wheels), the series engine uses the car's biodiesel motor to power an electrical generator, which in turn re-charges the car's lithium battery to operate the wheels. Penn State's lithium car battery requires approximately 3 to 4 hours to complete a full charge and can be plugged into any normal household outlet.

Micky Bly, the Gm Executive Director for global electrical systems, hybrids, electric vehicles and batteries, held a satisfied stride on the top floor of the garage Wednesday afternoon and beamed nearly as bright as the car's batteries; but he ran on pride.

"These engineering students are learning something practical" Micky said, "Something they can apply to their future after walking across the stage with their diploma in hand. They are using their passion, their academics, and their energy, and becoming advocates for energy efficiency to both the government and future generations."

Awards for Year Two of the competition were announced Thursday morning inside the concert hall of the downtown House of Blues, where the 16 groups, along with participating advisors, judges, and officials, were treated to a private, hand-clapping, napkin-waving, [gospel-choir breakfast](#). In the awards ceremony, Mississippi State University was presented with first place, Virginia Tech with second place and Pennsylvania State with third. Award money presented during the ceremony amounted to nearly \$100,000.

"The real prize is something very tangible" Micky stated, "Its technology and experience that the students can carry forward and over into future competitions."

Green Car Congress

Energy, Technologies, Issues and Policies for Sustainable Mobility

Mississippi State University Takes First in Year Two of EcoCAR Competition With Biodiesel EREV

Green Car Congress

May 28, 2010

<http://www.greencarcongress.com/2010/05/ecocar-20100528.html#more>

Also on [FavStocks](#).



Students from Mississippi State University [placed](#) first in the [2010 EcoCAR: The NeXt Challenge](#) finals in San Diego, Calif. after designing and building an biodiesel extended-range electric vehicle (EREV). Virginia Tech earned second place with an ethanol EREV design and Penn State came in third place building a biodiesel EREV.

The Mississippi State University EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123 Systems battery pack which provides an electric range of 60 miles. It's also equipped with a 1.3L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle achieved 118 miles per gallon gas equivalent (combined city/highway cycle).

In addition to the overall winner's award, Mississippi State won nine additional awards including performance events in auto-cross and acceleration.

Mississippi State University competed against 15 other universities to win first place in Year Two Finals of the three-year competition sponsored by the US Department of Energy and General Motors (GM). The competition challenges university engineering students from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's fuel consumption and emissions, while maintaining its utility, safety and performance. The winning teams will come together to answer questions about their work and vehicles during an online chat on 4 June at 3 pm EDT on the [Inside the Green Garage](#) blog.

During the second year of the EcoCAR competition, the teams utilized advanced automotive engineering processes, such as Hardware in the Loop (HIL) simulation, to move their designs into the physical vehicles. Once the vehicles were built and rolled out of their respective Green Garages, they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the cars was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

The Virginia Tech EcoCAR team designed an EREV vehicle with a 40 mile electric range using a 90 kW Ballard electric motor, 16 kW belted alternator starter and 21.3 kWh battery pack in a split parallel architecture. They chose to build the vehicle with a 2.4L Ethanol engine and use 78% less petroleum compared to the baseline vehicle.

Penn State's EcoCAR vehicle is also an EREV design which includes a 12.8 kWh battery pack coupled with a GM 110 kW Electric Traction Motor and 75 kW UQM generator. It includes a 4-cylinder 1.3L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.



MSU students tops in 'EcoCAR' competition

WXVT (via Associated Press)

May 28, 2010

<http://www.wxvt.com/Global/story.asp?S=12559643>

Also on [WLOX ABC-13 \(Southern MS\)](#), [Sun Herald \(Biloxi-Gulfport, MS\)](#), [WAPT ABC 16 \(Jackson, MS\)](#), [Mississippi Business Journal](#), [Newstimes](#), [Stamford Advocate](#), [Roswell Record](#), [ClarionLedger.com](#), [KQVR CBS 13/CW13 Sacramento](#), [The Republic \(Columbus, IN\)](#).

A future hybrid vehicle developed by students at Mississippi State University has won the second annual international EcoCAR competition to design a greener, more fuel-efficient vehicle.

Students had said hybrid technology used a diesel engine paired with an electric motor. They say the engine helps charge the batteries. They said the vehicle could travel about 50 miles in all-electric mode plus about another 150 miles with the diesel engine.

It is the third time in four years that a team from MSU has won such a competition.

The winners of were announced Thursday in San Diego. Sixteen teams were entered.

The 3-year contest challenges university teams to improve an existing, donated General Motors vehicle's fuel usage and its emissions while preserving its usability, safety and the way it performs.

MSU drives to top awards in EcoCar competition

NEMS360.com

By Dennis Seid

May 28, 2010

http://nems360.com/pages/full_story/push?article-MSU+drives+to+top+awards+in+EcoCar+competition&id=7727348&instance=secondary_stories_left_column#ixzz0pEwCtlkk

Mississippi State University's hybrid SUV won several awards, including the overall title, in the second year of the EcoCAR competition.

EcoCAR is a three-year advanced vehicle technology competition aimed to give university students the chance to design and build greener, more fuel-efficient vehicles.

MSU beat 15 other universities to win top honors for their designing and building of an extended-range electric vehicle. An awards ceremony was held Thursday in San Diego.

The competition started May 17 at General Motors' proving grounds in Yuma, Ariz., where the vehicles' performance was tested.

The teams could use a variety of power systems for the vehicle, in this case a converted Saturn SUV donated by GM, one of the event's main sponsors.

MSU's entry used a battery pack which provided an electric range of 60 miles, and a 1.3-liter GM turbodiesel helped the vehicle get 118 miles per gallon gas equivalent.

"This was our most challenging year and stakes were high to have our vehicle ready for inspections," said MSU team project leader Matt Doude in a press release. "To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates. We look forward to the next chapter of the competition - with so much talent among the schools it will not be an easy road to another victory. But it's this rigorous, hands-on process that gives us the valuable experience we'll need in the workplace."

In addition to the overall first-place finish, MSU won first in EcoCAR outreach, best creative promotion, best media relations, best education program, A123, best acceleration, best autocross, best vehicle design review presentation, best controls presentation, best mechanical presentation, best electrical presentation, best petroleum use, best well-to-wheel greenhouse gas, and lowest tailpipe emissions.

The top five

1. Mississippi State
2. Virginia Tech
3. Penn State
4. University of Victoria (British Columbia, Canada)
5. Ohio State University

MSU Wins GM's EcoCAR Competition

AutoEvolution

By Alina Dumitrache

May 28, 2010

<http://www.autoevolution.com/news/msu-wins-gm-s-ecocar-competition-20914.html>

Also on [Zikkir](#) and [Automotives Car](#).

STORY HIGHLIGHTS:

- Mississippi State University built a biodiesel EREV
- The vehicle achieved 118 mpg (1.99 l/100km) during testing
- It was followed by the Virginia Tech and Penn State teams

The recently launched GM competition finally found its winners, with the Mississippi State University (MSU) clinching first place, followed by the Virginia Tech team in the runner-up spot and Penn State in third. Each team had to re-engineer a GM-donated [car](#), implementing multiple alternative technologies and creating their own original architecture.

The final purpose of these modifications was to minimize the vehicle's [fuel consumption](#) and emissions, while maintaining its utility, safety and performance.

"This was our most challenging year and stakes were high to have our vehicle ready for inspections. To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," Matt Doude from Mississippi State, said in a release. *"We look forward to the next chapter of the competition – with so much talent among the schools it will not be an easy road to another victory. But it's this rigorous, hands-on process that gives us the valuable experience we'll need in the workplace."*

The team at MSU designed and built a biodiesel extended-range electric [vehicle](#) (EREV), with a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3l GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. The vehicle achieved 118 [mpg](#) (1.99 l/100km) during testing.

"During the last 12 months, these teams faced a difficult challenge – to build an innovative vehicle and continually refine and improve its operation," said Pat Davis, program manager of DOE's Vehicle Technologies Program. *"These students demonstrated extreme determination and commitment to make their vision a reality, and it is with great pleasure that I congratulate Mississippi State on its outstanding work and well-deserved first-place finish."*

EarthTechling

Mississippi State Takes Top Green Dog At EcoCar Challenge

Earth Techling

By Susan DeFreitas

May 28, 2010

<http://www.earthtechling.com/2010/05/mississippi-state-takes-top-green-dog-at-ecocar-challenge/>

When it comes to [green cars](#), some of the best minds in the South appear to have moved to the head of the class. That's the conclusion you'd draw, at least, from the results of GM's recent [2010 EcoCAR: The NeXt Challenge](#).

Pulling in at first place with their [biodiesel](#) extended-range [electric vehicle](#) (EREV) was [Mississippi State University](#), beating out [Virginia Tech](#) (who came in second) and 14 other universities in Year Two Finals of the three-year competition sponsored by the [U.S. Department of Energy](#) and General Motors (GM). The competition challenges university engineering students from across North America to re-imagine and re-engineer a GM-donated vehicle to minimize fuel consumption and emissions while maintaining utility, safety and performance.



This competition in its second year challenged teams to utilize cutting-edge automotive engineering processes, such as Hardware in the Loop (HIL) simulation, to move their designs into the physical vehicles—and then to test those vehicles the same way GM would, at the company's Desert Proving Grounds in Yuma, AZ. The winning teams will be available to answer questions about their cars during an online chat on Friday, June 4 at 3 p.m. EDT (more information on the competition [website](#)).



MSU students win stage 2 of EcoCAR challenge with 118 MPGe plug-in hybrid

Auto Blog Green

By Eric Loveday

May 28, 2010

<http://green.autoblog.com/2010/05/28/msu-students-win-stage-2-of-ecocar-challenge-with-118-mpge-plug/>

Also on [Socialnews.biz](#), [Collision Concierge](#) and [EcogreenFYI](#).



If you take a group of talented college kids and set them loose to re-engineer a vehicle for ultimate efficiency, the end result can look like the [2010 EcoCAR](#) challenge-winning entry from Mississippi State University (MSU), pictured above. Twenty students from the university dedicated a lot of time and effort to create the ultra-efficient plug-in hybrid. This year's [EcoCAR competition](#) is [stage two of a three-stage, three-year long](#) event.

