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## Omro High School Wins National Samsung 'Solve for Tomorrow' Contest



Last June, on a Facebook Live channel, science and engineering teacher Rob Turner and his team of Omro High School students learned that they were one of the five winners of Samsung's national Solve for Tomorrow Contest. After advancing through all three levels of the competition, the Omro High School team answered questions from the judges in the final round of the competition about their robot that can traverse ice with a sensor to measure ice thickness in real-time.

"We were the fifth to be announced live," Turner said. He spoke with the students over Zoom after the announcement. "Some of the kids-- their hope was fleeting, but I set them up the day before understanding that they already won 50 thousand dollars and were the top of thousands of schools. They were all freaking out when they heard."

The Samsung Solve for Tomorrow Contest requires participants to show how science, technology, engineering, and math

laborated with scientists and other experts throughout the school year to develop their prototype.

Due to the pandemic, the team had to meet virtually to prepare for the final competition. This also meant the in-person competition in New York had to be canceled. "They did an awesome job rising to that really unorthodox challenge," Turner said. "As a teacher, you try to prepare them for most of the challenges they will run into, but no one could have predicted this. They did a really good job answering the questions the judges had for them."

The judges were most interested in the mechanics of how the robot worked and plans for the future for continuing with this type of technology. Judges were impressed with the fact that the kids had a solid, functioning prototype.

According to Turner, several students

(STEM) can be used to solve a local problem. As a community that is part of the Lake Winnebago system, ice fishing is a way of life, and falling through the ice is always a danger. The high school team learned the engineering design process and col-



## 31 Wisconsin School Districts awarded Fab Lab Grants



Fab Lab at Washington Island School District. (See article on page 10)

On May 1, 2020, Wisconsin's Governor and the Wisconsin Economic Development Corporation (WEDC) today announced that 31 school districts throughout the state have been awarded a total of more than \$690,000 in grants to establish or expand local fabrication laboratory (fab lab) facilities.

"The fab lab program remains one of the best ways for students to gain experience in the high-tech manufacturing jobs where Wisconsin leads," the Governor said. "During the current coronavirus crisis, when we've needed quick turnaround for protective gear and other medical devices, those manufacturers have become even more important to our state."

"WEDC has invested more than \$2.8 million over the past five years to provide 77 school districts across the state with the equipment necessary to help students learn high-demand skills, including technology, manufacturing and engineering," said the secretary and CEO of WEDC. "Fab labs benefit not only the students themselves with important technology and career skills, but they also benefit Wisconsin employers, who will be able to find workers with the right skills to allow their companies to grow and thrive."

A fab lab is a high-technology workshop equipped with computer-controlled manufacturing components such as 3D printers, laser engravers, computer numerical control routers and plasma cutters. Through its Fab Labs Grant Program, WEDC is supporting the purchase of fab lab equipment for instructional and educational purposes by elementary, middle, junior high or high school students.

The following school districts were awarded Fab Labs Grants:

- Merrill Area Public Schools, \$15,000
- School District of Brown Deer, \$25,000
- Mellen School District, \$24,500
- Rice Lake Area School District, \$25,000
- School District of Beloit Turner, \$25,000
- Milwaukee Public Schools, \$25,000
- School District of Abbotsford, \$15,000

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Kelly Courtney



## Bay Link Manufacturing Gives Students ‘Real World’ Experience in the Manufacturing Industry



### Green Bay Area Public School District

Every year, juniors and seniors in the Green Bay Area Public School District are invited to apply for the Bay Link Manufacturing® program. Bay Link Manufacturing® gives students the opportunity to gain real world experience in manufacturing, engineering, marketing, and business. Recognizing that the future depends on creating a highly skilled workforce to sustain our vibrant community, the Green Bay Area Public School District and its partners developed Bay Link Manufacturing® in 2014. Students receive high school credit as well as college credit upon completion of the program.

Bay Link Manufacturing® is a high-precision manufacturing learning lab located at Green Bay West High School. The lab is equipped to complete projects for local companies in the areas of industrial welding, machine fabrication, and metals. Through sales, marketing, accounting, project planning, bidding, purchase orders, and customer service, students also learn the business side of manufacturing. After being a part of Bay Link Manufacturing®, students are prepared to attend a 2 or 4 year college in the fields of

manufacturing and engineering. They may also be prepared to enter the workforce in an entry-level position.

This student-run manufacturing job shop provides students with opportunities to complete projects for local businesses in areas of welding, machine fabrication, and metals. Some of the equipment capabilities include; design/software, CNC machining, manual machining, cutting and

welding.

Each summer, students have the opportunity to work for Bay Link Manufacturing®. Andy Belongia, Bay Link Manufacturing® Coordinator, hires a few students each year to keep the shop running through the summer months.

“There is no formal instruction during the summer, the students just know what we need to do and how to do it,” said Belongia. “They punch in; punch out just like a regular job. It’s more laid back in the summer and for that reason we need to have the right students.”

Students get hands on experience in learning to produce materials and projects efficiently, effectively and accurately. There is also a business side to Bay Link Manufacturing® where students talk to customers and make sales calls. “We do charge for the work we do, so the money that we make goes back into the program and the students then receive a scholarship based off our profits,” said Belongia.

Belongia’s favorite part about the program is the summer aspect of it. “We can tell our customers that we don’t close once the

### “This Girl Can” Workshop Series Aims to Engage Girls in STEM Fields

The Bay Link Manufacturing® program at West High School is doing its part to engage young women in exploring careers in the areas of manufacturing and engineering. Each year, local girls are invited to take part in a free workshop series called “This Girl Can.” The free workshops are designed to be engaging and educational, while exposing girls to the many career opportunities available in our region.

This Girl Can participants have created metal art using basic welding skills, wooden signs using a CNC machine, built garden beds using carpentry skills, and many more exciting projects. Girls in grades 7-9 are invited to attend the workshops with a special adult female. This person could be a mother, grandmother, older sister, aunt, female mentor, etc.

Andy Belongia is the instructor of Bay Link Manufacturing®, a manufacturing learning lab for students located in West High School. Bay Link is equipped to complete projects for local companies in the areas of industrial welding, machine fabrication and metals. Juniors and seniors at any Green Bay Area Public School District school are eligible to apply for entrance into the program.

Students receive high school credit as well as college credit upon completion of the program.

Since the inception of This Girl Can in the 2016–17 school year, Belongia has seen the benefits of introducing girls to the engineering and manufacturing fields. “Since we started This Girl Can, it has been rewarding to see a few of the girls enroll in our Bay Link Manufacturing® program when they are old enough,” said Belongia. “This Girl Can allows students to get comfortable with a new skill in a safe, controlled environment. Often they realize they are pretty good at welding, and it opens up a whole new career path for them.”

Belongia would like to see more girls enroll in Bay Link Manufacturing®, as the job opportunities in welding and manufacturing in Wisconsin are plentiful. “Many of our Bay Link Manufacturing® students have a job in their desired field right out of high school, and some work while they attend college to continue their education,” said Belongia. “These fields offer high-wage, family-supporting positions that you can make a career out of.”

school year is done. We can continue to keep these relationships going all summer and continue to do the work for them,” said Belongia.

Bay Link Manufacturing®, both as a course and summer employment, is a great addition to a student’s resume. By maintaining this program during the summer, students continue to gain experience in the areas of machining and manufacturing, which is important for employers who are looking to hire individuals with prior work experience.

To learn more about Green Bay West’s manufacturing program, visit [gbaps.org/baylinkmanufacturing](http://gbaps.org/baylinkmanufacturing) and follow them on Facebook at [facebook.com/BayLinkManufacturing](https://www.facebook.com/BayLinkManufacturing).

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## Arrowhead Technology and Engineering

### Reaching their vision one student at a time

#### Arrowhead High School

Arrowhead High School students embrace the opportunities of tomorrow through learning skills in our Technology and Engineering program today! Students graduating from Arrowhead High School in the next several years will have access to hundreds of career opportunities in skilled trades and manufacturing. In 2014–15 Arrowhead established the vision to better serve the students and help foster the regional economy by introducing students to design and engineering and the connections to manufacturing. This vision becomes more and more a reality each school year.

Arrowhead Metals Fabrication student, Matt Hopener embodies the spirit of this vision and the future of manufacturing. He likes technology and the idea of building something



great! When asked about what sparked his interest in metals fabrication and welding, he said that taking Arrowhead's Manufacturing with Engineering and Materials (MEM) class as a sophomore, he discovered that he was good at welding. From there, with the advice from his teachers, he signed up for Metals Fabrication and in November secured a job at a full-service large weldment and large fabrication manufacturer. He is proud of what he has been working on so far — including a staircase for Google! When asked about what he enjoys about metals fabrication and welding, "I like knowing that I am working on something different every day, I like to create things and see the results of what I have done." Matt is going to continue in the Arrowhead Tech and Engineering Program as senior as Youth Apprentice and plans to take a welding course in college after graduation.

Mr. Jeff Luetschwager, Wisconsin Technology Education Association Award of Excellence 2019 recipient AND Arrowhead teacher said "We're really trying hard to spark



student interested in Manufacturing at a young age because of all the current career opportunities. Once students enroll in our program they are hooked — engaged and excited. We expose them to so many different potential careers starting as early as freshmen year.

Our students understand what it takes to design, plan, program and manufacture real products."

The future continues to look bright for Arrowhead students who enroll in the Technology and Engineering! With the new renovated NC Metals lab and classroom and equipment upgrades like a Accurshear and CNC Mill.

The school is really excited to offer a new business and manufacturing experience Warhawk Manufacturing is a class offered at Arrowhead High School. The class meets for two class periods every day and is instructed by Anthony Christian and Jeff Luetschwager. Together they are leading students, teaching lifelong skills in engineering, manufacturing, and business. These students must learn the in's and out's of running a business. Ninety percent of all profits will be split up at the end of the year and given to the students as scholarships. Students will use previously learned skills from other classes that will help them contribute to the success of the business. The student employees will be responsible for quoting jobs, ordering material, manufacturing parts, quality control, shipping, receiving, invoicing, customer service, accounting, payroll, project



management, maintaining equipment, and everything else it takes to run a business.

