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TEACHING TODAY WI™

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Unity High School Science Teacher Selected as Wisconsin's 2024 National Teacher of the Year Representative

State Superintendent for Public Instruction Dr. Jill Underly presents Brian Collins his Teacher of the Year award.

The Wisconsin Department of Instruction today announced the state's representative to the National Teacher of the Year Program is Brian Collins, a science teacher at Unity High School in Balsam Lake.

Throughout his more than 22 years at Unity, Collins has taught general biology, AP biology, environmental biology, human anatomy/physiology, ecology, zoology, and ornithology. He was selected to be the state's representative for the Council of Chief State School Officers' National Teacher of the Year Program by a committee composed of educators, representatives from partner organizations, and past Wisconsin Teachers of the Year.

"Brian is an exemplary educator, and I am so excited that he will be Wisconsin's representative to the National Teacher of the Year program," State Superintendent Dr. Jill Underly said. "His energy, passion, and commitment to his students and community are inspiring. He would be the first to say that he is just one part of the interconnected ecosystem that is his school; I would respond that he plays a key role in fostering such an inclusive and rich community. I am grateful to him for his leadership in the Unity School District, in Wisconsin, and now at a national level."

> ***"I love seeing education at work in the quality of a person's life and in the strength of the community. I am eager and excited to serve as our state's representative, both as a teacher and as a lifelong learner."***
>
> ***— Brian Collins***

Earlier this year, Collins was named one of five 2024 Wisconsin Teachers of the Year in a surprise ceremony surrounded by students, colleagues, family, and community

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Successfully Connecting CTE to the Community Builds Skills

In today's society, many careers require technical skills. Students often enter our modern education system with limited awareness of their potential career paths. They may not have a clear understanding of the available opportunities beyond their local influences, such as family, friends, and neighbors. Career and Technical Education (CTE) courses provide students with the opportunity to explore career options, discover their interests, develop and enhance their skill sets, and establish connections with industry professionals.

While specific work skills can change rapidly due to technological advancements, the core abilities acquired through CTE courses, such as analysis, reasoning, problem-solving, planning, organization, teamwork, and decision-making, are universally applicable to any employer in any industry. These skills are in high demand, making CTE coursework indispensable in today's workforce. The practical, hands-on exploration of various fields in CTE encourages students to integrate their academic knowledge, and use it in conjunction with 'just-in-time' learning to tackle challenging tasks. For instance, I recently overheard a student discussing how concepts and formulas from her physics, pre-calculus, and engineering class challenges were interconnected, highlighting the cross-disciplinary nature of education that can be missed when we compartmentalize education into its topics.

In Omro, I have been encouraging my students for the past seven years to engage with their community and address local issues using their freshly acquired technical skills in a competitive manner. They apply these skills to a wide range of situations, transforming me (the teacher) from a traditional source of knowledge into a facilitator and coach for students. This shift empowers them to challenge themselves, tackle significant problems, build confidence, explore new interests, and take ownership of their learning. One of the most rewarding aspects of teaching in this manner is the continuous learning experience shared with the students.

Initially, this journey started with simple

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Brian Collins Selected as Wisconsin's 2024 National Teacher of the Year Representative

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members. A video and photos from the ceremony can be found on the DPI's Facebook page.

"I am so very honored to represent our state on the national level as Wisconsin's National Teacher of the Year representative," Collins said. "Good teaching and learning ultimately comes from trust, teamwork, and a sense of safety as we build strong relationships in the classroom and across the school community. I love seeing education at work in the quality of a person's life and in the strength of the community. I am eager and excited to serve as our state's representative, both as a teacher and as a lifelong learner."

Outside the classroom, Collins helped found Unity's Ojibwe Language Revitalization Club, has coached football and powerlifting, and has chaired the Professional Staff Development Committee. He continues his passion for birds and photography every summer as a contract biologist working all over Wisconsin for the Wisconsin Department of Natural Resources, which he shares in his classroom.

As Wisconsin's National Teacher of the Year representative, Collins will participate alongside other state representatives in various professional learning opportunities provided by the CCSSO. A National Teacher of the Year is selected from the group and travels nationally and internationally as a spokesperson and advocate for the teaching profession. For more information on the program, visit the CCSSO's website.

www.unity.k12.wi.us

Another Round of Applause to These Four Exceptional Educators

In addition to Unity School District's Brian Collins, four other educators were selected as 2024 Wisconsin Teachers of the Year. Congratulations to these teachers!

Saghar Homayounpour

Computer science teacher,
New Berlin West High School
School District of New Berlin

Homayounpour has grown West's computer science program to serve more than 200 students annually, exposing students and developing their skills in this continually evolving field. She also founded the school's successful CyberPatriot Club and is a mentor teacher who supports novice computer science teachers with one-on-one support as they begin their teaching experience.

"Saghar is an instructor who, when students have had the opportunity to work with her, they respect, understand, and grow with her passion for her subject and for learning in general," New Berlin West principal Michael Fesenmaier said. "Saghar thrives on challenge, willingly seeking what is necessary to grow and succeed, consistently taking the path that is best for her students and learning. She knows this comes through hard work and willingly engages with the task of continual growth for all."

Claudia Heller de Messer

English as a second language teacher at
Milwaukee Parkside School for the Arts
Milwaukee Public Schools

An ESL specialist, Heller de Messer works with 110 English learners at Parkside who, altogether, speak 19 languages (including English) and live in 10 ZIP codes across Milwaukee. The languages spoken include Burmese, French, Karen, the Somali dialect of Maay Maay, Pashto, Rohingya, Spanish, and Swahili. Many of her students and their families are recent immigrants or refugees, some of whom have been raised in refugee camps.

"I love working with newcomers who are so determined to learn English. It's just such a rewarding job, too," Heller de Messer said. "Everybody learns it. It's just a matter of time. I get to reap some beautiful benefits [from watching their growth]."

Rachel Kumferman

School social worker at
McKinley Elementary School
Wauwatosa School District

Kumferman has worked for the Wauwatosa School District for 22 years and has served as the District's McKinney-Vento Homeless Liaison since 2011. Kumferman has deep expertise in social work and counseling, but also contributes her talents to the school crisis team and equity team, and she serves as a PBIS (positive behavior interventions and supports) Tier Two coach, and much more.

"My driving force has always been prevention, and to help break down barriers so kids can learn," said Kumferman at her surprise ceremony. "I'm sure I'll break down a little bit later and have a lot of tears, but they are tears of gratitude. I mean, just seeing all the kids, seeing all the staff."

Seeing and feeling that love, Kumferman said, serves as a reminder of why she goes to work every day: "Kids are my passion, always have been, and being in an elementary school."

Katelyn Winkel-Simmerman

Mathematics teacher at
Cedar Grove-Belgium Middle School
Cedar Grove-Belgium School District

Winkel-Simmerman has taught math at Cedar Grove-Belgium Middle School for over six years. By building relationships with students, she successfully finds innovative ways to reach and teach all students and help them learn and grow as individuals.

As the advisor for the school's Student Council and a variety of committees, she works with students to plan events and provide meaningful opportunities beyond the classroom, which have a positive effect on the school and community.

She said her nomination let her reflect on her career as a classroom teacher and specialist, and "determine the learning that I need to do going forward. Receiving this recognition makes me feel appreciated for the work I have done and inspired to continue it."

Saluting 2023 Wisconsin Principals of the Year

2023 Elementary Principal of the Year Nikki Harcus

The Association of Wisconsin School Administrators has named Nikki Harcus as its 2023 Wisconsin Elementary Principal of the Year.

Harcus has served as principal of Westside Elementary School in the Sun Prairie Area School District for the past seven years. Under her leadership, the school has adopted a core value of believing all students can achieve at high levels and that all staff can create the conditions to make it possible.

Westside has become a true professional learning community, where all staff are committed to acting as positive members of a team that shares responsibility for student learning. These teams use formative assessments aligned to essential standards to ensure instruction is targeted and responsive to students' individual needs.

As one example of Harcus' commitment to shared leadership and collective efficacy, Westside has brought together staff, students, families, and community partners to build a highly effective Community Schools Program. Based on the results of a caregiver needs assessment, the school and its partners have launched a "walking school bus" to increase attendance, opened an onsite food pantry and clothing closet, started a family assistance fund, and grown the after-school program.

"On behalf of AWSA, I would like to congratulate Nikki Harcus for her selection as the 2023 Wisconsin Elementary Principal of the Year," said Jim Lynch, executive director of AWSA. "During her time at Westside Elementary, she has empowered and supported teachers to create a professional learning community truly focused on student learning and results. This honor reflects Ms. Harcus' outstanding leadership of her school community."

Harcus holds a master's degree in educational leadership and policy analysis from a local University and a bachelor's degree in early childhood education from a nearby college. Before serving as principal of Westside Elementary, Harcus was an assistant principal, instructional coach, literacy coach, and second-grade teacher.

sunprairieschools.org/westside-home

2023 Secondary Principal of the Year Andrew Farley

The Association of Wisconsin School Administrators has named Andrew Farley as its 2023 Wisconsin Secondary Principal of the Year.

Mr. Farley has served as principal of Brookfield East High School in the Elmbrook Schools for the past nine years. During that time, he has built a school culture rooted in positivity, opportunity, collaboration, relationships, and a commitment to the growth of students and educators as learners and leaders.

This process started about eight years ago, when teachers, staff, and administrators came together to define the school's mission, vision, and core values. They focused on commitments to maximizing the impact on students, learning, teamwork, service, and providing relevance for student success at Brookfield East and beyond.

"Mr. Farley has had a tremendous impact on the staff, students, and families at Brookfield East for nearly a decade," said Dr. Mark Hansen, superintendent of the Elmbrook Schools. "Through a strong school culture built on academic and human excellence, Brookfield East is flourishing."

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MPS Teacher Erin Sivek is Wisconsin Global Educator of the Year

Ask Erin Sivek which languages are spoken by her current students, and the teacher at MPS' International Newcomer Center might say, "Let me look at the class and listen." And then she recites a remarkable list.

This semester, she hears:

- Russian and Tuvan (also from Russia, north of Mongolia)
- Dari and Pashto from Afghanistan
- Swahili, Kibembe, French, Lingala, Chichewa, Wolof, and Bemba, from Africa
- Malay, spoken in Malaysia and other countries
- Burmese, Rohingya, and Karen from Southeast Asia
- Spanish from Nicaragua

Sivek, a teacher of English language arts and English as a second language, helps the speakers of those languages — young immigrants and refugees in grades 5 through 8 — learn English and go about life in America. For Sivek's work, the Wisconsin Department of Public Instruction named her Global Educator of the Year for 2022-23.

In choosing the winner, DPI considers how well the nominee cultivates students' global awareness and engagement; promotes global competencies beyond the classroom and includes colleagues and community members; inspires peers and others by modeling best practices in global education; takes innovative approaches to global education; and aligns teaching with the goals of Wisconsin's Global Education Achievement Certificate.

Sivek received the award at the Milwaukee Public Schools UNSIL World Fair, a gathering of students from the district's United Nations Schools of International Learning held in April at the UWM Panther Arena in downtown Milwaukee. When she learned her award would be presented at the fair, Sivek thought, "This is perfect. My students will be there."

The MPS Newcomer Center is housed in the Milwaukee Academy of Chinese Language (MACL), 2430 W. Wisconsin Avenue. A student who is new to the United States can attend the center for two years before making the transition to MACL or another school of their choice.

Sivek works with the MPS School Community Partnership for Mental Health, Sebastian Family Services, and a school social worker to address the needs of students, some of whom have endured trauma in their journey to settlement.

Sivek also ensures that students have the technology they need at home for their studies, securing Chromebooks for students and making certain they have mobile hotspots at home if they are without WiFi or are in temporary housing, as many who resettle are.

New students have other needs that are addressed, such as learning how to take the bus to school, and obtaining clothing, hygiene supplies, and furniture through vouchers from Goodwill and solicited donations.

Students' school experience varies. For instance, some of the Afghan students Sivek taught last year had attended school before, but some had not.

It's rewarding to Sivek when her students can do something well that they never could do before. For first-time students, it might be writing their names; or, if they'd been in school previously, it might be writing sentences in English and eventually entire essays.

Sivek, who grew up in Stevens Point, majored in English and minored in Spanish in college, graduating from the University of Wisconsin-Milwaukee in 2009. She was a student teacher at South Division High School, "an amazing experience," she said. She began teaching bilingual and monolingual English full time for MPS in February 2010 at South Division, in the same classroom where she had been a student teacher.

After Sivek's first year, refugee students began arriving at the high school. Her skills with them were noticed, and she was offered the job at the International Newcomer Center.

The experience is different from her time teaching at South Division. At first it was simply the age difference, Sivek said. Now, the situations of the students have changed.

The refugees she knew at the high school level had fled Myanmar themselves. Now students are predominantly of Central and East African heritage and were born in refugee camps. Many of Sivek's students this year are ethnic Congolese, arriving from the Democratic Republic of Congo, Tanzania, and Zambia.

Some have been waiting their whole lives to see which country they would settle in, Sivek observed.

Change is constant. That's why Sivek, who is pursuing her master's degree in educational policy and leadership at Marquette University, frequently checks the web pages of the United Nations and UN High Commissioner for Refugees and avidly reads The New York Times and National Geographic.

