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## Advanced Manufacturing Technical Education Equipment Grants to Serve More Than 2,200 Students



The Department of Workforce Development (DWD) announced the award of more than \$473,000 in Technical Education Equipment Grants to 14 school districts.

Funded through the Wisconsin Fast Forward Program, the grants will help school districts expand their advanced manufacturing education programs and connect more than 2,200 students to high-wage, high-demand, and high-skill careers.

High school students will train in advanced manufacturing fields to prepare for stable careers while they obtain dual enrollment credits, industry-endorsed certificates, and technical endorsements on high school diplomas. Advanced manufacturing refers to a variety of manufacturing activities that depend on the use and coordination of information, automation, computation, software, sensing, and networking, and/or use of cutting-edge materials and emerg-

ing production capabilities enabled by the physical and biological sciences (e.g., nanotechnology, chemistry, and biology). This involves developing new ways of manufacturing existing products, and manufacturing new products that emerge from advancing technologies.

Schools will use the technical education equipment grants to install new equipment, including computer numerical control (CNC) machines, robotic welders, fiber laser cutting machines, 3D printers, and more.

The new awards include:

### Cornell School District — \$50,000



Cornell School District, located in Chippewa County, will use grant funds to purchase a Bystronic Xpress 50 Press Brake, which will offer

students real world experience on how to bend pre-cut sheet metal properly and efficiently. Students will become experienced operators of press brake tools and laser cutting technology to meet local industry needs.

### Nicolet Union High School District — \$21,190



Nicolet Union High School District, located in Milwaukee County, will use grant funds to purchase a CNC plasma machine package, CNC milling machine, and an automated band saw. This will allow the school district to expand its manufacturing lab and increase the number of students trained, while maintaining a high level of programming, which will give students industry standard future ready skills.

### Arrowhead Union High School District — \$20,750



DWD issued a grant of \$20,750. Arrowhead Union High School District, located in Waukesha County, will use grant funds to purchase a CNC Vesta-660 Machining Center. It will give students hands-on training using industry grade equipment, build programs of study along career pathways in Engineering and Manufacturing, and build students' workforce readiness skills to meet the needs and demands of employers in their region.

### School District of West De Pere — \$34,760



The School District of West De Pere, located in Brown County, will use grant funds to purchase an APT Robot Weld Cell Certification Cart and additional end of arm tooling. The project will integrate the APT Robot into the curriculum to train capstone manufacturing students and upper-level robotics students in material handling and ArcTool welding applications. Students will be exposed to a wide range of hands-on training and will increase the number of students qualified to sit for certification assessments through NOCTI and Smart Automation Certification Alliance.

### Grafton School District — \$35,097



Grafton School District, located in Ozaukee County, will use grant funds to purchase a Boss FC ACCU-CUT Fiber Laser Cutting Machine, which will enable Grafton SD to specifically target the advanced manufacturing skills set of Computer Aided Manufacturing. This will allow them to meet the National Institute of Metalworking Skills (NIMS) standards for CNC Machining and train students towards obtaining the Safety, Measurement and Material NIMS certification. The equipment will provide students with the experiences needed to program, setup, run a CNC Laser, and fill employment needs of Grafton manufacturers.

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## Wildcat Manufacturing Gives Belleville Students an Edge for Careers in the Manufacturing Industry



Marie Perry, Communications Director  
School District of Belleville

In 2022, under the direction of then Project Lead the Way (PLTW) Technology Education teacher and STEM Coordinator Edward Neumann, Belleville High School (BHS) launched a new program called Wildcat Manufacturing. It was part of a redesign of the high

school's STEAM course offerings that made room for five PLTW offerings — Computer Integrated Manufacturing, Computer Science, Engineering Design & Development, Principles of Engineering, and Introduction to Engineering Design that allowed students to earn college credit.

Wildcat Manufacturing was the brainchild of Edward Neumann who started his career as a Technology and Engineering instructor in 1999 and became a Master Teacher in Project Lead the Way's Engineering Design and Development in 2014. Neumann taught for Belleville High School and directed its PLTW programs from 2015 until his untimely death on December 25th, 2022. Ed was not just a Master Teacher, but a passionate educator believing in helping all his students find their pathway to success and his arms and heart were big enough to mentor many of his fellow teachers along the way. Ed was very forward thinking and did his best to help prepare his students for their futures beyond the classroom. To this end, he created a state-of-the-art STEAM lab for the Belleville High School and through additional Fab Lab grant money from Wisconsin Economic Development Corporation in 2021, he provided a great palette of opportunities for his students to flourish in their entrepre-

neurial endeavors. In November of 2021, Ed Neumann received school board approval for his Wildcat Manufacturing course proposal. Ed had conducted student interest surveys to gauge student desire for a program like this prior to its onset. He modeled his class on two similar courses— Wisconsin's Cardinal Manufacturing and Indiana's Eagle Manufacturing.

In Ed's mind, Wildcat Manufacturing was the next logical step to help students receive cutting-edge experience in the trades. It would be a new student-run business where students could get a feel for what it takes to run a manufacturing business out of the high school's home-grown STEAM lab to gain work experience before graduating from high school. The program touts on its web page: "Started in 2022, we are a student-run business that can custom make almost anything."

District Administrator Nate Perry is pleased with what Wildcat Manufacturing offers 10th-12th grade students in the School District of Belleville:

*"The class focuses on all aspects of today's manufacturing industry. Students use previously learned skills from a variety of Art, Business, Trades and Engineering courses and apply soft skills through collaborative partnerships both in and*



*out of school. The student-run company is responsible for quoting jobs, ordering material, manufacturing parts, quality control, shipping, receiving, invoicing, customer service, accounting, keeping track of hours, maintaining equipment, and all other aspects of running a business. The class generates funds to help*

**Continued on Page 6**

## Tool, Die & Machining Association of Wisconsin: A Rich History, a Strong Future!



Written by Laura Gustafson,  
TDMAW Executive Director

The Tool, Die & Machining Association of Wisconsin (TDMAW) was founded in 1937. It was initially formed by a group of Milwaukee-area tool and die makers who saw the need for a professional organization that could promote the interests of their industry. The founding members were primarily small business owners who recognized the importance of networking and collaboration in the highly competitive field of tool and die making.

As the years passed, the group grew from

a handful of businesses to over 100 Wisconsin-based, privately held manufacturing companies. The TDMAW became more inclusive and began to allow key employees and industry sponsors to attend meetings and events, all working together to find ways to grow and strengthen Wisconsin manufacturing. They looked for ways to assist each other and offered members educational and professional development opportunities, as well as fun social and networking events, where relationships could continue to develop.

Now, 86 years later, TDMAW still stands strong as the premier tool & die organization in

our state. The association has remained true to its roots by continuing to focus on the needs and concerns of small and mid-sized tool and die and machining companies. We recently launched the TDMAW Forward Foundation, a charitable organization formed with the intent of advancing manufacturing and manufacturing education through the distribution of grants used for scholarships, curriculum enhancements, equipment, and the support of programs that will strengthen our industry, in the long run.

Another key role of the TDMAW is to promote the interests of its members at the state level. The association has been an active advocate for the tool and die and machining industries, working to promote policies and initiatives that support growth and competitiveness.

The Tool, Die & Machining Association of Wisconsin is not for 'business owners only' any longer. We have made room for individuals with an interest in manufacturing, through our Individual Membership, and we are working to support students through our affordable Student Membership. It is our hope that students who become involved with TDMAW will make connections with industry leaders (our members) who can assist them by sharing lessons learned, answering questions, and offering plant tours and job opportunities! Student members receive a complimentary subscription to TDMAW's Surgeons of Steel quarterly magazine and are invited to all our



monthly meetings and social events.

TDMAW encourages instructors and students to contact us if there is any way we can help or questions we can answer. Most of our TDMAW members are open to hiring promising tool & die makers and would be interested in speaking with students interested in launching their manufacturing careers. Reach out to our headquarters at ToolMaker@TDMAW.org to learn more.

Today, the TDMAW remains a vital and active organization, committed to supporting the growth and success of the tool and die and machining industries in Wisconsin and beyond. With a rich history and a strong commitment to its members, the TDMAW will no doubt continue to play an important role in the industry for many years to come.