Students earn both profit sharing, scholarships, and credit toward high school graduation.

Interested in investing in the future? Business and manufacturers that are interested in partnering with Arrowhead should contact Anthony Christian: "Our program continues to transform as it reflects modern manufacturing with exceptional learning environments. As spaces are revised and new equipment becomes available, we are able to push our curriculum to the next level. Without the support of our industry partners, we would not be able to meet the vision of Technology Education at Arrowhead."

For more information about Warhawk Manufacturing visit <https://warhawkmanufacturing.ecwid.com>

[www.arrowheadschoools.org](http://www.arrowheadschoools.org)  
(262) 369-3612



## 31 Wisconsin School Districts awarded Fab Lab Grants

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- School District of Mauston, \$15,000
- New Lisbon School District, \$9,700
- Somerset School District, \$25,000
- Waupun Area School District, \$25,000
- Pewaukee School District, \$25,000
- School District of Poynette, \$23,900
- Elmbrook Schools, \$25,000
- School District of Drummond, \$13,200
- Wauwatosa School District, \$25,000
- School District of Mondovi, \$25,000
- Oshkosh Area School District, \$25,000
- Washington Island School District, \$25,000
- Eau Claire Area School District, \$25,000
- School District of Omro, \$25,000
- Coleman School District, \$25,000
- School District of Random Lake, \$25,000
- Union Grove Union High School District, \$25,000
- Elkhart Lake-Glenbeulah School District, \$22,200
- Lake Holcombe School District, \$25,000
- School District of New Berlin, \$19,000
- Cedarburg School District, \$25,000
- Elkhorn Area School District, \$13,500
- School District of Mishicot, \$22,200
- Westby Area School District, \$25,000

The 31 public school districts are receiving a total of \$693,200 in Fab Labs Grants from WEDC. Individual school districts were eligible for up to \$25,000, and consortiums of two or more districts were eligible for up to \$50,000. The program requires matching funds from each district.

WEDC received 31 applications, which were evaluated based on readiness and long-range planning, curriculum, business and community partnerships, financial need and previous awards.

In addition to the grants, WEDC has developed a fab labs resource page on its website that provides districts with information and a video on how to set up and equip a fab lab, how to implement best practices to ensure a successful fab lab and more.

## Omro High School Wins National Samsung 'Solve for Tomorrow' Contest

### Continued from Page 1

will continue to work on the prototype. They applied for a grant program from MIT which could help them refine the prototype and work toward opportunities for patents.

When asked how the prize money and equipment will be used, Turner said that \$50,000 will go toward new Samsung brand materials, and the other \$50,000 will go toward classroom supplies as they continue the process of creating a fabrication lab in the district.

Turner is equally excited about next year's students and the competition. "Every year, I'm amazed at the ideas they come up with. I'm in the background helping them. I'm less of a person that stands up there and tells you how the world is and more of a person

guiding you on a journey learning of how the world is," he said. "It's not just the big schools that come up with really good ideas. It's about letting kids run with their creativity."

This is not the first time Omro High School has advanced to the final portion of the contest. In 2017–18, another group of Turner's students made it to the top 10.

Reprinted from the Wisconsin DPI ConnectEd

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## Welding News from Chippewa Falls Area Unified School District

### Female Welding Teacher Inspires Students to Go into Trade

A female Tech Ed teacher is paving the way for females in the field by teaching at a local middle school.

Maranda Degenhardt teaches welding to eighth graders Chippewa Falls Middle School. She became interested in tech ed in middle school, starting with woodworking classes.

“When I was in middle school we actually had these exploratory classes and one of mine happened to be tech ed, and I thought it was really cool to work with wood and things like that,” she says.

She continued to pursue tech ed throughout high school and college, and chose to come back to light the spark for eighth graders at Chippewa Falls Middle School. She says some people were apprehensive about a female welding teacher at first.

“Originally they were like, you’re a girl, you know how to do this? It’s really cool to show up the boys sometimes where I’m like, yeah, I do know how to do this, I can do it, you can do it too now. And so I



think it pushes the boys because they try to compete against me, but it’s funny because the girls are usually better.”

Degenhardt is glad that representing females in trade is inspiring students to take

### Chippewa Falls High School Awarded Welding Grant

*Jonathan Hiebl  
Chippewa Falls Area Unified School District*

Despite the chaos of 2020, the Technology Education Department at the Chippewa Falls Senior High has had an awesome year. In February, 2020, the department became a registered American Welding Society SENSE Training Organization. The AWS SENSE Program offers students the opportunity to earn industry recognized welding certificates while in high school. The SENSE Level I Program covers written and welder workmanship tests using GMAW, SMAW, FCAW, GTAW, oxyfuel, and plasma cutting processes on carbon steel, stainless steel, and aluminum. Full completion of the SENSE program is very challenging with the wide variety of processes, weld prints, and materials to cover. Students working through the welding career pathway at the high school have numerous employment and educational opportunities upon gradua-

tion including; One year welding diplomas, welding-related union apprenticeship programs, and immediate skilled employment opportunities.

In April, 2020, the department received additional good news as they were awarded a \$25,000 dollar grant from the American Welding Society (AWS) Foundation to upgrade the current welding lab. The grant was written and prepared by Laura Bushendorf, Donna Goodman, Danielle Hatfield, and Jonathan Hiebl. The school district matched the grant amount for a project total of \$50,000. The project funding provided 11 new multi-process welders, 2 new plasma cutters, upgraded electrical in the lab, and bought materials to fabricate and replace the welding booths. Students in the Welding Technology classes have been able to participate in the renovations by welding and fabricating the new booths that replaced the old outdated ones.

tech ed classes.

“It’s really cool to see they’re taking these classes because of me,” she says. “They’re like, ‘we like you as a person but we also like what you’re standing for’.

We’re showing that women can do it too, and that’s what’s really important, cause we don’t just need men in the trades but we

**Continued on Page 7**

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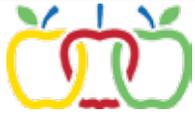
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# A-Tech Prepares High School Students for the World of Work

Kylie Harwell  
Communications Coordinator  
Appleton Area School District

If you've ever heard a student ask "When will I ever use this in real life?" you already understand the need for Appleton Technical Academy (A-Tech). Students learn practical skills that get applied to real-world situations, such as math skills to determine the proper angle for a specific laser cut or weld, writing skills to prepare a standout cover letter and resume, and science skills to understand the

chemistry behind the materials they're working with. Each student's education track is tailored to his or her interests, resulting in more individual attention.

A-Tech was created in response to a need for workers to fill the growing demand for skilled manufacturing positions in Northeast Wisconsin. The manufacturing environment in the region is strong and growing. Additionally, as more and more baby boomers retire, businesses are finding it increasingly difficult to find qualified workers to replace the retirees.

In cooperation with the local techni-

cal college and business leaders, this Appleton Area School District (AASD) charter school is focused on providing serious students with the skills needed for a successful career in modern advanced manufacturing.

Mark McQuade, A-Tech Principal says, "What sets us apart from other schools is our ability to offer over 40 college credits that transfer into the program of study that the student has chosen. The close relationship between the college instructors and A-Tech instructors allow for a smooth transition."

Using a project-based, hands-on learning approach, the school day features a mix of manufacturing related courses in welding, machining, mechanical design, automated manufacturing and a mix of traditional core classes in math, science, English, social studies.

A-Tech labs are second-to-none with brand new equipment that mirrors what the students will see in industry. We have eight welding booths with 16 welders that will expose the students to MIG, TIG and stick welding. We have six manual lathes, 4 manual mills and a brand new Haas CNC machining center. Our fabrication equipment includes a CNC plasma cutter and numerous metal forming pieces of equipment that will allow students to create meaningful projects.

Students in A-Tech learn about the world of work in a variety of ways. In the classroom they are exposed to the basics of machining, welding, mechanical design, automation, math for the trades, reading blueprints, project-based learning, and other classroom experiences designed to reflect the world of work.

A-Tech appreciates the involvement of manufacturing professionals making classroom presentations and demonstrations and busi-



## Students Forge Ahead with A-Tech



The clang of the hammer on the anvil echoes through the classroom. Two A-Tech students peer into the forge, watching the steel glow orange. They worked systematically over two class periods to make the top of a hammer.

It takes a lot of patience to make something from a simple metal rod. It takes teamwork too. One student holds the steel, occasionally inserting it back into the forge, while the other hammers the end to flatten and shape it.

These two students are both pursuing welding as a career, so they're using their last few months of senior year to get more familiar with different techniques and equipment. One senior already has a full-time job lined up, courtesy of his apprenticeship, and the other plans to pursue a welding certificate in college.

The school day features a mix of manufacturing-related courses in welding, machining, mechanical design, automated manufacturing and a mix of traditional core classes in math, science, English, and social studies. A-Tech students can choose their own focus in one of these areas in their junior and senior years and work to complete technical college credits.

The A-Tech classrooms look more like

the floors of real-world companies. Instead of rows of desks in the metals room, there are eight welding booths with 16 welders that expose the students to MIG, TIG, and stick welding. Students also have access to 6 manual lathes, 4 manual mills, and a new Haas CNC machining center. Fabrication equipment includes a CNC plasma cutter and numerous metal forming pieces of equipment that allow students to create projects that teach them the fundamentals of metal-working.

A-Tech students graduate ready for further schooling or to start a full-time job the week after graduation. They can produce and assemble structural metal products, read job orders and blueprints, and set up and use equipment to cut, shear, saw, form, roll, and bend metals.



nesses opening their doors to allow students to tour their production facilities and to do job shadows with experienced workers. We partner with many area manufacturers, a manufacturing alliance, and the technical college.