"It keeps me wanting to update myself with what's happening in the world," Sivek said, to see who might be coming to Milwaukee next and what kind of services they've received.

Despite their different backgrounds, those in Sivek's class find ways to relate. A student from Russia, seeing a new student from Malaysia in class, went to greet and help her, even though they had no language in common. The students automatically help each other, the teacher said; they remember being "the new kid," and feeling scared and unsure.

And Sivek greeted her new Rohingya students in their native language. "They feel a little safer, a little more comfortable, like, 'You know about me,'" she said.

mps.milwaukee.k12.wi.us

Saluting 2023 Wisconsin Principals of the Year Continued from Page 5

To ensure the school continues its path of excellence, a Principal's Cabinet made up of approximately 60 students regularly reviews the core values to develop ideas and action plans to ensure Brookfield East is meeting the needs of all learners. The cabinet played a leading role in the school adopting a daily resource period to help students manage their stress and workload.

Under Farley's leadership, the school has also aligned systems, structures, and priorities to ensure all students are college, career, and life ready. This has led to 85 percent of students selecting a two- or four-year technical college or university pathway after graduation.

"On behalf of AWSA, I am honored to recognize Andrew Farley with the Wisconsin Secondary Principal of the Year Award," said Jim Lynch, executive director of AWSA. "During his time at Brookfield East, Mr. Farley has fostered an incredible school culture. This award is a reflection of his outstanding efforts to constantly improve teaching and learning throughout the school."

Farley received a master's degree in educational leadership and a bachelor's degree in secondary education/history. He also has experience as an associate principal and social studies teacher.

elmbrookschools.org/brookfield-east-high-school

Supported by the Herb Kohl Educational Foundation, the Principal of the Year award recognizes school leaders who have helped drive student learning, foster instructional collaboration, and create safe and positive school environments. Recipients are selected based on their dedication to professional excellence, leadership skills and service to their communities.

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www.viterbo.edu/mae

Glodowski Selected as 2023 Wisconsin History Teacher of the Year

Justin Glodowski Named 2023 Wisconsin History Teacher of the Year as the Gilder Lehrman Institute Celebrates 20 Years of the National History Teacher of the Year Award

Marshfield School District

Justin Glodowski, a teacher at Marshfield High School, has been named the 2023 Wisconsin History Teacher of the Year, an award presented annually by the Gilder Lehrman Institute of American History, the nation's leading organization dedicated to K–12 American history education.

Inaugurated in 2004 and now celebrating its twentieth anniversary, the History Teacher of the Year award highlights the crucial importance of history education by honoring exceptional American history teachers from elementary school through high school. The award honors one K–12 teacher from each state, the District of Columbia, Department of Defense schools, and US Territories.

In addition to a $1,000 honorarium, Glodowski receives a core archive of American history books and Gilder Lehrman educational materials and recognition at a local ceremony in their honor, and becomes one of 53 finalists for the 2023 National History Teacher of the Year Award.

Justin Glodowski is in his 13th year teaching high school social studies. He currently teaches AP US Government and Politics, AP Comparative Government and Politics, and Genocide and Human Rights and has a master's degree in Teaching American History and Government from a local university. He has served in the Wisconsin Council for the Social Studies as a board member, Vice President, and, more recently, as President. Justin has also worked with the National Constitution Center and the Retro Report on teacher advisory groups.

"Justin's interactive approach to improving student learning is apparent when looking at his commitment to his instructional practice, classroom environment and involvement with local and state organizations. He continues to establish himself as an educational leader, inspiring mentor, and lifelong learner in the field of Social Studies. Our students and staff at Marshfield High School are very fortunate to have the opportunity to learn and grow with Justin on a daily basis. We'd like to congratulate Justin for receiving this incredible recognition, it is well deserved!", said Jackson Hein, Principal at Marshfield High School.

marshfieldschools.org

How To Nominate Someone For Wisconsin Teacher of Year

Wisconsin selects five (5) Teachers of the Year (TOY) annually to represent Elementary Schools, Middle Schools, High Schools, and Special Services. Through an interview process, one of the five is selected to represent Wisconsin in the CCSSO National Teacher of the Year program. DPI considers all five of its TOYs as a Teacher of the Year and does not give special designation to the one chosen to represent the state in the National Teacher of the Year program.

The road to become a Wisconsin Teacher of the Year starts when teachers are nominated for a Herb Kohl Educational Foundation Teacher Fellowship Award.

Once nominated by a student, parent, administrator, or peer, the teacher must submit an application for a Kohl Fellowship. Applications go through a review process that includes regional and statewide selection committees. A total of 86 public school educators receive a Herb Kohl Teacher Fellowship Award annually. The award includes both a $6,000 personal grant and a $6,000 matching grant for their school.

After the Kohl Fellows are selected, DPI engages a group of stakeholders to use those 86 applications to select the five Wisconsin Teachers of the Year.

Teachers can be nominated by students, parents, other teachers, community members, or administrators. All PK–12 classroom teachers who plan to continue teaching in their current or similar capacity for a minimum of 50% full-time equivalency for at least the upcoming school year are eligible to be nominated and apply. Pre-school 4K teachers in community-based centers must teach in a 4K program that is affiliated with an elementary school or school district and must be a currently licensed teacher in Wisconsin.

Learn more at: dpi.wi.gov/teacher-year/program/selection-process

Calling All Elementary Teachers Who Love Teaching Math or Science!

Nominations are now open for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST)!

PAEMST are the highest honors bestowed by the United States government specifically for mathematics, science, or STEM teaching. The award recognizes those teachers who use their deep content knowledge and pedagogical skills to support and leverage students' strengths to be successful in learning mathematics or science.

Research suggests that students often decide whether or not they're a "math person" "science person" or "STEM person" early in elementary school, and that's hard to change later. That has to do as much with self-conception as systemic bias.

Wisconsin educators in elementary grades sometimes don't self-identify as outstanding teachers of mathematics or science because they teach many subject areas. "We need more people to see themselves as math and science people, so their students do too," Wisconsin Department of Public Instruction Science Consultant Kevin Anderson said.

Learn more about this White House-sponsored award, administered by the National Science Foundation (NSF) by visiting the PAEMST website at paemst.nsf.gov. The DPI is here to support you -- we can match you up with a one-on-one PAEMST application mentor, and PAEMST itself offers national webinars to support different aspects of the application process.

Who Can Nominate

You can nominate yourself, or a colleague, or both! Nomination is just the first step. The nominee then puts together their application for the award. This is a great opportunity to highlight your teaching, but also your students' mathematical or scientific thinking.

Application Components

- Administrative Component (Letters of Recommendation & Resume)
- Narrative Component (Lesson Plan & Written responses to the Five Dimensions of Outstanding Teaching)
- Video Component (30 minute classroom video)

Timetable for Nominating and Applying

- Nominations are now open! Nominate by January 8th.
- Application materials due February 6
- State Finalists are notified by the end of March

The Wisconsin selection committee for mathematics can send up to three state finalists to the national round each year. The national selection committee can choose one awardee from the finalists. The same is true for science.

Have Questions?

Contact Julie Bormett for math (Julie.Bormett@dpi.wi.gov) or Kevin Anderson for science! (kevin.anderson@dpi.wi.gov)

Energy Education Program Teaches the Basics and Complexities of Renewable Energy

Joe Phillips
Osseo-Fairchild School District

There is certainly no doubt that we are in the midst of an energy transformation. From fossil fuels to renewable sources, the way we harness useful energy is experiencing a major shift. Prior to the industrial revolution, our energy needs were relatively modest. In modern times, and as we proceed into the future, our energy needs and demands are growing at an unprecedented rate. How we capture that energy to meet our growing needs is of great concern. "Rolling blackouts" during summer months is a frequent phrase used in many locations.

Now, let's consider the other focus of our energy shift: our loved ones. I have two beautiful young children who are going to continue to grow up in a world that is experiencing a shift in habitability unlike anything we've witnessed. Mass migrations, extreme weather events, and have you noticed that smoke from the unprecedented wildfires? You too have loved ones that are living in a changing climate. What will their future hold?

The success of our future, no matter the topic of choice, has always lied with the education of our children. What we *teach* them now leads to the choices they'll make in the future. *Our future*. Here at the Osseo-Fairchild School

District, we've chosen to offer a pathway to students that will directly impact the lives of families, the future of sustainability, and the health of our planet. This pathway, termed our "Energy Education Program," emerges students into both the basics and the complexities of renewable energy.

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Explore the Future of Energy at Osseo-Fairchild's 1st Annual High School Energy Fair

We are in the midst of an unprecedented change in energy usage, conservation, technological advances, and career opportunities. This is an unparalleled opportunity to see what these changes look like, what our future is moving toward, and how our students AND staff can both grow and benefit from the changes.

The first annual high school Energy Technology Fair is being held at the Osseo-Fairchild High School Campus on October 11! Sponsored by Xcel Energy, this immersive experience is unlike anything high school students or staff has experienced before! Solar? Yes! Wind turbines? Yes! Hydrogen fuel cells? Yes!

This is an all-day event that begins at 9:00 am in the Osseo-Fairchild auditorium and concludes at 2:00 pm. Schools in attendance will be allowed a maximum of 25 students and will be responsible for their own transportation. Students should bring their own lunch and will have the opportunity to eat in the commons or outside.

Students who attend this event will see some of the technology advances before ANY other students in our area. From actual hydrogen fuel demonstrations, experts demonstrating the future of battery storage, or local school districts showing how they measure energy loss using drones, the opportunity to see this all in one place is unbelievably unique.

Staff who attend will not only get to experience the same technology that students witness, but will also receive lesson plans and REAL solutions to implementing this into your classes (or building new renewable energy classes altogether). The resources, networking, and curriculum provided will allow you and your school to see how realistic it is to teach your students and community about energy.

Details at: sites.google.com/view/josephphillips/events

SASD Grads Pursue Careers in Electrical Industry

Sheboygan Area School District

The Sheboygan Area School District (SASD) and the Sheboygan business community have made significant investments in technical education programs dating back to 2016 when the district opened the $5 million Kohler | Johnsonville Advanced Technology Centers inside North and South High Schools. The 12,400 square foot state-of-the-art manufacturing and engineering labs prepare students for successful local college and career paths. The advanced technology centers offer high-tech manufacturing and engineering tools and technology, giving practical exposure to CNC, automation, electrical, and metrology equipment. The expansion, upgrade, and renovation of existing facilities were made possible through the district's investment and ongoing financial commitment, as well as significant contributions from local businesses, organizations, and sponsors.

Collectively referred to as Red Raider Manufacturing, or RRM, the primary goal is to provide both classroom instruction and authentic, hands-on learning opportunities that result in real-world employability. The Red Raider Manufacturing oversight team worked with local manufacturers and a local technical college to select equipment and curriculum that is relevant to students entering today's workforce.

As early as 9th grade, North and South High School students can choose from ten different technical education classes, like Electricity, Electronics & Automation, or Power Mechanics. Exposure to these types of classes early in their high school career gives students ample time to dive deeper into a certain area, explore other skilled trades, and expand their learning by taking advantage of a nine-week co-op experience or a 9 to 12-month youth apprenticeship.

The investment has been worthwhile, with more and more students pursuing well-paying jobs in the trades after high school.

After graduation, Dylan Vedetic was hired by a local electrical business, where he is a first-year apprentice and is also attending school. "The best part is the benefits that are offered as a union electrician. I am offered a pension, annuity, and very good healthcare. Other good parts about my job are learning new things every day and working side by side with co-workers who want to be just as successful," said Dylan.

Dylan added, "Over the course of my senior year at South High, I was in a youth apprenticeship working at a local electric company doing work in the shop and some on-the-job work. On average, I would work 15-20 hours per week. I found this program to be very beneficial, and it was nice to get a head start on my future."

Blake Thun also graduated from South High School and was hired right out of high school by a local electrical business as an apprentice. "The best part is learning a trade that not many people know how to do and being able to be there for the people that need electricity," said Blake. He said it's amazing to be taught ways to learn and work at a faster pace.

Owen Hayon graduated from North High School last spring and was hired at a local electrical business as a construction wireman. He is preparing to take his exam to begin the apprentice program. Owen said the best part of his job is the different skills he learns every day. "The day goes so quickly because no day is the same right now. It's a great trade to get into."

