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OAK RIDGE GRANT TO ENABLE WCU, A-B TECH
TO STUDY ENERGY-EFFICIENT WATER HEATER

CULLOWHEE – A \$420,000 **award** from **the Department of Energy through** Oak Ridge National Laboratory will enable Western Carolina University and Asheville-Buncombe Technical Community College to work with an Etowah manufacturing company to create a prototype of a new, **dual-service application**, energy-efficient water heater.

Through the project, faculty and students from Western and A-B Tech will take technology **invented by** Oak Ridge engineers, refine existing knowledge and develop a new control system that combines elements of a home dehumidifier and water heater to achieve greater **product reliability, flexibility of use, and energy savings**.

Preliminary studies conducted by Oak Ridge have shown energy savings near 50 percent when the system is used on heat pump water heaters. The new project will build on the prior technology, adding dedicated dehumidification to attempt to reach “Energy Star” ratings.

“It’s really pretty simple,” said Aaron Ball, associate professor of engineering technology at Western. “There are two byproducts of a dehumidifier – moisture and heat. The system that will be prototyped transfers the heat energy generated by the dehumidifier circuit into domestic water in a standard electric water heater tank. Energy savings result since the electrical elements of the water heater rarely will be **used less often** because **the majority of the water heating will be done by the dehumidification/heat pump cycle. Substantially less energy is required to run the dehumidification/heat pump cycle than the electrical resistant heating elements.**”

While project partners say they are excited about the potential development of a more energy-efficient water heating and dehumidification unit, they also say the most significant aspect of the project is the possibility of retaining and creating more manufacturing jobs.

“The two most important missions of the community college system are to facilitate local economic development and to provide workforce education,” said Robert Anderson, A-B Tech dean of engineering and applied technology. “The Oak Ridge project gives A-B Tech a wonderful opportunity to help bring manufacturing jobs to Western North Carolina and involve our students in a sophisticated real-world project at the same time.”

If testing conducted by Western and A-B Tech determines the system is a marketable product, American Carolina Stamping in Etowah would begin manufacturing the systems and ship them to a major water heater manufacturing company and contractors that have been identified **through** market assessment **and discussions with potential companies and contractors**, said Steve McNabb, president of American Carolina Stamping.

The project is another example of on-going efforts by Western’s department of engineering and technology to assist local business and industry by providing technical expertise to solve problems, said Duane Dunlap, department head. In recent months, faculty, staff and students have provided help to such wide-ranging WNC businesses as a plastics packaging plant and a pottery maker.

“Western is an important economic engine for the people and industries of the mountains, and faculty and staff with the department are committed to engagement,” said Dunlap.

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