Our students benefit from attending A-Tech in a multitude of ways. They get to learn what a career in manufacturing is really like. It's like taking a test drive before buying. They could make money while learning. Seniors enrolled at A-Tech have the opportunity to complete a paid youth apprenticeship for school credit.

A-Tech graduates gain advantage over other applicants entering the workforce. They'll already have hands-on experience in a variety of trades and skilled labor, making A-Tech graduates attractive to potential employers. Lead Teacher Paul Endter says, "Our students learn the value and rewards of hard work before they graduate. Thus, they are sought after by local businesses who are eager to employ our graduates."

Learn more about A-Tech: <http://appleton-tech.org>

[aasd.k12.wi.us](http://aasd.k12.wi.us)  
(920) 832-6161



## Welding News from Chippewa Falls

Continued from Page 6

also need those women, to show that we're capable."

Students say they are inspired by their teacher representing a minority in the field they're learning about.

"I thought it was really cool that there's a female teacher in this department because it's not really usual," says Emily Pomeitlo, one of her students.

Students in Degenhardt's class are inspired by her and are looking at careers that they wouldn't have normally considered.

"Definitely interested in the trades, because I think it's cooler than what most girls would do, like the classes they would take, so I'm interested in that."

Women make up about 5% of welders in the United States. Degenhardt is hoping to see that number increase.

[cfsd.chippewa.k12.wi.us](http://cfsd.chippewa.k12.wi.us)  
(715) 726-2417





## SPARTAN MANUFACTURING



Nina Crull  
Spartan Manufacturing  
McFarland High School

McFarland High School supplies many opportunities to all its students, but the opportunities are only as valuable as the students make them. In 2017 opportunity arose for McFarland juniors and seniors seeking hands-on and hands-off learning about what it takes to run a company. From brainstorming to production to advertising, Spartan Manufacturing entails the full experience of what it's like to work in the manufacturing field.

This class is unique in the sense that it is the school's first student-run business. When hearing, "student-run" many people automatically assume hectic chaos raging within a classroom, with no sense of direction. However, this is not the case for the handful of students who have dedicated their time and commitment to the success of Spartan Manufacturing.

As of 2017, Spartan Manufacturing was just starting out with only an idea and ambition to fuel it. Appealing to students with all different backgrounds of skills, the business profited most off each individual's expertise. Whether it be running the CNC to make cribbage boards or creating the website that

brought in all of the company's sales, each student helped contribute to the class in their own way. By the end of the school year, students could proudly say they had earned \$5,671 and gained more knowledge and experience than they could have ever hoped for.

Unfortunately in the following year, the class did not run due to the lack of students interested in the opportunity. However after a year of promoting, Spartan Manufacturing was up and running again with new purpose and aspirations to drive it.

At the beginning of the 2019-2020 school year, no one had any idea about the amount of attention Spartan Manufacturing would soon bring to McFarland High School. The class began with a template of a website they had designed the previous year and thirty-five hopeful students, with two experienced and knowledgeable teachers to get them on their feet.

Soon after introductions and expectations were defined, the class was off and running. Brainstormed products ranged from playing cards and scrunchies to metal candle holders and cutting boards. Some ideas took more moxie than others in



order to even make it off the ground; but in the end, Spartan Manufacturing had a total of ten products that would soon bring in revenue: Wisconsin cutting boards, Madison lakes cutting boards, conversion cutting boards,

Wisconsin cribbage boards, embroidered hats, scrunchies, drink koozies, washer snowmen, snowmen ornaments, and anodized aluminum keychains.

Once the brainstorming process came to a close, and production groups were established, the next challenge that the students of Spartan Manufacturing had to tackle were the daunting machines that resided in the better half of the school. Over the course of the first few weeks students were trained in all sorts of equipment ranging from sewing machines to the laser.

Each product required different software and expertise, which provided new and unique learning opportunities to the students involved. While some students focused on the design that instigated the production process, on softwares such as Aspire and Corel Draw, others specialized in running machines such as the CNC, Cricket, laser, mig welding, sewing machines, and embroidery machine.

There was never a point in time where a student wasn't busy; they were either in the classroom working with software, or in the woods and metal shops producing revenue. Each member of Spartan Manufacturing was working to their full potential and absorbing

hands-on and hands-off information of all sorts that would contribute to the prosperity of Spartan Manufacturing's future.

By the eighth week, Spartan Manufacturing was receiving more attention than anyone thought possible. The website had more than 400 visits, and by November 19th the class had made its first official sale to someone all the way in Oklahoma, who had heard about Spartan Manufacturing from one of the students, Christian Marcillo.

After the first sale the class took off, receiving more orders than even teachers Steve Pennekamp and Travis Ray thought possible. By Christmas time Spartan Manufacturing was in full swing, filling orders by the dozens. In times of chaos, weaknesses within the production phases were exposed. Unfortunately, some of the cutting boards had started to warp; but

soon thereafter, the problem was resolved by dividing the cutting board into four pieces and then gluing them together.

Not long after winter break, once the Christmas frenzy had passed, News 15 showed up at Spartan Manufacturing's doorstep. The opportunity was made possible by one of



Continued on Page 10



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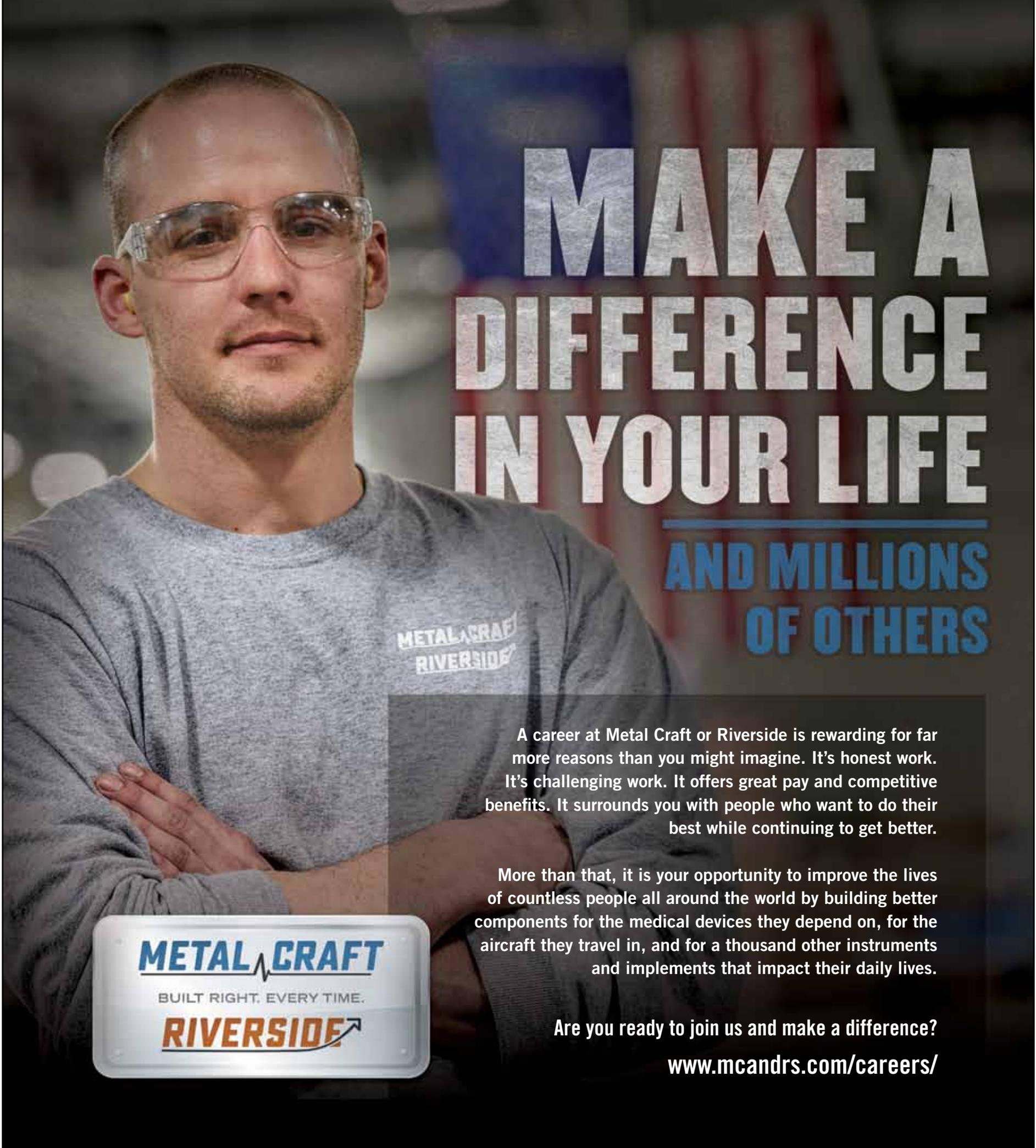
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## 21st Century Tech Ed in Washington Island School District's Fab Lab



*Matt LeBrun  
Tech Ed Instructor  
Washington Island School District*

The Washington Island School District received notice of their FY20 award from the WI Economic Development Corporation last spring. This exciting news was profound in several respects: the district had recently hired a dedicated Tech Ed instructor, and the class-lab space was in dire need of upgrades, repairs and equipment that would allow for a 21st century tech ed curriculum to be delivered to students in this island school district. The \$25k was more than welcomed, as it supplemented the work need to reconfigure the existing fab lab space.

An important piece of the grant application required proof of community support, as well as a detailed plan for sustaining the fab lab. Two Washington Island residents, Don Riewe and Leif Thoreson stepped up to assist the district's new Tech Ed instructor, Matt LeBrun. Matt was interviewed and hired in June of 2019. Matt chose the WISD because he felt that [this] small, rural school district was the perfect spot in which he could begin his teaching career. The position afforded him the ability to create his "dream tech ed" space,

and to build a curriculum that compliments the island's needs.