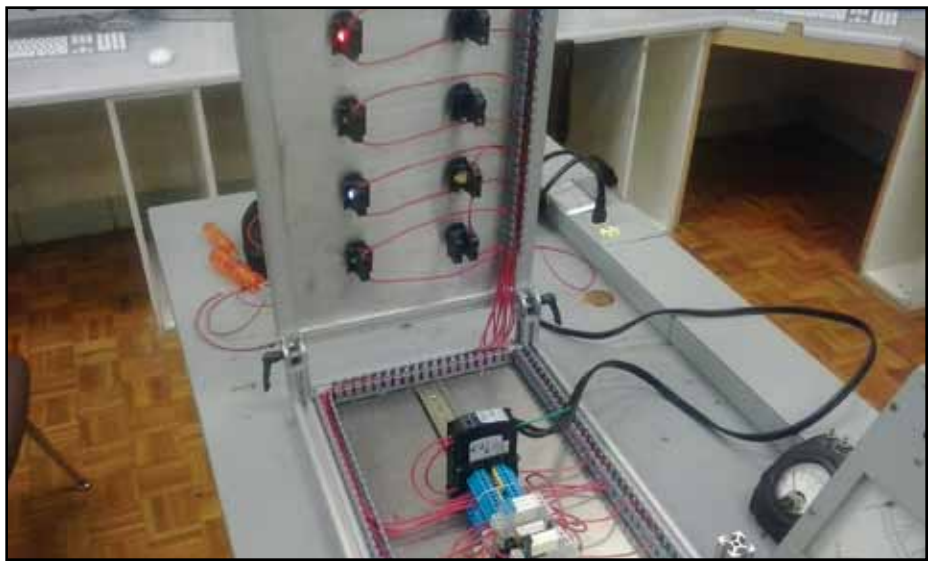
Owen was very prepared to enter the workforce through his experiences in high school. In addition to taking several RRM classes, he completed a youth apprenticeship in manufacturing at a local manufacturer in Manitowoc and took classes at a nearby college. "It was a great senior year as I like to be doing stuff and not just sitting in front of a computer," said Owen.

All three graduates participated in Sheboygan Area School District's House Construction class, where students from North and South High Schools work together to build a home. They all credited the program with giving them hands-on experience and a close-up look at a variety of different skills and industries. Dylan said, "House construction helped me learn about all the trades and allowed me to narrow it down to which one I believed would fit me the best." Owen added that it was helpful to see the skills used in real-life projects, like building a house.

As these three graduates embark on their first year of full-time employment in the Electrical trades, Owen summed it up best when he said, "I am only 18 and have a great start on my career."

These success stories from graduates who utilized the Red Raider Manufacturing program showcase how students can prepare for life after high school.

sheboygan.k12.wi.us



Careers in Energy

Engineering

An engineer is someone who likes to solve problems. They can help make the nation's electricity usage more efficient and more reliant on clean fuels.

Architects

Plan and design structures like homes, offices, theaters, factories, and other buildings.

Civil Engineers

Use engineering to plan and design construction projects, like roads, bridges, airports, water and sewage systems, and other facilities.

Electrical and Electronic Engineering Technicians

Work under the direction of engineers. Design, build, or repair electrical equipment, like circuitry or components. As companies look for ways of reducing utilities costs, new employment opportunities may arise for engineering technicians who can recommend solutions for improving production efficiency.

Electrical Engineers

Use engineering to research, design, develop, or test electrical equipment and systems. May oversee the manufacturing or installation of systems. Talents may be applied to connecting wind farms and solar panels to the grid. Career specialties include energy engineers and photo-voltaic (solar cell) systems engineers.

Electronics Engineers

Use engineering to research, design, develop, or test electronic components and systems for commercial, military, or scientific use. May design electronic circuits for things like telecommunications or aerospace controls.

Industrial Engineering Technicians

Work under the direction of industrial engineers to design processes to make better use of resources at work sites. Design the layout of an industrial or manufacturing workplace to make production more efficient.

Mechanical Engineers

Use engineering principles to design tools, engines, and other mechanical equipment. Oversee installation, operation, and equipment repairs. Can identify efficiency opportunities in commercial and industrial facilities and calculate estimates of savings.

Nuclear Engineers

Conduct research on nuclear energy and nuclear waste disposal. They work on problems related to how nuclear energy is used, and how to dispose of nuclear waste.

Stationary Engineers and Boiler Operators

Run or maintain equipment that provides utilities to building such as power plants, schools, hospitals, and residential buildings.

Installation and Repair Careers

Installers and repairers are essential to the energy industry. They install, inspect, test, and repair electrical or mechanical equipment.

Control and Valve Installers and Repairers

Install, repair, and maintain devices that regulate processes in buildings. This includes things such as electric meters, gas regulators, thermostats, and safety valves.

Electrical and Electronics Repairers of Commercial and Industrial Equipment

Repair, test, adjust, or install electronic equipment such as industrial controls, transmitters, or antennas.

Utility Line Workers

Construct and maintain the *transmission* and *distribution* equipment and facilities that deliver electrical energy to homes and businesses. Line workers install, service, and repair electrical lines in the case of weather-related outages or other disruptions.

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Work on heating, cooling, and ventilation systems in home and office buildings. May repair or install HVAC equipment. As demand for energy-efficient equipment grows, HVAC mechanics can become involved in the installation and maintenance of small scale renewable technologies.

Industrial Machinery Mechanics

Repair, install, or adjust manufacturing equipment. May take machinery apart when there is a problem and repair or replace broken equipment. As demand for energy increases, new employment opportunities can arise for machinery mechanics that can repair, install, or maintain wind farms and pipeline distribution systems.

Installation, Maintenance, and Repair Helpers

Assist maintenance workers with installation, maintenance, and repair work. May supply tools or clean work areas. Some workers may be employed in the energy industry in maintaining and repairing plumbing, heating, or residential and commercial electrical systems to make use of solar-derived hot water.

Powerhouse, Substation, and Relay Electrical and Electronics Repairers

Inspect and maintain electrical equipment in power generating stations, substations, and in-service relays. This occupation can be involved in solar installation and maintenance.

Solar Photovoltaic Installers

Install and maintain solar photovoltaic systems on roofs which convert energy from the sun into electricity for homes and businesses. PV Power Systems engineers drive the development and implementation of highly efficient grid-connected systems for Concentrated PV technologies. Electrical Engineers can be LEED-certified and work on sustainable projects or with an architectural firm.

Supervisors of Mechanics, Installers, and Repairers

Directly supervise the activities of workers who maintain or repair various machines, equipment, vehicles, or buildings. May be employed in electrical generation facilities to coordinate the activities of inspectors, machine setters and operators, and plant operators.

Wind Turbine Service Technicians

Inspect, adjust, or repair wind turbines. They may correct electrical, mechanical, and hydraulic problems.

Production Careers

Production workers in energy are mostly employed in power plants, often combining the duties of operators and technicians. Due to their high technical skills and union contracts, these workers can earn double the salary of what their counterparts in other industries earn.

Chemical Equipment Operators

Operate equipment to control chemical changes or reactions during a production process. May work on devulcanizers, steam-jacket kettles, or reactor vessels.

Chemical Plant and System Operators

Operate systems of machines that control entire chemical processes.

Gas Plant Operators

Distribute or process gas for utility companies by controlling compressors to maintain specified pressures on gas pipelines.

Nuclear Power Reactor Operators

Operate or control nuclear reactors. May start and stop equipment, monitor controls, and record data. Use emergency procedures when necessary.

Petroleum Pump System and Refinery Operators

Operate systems that refine petroleum. May specialize in certain types of systems, gauging or testing oil in storage tanks, or regulating the flow of oil into pipelines.

*Source: O*NET Online — www.onetonline.org*

Electronic Programs Sparking Interest in High-Demand Careers at Hudson High School

One of the electronics engineering labs at Hudson High School

As a Project Lead the Way (PLTW) Distinguished High School, Hudson High School is proud of its electronic programs and the spectrum of student opportunities. PLTW courses are described as "developing the in-demand, real-world knowledge and skills necessary to thrive beyond the classroom. PLTW Distinguished Program Recognition celebrates districts and schools committed to helping students own their education by increasing student access, engagement, and achievement in their PLTW programs". (PLTW website)

According to Derek Sciacca, a 25-year teaching veteran at Hudson High and current electronics teacher, "When we look at the courses that we offer, there are a wide variety of applications for electronics, so students get a lot of exposure. We cater to a wide variety of interests and abilities". Students begin with the Electricity, Electronics & Robotics semester-long course. This course explores the makeup of the atom, different forms of electricity, AC/DC circuits, electronic components, the fundamentals of electricity, renewable energy, and basic robotics. Students in the class build and solder together an AM/FM radio, practice the techniques of wiring outlets and lights, work on a renewable energy project involving how wind energy creates electricity, and perform simple robotic activities, programming small robots to perform simple tasks. This is a practical, hands on class where different tasks and projects are emphasized.

Many students then advance to the yearlong PLTW Digital Electronics course, a project-based course that takes a logical, systematic approach to understanding how digital circuits work. This course is taught hands-on beginning with basic concepts, circuit design and analysis, testing, and prototype construction. Most classroom activities involve information on new concepts, problem-solving activities using the new concepts, computer simulation, and circuit construction (wiring). Some activities will be taken to the printed and soldered circuit board stage. Students also have the opportunity to earn three college credits in this course.

Many students continue in the PLTW pathway and choose an electronics application for the Engineering Design & Development capstone course taught by Dan Weiland, who has also served over 20 years at Hudson. He adds, "We find multiple ways to integrate electronics into our curriculum throughout the PLTW courses. Students find it challenging and rewarding." Students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel. The culminating event is an open house where students present their project and proposed solutions, often including prototypes, to engineers in business and industry and local post-secondary leaders.

Electronics courses are popular electives. Each course has enrollment between 25-30 students, and multiple sections are offered. Each year, hundreds of Hudson High students have an opportunity to build skills in this area. These courses build skills for high demand, high wage jobs and STEM careers.

Hudson is located in the northwest of the state, on the St. Croix River on the border of Wisconsin and Minnesota. Hudson High School is a public secondary school serving grades 9 through 12 with an enrollment between 1850–1900 students.

hudsonraiders.org

Osseo-Fairchild Energy Education Program

Continued from Page 9

This pathway starts with an introductory course called "The Foundations of Electricity". Upon successful completion, students move into our "Photovoltaics" course, where they install, maintain, gather data from, and uninstall a large-scale photovoltaic array. Further educational offerings in this program included "PV and Battery Storage," "Alternative Energy Sources," and "Sustainable Energy Integration." These additional courses allow students to understand the storage of energy, wind turbines and hydroelectric power, along with the integration of renewable energy sources into today's modern architecture. This is a 3–4 year program, with the goal of students taking the NABCEP (North American Board of Certified Energy Practitioners) — PV Associates exam upon completion. This exam helps students become immediately employable and begin a career in sustainable energy.

> ***"Energy education IS general education. This is no longer an 'option' for our educational system, but rather a requirement. If we truly believe in a more sustainable future for our planet and a healthier future for our loved ones, it starts with our students now."***

I must mention the true highlight of the Energy Education Program. *It truly encompasses all forms of education.* Math? Check. The calculation of electricity requires all sorts of math (especially algebra). English? You bet. Writing technical manuals and following product installation instructions is an integral part of installing a system. Speech? Absolutely. Students are required to not only interact with others during installation, but also with staff and community members. Social studies and economics are imperative, as incentives and policies are key to our sustainable future. Marketing and finance are invaluable to determine the return on investment of a PV array. Chemistry? Physics? It's everywhere. I could really go on and on about the advantages of energy education, but I'm sure you get the idea.

Finally, I feel compelled to cut to the heart of the situation: *energy education IS general education*. This is no longer an "option" for our educational system, but rather a requirement. If we truly believe in a more sustainable future for our planet and a healthier future for our loved ones, *it starts with our students now*.

I am passionate about helping other districts implement an energy program. If you are interested in this area of curriculum, but are unsure where to start, please reach out.

www.ofsd.k12.wi.us

Clean Energy Job Creation and Growth

Clean energy job creation and growth are on the rise as more renewable energy and energy efficiency technologies become part of the U.S. power system. This is good news for the nation's economy, because investments in clean energy infrastructure and projects require more American workers. To maximize the positive economic impact of clean energy, the U.S. Department of Energy (DOE) is committed to creating quality jobs that can sustain American families. As workers earn more money, they spend more, which increases demand for goods and services, sustains demand for workers in clean energy, and positions the United States as a global market leader.

There are just over 8 million jobs in renewable energy today. In 2021 and 2022, energy jobs grew faster than overall U.S. employment. Workforce development in renewable energy, sustainable transportation, and energy efficiency is critical to increase power system security, reliability, and resilience in the face of extreme weather events due to climate change.

How to Start Your Clean Energy Career

The clean energy revolution needs professionals from all industries and occupations, not just scientists and engineers.

The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) is looking for enthusiastic, driven professionals to join our team and be Clean Energy Champions. We are seeking talented individuals with diverse perspectives and skills to help tackle the climate crisis.

EERE leads research, development, demonstration, and deployment of innovations in renewable energy, sustainable transportation and fuels, and buildings and industry that will equitably accelerate the national transition to a clean energy economy. We are working to ensure clean energy investments, new jobs, and energy justice benefit all Americans.

You do not need to be a clean energy expert to have a clean energy career. Some EERE positions are scientific or technical, and others support business operations, human resources, strategic analysis, communications, and more.

Find careers in EERE at: www.energy.gov/eere/clean-energy-jobs

Internships, Fellowships, Graduate and Postdoctoral Opportunities

The Office of Energy Efficiency and Renewable Energy (EERE) and U.S. Department of Energy (DOE) provide many opportunities for students, recent graduates, and others looking for internships, fellowships, and similar programs with the federal government.

Find out about these opportunities at: www.energy.gov/energysaver/internships-fellowships-graduate-and-postdoctoral-opportunities

Map a Career in Clean Energy

Start building our clean energy future with a career in the Office of Energy Efficiency and Renewable Energy (EERE). EERE offers opportunities across its technology offices and on its operations team.