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## Advanced Manufacturing Technical Education Equipment Grants Continued from Page 1

### Cedar Grove-Belgium School District — \$50,000



Cedar Grove-Belgium School District, located in Sheboygan County, will use grant funds to purchase a Haas ST-10 CNC Lathe, which will help students experience a real-world manufacturing environment and gain exposure to today's automated fabrication technology. Using the equipment, the school district will be able to support high demand careers of CNC machine operators and provide tangible skills development.

### School District of Superior — \$50,000



The School District of Superior, located in Douglas County, will use grant funds to purchase a Fortune/Eisen Model S-2A Vertical Turret Mill and Fortune Model 1440G Lathe. The School District will offer two new manufacturing courses starting in 2023-24 using the equipment and expose students to career opportunities in manufacturing, and other skilled trades. The purchase of equipment will also allow National Institute of Metalworking Skills Credentials to be embedded into three courses within the manufacturing pathway.

### Elmbrook School District — \$14,542



Elmbrook School District, located in Waukesha County, will use grant funds to purchase V5 Robotic Kits, Rev Robot-

ics Edu V2 Kits, and Arduino Kits for the Robotics and Automation Center, which will provide opportunities for students to engage in engineering, robotics, electronics, and manufacturing career pathways, including coursework, career-based experiences, and industry certifications that directly connect to employability.

### Muskego-Norway School District — \$50,000



Muskego-Norway School District, located in Waukesha County, will use grant funds to purchase an ARC Welding Robot that will provide students with the knowledge and confidence to operate a variety of material handling and ARCMate robots to support local employer's needs to develop more efficient and profitable welding processes. This training will provide the students with real-world, hands-on technical training in advanced automation and industry 4.0 technology.

### Watertown Unified School District — \$42,530



Watertown Unified School District, located in Dodge and Jefferson Counties, will use grant funds to purchase a Metal Fiber Optic Laser CNC Table for the metals lab, which will allow STEM students to use more efficient fabrication methods and increase students' exposure to advanced manufacturing training and careers beyond graduation. In addition, this equip-

ment will be utilized by a nearby college for adult welding courses during the evening as well as potential training opportunities for local employers.

### Pardeeville Area School District — \$8,885



Pardeeville Area School District, located in Columbia County, will use grant funds to purchase a Baileigh Metal Lathe to expand the Technology and Engineering Education program. With this purchase, students will gain access to more technical education classes and a solid foundation of technical skills, preparing them for youth apprenticeships, college classes, and/or College Academies while still in high school.

### Whitewater Unified School District — \$10,500



Whitewater Unified School District, located in Walworth County, will use grant funds to purchase Formlabs Form 3+ SLA 3D Printer and LJ Create Training Systems - Equipment - Injection Molding Trainer. This will provide high school students hands-on industry relevant experiences using design software and manufacturing equipment, by exposing students to a variety of plastics related design and manufacturing curriculum.

### Mukwonago Area School District — \$34,925



Mukwonago Area School District, located in Waukesha County, will use grant funds to purchase an Amatrol Skill Boss Smart Factory that will enable students to practice over 60 authentic skills in electronic, electrical, fluid power, and mechanical systems. This equipment will allow students to earn associate level one and three certifications through the Smart Automation Certification Alliance, as well as level one and two certifications through the National Institute of Metalworking Skills.

### School District of Gilman — \$50,000



School District of Gilman, located in Taylor County, will use grant funds to purchase Amatrol Process Control Learning (PLC) Systems, which will be used to develop a one-of-a-kind K-20 in process control. The school district will use industry-relevant equipment to offer learning and career exploration in the fields of PLC programming, electrical systems, sensors, automated processes, relay control, process control, pneumatics, and smart sensors. They will focus on micro credentials through the Smart Automation Certification Alliance and the local technical college. As a result, students will be workforce ready with industry recognized certifications.

*Courtesy of Wisconsin's Department of Workforce Development*

## Wildcat Manufacturing Continued from Page 4



*further our art, business, trades, and engineering courses and pay a percentage back to students for working hard and smart. Depending on a student's strengths in Art, Business, Trades and/or Engineering courses, they apply for a specific position within the company."*

It is this can-do attitude that continues to drive Mr. Neumann's former students to excellence. They began their second semester this year with advisors James Pickett and Nico Berthelon, but with the deep desire to still do Mr. Neumann's memory proud. Pickett joined the Belleville Education team in 2022 as a Busi-

ness and Marketing teacher. Berthelon stepped into Mr. Neumann's teaching role and has done a magnificent job. Berthelon says, "Currently we have been working on primarily custom projects, but we are looking to expand to more batch work while continuing with custom work on the side."

These two teachers have been guiding BHS PLTW students forward in their passions to study manufacturing and engineering. This year students have produced custom orders including street number signs for homes and trophies for fantasy football leagues and trivia contests. Larger projects have included 4' police crests for the local police department, a little free library, 3' sign for a local business, and a 6' sign for a local farm. More unique orders include: plastic placards for a solar energy company, 3D printed lunch tray handles for a student with disabilities, and custom bases for bio-hazard waste containers.

Pickett notes,

*"As a student-run business, in its first year of operation, we have focused on custom jobs. Almost all of our projects*

*have been made to the specifications of the customer. Our students go through the entire process of running a business; designing products, making price quotes, communicating with customers, creating finished products, marketing our products and business, and everything in between. Wildcat Manufacturing is a very unique class where students work alongside the teachers to help our business grow, but ultimately, the students are the ones who drive the success of the class."*

Interested in having a custom project done? Belleville's Wildcat Manufacturing students can be reached at:

**Website:** [www.wildcatmanufacturing.com](http://www.wildcatmanufacturing.com)

**Instagram:** @wildcatmfg

**Facebook:** Wildcat Manufacturing

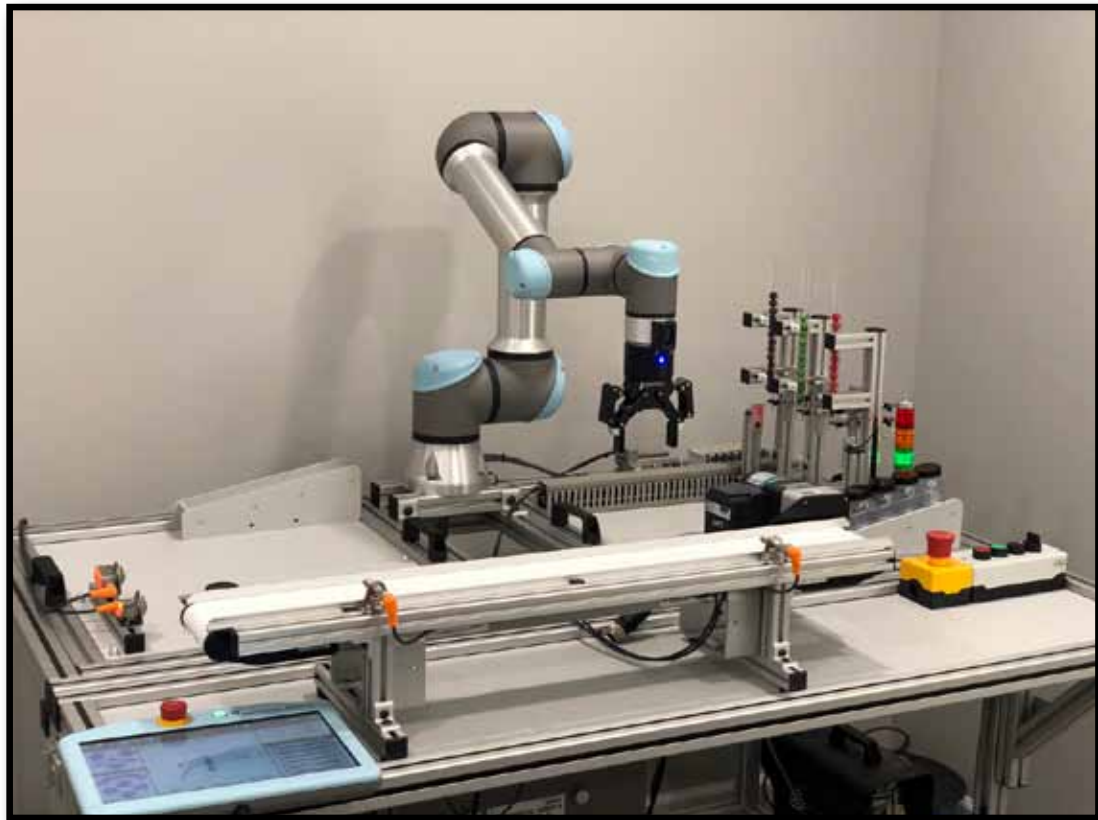
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## 25 Wisconsin School Districts Awarded Fab Lab Grants



Twenty-five schools around the state are celebrating more than \$560,000 in fab lab grants to train students in science, technology, engineering, arts, and mathematics (STEAM) skills and prepare them for careers using advanced technologies.

