



Mississippi State University

**X-cited!**

### Special points of interest:

- Read about how and what we did at competition, and our new Chevrolet Equinox!
- See what each thrust has been working on this summer, article below.
- Christopher Whitt, powertrain thrust leader, is featured in our Student in the Spotlight section.

## Team Takes Home Awards at Competition!

A new SUV and several awards capped off the first year of competition for the Mississippi State University Challenge X team.

At the Year 1 Competition, the team made several presentations based on their year's work. The team took third place for their Technical presentation, and second place for their Project Initiation Approval presentation. This presentation is similar to presentations that engineers give to management after they design a new vehicle. The presentation includes the design components and general mechanics of the vehicle.

"The judges commented that they were impressed with the balance between emissions and fuel efficiency on our design," said David Oglesby, Team Leader. "Several of the judges



The team poses with their new Chevrolet Equinox at Millsaps Chevrolet in Starkville.

remarked that we had a well organized approach."

The outreach team also did well at the competition, winning first place in the category of Best Community/Media

Outreach, and holding a tie with the University of Waterloo for first place on Overall Outreach. "We won because we made the goals of the Challenge X program our own goals, and pas-

## Thrust Update Area: What are they working on?

### Vehicle Modeling and Controls

Year 1 was challenging and entertaining for the modeling and controls thrust. Now we are focusing on performing simulation-in-loop and hardware-in-loop tests. We are also preparing for upcoming workshops.

Thrust Leader: Kiran Solanki

### Mechanical

We have mounted the engine to the test stand, removed the driveshaft from our Equinox. We are currently getting our VW engine ready to run!

Thrust Leader: Brian Christian

### Electrical

We are working diligently toward installing our Ballard drive. We are also preparing for upcoming workshops.

Thrust Leader: Ron Lewis

### Powertrain

We are designing the new rear cradle and the cooling system for the electric motor and controller.

We have also been working with our catalyst manufacturer and have received our emissions testing equipment.

Thrust Leader: Christopher Whitt

### Outreach Program

Year 1 competition was very exciting for the Outreach Team. Justin Crapps and Amanda McAlpin gave a presentation covering the outreach team's efforts over the entire year. The team was very pleased to be able to take home the Best Community/Media Outreach Award, and were tied for First Place Overall Outreach.

Now we're preparing for year 2! We are planning a big kick-off event for year 2 of the competition, and a recruiting event to be set for early September.

Thrust Leader: Justin Crapps

sionately pursued them to educate others about energy efficiency,” said Outreach Team Leader Justin Crapps,

Through the team’s presentations and reports from the first year on the vehicle design, General Motors judges decided that the team was ready to handle a vehicle of their own. The team was awarded a 2005 Chevrolet Equinox, which they will use to implement their design. The vehicle was shipped to Millsaps Chevrolet in Starkville and was handed over to the MSU team on July 12. The event was covered by both local newspapers and television stations.

While at the competition, the team was able to attend several technical workshops and visit the General Motors proving ground. The knowledge gained will prove useful to them in the upcoming

year as they implement their design from the first year into the vehicle, creating a vehicle that will be more fuel efficient.

The team chose a through-road-parallel hybrid electric architecture for their vehicle, using B20 bio-diesel fuel.

## Welcome and Thanks to our Newest Sponsors!

*W. H. Brady  
GOJAKS  
Greenhills Software*

## Atta-Dawgs

- To the **entire team** for a great year 1!
- Way to go Outreach Team! **Justin Crapps, Amanda McAlpin, and Terri Christian**. Two first place trophies and cash awards!
- Thanks to **Terri Christian** for bringing the Enya CD on our long grueling road trip to competition!

## Upcoming Events

August 1-5 —Mototron Motohawk software training in Columbus, IN  
August 11-13—MathWorks Workshop, Boston, MA

## Students in the Spotlight

*This column gives you a behind-the-scenes look at the students who are working on the Challenge X competition at MSU.*

This week’s student in the spotlight section features Christopher Whitt, thrust leader for the Powertrain group. Christopher has been a member of the MSU Challenge X team since it began, and is described by other teammates as reliable and always willing to help. That is why we chose him for this edition’s spotlight.

**Name:** Christopher Whitt  
**Hometown:** Lauderdale, MS  
**Major:** Mechanical Engineering

Christopher Whitt has been around cars for most of his life. So when he came to college, mechanical engineering seemed a logical choice, and when he learned about Challenge X, he jumped at the chance to participate in the future of car design.

“We are making a difference in so many different ways,” said Christopher. We



*Christopher looks under the hood of the Equinox.*

are showcasing new technologies and ideas that haven’t been implemented in production vehicles. We will use these innovations to help improve the public’s perception of hybrid vehicles by showing that you don’t have to give up performance to get a cleaner vehicle.”

Christopher says that working on Challenge X gives him technical experience in the field of automotive engineering, experience he wants to someday use in the work field.

“I feel that I am gaining valuable experi-

ence in automotive design and engineering while also making important contacts with GM personal as well as many automotive suppliers.”

Technical experience is not all that Christopher has gained from Challenge X. He has also participated in the outreach program, speaking about the competition to grade school students. He says he has also acquired time management; and by being a thrust leader, he has learned management skills through keeping his team motivated. Christopher believes all these skills will help him in the future.

In fact, Challenge X was an important factor in his decision to attend graduate school instead of seeking employment after obtaining his undergraduate degree. Now he says he wants to pursue an even higher degree.

“I’m currently planning to pursue another advanced degree in engineering,” said Christopher. “Then after completing my degree, I want to work in the automotive field where I plan to work in the area of powertrain design.”

*For newsletter suggestions or corrections, please contact Amanda McAlpin at [amcalpin@cavs.msstate.edu](mailto:amcalpin@cavs.msstate.edu).*