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Engineering Academy Students Win Awards at the National Robotics Challenge

TRAVERSE CITY, Mich. – More than 1,500 students – including some from Northwest Education Services (North Ed) Career Tech Engineering Academy – participated in the 2025 National Robotics Challenge (NRC), making this year's contest the largest yet.

The NRC started in 1986 and is the longest running competition of its kind. This year's event, which took place April 3-5 in Marion, Ohio, showcased a staggering 523 robot entries, and welcomed 102 schools from 17 states and Puerto Rico, including about 250 higher education students representing 24 colleges and universities.

Career Tech's Engineering Academy program sent 16 teams and 40 students to the event, with the Robo Hockey team taking home a nomination for the esteemed Honda Innovation Award in their category. Two other teams took silver and bronze in the Box Bot category, and another earned a bronze in the Manufacturing Workcell category.

Honda Innovation Award

The prestigious Honda Innovation Award is selected through a judging panel of Honda engineers and recognizes the team with the most creative and innovative design that embodies Honda's values. Teams from each category are nominated, with Engineering Academy's team the Puckaneers earning that nomination from the Robo Hockey category. The Robo Hockey category requires participants to build two remote-controlled robots that compete in a simulated hockey event against two robotic opponents.

The Puckaneers team constructed two robots with a unique X-DRIVE system, which used omni-wheels positioned at 45-degree angles for enhanced maneuverability and speed, allowing the robots to outmaneuver opponents. The robots' robust chassis was entirely 3D printed, incorporating 3D-printed metal parts in the wheels – a first for the Engineering Academy. The students also designed and built their own Printed Circuit Board (PCB), unlike competitors who used kits. The team employed digital Agile tools to streamline organization, communication and workflow. The judges were impressed by the team's engineering, technical skills, teamwork, build quality and robot performance.

Members of the Robo Hockey team are:

• Elijah Richardson, senior, Traverse City Central High School

- Brady Keen, senior, Leland Public School
- Dylan Blanke, senior, The Greenspire High School
- Olin Kasperowicz, senior, Traverse City Central High School

Box Bot Awards

Two teams of junior students earned second and third place awards for their work in the Box Bot category. In this category, students are challenged to design, construct, program and operate a battery-powered robot for use in a package delivery simulation.

Students on the second-place team include:

- Audrey Nicholson, junior, Elk Rapids High School
- Luke Schlegel, junior, Traverse City Central High School
- Sam Morgan, junior, Buckley Community Schools

Students on the third-place team include:

- Lars Lake, junior, Traverse City Central High School
- Soren Gest, junior, Traverse City West Senior High School

Manufacturing Workcell Award

The Manufacturing Workcell team won third place for their design, construction and operation of a smoothie-making system. Customers used a touch screen to select their desired smoothie, then a robotic arm moved an empty cup onto a conveyor belt. As the cup moved along the belt, it received ingredients and crushed ice from various stations. At the end of the conveyor belt, the robotic arm added a straw, stirred the smoothie and delivered the completed drink to the customer.

In the construction and design of the workcell, students used real-world process control engineering tools like PLCs (Programmable Logic Controllers), ladder logic (for programming) and a universal co-bot arm, which is designed to work safely with humans without causing injuries.

Students on the LITL Smoothies Workcell team include:

- Trystan Tryban, senior, Kingsley High School
- Logan Phnauef, senior, Kalkaska High School
- Logan Face, senior, Kingsley High School
- Isabelle Borden, senior, Kalkaska High School

"We are incredibly proud of our Engineering Academy students who represented North Ed Career Tech so well at the National Robotics Challenge this year," said Michael George, Engineering Academy instructor. "Seeing their creativity and problem-solving skills in action at the national level is a testament to their hard work and the commitment they make each day to learn in the classroom. This event, and the Engineering Academy program itself, isn't just about building robots; it's about building future engineers, innovators and critical thinkers who are exceptionally well-prepared for whatever path they choose after graduation."

Two Engineering Academy seniors from Kalkaska High School – Keller Torrey and Isabelle Borden – also spoke to business and manufacturing leaders at the NRC as part of a panel organized by the local economic development office in Marion, Ohio. The students shared their perspectives about career aspirations, what they might expect for their first job and other employment opportunities. Panel organizers sought students who would be comfortable sharing their thoughts with industry leaders and professionals, and the Engineering Academy students were chosen due to their past interactions with local business partners through mentorship and internship programs offered at North Ed Career Tech.

