



What will they think of next?

U-M mechanical engineering students show off nifty projects at Fall Design Expo

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You get a flat tire out in the country and you need help. Naturally, your cell phone battery has died. What do you do?

Keith Moller and his classmates may have a solution for you.

Moller, a senior engineering student at the University of Michigan, was part of a team of students that designed an attachment to quickly charge a wireless phone during an emergency. About the size of a large marble, the device attaches to the back of a specific brand of phone. A gear crank system operates a mini-generator that can get a cell phone working in six minutes.

Moller's project was one of about 50 on display at the Media Union on North Campus Wednesday afternoon during a Fall Design Expo staged by the Department of Mechanical Engineering.

The projects, displayed throughout the atrium of the union, ranged from highly sophisticated to whimsical and fun. Students in an intermediate course, Mechanical Engineering 350, designed projects that illustrated scientific concepts to sixth-graders. They were designed to be displayed at an educational, interactive facility such as Ann Arbor's Hands-On Museum.

Students in a more advanced design and manufacturing course, Mechanical Engineering 450, chose projects from ideas submitted by companies or organizations, and then designed cutting-edge prototypes that could some day make it into the marketplace.

Seniors Greg Braziunas, Neil Teichman, Grant Weber and Rob Demsick designed a safe, portable baby crib. The project was requested by Nancy Cowles, executive director of Kids In Danger, a Chicago-based nonprofit agency dedicated to ensuring the safety of children's products.

Weber and Demsick demonstrated how their crib collapses upward and not into the v-shape of some cribs that have suffocated children as the crib folded inward.

Cowles, who had traveled from Chicago to view the new product, marveled at its design and appearance. "This addresses a real problem that exists," she said. "I'm amazed at the progress they made with it."

Demsick, who attend Huron High and Plymouth Canton before coming to U-M, said the group members will apply for a provisional patent, which will protect their idea as they refine it before applying for a patent and putting it on the market in years to come.

"We wanted to make a prototype that would work, that was portable and safe," Weber said.

Meanwhile, in an adjacent room, Yung Keong Teo, a senior from Singapore, demonstrated a project entitled "Gumballistic Circus," in which a gumball was routed by a gear mechanism into a funnel and then a catapult, which launched the sweet, chewy projectile into the air.

"The purpose is to teach kids some simple engineering concepts while having fun at the same time," Teo said.

Nearby, seniors Debby Chen, Emily Cislo, Dan Jorgenson and Ben Kleyn took turns dueling as they showed their exhibit, called "Rock 'Em, Sock 'Em Robots. Cislo and Chen used levers to enable their plastic fighters to throw punches as they tried to knock each other's head off.

The lesson was to show sixth graders how rotational motion can be converted to another form of motion, as occurs in the pistons of a car, or in this case, throwing a punch.

"We may end up giving this to one of our professors for their kids to play with," Jorgenson said, smiling.

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