EERE is fighting the climate crisis by advancing President Biden's goal of reaching net-zero carbon emissions by 2050 through cutting-edge research that will bring clean energy technologies to communities all across America. But we need your help.

At the site below are various career maps to help you think about what your career can look like in clean energy, based on your education and experience.

Go to: www.energy.gov/energysaver/map-career-clean-energy

Source: Office of Energy Efficiency & Renewable Energy at Energy.gov

Two Wisconsin Schools Win Energy Challenge

Two Wisconsin schools have won a $2,500 cash prize in a statewide sustainability contest for students, according to a press release.

Students at **OH Schultz Elementary School** and **Oconomowoc High School** won a cash prize as part of the Renew Our Schools challenge, created by Wisconsin K–12 Energy Education Program in partnership with Focus On Energy.

Seventeen schools participated in the contest, which required winners to reduce energy usage by at least six percent. The winning schools won the cash prize along with a bonus $200 for additional mini-challenges, including investigation of home energy use and dedicating a school day to reducing energy use by three percent.

OH Schultz Elementary School exceeded requirements and reduced energy use by 16.94%, including behavioral interventions and installing LED lighting and sensors. "Our focus during the challenge was to get the whole school on board. It was great to see students and teachers actively involved in the competition," Ryan Kamien, fourth grade teacher at OH Schultz Elementary School, said in the release.

Oconomowoc High School reduced energy by 8.25%, reprising its Spring '22 victory with a combination of tactics, including switching A/C to occupancy-only and visiting the town utility company to learn more about energy.

"We have found the Renew Our Schools program to fit our curriculum perfectly," Kelly Holtzman, science teacher at Oconomowoc HS, said in the release. "Giving our students the opportunity to use energy-tracking data and learning how to interpret the results is a profound skill to develop at their age. Energy is a topic that affects everyone. We need to ensure we are doing our part to educate others because, at the end of the day, we are all energy consumers."

Advancements and New Technologies for Bellin Nursing Students

Bellin College in Green Bay has educated healthcare professionals for over 110 years. Starting as a nursing school in 1909, Bellin College now offers 16 different programs across the undergraduate, graduate, and post-graduate levels.

"I knew I wanted to work in the operating room since I was 12 years old," Zoe Koepp, current Bellin College Surgical Assisting student said. "I was very intrigued by Bellin College since it's strictly a healthcare college."

Not only does Bellin College prepare its students for successful careers, but by expanding its program offerings, it also works to focus on the needs of today's healthcare challenges.

"The college is a state-of-the-art facility," Chad Dall, Director of Outreach and Engagement says. "We have multiple classrooms for different styles of learning, and our lower level has a lot of simulation equipment that you'd find in a real hospital setting."

Bellin College emphasizes hands-on learn, leadership, and service learning. It continues to adapt its educational models, so students are well-prepared to enter the healthcare field upon graduation.

"There are so many opportunities to learn," Zoe Cambray, current Bellin College nursing student says. "You're using things you're going to see in the hospital, so I definitely felt prepared going into my clinicals."

Bellin College has also advanced its technology offerings to keep up with the healthcare models of today. Most recently, with the addition of the state-of-the-art VERT Simulator for its radiation therapy program and the SynDaver, a synthetic cadaver that mimics human skin and tissue, students can engage in best practices and feel confident in their skills and abilities.

"It's great to see the advancements and new technologies Bellin College has added," Amanda Super, Nursing Assistant Program Coordinator says. "It's really grown even since I was a student here, so to be able to teach with the new equipment and to show our students is incredible."

Bellin College recently changed all undergraduate programs to a three-year curriculum, while still having students obtain a bachelor's degree. In doing so, it hopes to alleviate some of the challenges and shortages the healthcare industry faces, while providing many opportunities for its students, so in return they can provide the best care possible for patients in the Green Bay area and beyond.

Fall Creek High School: A Leader in CTE Education

Fall Creek High School is a leader in Career and Technical Education (CTE), offering a variety of programs that prepare students for in-demand careers. The school's CTE programs are divided into three categories: Agriculture, Business and Information Technology, and Technology and Engineering.

Agriculture

Fall Creek Agriculture department puts an emphasis on the science of agriculture. Mrs. Loewenhagen, the Agricultural Instructor, seeks out professional development that enhances the program including being a National Agriscience Teacher Ambassador and CASE (Curriculum for Agriculture Science Educators) Certified Instructor in Agriculture Explore, Agriculture Food and Natural Resources, Plant Science, and Animal Science. This was embraced throughout the remodeling process of the school creating a functional classroom space and laboratory area that includes a small animal room. The agriculture program offers a variety of different agricultural related pathways teaching the industry relevant curriculum through hands-on and inquiry based education. Throughout the 18 courses offered, students have the opportunities to utilize scientific and industry used equipment. Two courses, Horticulture and Vet Science, have been aligned to the science standards, meeting the needs of our students in receiving science electives. In addition, the Veterinary Science Course has been transcribed with Chippewa Valley Technical College to count as 3 Animal Science College Credits.

It is important in Fall Creek to utilize the three circle model of Agriculture Education offering industry leading classroom instruction with real world lab experiences. All students have the opportunity to participate in FFA and participate in Career Development Events and Leadership Development Events that have a direct tie to the classroom instruction. Students are also highly encouraged to have an SAE (Supervised Agricultural Experience) in which students obtain work or establish an entrepreneurship opportunity within the Agriculture Industry, which has been the basic guide to every high school senior's High School Capstone Project.

The agriculture program also offers a job based curriculum to help our students gain and keep employment. The curriculum includes the opportunity for Work Based Learning meeting the Wisconsin Department of Workforce Development Youth Apprenticeship Program getting employment skill certifications. Junior Achievement Skills Success and Titan Programs are also implemented in the Work Based Curriculum to hear from Industry Professionals

The student-run "Cricket Store" with some of the merchandise.

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Students Experience Multiple CTE Pathways at Augusta High School

Darrel Smith,
Technology Education Instructor
Augusta School District

Augusta High School, located in rural Augusta in Western Wisconsin is forging ahead with a comprehensive 21st-Century CTE department. August CTE showcases, Robotics 4.0, Tech-ed, Business Ed, Entrepreneurship/student led business, Family and Consumer Education, and Agriculture.

Here's an overview of the kinds of career pathways students are exposed to at Augusta.

Student Led Business Program — Up and running, from teaching how to become an entrepreneur, to learning how to deal with conflict in the workplace, to pushing ink, this program has it all at Augusta. T-Shirts for Tomorrow screen-printing and vinyl student-led business program is teaching students, from scratch, how to create film, register, expose and develop the screen, centering and inking shirts, and curing the final product. Quality is a priority and students owning mistakes and learning from them is of the utmost importance. Working together and being a leader is a quality that is developed along the way.

Family and Consumer Education — We offer an array of culinary courses, courses in fashion, and interior design, in addition to training and certifying students work in childcare. The school district has recently started a childcare program to help support our families' needs and to reduce the impact of low to no childcare options in our community. With these courses and childcare centers, our students will be able to gain real work experience and help impact/improve the lives of our children.

Agriscience — All hands on deck, all the time. Agriculture courses here at Augusta really

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Tech Ed Integral to Career and College Readiness

Potosi High School Industrial Arts Programs

Potosi School District

The Potosi School District is a small, rural district in the far corner of Southwest Wisconsin. Our mission is to focus on every student to develop their maximum potential, to foster academic excellence, along with career and college readiness through high quality instruction, character education, collaboration, and community involvement. It is with this mission that Potosi's Industrial Arts Programs are built to serve.

When Dakota Bockenhauer, Technical Education Instructor, came to the district in January of 2018, the current program and facilities had been in a holding pattern for some time.

By the end of Dakota's first semester, the importance of the program and its ability to produce career-ready students was obvious. The following year, a community supported referendum passed alongside being awarded a Wisconsin Fast Forward grant. The entire facilities and program were remodeled from the floor to the ceiling, and equipment, from computers to tools, was upgraded.

Students start with some of the "core" courses including: Woods, Welding, Metals, Structure, and Mechanics. Here students learn basic material and technique theories and turn those into skills through guided projects.

Students build many projects throughout the course, each sequential project adds tools, techniques, and materials to a student's skill set. Other courses like Robotics and Engineering Design, focus on the design process. Again, students are armed with basic techniques and theories and are given opportunities to turn them into skills through guided projects.

Once students complete at least one core course, as well as the Engineering Design course, they have the ability to take Advanced Shop courses. These courses focus on real world projects. Here the goal is for students to take the tool, technique, and material theories discussed in the core courses and couple that with the design and building processes from Engineering Design. Students are allowed to work on their own projects while completing a Project Portfolio to guide and document their project process.

> ***"Our youth apprenticeship program involves a wide array of industries such as technology, agriculture, medical, and hospitality. Students have the opportunity to work for employers where they earn valuable skills, knowledge, and credit they can apply to their educational career. These opportunities serve college bound and career driven students alike."***

Students also have the opportunity to complete a service-learning project through the Project Management course. Here students have the opportunity to form a small business, as individuals or groups, and work with a client to complete a project. We typically have a long list of potential clients including community members, non-profits, municipalities, and local businesses. Students will interact with their client to complete project bids, design, estimates, and builds of a particular project. In the rare event students don't have a current project request, students will prepare a project proposal for something they think would benefit the school or community. Students will also complete a Project Portfolio alongside the other client tasks.

Our goal is to make students as college and career ready as possible. We think industry approved certifications and youth apprenticeships are a great way to do that. The certifications give specialized skills and resume highlights to our students pursuing either college or a career alike. Currently 4 of the 5 "core" courses have a certification tied with them, with the goal for all 5 to have a certification. Our youth apprenticeship program involves a wide array of industries such as technology, agriculture, medical, and hospitality. Students have the opportunity to work for employers where they earn valuable skills, knowledge, and credit they can apply to their educational career. These opportunities serve college bound and career driven students alike.

This model is still in its infancy but has shown quick growth. In the short five years we have grown the CTE program to 91% of graduates are CTE Participants, 53% are CTE Concentrators, and 51% earn at least one CTE App (certification or apprenticeship).

We continue to make plans for new courses, curriculum, additions and remodels to our already new facilities and equipment so we can keep pace with rapidly changing industries. All as we continue to strive to better our program and our student outcomes.

"Our tech ed program is an integral part in our overall system to help our students become career and college ready. While some may still think of technical education as an alternative to a 'regular education' tract, we know that in reality, tech ed works hand-in-hand with the rest of our curriculum, including the same high standards we expect in every classroom."

— Kurt Cohen,
Potosi School District Superintendent

www.potosisd.k12.wi.us

CTE Program Highlights in the Rice Lake Area School District

Career and Technical Education at Rice Lake offers a variety of opportunities for students. Here's a brief look at the career pathways students are being introduced to at Rice Lake.

Agriculture

The Agriculture program at Rice Lake is fortunate to have access to the "River Doc" Nature Conservancy which was generously donated to our district. This conservancy includes a mature hardwood forest, a stream, lakefront, grassland, and an agricultural field. This has allowed our students to gain real life and hands-on experiences in a variety of courses and develop their skills. Students in our Forestry course had practical experiences identifying tree species, measuring the volume of lumber, determining the stocking density of the forest, and they developed a potential plan for management decisions of this forest. Students in Natural Resources have units focusing on protecting our soils and water. They have done labs determining soil types, horizons, nutrient levels, and they have learned about erosion prevention methods to protect our waterways. Our Wildlife Management course has also done several projects identifying habitat types, wildlife, and even has a Trail Camera from the Wisconsin DNR Snapshot program. The River Doc Nature Conservancy is used by all levels of students 4K-12 in the district, and we are fortunate to have such a unique resource as a part of our district.

Business

The Rice Lake High School Business Education program continues to promote college and career readiness. The department has partnered with a local technical college to offer 21 credits of dual credit courses. The classes include Accounting, Law, Management and several others. Students in these classes develop real world skills while building the confidence to be successful in college and beyond. In addition to the partnership

with a local college, Rice Lake High School has a dynamic internship program. Each term students receive on-site experiences with many of the premier employers in the area. There are 78 students scheduled to have internship experiences this year through a partnership with more than 63 local employers.

Family and Consumer Education

The students in the Family and Consumer Sciences program are always wanting to learn and connect with the community. Projects that students have created include hats and mittens for local children, dresses for children around the world, and most recently the pillow project. This project was completed by the Hobbies for Life class, where students learn many different skills with the hope of developing a new hobby that they can take with them for the rest of their lives. Students at the elementary school level created pictures of animals/creatures that the students in Hobbies for Life class brought to life with their sewing skills. Each child was able to receive a stuffed animal/creature that was created by a high school student, from the drawings that they had made.

Tech Ed

Our construction pathway is growing and the things we are building are becoming more and more complex. This was a 16x32 deer hunting cabin with a loft that our Construction Framing 1 class completed in spring of 2023. The cabin was built on site and then hauled to its final destination. As we have started building these bigger and more complex structures, more and more students are interested in the program, and our class size and number of sections are growing. We also are getting more community involvement as well as compliments from people driving or walking by. This makes the students feel proud of their work and take more pride in the class.

Art

High School Art students were chosen to showcase their three-dimensional artwork at Arts in Hand Gallery in Spooner, WI during the month of June. Braden Thomas and Joshua Nelson, both recent graduates, shared some of the amazing pieces they created during their senior year at Rice Lake High School.