MSU's vehicle not only won this year's competition, it literally blew everyone else away. Of the sixteen entrants, MSU scored 844 out of 1,000 possible points. The next closest competitor managed only 691 total points. MSU's re-

engineered plug-in hybrid posts numbers that would be remarkable for any automaker and are downright ridiculous for a team of college kids. The vehicle has an electric range of 60 miles and managed to return 118 miles per gallon equivalent throughout the competition. The university is looking ahead to stage three, scheduled for next year, and remains optimistic of a repeat win. [Follow the jump](#) to watch highlights of the event.





Plug-in Hybrid Wins EcoCAR Challenge Stage 2 for MSU Students

Eco Auto Ninja

By Jake Gosselin

May 28, 2010

<http://www.ecoautoninja.com/eco-hybrid-vehicles/plug-in-hybrid-wins-ecocar-challenge-stage-2-for-msu-students-61246/>



The 2010 EcoCAR challenge is the second stage of a three-part, three-year challenge and this stage's winning team is the Mississippi State University (MSU) team and their super efficient plug-in Hybrid. The MSU augmented plug-in hybrid has a 60 mile all electric range and a per gallon equivalent of 118 miles.

The contest wasn't even close this year with MSU's plug-in hybrid destroying the competition with a score of 844 points out of 1,000 with the second highest score only getting 691.

The MSU college kids have put together a very impressive vehicle that would make any car manufacturer blush with jealousy. It will be interesting to see how the MSU team does in the next stage of the EcoCAR competition.

Biodiesel, Ethanol Vehicles Win EcoCAR Challenge

Alternative Energy Newswire

May 28, 2010

<http://www.alternativeenergynewswire.com/biodiesel-ethanol-vehicles-win-ecocar-challenge>

Two biodiesel-powered and one ethanol vehicle took top honors in the latest EcoCAR competition.

[This press release](#) says a biodiesel extended-range [electric vehicle](#) (EREV) from Mississippi State University won first place in the General [Motors](#) and Department of Energy-sponsored EcoCAR: The NeXt Challenge finals in San Diego, with Virginia Tech earning second place with an ethanol-powered EREV design and Penn State coming in third building a biodiesel EREV vehicle:

The competition challenges university engineering [students](#) from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's [fuel consumption](#) and emissions, while maintaining its utility, safety and performance. The winning teams will answer questions about their work and vehicles during an online chat on Friday, June 4 at 3 p.m. EDT.

During the second year of the EcoCAR competition, the teams utilized cutting-edge [automotive](#) engineering processes, such as Hardware in the Loop (HIL) simulation, to move their designs into the physical vehicles. Once the vehicles were built and rolled out of their respective Green Garages – or design and construction shops – they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the [cars](#) was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

The Mississippi State EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle's fuel economy stood out, achieving 118 miles per gallon gas equivalent (combined city/highway cycle). In addition to the overall winner's award, Mississippi State won nine additional awards, including performance events in auto-cross and acceleration.

Virginia Tech's entry has a a 40 mile electric range, and Penn State's EcoCAR vehicle includes a 4-cylinder 1.3 L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.



MSU takes top spot in EcoCAR vehicle challenge's 2nd year

Starkville Daily News

By Paul Sims

May 29, 2010

<http://www.starkvilledailynews.com/content/view/220211/60/>

Also on [Yuma Talk](#).

For three out of the last four years, a Mississippi State University team has captured the top prize in a North American competition to improve a vehicle's fuel economy and emissions. MSU bested teams from 15 other institutions to take top place in the second year of the EcoCAR competition, officials announced Thursday.

The three-year contest challenges university teams to improve an existing, donated General Motors vehicle's fuel usage and its emissions while preserving its usability, safety and the way it performs.

"It's unbelievable. These kids blew everybody away. They were way, way ahead of the nearest competition," said Dr. Marshall Molen, DTI-Ergon distinguished professor of electrical and computer engineering, the MSU faculty advisor for EcoCAR and the lead for vehicle integration at the Center for Advanced Vehicular Systems at MSU.

Molen spoke by phone Thursday afternoon from San Diego, where the EcoCAR awards ceremony took place Thursday morning.

The student team designed an extended-range electric vehicle built to operate on biodiesel, according to a statement on the competition results. The vehicle includes a 21.3 kWh A123Systems battery pack, which offers a 60-mile electric range. It sports a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration.

The car's fuel economy reached 118 per gallon gas equivalent in a combined city/highway cycle. MSU took top honors for the last two years and won the overall title for "Challenge X: Crossover to Sustainability," a similar competition which concluded in 2008.

"This car exceeds the performance of the Challenge X vehicle," Molen said. "The car has very good acceleration and generates low emissions."

The team spent one week at the Desert Proving Grounds in Yuma, Ariz., where the car went through "all kinds of different events," Molen said.

Along with putting the car through its paces, the team went through their own series of challenges as well. They delivered presentations on the electrical control and mechanical systems and made outreach pitches, "trying to educate the public on the benefits of electrified vehicles," Molen said.

"Our young people made such a positive impression. ... They were extremely well-rehearsed and prepared," he said.

More than 20 students have participated with the team in recent times, Molen said, with 13 on the trip to San Diego.

"They're such a fine group of students," Molen said.

"This was our most challenging year and stakes were high to have our vehicle ready for

inspections. To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," said Matt Doude, the team leader, who hails from McCool, in the statement.

The team also took home a number of other awards along with the top prize.

"We congratulate each student, the faculty advisers, and all those involved in this tremendous win. We know that Mississippi State students are among some of the brightest and best, and this team has made the university and our entire state proud with their accomplishments," MSU President Dr. Mark Keenum said in a separate statement.

Virginia Tech came in second place with an ethanol-fueled design and Pennsylvania State University took third place, also with a vehicle with biodiesel as a fuel.

General Motors and the U.S. Department of Energy are the headline sponsors.

DoE, GM and Environmental Protection Agency officials have commented that this is the best performance of any car in any of the competitions before, Molen said.

MSU placed third in 2009, the first year of the EcoCAR contest.



Students' biodiesel electric car takes first place

The Green Car Website.co.uk

By Paul Lucas

May 29, 2010

<http://www.thegreencarwebsite.co.uk/blog/index.php/2010/05/29/students-biodiesel-electric-car-takes-first-place/>

Also on [ITS for Home](#).

There were celebrations all around Mississippi State University after its students scooped first place in the 2010 EcoCar: The NeXt Challenge finals in San Diego, California.

The team built a biodiesel extended range [electric vehicle](#) with a 21.3kWh battery pack from A123Systems that provides an electric range of 60miles. It is also equipped with a 1.3l GM turbodiesel engine and a 75kW UQM generator and achieves the equivalent of 118miles per gallon.



In addition to the overall winner's award the university won nine additional awards including in performance events in auto-cross and acceleration.

A further 15 universities competed with Virginia Tech earning second place with an ethanol extended range [electric](#) vehicle; and Penn State scooping the bronze by building a biodiesel extended range electric vehicle.

The competition challenged university students to re-engineer a GM-donated vehicle to minimise the vehicle's fuel consumption and emissions while maintaining safety, utility and performance. Once the vehicles were built and

rolled out they went through a series of tests at GM's Desert Proving Grounds in Yuma with each [car](#) evaluated on its ability to decrease fuel consumption and greenhouse gas emissions while maintaining acceptable performance, utility and safety levels.

PSU team places third in EcoCar competition

CentreDaily.com (Centre Daily Times)

May 29, 2010

<http://www.centredaily.com/2010/05/29/2006096/ambriefing.html>

A car design by a Penn State student team won third place in the 2010 EcoCar competition.

Penn State's team competed with 16 North American universities whose students designed hybrid extended-range electric vehicles. General Motors and the U.S. Department of Energy sponsor the competition, which challenges student teams to re-engineer GM vehicles to make them more fuel efficient and cut emissions.

"Eco-Car: The Next Challenge" took place in Yuma, Ariz., and San Diego, Calif.

The Penn State vehicle uses a 1.3L GM diesel engine to drive a 75-kilowatt electric generator that creates electricity, which powers the vehicle. This is the second year of a three-year competition.

In addition to placing third overall, the team also won best social media, best AVL drive quality, and best technical report.

Mississippi State took top honors with an extended range electric vehicle that runs off of B20 Biodiesel. Virginia Tech won second place with a 2.4L Ecotec engine that runs off of E-85 ethanol.

EcoCAR Challenge gets students scrambling in Arizona desert

Gizmag (part of au.hadnews.com)

May 29, 2010

<http://au.hadnews.com/ecocar-challenge-gets-students-scrambling-in-arizona-desert.htm>

Also on TechToysReport.com and [V8 Rangers and Muscle Cars](http://V8Rangers.com).



Not long ago we told you about the [Moto Student competition](#), wherein teams of students from across Spain and the rest of Europe are competing to build racing motorcycles. Well, a similar competition is underway in the US, and it's called EcoCAR: The NeXt Challenge. In this contest, teams of North American engineering students are competing to convert GM-supplied vehicles into super-efficient, super-clean-running, high-tech wonders. The second year of the three-year contest wrapped up this week, with Mississippi State University (MSU) taking the top spot.

As EcoCAR describes it, the teams' goal should be "to reduce the environmental impact of vehicles by minimizing the vehicle's fuel consumption and reducing its emissions while retaining the vehicle's performance, safety and consumer appeal." Year One of the challenge saw the students using CAD tools to compare and select power trains and other components, and to check that the vehicles' electrical, mechanical and software systems would all work in harmony.

This year, the teams took their ideas off the computers and incorporated them into real, live vehicles. Last Wednesday, all the teams and their SUVs squared off at the GM Desert Proving Ground in Yuma, Arizona. After six days of tinkering, inspecting and road testing, MSU's Year Two win was announced this Thursday.

The MSU team chose to go with a biodiesel extended-range electric vehicle (EREV). Their hybrid is equipped with a 21.3 kWh A123Systems battery pack, providing an electric range of 60 miles. It also has a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. What that all boils down to is a gas-equivalent of 118mpg, city/highway combined.

“To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates,” said MSU’s Matt Doude. “We look forward to the next chapter of the competition – with so much talent among the schools it will not be an easy road to another victory.”

EcoCAR: The NeXt Challenge was established by the United States Department of Energy and General Motors, and is being managed by Argonne National Laboratory.

Penn State EcoCAR team wins third place at competition

The Daily Collegian

By Eddie Lau

May 30, 2010

http://www.collegian.psu.edu/archive/2010/05/30/penn_state_ecocar_team_wins_th.aspx

Also on [Yuma Talk](#) and [Nittany Vacations](#).

