

UCSD Engineering Students Drive Into the Future With Electric Racecar

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UC San Diego engineering students received a grant from Plug-In America to design and build an electric racecar to help fuel the "green" auto movement.

A group of engineering students at UC San Diego are helping to fuel the trend toward "green" vehicles by designing and building an electric racecar. The students, who are members of the UC San Diego Society of Automotive Engineers (SAE), will race their hand built electric car against more than 30 college and university teams from across the globe during the Formula Hybrid International Competition May 4-6 in Loudon, NH, at the New Hampshire International Speedway.

The UC San Diego team built its Formula Hybrid car using a \$15,000 grant from Plug In America, a nonprofit organization that works to accelerate the shift to plug-in vehicles powered by clean, affordable, domestic electricity. The grant, intended to encourage engineering innovation at California colleges and universities, was funded by the California Air Resources Board (CARB). Other grant recipients were Cal Poly Pomona, Cal Poly San Luis Obispo, and UC Irvine. Other sponsors of the program include the SAE, the Institute of Electrical and Electronics Engineers, and major automakers, such as Toyota, Chrysler and General Motors.

"We are proud to make these grants to outstanding student teams at Cal Poly Pomona, Cal Poly San Luis Obispo, UC Irvine, and UCSD," said Jay Friedland, legislative director of Plug In America. "We were particularly impressed with the rigor and ingenuity of this year's projects and gratified to see the growing interest in electricity use for transportation."

Under the program, students design and build an open-wheel, single-seat car that must conform to a strict set of rules, or formulas, that emphasize, encourage, and promote drivetrain innovation and fuel efficiency. A Formula Hybrid vehicle must use at least 15 percent less gasoline than a comparable standard Formula SAE racecar operated under the same conditions. And, unlike the traditional Formula SAE gas-powered car, Formula Hybrid teams are encouraged to incorporate used racecar parts rather than build everything from scratch.

The UC San Diego team also built a gas-powered Formula SAE car which it will race in Fontana, Calif. in June. The students unveiled both cars on April 23 during Earth Week 2.0 at UC San Diego.

"We decided to also build an electric car this year because of the support and push from industry," said Jerry Curiel, a mechanical engineering student in the Jacobs School of Engineering and president of the UC San Diego SAE. "It also reflects the goals of UCSD to become the 'greenest' university in the United States. More importantly, it's a great opportunity to make green technologies fun and exciting in the eyes of our fellow students."

The Formula Hybrid competition has a two-year design cycle, meaning that during the first year teams may enter the competition with a fully electric car and come back the next year with a full hybrid powertrain engine.

"We are hoping to be able to work closely with key companies within San Diego during the next 12

months in order to develop our series hybrid vehicle for next year,” Curiel said. “California is fast becoming the new Detroit for green vehicles; we hope to take advantage of this and hopefully bring the Formula Hybrid trophy stateside within the next couple of years.”

Curiel said that Plug-In America, along with automotive industry leaders, are looking more toward academia to help pave the path for the design of more fuel-efficient, green vehicles.

“There are mixed feelings about developing electric vehicles and plug in hybrids, with the opposition stating that we are merely moving the pollution from the exhaust of a car, to the exhaust of an electric company,” he said. “While this is true, it doesn't address the fact that this transformation of energy usage is far cleaner for the environment. As engineers of the future, we believe that people need to look at the broader picture of being ‘green.’ We want the world to be a better place for all.”

Provided by University of California - San Diego
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