A fab lab, short for fabrication laboratory, is a high-technology workshop equipped with computer-controlled manufacturing components such as 3D printers, laser engravers, computer numerical control (CNC) routers, and plasma cutters. Through its Fab Lab Grant Program, WEDC is supporting the purchase of fab lab equipment for instructional and educational purposes for K-12 students across the state.

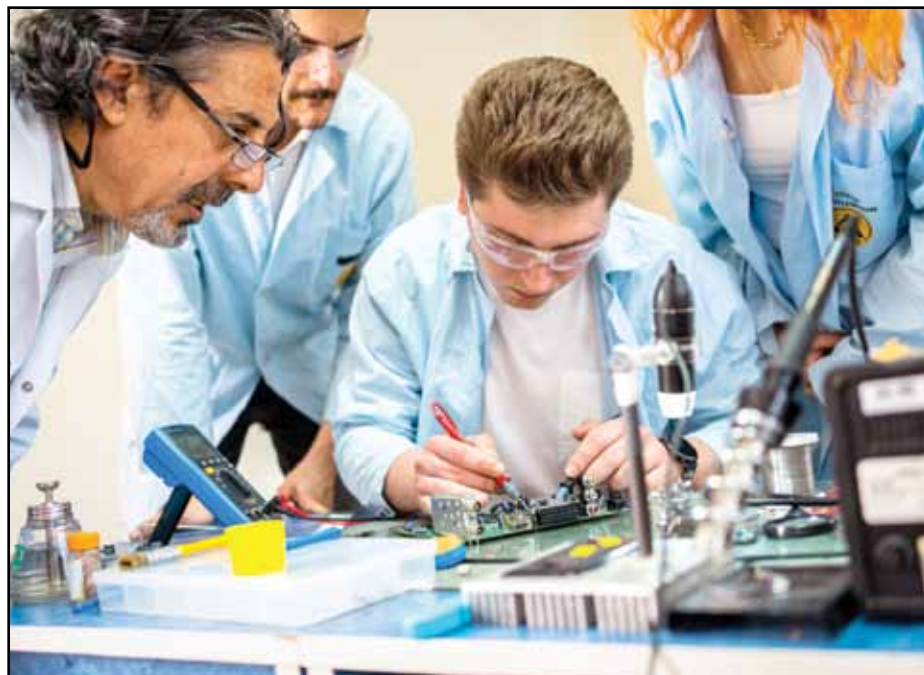
"Fab Labs allow businesses and schools to work together to provide students with STEAM education that will translate into real-world career skills," said the WEDC Secretary. "Fab labs benefit not only the

students themselves with important technology and career skills, but they're also a win for Wisconsin employers who will be able to find workers with the right skills to allow their companies to grow and thrive."

WEDC provides grants of up to \$25,000 to eligible Wisconsin public school districts, or up to \$50,000 to consortiums of two or more public school districts, for the creation and/or expansion of fabrication laboratories within the school district(s). The funds may be used to purchase equipment used for instructional and educational purposes by elementary, middle, junior high or high school students.

Applicants must supply matching funds equal to at least 50% of the grant amount provided by WEDC.

In addition to the grants, WEDC has developed a fab lab resources page for its website that provides districts with informa-



tion on how to set up and equip a fab lab, how to implement best practices to ensure a successful fab lab, and more.

For more information on the state's fab labs, including resources for teachers, visit [wedc.org/fablabs](http://wedc.org/fablabs) or follow #WIFabLab on Twitter.

### Barneveld School District – \$20,000



Barneveld School District was awarded \$20,000 to purchase a Laser Engraver.

This project will benefit the school district by allowing students access to modern manufacturing equipment that can prepare them, expose them, and get them interested in the skilled trades and STEAM-related careers.

[www.barneveld.k12.wi.us](http://www.barneveld.k12.wi.us)

### Cedar Grove-Belgium School District – \$25,000



The Cedar Grove-Belgium District is implementing the Rocket Academy which will fully immerse students in a robust manufacturing

and trades education. Students will receive hands-on experience relevant to today's local industries. By investing in state-of-the-art tools, equipment, and technology, students will receive practical training on machinery used throughout our local industry.

[www.cgbrockets.com](http://www.cgbrockets.com)

### CESA 3 – \$49,650

### Cornell School District – \$25,000



The grant will be used to purchase a press brake. "If they weren't exposed to (tech programming), they didn't even think about it.

Most of these kids had never seen a laser cutter. The equipment we're bringing in is industry standard. They are getting real world experience." The brake will bend metal pieces for students, and it should arrive later this spring.

[www.cornell.k12.wi.us](http://www.cornell.k12.wi.us)

### Elmbrook School District – \$25,000



[elmbrookschools.org](http://elmbrookschools.org)

### Elmwood School District – \$24,780



[elmwood.k12.wi.us](http://elmwood.k12.wi.us)

### Gresham School District – \$25,000



This is the second year Gresham is receiving this award.

Funds will be used for students to be certified in measurement from Snap-On and a horizontal bandsaw will be purchased.

[www.gresham.k12.wi.us](http://www.gresham.k12.wi.us)

### Hayward Community School District – \$25,000



[hayward.k12.wi.us](http://hayward.k12.wi.us)

### Lac Courte Oreilles Ojibwe School – \$19,920

See story page 16



[www.lcoosk12.org](http://www.lcoosk12.org)

### Markesan District Schools – \$25,000



[markesan.k12.wi.us](http://markesan.k12.wi.us)

### Montello School District – \$25,000



[montelloschools.org](http://montelloschools.org)

### Nicolet Union High School District – \$25,000



[www.nicolet.k12.wi.us](http://www.nicolet.k12.wi.us)

### Northland Pines School District – \$25,000



[www.npsd.k12.wi.us](http://www.npsd.k12.wi.us)

### Omro School District – \$17,485



[www.omro.k12.wi.us](http://www.omro.k12.wi.us)

### Prentice School District – \$3,850



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# A New Student Led Business — Inside Superior’s Spartan Manufacturing



David Coy  
Communications/PR Specialist  
School District of Superior

Spartan Manufacturing, the newest two-hour class at Superior High School, is set to host its first set of students in the fall of 2023. Spartan Manufacturing Coordinators Adam Kuhlman and Spike Galewski are currently working with students on a soft launch - producing small projects and organizing new leadership roles for the program.

“Hopefully, student engagement will go

up and they’ll see value not only in the classroom but value in the trades,” said Kuhlman.

This new student-led program is an opportunity to introduce juniors and seniors to the manufacturing field and all the possibilities a career in the trades could offer.

## What is Spartan Manufacturing?

Superior High School offers a wide range of classes any student can experience. In the industrial technology wing, students can take courses like Metals 1 or Woods 1. Still, after

their junior year, many are often left without a capstone experience.

Spartan Manufacturing changes that by offering a student led-student run manufacturing business. Students will have control over everything. Juniors and seniors will meet with companies and customers to organize projects, produce products, create relationships for the program, and plan marketing strategies.

“We wanted to attract and retain those students,” said Galewski. “I think it is important for the students to get a taste of the real world in the classroom. Once you get out in the real world, things change. A lot of the time, it feels like we are just teaching the hard skills — the technical stuff. We really want Spartan Manufacturing to also teach those students soft skills — like looking someone in the eye, shaking hands, and having a decent conversation with someone. That’s why we want this program to be student-led. They are part of every step in the process.”

