



Career & Technical Education

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Empower Students to Invent their Future

Have you ever said, “I wish I would have invented that! Why didn’t I think of that?” Then your mind begins churning to imagine a new gadget to make life easier, an idea to make the world a better place, or you land yourself on Shark Tank reveal! Cool right?

Fargo Public Schools is proud to empower and inspire students to think like inventors. Our K-12 curriculum is intended to nurture and cultivate an inventor’s mindset. Educators provide a safe place for students to explore, learn new technology, take risks, work as team, and learn through feedback. All are essentials skills and level the playing field for FPS students. Behind every invention or iteration, lies an engineer, an artist, a coder, a technician, a musician, an entrepreneur, or a risk-taker who has stretched their creativity to see the world in a new way.

K-12 Engineering & Coding at a Glance

At FPS, elementary students are exposed to keyboarding, computer sciences, robotics, STEM, and makerspace activities. Middle level learners engage in engineering, design-thinking, coding, construction, teamwork, 3D printing, robotics through PLTW – STEM curriculums in Design and Modeling and Automation and Robotics. The high school Engineering [pathway](#) boasts, Robotics I, Robotics II, Intro to Engineering, Principles of Engineering, Civil Engineering & Architecture, and a ‘new’ Design & Engineering Capstone course.

Technology & Engineering – 2022 Director’s Award of Excellence

FPS Technology & Engineering Education (T&EE) sets the pace for excellence in North Dakota. On August 9, 2022, the Fargo T&EE program was awarded the 2022 Director’s Award of Excellence from the North Dakota Department of Career and Technical Education. Awards in excellence must meet 10 standards of quality, competing against dozens of programs across the state.



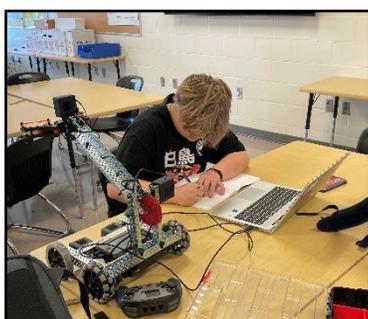
Representatives accepting the award were Ron Streit, Ryan Pierce, Mark Langlie, and Denise Jonas. However, this award comes with a host of players including, middle school instructors Tom Weber and Shawn Brekke - Ben Franklin, Alexis Yokom and Alex Kopyy - Carl Ben Eielson, and



Career & Technical Education, continued

David Lee, Garry Roth, and Amber Denault - Discovery. High school instructors also include, Phil Campbell and Scott Kittelson - North High School, Noah Bartnick and Andrew Henjum - South High School, and Eric Hall and Tyler Miller at Davies High School.

What's new for 2022-23?

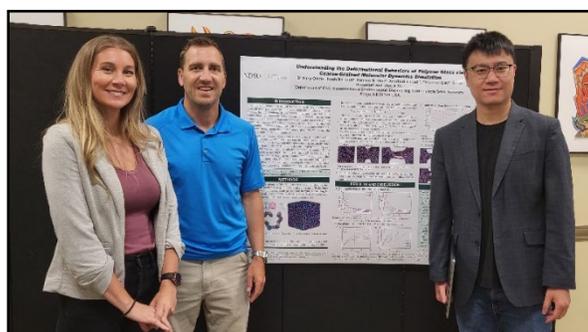


North High School and Davies High School will launch Robotics II in 2022-23. The course will expose students to Artificial Intelligence (AI) and factory automation using [VEX Workcell](#) curriculum activities. Students will learn theory, that normally requires human intelligence, and along with coding, hardware, sensors, motors, and electronics that introduce students to automation. Each course provides students with the opportunity to think about the world they live in now and inspire them to change it for the future. Robots may

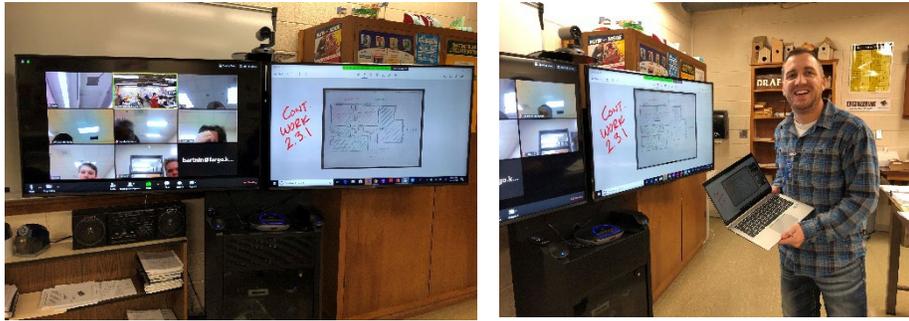
not be taking over the world yet, but there are [companies at the forefront of innovation](#) and our students will be ready for it.

South High School co-creation!

Noah Bartnick, Technology & Engineering, and Brittney Olson, Science, partnered this summer with NDSU graduate students to combine the theory of science with engineering design. Their co-creation resulted in an interdisciplinary unit around molecular dynamics in the design and innovation of a hockey stick. The relatable project will inspire and challenge students to invent a durable, affordable, and sustainable hockey stick. Noah will also launch Robotics I at South High School and continue teaching a hybrid section of Civil Engineering and Architecture to South, North, and Davies.



Career & Technical Education, continued



Career Outlook for Students

Robotics and automation are a vital part of the global economy, with a projected \$67 billion impact by 2025. The growing job demand ranges from careers in agriculture to aviation, manufacturing to transportation, and high-tech medical industries. [Built-in](#), a 2011 startup tech and recruitment company, lists 26 companies on the forefront of robotics innovation.

Choice Ready

As Fargo students continue to learn and explore in high school, they will be better informed to consider options after high school such as a two-year robotics, automation and mechatronics technical degrees, military training, or advanced degrees in engineering and robotics.

Whatever T&EE career pathway, the sky's the limit, literally. Drone technology continues to grow for use in all industries, transportation companies persist to test driverless trucks, automated farming is happening in our own back yard and artificial intelligence is making way for Smart robots. As startup companies stretch our thinking to use [bike lanes for autonomous deliveries](#) and smart robots to take patient's vital signs, our experiences will be amplified and students need to be exposed. Check out more than 240 articles on [MIT's website](#) with robotics ideas that will blow your mind! Fargo Public Schools is proud to empower and inspire our students to think like inventors.

