Project sheds light on solar energy

By **Theresa Freeman / Daily News Staff**
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This fall, when students ask three MetroWest teachers about solar energy, the educators will be able to answer from actual experience.

Teachers from Ashland and Franklin public schools and a professor from Dean College in Franklin have been studying solar power during the sunny summer break so they can integrate what they learn into lessons this school year.

"It's going to make it real for my kids," said June Thall, a teacher at Remington Middle School in Franklin.

Students enter Thall's seventh-grade science classes already familiar with many technologies. Now, she hopes to get them excited about solar energy by discussing more advanced technology.

"They come in knowing an awful lot. I have no delusions I'm ahead of the curve," said Thall. "It's going to make them more aware of solar power, and that's my mission."

Thall, Ashland High School teacher John Bacon and Dean College professor Laurie McDonough this year are part of the final round of a three-year program, funded by state and federal money and corporate sponsors.

The program, Leadership Initiatives for Training & Technology (LIFT2), aims to dispel negative perceptions of careers in science and technology and to help show students how the sciences can fit into everyday life.

"Too few high school students are prepared for and attracted to post-secondary majors in science, technology, engineering and math, the essential academic preparation for many 21st-century careers," said David Cedrone, director of the LIFT2 program.

So far, 63 teachers have joined LIFT2, said Cedrone. They are from three state Department of Education designated "high needs" districts -- Framingham, Waltham and Marlborough -- and six partner districts, Ashland, Natick, Littleton, Maynard, Franklin and Lexington.

LIFT2 integrates relevant, authentic work placement in innovative industries with graduate course work from leading universities for middle and high school science, technology, engineering and math teachers. The educators then develop curriculum based on their projects.

The state Department of Education and the federal No Child Left Behind Act have provided $650,000 total, over three years, to launch and refine the program.

Corporate sponsors have contributed nearly $250,000 in equipment and externship funding during the program's first two years.

Thall, Bacon and McDonough are working together on a yearlong study of the production, distribution and use of solar energy.

Bacon said he hopes to use in his classes solar power data collected by equipment, which will be installed at Ashland's new high school, currently under construction.

His sophomore and junior biology classes will benefit from analyzing real information gathered from the roof of their school, which opens in January, Bacon said.

"Looking at something and doing something gets much more attention than just talking about it," said Bacon. "This is really exciting."

The team so far has visited Heliotronics, in Hingham, a company that makes educational solar power data monitoring equipment. President Clayton Handleman said he hopes to help the teachers show students the practical uses of technology they might not have seen before.

"There are all kinds of things a math or a science teacher can pull out of this," said Handleman, who also serves as an adviser to the project. "It's not an abstraction, and it's not wishful thinking. It's something that's happening now."

Heliotronics' Epiphany series of data acquisition systems range from systems that measure, display and store sunlight, temperature and energy to more sophisticated systems with comprehensive performance measurement capabilities and extensive meteorological instrumentation.

Last week, the team worked on Heliotronics' assembly line to help pull together the SunViewer.net Internet-based data display system.

"This is the inspirational, the motivation part of the project," said Handleman.

Besides hosting the team for hands-on work, Handleman is also connecting Thall, Bacon and McDonough with industry contacts and arranging other factory tours.

Research conducted by the team will be used to address power needs on Thatcher Island, off the state's north shore. Karen Panetta, a professor at Tufts University and founder of the Nerdgirls engineering program for teens, will work with the team on finding alternative energy sources for this tiny island.

"We're trying to have a narrow focus this summer," said Cedrone, a member of the Metro South West Regional Employment Board.

McDonough looks forward to having better answers to her students' questions. She said she can tailor lessons in areas of the science, social science, business or entrepreneurship in her biology, ecology and environmental classes.

"It makes teaching so much more authentic when you actually are hands-on with what you are talking about," said McDonough. "The opportunities just keep popping up."

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