AP Studio Art students showcase their portfolio at a CTE project showcase event where the students discuss their Sustained Investigation with community members. The artists have an opportunity to explain an underlying connection between their pieces whether through subject or mediums. This offers the AP Students a chance to communicate their ideas and allows them to formulate thoughts for the writing component of the portfolio submission.

www.ricelake.k12.wi.us

Fall Creek High School: A Leader in CTE Education Continued from Page 15

Student Programing the FANUC Robitic Arm in the District's Fab Lab

the employment skills that are essential in the workplace.

Business and Information Technology

Business & Information Technology (BIT) Education prepares students for careers related to business, technology, finance, management, and much more. BIT content focuses on topics that affect every member of society, including preparing individuals to own or operate their own business, and how to be successful members of our American Enterprise system. Fall Creek has two BIT educators that have developed and continue to grow a comprehensive business program. Transcripted credit, via Chippewa Valley Technical College, is provided in the following BIT courses: Accounting, Desktop Publishing, Microsoft Office Suite, and Personal Finance. When students take Information Processing, they have the potential to get MOS Certified in Word 2019.

One of the more successful additions to our Business and Information Technology course offerings has been the Cricket Store. This student-run business concentrates on general Fall Creek Cricket Merchandise. The idea began back in the fall of 2019. The high school just completed a major renovation and was looking to greatly increase the availability of Cricket Merchandise for the Fall Creek Community. Charles Fitch, one of the Business and Information Technology Instructors, put together a new course, Cricket Merchandising. This course gives students the experience of operating a business. Students acquire skills in team building, marketing, merchandise designing, purchasing, pricing, and setting up displays. The students also learn about product photography, packaging, and shipping.

The physical store is located in the high school commons area and is open for many indoor events including most volleyball and basketball games. The highest sales events are the back-to-school night and music concerts throughout the year. The Cricket Store has been very successful over the last four years, averaging close to $20,000 in sales the last two years. The class also sells merchandise online through our website. Approximately 34% of our sales are online. Most of our orders ship within the extended Fall Creek area. We also receive online orders from outside the state of Wisconsin and we have shipped to 18 different states! Check out our website: gocricketsmerch.com

Technology and Engineering

Technology and Engineering Education prepares students for careers related to Construction, Engineering, Manufacturing, and Transportation. With the focus on STEM, this CTE area applies the knowledge learned in science and math with hands-on real world applications. Currently the district was awarded a DWD Grant that focused on Manufacturing. Students are getting experiences in learning Industry 4.0 concepts along with robotic operation and programming.

The school district also invested in establishing a Fab Lab that is used by K-12 students. The Fab Lab has 3D printers, Laser Engravers, Vinyl cutter, Banner maker, CNC router and Plasma Cutter. Middle school students in grades 6th, 7th and 8th have many opportunities throughout the school to create their own learning in a program called Launch where students can get a jump start on learning design software, engineering concepts, and much more before they enter high school, so they are ready to navigate a career pathway.

Course offerings vary from year to year so that Fall Creek High School Students have a variety of classes to choose from while in high school. There are a few classes that also offer transcripted credit through Chippewa Valley Technical College. Those are, Welding, Intro to CAD 2d, Intro to Solidworks, and Intro to REVIT. Students are also able to earn Industry 4.0 Smart Automation Alliance Certifications by choosing coursework in Technology and Engineering.

In addition to the courses offered at Fall Creek High School, there are a variety of other CTE opportunities via Chippewa Valley Technical College (CVTC) Academies, such as welding, healthcare, construction, dental assistant, just to name a few. Fall Creek High School also participates in the Start College Now program (SCN), which allows students to earn college credit while still in high school. This program is a great way for students to get a head start on their college education and save money on tuition.

The CTE programs at Fall Creek High School are a great way for students to prepare for a successful future. By gaining the skills and knowledge they need in high school, students can be well on their way to a rewarding career.

www.altoona.k12.wi.us

Multiple CTE Pathways at Augusta High School Continued from Page 15

focus on giving students relevant and engaging experiences. Some courses include Biotechnology in Agriculture, Small Animal Science, Wildlife Conversation, Occupational Leadership, Greenhouse Management, Large Animal Science, Aquaculture, and a middle school exploratory class. Students are able to work collaboratively with classmates, industry representatives and the community to assist their learning by connecting Agriculture to everything that we do in our day to day lives.

Business Ed, Entrepreneurship — In the business area, our goal is to give students a genuine experience that aligns with business and industry standards. We have a variety of courses offered for students who are interested in a business pathway related to marketing, finance, management and administration. Within this pathway, we offer three transcripted credit opportunities through Chippewa Valley Technical College, including Microsoft Office, Web Design and Coding, and Personal Finance. When completed, these courses count toward a college degree at CVTC.

Mechatronics — Our Mechatronics courses offer a comprehensive blend of mechanical and electronic principles. Students gain hands-on expertise in designing, building, and maintaining automated systems. Unique opportunities include earning valuable Smart Automation Certification Alliance (SACA) industry credentials, boosting future job prospects. This coursework imparts specialized mechatronics knowledge and practical skills relevant to today's job market. Collaborations with local schools, businesses and post-secondary options provide real-world insights. Graduates emerge with a competitive edge, well-equipped to conquer modern workforce challenges in mechatronics and beyond.

Technology Education — Our School's Technology Education program consists of wood working and construction classes, small engines, automotive and agricultural mechanics classes as well as metals and welding courses. These classes focus on needed skills to gain entry level employment in the fields that are being taught. Along with the focus topics, the classes in the technology program also teach work habits and how to be an asset to employers. In the next year there are plans to begin teaching ASE certification classes in Automotive through the Technology Education department.

All these opportunities offered at Augusta will give these students a head start in a wide variety of career fields.

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– ***Sarah Fredricks,*** 6th grade science teacher at Cheney Middle School, West Fargo

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FALL 2023

Exploring Manufacturing in Wisconsin

The Economic Future of Rural Wisconsin Communities Relies on Attracting and Retaining Local Workforce Talent

The Osseo-Fairchild Technical Education Center is a training center in west central Wisconsin focused on providing relevant manufacturing educational opportunities.

Manufacturing is a critical industry in our rural region of Wisconsin. Our focus is to provide and expand new opportunities for area students in careers that will address a critical manufacturing workforce shortages.

This innovative training center reflects public/private partnerships between technical colleges, school districts, and employers. Our purpose is to provide a dedicated space for manufacturing education to meet local industry needs and advance opportunities in our surrounding communities.

This facility provides educational opportunities in, welding, machining, alternative energy, computer aided drafting/manufacturing, design, architecture, mechatronics, robotics, automotive, building construction and precision measurement. In addition to our focus on trades skills we will prepare students with the required "soft skills" (Team Player, Hardworking, Unstoppable, Networking, Dependable, Engaged & Role model) necessary to survive in the rapidly changing business environment.

We will also serve rural unemployed and underemployed adults starting or advancing their education and area employers seeking incumbent workforce training, with programs offered outside traditional business hours to accommodate adult schedules.

Our partnerships with local industries will help make these training programs very relatable to the real world, exposing the students to the industry by plant tours or even potential employers coming in to state their needs. Our goal is to make students aware of what types of careers are out there and then provide a way for the student to explore and receive training in those career paths.

We want to increase the quality of the workforce in our rural area by attracting and retaining talent, upskilling existing workers, improving career pathways, promoting apprenticeships and other work-based learning, promoting career awareness, and reaching out to unemployed or individuals.

With the partnership of a local technical college, we are able to bring training opportunities directly to our students and community residents. Our target is our rural K–12 students, as well as unemployed and underemployed adults seeking short-term training. The partnership will also offer professional development to secondary teachers to bolster K–12 technical education.

Contextualized and Work-Based Learning

Work-based training programs such as job shadows and youth apprenticeships are critical tools for growing the workforce pipeline. We are working with local industries to engage employers as active participants in solving the region's workforce challenges through developing and expanding work-based learning opportunities for rural communities.

The unique nature of this regional training institute integrates employers into curriculum development, equipment selection and training, and hosting manufacturing apprentices. We are not working

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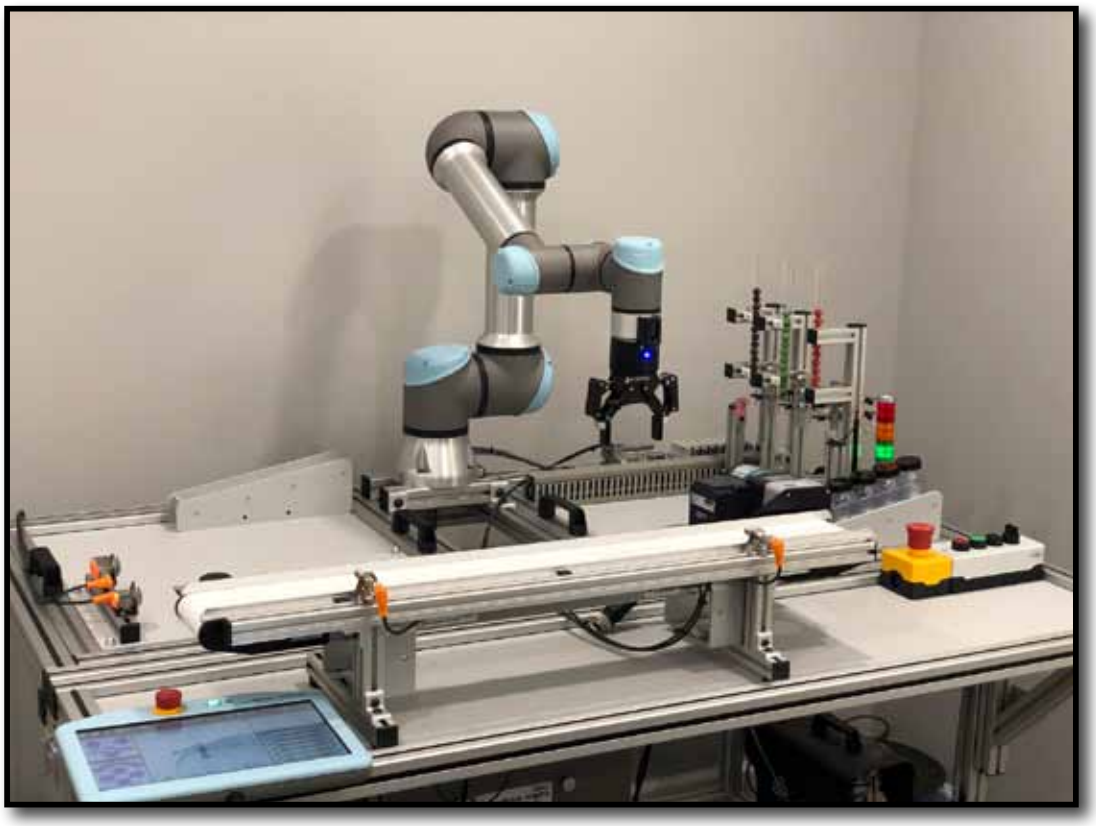

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Crafting Careers: New Richmond High School Welding Program's Impact on Student Learning

Eight years ago, New Richmond High School embarked on a new adventure for its students. Using the Workforce Development Grant, New Richmond High School created the Northwood Technical College Welding Program (Welding Academy) with the goal of preparing students to be successful in welding positions following high school graduation.

Many students who have completed their time at the Welding Academy have become employees of local businesses. The constant circulation of local support in the area has helped the Welding Academy grow. This provides unique opportunities for students not only in New Richmond High School, but from other area schools as well including Osceola High School, Hudson High School, Somerset High School, Baldwin High School and others.

Now, in its eighth year, the Welding Academy is consistently accepting 16 senior students per year. Students from New Richmond High School, and other area schools, must apply to be accepted into the program.

In order to be accepted, students must complete the academy during the school year, maintain a GPA of 2.0 or higher, be in good standing as defined by New Richmond High School, remain on track for completing the high school curriculum, have prior technical and/or vocational experience, and have not missed more than 3 days of school per semester during their junior year.

"The Welding Academy has been an incredible experience and I am beyond grateful for the opportunities given through the program," said Osceola High School 2023 Graduate Ella Quist.

During the 3-hour block each school day, Welding Academy students learn and study the art of welding, and are able to practice their welding skills by completing weldments using various welding processes in flat, horizontal, vertical, and overhead positions.

"The New Richmond High School Shop Program has taught me so many valuable life skills under the instruction of highly knowledgeable teachers," said New Richmond High School Senior Madi Fiebiger.

Upon successful completion of the program, students earn Shielded & Gas Metal Arc Welding Technical Diplomas. The Welding Academy gives the students the credentials and experience to apply for entry-level welding positions. Students also earn 10 credits through the Dual Enrollment Academy that can be applied to the Northwood Technical College Welding Diploma, of which you need 34 credits to receive. Welding Academy students also have the opportunity to take Applied Communications to earn an additional 3 transcripted credits through Northwood Technical College.

Print Reading for Welding Trades, Applied Math, Gas Metal Arc Welding, and Shielded Metal Arc Welding courses provided through the Welding Academy at New Richmond High School give our students a competitive edge over other high school seniors. Our students possess the skills needed to be successful in a welding career following high school graduation.

