CELEBRATING 25 YEARS

Fall 2022, Volume 1

TEACHING TODAY WI™

MANUFACTURING TODAY WI™

WISCONSIN'S 4K–12 EDUCATION CONNECTION SINCE 1997

CONNECTING & EXPLORING MANUFACTURING IN WISCONSIN

Grow-Your-Own Educator Internship Takes Flight

Milton Lewis working with a student

"Representation Matters" is a phrase seen frequently in the arts and entertainment industry, and it applies to education, too. "Students who have teachers who look like them are much more successful," says Alexander DeBaker, Executive Director of Academies and Transformation for Racine Academies. Now, Racine is making a bid to capitalize on this by initiating a Grow-Your-Own Educator Internship for its students in the education pathway.

Education pathway students already have access to an Educators Rising chapter and dual enrollment courses through three area colleges.

The internship program, which started last year with nine students, is tied to the state-certified employability skills certificate and the state-certified leadership skills certificate. It's a paid internship. Students get credit for their work, and interns receive a letter of intent from Racine's human resources department that promises a job upon successful completion of a bachelor's degree program in education.

"The pay attracted me at first," says Milena Gutierrez, a senior in the education pathway, who dropped one of her two jobs to take the internship.

"Then my teachers started telling me, 'You can go far with this. They'll hold a place for you.'" That's when her passion kicked in. Milena has two sisters with special needs.

> ***"[T]here are so many things going through their little heads, you really have to get to know them before you know what's going on with them. . . . I've been placed in a resource room so I get to work with kids who have a variety of disabilities, . . . I get to see how teachers are planning."***

They can't walk or talk, and they communicate with noise. "If ever I was a teacher, it would be in special needs because of them," she says. "That's why I wanted to continue in this pathway."

Milena is interning in a middle school

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21 Wisconsin School Districts Awarded Fab Lab Grants

21 school districts throughout the state have been awarded a total of more than $508,000 in grants from the state to establish or expand local fabrication laboratory (fab lab) facilities.

"Fab labs provide students throughout Wisconsin with access to the hands-on experience and training necessary to prepare them for the jobs of tomorrow and beyond," said Wisconsin's Governor. "We're glad to be awarding these funds to 21 school districts today so they can establish or expand their fab lab programs, which continue to benefit entire communities across our state by fostering collaboration, bolstering access to technology, encouraging innovation, and inspiring the next generation of leaders."

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

"WEDC has invested more than $3.9 million over the past seven years to provide 106 schools across the state with the equipment necessary to help students learn high-demand skills, including technology, manufacturing and engineering," according to the secretary and CEO of WEDC. "Fab labs benefit not only the students themselves with important technology and career skills, but they also benefit Wisconsin employers, who will be able to find workers with the right skills to allow their companies to grow and thrive."

The following school districts were awarded Fab Lab Grants:

School District of Belleville – $15,000

This is their 2nd Fab Lab Award in two years! In the same week as receiving its second Fab Lab award, Belleville also received the news that it was selected as a PLTW Distinguished District for the 2021-22 academic year — one of only 13 Districts across the nation (and 2 in Wisconsin) to receive such recognition. *"As a district, we believe that we are preparing students for careers in the 21st century and building strong partnerships with local businesses and manufacturers."* — Nate Perry, District Administrator for the School District of Belleville

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eCYBERMISSION

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Peshtigo Technology Education Exploratory Classes Prepare Students for Careers

Peshtigo students Evan Young, Abbey Graf, Landon Haulotte, Kyle Beattie, Bastian Coble, Luke Swiatnicki, and Braydon Denowski pose with their geometric wood epoxy projects

Sam Zuehls, Peshtigo School District

Eighth grade students in Peshtigo take two one quarter technology education classes which introduces them to a number of different skills. One class is taught by technology teacher Mike Paquette where he creates design challenges for students to work on in teams.

"The goal is to mimic a business and teach students the problem-solving process they need to go through to bring a product to market," he said.

The class members are faced with a challenge product to create such as a coin sorter. They research design and do an efficiency study. Students then purchase materials, write purchase orders and checks, and learn to maintain a tight budget. The goal is to complete a finished usable prototype.

Eighth grade students also learn about robotics. They learn about circuits, basic electrical systems, and even how to solder.