All the money raised from the projects will return to the program. Students will tally their hours and get paid in the form of scholarships. This will help the students who move forward in a specific career, trade school, or college/university. There will be some profit-sharing options as well.

“It gives students independence. It gives them responsibility,” said SHS junior Sam Meller. “It’s not just a project for themselves, but something for another business.”

Students will have various responsibilities within the program. Those who want to be in a leadership position must fill out an application and meet with the coordinators for an interview. Spartan Manufacturing will be home to Project Managers, Sales Managers, Marketing Managers, and more.

“I think the business aspect, marketing a product, learning how to sell it, and getting customers is what interests me the most,” said Meller. “I think it’s important because maybe down the road, I’ll start my own business, or whenever I get a job, I will need to use these skills.”

## Community Partnership

There’s currently a trade labor shortage in the Northland, and Spartan Manufacturing hopes to guide the next generation of welders, business leaders, and manufacturers. The team is looking to partner with the local community and make products that will be available in local stores/businesses.

“We have done a lot of outreach to see what local businesses need,” said Kuhlman. “We want it to be organic and belong to everyone. It’s not just me and Mr. Galewski’s program.

It’s something that belongs to everyone.”

The program has already partnered with a nearby manufacturer to produce a specific part for their pump.

“How do you get kids into the wood-working and metal shops at the high school level?” said Todd Maki, the company’s Chief Operating Officer. “When I met with Adam and Spike, they had a lot of excitement, which excites me. We are trying to outsource some of the stuff that is consistent and built the same way. If we can do that with Spartan Manufacturing and allow the kids to build this item that goes into our pump, it’s a nice easy start. But I don’t want to stop there. I want to keep bringing new things in and getting more complex. I think they will be excited to work on that stuff.”



## The Future is Bright

The goal is to help the Superior community and meet the needs of potential employers. Spartan Manufacturing wants to grow the students’ skill level and be job ready by graduation.

“Not every job needs a four-year college degree,” said Kuhlman. “If we can get kids in the trades, getting them earning money right away will benefit the local community. If we can meet the needs of our businesses and set up our students for success, then we are doing well.”

The class is now open to all SHS students, and the leadership team is already starting to form. If you want to learn more about the program, check out the website (<https://spartanmfg.org/>). You may also follow the team on Facebook (<https://www.facebook.com/SpartanMFG>). For an inside look, watch the “What is Spartan Manufacturing?” video on YouTube (<https://www.youtube.com/watch?v=sUXle83L1HM>).

Opportunity awaits you

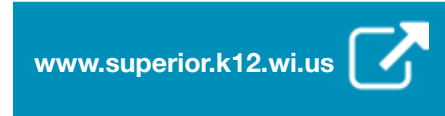
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# The Benefits of Teaching a Student-Run Business



Excerpts from "DREAM BIG. HAVE FUN." A book by and about Cardinal Manufacturing, School District of Eleva-Strum. Download the book at [www.cardinalmanufacturing.org](http://www.cardinalmanufacturing.org) under the resources tab.

*"A student run business offers so many benefits to all those involved, but the focus is always on the benefits to the students. Any activity that can make the material students are learning more engaging and relevant to their everyday life and their future is a big plus. A student run business provides the most realistic risk and reward experiences for students while still taking place in a classroom environment providing real learning. In addition to all the real world measurable benefits, working in a student run business environment is the most fun way to teach students and provides a situation where everyone involved is winning."*

— Craig Cegielski,  
Cardinal Manufacturing Founder

Experienced teachers who have worked in a successful student run business model will tell you that it is the most fun and rewarding way to teach. While it requires dedication and focus to get started, the investment of extra effort at the beginning pays off with many rewards.



## Excellent Student Engagement and Behavior

### Application of Subject Matter

When a student is engaged and interested in the subject matter, they learn more thoroughly, retain more information, and are more successful when applying the knowledge. A

student run business provides real life situations where learned skills are used and needed every day. This includes technical skills related to the business and foundational academics such as reading and math. Making learned material relevant to everyday life right away is a major benefit to having a student run business at your school.

### Improved Behavior

Participating in the student run business is a privilege. Students must apply for and maintain standards for continued participation in the business. Motivated students behave better in all classes to avoid losing access to the activities in which they want to participate.

### Leveraging Teachable Moments

While there are specific lessons and objectives of a student run business, those lessons are seamlessly integrated into the day-to-day operation of the student run business. Teachers and instructors are naturally reinforcing the lessons and material to students in relevant situations. It is a much more natural and enjoyable way of teaching and learning.

### Opportunities to Reach All Students

All teachers have students who for one reason or another are not showing their full potential at school. A student run business provides more latitude than a traditional classroom for all students to shine and where teachers can focus attention on individual student strengths. The hands-on learning

**Continued on Page 11**

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# The Benefits of Teaching a Student-Run Business Continued from Page 10

approach is very effective for any student, no matter their academic history. Student success is very rewarding for both the student AND the teacher.

## About Cardinal Manufacturing

From a simple repair job to custom designed and machined parts, Cardinal Manufacturing meets a wide variety of needs for local individuals and businesses as well as for companies located outside of our immediate area.

Cardinal Manufacturing began in the

Elewa-Strum School District during the 2007-2008 academic year when instructor, Craig Cegielski, approached the School Board about the potential of pursuing an in-school manufacturing business similar to one he started in his prior position in the school district of Antigo, WI.

The school board approved and since that time Cardinal Manufacturing has gone from its infant stages to a company with significant annual sales and national notoriety. The growth of the program has attracted national and international attention and Cardinal Manufacturing has attended national tradeshow



and hosted celebrity guests.

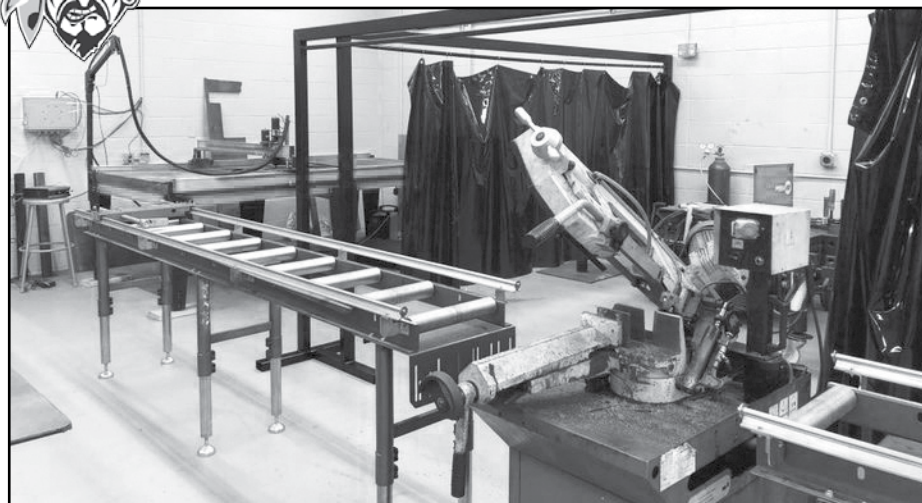
Cardinal Manufacturing has served hundreds of customers from private individuals to clients throughout the state of Wisconsin and other parts of the country. A number of students have gone directly to skilled employment positions after high school, but most choose to go on to post-secondary education through technical college or the university system.

To learn more, view workshop opportunities, and to see the latest news from Cardinal Manufacturing go to [www.cardinalmanufacturing.org](http://www.cardinalmanufacturing.org)

[esschools.k12.wi.us](http://esschools.k12.wi.us)



## Fitting the Growing Manufacturing Needs of the Future in Fall River



*Brian Anderson  
Technology Education Teacher  
Fall River School District*

I have been the Technology Education Teacher at the Fall River School District since August of 2000. When I took the position with our district, we had a two thousand square foot shop area that housed our woodworking, welding, and small engine programs. In addition to the shop area, we also had a classroom that was straight out of the 1960s.

In the first 15 years, we slowly added engi-

neering software on ten computers. We secured the donation of a metal lathe and milling machine to expand our program to machining as well as welding and fabrication. We also purchased a computer numerical control (CNC) wood router, and CNC plasma cutter to give students experience in programming CNC machines. In addition to the renovated shop areas, the district did purchase the community's retired fire station. We then were able to utilize part of that building to move our small engines and automotive workshop to this new space which increased our

square footage for our manufacturing area, but we were still in need of a dedicated shop area for wood fabrication.