"Having the support from our community, the School District of New Richmond, Northwood Technical College, and local business partnerships have ensured a quality program for past, present, and future students."

The exciting part of this program is that it not only benefits the students, but it benefits the communities surrounding New Richmond High School. Our graduates are helping to fill the skills gap in the local area because they have the experience and skills

Continued on Page 34

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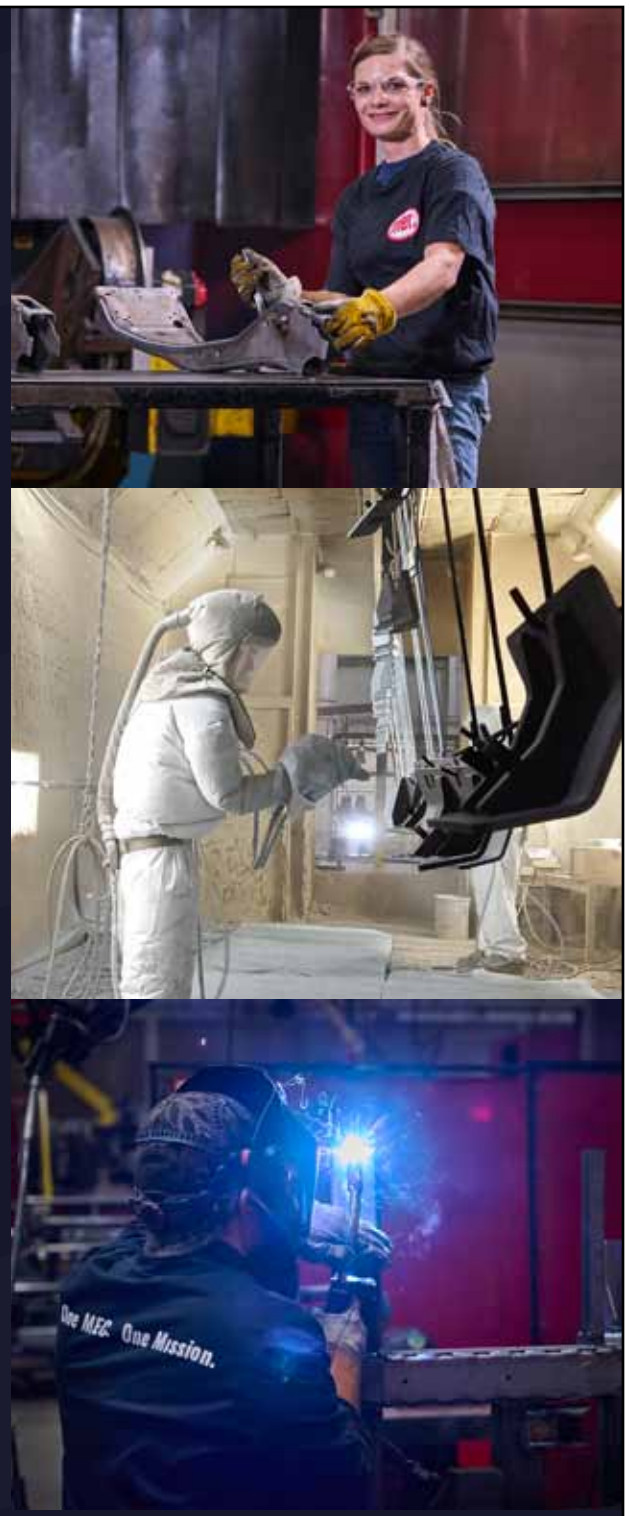

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Thinking About Starting a Student-Run Business in Your School?

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May 2023 Cardinal Manufacturing Open House

Located in the School District of Eleva-Strum, Cardinal Manufacturing has grown from one teacher's idea to an exemplary program that is revolutionizing manufacturing education. Cardinal Manufacturing is a company within a school, where students learn about manufacturing and gain real-life experiences of problem solving, running a business, and working in professional career roles.

Craig Cegielski is that teacher with the idea. Now he's the teacher with the book.

Quoted from DREAM BIG. HAVE FUN. A look inside an established Student Run Business.

Craig Cegielski,
Cardinal Manufacturing Founder

As a Middle and High School Technical Education teacher since 1998, I have been very fortunate to grow a student run business model into one which can be replicated in any school in any location with determination and the right partners. If you've heard of Cardinal Manufacturing in Wisconsin, this is the business and program my team and I have built with the help of many partners, students, the community, and our local school district.

This book is designed to give you encouragement to get started or inspiration to take the next steps to grow and enhance a student run business in your school. Our team has had the opportunity to host many schools over the years and develop workshops and in-depth training tools and resources that are provided for very low cost or for free thanks to generous donors who support the student run business model.

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.

A Student Run Business Makes School More Fun and More Relevant to All Students.

Real World Application of Lessons — Students easily find the real-world application of what they are learning in their everyday interactions at a student run business. Many academic skills are utilized each day in the business operations from math, reading, and writing to lessons from other courses. Students experience firsthand how the knowledge is a benefit to their effectiveness. The hands-on application of learned skills helps students with understanding, retention, and realizing the importance of all the subject matter they have learned throughout their educational careers.

Prevent Boredom — It's no secret that many students in a traditional setting are bored for any number of reasons. A student run business provides real life challenges and opportunities for problem solving each day. This is challenging for students and provides a rewarding feeling of accomplishment.

Any Student Has a Place — Each student has talents, but not all students excel in a traditional classroom setting. A student run business provides an ideal opportunity for all students to find a role where they can shine and work to their full potential with success. A big part of the learning in a student run business is recognizing and respecting the range of skills required to successfully run a business. It takes a team effort and everyone is an integral part of that team. Students who may have struggled in a regular classroom can shine in this setting and gain a significant amount of confidence through real measurable achievements.

Participating in a Student Run Business Teaches Valuable Life Skills.

Soft skills — The so-called soft skills, how you work with and interact with others, are an important part of life that aren't usually formally taught in an atmosphere where they can be immediately practiced. Students who participate in Cardinal Manufacturing are taught early and often how to shake hands; initiate a conversation; communicate with co-workers, instructors, and clients; arrive on-time; and be responsible. Employers regularly tell us that these soft skills are more important to master than technical skills.

Career and Life Planning — To participate in Cardinal Manufacturing, students must take prerequisite classes as well as submit a resume and successfully complete the interview process. Once students are part of the program, the classroom portion of Cardinal Manufacturing includes assignments on career research and reporting, developing individual plans and life goals, and gaining exposure to a range of educational and career opportunities through guest speakers and site visits.

For more information on live workshops, guidebooks, class outlines, step-by-step instructions, and more low cost and free resources please visit www.StudentRunBusiness.com.

The free download of *DREAM BIG. HAVE FUN.* is available at https://www.studentrunbusiness.com/free-resources

About Cardinal Manufacturing

Cardinal Manufacturing is a year-long two credit class which offers far more than standard classroom instruction. Students in this class gain the real-life experiences of problem solving, running a business, and working in professional career roles. Students must apply to be part of this program and manufacturing employees have successfully completed both Metal Working I and II. The application process includes creating and submitting a resume, project portfolio, and a letter of recommendation. Once accepted, student participants are assigned a role that may include:

- Quoting jobs
- Ordering materials
- Manufacturing parts
- Quality control and inspections
- Shipping product
- Receiving product and materials
- Invoicing
- Customer service
- Accounting
- Marketing
- Maintaining work hours

Besides the great experience gained, a portion of Cardinal Manufacturing earnings are paid to students after expenses and upcoming needs are covered. The students receive a profit-sharing check at the end of the school year based upon number of hours worked and other measurement tools.

The growth of the program has attracted national and international attention and Cardinal Manufacturing has attended national tradeshows 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.

Cardinal Manufacturing has also built strong relationships with a number of private companies and professional organizations which have been supportive through donations, advice, publicity opportunities, and projects.

In-school programs such as Cardinal Manufacturing serve as a grassroots economic development effort. Not only do these programs expose students to career opportunities in manufacturing and teach students soft skills for future employment, but they also work toward changing the attitudes of counselors and parents to be more open to the idea of encouraging students to look at manufacturing careers. Students get hands on opportunities to try out these roles before making an expensive decision in choosing a post-secondary program. In other words, kids get the chance to try welding, machining, construction, production management, accounting, office management, and marketing prior to committing to a major or area of study. The services provided through the program are worthwhile and valuable to the customers who pay for the service.

www.cardinalmanufacturing.org

LCO Fab Lab Brings Learning and Creativity to Life

The Lac Courte Oreilles Ojibwe (LCO) School Fab Lab is in it's beginning stages, set up in the middle school building in the Science / Project Lead The Way Classroom. The generous grant from WEDC has brought learning and creativity to life with equipment to support students in STEM learning. Most of the equipment is mobile, set on carts to be able to be used in other rooms. There are 4 3D printers and students are learning CAD skills to create or modify designs to be printed. There are 3 cricut machines that students can use for creative projects. So far this year, students have been designing vinyl applications to customize personal items and decorate school spaces. The customization incorporates Ojibwemowin language and cultural designs. The laser engravers are a source of great excitement as the students brainstorm project ideas and materials that can be used in the machines. The grant also provided PocketLab sensors. One kit includes racetracks and cars with sensors that allow students to collect data via bluetooth for physics experiments. Students will use the other sensors to explore data related to water and air quality, weather and climate. Much of the learning in a rural tribal school happens outdoors during traditional activities. These activities include wild ricing, spear fishing, ice fishing and setting up a sugar bush for maple syrup production. In addition to their phenology observations and cultural lessons, students will use the sensors to explore data related to water and air quality, weather and climate.

The FabLab challenges students to take ownership and direct their own learning. The FabLab helps students practice executive functioning skills such as time management, collaboration and responsibility. Students also develop a greater awareness of technical set up and connection of equipment, measurement, troubleshooting and perseverance as they repeat the engineering design process and learn from mistakes. The FabLab compliments the woodworking shop that was started last year at LCO school.

FabLab grant writer and teacher Tammy Moncel says, "LCO school supports efforts to provide STEM opportunities and connections for young people to explore skills and careers common in today's workforce. I enjoy learning with the students and I am amazed every day by the creativity, artistic ability and original ideas of the students in my classroom. Great things are happening here."

This year, LCO 8th grade students participate in Try Engineering sponsored by a multinational aerospace and defense technology company. Each student has an E-mentor who works for the company, and they exchange messages regarding articles and class activities. Many of the students are paired with someone who directly worked on the James Webb space telescope project.

Lac Courte Oreilles Ojibwe school is a certified Project Lead The Way (PLTW) School. PLTW is an engineering program for the LCO middle school Gateway to Technology program and High School Engineering and Biomedical Pathways. This year, a pathway was added for Computer Science. Moncel, Wendy Fuller and Dion Doyle are PLTW teachers at LCO.

LCO school is an affiliate pre-college school of the American Indian Science and Engineering Society (AISES). AISES supports the sphero robotics program at the LCO middle school. The middle school and high school are part of the Indigenous Coders project supported by AISES and Comcast Universal with student coursework and experiential learning in Computer Science.

www.lcoosk12.org

Luther High School Receives Generous Grant that Supports Advanced Manufacturing Learning

This past summer, Luther High School, located in Onalaska, celebrated the groundbreaking of a new education center, which will house a brand-new initiative that focuses on Advanced Manufacturing Learning and STEM (Science, Technology, Engineering and Math) Education. Through a grant from the Ronald & Joyce Wanek Foundation, Luther will be able to purchase state-of-the-art equipment and curriculum, providing ample opportunities to connect students with high-demand and high-wage career fields and support student learning that will best prepare them for their future.

Partnerships with local industries will enhance student learning, and allow transcripted credits and industry recognized certifications such as SACA (Smart Automation Certification Alliance) to be earned and transfer seamlessly into advanced manufacturing career pathways at Western Technical College.

"We are excited to launch this new initiative and to focus on involving students in Advanced Manufacturing Learning and STEM Education," stated Phil Punzel, Luther High School Principal. "Luther High School will have the best facility, curriculum, and instruction that focuses on Advanced Manufacturing Learning and STEM in the region."

Starting this fall, students will be offered Introduction to Industrial Robotics and also a course in Mechatronics. In the future, Luther will offer courses in Industrial Controls, IIOT (Industrial Internet of Things), Welding, C&C Machining, Alternative Energy, and more. Students will be learning industrial robot programming, and various mechatronics skills such as pneumatics, hydraulics, electrical controls, data processing, PLC programming, sensors, basic welding techniques, metal fabrication techniques, CNC programming and machining, and plasma cutting.

"We are using two Fanuc ER-4iA robots, one Fanuc CRX-5ia robot, and soon we will be getting a Fanuc Arc Mate welding robot as well. Being an introductory course, our students are learning about how to jog the robot (moving the robot manually) and program the robot (have the robot perform tasks by itself)," said Brandon Gjestvang, practical arts instructor at Luther. "There are many facets of programming the robot which include learning about the parts of the robot, how the robot moves and using those movements to perform different tasks, learning about different types of end effectors (robot heads) and how the robot uses them to perform different tasks, learning about several types of robot code and the multitude of ways to utilize the code to perform complex tasks."