Engineers from Penn State take third place at the 2010 EcoCAR competition in San Diego Thursday, after competing with 15 other North American university teams in the past 10 days.

Penn State was among 16 North American universities represented at the San Diego finals in the second year of the three-year competition for their extended range electric vehicle (EREV) design that runs on B20 biodiesel.

Sponsored by the U.S. Department of Energy, General Motors, among others, the competition challenges North American young engineers to "re-engineer" a GM-donated vehicle to minimize fuel consumption and emissions, while maintaining performance, safety and consumer appeal.

More than a dozen of engineering tests, technical and outreach events took place at the GM Desert Proving Ground in Yuma, Az. and at locations throughout San Diego, Calif. from May 17 to May 27.

Students had to present their designs in front of GM executives and members from the automobile industry.

"I am very happy with the result," said Gary Neal, faculty adviser of Penn State EcoCAR team. "These students put a lot of hard work into this year and I think it pays off by a good place finish."

Neal said the team didn't do very well in the emissions part of the competition but he said he already has a plan to work on the emissions equipments over the summer and fall.

The result is definitely a team effort. The team's Outreach Coordinator Dana Bubonovich said some members spent 15 to 16 hours in the garage just want to make every single thing right.

"I started off last year as a senior ... I enjoyed so much that I actually applied for graduate school so I can stay here and continue to work on the project," said Benjamin Koch (graduate-engineering science), a member of the Penn State team.

Koch said he learns a lot and it is a really valuable experience.

Penn State's EcoCAR vehicle is based around the 2009 Saturn Vue. The design includes a 12.8 kWh battery pack coupled with a 120 kW electronic traction system and 75 kW generator, according to the team's Web site.

It gets an estimated 47 miles per gallon, travels 25 miles in battery mode and then another 225 miles when the generator kicks in, Koch said.

It takes about four hours to fully charge the battery, he added.

GM Vice President for Global Vehicle Engineering Karl Stracke praised students for their hard work and ability to utilize cutting-edge automotive engineering processes to transform their designs into the physical vehicles.

"These students worked tirelessly in their Green Garages building the next generation of clean vehicles and their progress has exceeded our expectations," Stracke said.

The Penn State team brings home 10 trophies from San Diego. In addition to taking Third Place Overall, the team also won Best Social Media, Best AVL Drive Quality, Best Technical Report, placed third in Outreach, placed second in A123 Battery Design and were runner's up in Well-to-Wheel Greenhouse Gas Emissions, Best Tailpipe Emissions and Best Fuel Consumption, according to the team's press release.

Bubonovich said the team won Best Social Media for the second year in a row because they were able to keep updating information on various online platforms.

"It was actually based on a point system for both outreach and social media," she said. "We have tweeted almost 900 times, maintained the Facebook, uploaded YouTube videos and blogged on a continuous basis."

Mississippi State earned the highest score of 844 out of a possible 1000 points and placed first with their EREV vehicle utilizes biodiesel, while Virginia Tech earned second place with an ethanol-powered EREV design.

Last year's winner Ohio State finished fifth place this year.

Mississippi State takes Top Honors for the second year in a row at EcoCAR Competition

CleanMPG.com

By Wayne Gerdes

May 30, 2010

<http://www.cleanmpg.com/forums/showthread.php?t=32433>



Students from Mississippi State University placed first in the 2010 EcoCAR: The NeXt Challenge finals in San Diego today after designing and building a biodiesel extended-range electric [vehicle](#) (EREV).

Virginia Tech earned second place with an ethanol-powered EREV design and Penn State came in third place building a biodiesel EREV vehicle.

Mississippi State beat out 15 other universities to win first place in Year Two Finals of the three-year competition sponsored by the U.S. Department of Energy and General Motors (GM). The competition challenges university engineering students from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's [fuel consumption](#) and emissions, while maintaining its utility, safety and performance. The winning teams will answer questions about their work and vehicles during an online chat on Friday, June 4 at 3 p.m. EDT.

During the second year of the EcoCAR competition, the teams utilized cutting-edge automotive engineering processes, such as Hardware in the Loop (HIL) simulation, to move their designs into the physical vehicles. Once the vehicles were built and rolled out of their respective Green Garages – or design and construction shops – they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the [cars](#) was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

The Mississippi State EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle's fuel economy stood out, achieving 118 [miles per gallon](#) gas equivalent (combined city/highway cycle). In addition to the overall winner's award, Mississippi State won nine additional awards, including performance events in auto-cross and acceleration.

"This was our most challenging year and stakes were high to have our vehicle ready for inspections. To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," said Matt

Doude from Mississippi State. "We look forward to the next chapter of the competition – with so much talent among the schools it will not be an easy road to another victory. But it's this rigorous, hands-on process that gives us the valuable experience we'll need in the workplace."

"These students worked tirelessly in their Green Garages building the next generation of clean vehicles and their progress has exceeded our expectations," said Karl Stracke, GM vice president, Global Vehicle Engineering.

"Each team experimented with technologies and made great strides towards optimizing fuel efficiency and minimizing emissions. With critical and successful testing under their belts, we're excited to see the teams refine and improve their vehicles in the last leg of the EcoCAR competition," Stracke said.

The Virginia Tech EcoCAR team designed an EREV vehicle with a 40 mile electric range. using a 90kW Ballard electric motor, 16 kW belted alternator starter and 21.3 kWh battery pack in a split parallel architecture. They chose to build the vehicle with a 2.4 L Ethanol engine and use 78 percent less petroleum compared to the baseline vehicle.

Penn State's EcoCAR vehicle is also an EREV design, which includes a 12.8 kWh battery pack coupled with a GM 110 kW Electric Traction Motor and 75 kW UQM generator. It includes a 4-cylinder 1.3 L biodiesel engine and achieved more than double the [fuel economy](#) of the baseline vehicle, or 57 miles per gallon gas equivalent.

Conclusions?

While we all know a diesel adds thermodynamic and fuel efficiencies, this was a no brainer. Too bad GM will never bring one to market which negates much of the Challenges goals.

Second item... 20 + kWh of A123Systems packs and probably their latest with a large jump in both energy and power density is sure to push these vehicles way beyond their standard EPA on an energy equivalent basis. Again, GM will push 16 kWh packs in the Volt with 8 kWh or so usable but a 20 kWh pack at \$625 +/kWh (OEM cost) is quite a bit to add to the price of an everyday Equinox.

Finally, the real engineering came about in the series, series-parallel and parallel designs to transmit power from either the included engines, the pack through Inverter or both. My hats are off to these students for taking the vehicles from a design study to actual vehicle and achieving a great increase in fuel economy while lowering emissions.

CanadianDriver

Mississippi team places first in EcoCAR Challenge

Canadian Driver

May 31, 2010

<http://www.canadiandriver.com/2010/05/31/mississippi-team-places-first-in-ecocar-challenge.htm>

Also on [Yuma Talk](#) and [Energy For Us All](#).



San Diego, California – A student team from Mississippi State University has placed first over 15 other university teams, including three from Canada, in the second year of the three-year EcoCAR Challenge.

The competition, sponsored by the U.S. Department of Energy, gives engineering students the chance to design and build advanced vehicles that demonstrate leading-edge automotive technologies. The teams re-engineer a vehicle donated by

General Motors to minimize its fuel consumption and emissions, while maintaining its utility, safety and performance.

The Mississippi team placed first after designing and building a biodiesel extended-range electric vehicle (EREV). Virginia Tech took second with an ethanol-powered EREV design, while Penn State came third with a biodiesel EREV vehicle.

The first-year challenge, held in Toronto, required students to design the vehicle, including writing a design report, and presenting a business program and trade show display. The winner was Ohio State University. During the second year, the teams used cutting-edge automotive engineering processes, such as Hardware in the Loop (HIL) simulation, to move the designs into the physical vehicles. Once the vehicles were built, they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Arizona, similar to those conducted on production vehicles. Mississippi State's vehicle achieved the equivalent of 1.9 L/100 km (142 mpg Imp); it uses a 1.3-litre GM turbodiesel engine with battery pack, providing an electric range of 100 km.

In addition to the overall winner's award, Mississippi State won nine other awards, including performance events in autocross and acceleration.

The Canadian teams are from the University of Waterloo in Ontario, the University of Victoria in British Columbia, and the University of Ontario Institute of Technology (UOIT) in Oshawa, Ontario.

Mississippi State drives home with year-two EcoCAR trophy

ZDNet – Green Tech Pastures

By Heather Clancy

May 31, 2010

<http://www.zdnet.com/blog/green/mississippi-state-drives-home-with-year-two-ecocar-trophy/12126>

Also on [Geek-o-pedia](#) and [Green Power](#).

Engineering students from Mississippi State University were victorious at the end of the second year of the [EcoCAR challenge](#), a green-tech design competition co-sponsored by the U.S. Department of Energy and General Motors.



The university teams are being evaluated on their ability to create a vehicle that decreased fuel consumption and greenhouse gas emissions, while retaining certain levels of consumer acceptance. GM donated the vehicles used by the 16 teams for the competition. The point of the competition is for these students to redesign an existing vehicle to meet improved fuel efficiency and environmental standards. Personally, I like the fact that the teams are using suburban utility vehicles because, as my friend with five kids will tell you, some families just don't find itty-bitty electric cars practical.

The EcoCAR designs fall into four different categories: extended-range electric, plug-in hybrid electric, fuel cell plug-in hybrid electric and full-function electric. The cross-over SUVs were tested at the GM Desert Proving Ground in Yuma, Ariz. They have been designed over the course of the past two years, and this was the first proof point of those designs.

The Mississippi team's car was an extended-range electric vehicle running off a 21.3 kilowatts-hour A123Systems battery package, a 1.3L GM turbodiesel engine and a 75-kilowatt UQM generator. During the tests, their entry managed to get 118 miles per gallon, for a combined city/highway cycle. The team also won separate tests for auto cross and acceleration.

[Here's more information about the contest and its general mission.](#)

So here's the challenge for the next year: To refine and improve on the vehicles.



Next green car technology hub: Starkville, Mississippi?