With the support and assistance of Riewe and Thoreson, LeBrun began the work of inventorying what this fab lab space would need in the first phase of their 3-phase plan. The WI community also rose to this challenge. The WI Lions Club donated \$5000.00. The WI Education Foundation followed with a \$7500.00 gift, and the Jessup Foundation added an additional \$5000.00. These bequests offset what the WEDC Fab Lab grant required in order to apply. The WISD ear-marked the remainder of the 100% match with district money.

The team of Riewe, Thoreson and LeBrun moved full steam ahead. New wood working equipment was ordered. This included a sliding table saw, combo jointer-planer, a dust collection system that is not only efficient, but quiet. The noise level is minimal given the space of the Fab Lab and the school building. The new laser engraver offers students the opportunity cut through and/or engrave on multiple materials, including plastic, wood, glass, cloth, leather, acrylic and metal. These may not seem like a big deal, but one has to understand that this space was virtually empty.



There was no real supply of working tools or equipment. The actual fab lab space was updated in term functionality and aesthetics: it was cleaned and painted. The air handling system was replaced, and the electrical was upgraded. A dual trough sink was installed, and windows were added onto the east wall of the room, to ensure safety and proper sight lines for teacher supervision. Plus, one also needs to understand that as an "island" school district, it is quite the feat to secure the delivery of supplies and resources in a timely manner.

This includes lumber, electrical supplies and materials, and the actual installers of any new equipment, onto the island.

These upgrades will afford the WISD students the opportunity to engage in a 21st century Tech Ed experience, that so many of their peers on the mainland have had for decades. These opportunities are provided for all students in grades 6–12 presently. We plan to expand this experience for our upper elementary students, as well as move onto Phase 2 of the three-phase plan. This includes developing a metals space, whereby students can have a welding and machining

experience. This Fab Lab space was also developed to support community use in the evenings and/or on weekends. Mr. LeBrun's vision is to offer adult education classes for those wanting to hone their woodworking, metal and welding skills.

We are humbled and grateful for this WEDC grant opportunity. We are also appreciative of those Washington Island community members who wrote letters of support for our grant application. We are indebted to those who showed up in person to do the heavy lifting of organizing and developing this Fab

Lab space for our island school children. Without these partnerships, we would not be where we are presently. We also applaud the WISD Board of Education for their part in this endeavor. They believed in this program and have supported it from its inception.

**As an "island" school district, it is quite the feat to secure the delivery of supplies and resources in a timely manner. This includes lumber, electrical supplies and materials, and the actual installers of any new equipment, onto the island.**

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## Spartan Manufacturing

Continued from Page 8

the Spartan Manufacturing's most ambitious students, Callie Korth. When asked what prompted her to email News 15, she explained "I just wanted to gain exposure, and try to give people an understanding about what goes on in a student run business."

The momentum from the story released on January 9th brought in not only sales, but gave Spartan Manufacturing the latitude to appeal to customers from all areas of Wisconsin. Shipping orders from Janesville to Sheboygan, the company had attained one of its main goals set at the beginning of the year, to reach outlets past the little town of McFarland.

Looking back on the success of Spartan Manufacturing, Steve Pennekamp, the teacher that started and oversees Spartan Manufacturing, emphasized the importance of experience that is entailed within the class, "One thing I'm very proud of about this opportunity is that it takes advantage of everything a student learns, and applies it to a class. For example, Spartan Manufacturing is built off of common core classes such as math and English, and

then applies these skills on a larger scale in order to achieve a particular outcome that is tangible."

Moving forward as a company, Spartan Manufacturing is planning to bring in other specialties, such as the business, art, and language departments, which will allow these specific students to apply their specialties to concrete results. The class will highlight each individuals' talents, while at the same time, give students a chance to experience a workplace environment.

The future of Spartan Manufacturing is bright; however, it lies within the next generation of ambitious students to fuel an enterprise that thrives off their determination and aspirations.

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## Merrill Area Public Schools Fab Lab



*Josh Zalewski  
Fab Lab Director  
Merrill Area Public Schools*

The path to creating the Merrill Area Public Schools (MAPS) FAB Lab began with a referendum in 2017 where the community identified the development of a FAB Lab as a high priority to help bridge the skills gap between students, community members, and employees. Work began at the start of the 2018–2019 school year where the first semester was spent collaborating, designing the room, construction renovations, equipment research, purchasing, and assembly just to name a few.

One very high priority was to get out into the local manufacturing companies and see what they do, identify their struggles, and work to develop a plan on how we at the school with the FAB Lab can help meet those needs. This was time well spent. Out of those meetings came strong business partnerships, monetary and equipment donations, and an advisory board that consists of business owners, human resource, business managers, floor workers, school administration, student representation and teachers. Some of the representatives wear multiple hats as they are also parents of students in the district. This advisory board helps guide curriculum, equipment purchases, and planning for open community and business training events. We are very fortunate to have the support of our local business and administration. Without

them we would not be able to receive the WEDC FAB Lab grants that we have. They are instrumental in making sure we have the tools needed to be successful.

Our room renovations took an old outdated computer lab and completely stripped it down to the bare concrete, knocked holes in the wall for a see through trophy case, added updated power, ventilation and compressed air along with storage cabinets and work stations. We now have a beautiful facility focused on the design process, collaboration, problem solving, prototyping, entrepreneurship, and by using the latest technologies we are really making an impact.

With our grant dollars we not only focused on the tools and equipment necessary to be a chartered FAB Lab but we identified where the district needed help meeting the needs of changing technology in the manufacturing workplace. We have already in year two expanded the Lab and created a FAB Lab Machining Center which consists of a CNC plasma table, 10 tool changing CNC mill, CNC lathe, a 3d scanner for reverse engineering and part replication, and finally a videoconferencing system so that we can collaborate with other labs and companies around the world. This is a fantastic opportunity for our students to learn in this lab why they have learned everything else in their core areas and put those skills into practice.

Last year we were well on our way opening to the community and we piloted

this with a group from the VFW that came in for four evenings learning additive manufacturing with 3d printing, and subtractive manufacturing with our CNC routers and lasers. Thus far the FAB Lab trainings have reached ages ranging from 8–80+. We had another full group scheduled along with separate community nights and staff training for the spring 2020 but unfortunately we had to cancel due to Covid. We are hoping to resume training and expand on those offerings in the near future. Fingers crossed.

One final piece of our FAB Lab is teaching our students about business. We run the FAB Lab II course in partnership with Bluejay Design and Manufacturing as a student based enterprise where we develop products, market, advertise, and sell a variety of items from fire pit rings, engraved mugs, cribbage boards, and lake maps just to name a few. This has also opened the door for business partnerships to thrive where we make promotional pieces or prototypes for organizations or individuals.



You can find more information on our district website <https://sites.google.com/maps.k12.wi.us/mapsfablab/home> or like Merrill FAB Lab and Bluejay Design and Manufacturing on FaceBook.

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*Thea DM Hempel*  
 Business Education and German Teacher,  
 Grades 6 – 12  
 LH Products Business Director  
 Lake Holcombe School

With a \$25,000 WEDC Fab Lab Grant, LH Products, which operates out of Lake Holcombe School, is looking to expand their operations and product offerings. The company, which is in its 4th year, is completely self-funded and student managed. The students of Lake Holcombe High School use their experience at LH Products to create a real life work environment and develop long lasting skills for college and career readiness.

Lake Holcombe School enrolls approximately 300 students in a single PreK–12 building. Holcombe is a small rural commu-

## LH Products at Lake Holcombe School

nity in the northwest area of the state on the beautiful Holcombe Flowage. LH Products which was founded in April of 2017 with the Forward Together Grant from WEA Trust, strives to create the highest quality products available while teaching students aspects of business and manufacturing management. The course is taught in a co-curricular format within the Technical Education and Business Education departments.

The school utilized the Fab Lab grant to purchase two pieces of equipment, an Epilog 60 watt laser engraver and Maker Series CNC Router. While the equipment will be used primarily by the LH Products student employees, middle and high school students and the community will also have access. Both pieces of equipment will allow the company to increase production time, detail and quality and create larger items in the product line.

LH Products currently produces hand-made wood products including a wide variety of cutting and specialty boards, coasters, ornaments, bucket toppers, magnets and keychains.



Most of these products are offered with customization through laser engraving. With the use of the current equipment, the company has achieved sales of nearly \$20,000. Profits have been used to purchase additional equipment for the school, take business trips to tour manufacturing facilities in Northern Wisconsin and offer small scholarships to the student employees. There has been tremendous support from the area community, but sales have also been realized through craft shows and e-commerce Weebly and Etsy sites. Products have shipped throughout the United States and as far away as China. Customers range from students at the school to several large corporate clients. The student employees manage every aspect of company operations from sourcing raw materials to sales management. The course/company brings together a Manufacturing Management course with a Business Man-

agement course. Both teams work together on production planning, product costing and pricing, product development, marketing and distribution and accounting. For more information, please visit [www.lhproductswi.com](http://www.lhproductswi.com)

Technology Education teacher, Andrew Lorenzen, is thrilled about the new opportunities the equipment will provide, “We can now complete a Fab Lab setting in a traditional industrial arts program. Lake Holcombe is a small community that does not readily have access to resources that larger, more urban schools do. This grant will be a tremendous asset to the tech ed program and the school.”

