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## **Human, electronic connections power fishing pole project**

[By Jennifer L. Williams](#)

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HAMPTON

Weakened by treatments for a brain tumor and confined to a wheelchair, Tee Blake of Chesapeake wanted to get back out on the water to fish.

Enter students from Old Dominion University, along with mentors for NASA Knights robotics Team 122, who marshaled materials and expertise at New Horizons Regional Education Center in Hampton.

They turned what was to be a morning of cleaning up the lab into a day of designing and building a motorized rod and reel and mounting device to hold a fishing pole on Blake's wheelchair.

"These guys came out of the blue and said: Here it is," Blake said. "It was just a blessing from God."

Blake, 46, already had a slight disability left over from when he broke his neck at the age of 16. Now he is in a fight for his life, undergoing chemotherapy and radiation treatments for his second brain tumor in the last few years. Confined to his wheelchair, he is too weak to fully handle a fishing rod.

Fishing has been a family pastime for "ages and ages," according to Blake's father.

Tammy Blake, Blake's sister, told coworker and friend Patricia Laverdure about her brother's situation.

Laverdure and Tammy Blake, occupational therapists with Fairfax County schools in Northern Virginia, talked about how good it would be for Blake if he could fish again. Laverdure asked her son Nate, a mechanical engineering student at ODU, to find a way to make it happen.

A quick turnaround time was crucial. Patients with Blake's type of tumor are given a guideline of six months to a year to live.

Nate Laverdure had been involved in robotics team activities at Chantilly Academy, and became a young mentor with the New Horizons team after arriving at ODU. He and a handful of his

fellow seniors at ODU quickly set to work to get Blake fishing again.

Nate Laverdure put out a call for materials and expertise, getting parts from engineering teacher Marty Rothwell at Chantilly Academy and an offer of spare parts and use of the robotics lab at New Horizons from teacher Joanne Talmage.

Talmage also heads up Team 122, and she asked several industry professionals who serve as mentors for the team to help Nate Laverdure. High school students were coming for a cleanup around the robotics lab the morning of Oct. 3, and Nate Laverdure and his group would be there as well, she told them.

What was supposed to be an 8-10 a.m. slot ran until 2 p.m. High school students were shifted over exclusively to the cleanup, while the pros worked with the ODU students, Talmage said. Everybody got a chance to trade information.

The mentors were Jim Young, a retired systems engineer from NASA Langley, Jefferson Lab engineer Brian Carpenter, and Tony Smith, an automotive technology instructor at New Horizons.

"We worked on this project just like it was our brother that needed help," Young wrote in an e-mail.

The group tossed ideas around, made a few rough drawings and then starting cutting things and screwing them together, Smith said.

"Only people involved with robotics would come up with an idea like this," Carpenter wrote in an e-mail.

The main task was to get the reel motorized, so Blake could push a button and it would spin. That was accomplished, although he will need somebody to cast for him.

"I think it's a great way to show how it's possible to stay working in an engineering type of field and bring things back to the community," Nate Laverdure said. "We were very glad that we were able to give him that ability. We wouldn't have been able to do it without the help of the people we reached out to."

For Talmage, who always tries to get her students thinking about practical applications for technology, it was the perfect convergence of a challenging project and a motivating reason to get it done. Many times her group doesn't know who repairs and refurbishments are for, and this time they did.

"Nate didn't have a very long amount of time to make this device — so we all had to pool our resources together," Talmage said. "And that's the only way that something like this can happen."

After a visit to Blake the following day to fit and refine the device, the electrical assembly work was finished the next week. The rod was ready for the family's goal of fishing the Outer Banks

on Columbus Day weekend. But the weather didn't cooperate.

"This has touched our family so deeply," Tammy Blake said. Blake's family is overwhelmed with gratitude for the efforts that went into the project, said his father, Steve Culross. They are working on getting him out to the shore.

"We're looking forward to reeling in that first fish," Culross said. "We're going to test it at the earliest opportunity and report back to them how it works."

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