SUNfiltered

By Jeff McIntire-Strasburg

May 31, 2010

<http://www.sundancechannel.com/sunfiltered/2010/05/green-car-technology-starkville-mississippi/>



If you're a betting person, what university would you wager on for creating the next generation of cleaner vehicles? MIT? Cal Tech? Stanford? Turns out you may want to look a little further south... the student team from [Mississippi State University](#) took the flag at the second year of [EcoCAR: The NeXt Challenge](#).

The Challenge, a three-year competition focused on "development, exploration and implementation of advanced vehicle technologies," recently held its second-year finals in Yuma, Arizona and San Diego, California. The 16 teams in the competition (and, OK, the schools above aren't participating) each take a donated Saturn VUE and try to turn it into a green

super car. The MSU team chose to develop an extended-range electric vehicle (EREV) hybrid that featured

- a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles
- a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a [series](#) plug-in configuration
- a whopping **118 miles per gallon** gas equivalent (combined city/highway cycle).

Runners-up Virginia Tech and Penn State also went with an EREV powertrain; all three schools' entries are also designed to run on biofuels.

This is the Bulldogs' second year to take honors in the competition: during the first-year design phase, the team placed third. Perhaps Starkville's the place to be if you're looking to get into green car design and engineering...

The EcoCar Challenge is a joint project of the US Department of Energy and General Motors; the Argonne National Laboratory is managing the competition.

Think MSU's design is feasible for eventual production? Think GM's getting relatively cheap engineering help? Got other thoughts on this competition, or the designs coming out of it. Let us know.

About.com: Hybrid Cars & Alt Fuels

Mike's Hybrid Cars & Alt Fuels Blog

College Kids Build a 118 mpg SUV

Mike's Hybrid Cars & Alt Fuels Blog

By Mike McNessor

May 31, 2010

<http://alternativefuels.about.com/b/2010/05/31/college-kids-build-a-118-mpg-suv.htm?nl=1>



A bunch of overachieving students from [Mississippi State University](#) built a diesel/electric SUV capable of a combined 118 mpg and nailed down first place in [2010 EcoCAR: The NeXt Challenge](#) finals held in San Diego, May 27.

The Mississippi State entrant is an extended range electric vehicle like the Chevy Volt, meaning that it runs on electric power all the time. But unlike a standard electric vehicle which must be plugged in and charged up once the batteries have been depleted, extended range vehicles use an onboard generator to recharge the batteries, allowing the vehicle to continue on. EREVs

can also be recharged via a home recharger.

The Mississippi State EcoCAR team's vehicle runs on a 21.3 kilowatt-hour A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3 L GM turbodiesel engine and 75 kilowatt UQM generator. During testing, the vehicle achieved 118 mpg and won nine additional awards, including autocross and acceleration competitions.

Mississippi State beat out 15 other universities to win first place in Year Two Finals of the three-year competition sponsored by the U.S. Department of Energy and General Motors.

[Virginia Tech](#) earned second place with an ethanol-powered EREV and [Penn State](#) came in third place building a biodiesel EREV vehicle.

Impressive and a far cry from what I ever managed to accomplish in college including: Finding the best places to buy cheap Cliffs Notes and loafing at menial after-school jobs for beer money.

UOIT automotive engineers turn heads in Arizona and San Diego during second phase of EcoCAR Challenge

Exchange Morning Post

June 1, 2010

<http://www.exchangemagazine.com/morningpost/2010/week22/Tuesday/060109.htm>

OSHAWA - After ten days of tense competition against 15 other North American universities, the University of Ontario Institute of Technology (UOIT) has vaulted to the top group of teams in the EcoCAR: The NeXt Challenge automotive engineering design competition. UOIT's ambitious crew of innovative, problem-solving students has again proven it has what it takes to make an impressive mark against a group of long-established U.S. universities that includes Penn State, Virginia Tech and Ohio State University.

As part of the second phase of the three-year advanced vehicle technology challenge, UOIT's EcoCAR team put its cutting-edge, eco-friendly electric car through a long series of dynamic and static tests in the arid desert climate at the General Motors (GM) Proving Grounds in Yuma, Arizona. UOIT's design took top honours in two categories in Arizona: for the car's performance when changing lanes at high speed and for dynamic consumer acceptability based on handling, noise and vibration.

After emerging from Arizona ranked in the top group of teams, the UOIT engineering students moved on to the next stage of competition in San Diego, California to expand their outreach efforts and show off their designs and plans to industry experts as well as the U.S. media. UOIT completed the second phase of EcoCAR ranked fourth for its electrical and mechanical systems and in sixth place overall. Also in San Diego, at the Sponsor Social networking and recruiting event, UOIT was presented with the award for second-place in the Bosch Diversity category, which recognizes the team that best attracts and retains people of different nationality, ethnic background, gender and academic program. UOIT placed just behind the Missouri University of Science and Technology and ahead of Ohio State.

The competition will continue through the spring of 2011. UOIT is just one of 16 North American universities (one of three in Canada) that qualified to participate in EcoCAR: The NeXt Challenge, an automotive engineering design competition sponsored by GM and the U.S. Department of Energy. Each team of engineers is aiming to be the one that creates the most environmentally-friendly car while maintaining the performance standards expected by consumers.

UOIT's EcoCAR is a hybrid vehicle generously donated by GM Canada. As part of its innovative approach to the competition and effort to earn high marks for reducing greenhouse gas emissions, the UOIT team opted to make its vehicle a fully-electric model. In addition to increasing energy efficiency through its advanced technology design, the team is also striving to maintain consumer acceptability in the areas of performance, reliability and safety.

UOIT owns Canada's largest electric vehicle fleet at a university, which includes electric buses, pickup trucks, bicycles and even a hydrogen hybrid electric wheelchair.



UOIT automotive engineers turn heads in Arizona and San Diego during second phase of EcoCAR Challenge

Northumberland Today

By J. Cassin

June 4, 2010

<http://www.northumberlandtoday.com/Community/NewsDisplay.aspx?c=51048>

OSHAWA - After ten days of tense competition against 15 other North American universities, the University of Ontario Institute of Technology (UOIT) has vaulted to the top group of teams in the EcoCAR: The NeXt Challenge automotive engineering design competition. UOIT's ambitious crew of innovative, problem-solving students has again proven it has what it takes to make an impressive mark against a group of long-established U.S. universities that includes Penn State, Virginia Tech and Ohio State University.

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UOIT owns Canada's largest electric vehicle fleet at a university, which includes electric buses, pickup trucks, bicycles and even a hydrogen hybrid electric wheelchair. For more information about UOIT's EcoCAR, please visit the team's website at <http://uoitecocar.info/ecocar>

Mississippi State Wins EcoCAR Competition

Automotive Fleet

June 1, 2010

<http://www.automotive-fleet.com/News/Story/2010/06/MSU-Wins-Top-Honors-in-EcoCAR-Competition.aspx?interstitial=1>

SAN DIEGO - Students from Mississippi State University placed first in the 2010 EcoCAR: The Next Challenge finals in San Diego on May 27, after designing and building a biodiesel extended-range electric vehicle (EREV).

Virginia Tech earned second place with an ethanol-powered EREV design, and Penn State came in third building a biodiesel EREV vehicle.

Mississippi State beat out 15 other universities to win first place in Year Two Finals of the three-year competition sponsored by the U.S. Department of Energy and General Motors. The competition challenges university engineering students from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's fuel consumption and emissions, while maintaining its utility, safety and performance. The winning teams will answer questions about their work and vehicles during an online chat on Friday, June 4, at 3 p.m. EDT.

During the second year of the EcoCAR competition, the teams utilized cutting-edge automotive engineering processes, such as Hardware in the Loop (HIL) simulation, to move their designs into the physical vehicles. Once the vehicles were built and rolled out of their respective green garages -- or design and construction shops -- they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the cars was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

The Mississippi State EcoCAR team chose to design an EREV hybrid with a 21.3 kWh A123Systems battery pack, which provides an electric range of 60 miles. It's also equipped with a 1.3 L GM turbodiesel engine and 75 kW UQM generator in a series plug-in configuration. During testing, the vehicle's fuel economy stood out, achieving 118 miles per gallon gas equivalent (combined city/highway cycle). In addition to the overall winner's award, Mississippi State won nine additional awards, including performance events in auto-cross and acceleration.

"This was our most challenging year and stakes were high to have our vehicle ready for inspections. To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," said Matt Doude from Mississippi State. "We look forward to the next chapter of the competition -- with so much talent among the schools it will not be an easy road to another victory. But it's this rigorous, hands-on process that gives us the valuable experience we'll need in the workplace."

"During the last 12 months, these teams faced a difficult challenge -- to build an innovative vehicle and continually refine and improve its operation," said Pat Davis, program manager of DOE's Vehicle Technologies Program.

The Virginia Tech EcoCAR team designed an EREV vehicle with a 40-mile electric range using a 90kW Ballard electric motor, 16 kW belted alternator starter and 21.3 kWh battery pack in a split parallel architecture. The team chose to build the vehicle with a 2.4 L Ethanol engine and use 78 percent less petroleum compared to the baseline vehicle.

Penn State's EcoCAR vehicle is also an EREV design, which includes a 12.8 kWh battery pack coupled with a GM 110 kW Electric Traction Motor and 75 kW UQM generator. It includes a 4-cylinder 1.3 L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.

Mississippi State Wins Big at EcoCAR With 118 MPG

Wired

By Keith Barry

June 1, 2010

<http://www.wired.com/autopia/2010/06/mississippi-state-ecocar-118-mpg/#ixzz0pifcOAOg>

Also on [Zikkir](#), [AutoGlobe.com](#), [CarZeit](#), and [Yuma Talk](#).



After the second year of competition in the EcoCAR challenge, students from [Mississippi State University](#) won first place with their extended-range electric vehicle.

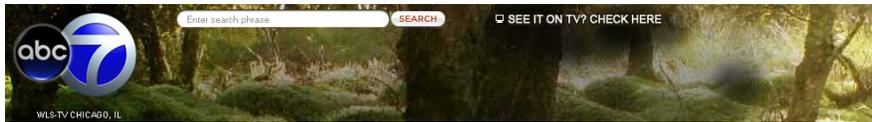
During the second year of competition, teams transformed Saturn Vues into ultra-high-mileage vehicles based on designs the teams conceived during the first year of competition. The Saturns were donated by GM, who sponsors the competition along with the U.S. Department of Energy, the Canadian government and the Argonne National Laboratory.