"Part of what we hope to accomplish at Career Tech is not just equipping students with job-specific skills, but cultivating well-rounded individuals and critical thinkers who are empowered to become leaders and shape their industries after graduation," said Pat Lamb, assistant superintendent of Career and Technical Education at North Ed. "By providing opportunities for students to participate in events like the NRC, or to work alongside industry experts through mentorships and work-based learning opportunities, they are gaining the hands-on experiences and perspectives that will allow them to confidently contribute their unique insights and become influential voices in whatever field they choose."

The NRC is unique among other robotics competitions in that the students are 100% in charge of their projects, from budgeting to troubleshooting.

<u>Engineering Academy</u> is an award-winning program for high school juniors and seniors at North Ed Career Tech that integrates courses in engineering, English, economics, mathematics and science around the themes of robotics and manufacturing. Engineering Academy is currently accepting applications from current high school sophomores for admission beginning in the 2025-26 school year. Students interested in learning more about the program and its application process may contact instructor Michael George at <u>mgeorge@NorthwestEd.org</u> or 231.922.7845.

North Ed Career Tech offers more than 20 programs to high school juniors and seniors from Antrim, Benzie, Grand Traverse, Kalkaska and Leelanau counties. Students are educated in career and technical fields, offering hands-on practical experiences, job shadowing, career exploration and early college opportunities, along with rigorous academic integration. For more information about North Ed Career Tech, <u>click here</u>.

<u>Click here to watch a short video clip of students participating at the National Robotics</u> <u>Challenge.</u>

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Photos below



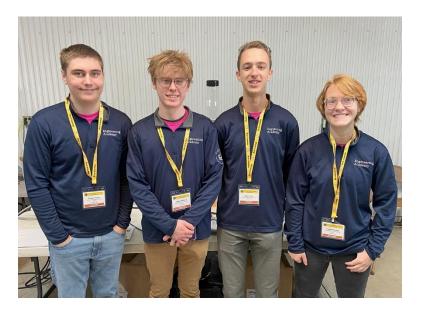
Seniors Stewart Gibson, of Buckley; Dean Hulett, of Northport; Nathan Peters, of Kingsley; and Sean Vilter, of Glen Lake, work on their robot during the National Robotics Challenge in Marion, Ohio.



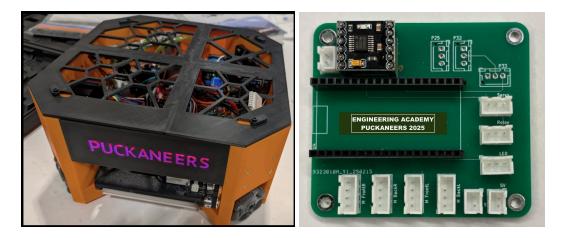
Above left, Devin Melton, a senior from Elk Rapids, works on his team's Rescue Robot during the National Robotics Challenge in Marion, Ohio. Above right, Nathan Peters, a senior from Kingsley High School, demonstrates his team's Rescue Robot during the National Robotics Challenge in Marion, Ohio.



Students line up on stage to be recognized for the Honda Innovation Award at the National Robotics Challenge in Marion, Ohio.



Students on the LITL Smoothies Workcell team include, from left, Trystan Tryban, senior, Kingsley High School; Logan Phnauef, senior, Kalkaska High School; Logan Face, senior, Kingsley High School; and Isabelle Borden, senior, Kalkaska High School. The team took third place in the Manufacturing Workcell category for creating a robotic smoothie station.



Above left is one of the Puckaneers' two robots used in the Robo Hockey contest. Above right is the custom Printed Circuit Board designed by Elijah Richardson, a senior from Traverse City Central High School in the Engineering Academy program.



Isabelle Borden, left, a senior from Kalkaska in the Engineer Academy program at North Ed Career Tech, participates during a panel discussion at the National Robotics Challenge. The panel was organized by the local economic development office in Marion, Ohio, and offered students an opportunity to speak to area business and manufacturing leaders about career aspirations. (Photo courtesy of the City of Marion, Ohio).