

Media Relations

EPA Awards Fellowships To Two UNH Undergrads Studying Biodiesel

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L-R: Ihab Farag, professor of chemical engineering at UNH; Brian McConnell '13 of Peabody, Mass.; Gina Chaput '13 of Merrimack. Credit: Lisa Nugent, UNH Photographic Services

DURHAM, N.H. – Two University of New Hampshire juniors researching how algae could produce fuel have received fellowships of nearly \$50,000 from the U.S. Environmental Protection Agency (EPA)'s National Center for Environmental Research (NCER).

Gina Chaput of Merrimack and Brian McConnell of Peabody, Mass., are among just 40 recipients nationwide of the Greater Research Opportunities (GRO) fellowships. The two-year GRO fellowships, for undergraduate environmentally related study, provide up to \$19,700 per year of academic support and \$9,500 for internship support.

 
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"Brian and Gina's research commitment, project dedication, collaboration with other students, and work ethic advanced our microalgae biodiesel studies to a higher level," says Ihab Farag, professor of chemical engineering at UNH, who mentors both students in their research on biodiesel. "They both got papers accepted for publication in the Energy, Utility & Environment Conference online journal. They are very deserving recipients of these prestigious fellowships."

The students have been exploring green microalgae grown in municipal waste water as a possible feedstock for biodiesel production. Chaput has been looking at environmental factors such as sources of nitrates, carbon dioxide fertilization, and nitrate starvation, to find the optimal conditions for micro algae growth and lipid (oil) production. McConnell has been exploring growing the algae in high-tech plastic bags that float on the surface of saltwater, eliminating competition with food crops, and making biodiesel production more economical.

"As a genetics major, my goal is to incorporate my studies into this project and genetically modify the algae so that there is a higher oil production for less biomass," says Chaput, who is also working with Estelle Hrabak, associate professor of plant biology and genetics. "My overall goal is to combine the studies and have an algae feedstock that can offer a plan of moving away from fossil fuels and toward a new energy source that would benefit society environmentally and economically."

"Growing microalgae locally will reduce U.S. dependence on foreign oil and enhance our energy security," adds McConnell, a chemical engineering major and student in the UNH honors program. In addition to this fellowship from the EPA, McConnell received the Scholars Award from the National Science Foundation earlier this year.

Both students are grateful to the GRO fellowship for easing financial pressures as well as for the fellowship's summer internship with the EPA. "Biofuels have been a passion of mine since high school, so the fact that I can use that passion beyond my education and for a real-life application is really a great feeling for me," says Chaput, adds that she has wanted to work at the EPA for several years.

"Graduate schools and future employers look for work experience, and there is no better place to get experience than at an EPA laboratory or office," McConnell says.

The GRO fellowship program encourages promising students to obtain advanced degrees and pursue careers in environmental fields. Eligible students will receive support for their junior and senior years of undergraduate study and for an internship at an EPA facility during the summer between their junior and

senior years. More information is at epa.gov/ncer/fellow.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

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Photograph available to download: http://www.unh.edu/news/cj_nr/2011/nov/bp02grant_01.jpg

Caption: L-R: Ihab Farag, professor of chemical engineering at UNH; Brian McConnell '13 of Peabody, Mass.; Gina Chaput '13 of Merrimack. Credit: Lisa Nugent, UNH Photographic Services

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