The competition is meant to prepare future leaders in automotive engineering, so the student cars have to pass the same tests as GM's production vehicles. Those tests took place last week at GM's Desert Proving Grounds in Yuma, AZ and ensured that all the cars were consumer-ready.

In addition to coming out tops in auto-cross and acceleration, Mississippi State's car impressed the judges with an overall fuel economy of 118 MPG-equivalent, made possible by batteries from A123 and a 1.3L GM turbodiesel engine burning biofuel acting as a range extender.

"To finish a year of hard work and long hours in first place is an incredible honor for me and my teammates," said Mississippi State's Matt Doude. "We look forward to the next chapter of the competition."

In second place came the team from Virginia Tech, whose [VT-Rex we profiled in April](#). Third place went to Penn State who also built a biodiesel range-extended EV.



Mississippi State University wins EcoCAR competition

ABC7chicago.com

June 1, 2010

<http://www.greenrightnow.com/wls/2010/06/01/mississippi-state-university-wins-ecocar-competition/>

A look at the Hardware In the Loop strategies employed by The Ohio State University EcoCAR Team:



Students from Mississippi State University placed first in the 2010 EcoCAR: The NeXt Challenge finals in San Diego last week after designing and building a biodiesel extended-range electric vehicle. Virginia Tech finished with an ethanol-powered EREV design and Penn State came in third after building a biodiesel EREV vehicle.

Mississippi State beat 15 other universities to win the Year Two Finals of the three-year [competition](#) sponsored by the U.S. Department of Energy and General Motors. The competition challenges university engineering students from across North America to re-engineer a GM-donated vehicle to minimize the vehicle's fuel consumption and emissions, while maintaining its utility, safety and performance.

During the second year of the EcoCAR competition, the teams utilized cutting-edge automotive engineering processes to move their designs into the physical vehicles. Once the vehicles were built and rolled out, they went through a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on production vehicles. Each of the cars was evaluated based on the ability to decrease fuel consumption and greenhouse gas emissions, and maintain consumer acceptability in the areas of performance, utility and safety.

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The Virginia Tech EcoCAR team designed an EREV vehicle with a 40 mile electric range. Penn State's EcoCAR vehicle is also an EREV design, which includes a 12.8 kWh battery pack coupled with a GM 110 kW

Electric Traction Motor and 75 kW UQM generator. It includes a 4-cylinder 1.3 L biodiesel engine and achieved more than double the fuel economy of the baseline vehicle, or 57 miles per gallon gas equivalent.

Here is a list of schools participating in the competition:

- Embry-Riddle Aeronautical University
- Georgia Tech
- Michigan Technological University
- Mississippi State University
- Missouri Univ. of Science and Technology
- North Carolina State University
- The Ohio State University
- University of Ontario Institute of Technology
- Pennsylvania State University
- Rose-Hulman Institute of Technology
- Texas Tech University
- University of Victoria
- University of Waterloo
- University of Wisconsin
- Virginia Tech
- West Virginia University

Modeling the way with academia and industry

Embedded.com

By Jim Tung

June 1, 2010

<http://www.embedded.com/columns/guest/225200758>

When I visit companies around the world, I see some recurring themes. The systems they are developing are more complex and perform more functions than ever before. These systems typically include combinations of existing subsystems, off-the-shelf components, and custom subsystems. The development is performed through collaborations of engineering teams representing multiple disciplines, often in different companies or locations around the world.

These companies have found that their traditional development processes are insufficient to address increasing system complexity, the pressure to shorten time-to-market, and customer demands for more functionality with higher quality. As a result, they have modified or completely transformed their development processes to exploit the use of models. They have stopped relying on paper-based specifications, and instead use models as executable specifications that clarify and communicate requirements and specifications. They use multi-domain models to simulate the system-level behavior of their designs. They simulate the subsystems adjacent to their design when the real subsystems are not available or haven't yet been developed. They automatically generate code for embedded systems from algorithmic models. And they leverage models as test cases and hardware-in-the-loop simulations to test and verify their products and systems. This approach, known as [model-based design](#), is being used in diverse applications, for large and small projects, with co-located and geographically-distributed engineering teams.

These companies are looking to engineering schools to produce engineering graduates with the skills to take full advantage of model-based design. Engineers are asked to think about engineering at a "systems" level rather than only being a specialist in a single domain. They require stronger modeling and analytical skills, not simply an ability to prototype. And, of course, those newly hired engineers must also have a strong foundation in engineering concepts and mathematics.

But large gaps exist between industry needs and engineering education when it comes to modeling. In 2009, the [IEEE Control System Society](#) conducted an informal survey of academic and industry members to evaluate the capabilities of engineering graduates. One question asked of the members was, "What areas (if any) need to be strengthened or added to the curriculum to better prepare control engineers for industry?" The responses showed strong consensus across academia and industry about the areas for improvement: hands-on experience, industry-focused design, computer hardware and software, and mathematical modeling of dynamic systems.

The survey also pointed out the discrepancy between what is needed and what is delivered. Over 90% of the industry respondents said that simulation models for system verification or product design, nonlinear models, real-time models for hardware-in-the-loop verification, and experimental system identification methods are useful and valuable skills for controls engineers in industry. Yet, less than 50% of the university respondents said that those are "topics covered in a course or courses that you regularly or occasionally teach, and that would typically be completed by entry-level control engineers graduating from your institution."

Some universities have taken significant steps to expose engineering students to modeling and simulation techniques, particularly in controls, signal processing, and mechatronics labs. Senior-year design projects are increasingly team-based, not individual, and frequently involve building and sharing models. GM, the primary sponsor of the [ChallengeX](#) and [EcoCAR](#) student competitions for fuel-efficient vehicle design, considers modeling and analysis to be so important in its own processes that it required the student teams to model,

simulate, and analyze their design extensively for a year of the three-year competition before even having access to vehicles.

The Green Building Inspector

Green Living and Construction

Mississippi State University Wins Year Two of the EcoCAR Competition

The Green Building Inspector

June 2, 2010

<http://greenbuildinginspector.com/2010/06/mississippi-state-university-wins-year-two-of-the-ecocar-competition/>

After nearly two weeks of intense competition, Mississippi State University (MSU) claimed top honors on May 27 in the second year of the EcoCAR competition, a three-year automotive engineering competition sponsored by DOE and General Motors Corporation (GM). Officially dubbed “EcoCAR: The NeXt Challenge,”



the competition invited university engineering students from across North America to re-engineer a GM-donated sport utility vehicle to achieve improved fuel economy and reduced emissions. The 16 competing teams also strove to retain the vehicle’s performance, safety, and consumer appeal. The MSU team met the challenge by building an extended-range electric vehicle (EREV), using a 21.3-kilowatt-hour battery pack from A123Systems that provided an electric range of 60 miles. That was backed up with a 1.3-liter, biodiesel-fueled, turbocharged diesel engine that powered a 75-kilowatt generator from UQM Technologies. The team kept the two systems separate, with the battery pack powering an 8-kilowatt motor on the rear transaxle,

and the engine powering a 45-kilowatt motor on the front transaxle. During the competition, the vehicle achieved a fuel economy equivalent to 118 miles per gallon of gasoline.

The high fuel economy helped the MSU team garner 844 out of a possible 1,000 points, earning its first-place finish. Coming in second place was the Virginia Tech University team, which built an EREV with a 40-mile electric range, also driven by a 21.3-kilowatt-hour battery pack, but with a 90-kilowatt motor. Their extended range was achieved with a flex-fueled, 2.4-liter, four-cylinder engine. Landing in third place was Pennsylvania State University, again with an EREV, which used a 12.8-kilowatt-hour battery pack to power an 80-kilowatt motor. Like the MSU team, their backup power source was a 1.3-liter, biodiesel-fueled, turbocharged diesel engine, which powered a 75-kilowatt UQM generator.



The May competition included a series of safety and technical tests at GM’s Desert Proving Grounds in Yuma, Arizona, marking the end of two years of hard work by the university teams. In the first year of the EcoCAR challenge, the teams determined the design for their vehicles, and in the second year, they had to turn those designs into reality. For the next and final year, the teams will have to refine their vehicles to near-showroom quality. In the meantime, you can participate in a Web chat with the top three teams on Friday, June 4, at 3 p.m. EDT on the EcoCAR blog site, “[Inside the Green Garage](#).” See the press releases from [GM](#) and [MSU](#), as well as the [EcoCAR Challenge Web site](#).

Alternative Energy

Mississippi State University Wins Year Two of the EcoCAR Competition

Alternative Energy

June 2, 2010

<http://alternative-energy-resources.info/green-energy-news/mississippi-state-university-wins-year-two-of-the-ecocar-competition/>



A team from MSU has stripped an SUV and packed it full of batteries, motors, electronics, and a small diesel engine, achieving the efficiency equivalent to 118 miles per gallon of gasoline. Their effort took first place in the EcoCAR competition, hosted by DOE and General Motors Corporation.



Penn State team finishes third in national EcoCAR contest

Penn State Live

June 2, 2010

<http://live.psu.edu/story/46999>

Penn State's entry placed third overall in the national EcoCAR: The NeXT Challenge's Year Two Finals, held May 17-27.

The three-year competition, sponsored by the U.S. Department of Energy (DOE) and General Motors (GM), challenges engineering students from across North America to re-engineer a GM-donated car to minimize the vehicle's fuel consumption and emissions while maintaining its utility, safety and performance.

The Penn State team won awards for best social media program, best AVL drive quality and best technical report. It also placed second in A123 battery design, third in outreach and was the runner up in the wheel-to-wheel greenhouse gas emissions, best tailpipe emissions and best fuel consumption categories.

An online chat will be held with the Penn State team and the first- and second-place winners at the contest's behind-the-scenes blog at www.greengarageblog.org at 3 p.m. on June 4.

The competition's second year tasked the 16 U.S. and Canadian teams with implementing their vehicle designs that were simulated in Year One.

Penn State's car, an extended range electric vehicle, features a 330V lithium-ion battery pack coupled with a GM 120 kW electronic traction system and 75 kW UQM electric generator.

The vehicle includes a 4-cylinder, 1.3-liter biodiesel engine that achieved more than double the fuel economy of the baseline vehicle, or 57 mpg gas equivalent.

The first part of this year's competition was held May 18-23 with a series of safety and technical tests on each vehicle at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on prototype vehicles to evaluate their production readiness. Each car was tested on its ability to reduce fuel consumption and greenhouse gas emissions while maintaining consumer acceptability in the areas of performance, utility and safety.

