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UNH Team Wins Top Prize at National Environmental Engineering Competition

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UNH Media Relations

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April 29, 2014

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The Granite State Ventures team of University of New Hampshire seniors (L-R: Daniel Crowley, Professor Jeffrey Sohl, Bridget Fay, Cole Jaillet, Andrew Nelligan, Jeffrey Moore) and their award-winning TiltOne power point tracking system for solar panels.

Credit: Lisa Nugent, UNH Photographic Services

challenges undergraduates from around the U.S. to develop technological solutions to one of five real-world environmental challenges. The UNH team chose to tackle an economic obstacle to solar panels: The energy “cost” of the system that moves them to track the sun during the day.

Called power point tracking systems, these systems draw energy generated by the solar panels to power the motor, making them inefficient. Further, solar panels lose energy during the day due to overheating. The engineers on the team, Jeffrey Moore and Andrew Nelligan, addressed both inefficiencies by utilizing thermoelectric generators to harness that excess heat for the energy that swivels the panels to follow the sun at an optimal angle as it passes through the sky.

“We created a system that’s really going to take care of a real problem,” said entrepreneurship and marketing major Daniel Crowley. Their system, which they call TiltOne, harnesses 22% more energy than traditional systems, they said.

While the engineers solved the technical problem and created a prototype of their design, the entrepreneurs – Crowley, Cole Jaillet, and Bridget Fay -- applied their business acumen to make TiltOne a success in the marketplace.

“We were the only team there with business as well as engineering majors,” said Jaillet, explaining their winning edge. “The engineers created this cool product, but it was up to us business majors to make it feasible.”

Scanning the landscape of their potential market – commercial facilities that might use rooftop solar panels – Granite State Ventures learned that less than 1 percent of the nation’s 5 million commercial buildings use solar

DURHAM, N.H. – A team of University of New Hampshire seniors won the INTEL Innovation award for the top project in the 24th annual Environmental Design Contest at New Mexico State University earlier this month. The team – three business entrepreneurship majors from UNH’s Peter T. Paul College of Business and Economics and two mechanical engineering majors from the College of Engineering and Physical Sciences, led by Paul College professor Jeff Sohl – won for their novel approach to solar panel tracking systems.

Calling themselves Granite State Ventures, the UNH team was one of 19 competing.

The contest, hosted by the Waste Management Education and Research Consortium (WERC),

panels, despite the fact that “the vast majority of commercial buildings are friendly to solar power,” said Moore.

The students’ marketing plan addressed pricing, regulatory issues and incentives, payback period, and competition. With approximately 4.9 million buildings in their market share and a solar market that’s expected to grow revenues by 8 percent in 2014 alone, TiltOne seemed poised for success.

The judges, experts from industry and government, agreed. “This award proves that the project works,” said Jaillet.

“I believe this is a tribute to our ability at UNH to successfully work across disciplines. I look forward to continuing to offer unique interdisciplinary activities such as this to our students in the future,” said Sohl, who is the director of UNH’s Center for Venture Research. In addition to Sohl, the team was guided by faculty mentors Barbaros Celikkol and Brad Kinsey, both professors of mechanical engineering.

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 12,300 undergraduate and 2,200 graduate students.

Photograph available to download: <http://www.unh.edu/news/releases/2014/04/images/werc2014In-1214.jpg>

Caption: The Granite State Ventures team of University of New Hampshire seniors (L-R: Daniel Crowley, Professor Jeffrey Sohl, Bridget Fay, Cole Jaillet, Andrew Nelligan, Jeffrey Moore) and their award-winning TiltOne power point tracking system for solar panels.

Credit: Lisa Nugent, UNH Photographic Services

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