The major turning point was in 2017-2018 with the passing of a school wide referendum which allowed us to complete the transformation and totally renovate and update our Technology & Engineering Education spaces and then were able to move our wood manufacturing and construction into a new one thousand square foot shop space. To fit the classroom into what we term our "Fab Lab" we installed 20 computers loaded with updated engineering and CNC software, purchased a laser printer, six 3D printers, and a vinyl cutter. We were also able to add and upgrade welding units, so that our students could gain experience in SMAW, GMAW, and GTAW welding processes. We also were able to purchase Bluco fixturing tables to give students real world fabrication experiences. In addition to referendum funding, we also applied and were awarded \$25,000 for a Fab Lab grant which we used to purchase a HAAS CNC Milling machine.

As we continue to update and improve our school facilities, we are also working hard to build a curriculum that allows students to experience as many manufacturing processes as possible. Whether it is designing and producing awards for athletics or academics, rocket parts with the eighthgrade science class, or individual student projects, the goal is always to excite stu-

dents about manufacturing and its possibilities.

Recently, we had a unique honor to be a partner in producing the "Coolest Thing Made in Wisconsin" Trophy. Our job was to design and produce the acrylic Wisconsin state shape to fit into the frame that had already designed. The task was a real-world challenge that consisted of producing a part to a company's specifications. We succeeded at our task and were invited to be part of the ceremony when the trophy was presented to the winning Wisconsin manufacturer. This was truly an exciting experience for both my students and myself!

In technology education, updating equipment and technology brings about many challenges, especially as the only technology education teacher in the school district. I have learned to trust and rely on my students for assistance, and we work through these challenges side by side, which are great learning opportunities. We strive each day to challenge our students to improve their understanding of each process and piece of equipment. Our goal for the future is to continue successfully partnering with local businesses and building our program to fit the growing manufacturing needs of the future.

[www.fallriver.k12.wi.us](http://www.fallriver.k12.wi.us)





## Seymour Celebrates Their New Tech Ed Addition



*Kellie Bohn, District Administrator  
Seymour Community School District*

The completion of this beautiful facility is the culmination of activities that began during the 2017–18 School Year. Prior to that year, enrollment in the Tech Ed programs was floundering and the district struggled to hire and retain staff. Staci Sievert, who was a current staff member at that time in the Social Studies department, offered to get her certification and teach the Tech Ed classes.

It was also during the 2017–18 school year that Director of Teaching and Learning, Jenny Pierre, and High School Principal Tom Mueller, brought local business and community partners together to collaborate with school staff on how best to develop the local workforce to support our local communities. These discussions helped to create the foundation for the Tech Ed curriculum and program development, guided the purchase of new equipment, and played an instrumental role in the eventual passage of the building referendum. Says Business Manager Pete Kempen,

“This project is a true example of community partnership. Community members helped us to identify the need and then develop the solutions. It was a tremendous collaboration between our school district and the business community.”

The School Board supported the increase in enrollment in the program and found room in the budget to increase and update the equipment. With the class sizes and the equipment inventory both growing, the lack of work and storage space became problematic. Classes had to be scheduled with time to allow significant switching of materials and equipment. Supported by the encouragement of the SCSO School Community, the District went to referendum in April of 2021.

Planning for the new addition started almost immediately after the passage of the referendum with the majority of the Construction happened this past summer, with the goal to have students working in the learning spaces on the first day of school.

The staff and students are excited to

be working in their new facility. “This new facility makes it possible for us to offer our students learning experiences that are second to none,” states District Administrator Kellie Bohn. “We so appreciate our community’s ongoing support of our schools and our students.”

### Our teachers:

**Name:** Eric Bergsbaken

**Specialty:** Automotive

**Experience:** Two years at Seymour, prior teaching experience at Reedsville

**Quote:** “The size and capacity of our new facility provides great opportunities for students in the area of automotive. In addition to the Thunder Service Center, we will now be able to offer our students experiences with Diesel and Ag Mechanics, which is an area of personal expertise for me.”

**Name:** Jody Schneider

**Specialty:** Electricity, Fab Lab, Construction, Robotics

**Experience:** 24 years as an electrical contractor, and a State Master License as an electrician; Five years teaching at Seymour.

**Quote:** “The extra space and updated equipment provide a totally different experience for students. The possibilities are endless; we have space to continue to grow and develop our programming.”

**Name:** Mike Holmgren

**Specialty:** Machining, Welding, Metals

**Experience:** First year teaching at Seymour; prior teaching experience at Hortonville.

**Quote:** “I look forward to continuing to learn alongside the students, as our field continues to develop. Growing a program in this new facility certainly played a role in my choice to teach in Seymour.”

**Name:** Staci Sievert

**Specialty:** Wood manufacturing

**Experience:** 28 years teaching in Seymour: 22 years in Social Studies, and six in Tech Ed.

**Quote:** “The new tech ed facility is wonderful because it allows all of our curriculum areas — automotive, electrical, machining, welding, wood manufacturing, home construction and CAD (computer aided design) to have their own designated spaces. This will be great for our students to be able to go more in-depth in the areas of their choice.”

[seymour.k12.wi.us](http://seymour.k12.wi.us)



Seymour Community School District received a \$25,000 fab lab grant to expand its existing fab lab facilities used by students, community members, and businesses alike.

“Seymour is our home, and we want to see the community and school grow,” said Kurt Schuh, owner of a local construction company and a Seymour native. Schuh’s company, a second-generation family-owned business located in Seymour, supports the fab labs program by donating supplies, providing work-site tours, and mentoring students.

Rylee Geiger, a senior at Seymour High School, will be attending college next

year to study automation engineering.

“The fab lab has allowed me to step out of my comfort zone and put myself in challenging situations where I need to be precise and attempt to expand my imagination by looking at things from multiple perspectives,” Geiger said. “By designing things, I am putting tests and experiments into play to see how well everything looks, and if some things don’t go to plan, there are plenty of other ways that I was taught to fix the mistake. The fab lab has allowed me to explore my interests in designing and allowed me to experience how to make these ideas into working projects to my liking.”



# Mishicot High School's Manufacturing Program



Our HAAS CNCs are located in the Metals workshop. CNC students learn how to run the mini mill from the designing to the manufacturing process.

*Kyle Junk, Technology Education School District of Mishicot*

The School District of Mishicot is located on the coastline of Lake Michigan, about 20 minutes southeast of Green Bay. Our school district is located in Manitowoc County and serves approximately 900 students ranging from early childhood to grade 12.

Our current program follows two career pathways, manufacturing and architecture and construction. Students can take a variety of courses ranging from electricity - to machine tools - to wood manufacturing - to welding.

Students have the opportunity to earn 3 different dual credit courses through our local technical college in Welding, Metals Manu-

facturing, and Machine Tool. They are also able to earn the Haas Basic Mill Operator Certification in our CNC Machining course. Students are able to successfully master skills in precision measurement, precision machining, CAD/CAM, AC/DC circuits, and welding and can start in these areas as early as 6th grade in our middle school enrichment and tech ed courses.

We have experienced growth in all of these programs over the last 5 years, going from having one instructor teaching both pathways with no middle school program, to now having three instructors teaching in our 3 lab spaces: Metals workshop, Woods Workshop, and Fab Lab.

Current students and staff have the opportunity to be involved with a state-of-the-art fab lab in which this area includes three epilog laser engraving machines, Tormach CNC mill along with many other fabrication equipment. To go along with the fab lab, manufacturing students have the opportunity to expand their knowledge and experience in both the metals shop and wood shop where exposure to both modern woodworking and metalworking equipment. Some of the equipment found in these areas are the following; Haas mill and lathe, CNC routers, CNC plasma tables, new manual metal lathes and mills.



Student at work, setting up the CNC mill located in the Fab Lab for an Intro to Manufacturing project.

Through classes like Mishicot Enterprise, a student-led business, students get to serve individuals and businesses from the area; providing hands-on learning experiences for students interested in entrepreneurship. Some projects are more challenging than others. Students apply their problem-solving skills to work around machine issues, design errors, quality control

**Continued on Page 14**

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# What Would You Like to Do in Manufacturing?