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*Thank you to all the educators who sent us articles on their Fab Lab Grants.*

*There are so many more great stories to tell about Fab Labs in Wisconsin schools. Unfortunately we ran out of room this issue, but we will be featuring more in the Spring Edition of Manufacturing Today WI.*



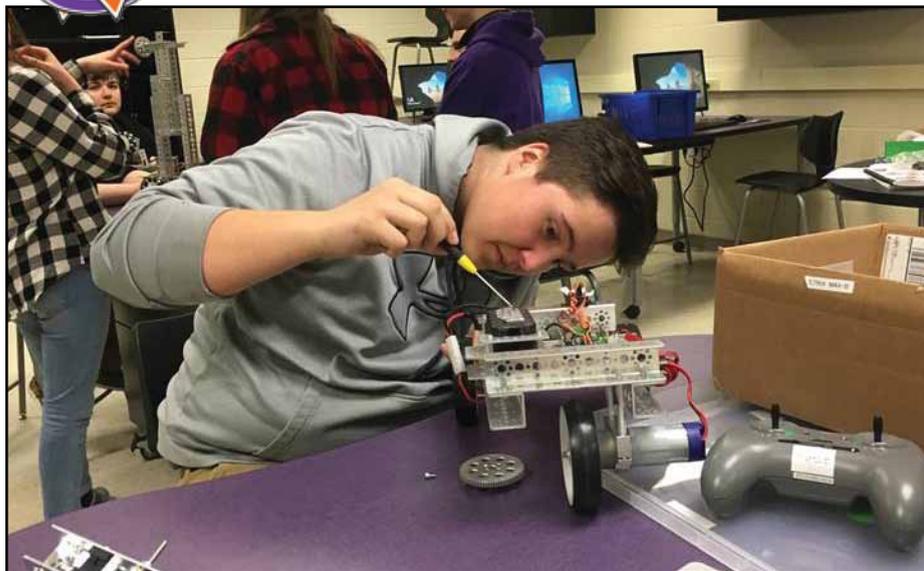
*Watch for it in Spring of 2021!*



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## Robotics Course Giving CWHS Students Taste of Future



Rachel Westberg  
Chetek-Weyerhaeuser Area School District

Screwdrivers, robot arms, gears, motors, sensors--At first glance, this doesn't sound like the typical material list for a traditional high school class. At Chetek-Weyerhaeuser High School, however, as educators continue to move their students towards an education that will prepare them for an ever-changing, technically advanced future, the Technical Education Department is offering a new course that does include such a list of supplies. It's called Intro to Robotics.

According to CWHS Tech Ed Instructor Mikel Cobb, industry and manufacturers continue to turn to automation to increase efficiency and productivity. As more and

more robots are being utilized by consumers — including things like Roomba vacuums and other time-saving devices, it became time for the department to start an Intro to Robotics course.

The course uses robot kits, software and various sensors that the students then take to develop, build and program two different types of robot systems: autonomous and radio controlled. Students cover topics such as motor control, gear ratios, torque, friction, sensors, timing program loops, logic gates — along with many others themes that sound more like something out of a college-level class textbook.

So why would students take what sounds like such a technical course with concepts that might at first glance feel intimidating?

"I like that it's hands on," explains sophomore Dominic Garland. "It seems to be a useful skill to me to know how to program robots and have that experience."

"I just find it interesting," adds freshman Grace Neilsen. "I've been doing stuff like this since middle school with Legos and other things, and this was a new way to continue learning about robotics and how things move."

Students don't necessarily dive right into such technical terms, however. Several of the first days are spent learning vocabulary. Then students work with a manual to begin constructing robots with kits. Eventually, students work together to customize their own robots that complete given tasks — anything

from placing something into a box to having a robot go up a ramp. The entire process is a master class in STEM (Science, Technology, Engineering and Math), working with concepts often taught in physics, math, or engineering. Once they have their designs, students' robots are programmed to compete in various courses or games.

Neilsen notes she is seeing the benefits of the class in several of the extracurriculars she is involved in. Cobb also adds that the skills learned in the class could be beneficial in competitions with organizations such as First Robotics, SkillsUSA and Science Olympiad. Neilsen knows there is real-world application to the things she is learning. A Wisconsin-based company who sells and programs robots recently presented to students in the technical education department, and it created a whole new world of opportunity for the possibilities that robots can bring.

It really opened my eyes to the ways we can use robots," notes Neilsen. "It has been really fun to build and use them, and then see their application in other places."

Such technical concepts are often tough to grasp, especially for some of the freshmen or sophomores in the class. That is where the real learning begins. According to Cobb, at least one day a week, the students get together and have a sharing session. Students showcase their robot to the rest of the class and discuss any issues or successes they are having at that time. As a group, the

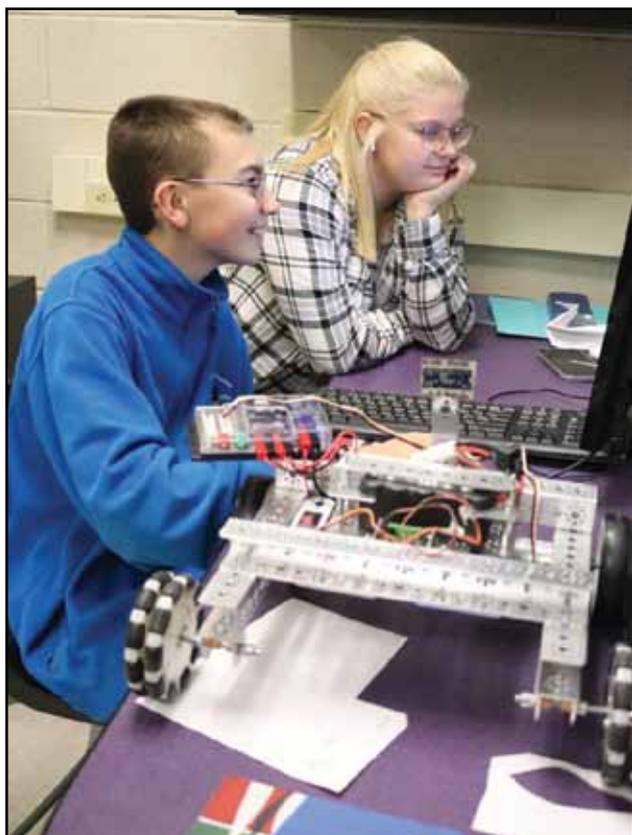
students troubleshoot and work together to solve those problems. It is perhaps this type of hands-on education that becomes more valuable than simply learning how to put together and program a robot.

"I think the most important thing I've taken away from this class is to know you don't have to go off of what the book (manual) says," notes Garland. "I like having to learn how to make things differently than what the book tells you—to go 'off script' and think out of the box. There have been times where I've had an 'A HA!' moment in the middle of doing something else, and it just comes to you in how to fix a problem you have with your robot."

And for the instructor, it is this kind of creative problem solving that might just be the most rewarding part of teaching the class.

"I want them to be able to know how to customize their robot to their needs based on the assignment given," adds Cobb. "The most exciting part for me is when students customize their robot. Creative problem solving comes into play and I never know what might come next."

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## Hour of Code 2020

The Hour of Code takes place each year during Computer Science Education Week. The 2020 Computer Science Education Week will be December 7–13.

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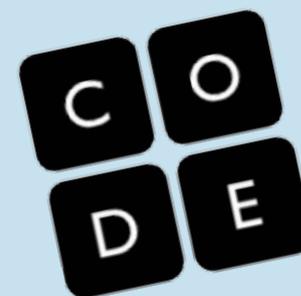
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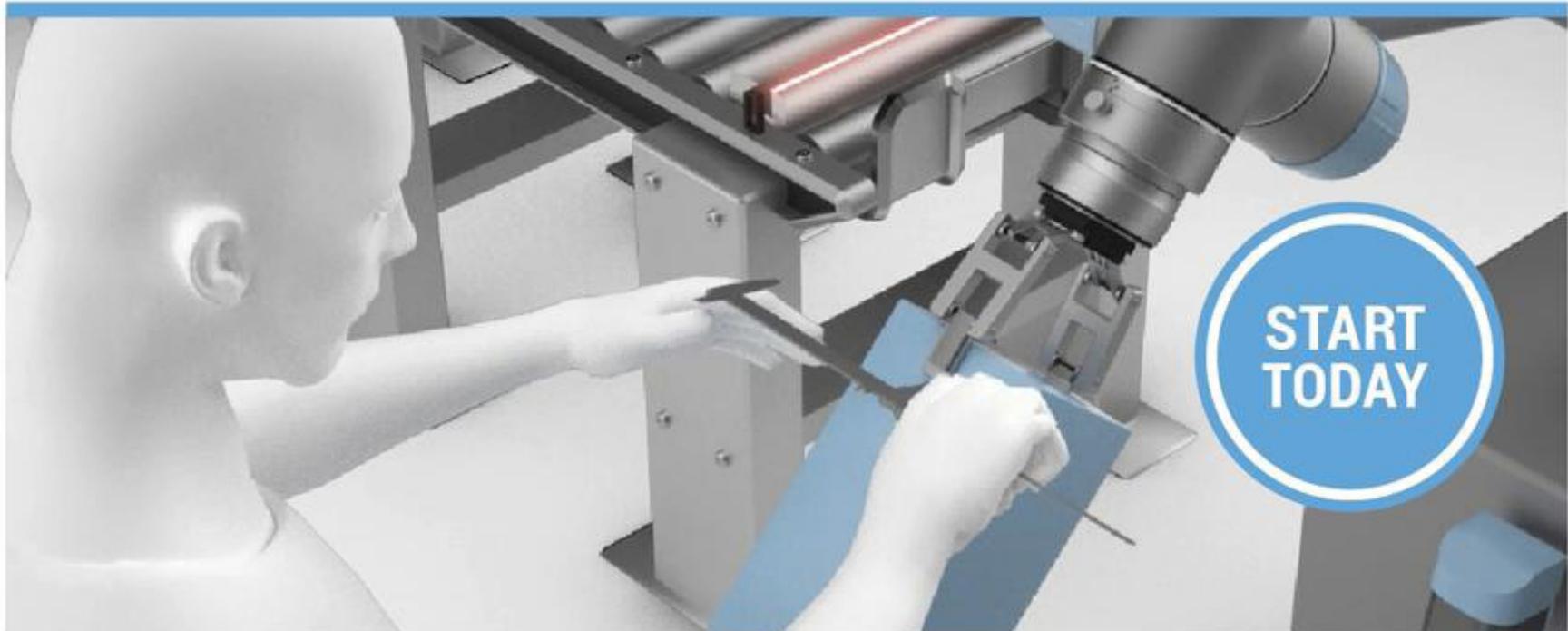
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| <b>Module 1</b><br>First look:<br>The robot at<br>a glance<br><i>(7 min)</i>        | <b>Module 2</b><br>Preparing a<br>robot task<br><i>(6 min)</i>                      | <b>Module 3</b><br>Setting up<br>a tool<br><i>(17 min)</i>                          | <b>Module 4</b><br>Creating<br>a program<br><i>(12 min)</i>                          | <b>Module 5</b><br>Interaction<br>with external<br>devices<br><i>(11 min)</i>         | <b>Module 6</b><br>Controlling<br>conveyors<br><i>(10 min)</i>                        | <b>Module 7</b><br>Safety settings<br><i>(15 min)</i>                                 | <b>Module 8</b><br>Optimizing<br><i>(6 min)</i>                                       |

### Pro track

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|  |  |  |
| <b>Module 9</b><br>Program flow<br><i>(16 min)</i>                                  | <b>Module 10</b><br>Feature<br>coordinates<br><i>(13 min)</i>                       | <b>Module 11</b><br>Force control<br><i>(12 min)</i>                                |

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## Resources: Career Exploration and Skill Development



### GetMyFuture

As a CareerOneStop website, this tool allows youth to explore careers, learn about education options, identify ideas for employment and job opportunities, and find support. The site also includes a toolkit to find local resources and information to find a job, obtain unemployment benefits, or get contacts to help with next steps.