Paquette is not alone in the technology education department. Beth Rocque also teaches a technology education class which focuses on different knowledge and skills. In Rocque's class, students learn a number of work-related skills including coding javascript, isometric and orthographic sketching, architectural drafting, 3D printing, and woodworking!

"Coding skills are important because "most factories are humans maintaining machines." Learning to create and read isometric, orthographic, and architectural sketches are really important in industry and the trades. Three dimensional printing is "huge in the field", and is very important in engineering and manufacturing," said Rocque.

Students also learn some basic woodworking skills and are exposed to tools. Last fall, the students entered a competition in which they built an adirondack chair and bench. "Industry and the trades fields are huge, so we introduce as many exploratory concepts as possible for eighth graders," explains Rocque.

Recently, students completed a woodworking project she called a "Geometric Wood Epoxy Project". "After designing their projects, students had to fit all of their geometric shapes within a specified area, which was challenging at times!" shared Rocque.

Rocque taught students how to scale their designs. They got to choose from various woods which included oak, cherry and black walnut with different shades, colors and grains. All of the wood for the projects were donated by a local flooring company.

Students learned to operate several tools for the project, such as the band saw, which allowed them to cut wood into geometric shapes.

Student Evan Young said, "The tool I found most interesting was the band saw. The speed of how fast the blade spun and how it cut a perfect line in the wood was pretty cool."

After sanding the shapes and placing them into the design, students then sealed the project together with epoxy. Two weeks after applying epoxy of varied colors, students squared off the projects using a table saw.

Student Karter Carpenter said, "The tools I was most interested to learn were the band saw and the table saw. I want to continue woodworking and learn to build things like tables, chairs, and cabinets."

"This geometric wood epoxy project requires math, science, and art skills." Rocque adds, "This helps students gain problem solving and decision making skills which will help them later in life."

Rocque's project utilized geometry, measuring, woodworking, and principles of manufacturing. "Students learned to mass produce one shape multiple times, as well as the skill of plastic forming," she said, and that the concept of conserving materials and patience is taught in the epoxy stage of the project.

Eighth grade student Abbey Graff said, "The coolest thing I learned was to use epoxy. It was fun and exciting, and turned out really cool!"

"We want to emphasize universal skills students need across all career sets, such as the ability to problem solve and work together as a team," states Paquete.

Rocque adds "Seeing the pride students have once the product is finished, is super rewarding!" Student Nathan Sebero enjoyed learning more about coding and liked how his wood epoxy project turned out. "I see myself working in the trades or manufacturing," he said.

www.peshtigo.k12.wi.us

STEM Future is Bright at Fontana Elementary

Taken in part from "Fab-ulous news: Big Foot High School, Fontana Elementary receive joint $32,399 WEDC grant to update, expand fab lab facilities" by Eric Johnson for the Lake Geneva Regional News

Fontana Elementary School principal Steve Torrez said a grant awarded last spring funded a reconfiguration and redesign of the school library for the 2021–2022 school year to add a fab lab featuring 3D printers, laser cutters and "greater access to greater technology for the kids."

The fab lab is under the direction of librarian and 21st Century coordinator Annelise Gutierrez.

Torrez said an Elkhorn-based furniture manufacturer assisted Fontana Joint 8 School District with writing last year's grant and later assisted the school with the redesign of the library space for the fab lab facility. The firm also assisted with the purchase and set-up of fab lab design software and equipment including 3D printers and laser cutters, as well as professional development for school staff involved with the fab lab.

Among the cross-curricular connections to arise out of the fab lab, Torrez noted, is use of the fab lab for art applications, including educational decorative wall designs for the pre-school area and the creation of t-shirt apparel for band, sports and other groups.

Other technology offerings at Fontana Elementary School, Torrez said, includes the school's drone club and a curriculum expansion partnership with their local technical college in areas including drone flight, 3D design, CAD software, and career and college readiness.

The recently-announced shared grant award for the 2022–2023 school year, Torrez said, came out of a "partnership with Big Foot to expand and allow some connection from middle school into high school."

"That will hopefully expand not only the opportunities for our kids, but also carry over what they learned here into high school and beyond," he noted.