Additional events were held May 23-27 at locations throughout San Diego, Calif., culminating with an awards ceremony at the House of Blues.

"I think the best part was taking part in the vehicle dynamic testing in Yuma at the GM Desert Proving Grounds. The team was able to take part in braking and acceleration testing, autocross events, fuel consumption and emissions testing and dynamic consumer testing," said Marty Lechner, a mechanical engineering senior. "These events didn't go off without their complications. The team faced a variety of issues, including wrong sized fuse and high-voltage wires, dropping a washer inside the ETS inverter, leaking intake and coolant, issues with datalogger software, previously unknown battery power limiting from the A123 battery management system and a non-functioning air conditioning system."

"During the last 12 months, these teams faced a difficult challenge -- to build an innovative vehicle and continually refine and improve its operation," said Pat Davis, the DOE Vehicle Technologies Program manager, in a press release.

Mississippi State University and Virginia Tech finished first and second in the competition, respectively.

Looking forward, Penn State team leader and graduate student Derek Bailey said, "The team needs to work on a lot of things in Year Three to be able to place in the top three again. Since Year Three consists of consumer acceptability, the team plans on light-weighting components in the vehicle, working on a paint job and exterior and interior aesthetics and refining all components and controls within the vehicle."

The team, advised by Gary Neal, a research engineer with the Applied Research Laboratory, includes 35 undergraduate students and six graduate students. About a dozen members traveled to the Year Two Finals.

During the contest's first year, the Penn State team finished 7th overall and won accolades including the Donald Streit Sportsmanship Award and the best social networking award. The team also took third overall in outreach and second at the contest's opening skit night.

More on the contest can be found online at the contest's official site at <http://www.ecocarchallenge.org/> online. The Penn State team's site is at <http://www.hev.psu.edu/> online.

Weekly Clean Energy Roundup: June 2, 2010

SustainableBusiness.com

June 2, 2010

<http://www.sustainablebusiness.com/index.cfm/go/news.feature/id/1809>

Mississippi State University Wins EcoCAR Competition

On May 27, after nearly two weeks of intense competition, Mississippi State University (MSU) won the second annual EcoCAR competition, a three-year automotive engineering competition sponsored by DOE and General Motors.

"EcoCAR: The NeXt Challenge," invited university engineering students from across North America to re-engineer a GM-donated SUV to achieve improved fuel economy and reduced emissions. The 16 competing teams also strove to retain the vehicle's performance, safety, and consumer appeal. The competition included a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Arizona.

The MSU team built an extended-range electric vehicle (EREV), using a 21.3-kilowatt-hour (kWh) battery pack from A123Systems. The car, which has an electric range of 60 miles is backed up with a 1.3-liter, biodiesel-fueled, turbocharged diesel engine that powers a 75 kilowatt (kW) generator from UQM Technologies.

The team kept the two systems separate. The battery pack powers an 8 kW motor on the rear transaxle, and the engine powers a 45 kW motor on the front transaxle. During the competition, the vehicle achieved a fuel economy equivalent to 118 miles per gallon of gasoline. See a [video](#) of the car's design on YouTube.

Virginia Tech University came in second place with an EREV with a 40 mile electric range, also driven by a 21.3 kWh battery pack, but with a 90 kW motor. The extended range was achieved with a flex-fueled, 2.4-liter, four-cylinder engine. Landing in third place was Pennsylvania State University, again with an EREV, which used a 12.8 kWh battery pack to power an 80 kW motor. Like the MSU team, their backup power source was a 1.3-liter, biodiesel-fueled, turbocharged diesel engine, which powered a 75 kW UQM generator.

In the first year of the EcoCAR challenge, the teams determined the design for their vehicles, and in the second year, they had to turn those designs into reality. For the next and final year, the teams will have to refine their vehicles to near-showroom quality.

You can participate in a Web chat with the top three teams on Friday, June 4, at 3 p.m. EST on the EcoCAR blog site, "[Inside the Green Garage](#)." See the press releases from [GM](#) and [MSU](#), as well as the [EcoCAR Challenge Web site](#).

Penn State Team Finishes Third in National EcoCAR Contest

Gantdaily.com

By Curtis Chan, Penn State

June 3, 2010

<http://gantdaily.com/2010/06/03/penn-state-team-finishes-third-in-national-ecocar-contest/>

Penn State's entry placed third overall in the national EcoCAR: The NeXT Challenge's Year Two Finals, held May 17-27.

The three-year competition, sponsored by the U.S. Department of Energy (DOE) and General Motors (GM), challenges engineering students from across North America to re-engineer a GM-donated car to minimize the vehicle's fuel consumption and emissions while maintaining its utility, safety and performance.

The Penn State team won awards for best social media program, best AVL drive quality and best technical report. It also placed second in A123 battery design, third in outreach and was the runner up in the wheel-to-wheel greenhouse gas emissions, best tailpipe emissions and best fuel consumption categories.

An online chat will be held with the Penn State team and the first- and second-place winners at the contest's behind-the-scenes blog at www.greengarageblog.org at 3 p.m. on June 4.

The competition's second year tasked the 16 U.S. and Canadian teams with implementing their vehicle designs that were simulated in Year One.

Penn State's car, an extended range electric vehicle, features a 330V lithium-ion battery pack coupled with a GM 120 kW electronic traction system and 75 kW UQM electric generator.

The vehicle includes a 4-cylinder, 1.3-liter biodiesel engine that achieved more than double the fuel economy of the baseline vehicle, or 57 mpg gas equivalent.

The first part of this year's competition was held May 18-23 with a series of safety and technical tests on each vehicle at GM's Desert Proving Grounds in Yuma, Ariz., similar to those conducted on prototype vehicles to evaluate their production readiness. Each car was tested on its ability to reduce fuel consumption and greenhouse gas emissions while maintaining consumer acceptability in the areas of performance, utility and safety.

Additional events were held May 23-27 at locations throughout San Diego, Calif., culminating with an awards ceremony at the House of Blues.

"I think the best part was taking part in the vehicle dynamic testing in Yuma at the GM Desert Proving Grounds. The team was able to take part in braking and acceleration testing, autocross events, fuel consumption and emissions testing and dynamic consumer testing," said Marty Lechner, a mechanical engineering senior. "These events didn't go off without their complications. The team faced a variety of issues, including wrong sized fuse and high-voltage wires, dropping a washer inside the ETS inverter, leaking intake and coolant, issues with datalogger software, previously unknown battery power limiting from the A123 battery management system and a non-functioning air conditioning system."

"During the last 12 months, these teams faced a difficult challenge — to build an innovative vehicle and continually refine and improve its operation," said Pat Davis, the DOE Vehicle Technologies Program manager, in a press release.

Mississippi State University and Virginia Tech finished first and second in the competition, respectively.

Looking forward, Penn State team leader and graduate student Derek Bailey said, "The team needs to work on a lot of things in Year Three to be able to place in the top three again. Since Year Three consists of consumer acceptability, the team plans on light-weighting components in the vehicle, working on a paint job and exterior and interior aesthetics and refining all components and controls within the vehicle."

The team, advised by Gary Neal, a research engineer with the Applied Research Laboratory, includes 35 undergraduate students and six graduate students. About a dozen members traveled to the Year Two Finals.

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Battery Maker Dow Kokam's Ambitious Goal: 300-Mile Range for EVs

BNET

By Jim Motavalli

June 3, 2010

<http://industry.bnet.com/auto/10005172/battery-maker-dow-kokams-goal-300-mile-range-for-evs/>

One of the critical shortcomings of battery vehicles is range – most won't go more than 100 miles on a charge. But Dow Kokam, a year-old joint venture formed last year between Dow Chemical and Kokam America, is addressing that with very compact battery packs of 80 kilowatt-hours or more that will, at least theoretically, give tomorrow's cars a near-300-mile range.

Dow Kokam is not a high-profile name in the industry, and it doesn't have any car company customers yet. But if it builds higher-capacity batteries than the competition, automakers will beat a path to its doors in Michigan. It may turn out that, as people get used to electric cars, they won't really need that kind of range, but it's what people are used to from internal combustion, and any less will produce at least short-term "range anxiety."



Dow Kokam breaks ground later this month on a \$322 million Midland, Mich., factory supported by a \$161 million Department of Energy grant. The plant has a targeted capacity of 600 million watt hours, enough to supply 30,000 cars with battery packs. Now it just needs customers.

Dow Kokam's CEO, Ravi Shanker (no, not the sitar player; this one's a 20-year Dow veteran) said in an interview that the company's value proposition is based on long-range batteries. "Our challenge is providing the right balance of energy, power, longevity and safety," he said. "Integrating a pack like that into a vehicle for robust performance presents complex technical challenges."

The EV industry is already working on very big battery packs, even though the average pack in the cars coming on the market this year is in the 25- to 30-kilowatt-hour range. Tesla Motors, for instance, [estimates that it could need an 85- to 95-kilowatt-hour pack for the Model S](#) (which will offer a pack with 300-mile range as an optional extra).

Tesla's chief technical officer, J.B. Straubel, told me, "It would be the biggest pack on the market, and we're designing and building it ourselves." He added, "Saying it can't be done is like saying there's never been a gas tank that big. It's within technical reality."



The EcoCar Challenge, supported by General Motors and the Department of Energy, has 16 college teams competing in green vehicle conversions of Saturn Vue SUVs. At the second-year heat in Arizona recently, [the University of Ontario showed off its all-electric solution](#), with a Dow Kokam 80-kilowatt-hour lithium-ion battery pack. Team leader Mike Maduro told me that it has (at least on paper) a 240-mile range, more than double that of the Nissan Leaf. And the Saturn Vue is no lightweight platform.

Shanker said that Dow Kokam may not yet have OEM partners, but it's talking to a number of them. To demonstrate its capabilities, it has installed packs in a number of vehicles, including minivans, trucks and a Lotus Elise with Telsa Roadster-like performance. It also bought the electric car subsidiary of the French-based Groupe Industriel Marcel Dassault, which makes high-performance batteries and energy management systems.

According to Shanker, cars like the Elise present a packaging problem because they weren't designed as battery vehicles – an issue that will probably go away in a couple of years as more unique battery car platforms are built. By producing its flat and stackable lithium-ion polymer batteries in 10-kilowatt-hour modules, Dow Kokam aims to fit its packs into the space normally taken up by the gas tank and transmission.