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Operate, install, and maintain equipment that tracks air and space vehicles.

**Wages** — \$31.31/hour

## Aircraft Structure and Systems Assemblers

Assemble, fit, and install parts of aircraft.

**Wages** — \$26.11/hour

## Biofuels Processing Technicians

Work on various parts of the production of biofuels, such as ethanol.

**Wages** — \$30.26/hour

## Cabinetmakers and Bench Carpenters

Build wooden objects such as cabinets or furniture.

**Wages** — \$19.40/hour

## Chemical Equipment Operators

Operate equipment to control chemical changes or reactions during a production process.

**Wages** — \$19.31/hour

## Chemical Plant and System Operators

Control entire chemical processes through a system of machines.

**Wages** — \$22.73/hour

## Chemical Technicians

Work in labs and assist with analyzing chemicals and other substances.

**Wages** — \$23.06/hour

## Coating, Painting, and Spraying Machine Operators

Operate machines to coat or paint products.

**Wages** — \$19.26/hour

## Computer Numerically Controlled (CNC) Machine Tool Programmers

Develop programs to control the processing of metal or plastic parts by machines.

**Wages** — \$28.90/hour

## Crushing, Grinding, and Polishing Machine Operators

Operate machines that crush, grind, or polish materials like coal, glass, grain, stone, food, or rubber.

**Wages** — \$20.03/hour

## Cutting, Punching, and Press Machine Operators

Operate machines to saw, punch, bend, or straighten metal or plastic material.

**Wages** — \$18.14/hour

## Drilling and Boring Machine Operators

Operate machines to drill, bore, ream, mill, or countersink metal or plastic pieces.

**Wages** — \$16.47/hour

## Electrical Engineering Technologists

Assist electrical engineers in a variety of activities.

**Wages** — \$27.47/hour

## Electrical and Electronic Engineering Technicians

Apply electrical and electronic theory to design or build electrical equipment.

**Wages** — \$30.42/hour

## Electrical and Electronics Drafters

Prepare diagrams that are used to create, install, or repair electrical equipment.

**Wages** — \$28.15/hour

## Engine and Other Machine Assemblers

Construct, put together, or rebuild all types of machines.

**Wages** — \$17.77/hour

## Extruding and Drawing Machine Operators

Operate machines to push thermoplastic or metal materials into tubes, rods, hoses, or structural shapes.

**Wages** — \$18.52/hour

## Fabric and Apparel Patternmakers

Make precision fabric patterns.

**Wages** — \$26.77/hour

## Forging Machine Operators

Operate forging machines to shape or form metal or plastic parts.

**Wages** — \$20.75/hour

## Furnace, Kiln, Oven, Drier, and Kettle Operators

Operate specialized heating equipment.

**Wages** — \$19.53/hour

## Gas Plant Operators

Distribute or process gas for utility companies.

**Wages** — \$32.27/hour

## Geothermal Technicians

Install or maintain geothermal (ground source heat) systems.

**Wages** — \$22.18/hour

## Hydroelectric Plant Technicians

Monitor activities involved in hydropower generation.

**Wages** — \$30.26/hour

## Industrial Engineering Technicians

Help industrial engineers to design processes to make better use of resources at work sites.

**Wages** — \$24.71/hour

## Industrial Machinery Mechanics

Repair, install, or adjust manufacturing equipment.

**Wages** — \$26.12/hour

## Inspectors, Testers, Sorters, Samplers, and Weighers

Look for defects or problems in raw or manufactured materials.

**Wages** — \$19.06/hour

## Jewelers and Precious Stone and Metal Workers

Design, create, or repair jewelry.

**Wages** — \$18.04/hour

## Lathe and Turning Machine Operators

Operate lathe and turning machines in production processes.

**Wages** — \$19.35/hour

## Machinists

Set up and operate a variety of machine tools to produce precision parts.

**Wages** — \$23.40/hour

Source - <https://www.onetonline.org>

## Mishicot High School's Manufacturing Program Continued from Page 13



Our HAAS CNCs are located in the Metals workshop. CNC students learn how to run the mini mill from the designing to the manufacturing process.

and different materials applications.

The School District of Mishicot has also had the gracious opportunity to become partners with a nearby machine services company over the past several years. They have donated two Haas pieces of equipment along with tooling. Without this generous donation, Mishicot High School students would not have the opportunity to be exposed to modern manufacturing technology and equipment. Along with assisting in expanding our manufacturing program, the company has been strongly involved in YA opportunities for Mishicot Students along with always willing to give class tours.

We, as Mishicot Technology Education educators, encourage our students to be part of our Mishicot community. Students collaborate on two remarkable events every year: Mishicot Pumpkinfest and Visual Arts and STEM night at OH Elementary School. They showcase their projects from classes like

Intro to Manufacturing, Woods Manufacturing and Advanced Woodworking. Students show to the community their learning experiences through designing, laser engraving and CNC machining among others.

As a program our goal is to continue sparking interest in the world of manufacturing. As a team we will continue to create partnerships with local manufacturing companies and expand our college credit options. Our goal is to expand our footprint moving forward in our manufacturing area to accompany new manufacturing equipment and to continue opening doors for student opportunities.

[mishicot.k12.wi.us](http://mishicot.k12.wi.us)





# D.C. Everest Enterprise Students Partner with South Area Fire and Emergency Response (SAFER) District to Construct Training Equipment

*Michelle Rothmeyer  
Coordinator of Communications  
D.C. Everest Area School District*

On May 3, D.C. Everest Senior High students enrolled in the DCE Enterprises course delivered a custom-made reinforced steel door and frame to members of the SAFER Fire District (South Area Fire and Emergency Response). The door and frame assembly will be used by members of SAFER to train firefighters on how to breach a door in the event of an emergency.

In order to be fiscally responsible, SAFER Battalion Chief Mark Meyers and his team had been brainstorming ideas concerning creating a door and frame assembly. They had considered constructing the item themselves and located production plans online. However, they quickly realized the task was outside their area of expertise. As they explored local options, one of the SAFER members mentioned the student-led D.C. Everest Enterprises program.

The DCE Enterprises program is a year-long course, added to the curriculum in 2020, that allows students to run a custom metal fabrication business. Students are in charge of every aspect of the small business, from

managing the supply chain, to bookkeeping, billing, production and fabrication, finishing, and shipping. Students who enroll in the course are exposed to all facets of the business but can focus on what most interests them — product design, CNC manufacturing, finishing and coating, welding and fabrication, shipping and receiving, website development, advertising, marketing or finance.

Now in its third year, the student-led enterprise has developed a strong presence in the community and abroad. They produce— for example — custom metal signs, decorative waterfalls, fire pit grates, picnic tables, trailers, benches and aluminum truck topper cargo hauling baskets.

This year, their product line has expanded to include a custom-made reinforced steel door and frame for SAFER.

One of SAFER’s employees is a former student of Steve Kmosena, DCE technology education teacher, who launched the DCE Enterprises course. The SAFER employee met with Kmosena and they reviewed the plans and the specifications — the door has to be able to withstand brute force, according to Meyers — to determine whether DCE



Enterprises had the capacity for the project. The students then began working on a bid for the project, contacting SAFER for clarification as needed. Once the bid was presented to SAFER and approved, the project was launched. Before the design was finalized, SAFER visited the site of DCE Enterprises

to review the door and frame to see if any changes were necessary. “It was an awesome visit,” noted Meyers. “The students were so enthusiastic. We are very grateful for the process. It’s saving us money, we have

**Continued on Page 16**

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# 25 Wisconsin School Districts Awarded Fab Lab Grants

Continued from Page 8

**School District of River Falls— \$25,000**

See story on page 20



[www.rfsd.k12.wi.us](http://www.rfsd.k12.wi.us)

**School District of Black Hawk – \$25,000**



[blackhawk.k12.wi.us](http://blackhawk.k12.wi.us)

**Sparta Area School District – \$6,197**



[www.spartan.org](http://www.spartan.org)

**Weyauwega-Fremont High School – \$16,667**



[wegafremont.k12.wi.us](http://wegafremont.k12.wi.us)

**Albany School District – \$9,904**



“Being selected for this grant will help us expand our STEAM offerings. Serving the needs of all students and developing the required skills, attributes, and dispositions to be successful is our primary focus. With this grant, we will be better equipped to design a cutting-edge program that connects to all students and the greater community,” said Kurt Soderberg, superintendent of the Albany School District.

