

Innovation at Work:

Engineering students demonstrate their influence

Six capstone design teams did more than demonstrate their projects when completed—they demonstrated the potential that engineers have to change lives in the workplace, and beyond.

Sponsored by the National Institute for the Severely Handicapped, the six mechanical engineering teams were asked to use technology to improve employment opportunities for the disabled.

Working with community partners, each team designed and developed an assistive technology product.

The Stocker Center Street Gang designed a self-contained geared wheel that attaches to a standard wheelchair, making it easier for the user to ascend an obstacle such as a steep ramp.

“I believe that the purpose of engineering is to help improve the quality of living for human beings.”

—Daniel Folz, B.S.M.E. '08

BSME '08, says he is proud to have been part of a team that created a beneficial concept. “Every time I look at a wheelchair, I think back to the hours we spent designing and refining our concept,” he said.

Partnering with a retail employee, Team MeToo created a lifting vest that helps a person who has lost an arm lift large, heavy objects with ease.

Halliday's Heroes created a pulley system that decreases the force required to operate a body-powered prosthesis. Tim Lang, a dairy farmer in Marietta, fits the system into his standard forearm prosthesis. His back pain has decreased as a result of the new system.

“I can really feel a difference in my shoulders,” said Lang, who milks 100 cows twice a day. “Also, I like that the moving parts are on the inside so they won't get caught on anything.”

The wheel was specially designed for Carolyn Bailey Lewis, director of Ohio University's Telecommunications Center.

“This new geared wheel will really help relieve the pressure of getting up a steep place,” Lewis said, noting that while campus ramps meet Americans with Disabilities Act requirements, they can still pose challenges.

Team member Brian Kaufman, BSME '08, says he is proud to have been part of a team that created a beneficial concept. “Every time I look at a wheelchair, I think back to the hours we spent designing and refining our concept,” he said.




“Before, I was not able to lift these bigger boxes at all,” said **Dan Bohner**, team MeToo's client. “Now, they are no problem at all.”

Superior Student Solutions designed an automated cardboard cutting station to create an opportunity for a physically disabled person in the cardboard cutting unit at SW Resources in Parkersburg, West Va.

Team ABP designed a tab-dispensing device for Hocking Valley Industries (HVI) that increases production and allows people with more severe disabilities perform a tab-sorting task.

Working with ATCO, a local nonprofit that provides employment opportunities for adults with developmental disabilities, Team Redundancy Team created a ballpoint pen assembly jig for an employee of ProPoint with severe mobility and dexterity limitations. The device lines the ink cartridge with the pen barrel, allowing Roy to easily slide the pen up a slope to a platform where it comes to rest. Then, he can press a button and the device slides the ink cartridge tightly into the pen barrel.

The team's design cut Roy's pen assembly time from up to ten minutes, to an average of four minutes—and Roy was able to complete the activity with less strain.

“They all demonstrated what is important—that they helped someone in the community,” said Gregory Kremer, chair of the Department of Mechanical Engineering. 

Beth Ruth (Ohio Rehabilitation Services Commission/THISability Magazine) and Melissa Gerber contributed to this story.