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Advanced energy inspires Ohio curricula Workshop focuses on application of energy technology

Aug 12, 2009

Nine science and math teachers from high schools throughout southeastern Ohio stood huddled in the shadow of Ohio University's compost facility last Thursday in the midst of a lively debate on the poor compostability of purple-skinned vegetables. From there, the conversation drifted to the acid-content of oak leaves and finally to the problems with adding meat scraps to a home compost bin.

While many of the teachers composted and gardened at home and were familiar with composting techniques, none had seen a compost system as large as the one that sat before them.

Since January, the [Ohio University compost system](#) has been turning campus food waste and biodegradable service ware into toxin-free fertilizer for the university grounds -- a prime example of how advanced energy technologies are changing the everyday behavior of large communities.

For the teachers, whose visit to the compost site was part of a four-day Science, Technology, Engineering and Mathematics (STEM) Education Coalition workshop, the facility was an ideal place to wrap up three days of tours and training sessions before sitting down together to develop classroom curricula.

The STEM workshop was held by the Ohio Appalachian Educators Institute (OAEI), a partnership between [Ohio University-Southern](#) and the [Voinovich School of Leadership and Public Affairs](#), with funding from the National Educators Association (NEA) Foundation and the AT&T Foundation. Both foundations are part of a group of nearly 600 organizations, including the U.S. Department of Education, that support STEM nationwide, providing educators and students with tools to promote academic achievement and career interest in mathematics and the sciences.

Asked by the NEA Foundation and the AT&T Foundation to participate as a rural partner on the high school level, interim director Lesli Johnson said the OAEI chose to concentrate this year's four-day workshop on advanced energy.

With an increased nationwide focus on the implementation of advanced energy technologies, it is more important than ever that students gain the knowledge and the training they need to thrive in a changing workforce, said Johnson.

Seven southeastern Ohio school districts sent teachers to participate in the workshop. The first three days introduced participants to various Athens business owners and members of the university community who are leading the way in advanced energy technology. On the fourth day, after a presentation by curriculum expert Don Washburn of the Lawrence County Education Service Center, the teachers worked in small groups to develop curricula that they will introduce into their classrooms this fall. Their curricula will also be posted online for other teachers to view and utilize.

In addition to the tour of the compost site, the teachers visited Ohio University's Ecohouse, a university-owned student rental that has been retrofitted with the latest energy-saving technology, and the Innovation



A total of nine high school teachers from seven school districts throughout southeastern Ohio participated in the workshop, which allowed them to conduct hands-on experiments.



Associate Professor of Civil Engineering Ben Stuart shows an algae sample to the participating teachers.

Photographer: Kevin Riddell

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Center, which houses an array of sustainable business start-ups.

The educators also heard from a variety of Ohio University professors about innovative research being done in advanced energy and sustainability initiatives on the university campus, including work being done to raise environmental literacy among students.

"The OAEI/STEM workshop really opened my eyes to what's being done in advanced energy systems," said Lawrence King, who teaches physical science at Warren High School in Warren County. "I'm excited about bringing what I've learned back to my students, particularly the information about hydrogen generation, which could be the wave of the future."

"Showing our students how the things they learn in the classroom are implemented and relevant in the real world is very important," added Randy McClay of the Valley Local School District in Scioto County. "We've been able to gather a lot of good examples over the past three days."

Johnson was equally pleased with the outcome. She and her team are already working to plan two more OAEI/STEM programs in 2010 and 2011.

"We've received interest from math teachers in holding one workshop devoted exclusively to math, given how difficult it can be to find real-world applications to aid in teaching math to students," she said. "We're also considering going a little broader next year, focusing on the environment in general."

"(It's been) fun... learning about so much new and exciting research," McClay remarked as the group made its way through the woods, back to the Voinovich School from the compost facility. The rest of the group unanimously agreed.

Related Links

Voinovich School of Leadership and Public Affairs: <http://www.voinovichschool.ohio.edu/>
Composting Project at Ohio University: <http://www.ohio.edu/sustainability/Compost.htm>

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