**Website:** [www.careeronestop.org/GetMyFuture/default.aspx](http://www.careeronestop.org/GetMyFuture/default.aspx)

### My Next Move

This electronic tool gives individuals three main ways to explore careers, including an online O\*NET interest assessment, and provides a profile of each occupation highlighting important knowledge, skills, abilities, technologies used, simplified salary and outlook information, and links to find specific training and employment opportunities.

**Website:** [www.mynextmove.org](http://www.mynextmove.org)

### Occupational Outlook Handbook

The Occupational Outlook Handbook is a nationally recognized source of career information from the U.S. Department of Labor, Bureau of Labor Statistics (BLS). It is designed to help individuals make decisions about their future work lives. The handbook, which is revised every two years, includes information on hundreds of jobs and describes the training and education needed, earnings, expected job prospects, what workers do on the job, and working conditions.

**Website:** [www.bls.gov/ooh](http://www.bls.gov/ooh)

### Apprenticeship.gov

Apprenticeship.gov is the one-stop source to connect career seekers, employers, and education partners with apprenticeship resources.

This website can help employers learn about models of apprenticeship as well the benefits of apprenticeship, such as recruiting a highly-skilled workforce, improving profitability, minimizing costs, and retaining workers. The site also walks employers through the process of posting their apprenticeship job listings online to attract job seekers to their positions.

**Website:** [www.apprenticeship.gov](http://www.apprenticeship.gov)

### Youth Engaged 4 Change!

The federal Interagency Working Group on Youth Programs created YE4C to promote meaningful opportunities and engagement for America's youth. Find volunteering, internships, jobs, and leadership opportunities, and other ways to change your life and your world.

**Website:** [engage.youth.gov](http://engage.youth.gov)

### Connecting At-Risk Youth to Promising Careers

This brief, developed for the U.S. Department of Health and Human Services, Administration on Children, Youth and Families, discusses promising occupations for at-risk youth. The occupations are based on their potential for reasonable wages, the required educational prerequisites, projected growth and demand in the labor market, and

potential for individual advancement. Opportunities in the healthcare and construction fields are highlighted, as well as work-based learning and career pathway programs.

**Website:** [www.acf.hhs.gov/sites/default/files/opre/connect\\_at\\_risk.pdf](http://www.acf.hhs.gov/sites/default/files/opre/connect_at_risk.pdf)

### Youth Mentoring Resources

Mentoring — matching youth or “mentees” with responsible, caring “mentors,” usually adults — has been found to be an important support for youth as they transition to adulthood and the workforce.<sup>1</sup> Mentoring provides opportunities for youth to develop emotional bonds with mentors who have more life experience and can provide support, guidance, and opportunities to help them succeed in life and meet their goals.<sup>2</sup>

Apprenticeships and internships can provide on-the-job opportunities to integrate mentoring into employment experiences for youth. You can find out more about both apprenticeships and internships for youth below. Learn more about mentoring and the benefits for youth and their mentors.

**Website:** [youth.gov/youth-topics/mentoring](http://youth.gov/youth-topics/mentoring)

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- \$25.00 cash prizes will be awarded to each of the six Honorable Mentions.

High School essays are to be between 500 and 600 words in length. Middle School essays are to be between 400 and 500 words in length. A Word document or PDF is preferred. We will be featuring the winners in our Holiday Issue which will be released in mid-December. The honorable mentions will be presented in the following three issues. This contest is open now for submissions, and the deadline for entries is January 10, 2021 at 5:00 p.m.

**Entries must include a teacher contact name, what school the student is attending, and grade.**

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For any questions please contact:

Renee – [renee@teachingtodaywi.com](mailto:renee@teachingtodaywi.com), 715-839-7074



# CAREER AND TECHNICAL EDUCATION

## Developing student career readiness, independence and resilience in a low-risk, high-reward setting

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- >> Students can choose from **500+ programs** to land on just the right career path. Many **courses are available online**, while hands-on learning is offered where it's critical to skill development. Smaller classes and adaptation of CDC guidelines enhance student safety. The optimal learning environment is determined by course content.
- >> **Flexible course offerings** allow students to continue hands-on learning safely, with social distancing, and still schedule classes around responsibilities.
- >> Instructors are passionate **industry experts** who maintain industry credentials and connections.
- >> Classrooms are outfitted with the latest technology to provide the **most relevant lessons** to meet employers' needs.
- >> Instruction is designed and conducted to best help students **learn the skills — and develop the confidence** to use them.
- >> Students who begin at a technical college take on **less debt and begin earning sooner**, often without limiting their opportunities to transfer.
- >> Some of the fastest growing, best paying and most in-demand jobs are in sectors like health care and information technology. However, traditional trades careers beginning with apprenticeships also provide **outstanding stability and earnings potential**.
- >> **Financial aid and scholarships** are available to students in most degree and diploma programs at the technical colleges.



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



## Students Look to the Future in Meemic Masterpieces Art Contest

By Meemic Insurance

One of our favorite things to do at The Meemic Foundation is viewing the student-created entries for our Masterpieces grant opportunity. Despite the challenges caused by the pandemic, we still received hundreds of pieces of art. In addition to the prizes won, the winners' framed artworks are now on permanent display throughout our headquarters in Auburn Hills, MI. The themes were Your School in the Future, Your Home Life in the Future and Happy Robots.

To celebrate the winners, we went into space with a futuristic virtual art show. You can watch the whole video and see all the winners at [MeemicFoundation.org/MasterpiecesGallery](http://MeemicFoundation.org/MasterpiecesGallery). Check out the Wisconsin winners below.

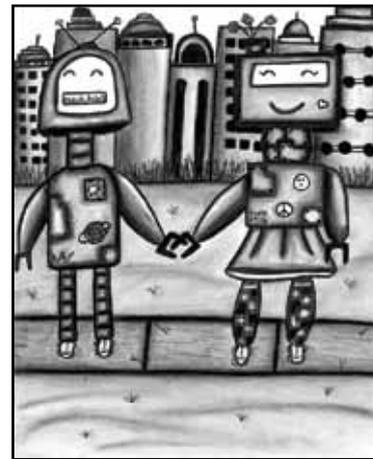
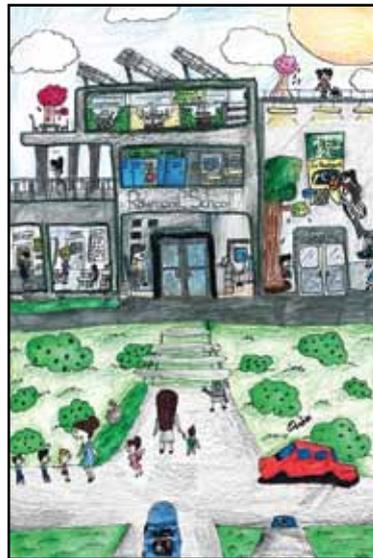
This year, the Foundation is excited to extend our Masterpieces brand to include creative writing: a poetic rap contest. Learn more about this exciting opportunity at [MeemicFoundation.org/Masterpieces](http://MeemicFoundation.org/Masterpieces).



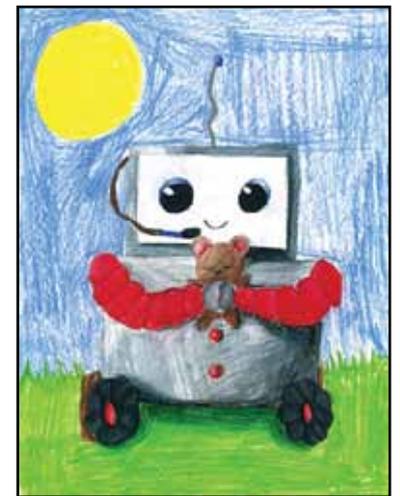
Nova, Van Buren Elementary School, Janesville



Owen, Lien Elementary School, Amery



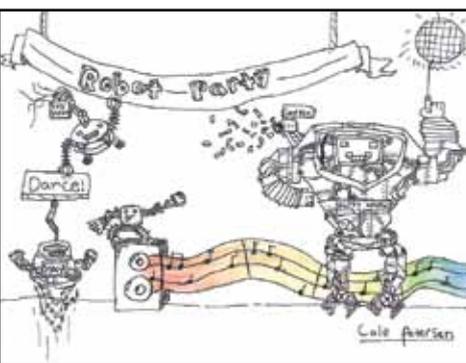
Ally, De Pere Middle School, De Pere



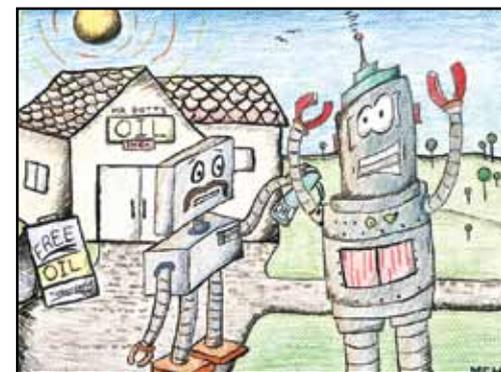
Caralyn, West Salem Middle School, West Salem



