Teacher takes externship for real-world experience

By Kyle Swartz
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WALLINGFORD — A local company is helping a North Haven teacher boost his engineering skills.

Chris Porto of North Haven, a pre-electrical engineering educator at Norwich Technical High School, is enhancing his teaching capabilities through a summer externship, focusing on technology similar to Wii remotes.

Through the Connecticut Business and Industry Association, Porto will spend four weeks at Ultra Electronics Measurement System Inc. in Wallingford, which produces military-grade controllers for computerized combat drones and robots.

Accordingly, Porto must be mum on some points. "I'm working on a project which I can't really talk about," he said.

While the purpose is secret, Porto can discuss his assignment's technology. "A lot of it has to do with motion sensor technology, as used in Wii remotes," he said. "That's what we're going toward — sensors that can sense movement and acceleration in three axes."

Next school semester, Porto will take his new knowledge back to his students. He said he expects that his externship will lead to hands-on classroom activities such as constructing robots.

"We're very big on learning by doing in technical schools," he said. "A lot of technology I'm working on can be applied to robotics and robotic projects."

Porto was a professional engineer for more than two decades before becoming a high school teacher four years ago. "I decided to take the plunge," he said. "Engineering work just wasn't that satisfying anymore. And I always had in the back of my mind that I would like to teach, that it would be a good fit for me, and that I would find it rewarding."

That assumption proved correct. He began instructing pre-electrical engineering classes in Norwich. Nearby Three Rivers Community College offered additional learning opportunities for his

Chris Porto

classes, and he began taking them there. Porto formed a friendship with a Three Rivers professor, who had participated in a CBIA externship the summer before.

"She e-mailed me," he said. "She thought I would enjoy it too."

Porto and his Norwich teaching partner, Ernie Todd, filled out online applications. Both underwent a series of interviews, including sit-downs with people from United Illuminating and Connecticut Light & Power. Porto's talk with Ultra Electronics was especially auspicious, he said, because he knew several employees there from his former vocation.

Perhaps encouraged by a good word from Porto's past associates, but mostly because he was highly qualified and held laudable intentions, Ultra Electronics accepted him for an externship in late May.

"I think they selected me because of my professional background, my experience as an engineer, and because I'm teaching pre-electrical engineering," he said. "When filling out the application, you have to summarize what you hope to get out of the externship. I wrote that I wanted to learn the most current practices of the industry of electrical engineering because I want my students to be prepared for the real world."

Porto's first day was July 6. "For four weeks I will be like a regular employee," he said. "I keep normal hours. I am treated like a regular employee."

Porto is helping build circuit boards for motion-sensitive military joysticks. "They look like video game controllers," he said.

In explaining his project's advanced technology, Porto said the current buzzword is "MEMs," or micro-electro-mechanical devices. "MEMs" are electromechanical devices shrunken to a microscopic size," he said.

"They can put a chip on an accelerometer," he added. "Take that microscopic device and hook up an electronic interface, and then you can read acceleration and feed it into a computer, that measures acceleration."

Coupled with miniature gyroscopes, the tiny accelerometers can track movement. "Gyroscopes can determine how the operator is moving the controller device," Porto said. "If you know where you are, and you know how much you've accelerated, you can use that to calculate how far you've gone and know what direction you're accelerating. Computers can do that on the fly."

"Chris is working out very well," said Les Yoho, Ultra's electrical engineering manager. "He has completed a circuit board for a very important project for us, an internal development project we're working on. I wish I could keep him longer."

"I think it's a great program," Yoho added. "It's very helpful for us, and for him to go into the workforce and bring that back to his students — that's very helpful as well."

Porto concurred. "It's good for the company because they don't have to pay," he said. For Porto, it's a chance to better prepare his students for the contemporary marketplace. "The best way to do that is to spend some time in the real world to know what's out there," he said.

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