Today, Dow Kokam could fit eight of its modular packs into a small sedan (yielding 80-kilowatt-hours) but it might take up some trunk space. “You want to squeeze in as much power and energy as possible, but you also don't want to be left with only enough storage space for a set of golf clubs,” Shanker said.

Dow Kokam also hopes to squeeze more range out of its battery packs by allowing deeper discharge than other companies. Most EV batteries will never be more than 80 percent depleted, but Shanker says “that's like having only half a gas tank. Our technology is aimed at having more addressable energy per charge.”

If deeper discharge means the difference between an EV cruising down the highway and one stranded by the side of the road, Dow Kokam probably has a value proposition there.



GM EcoCar Challenge

ZDNet

June 3, 2010

<http://www.zdnet.com/photos/gm-ecocar-challenge-photos/430297>



Before each prototype is allowed onto the track, it must pass the 300-point safety inspection, governing all sorts of requirements from being able to start to placement of sponsor decals. Virginia Tech team members are hard at work trouble shooting a sensor issue that prevented them from passing the safety check the first time around. That's right -- all this work is to figure out why a sensor didn't turn on. Virginia Tech went on to win second place in the competition and additional awards for Best Static Consumer Acceptability and Best Braking.

Vehicle Design: The Virginia Tech hybrid Electric Vehicle Team has designed and built an extended range electric vehicle (EREV) plug-in hybrid. The vehicle has the ability to charge a high energy capacity battery from any standard wall outlet, and run in electric-only mode for more than 65 km (40 miles). The design has two electric motors integrated into the vehicle along with the battery pack in a split parallel architecture.

The Virginia Engineer

2010 EcoCAR Competition Winner Announced

The Virginia Engineer

June 3, 2010

<http://www.vaeng.com/news/mississippi-state-wins-ecocar-competition>

Students from Mississippi State University placed first in the 2010 [EcoCAR: The NeXt Challenge](#) finals on May 27th, 2010 in San Diego, Calif. after designing and building an exceptional biodiesel extended-range electric vehicle (EREV). [Virginia Tech](#) earned second place with an ethanol EREV design and Penn State came in third place building a biodiesel EREV vehicle.

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.

GM EcoCar Challenge (photos)

Computer Shopper/CNET

By Lianne Yvkoff

June 3, 2010

http://computershopper.com.com/2300-10863_7-10003651.html



Virginia Tech

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Photo credit: Liane Yvkoff/CNET

Peeking under the hood at the EcoCar Challenge

The Car Tech Blog - CNET

By Liane Yvkoff

June 4, 2010

http://reviews.cnet.com/8301-13746_7-20006722-48.html



It's hard enough building an electric [car](#) from the wheels up, carefully selecting lightweight materials and creating an efficient yet robust power train with commercial appeal. But it's arguably tougher to take a stock ~4,000 lb. hybrid SUV, remove its internal bits, design and squeeze in alternate components not designed for automotive uses around an existing infrastructure, put everything back together and hope it passes a 300-point safety check.

Now try tackling all this during finals.

As part of the GM's EcoCar Challenge, a program sponsored in conjunction by the Department of Energy and several automotive suppliers, 16 university teams of undergraduate and graduate students are competing in a three-year competition to plan, develop, and refine an alternative fuel SUV that meets commercial and consumer standards.

Competing for more than \$100,000 in prizes each year, teams are required to replace the SUV's existing hybrid engine and transmission with an extended-range, plug-in electric, fuel-cell, or all-electric power train using their choice of B20, E85, or liquid hydrogen fuel. The vehicles are judged on fuel economy, well-to-wheel emissions reduction, performance, and towing, to name a few factors.

On May 20, I visited GM's Desert Proving grounds in Yuma, Arizona as the teams prepared to test their vehicles in the second stage of the competition. Seeing these modified SUVs in various stages of undress and watching students racing to troubleshoot and reassemble their vehicles like young NASCAR pit teams, I quickly realized that my college experience was a waste of time.

[GM EcoCar Challenge \(photos\)](#)



My biggest accomplishment in college involved a bad rendition of Minesweeper, albeit with poorer graphics and less functionality. But these students are using the same tools as GM engineers to model and build a fully functioning alternative fuel vehicle that can tow 1,500 lbs while explaining at a dizzying pace how the vehicle works.

Most college students I knew couldn't change a tire, let alone an entire vehicle propulsion system. An hour into the garage tour, I gave up trying to pretend that I understood what they were talking about and stuck to questions my brain could handle, like "What's your major?" (typically mechanical or electrical engineering) and "What do you want to do after college?" (most common response: get a job).

And it's a worthwhile effort on GM's part, especially considering that the car manufacturer doesn't get a lot of press for this type of program. GM's Aaron Sullivan, lead engineer for electric vehicle program explains that

it's all part of a plan to get students excited about automotive engineering and give them the tools to hit the ground running. But it's also not a bad way for the carmaker to recruit future engineers.

Frontrunner Mississippi State won first place overall this year, with its EREV hybrid equipped with a 1.3 L GM turbodiesel engine and a 21.3 kWh A123 Systems battery pack, achieving an electric range of 60 miles and a 118 mpg gas equivalent (combined city/highway cycle). Virginia Tech came in second, and Penn State took third place. Next year, students will focus on optimizing and refining their prototypes.



MSU welcomes home EcoCAR team

Mississippi State University Relations

June 4, 2010

<http://www.msstate.edu/web/media/detail.php?id=4906>



For its first-place finish last week in the 2010 EcoCAR: The NeXt Challenge competition, the Mississippi State student team will take its winning vehicle on a victory lap through campus Tuesday [June 8] afternoon. (For the route, visit <http://www.bagley.msstate.edu/ecocar/>.)

At the conclusion of the drive, university President Mark E. Keenum and other campus leaders will officially extend congratulations to team leader Matthew Doude and the other engineering majors during a 3:30 p.m. program at the Center for Advanced Vehicular Systems in the Thad Cochran Research, Technology and Economic Development Park. The park is located adjacent to campus, across state Highway 182.

Team members and those present will conclude the celebration with servings of MSU's famous ice cream.

The university placed first among 16 institutions represented at the San Diego finals in year two of the three-year competition sponsored by the U.S. Department of Energy, General Motors and the Canadian government, among others. The competition challenges North American engineering majors to "re-engineer" a GM-donated vehicle to minimize fuel consumption and emissions, while maintaining its utility, safety and performance.

The home team designed a plug-in hybrid vehicle with an electric range of 60 miles. During testing in California, the vehicle achieved a 118 miles-per-gallon equivalent of combined city and highway mileage.

Overall, MSU accumulated 20 trophies, including first place in each of the three fuel economy events, as well as first in three of four major presentation competitions.



Mississippi State University Wins EcoCar Competition

EnergyBoom

By Alison Pruitt

June 4, 2010

<http://www.energyboom.com/transportation/mississippi-state-university-wins-ecocar-competition>

[Mississippi State University](#) (MSU) has taken top honors in the second year of the [EcoCAR competition](#), a three-year automotive engineering competition sponsored by the [Department of Energy](#) (DOE) and [General Motors Corporation](#) (GM). Officially dubbed "EcoCAR: The NeXt Challenge," the competition invited North American university engineering students to re-engineer a GM-donated sport utility vehicle to achieve improved fuel economy and reduced emissions.

Part of the challenge facing the 16 teams is maintaining the vehicle's performance, safety, and consumer appeal. The MSU team met the challenge by building an extended-range electric vehicle (EREV), using a 21.3-kilowatt-hour battery pack from [A123Systems](#) that provided an electric range of 60 miles. That was backed up with a 1.3-liter, biodiesel-fueled, turbocharged diesel engine that powered a 75-kilowatt generator from [UQM Technologies](#). The vehicle reached 118 miles per gallon of gasoline.

The high fuel economy helped the MSU team garner 844 out of a possible 1,000 points, earning its first-place finish. Coming in second place was the [Virginia Tech University](#) team, which built an EREV with a 40-mile electric range, also driven by a 21.3-kilowatt-hour battery pack, but with a 90-kilowatt motor. Landing in third place was [Pennsylvania State University](#), again with an EREV, which used a 12.8-kilowatt-hour battery pack to power an 80-kilowatt motor.

The competition included a series of safety and technical tests at GM's Desert Proving Grounds in Yuma, Arizona. In the first year of the EcoCAR challenge, the teams determined the design for their vehicles, and in the second year, they had to turn those designs into reality. For the next and final year, the teams will have to refine their vehicles to near-showroom quality.

Ottawa congratulates the Ecocar challenge winners

Oye! Times

By Alan Rogers

June 4, 2010

<http://oyetimes.com/news/45-canada/3426-ottawa-congratulates-the-ecocar-challenge-winners>

The Government of Canada is pleased to congratulate the Canadian teams participating in the 2010 EcoCAR: The NeXt Challenge finals in San Diego, California, this past week. The University of Victoria placed fourth overall and won four awards, including the NSF Incoming Advisor Award. The University of Ontario Institute of Technology placed sixth overall and won two awards, including the Lane Change Award. The University of Waterloo placed eighth overall and won the NSF Outstanding Long Term Advisor award.

The competition challenges engineering students from 16 universities across North America to re-engineer a General Motors-donated vehicle to minimize the vehicle's fuel consumption, petroleum use and emissions, while maintaining its utility, safety and performance.

"The EcoCAR competition offers an excellent showcase for the talent and ingenuity of these students, as well as bringing us closer to our goal of realizing the full economic and environmental potential of these technologies," said the Honourable Christian Paradis, Minister of Natural Resources Canada.

Natural Resources Canada and Transport Canada jointly contributed a total of \$500,000 to the program over three years. Last year, the University of Victoria placed second to the University of Ohio for its design of an Extended Range Electric Vehicle that runs on electric power and E85 ethanol, one of the fuels approved for use in the competition.

The Government of Canada supports other, similar activities as part of its broader commitment to encourage the accelerated development and market-readiness of technology solutions in clean energy and is committed to reducing Canada's greenhouse gas emissions by 17 percent from 2005 levels by 2020, a target that reflects the importance of aligning with U.S. policy.

CanadianDriver

Canadian teams win awards in EcoCAR Challenge

Canadian Driver

June 7, 2010

<http://www.canadiandriver.com/2010/06/07/canadian-teams-win-awards-in-ecocar-challenge.htm>

Ottawa, Ontario – The three Canadian university teams participating in the [EcoCAR Challenge in San Diego](#) have been named winners of individual awards in the 2010 finals held in San Diego. The overall winner for 2010 was the University of Mississippi.