"We plan to partner with the woods area to make some wood/metal collaborative projects, specifically everyday items like fire rings, small signs, but we also hope to make different types of artistic welding projects as well," said Gjestvang. "We have different capstone course ideas for students who exhibit a highly motivated mindset toward different avenues in our Advanced Manufacturing Learning Center. They could range from designing and fabricating a trailer, to designing, programming and assembling a basic automation process. Many ideas have been flowing through my head!"

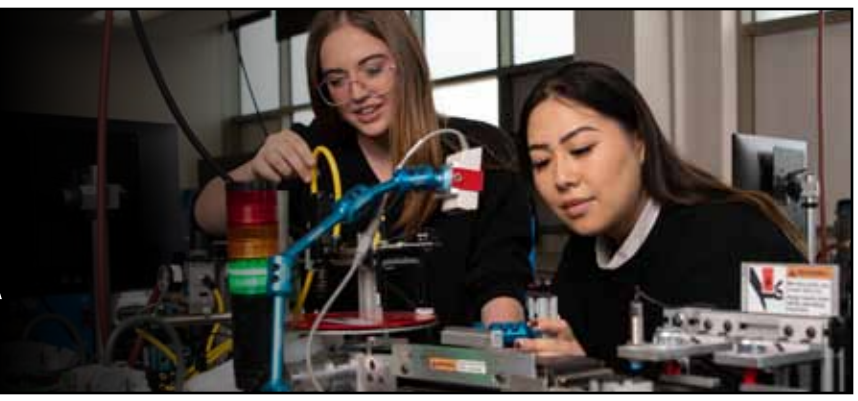
But in addition to those technical skills, students will be learning "soft" skills such as firm handshakes and eye contact, professionalism (keeping equipment and shop clean and organized), being on time, etc.

Future expansion plans include adding additional space for the woods area, adding new space for applied technologies, and a new space for welding/fabrication and machining in order to offer both basic welding and advanced welding/fabrication courses.

"All of the new courses we are offering will be dual credit transferable to Western Technical College in Lacrosse," said Gjestvang. "Luther became a SACA certification location this summer. This means that down the road students can earn SACA certifications which can be on the theory portion and also hands-on portion of the subject matter they are studying. If they earn any of these certifications, they can put them on their job resumes to put them ahead of other applications for the same positions and/or they can apply them toward a brand new Automation Leadership bachelor's degree offered at a local university.

www.lutherhigh.org

Architect's rendering of new Woods Shop



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Successfully Connecting CTE to the Community Builds Skills

Continued from Page 1

materials like cardboard and duct tape, the go-to tools for inventors. Over time, our approach has evolved into an extraordinary fabrication space equipped with advanced technology tools, offering endless opportunities for students. Duct tape still serves as the foundation, but now students have access to advanced tools like laser cutters, 3-D printers, vinyl cutters, CNC mills, electronics, robotics, coding, automation, and even CNC clay printing. Our goal has been to reach students from kindergarten to the 12th grade, and we have achieved this by introducing mini Fab Lab carts in elementary schools and offering coursework in our Fab Lab in middle and high schools. Elementary students learn the basics of Computer-Aided Design (CAD) and 3-D printing, while high school students engage in complex assemblies and processes. Our current course offerings include an eighth-grade introduction to the lab space and a series of semester-long fabrication courses that increase in difficulty, culminating in an invention course that involves various types of engineering.

The development of our fabrication space has been a collaborative effort spanning four years. It has been made possible through district investments, grants, winnings from STEM competitions, and contributions from local companies, all of whom recognize the value of providing high-tech CTE education. Spaces like these prepare students for the challenges they will encounter in their chosen college and/or career paths. They cultivate innovators, makers, and problem solvers equipped to address the unknown challenges of the future. As we look ahead, it is crucial for students, parents, teachers, communities, school boards, and administrators to view CTE as a launching pad, providing our children with the tools and skills they need to tackle any challenges life may present.

www.omro.k12.wi.us

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

Montello Upgrades Fab Lab, Partners with Community to Grow Opportunities

The Montello School District in Marquette County will be using a $25,000 grant from the WEDC through its Fab Lab Program to facilitate a much-needed upgrade to its laser engraver and fabrication lab tools. This upgrade will not only enhance the quality of the equipment but also enable co-taught courses with the Business and Manufacturing departments, thereby allowing the school to offer entrepreneurship courses throughout the year.

The state-of-the-art equipment will provide students with invaluable real-world experience by enabling them to take projects from conception to completion. They will learn to analyze data and market trends, making necessary adjustments throughout the production process to meet the ever-changing needs of consumers. This hands-on opportunity will

enable them to gain a deeper understanding of what steps it takes to run a successful project.

In addition to the equipment upgrade, the school has established strong partnerships with community members who share the same passion for preparing students for the real world. These partnerships have enabled the school to offer certifications in CNC and OSHA, as well as grow our Youth Apprenticeship and Work Study programs. We strive to provide training in problem-solving and critical thinking to prepare our students for the workforce. We would like to invite local businesses and schools to partner with us as we grow our program to provide great learning opportunities for our students.

montelloschools.org

New Neenah HS Building Expands CTE Facilities — and Student Career Opportunities

There's plenty to love about the newly-constructed Neenah High School building. With unique, flexible classroom areas, an abundance of natural light and state-of-the-art technology, the school provides an ideal learning environment for its 2,000 students.

Among the school's most prominent features is its focus on career and technical education (CTE) facilities. Located in the most visible areas of the school are modern learning facilities for metals, woods, automotives, welding, robotics and culinary arts. Three-dimensional art rooms are the first rooms visitors see in the corridor at the school's main entrance.

It's a big shift from Neenah's previous high school where CTE courses were housed down their own separate wing, often going unnoticed by students and community members. It's likely some students attended the school for four years and weren't even aware of all the school had to offer in CTE due to the courses' obscure location.

In the new school, the spacious metals and woods shops feature expansive windows looking out to the school's atrium, which is the central hub of the school and where students eat lunch over three different lunch periods. In the first two weeks of school, the teachers have already placed some of their coolest projects in front of the windows to draw attention and build curiosity. Those projects include a racecar in the metals shop and the robotics competition field in the engineering classroom.

The CTE facilities also boast windows to the exterior of the school, providing natural light and easy access for moving large materials and vehicles in and out of the spaces. State-of-the-art air handling units have been installed in the welding area for a safer learning environment.

Not only has the proximity of the classrooms improved, but so has the equipment. The culinary arts classroom features an industry-caliber Pro Serv kitchen that is compatible with the local technical college's course offerings. A Neenah-based automotive dealer made a contribution to help the autos lab go from two working lifts to four with a hydraulic lift, matching many of their own facilities. Miller Electric made donations to the welding lab as the number of booths increased from eight to 15. The woods area has also significantly increased in size. All of the CTE facilities are comparable to those in industry and technical schools, providing a smooth transition for students after graduation.

The curriculum hasn't changed much yet, but there's already plans to add a capstone class in welding. Teachers have also floated other ideas that correspond with their modern surroundings while expecting their class sizes to increase with the greater visibility for the programs.

The previous high school has transitioned into a 2,000-student middle school serving students in grades 5-8. CTE facilities in the middle school have also seen a modernization over those in the previous Shattuck Middle School that closed after its 95th school year last spring. Part of the referendum plan for the new high school included renovations to the previous high school, including the CTE areas for middle schoolers. The kitchen was relocated from one end of the school to the other and is furnished with new equipment.

While CTE courses weren't necessarily the focus of Neenah's need for facilities upgrades in recent years, they have benefited greatly from the changes and are sure to better prepare students for college and careers after graduation.

www.neenah.k12.wi.us

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Gresham Fab Lab Prepares Students for Future Careers

Gresham Fabrication Lab is taking steps forward in helping students prepare for futures in the manufacturing industry.

In 2020, Gresham School District, with the help of the community, made the move to incorporate Technology Education and a Fabrication Lab to the district. Through the use of funding from the Wisconsin Economic Development Corporation and local business and college partnerships, students are now able to earn college credit in multiple classes and have the opportunities to develop their skills and experiences in the manufacturing fields. We have started the implementation of Snap-on's Precision Measurement Certification program, through which students will have the opportunity to earn an industry certification in measurement. This collaboration will help better prepare students to enter the workforce or college.

The Fabrication Lab has created many opportunities for the staff and students to apply cross-curriculum concepts, as well as to develop skills to learn a variety of manufacturing processes. Students have been using hands-on learning with welding to graphic design and 3D printing.

gresham.k12.wi.us

New Richmond High School Welding Program Continued From Page 24

that our employers are looking for.

"Having the support from our community, the School District of New Richmond, Northwood Technical College, and local business partnerships have ensured a quality program for past, present, and future students," said Technology Education Teacher and Northwood Technical College Welding Academy Advisor Thomas Leque.

Many of our students will finish the 34-credit welding program at Northwood Technical College, while others will go straight into the workforce after high school, join the Military, or go to college.

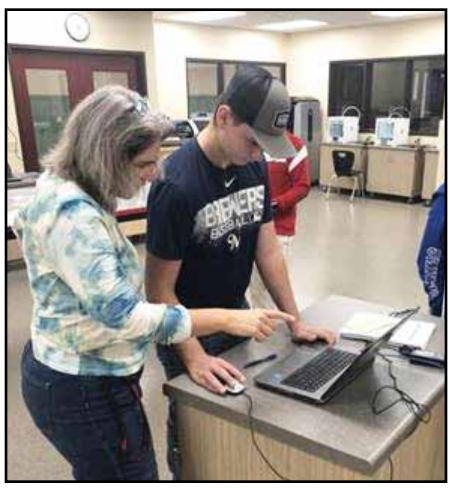
In the Spring of 2023, Welding Academy students Bode Gabriel and Logan Schactner earned the AWS D1.1 Structural Welding — Steel Certification through the American Welding Society before even graduating from New Richmond High School. This was an outstanding accomplishment achieved through determination by two students who were not afraid to chase after their dreams.

In the future, New Richmond High School strives to continue supporting the community through the Welding Academy. Continuing to attract quality students from our local area and meet the welding needs of our community is a priority that the School District of New Richmond finds important as students continue to learn, advance, and find success.

newrichmond.k12.wi.us

Seymour High School's "Amped on Algebra"

Seymour's AMPED on Algebra initiative earned a FabLab grant which was featured in *Manufacturing Today WI* last summer. Some of the grant money was used to purchase a wood CNC router which "AMPED" students will use to make signs for sale to the public in their student-run business. Right now students have learned computer design techniques and the laser engraver. Next up will be the vinyl printer and CNC router.



Amped on Algebra is a hybrid class that offers Math and Tech-Ed together. Staci Sievert and Todd Messner co-teach this class. These students get a unique experience by applying the algebra to real-life projects. The students are using the Epilog Laser engraver to cut out puzzle piece that they designed using CorelDRAW Graphics Suite.

seymour.k12.wi.us

Luxemburg-Casco Emphasis on Technical Education Nets Positive Results for Students, Area Businesses

Norm Hippert, Technology Education Teacher Luxemburg-Casco School District

The Luxemburg-Casco School District has placed an increasing emphasis on technical education in recent years. The growth of this curriculum is attributable to the expanding interest from our students, along with the commitment and support of businesses in our area.

We are able to offer students broad exposure to available career pathways, while also providing a large potential pool of employees for those companies. As part of our technical education curriculum, we enjoy partnerships with roughly 50 local businesses.

Our Fab Lab courses are very popular with students and we regularly receive more requests to enroll than the number of seats available. The wide range of technology equipment our district is fortunate enough to have attracts students who wouldn't normally explore a technology-related career path.

Many students are able to evolve their classroom experiences into a Youth Apprenticeship within the manufacturing industry. Almost 58 percent of our juniors and seniors are YA participants across 13 career clusters.

The centerpiece of our technology-education equipment is a FANUC Fenceless ER-4iA robotic arm, the largest robotic arm in the industry, and one of five new pieces of equipment our district acquired at the start of the 2022-23 school year. Two Haas mini-CNC mills, an injection molder and an embroidery machine were the other components.

Not many people know how to effectively use the robotic arm. The opportunity for our students to learn and become proficient with the equipment gives them a distinct advantage as they enter the workforce.

The mini-CNC mills complement our existing CNC (computer numerical control) equipment, and we find them to be a great way to introduce our students to metals. It provides the students with the opportunity to discover a variety of ways that they can create a product.

We see the embroidery machine as a great tool for use by the Spartan School Store, which sells school-branded apparel. As with the mini-CNC mills, it also provides students with the ability to design and create a product, then make it.

Area businesses have supported our new equipment purchases through both monetary and in-kind donations. These community partnerships energize our students and are integral to the success of our curriculum.

This new equipment is a great addition to our already existing capabilities of: 3D printing, 2-dimensional CNC machining, graphic arts, laser engraving and drones.

We bring in outside speakers, representing area Registered Apprenticeship programs, to share with our technical education students how they can best enter their career fields, along with pay and benefits, career progressions, and opportunities for educational advancement and leadership development.

Our commitment to technical education was recognized by the Northeast Wisconsin Manufacturing Alliance (NEWMA) in October 2022, when we received the Educator-Manufacturing Partnership Award. NEWMA presents awards each year during Manufacturing Month in Wisconsin to honor exemplary methods and spotlight best practices in the region.

