

## COE Student Named Co-op of the Year Finalist

Hillary Holback, senior in chemical engineering, was recently recognized as a 2007 Co-op of the Year finalist for her outstanding contributions to Eastman Chemical Company. The award, sponsored by the Cooperative Education Division of the American Society of Engineering Education (ASEE), is a national recognition, and members of the ASEE's Cooperative Education Division select nominees.

Dr. Doug McWilliams, who works with Eastman's Specialty Polymers Technology Division, nominated Holback for the award.

"Hillary worked with me on a project related to the development of biaxially-oriented copolyester films as a dielectric film for flexible circuits," said McWilliams. "The project was recognized as important on a corporate level, and Hillary's work was important to fundamentally understand the effects of a process conditions on the performance of our material. It was an ambitious project to complete, but Hillary is a fast learner and began to contribute quickly."

When Holback first began her education in chemical engineering at the University of Tennessee, she felt her career path was set in stone.

"Initially, I thought I'd go to college, earn my degree in chemical engineering and work in industry," said Holback. However, after deciding to co-op through UT's Office of Professional Practice in order to gain job experience, Holback felt very differently about what she wanted from life.

"After four years of experiences, I realized that I don't have to be like everyone else. I came to understand that not everyone who obtains a particular degree uses it for the same expected end," said Holback. "Looking back at my initial and current perspectives on my career path, the drastic change could be considered a metamorphosis. In actuality, I attribute gradually figuring out what profession suits me to my co-op experiences."

Holback worked four different co-op assignments with Eastman Chemical Company, one of which took her to Workington, England, for a month during the summer of 2006. While working in the Global PET Technology division of Eastman's England facility, Holback, under the leadership of Emily Frasier, approximated flow rates and estimated vessel sizes required for production of a new additive and created conceptual drawings for the new additive system.

"I would not have had the opportunity to explore another part of the world in a business setting had it not been for Eastman," said Holback. "The experience in England has encouraged me to do research or work abroad for a couple of years because I understand the importance of being versatile, both culturally and professionally."

Before coming to UT, Holback received an International Baccalaureate diploma from Wilson High School in Florence, S.C. During her time there, she studied the influence of colored plastic mulches on plant chemistry during an apprenticeship with the USDA Agricultural Research Service Coastal Plains Research Center. The previous year, Holback again worked as an apprentice, but this time with the Department



**Hillary Holback (center, right) is congratulated for her honor by (left to right) Bamin Khomami, head of the Department of Chemical and Biomolecular Engineering; Masood Parang, Associate Dean for Student Affairs; and Walter Odom, Director of the Office of Professional Practice.**

## Irick Develops Legacy Engine

Dr. David "Butch" Irick, research assistant professor in the Department of Mechanical, Aerospace and Biomedical Engineering, is working with Power Source Technologies to develop a simple and unique high-torque rotary engine with a myriad of military, industrial and commercial applications. The engine, dubbed "the Legacy," is a dream of Mr. Bart Watkins, chairman and chief executive officer of Power Source Technologies, whose partners include the University of Tennessee, Oak Ridge National Laboratory and Oak Ridge Tool-Engineering, Inc. The company's mission is to revolutionize the design of the internal combustion engine. According to Irick, a few of the engine's attributes include more horsepower per pound of engine weight; a 25 percent lower production cost because of fewer and simpler components; ability to use most any fuel more efficiently; and reduced emissions due to the efficient manner in which it burns fuel. Irick believes the Legacy could be brought to market much more easily than fuel cell vehicles because it is near-term technology and can use much of the same diesel technology that exists now for fuel injection and peripheral functions. Both Watkins and Irick believe applications for the Legacy engine are unlimited.



**Dr. Butch Irick (left) works on the Legacy Engine. Photo by Michael Patrick, Knoxville News-Sentinel**

*Story by Amanda Womac*

of Theoretical and Applied Mechanics at Cornell University.

After graduation this spring, Holback plans to study pharmaceutical science on the Ph.D. level in order to reach her ultimate goal: a career in research and development.

"I no longer see my career as being set in stone," said Holback. "These last few years have shown me that I cannot always foresee the contributions I may one day provide in my profession, in the same way that co-oping made unexpected contributions to my career decisions."

"The Office of Professional Practice is thrilled with Hillary's honor and with her success in our program," said OPP Director Walter Odom. "We hope other students will take advantages of our international opportunities in the future."

For more information on the Office of Professional Practice's co-op and internship opportunities, visit <http://www.coop.utk.edu> or contact the OPP by phone at (865) 974-5323.

*Story by Amanda Womac*