[www.albany.k12.wi.us](http://www.albany.k12.wi.us)

**School District of Fort Atkinson – \$25,000**



[www.fortschools.org](http://www.fortschools.org)

**School District of Mishicot – \$25,000**

See story on page 13



[mishicot.k12.wi.us](http://mishicot.k12.wi.us)

**Seymour Community School District – \$25,000**

See story on page 12



[seymour.k12.wi.us](http://seymour.k12.wi.us)

**School District of Belleville – \$16,600**

See story on page 4



[belleville.k12.wi.us](http://belleville.k12.wi.us)



## Lac Courte Oreilles Ojibwe First Tribal School in State to Receive Fab Lab Grant

Lac Courte Oreilles Ojibwe School is the first Tribal school to be awarded a fab lab grant from WEDC. They've been awarded \$19,920 to establish a fab lab facility and support their existing STEAM courses. The school plans to use the grant to purchase four 3D printers, three Cricut machines, two laser engravers, two STEM lab sensor kits, and a decal machine. Students will now be learning how to program and operate these new machines. The school is also planning to integrate student-led, instructor-facilitated learning in its fab lab space and to provide fab lab classes for community members.

The equipment purchased by Lac Courte Oreilles Ojibwe School will benefit their student body throughout their elementary, middle, and high school, as well as Waadookodaading, the Ojibwe language institute. The school is dedicated to culturally responsive and sustaining STEAM education. Students have had the opportu-

nity to participate in a variety of educational programs and career-building experiences, including the Student Space Flight Experiments Program, where a winning team of Lac Courte Oreilles Ojibwe School students was able to send an experiment to the International Space Station.

“This grant is huge for us,” said Tammy Moncel, science teacher at Lac Courte Oreilles Ojibwe School. “We’re seeing a huge need and interest in fabrication and technology-based skills. The students are really excited about these opportunities.”

Lac Courte Oreilles Ojibwe School was one of 12 first-time fab lab grant recipients.

Courtesy of the WEDC

[www.lcoosk12.org](http://www.lcoosk12.org)



## D.C. Everest Enterprise Students Partner with South Area Fire and Emergency Response (SAFER) District

Continued from Page 15

a great training prop that will serve us well and we had an opportunity to work with area students who are part of an impressive program.”

When the SAFER team arrived to see the final product, they had the opportunity to speak with a few of the students who helped manufacture the door and share with them the role the steel prop will play in the rescue personnel’s training sessions. A few firefighters even demonstrated what the training sessions will consist of while the students stood nearby and watched. “All too often, the “next” generation is viewed in a negative light. We regularly hear comments such as today’s students only know how to play video games or kids these days are lazy. This project and this program provides evidence that our future is bright,” concluded Aaron Hoffman, DCE Career and Technical Education Director. “These students have been heavily involved in every facet of the design and construction of this door and, quite honestly, they’ve done amazing work. We strive to create the best environment for students and support them along the way, and every time they take things further than we thought



possible. We’re really proud of the students.”

A sample of Evergreen Enterprise products is available on the DCE Enterprise website and customers are encouraged to submit custom product ideas as well. “If we can make it or fix it, we’re going to do it,” notes Mr. Kmosena.

For more information, visit:

- **Facebook:** [DCE.Enterprise](https://www.facebook.com/DCE.Enterprise)
- **Twitter:** [@DceEnterprise](https://twitter.com/DceEnterprise)
- **Website:** [dceenterprise.weebly.com](http://dceenterprise.weebly.com)

[www.dce.k12.wi.us](http://www.dce.k12.wi.us)







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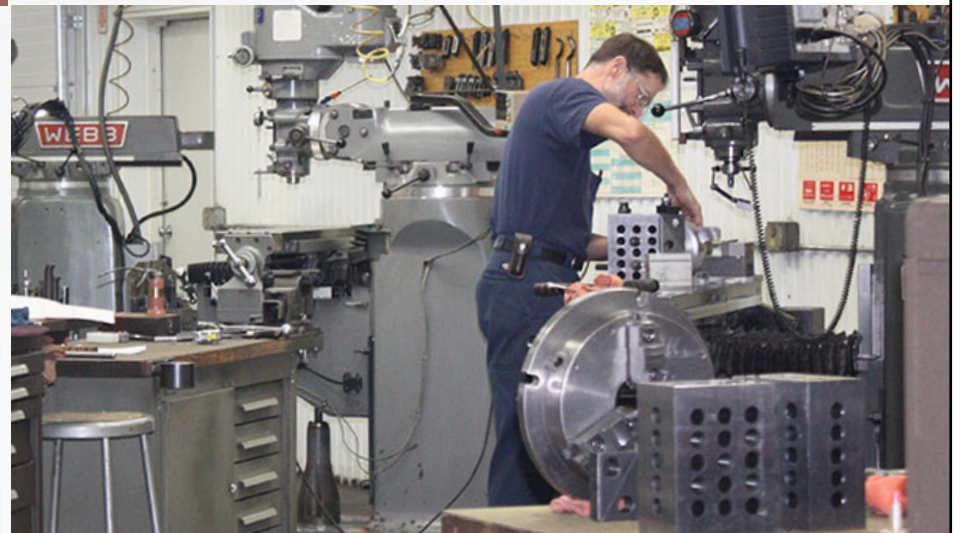
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JBC Machine is committed to continuing education and training for our employees. As of 2021, we have graduated six employees through the apprenticeship program with Fox Valley Technical College, making them journeyman machinists. In addition, we constantly cross train every employee to ensure no matter who machines your parts, we will produce the same quality results that we are known for every time.

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## From Wild Child to Welder



If there's one thing Winneconne High School alum Jack Stanek and his former teachers would agree on, it's that when Jack reached sixth grade, he was a wild child. "I spent more recesses in detention," admits Jack. Today, he works as a welder for Innovative Machining, Neenah, WI. He lives in the home he bought last year at the age of 20 and is every bit the model citizen. What brought on this transformation?

In part, Jack got to know himself. In

sixth grade, "I started to get bored. In a lot of classes, I started to have too much time on my hands," he says, "I started getting into a lot of trouble."

In fact, he recognized a pattern: "This is going to sound really, really weird," he says. "But every time I set a goal, I'd finish a goal, I'd get bored, and then I'd get in trouble."

Luckily, Jack was surrounded by wise and patient adults. A group of them sat him

down and guided him toward defining his purpose, his "why." For example, as the adults explained to him, if you want to be a healthier person, your goal is not to lift 300 pounds at a bench press; your goal is to stay healthy so you can roll around on the floor with your grandkids one day. "I needed something that would keep me busy and would be endless," says Jack.

As he continued through middle school, he took classes in technology and agriculture, but when he got to the high school STEAM curriculum, that was it. According to his former tech ed teacher Chris Arps, once he was able to see what the world has to offer and the skill sets needed, "I think that's what lit his fire. . . . I think he took every single tech class that we offer here. . . . He loved the challenge."

"[Mr. Arps] knew if I was bored, I was out of there," says Jack. "I really got good at [welding]. I did a lot of stuff that other students couldn't. And then when I started teaching other students what I was doing, . . . I was realizing how much time and ideas and devotion I had to it and there was no end to it. There is never too much knowledge and I love that. I love that there's never a stop with any form of welding and then I could teach that. And that just made it even better teaching."

"I would say grades are irrelevant to him. It's more about the knowledge," Mr. Arps continues. "[He's thinking more] what am I going to get out of the class? And how does it relate to the real world?"

Jack continued to pursue all the elements of a career pathway: In addition to his CTE courses, he earned industry-recognized credentials, dual credit, was an officer for his SkillsUSA chapter, and was a youth apprentice his senior year (2020) at a company that hired him as a fabricator after he graduated. He distinguished himself by working with some welding inspectors to do a vertical down structural test — a task thought to be nearly impossible. As a result, the American Welding Society is going to be changing some rules.

Jack's take on it: "I did some cool stuff, yes. But I think the more impressive thing was me growing as a person. And that's not going to stop."

