Oregon Tech

OIT/ETIC Success Story

The **Oregon Renewable Energy Center** is moving OIT and the State to the head of the class in America's sustainable-power industry.

The best known project involving OREC has been the Rose House, an 800-square-foot home in Southeast Portland built by a retired couple who have been dedicated environmentalists for decades. It is one of about 500 "zero energy" homes in the country. OREC operates equipment that constantly monitors the structure at numerous locations, measuring energy consumption and generation as well as interior and exterior wall temperatures.

OREC teams also monitor a home in Cannon Beach, which employs geothermal energy available through tapping wells hundreds of feet deep and transferring the heat found in water at the level into the home for heating. The builders of the home turned to OIT for advice on geothermal technology because OIT is the only campus in the country entirely heated and cooled by deep-water geothermal wells. The University also boasts the 28-year-old Geo-Heat Center.

Fuel-Cell-Powered Vehicle: OREC staff and students have built "the lowest cost fuel-cell-powered vehicle in the country" using a Proton Exchange Membrane Ballard 1.2 KW Hydrogen fuel cell as its sole power source that is capable of driving the 280 pound vehicle at 55 MPH. The vehicle uses a bank of super capacitors to store the electricity from the fuel cell rather than batteries.

The vehicle uses a bank of super capacitors to store the electricity from the fuel cell rather than batteries. The hydrogen is stored in the latest light-weight carbon-fiber storage tank. The motor drive, electrical generator and controller are the newest generation of electrical and electronic control technology. This project represents the first step in the development of an entirely self-contained fuel cell powered vehicle of tomorrow.

OIT's Sponsored and Pre-College Programs reach out to students of all ages to broaden their hands on experience and strengthen the curriculum to career connections in science and technology. One of our most exciting programs was GRAD: Graduation Really Achieves Dreams which was a 4-week residential camp co-sponsored by ETIC, AT&T, the National Council for Community and Educational Partnerships, Oregon GEAR UP, and Transcanda.

Students learned about GPS/GIS, launch a high altitude balloon launch, studied Crater Lake National Park, and made film of microscope water life.