Io, Innovations STEM Academy, Sparta



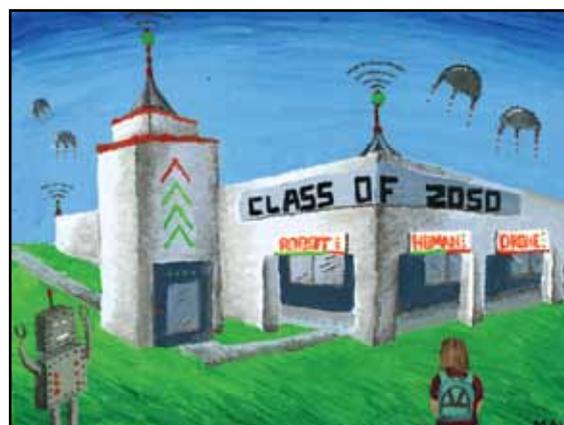
Cole, Heritage Elementary School, De Pere



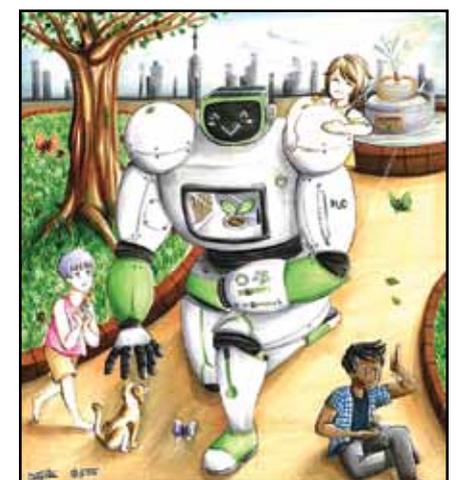
Madalyn, Immanuel Lutheran School, Greenville



Max, Immanuel Lutheran School, Greenville



Mckenzie Immanuel Lutheran School, Greenville



Augusto, DeForest Area High School, DeForest



**DID YOU KNOW** that you could suffer a significant financial loss without **renters insurance**? Your landlord's policy does NOT cover your personal property.

*Here are three reasons to have renters insurance.*

► **It protects your possessions.**

Even if you feel your possessions are fairly modest, losing even one big ticket item to fire or theft or lots of smaller possessions at one time could be financially overwhelming.

► **It provides liability protection.**

Unintentional bodily injury, like someone slipping on a wet floor and breaking an arm or property damage that you cause to others, could be as financially devastating to you as a fire in your apartment.

► **It's affordable.**

Renters insurance is very inexpensive. Prices vary according to the amount of coverage and the deductible you choose, as well as certain risk factors like where you live. Depending on the amount of coverage and the deductible, a typical renters policy with Member Benefits starts at \$6-\$7 per month.

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### Monthly Grant Opportunity from The Meemic Foundation!

We invite you to PopIn2Win! It's The Meemic Foundation's monthly opportunity for a valuable resource or tool that will enhance your classroom or distance learning experience for your students! It's super-fast and easy. No application to complete. Just log in to your Foundation Club account and nominate yourself, a local school or educator to enter the current month's PopIn2Win opportunity.

**Website:** [MeemicFoundation.org/PopIn2Win](http://MeemicFoundation.org/PopIn2Win).

### Student Poetic Rap Writing Contest from The Meemic Foundation

Join The Meemic Foundation in showcasing the artistic ability of our students. Meemic Foundation Club Members can sponsor a student's original poetic rap (lyrics only) to be entered in our student contest. Sponsoring Foundation Club Members of winning entries will earn a \$300 school supplies grant for their school. Plus, each winning student artist will receive a Beats by Dr. Dre—Solo3 Club Collection Wireless On-Ear Headphone.

**Deadline:** December 31

**Website:** [MeemicFoundation.org/Masterpieces](http://MeemicFoundation.org/Masterpieces)

### EngineerGirl Essay Contest

The annual EngineerGirl Essay Contest encourages students to write about the role of engineering in society and the impact it has on our world. You should submit a piece of writing that salutes engineering's role in meeting and defeating the challenges presented by COVID-19. Your submission must also follow the specific guidelines and limits for your competition category – based on your grade level.

The contest is open to individual girls and boys in each of three categories:

- Elementary (grades 3 through 5)
- Middle School (grades 6 through 8)
- High School (grades 9 through 12)

**Deadline:** Essays are due February 1, 2021.

**Website:** [www.engineergirl.org/134513/2021-contest](http://www.engineergirl.org/134513/2021-contest)

### C-SPAN's StudentCam Video Documentary Competition

C-SPAN's StudentCam is an annual national video documentary competition for students in grades 6 through 12. Individual

students or teams of up to three students create a short video documentary on the current theme. Each video documentary should explore an issue that presidential candidates should address during their campaign. The video must analyze the current or historical significance of the chosen issue and include differing points of view. Video documentaries are judged in two categories, middle school and high school, with prizes to be awarded to student winners and their teacher advisors or schools.

**Deadline:** January 20, 2021.

**Website:** [www.studentcam.org](http://www.studentcam.org)

### Saxena Family Foundation Grants

The Saxena Family Foundation has a particular focus on initiatives that promote US science, technology, engineering, and mathematics (STEM) education and the empowerment of girls, female children, and young women so that they have equal rights later in life. The foundation focuses on empowerment programs to include economic, educational, and political empowerment of women through literacy programs, jobs, and life-skills training.

Average awards range from \$5,000 to \$50,000.

**Deadline:** Applications accepted year-round.

**Website:** [saxenafoundation.com/guidelines](http://saxenafoundation.com/guidelines)

### Toshiba America Grant Program for 6-12 Science and Mathematics Educators

Toshiba America Foundation accepts applications from teachers who are passionate about making science and mathematics more engaging for their students. The foundation seeks to support teachers by providing funds to support classroom projects. The foundation strongly encourages projects planned and led by individual teachers or teams of teachers for their own classrooms.

**Deadline:** Requests for grants less than

\$5,000 are due March 1, June 1, September 1, and December 1, annually. Requests for grants of more than \$5,000 are due May 1 and November 1, annually.

**Website:** [www.toshiba.com/taf/612.jsp](http://www.toshiba.com/taf/612.jsp)

*“If the power to do hard work is not a skill, it's the best possible substitute for it.”*

— President James A. Garfield

## 2021 Wisconsin Teachers of the Year



The road to becoming Wisconsin Teacher of the year begins with the Herb Kohl Teacher Fellowship Program. If nominated for a fellowship, a teacher can complete the application. Applications of teachers selected for Kohl Fellowships are then put

through a process to determine the Wisconsin Teachers of the Year. The Herb Kohl Educational Foundation Inc. is currently accepting nominations for Herb Kohl teacher fellowships and principal leadership awards. Visit the Herb Kohl Foundation website for more



**Derrick Meyer**

**Amery High School  
School District of Amery**

Derrick Meyer is an agriscience and driver's education instructor at Amery High School in Amery, Wisconsin. He earned his Bachelor of Science degree in agricultural education 1996. He received his master's in education in 2000, and his driver's education certification in 2016.

Meyer served in the Army Reserve for eight years as a medic and is currently in his 24th year of teaching, including schools in Random Lake, Stevens Point, and sixteen years in Amery.

Meyer is also a successful Future Farmers of America (FFA) Advisor. His teams have earned over 50 State championships and a handful of national championships in speaking contests and career development events. Meyer's program has produced 10 State FFA officers, including one state FFA president. He is a member of the Polk County Agricultural Education Association, Wisconsin Association of Agricultural Educators, and the National Association of Agricultural Educators.

He has been a frequent Wisconsin conference presenter for Parliamentary Procedure, The Art of Bonsai, and Innovative and Emerging Technologies in Agriculture. Meyer was on the Department of Public Instruction Curriculum Development Committee, Wisconsin Representative for the National Agriculture Council, State of Wisconsin Board of Direc-

tors for FFA (10 times) and is the founder of the first-ever Northwest Wisconsin Virtual Livestock Show.

Meyer's honors include the State and National Agriscience Teacher of the Year finalist (2000), Portage County Golden Apple Award Winner (2001), and Town of Amery Teacher of the Year finalist (2019).

[www.amery.k12.wi.us](http://www.amery.k12.wi.us)  
(715) 268-9771



**Trish Kilpin**

**PK-12 School Social Worker  
Greendale School District**

In her 30th year as a Greendale School District School social worker, Trish Kilpin is an educational leader who works to create a culture of hope, health, help-seeking, and connectedness for the students. With a passion to create institutional, systemic change, she strives to "move upstream", empowering youth and adults with the skills, information, and tools needed to engage their strengths and build resilience when faced with adversity.

Kilpin earned her Bachelor of Arts in psychology and Masters of Science in social work and was named the Wisconsin School Social Worker of the Year in 1997. She believes that the social, emotional and cognitive facets of learning are deeply linked, and supportive

information on making a nomination.