*Courtesy of the WI DPI*

[hs.winneconne.k12.wi.us](https://hs.winneconne.k12.wi.us)



## Luxemburg-Casco School District Grows Commitment to Technology, Machining Courses Through Equipment Additions



The Luxemburg-Casco School District has further enhanced its commitment to the growth of technology- and machining-related courses offered to its high-school students. The district received five new pieces of equipment at the start of the 2022–23 academic year.

Mike Snowberry, the district's director of learning services, believes that L-C now has

the largest amount of machining equipment in the area for a school of its size. He is excited by the addition of these new pieces of learning technology and the impact they will have on students. "They expose students to different industries and career clusters," says Snowberry.

**Continued on Page 19**

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# Luxemburg-Gasco School District Grows Commitment to Technology, Machining Courses Through Equipment Additions Continued from Page 18



The embroidery machine provides students with hands-on opportunities to design and create products.

“Beyond that, they offer the experience of learning how to design something, then seeing the practical solution by making it, particularly for students with an interest in creativity.” The new equipment consisted of a FANUC Robotic Arm, two Haas mini-CNC mills, an injection molder and an embroidery machine.

The robotic arm — the Fenceless ER-4iA — is the largest one in the industry and not many people know how to run it, according to Snowberry. Along with its CERT education training and advanced software, the equipment is valued at \$38,000.

The mini-CNC mills, which complement the district’s existing CNC (computer numerical control) equipment, are a good way to introduce students to metals. Through their use, students are able to discover the many ways that they can create a product.

The injection molder, along with the Amatrol Plastics Technology Learning System, carries a value of \$17,500.

The embroidery machine has potential use by the Spartan School Store, which sells school-branded apparel. It also provides students with the opportunity to

design and create a product, then make it.

All of the new equipment will complement the district’s existing machinery: 3D printing, 2-dimensional CNC machining, graphic arts, laser engraving and drones. It will continue to broaden the offerings available to students, including those who wouldn’t normally pursue a technology-related career path.

“A large number of students in Fab Lab courses are not traditional technology-education students,” says Snowberry. “Our belief is that some of these non-traditional students may decide to pursue careers as CNC machinists, if they are exposed to such technology in high school.”

Four area businesses collectively supported the new equipment purchases with donations totaling \$30,000. They also have made in-kind donations of equipment to the district.

“We can’t thank area businesses enough for their ongoing support,” adds Snowberry. “They see how these programs energize students and provide career-exploration pathways. These community partnerships are critical to the success of our Fab Lab curriculum.”

The district also contributed \$20,000

towards the purchase of the mini-CNC mills. L-C additionally received a Technical Education Equipment Grant of \$25,000 from the Wisconsin Department of Workforce Development (DWD) in April 2022. The Fast Forward grant funds received by L-C were utilized toward the purchase of the robotic arm.

The Fab Lab courses are increasingly popular with L-C students, and the district consistently receives more requests to enroll than the number of seats available. In this year’s first semester, there were six sections of Fab Lab 1, totaling 102 students, up from four sections and 74 students during the 2021–22 academic year.

The ultimate outcome is broad exposure by L-C students to available career pathways and heightened skills for post-secondary education or work, along with a more robust potential workforce for area businesses. The result is a win for everyone.



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## RFHS Robotics Club: Business and Games



School District of River Falls

Students at River Falls High School are helping solve today's global challenges. Over a period of 6 weeks, 19 students in the Robotics Club design, build, program, and test their robot as they prepare for their inaugural "game" — a FIRST® Robotics Competition. This year's event, Charged Up, challenged teams to reimagine the future of sustainable energy, focusing on ensuring access to

affordable, reliable, sustainable, and modern energy for all.

RFHS Robotics Club is much more than a robot competition. "Students are essentially running a business," says Ryan Brill, RFHS teacher and head mentor. Student Arlo L'Allier agrees: "We're not only just having fun and competing, but really learning to work on a team, gaining technology-based knowledge and learning how to

problem solve."

Arlo emphasizes that the Robotics Club is not just for those who are technically-inclined: "I know nothing about computer programming, but we have people on the team who are good at that. We have a couple of students who are on the media side — talking to businesses, taking videos, documenting, designing logos. There's a spot for every single type of person

to be a part of the team."

Brill says the Robotics club is just one piece in the bigger picture of creating a district-wide program. "I hope we can use this as a springboard to start district-wide robotics, and it can be a stepping stone for more robotics-based and STEM-based opportunities for students of all ages."

In the past two years the district received grants and generous donations for three mills, two lathes, and most recently, a grant for a larger mill. These machines are used in the Career & Technical Education (CTE) classes at the high school, many taken by students who join the robotics club. Students then see a real-world connection as they build their robot. "We are able to take skills we learn in other classes — programming, CNC machining, engineering design, and use them in the robotics club," says Arlo. "All those skills are brought together in a culminating project that is fun."

Assistant Mentors Jared GrothOlson, Mike Lord, and Rob Peter help guide and mentor the students. The RFHS Robotics Club has been funded by the generous donations of nearly 20 community partners.

Wiley's Common Grounds had a special guest in the shop last week!

### Bill the Robot!

Bill was developed and built by the



RoboCats — the RFHS Robotics team. Advisors Mr. Brill and Mr. GrothOlson joined the team as they demonstrated how the robot could move and pick up items. Students were even given the opportunity to test it out! What's next? Possibly a robot that makes and serves coffee?

[www.rfsd.k12.wi.us](http://www.rfsd.k12.wi.us)



## Internships — A Valuable Option



Robert Judson, Marketing Specialist  
Metal Craft and Riverside Machine and Engineering

"It's our job to figure out how to do the impossible — to get creative and to accomplish what others say can't be done."

Learning a trade can be a great option for students who are interested in gaining practical skills and entering the workforce quickly. Trades such as CNC machining, plumbing, electrical work, welding, and carpentry are in high demand and can provide students with stable, well-pay-

ing careers. In addition, many trade schools, technical colleges, and apprenticeships offer hands-on training and real-world experience, which can be invaluable to students. Learning a trade can also be a cost-effective alternative to traditional four-year degree programs, as many trades offer competitive salaries without the high costs of college tuition. Overall, learning a trade can be a great option for students who want to gain valuable skills, enter the workforce quickly, and secure a stable career. With so many options out there, what is the best way a young person or student can find out what trade fits them the

best? Finding a great internship may be a great option.

Internships like the ones we offer at Metal Craft and Riverside Machine and Engineering are important to students because they provide them with valuable hands-on experience, help them explore career opportunities, and prepare them for the workforce. Internships allow students to apply what they have learned in the classroom to real-world situations and gain practical experience in their chosen field. They also provide students with the opportunity to network with professionals in the industry, which can lead to future job opportunities. Internships can help students make informed decisions about their future careers, develop important skills, and stand out when applying for future jobs. Overall, internships provide students with a competitive edge in the job market and help them prepare for their future careers.

- Help students explore career opportunities in the manufacturing industry
- Prepare students for the workforce by developing important skills such as problem-solving, teamwork, and communication
- Help students make informed decisions about their future careers by exposing them to various job roles and responsibilities within the industry
- Help students stand out when applying for future jobs by giving them practical experience in the field.

One of the most significant benefits of internships in manufacturing is the chance to gain practical experience. Many students have little experience working in manufacturing, and internships provide them with the opportunity to learn about different manufacturing processes, techniques, and technologies. This experience can help them develop important skills that they can use in future careers, such as problem-solving, teamwork, and communication.

An Internship in manufacturing can also help students prepare for the workforce by providing them with valuable skills and experience that they can use in future jobs. By working in a manufacturing facility, they can develop a strong work ethic, learn how to work in a team, and gain experience using different types of machinery and equipment. These skills can help them stand out when applying for future jobs and make them more valuable to potential employers.

In conclusion, internships are vital because they provide young people with hands-on experience, that help them explore career opportunities, and prepare them for the workforce. Manufacturing is a critical sector of the economy, and providing students with opportunities to gain experience in this field can be an excellent way to help them prepare for their future careers. By working in a manufacturing facility, students can develop important skills that they can use in future jobs, learn about different job roles and responsibilities, and gain practical experience that can help them stand out in the workforce.

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