The three-year competition challenges engineering students from 16 universities to re-engineer a donated GM vehicle to minimize its fuel consumption, petroleum use and emissions, while maintaining its utility, safety and performance.

The University of Victoria (B.C.) placed fourth overall and won four awards, including the NSF Incoming Advisor Award. The University of Ontario Institute of Technology (Oshawa, Ontario) placed sixth overall and won two awards, including the Lane Change Award. The University of Waterloo (Ontario) placed eighth overall and won the NSF Outstanding Long Term Advisor award.

Natural Resources Canada and Transportation Canada jointly contributed \$500,000 to the program over three years. Last year, the University of Victoria placed second to the University of Ohio for its design of an extended range electric vehicle that runs on electricity and E85 ethanol.

Local winners at EcoCAR Challenge

570 News

June 7, 2010

<http://www.570news.com/radio/570news/article/63332--local-winners-at-ecocar-challenge>



The University of Waterloo comes home with an award from the EcoCAR Challenge in San Diego.

16 universities, including three from Canada, took part.

It's the culmination of a three-year competition which had students re-engineer a GM vehicle.

Their task: to make it more fuel efficient and reduce emissions, while at the same time ensuring it remains safe and maintains its performance.

The team from the University of Waterloo placed eighth overall and won the NSF Outstanding Long Term Advisor award.

The Epoch Times

Canadian Team Places Fourth in International Ecocar Competition

Epoch Times

By Joan Delaney

June 7, 2010

<http://www.theepochtimes.com/n2/content/view/36996/>

Teams of engineering students across North America have been vying with each other in an ongoing three-year competition that gives them unprecedented access to the world of vehicle design.

In this year's contest, the 2010 EcoCAR: The NeXt Challenge, teams from 16 universities in Canada and the United States competed to convert a GM-donated SUV into a hybrid, fuel cell, or electric vehicle while maintaining performance, safety, and consumer appeal.

The University of Victoria placed fourth overall and won four awards, including the National Science Foundation (NSF) Incoming Advisor Award. The University of Ontario Institute of Technology placed sixth and won two NSF awards, while the University of Waterloo placed eighth and won the NSF Outstanding Long Term Advisor award.

The government congratulated the teams for their efforts.

"The EcoCAR competition offers an excellent showcase for the talent and ingenuity of these students, as well as bringing us closer to our goal of realizing the full economic and environmental potential of these technologies," Christian Paradis, Minister of Natural Resources Canada, said in a statement.

Mississippi State University placed first, with a score of 844 out of a possible 1,000 points. Second-place winner was Virginia Technological Institute, while Pennsylvania State University came third.

The Ecocar challenge is a three-year collegiate advanced vehicle technology engineering competition established by the U.S. Department of Energy and General Motors. GM provides production vehicles, vehicle components, seed money, technical mentoring, and operational support.

"When I look at the team members during this competition, I see passion in their eyes," Karl Strake, VP for Global Development at GM, said at the awards ceremony.

"That is what we need in this industry, and for the future of automobiles."

The finals for the 2010 competition, year two of the program, took place in San Diego last week. Aspects such as the vehicles' drivability and performance were tested at the GM Desert Proving Ground in Yuma, Arizona.

The students explore a variety of cutting-edge clean vehicle solutions, including full-function electric, range-extended electric, hybrid, plug-in hybrid and fuel cell technologies. They also incorporate lightweight materials into the vehicles, improve aerodynamics, and utilize alternative fuels such as ethanol, biodiesel, and hydrogen.

The first year of the competition involved designing and modeling a proposed vehicle architecture and related component selection. In the fall of 2009, GM donated a new Saturn Vue to each school. In years two and three, students will make their design a reality and develop a working vehicle that meets the competition's goals.

The teams come together at the end of each academic year to compete in more than a dozen static and dynamic events. Prizes each year amount to more than US\$100,000.

Last year, the University of Victoria placed second to the University of Ohio for its design of an Extended Range Electric Vehicle that runs on electric power and E85 ethanol, one of the fuels approved for use in the

competition.

Natural Resources Canada and Transport Canada jointly contributed a total of \$500,000 to the program over three years.

Mississippi State University Takes First in Second Stage of EcoCar Challenge

HybridMile.com

June 7, 2010

<http://www.hybridmile.com/news/mississippi-state/>



The [EcoCar Challenge](#) entered its next phase last week by announcing that [Mississippi State University](#) won the first place prize for Year Two. This three-year contest pits 17 universities against each other with hopes of developing [automobiles](#) with high fuel economies and low emissions. The Mississippi State EcoCar Team combined a 21 kWh A124 Systems battery, a 1.3-liter turbodiesel engine and a 75kW generator to produce a range-extended vehicle. Student designers indicated that the prototype could travel up to 60 miles on all-electric power and achieve 118 miles per gallon.

The second place prize in Year Two was awarded to [Virginia Tech University](#) and its extended-range ethanol vehicle. This entry uses a 2.4-liter ethanol engine, 21kWh battery pack and 90kW Ballard electric motor to reduce fuel consumption by 78% compared to a comparable model. EcoCar Challenge judges gave the third place prize to [Penn State University](#) and its extended-range biodiesel vehicle. Penn State students combined a 12.8kWh battery pack, a 1.3-liter biodiesel engine and an 110kW electric motor to produce an equivalent fuel economy of 57 [miles per gallon](#).

The EcoCar Challenge is sponsored by General Motors and the U.S. Department of Energy with the hopes of finding the next generation of vehicles designs. In the first year, university teams submitted designs for greener vehicles that were judged by industry experts. In early 2010, these teams entered Year Two by attending workshops at Embry Riddle Aeronautical University. All 17 teams used resources from the university and General Motors to put their initial designs into action. General Motors allowed EcoCar participants to test their vehicles at the company's Desert Proving Grounds in Yuma, Arizona. These tests allowed judges to assess criteria including fuel efficiency, performance and safety against the promises of initial simulations.

We will need to see how the Mississippi State, Virginia Tech and Penn State teams fair as we head into Year Three. These innovations in [automobile](#) design are not only important for this generation of vehicles but the next generation. Student designers are gaining access to parts, research tools and funding needed to put new ideas into motion. As the EcoCar Challenge recedes into the rearview mirror, participants will become auto designers and executives responsible for greener vehicles in the next 50 years. We must hope that these young experts stick to their guns as they enter the auto industry rather than sticking to the status quo.



Rose-Hulman's EcoCAR team earns Top Vehicle Appearance & Outreach Presentation Awards

Terre Haute Tribune-Star

June 8, 2010

<http://tribstar.com/schools/x93706999/Rose-Hulman-s-EcoCAR-team-earns-Top-Vehicle-Appearance-Outreach-Presentation-Awards>

Even though it may have a camouflage color scheme, Rose-Hulman Institute of Technology's hybrid-electric sport utility vehicle was noticed during this year's finals of the EcoCAR Challenge from May 18-27 in Yuma, Ariz., and San Diego.

Rose-Hulman's vehicle earned the Best Vehicle Appearance Award and Best Outreach Presentation Award (\$250) from competition judges. The team also earned an award for MATHWORKS modeling effectiveness.

"Our vehicle turned a lot of heads," stated faculty adviser Zac Chambers, associate professor of mechanical engineering. "Because most of the Year II competition was taking place in the desert (General Motors' Western Proving Grounds near Yuma, Ariz.), we went with the camouflage color scheme. It has received favorable comments throughout the competition."

The outreach presentation covered aspects of activities conducted during the past year to educate others about Rose-Hulman's vehicle and the importance of sustainability. Team members have used blogs, streaming video, Twitter updates, Facebook groups and other forms of social media to communicate messages about energy efficiency and advanced vehicle technologies to the public. The team has also hosted educational exhibits and attended community events to update the public about energy-related issues.

Outreach Coordinator Thomas Reives, an engineering management graduate student, made the outreach presentation to 11 judges, all of whom are from EcoCAR sponsor organizations. He was the only engineering major to make a presentation in the category. All of the other teams utilize public relations and marketing majors to organize community outreach and media relations activities.

"Thomas did an exceptional job representing the team and Rose-Hulman. The judges were impressed that we had someone making the presentation who had so much technical knowledge," Chambers said.

Team leader Cameron Hazel helped EcoCAR in promoting the event through a series of satellite media interviews.

Meanwhile, other team members were successful in getting the vehicle operational with its biodiesel engine and electric motor, powered by state-of-the art battery technology provided by Indiana-based EnerDel Inc. However, this remarkable achievement came after the drivability testing period.

"This team has worked very hard, under demanding conditions, to accomplish many great things. While we weren't able to complete the required driving tests, we were one of the few teams to get a vehicle to operate as a hybrid-electric," said Chambers. "This has been quite an educational experience for our students. We have learned a lot from professional engineers and technicians, some of best in the business. This knowledge will be invaluable as the team moves forward to the third year of this competition."

Karl Stracke, GM vice president of global vehicle engineering, said, "Each team experimented with technologies and made great strides towards optimizing fuel efficiency and minimizing emissions. With critical and successful testing under their belts, we're excited to see the teams refine and improve their vehicles in the last leg of the EcoCAR competition."

Rose-Hulman is the only Indiana college or university participating in EcoCAR, a three-year competition that

demonstrates leading-edge advanced transportation technologies. Other colleges in the competition are Embry-Riddle Aeronautical University; Georgia Tech; Michigan Technological University; Mississippi State University; Missouri University of Science and Technology; North Carolina State University; Ohio State University; Pennsylvania State University; Texas Tech University; University of Ontario Institute of Technology; University of Victoria; University of Waterloo; University of Wisconsin; Virginia Tech; and West Virginia University.



EcoCAR Year 2 Results

North Carolina Solar Center

By Erik Schettig

June 8, 2010

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EcoCar team members from across North America met up for two weeks during May in Arizona and California to compete in Year 2 of a 2 year competition. In Phoenix, Arizona students had the opportunity to test their vehicle on the GM proving grounds and in San Diego California students presented to industry leaders and competition officials the hard work they have put in over Year 2. NC State EcoCar team received the Most Improved award and are proud to show off the strong work and effects from over the first two years. To see all awards presented and results from Year 2, visit the [Green Garage Blog](#).