Growing student interest in our manufacturing programs has been made easier by all of the "cool" equipment we have. Students say that they enjoy the large amount of hands-on experiences we build into our coursework.

luxcasco.k12.wi.us

Wisconsin School Districts Encouraged to Apply for Fab Labs Grants

WEDC Expects to Award Grants to 20 Districts; Deadline is Jan. 12

The Wisconsin Economic Development Corporation (WEDC) is now accepting applications for the eighth year of its Fabrication Laboratories (Fab Labs) Grant Program, which provides funding to help public schools build or expand fab labs.

The grant program supports hands-on science, technology, engineering, arts and math (STEAM) education by assisting public school districts with equipment purchases for instructional and educational purposes in fab labs. Fab labs are high-tech workshops with the latest equipment, including computer-controlled manufacturing components such as 3D printers, laser engravers and computer numerical control routers.

WEDC's investment in the program puts fab labs within reach for schools that might otherwise not have the financial means to install such facilities.

"These labs give students the chance to not only develop the skills our employers need but to create, invent and innovate," said Missy Hughes, secretary and CEO of WEDC, the state's leading economic development agency. "Fab labs are a training ground for the next generation of Wisconsin's workforce."

WEDC will provide grants of up to $25,000 to public school districts, or up to $50,000 to consortiums of two or more districts, for the creation and/or expansion of fab labs. The minimum grant amount is $10,000.

For this year's funding cycle, applicants are being asked to match 50% of the amount of grant funds requested. For example, if a district is requesting a grant of $25,000, the district must provide a match of at least $12,500. The funds may be used to purchase equipment used for instructional and educational purposes by elementary, middle, junior high, or high school students.

Since the program's inception, WEDC has awarded over $4.5 million in grants to 118 districts. In April, grants totaling $560,053 were awarded to 25 districts.

WEDC is allocating $500,000 in this fiscal year and anticipates awarding 20 grants. Recipients will be announced in the spring.

Fab Labs Grants will be awarded on a non-competitive process first-come, first-served basis, with applicants evaluated on application completeness, evidence of readiness and long-range planning, curriculum, business and community partnerships, financial need and previous awards.

Applicants who have already received three grants will be ineligible this year for additional funds, except for Milwaukee Public Schools. If a district previously received three Fab Labs Grants, they would still be eligible to apply for a one-time grant to establish a fab lab for use by K-8 students.

In addition to the grant program, WEDC also is supporting the state's fab labs by working with UW-Stout and Fox Valley Technical College to develop an online tool to increase collaboration and the sharing of resources among school districts with fab labs.

The web portal, which was developed by the UW-Stout Discovery Center with guidance from teachers statewide, allows teachers and others at fab lab schools to communicate with one another on topics such as curriculum development and implementation, equipment usage and troubleshooting, training and professional development.

More information on the program, including application details, can be found at wedc.org/fablabs. The deadline to apply is Jan. 12.

About the Wisconsin Economic Development Corporation

The Wisconsin Economic Development Corporation (WEDC) leads economic development efforts for the state by advancing and maximizing opportunities in Wisconsin for businesses, communities and people to thrive in a globally competitive environment. Working with more than 600 regional and local partners, WEDC develops and delivers solutions representative of a highly responsive and coordinated economic development network. Visit wedc.org or follow WEDC on Twitter @WEDCNews to learn more.

Osseo-Fairchild Technical Education Center Continued from Page 21

in silos anymore to address challenges. This is a true regional collaboration between employers, educators, economic development, and workforce systems to find solutions and change the way we are preparing our students for careers in the manufacturing industry.

Short-term Training in Educational Pathways through Academies

The academies will deliver short-term training credentials in manufacturing. This training will be incorporated into dual credit opportunities for high school students, as well as offered at flexible times to adults.

Partnerships with a local college — Current Academies

- This provides students interested in a career in healthcare with the opportunity to complete college level science classes, explore a variety of career paths in healthcare, and to complete all the prerequisites to the nursing program so students can apply directly to the waitlist, saving up to two years of time by doing this in high school.

- Welding Academy located at Osseo-Fairchild Technical Education Center
  - Dual credit academies give high school students a chance to navigate their interests and career options to develop the most successful individualized career path. Credits successfully earned through this academy may be applied to a local college Welding program. By successfully completing all three courses and passing the WorkKeys assessment to earn credit for Industrial Skills, students will earn a Wire Feed Welding Certificate (Intro to GMAW).

- Construction Academy located at Osseo-Fairchild Technical Education Center
  - An area technical college and high schools have partnered to offer students who are interested in pursuing a career in residential construction the opportunity to earn high school and college credit. This academy is designed to provide important safety and construction skills for employment. Students will learn construction safety and roof systems and stairs processes. Completion of this academy will lead into the one-year residential construction technical diploma program at a nearby college.

"WORKING TOGETHER AND NOT IN SILOS" is the key to our success!

With the rising costs for our building project, we had to find other ways to help fund new manufacturing equipment for the training center. One of the sources to help fund part of the equipment was through written grants including one from the Workforce Economic Development Center. This was a grant that was written with a local technical college and helped bridge the gap between high school and post high school education. With this grant, support from local businesses and non-profit organizations like Manufacturing SOS, our students can learn on industrial grade equipment.

This multi-purpose training center will be utilized by high schools and employers, strategically integrating them into a "win, win" partnership.

Our existence is possible through three key ingredients: Educational partners (both secondary and postsecondary) with the capacity to offer and participate in industry-recognized training programs that prepares individuals for careers and further education; 2) Strong industry support to ensure employer involvement through workforce training efforts and work-based training components; and 3) Engaged workforce system entities to facilitate a direct connection between employers and educators and offer programs and services designed to increase success across stakeholder groups (students, employees, employers).

www.ofsd.k12.wi.us

DWD Announces $227,520 in Advanced Manufacturing Technical Education Equipment Grants to Serve More Than 1,030 Students

Training will boost workforce readiness and fill the need for skilled manufacturing workers

This August, the Department of Workforce Development (DWD) announced awards of $227,520 in Technical Education Equipment Grants to seven school districts.

Grants funded through the Wisconsin Fast Forward Program will help school districts expand advanced manufacturing education programs. As a result, 1,033 students will connect to high-wage, high-demand, and high-skill careers.

"These technical education equipment grants are helping school districts provide state-of-the-art manufacturing equipment to prepare students for future careers with a sustainable wage," DWD Secretary Amy Pechacek said. "The high-demand, high-skill advanced manufacturing industry will benefit from training provided as a result of this funding."

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 uses innovative technology to improve products and processes.

Schools will use these technical education equipment grants to install new equipment such as computer numerical control (CNC) machines, robotic welders, fiber laser cutting machines, and more.

The seven $227,520 in Technical Education Equipment Grants awards include:

Peshtigo School District, Marinette County:

$40,575 to purchase augmented reality headsets, 3D printers, laser/engravers and CNC machines. They'll help students dive into creative and innovative ways of learning.

Lake Geneva-Genoa City Union High School District, Walworth County:

$47,877 for Lake Geneva-Genoa City Union High School, also known as Badger High School, to update its manual mills and lathes with modern, improved computer interfacing. Funds also will cover the purchase of a tabletop CNC waterjet, which will provide access to more diverse and comprehensive curriculum and training.

Williams Bay School District, Walworth County:

$15,895 to buy Amatrol Industry 4.0 Learning Systems. They deliver classroom-based skill performance assessments evaluating how well a learner performs hands-on skills including real-world industrial components, for the closest possible on-the-job working experience.

St. Francis School District, Milwaukee County:

$50,000 to purchase a Vertical Mill, Welder-255 Multimatic, Pedestal Drill Press and a Belt Sander. This equipment will be used for a new Advanced Manufacturing Career Pathway at St. Francis High School, which will provide opportunities to engage in hands-on projects with local Southwest Milwaukee Consortium business partners. Students also will be eligible to earn an industry recognized Precision Measurement Certificate.

Muskego-Norway School District, Waukesha County:

$49,839 to purchase a Miller Multimatic 255, Spectrum 875 Welding Equipment, and Miller AUTO-LINE Plasma Cutter. The equipment will offer students real-world, hands-on technical training in smart manufacturing, machining and controls, and materials and composites.

Edgerton School District, Rock County:

$10,000 to purchase a 4x4 CNC Plasma Table, which will teach students about manufacturing, metalwork, business, and CNC programming. The new table will provide students with hands-on experience in CNC machining and manufacturing.

Tomah School District, Monroe County:

$13,334 to update its advanced manufacturing equipment. The district will buy a FANUC Fenceless ER-4iA R-30iB Mate Plus Controller CERT Cart to help students better understand precision fabrication.

Hamilton School District Applied Engineering and Technology Programs Recognized

Courtesy of Hamilton School District

Earlier this year, the Applied Engineering and Technology (AET) programs at Hamilton High School, Templeton Middle School and Silver Spring Intermediate School were all awarded "Program of the Year" by the Wisconsin Technology Education Association (WTEA). This distinguished honor was made possible thanks to the support from Hamilton School District community members.

Hamilton High School has been named "High School Program of the Year." Silver Spring Intermediate School and Templeton Middle School share the honor of "Middle School Program of the year." WTEA recognizes all three AET programs for providing students with rigorous training and skill development in the areas and concepts of technology and engineering.

Only one Wisconsin school is recognized per year, at each level. This is the first time a middle and high school program from the same school district have simultaneously been awarded. The committee can choose to award this to multiple schools from the same district if they are delivering comparable programs, such as Silver Spring Intermediate and Templeton Middle Schools.

"The Applied Engineering and Technology Department does an extraordinary job of blending life skills, safety, innovation, real world application and providing students with the opportunity to gain skills that can lead to future careers" said Hamilton School District Superintendent Paul Mielke, Ph.D. "Our business partners are astounded at the opportunities that kids are being provided and how well prepared they are for future employment."

In 2018, the Hamilton School District community passed a referendum which helped to fund a complete renovation to the AET spaces at Hamilton High School. The teachers and administration worked tirelessly to align their curriculum with real world applications and input from the current business and manufacturing community. The end result was a revamping and revitalization of curriculum that has resulted in a record number of students taking advantage of the newly offered opportunities that did not previously exist.

Interest in AET programs extends to younger students as well. Silver Spring Intermediate and Templeton Middle School's Applied Engineering classes have generated so much interest they are always filled to capacity.

"I would be remiss if I also did not mention the dedication of the teachers in our Applied Engineering and Technology Department. Schools are only as successful as the staff who are in the classroom everyday" Dr. Meilke noted. "The teachers in the Applied Engineering and Technology Department are constantly innovating and adapting while they support and nurture the daily needs of the students. They are the heartbeat of the program and Hamilton is very fortunate to have them."

The District's AET program includes courses in Architecture and Construction, Engineering, Graphic Arts, Machining and Automation, Welding Fabrication and Woodworking.

hamilton.k12.wi.us

Community Comes out to Experience Hamilton Applied Engineering and Technology Programs

On June 6th, community members visited Hamilton's Applied Engineering and Technology (AET) Open House to tour state of the art labs, see class projects, meet teachers and hear directly from students about what they accomplished during the 2022-23 school year.

Teachers and students from Hamilton High School, Templeton Middle School and Silver Spring Intermediate School were thrilled to speak with community members and answer their questions during the event held at Hamilton High School.

Current AET facilities were created to foster innovation, hands-on learning and provide students with exceptional opportunities in the fields of engineering, construction, fabrication, graphic design and welding.

"We are grateful that so many community members and local business representatives attended our open house," said Superintendent Paul Mielke, Ph.D. "We are incredibly proud of our award winning AET programs. This was an opportunity to help community members better understand why our schools are receiving statewide recognition following incredible advancements made possible by the successful 2018 referendum."

Local business representatives remarked at the advanced and applicable skills students are now acquiring while in high school. Several community members remarked on how they were astonished by technological advances.

hamilton.k12.wi.us

Nearly $1 Million in Wisconsin Fast Forward Grants Now Available for School Districts to Train Students

Expanded Technical Education Equipment Grants Address Workforce Shortage

School districts are encouraged to apply for the latest round of Wisconsin Fast Forward grants from the Wisconsin Department of Workforce Development (DWD).

Under the Expanded Wisconsin Fast Forward program, nearly $1 million in grant funds will be available to Wisconsin school districts to teach students to use advanced manufacturing tools and equipment. The awards, ranging from $5,000 to $50,000, will be used to train high school students in technical fields that will help address Wisconsin's skilled worker shortage.

"These grants help address Wisconsin's worker quantity challenge by training high school students across the state for in-demand careers in one of our strongest industries," said DWD Secretary Amy Pechacek. "This is an investment that connects our future workforce to cutting-edge manufacturing equipment and the skills to use it."

The grants will reimburse school districts for purchase and installation of technical education equipment, including costs for equipment operation software and instruction materials. The equipment will be used for vocational training and technical education in advanced manufacturing fields.

This grant program helps students transition from high school into the workforce by supporting technical education. It reduces higher education costs by providing dual enrollment credits, industry-endorsed certificates, and technical endorsements on high school diplomas.

Applications are due by 3 p.m. Central Standard Time (CST) on Tuesday, December 5, 2023.

Find additional information or download an application on the Wisconsin Fast Forward Program website: wisconsinfastforward.com

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