The State Superintendent recognized five exemplary Wisconsin educators for being named the 2021 Wisconsin Teachers of the Year. The group was notified of their selection for the honor earlier in the day at a virtual gathering. "Teachers have the incredible responsibility of educating our children and inspiring them to grow," The State Superintendent said. "I am honored to recognize these five educators for their dedication and commitment to Wisconsin students and to call them our 2021 Wisconsin Teachers of the Year." The 2021 Wisconsin Teachers of the Year are among the 86 educators recognized earlier this year by the Herb Kohl Educational Foundation's Teacher Fellow-

ship Program, which honors and supports teaching excellence and innovation across Wisconsin. The honorees were selected by a diverse committee to represent voices, contexts, and perspectives as educational leaders throughout Wisconsin. Herb Kohl, former state senator, philanthropist, and businessman, furthered his commitment to the Wisconsin Teacher of the Year Program by adding a fifth honoree, an increase from the usual four who are recognized annually. The Herb Kohl Educational Foundation will also provide a \$3,000 personal award to each of those selected.

learning environments are rooted in warm, supportive relationships. She is a committed advocate of comprehensive school safety and serves as a leader on district crisis and safety teams. This work ensures that students feel psychologically, as well as physically safe in schools. She teaches PREPaRE courses around Wisconsin. Her focus on the prevention of and preparedness for a crisis event is balanced with best practices in response and recovery when needed.

Kilpin is active in the development and implementation of, as well as ongoing training for, a Threat Management process in her district. She provides ongoing consultation for threat management teams in Greendale Schools and across Wisconsin. Kilpin also trains and leads in Restorative Processes, Trauma-Informed Care, Psychological First Aid, and she is a Sources of Strength coordinator and trainer.

[www.brodhead.k12.wi.us](http://www.brodhead.k12.wi.us)  
(608) 897-2141



**Brooke Lederman-Kintzle**

**Brodhead Middle School  
Brodhead School District**

Brooke Lederman-Kintzle is a cross-categorical special education teacher at Brodhead Middle School in Brodhead, Wisconsin. She also coaches volleyball and

basketball at Brodhead High School. Lederman-Kintzle earned her bachelor's degree in 2013 with dual-certification in regular education and cross-categorical special education. She also has her master's degree in special education. While attending college, Lederman-Kintzle also received certifications in applied behavior analysis, autism specialist, and transition specialist. For her work while she was attending college, she received a Graduate Student of the Year award in 2016. Currently, she is completing her educational leadership degree.

Lederman-Kintzle strives to create inclusive and trauma-sensitive environments at Brodhead Middle School. She has volunteered with groups dedicated to assistive, adaptive, and inclusive practices for children. Within her teaching, she emphasizes the importance of building relationships with students in order to create mutual trust and respect in her classroom. The strong relationships with her students help motivate them to reach their full potential.

Aside from building strong relationships with students, Lederman-Kintzle connects learning to real-life by integrating social, community, and life skills into the curriculum. She has planned and created many community-based learning opportunities for her students to apply skills in real-life scenarios. Lederman-Kintzle uses individualized education, differentiated curriculum, assistive technology, and adaptive tools, and research-based interventions to reach the unique needs of her students.

[www.greendale.k12.wi.us](http://www.greendale.k12.wi.us)  
(414) 423-2700

**Continued on Page 21**

## Teachers of the Year Continued from Page 20



**Susan Richardson**

Susan Richardson earned her Bachelor of Arts degree in German in 1996 as well as her middle/secondary teaching license for German and social studies. Richardson completed her certificate in teaching English as a foreign/second language in 1997. She taught for seven years in Kiel, Schleswig-Holstein, Germany.

She also worked in interpreting and translating and began substitute teaching in Milwaukee Public Schools. Later, Richardson earned her Master of Arts degree from the University of Wisconsin-Milwaukee in German language, linguistics, and literature. After teaching at the Volkshochschule Landkreis Neumarkt, in Bavaria, Germany, in 2011-2012, she returned to Wisconsin and earned her elementary teaching license. Richardson is a member of the Milwaukee Teachers' Education Association, Wisconsin

Education Association Council, and the American Association of Teachers of German.

In 2018, Richardson was awarded the Metropolitan Milwaukee Alliance of Black School Educators "Teacher of the Year." She is currently pursuing her National Board Certification in Literacy: Reading, Language Arts — Early and Middle Childhood, which has cemented her belief that critical reflection is an important process for all educators. Richardson founded Kunst Klub, a volunteer-run after school program, which offers no-cost, hands-on art instruction to students at MGIS. In 2019, she attended a week-long session at Shakerag Workshops, Sewanee, Tennessee, to learn additional strategies and approaches to inspire students through art. She believes art is an equalizer, through which all students can experience success.

[www5.milwaukee.k12.wi.us/school/mgis](http://www5.milwaukee.k12.wi.us/school/mgis)  
(414) 393-5600

### 2021 Wisconsin Representative for National Teacher of the Year Revealed

Susan Richardson, a third-grade teacher at Milwaukee German Immersion School, was recently named the 2021 Wisconsin representative for the National Teacher of the Year program.

The State Superintendent made a surprise virtual announcement to the five Wisconsin Teachers of the Year. After interviews and a selection process, Richardson was chosen to represent Wisconsin in the National Teacher of the Year program.



**Koren Jackson**

### Milwaukee Transition High School Milwaukee Public Schools

Koren Jackson is a special education teacher at Transition High School in Milwaukee. She earned her bachelor's degree in physical education and health in 1996. Jackson went on to get her post-baccalaureate certification in special education (learning disabilities and emotional behavioral disabilities) from the University of Wisconsin-Milwaukee in 2002 and her master's degree in curriculum and instruction with an emphasis in special education in 2012. In 2018, Jackson also earned an

alternative education certification. She has been working for Milwaukee Public Schools since 1999.

Jackson works closely with the GED Option 2 and Competency-Based Learning (CBL) programs, alternative pathways to graduation in an alternative setting at Transition High School. She directly supports adjudicated youth, teen parents, and students who have dropped out and/or have been expelled from a traditional high school. She utilizes positive relationship-building to assist students who have often discounted themselves to realize the greatness they already have within.

She supervises student volunteers each semester working with the Milwaukee Public Schools Special Olympics Program and encourages her students to work with various community groups and organizations so they are continuously gaining skills necessary to be productive citizens. She is a member of Transition High School's learning team and serves as the assessment coordinator.

In her spare time, she enjoys traveling domestically, attending sporting events, and spending time with family and friends.

[www5.milwaukee.k12.wi.us/school/transition](http://www5.milwaukee.k12.wi.us/school/transition)  
(414) 934-4400

Source: Wisconsin DPI

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## Two Wisconsin Educators Receive Presidential Award for Excellence in Mathematics and Science Teaching

Karen Olsen, a science teacher at Baraboo High School, and Katie Haas, a mathematics teacher at Edgar Middle School were recently awarded the highest honor in the nation for teachers of science, technology, engineering, and mathematics: Presidential Awards for Excellence in Mathematics and Science Teaching.

National awardees from all 50 states and territories were announced at a White House Office of Science and Technology Policy and National Science Foundation virtual event on August 3. Each educator receives a certificate signed by the President of the United States and a \$10,000 award from the National Science Foundation.



**Karen Olson**

**Baraboo High School Science Teacher  
Baraboo School District**

According to the PAEMST website (2020a), Karen Olson has been a teacher for 21 years. She currently serves as an instructional coach and has taught 9th-12th grade biology and astronomy classes for seven years at Baraboo High School. Previously, she was a science teacher for 14 years at Waunakee Community High School teaching biology, biotechnology, astronomy, weather and climate, and physical science classes.

Karen's students collaborate with community agencies and design mitigation plans to reduce impacts of human disturbances on local ecosystems. She uses modeling of phenomenon to engage students in scientific inquiry.

Karen is on the building leadership team and has mentored new teachers for 13 years.

In 2006, Karen was chosen for the Astrobiology Summer Science Experience for Teachers (ASSET) where she trained with NASA scientists to develop curriculum using astrobiology research.

In 2014, Karen was named the Wisconsin Environmental Education Energy Educator of the Year and was named a 2016 Herb Kohl Educational Foundation Teacher Fellow. She has presented numerous times at Wisconsin Society of Science Teachers conferences and one time at the National Science Teaching Association Regional Conference.

Karen is National Board Certified in adolescent/young adult science.

[www.baraboo.k12.wi.us](http://www.baraboo.k12.wi.us)  
(608) 355-3950



**Katie Haas**

**Edgar Middle School Mathematics Teacher,  
Edgar School District**

According to the PAEMST website (2020b), Haas is a National Board Certified Teacher in early adolescent mathematics.

During Katie's teaching career, she has been instrumental in improving mathematics instruction in her district. She initiated the adoption of a new curriculum focusing on a deeper conceptual understanding of mathematics. Katie facilitated monthly K-12 professional development focused on the implementation of the Standards for Mathematical Practices for students and best

teaching practices. To meet the needs of all learners, she launched the mathematics intervention services and initiated co-teaching with special education staff in the district.

In her classroom, Katie fosters an active learning environment. She utilizes specifically designed tasks and activities to guide students to develop a deeper conceptual understanding of mathematics. While working, students grapple with problems, discuss answers with peers, and receive feedback from Katie. She uses strategic questions to keep students engaged and actively problem solving while nudging them towards mastering the concept.

Beyond the classroom, Katie has mentored new teachers and served as a leader on the school improvement and positive behavior intervention system teams. She was selected as a panelist for the teacher speakout event hosted by the Wisconsin Center for Education Research to discuss the challenges and successes of teaching STEM in rural districts.

[www.edgar.k12.wi.us](http://www.edgar.k12.wi.us)  
(715) 352-2352



Since 1983, the Presidential Awards for Excellence in Mathematics and Science Teaching has recognized more than 5,000 teachers. Awards are made to elementary (K-6th grade) and secondary (7th-12th grade) teachers in alternate years.

Source: PAEMST and Wisconsin DPI

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### Nominate a STEM Teacher Today!

This year's awards will honor science, technology, engineering, mathematics, and/or computer science teachers working in grades 7-12. Nominations close on March 1, 2021.

**Deadline:** Applications for 7-12th grade teachers are now open. Applications must be completed by April 1, 2021.

**Website:** [www.paemst.org](http://www.paemst.org)





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- All the FUN you expect from the Wisconsin Transition Conference!

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#### **Keynote Speakers:** *Nicole Tucker-Smith, Christopher R. Bugaj*

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