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CVTC Grads Finish with Patent Application in Pocket ***Mechanical Design students come up with device for electrical power workers***

Eau Claire, WI – A group of Chippewa Valley Technical College graduates will have an eye-catching item on their resumes as they enter the workforce: an application for a patent on a new product.

It will likely take a few years for approval, and it's too early to know if the product will ultimately lead to income, but Mechanical Design students Zach Gunderson of Spooner, Derek Ortner of Stratford, Ethan Palmer of Mondovi and David Smith of Eau Claire developed a product that could make life easier for electrical power distribution workers.

"We call it the Wichita Lever," said Gunderson, the lead designer on the project. The name references a 1968 country song called Wichita Lineman. "It strips a protective coating off underground power lines workers are installing so they don't have to do it by hand."

The project came about when instructor Joe Vyrzal challenged the group to come up with an entry for the national American Technical Education Association 3D Futures Competition last March. The contest called on students to use technology to design a product and make a video about it.

"We had no idea what to do," said Gunderson, a 2010 Spooner High School graduate. "We started brainstorming as a class and used a process in which we identify a problem and how to solve it. We ended up with the product and the video 12 days later."

Gunderson's brother is a CVTC graduate in the Electrical Power Distribution program and one day sitting around a campfire, the apprentice line worker kept rubbing his shoulder. "He said he had been laying underground cable and had been stripping wire all day," Gunderson said.

As workers install lines and make connections, they use a hooked knife to cut around the protective coating on the heavy cables and peel it off by hand, requiring some muscle power, especially since between one and twelve feet has to be stripped, Gunderson explained.

"My brother and a cousin are linemen, and I knew about that problem too," Smith added.

Identifying that as the problem they would try to solve, the team came up with a box in which the end of the cable could be placed next to strategically placed blades. The line worker then takes a standard cordless drill and attaches it to a drive on the outside of the box. The power of the drill forces the

cable out of a hole at the end of the box with the blades cutting longitudinal slices along the coating, which can easily be pulled off like peeling a banana.

It wasn't easy to figure out. The team described difficulties in matching the gears and power needed to move the cable and the proper angles and placement of blades.

"I got all of the cable specifications from my brother," Smith said.

"I did most of the gear sizing," Ortner added.

"I helped with the design and assembly and did the video," said Palmer, a 2015 Mondovi High School graduate.

"It runs 6-7 inches per second," Gunderson said. "We had to figure out how to make it so it worked but wasn't dangerous to use."

Gunderson said they showed the video to his brother and he declared the device would make his job so much easier. Internet and patent searches revealed no such products. And that national contest? They placed third, with the organizers suggesting they look into a patent.

The patent, if approved, will be in Gunderson's name with the others listed as contributors. They applied just before their May 17 graduation.

They were among 691 graduates in 63 associate degree and technical diploma programs honored at CVTC's Spring Commencement Ceremony. The largest program was Nursing-Associate Degree with 80 graduates, followed by Business Management with 38, Electrical Power Distribution with 35 and Criminal Justice with 32.

CVTC also held a commencement ceremony at its River Falls Campus May 16, with 47 graduates in 10 programs honored. In addition, the two ceremonies honored 13 students for completing their General Education Development or High School Equivalency diplomas.

With over 95 programs offered both online and on-campus, Chippewa Valley Technical College delivers superior, progressive technical education which improves the lives of students, meets the workforce needs of the region, and strengthens the community. CVTC programs are designed with input of business and industry to prepare graduates for today's jobs, with 93 percent employed within six months of graduation and associate degree graduates earning an average annual salary of \$44,000.

Cutlines:

A team of CVTC Mechanical Design students has applied for a patent on a device they developed to help electrical line workers strip a thick coating from underground power lines during the installation process. From left are Derek Ortner of Stratford, David Smith of Eau Claire, Zach Gunderson of Spooner and Ethan Palmer of Mondovi.

Shown with the trophy from the national design competition is a prototype of the CVTC team's Wichita Lever device, made with a 3D printer.

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