

University

PSU students changing auto landscape

by Janet Robbins

It was the third week of May. Many Penn State students were still recovering from the orgy of caffeine-fueled studying that is known as finals week. Seniors were ditching their bar tour T-shirts in favor of caps and gowns. Future seniors were settling in at mom and dad's house, having bonfires and catching up with old high school friends. Others were left hanging around State College, enjoying their precious few days of summer before classes would beckon them into the now-stuffy buildings.

The days seemed a little shorter for members of Penn State's Challenge X Team.

With less than a week to go until the Challenge X finals in Detroit, Mich., team members had no time for campfires and cocktails. They were busy putting the fin-

ishing touches on their competition vehicle: a 2005 Chevrolet Equinox, the hybrid status of which has been three years in the making.

The team has been working on the vehicle since 2004, explained Melanie Fox, this year's team leader. After a year of planning, the team received a gift from General Motors: the Nittany Lion-emblazoned vehicle.

"GM donated a 2005 Chevy Equinox to each of the 17 participating schools," Fox said. "We tore it apart, manufactured and installed our hybrid components and created a 'mule vehicle' for competition."

explained Michael Casper, editor and public relations contact for the Pennsylvania Transportation Institute (PTI). PTI is an interdisciplinary research unit at Penn State which provides facilities and manages funding for the Challenge X team.

Casper, a former editor for *Voices of Central Pennsylvania*, explained that the vehicle's electric batteries charge while the internal combustion engine runs the car. The batteries, comprised of nickel metal hydride (NiMH), take over some of the engine's workload once they are powered, increasing engine efficiency and saving gasoline.

Opponents say hybrids aren't worth the expense if consumers are looking to buy them for economic reasons. It would take five years or more to recoup the extra cost. Additionally, fuel efficiency often depends

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on the condition of the road and the way the driver handles the vehicle.

But proponents say gas costs are only one reason to buy a hybrid. Reducing harmful emissions are the other.

"Emissions are hugely important of course, in terms of preserving the safety of human and animal life, as well as basic environmental interests," Casper said.

Critics of hybrid vehicles argue that batteries from hybrid vehicles may be doing more harm than good. Batteries need to be replaced, and their disposal could cause a pollution issue.

But most hybrid-producing car companies have established recycling programs for used batteries and offer dealers a cash incentive for each battery returned to the company.

According to information provided by Toyota, every part of the battery is reused. Honda describes the "recycling" process a bit differently. It includes disassembling and sorting the materials; shredding the



Photo by Melanie Fox

Tim Cleary who graduated this year with a bachelor's degree in mechanical engineering, helps put the finishing touches on Penn State's Challenge X entry. The team placed fifth among 17 competitors.

plastic material; recovering and processing the metal. The alkaline material is neutralized and sent to a landfill.

Another concern is that battery replacement will contribute to the cost of owning a hybrid.

"I did have to replace the battery once and it was under warranty," said Honda Insight owner Paul Moses. "I've priced them at up to \$5,000, but few people ever have to pay that."

The U.S. House of Representatives may be among those who oppose hybrid vehicles. A June 23 attempt by Rep. Emanuel Cleaver, D-Mo., to require House members to lease hybrid or alternatively fueled vehicles was withdrawn at the last minute.

Cleaver's proposal was rejected because of the relative scarcity of alternative fueling stations in some states, claimed John Santore, House Rules committee spokesman, yet hybrid vehicles run on traditional gasoline.

Car companies as well as proponents like Casper and Fox are hopeful about the future of hybrids, and with good reason. Worldwide hybrid sales more than doubled between 2004 and 2006. As gas prices rose above \$3 per gallon across the United

States, sales for Toyota Prius are up almost 200 percent from a year ago while most SUV sales remained in the double-digit percent increases, according to a national association of car dealers.

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PSU's own hybrid arrived in the Motor City days before the Challenge X team in order to go through a battery of tests and qualifying trials. Days later, Penn State placed fifth among 17 competitors for the third year in a row, garnering a \$3,000 prize.

In June, the modified Equinox and its creators returned home for the summer, which means there will be a little down-time for both parties.

In less than a year, the Penn State Challenge X team will be back in full-force as they compete in the fourth and final year of the contest. But for now, the 30 undergraduate and graduate students and professors who make up the team will finally have the chance to recharge their batteries.