

Contact: Ilhami Yildiz
805-756-6153
iyildiz@calpoly.edu

Cal Poly Algae-to-Biofuel System Awarded

SAN LUIS OBISPO – A Cal Poly research effort won a Grand Challenge award in a competition sponsored by the USDA and the 25x25 Alliance. The award is for the development of systems or technology that will help farms and ranches produce 25 percent of the nation's energy by the year 2025 without impacting food production.

Cal Poly's winning entry, "Sustaining Civilization Under Cover," used photobioreactors, a system of enclosed solar tubes, to mass-produce algae, one of the most promising forms of biofuel.

In addition to generating a renewable energy source, the photobioreactors use carbon dioxide, a harmful greenhouse gas, in the production of algae – effectively converting these harmful emissions into a harmless and renewable source of energy. A powerful example of this conversion is the capture of flue gases from industrial venting. Rather than emitting harmful flue gases that contribute to global warming, the gases can be captured and used in the production of algae, which is then converted to biofuel.

"The process has multiple benefits," said Ilhami Yildiz, Associate Professor of BioResource and Agricultural Engineering. "Having a renewable energy source should help stabilize fuel prices and curb dependency on foreign oil. It shouldn't impact the cost of agricultural land nor compete with food production as a use of the land. A byproduct of the algae production can even be used as a protein-rich source of animal feed. The process is a completely sustainable and enriching cycle."

Part of an interdisciplinary team including the private sector, industrial and institutional partners, Cal Poly is fast becoming a leading institution for the applied research and development of controlled-environment algae-production systems. In addition to The Grand Challenge Award, the team also received a \$400,000 grant from the USDA, ARI, BKS Energy and Energy Alternative Solutions, Inc. for the continued research of microalgae-to-biofuel production in controlled environments.

Grand Challenge recipients were recognized during BioEnergy Awareness Days (BEAD II) in Washington, D.C., June 19-22. The competition challenged academic institutions to redefine the role they play in the development and delivery of renewable energy and alternative fuels from farms and forest land. Cal Poly was one of 13 universities recognized with winning entries.

The 25x25 Alliance is a cross-section of business, labor, conservation and religious groups dedicated to developing renewable energy and increasing quality employment opportunities in rural America.



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805.756.7266
polynews@calpoly.edu