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UNH Students Compete In International Design Contest

Debra JohnnyBear

UNH College of Engineering and Physical Sciences

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UNH Students Compete In International Design Contest

Contact: [Debra JohnnyBear](#)

603-862-3102

College of Engineering and Physical Sciences

April 2, 2007

DURHAM, N.H. -- University of New Hampshire students will be among the college and high school students from throughout the U.S., Canada, and Mexico who participate in the 17th Annual International Environmental Design Contest (EDC) April 1-4 at New Mexico State University.

Twelve seniors from UNH are competing in this year's Design Contest. Andrew Clements (environmental engineering major), Tiffany D'Amour (business), Lisa Damiano (environmental engineering), Katherine Dietz (business), Shawn Dupont (business), Christopher Getman (business), Steven Granese (civil engineering), Michael Olson (environmental engineering), Jessica Tokson (environmental engineering), Bret Tolivaisa (environmental engineering), Eduard Viel (environmental engineering) and Amalia Wosiski-Kuhn (environmental engineering) will tackle Task 4: [Conversion of Biomass Resource to Useful Forms of Energy and Other Products](#). This year's design challenges revolve around water, its viability and availability and renewable energy sources. The students' faculty advisor is Jenna Jambeck, research assistant professor in UNH's Environmental Research Group.

Sponsored by the Waste Management Education and Research Consortium (WERC), which includes several universities and national laboratories in New Mexico, the annual contest involves tackling real-life problems provided by industry and government. The WERC EDC is the only contest in the world that provides a competitive challenge and means of interaction for university and high school students who are involved in environmental education. With seven years of participation and two overall wins, the UNH team has a strong history of performing well at this international competition. While focusing on the conservation of energy and natural resources, UNH's WERC team's (MicroCellutions' Inc.) goal is to provide farmers with innovative solutions to waste management for the betterment of the environment and the safety of the farmer.

As a responsible member of the global community, MicroCellutions, Inc. is progressing renewable energy technologies by designing a single-chamber, open-air microbial fuel cell (MOR-2007) that successfully converts cow manure directly into electricity. The MOR-2007 is designed to reduce maintenance, operational difficulty, energy requirements, odors, chemical oxygen demand (COD), and phosphorus, while minimizing the impact of current manure management practices on air and water quality. Residuals from MOR-2007 can be easily composted to provide bedding or land applied to cropland providing essential nutrients for plant uptake. This cyclical approach to nutrient management on the farm minimizes costs for additional fertilizers and bedding materials. MicroCellutions' innovative technology and design, along with their education of farmers about microbial fuel cell (MFC) technology through public outreach, will provide dairy farmers with an alternative and sustainable manure management system.

Lisa Damiano, UNH environmental engineering senior, said that "participating in an interdisciplinary group with students from business, civil engineering, and environmental engineering was a valuable learning experience. While selecting a project we focused on being innovative. We soon discovered that being innovative was much harder than anticipated

because along with learning about it, we had to create our own technology before we could even start to build our project. Although it was a lot of hard work, it was a fun project and I feel good about. We hope to represent UNH well at the annual competition.”

Participating in this year’s contest are 34 different university teams from all over the U.S. including Mexico, Canada, and Hungary, in addition to 25 teams that will participate in a separate concurrent high school competition. Teams will compete in seven different tasks for cash prizes, trophies, and worldwide recognition.

The UNH College of Engineering and Physical Sciences integrated several disciplines into this environmental engineering capstone senior design project. Students in the interdisciplinary group represent the following majors at UNH: Environmental Engineering-Municipal Processes, Civil Engineering, and Business-Entrepreneurial Venture Creation (along with Whittemore School of Business Professor Jeff Sohl). For more information, contact Jenna Jambeck at 603-862-4023, Jenna.Jambeck@unh.edu or www.werc.net.

The UNH WERC project was made possible thanks to the efforts of the students themselves, who raised money from outside sponsors to fund their trip to New Mexico. WERC 2006/07 Team (MicroCellutions’ Inc.) would like to thank the following financial contributors: John Aber (UNH vice president of research and public service); Appledore Engineering, Inc.; Aries Engineering, Inc.; Stephen Bolander (Dean, Whittemore School of Business and Economics); Mr. and Mrs. Larry J. Clements; DeFelice Corporation; Taylor Eighmy; Environmental Compliance Services, Inc.; Environmental Research Group; GeoInsight;, Inc.; Golder Associates, Inc.; N. Granese and Sons, Inc.; Hoyle, Tanner, & Associates, Inc.; Joe Klewicki (Dean, College of Engineering and Physical Science); MacGuire Group, Inc.; Malcolm Pirnie, Inc.; E.J. Prescott, Inc.; Ransom Environmental Consultants, Inc.; Resource Laboratories, LLC; Rath, Young, and Pignatelli, PC; Sanborn, Head & Associates, Inc.; Underwood Engineering, Inc.; and Waste Management Weston & Sampson Engineers, Inc.

Photo available to download: <http://unh.edu/news/img/werc07.JPG>

Caption: Twelve UNH senior engineering and business students participated in the 17th Annual International Environmental Design Contest (EDC) April 1-4 at New Mexico State University. Left to right: Andrew Clements, Steven Granese, Bret Tolivaisa (back), Amalia Wosiski-Kuhn (front), Eduard Viel (back), Lisa Damiano (front), Christopher Getman (back), Jessica Tokson (front), Michael Olson (back), Shawn Dupont (front), Tiffany D’Amour (front), Katherine Dietz (back) and Jenna Jambeck (front), research assistant professor in the Environmental Research Group and the faculty advisor.