



Post-doctoral Research Position in **Biofuels Genetic & Bioprocess Engineering**

A post-doctoral position is immediately available to work on a collaborative ARPA-E sponsored research project on the **genetic engineering of hydrocarbon synthesis into *Rhodobacter*** in the Curtis Laboratory (<http://sites.google.com/a/psu.edu/curtislab/wrc2/>) in the department of Chemical Engineering. The project is a collaboration with the laboratories of Joe Chappell in Agricultural Biotechnology (<http://www.uky.edu/Ag/Agronomy/Chappell/welcome.htm>) at the University of Kentucky and the Logan Laboratory in Civil & Environmental Engineering (<http://www.engr.psu.edu/ce/enve/logan/>) at Penn State. The post-doc will transform *Rhodobacter* with genes that have been isolated from an alga that produces branched C₃₄ isoprene hydrocarbons. This complements an ongoing collaboration between the Chappell and Curtis labs where this biosynthetic pathway of *Botryococcus braunii* is being elucidated and transformed into other photosynthetic hosts (<https://sites.google.com/a/psu.edu/curtislab/research-projects/algae>). The genetic engineering will build upon our ongoing research that is developing *Rhodobacter* as a membrane protein expression platform (<https://sites.google.com/a/psu.edu/curtislab/research-projects/rhodo>) as well as patented low-cost plastic lined bioreactor technology that is being developed for both environmental applications and lignocellulosic biomass fermentation where it is critical to achieve low production costs (<https://sites.google.com/a/psu.edu/curtislab/environmental>). An important component of the research will include working with a graduate student to refine a process economic model that will examine alternative process scenarios including direct delivery of electrons in a fuel-cell configuration, or use of low-cost plastic bag bioreactors in an autotrophic growth mode where H₂, O₂ and CO₂ gasses are stoichiometrically consumed. The candidate should have experience in molecular biology techniques and interest/experience in economic feasibility analysis.

To apply for this postdoctoral position, inquire with CV and a statement of interest to **Dr. Wayne Curtis** (wrc2@psu.edu copied to bgreenaway@engr.psu.edu). Please include "Rhodobacter Postdoc" in the subject of the email to help identify the email.

Web	https://sites.google.com/a/psu.edu/curtislab/research-projects/electrofuels
Location	Penn State University http://www.psu.edu/ State College, PA http://en.wikipedia.org/wiki/State_College,_Pennsylvania
Start Date	Immediately (duration up to 3 years)
Apply to:	wrc2@psu.edu copied to bgreenaway@engr.psu.edu

Additional Information about Penn State

Penn State Research: In 2009, Penn State ranked ninth nationally in science, engineering R&D spending. Expenditures on science and engineering R&D in 2008-09 totaled about \$753 million, up by 7 percent from the year before.

<http://www.rps.psu.edu/>

Penn State Surroundings: State College is ranked in the top twenty of *Kiplinger's Personal Finance* magazine's "Fifty Smart Places to Live." The community is also consistently rated among the safest in the nation. The town surrounding Penn State (State College, PA) is a classic college town. There are hundreds of thousands acres of State Parks and Forest Lands surrounding Penn State (Mt. Biking, Hiking, Fishing ... within 10 miles of campus)

http://en.wikipedia.org/wiki/Rothrock_State_Forest

Penn State Campus: The University Park campus itself hosts more than 50,000 students and employs 22,000 people. The Nittany Lion football team, a Big Ten Conference member, draws throngs to the 107,282-seat Beaver Stadium on campus. Among several other highly popular facilities are the 16,000-seat Bryce Jordan Center, an entertainment arena, and the Center for the Performing Arts, one of Pennsylvania's major cultural resources. Off campus, the Penn State Downtown Theater hosts a broad array of national and international performing acts in music, theater, comedy, and more.

www.psu.edu