Part of Fontana Elementary School's fab lab technology expansion, Torrez said, is student exposure to green energy engineering and future STEM employment opportunities through the school's collaboration with a Lake Geneva-based commercial and industrial solar developer, which installed a small rooftop solar array at the school in April.

"The array of opportunities and employment that come with solar is diverse," Torrez said. "It's not just green energy and solar, it's engineering, it's construction, it's developing, it's building, it's typography. We're just trying to layer-up and expose kids to multi-multi-faceted opportunities that come with it."

Solar developer president, John Kivlin, said development of the small solar array at Fontana Elementary School had its roots in several years of discussions with Torrez.

"We donated part of the array, with a grant from the state for part of the array and the balance the school has agreed to pay," he noted. "It was a collaborative one third, one third, one third share. Living here in the community, it's a good opportunity to give a little something back."

Kivlin said the "small demonstration system" solar array will provide educators with monitoring and performance data to explain how solar works and allow students to see real-time performance.

"There's some good opportunities for the kids to look at it and form questions of their own that will lead to who knows what," Kivlin said.

"Scientists and engineers of the future," Torrez replied.

"Or in the present," Kivlin said.

www.fontana.k12.wi.us

Why Choose Energy?

For most people, jobs in the energy industry become careers. Those careers become professions of passion. Project teams become family. For some, those are reasons enough to consider an energy career. For those who need more convincing, consider the energy sector has careers that fulfill a variety of professional interests.

Want to work outside with your hands in a skilled trade position – fixing, building, or repairing things? Check! We've got lots of those opportunities. Drawn to the environment and opportunities to impact its future? Another check. What about finding solutions for things that don't even exist yet, solving some of the industry's most complex challenges? We certainly have you covered there! Technical positions? Business operations? Entrepreneurial challenges? An industry that supports diverse, equitable, and inclusive work environments? Check. Check. Check. Check. Oh, and did we mention, the industry pays well? Really well.

Getting Started: Education Ideas to Launch an Energy Career

With so many different jobs in the energy industry, it can be tough to navigate where and how to start your career journey. Students and career explorers often ask how they should prepare themselves. More specifically, they are curious about college requirements, opportunities available from local technical schools and apprenticeships, and what's possible right after high school.

The simple answer is all these avenues can lead to successful energy careers. Yet, they each start you in a different place. Not a right or wrong place or a better or worse place, just a different place. The industry is equally reliant on those with degrees and those who prefer to learn through on-the-job training and experience.

Entry Level Non-Skilled Positions

For those without relevant experience looking for the proverbial "foot in the door opportunity" in a labor, construction, heavy equipment, or related role, neither experience nor a college degree is required. These entry-level, non-skilled positions offer employment for those who want to develop useful competencies that can help accelerate future career opportunities. Safety and skill-based training is provided on the job by experienced leaders and skilled professionals. Those entering these positions are selected for their willingness to work hard, often in challenging environments, eagerness to learn, and ability to work as part of a team. There are generally no education requirements for these positions, beyond a high school degree or GED.

Employees who succeed in these roles are often candidates for apprenticeship positions for skilled trade jobs.

Skilled-Trade Jobs

Skilled trade employees, as their position title implies, are those who have mastered the responsibilities of their craft. They have developed a special skill set that demands particular knowledge and abilities. In the energy industry, most skilled tradesmen and women perfect their skills over several years, generally two to four, but as many as six. College is not a requirement for most of these jobs; instead, training is provided through apprenticeship. Individuals also prepare for these positions at local community colleges or specialty training programs. A high school diploma or GED is required.

Because those who work in skilled trade roles work with their hands, doing physical labor, it's a common misperception that strength and brawn are more important than critical thinking and problem-solving abilities. This is not the case. Skilled-trade professionals and the work they do is fueled by hands-on work that is challenging, both physically and mentally. There is a shortage of these workers throughout the country in many fields, including in the energy industry. For years, society has encouraged all students to pursue collegiate education and as a result, we now find ourselves with a gap between the supply and demand of craft workers.

While some apprenticeships may be available to students right after high school, many will require the ability to earn a Commercial Driver's License and/or operate heavy equipment, conditions that often necessitate candidates be at least 21 years of age.

There industry offers tremendous opportunity for advancement within skilled trade positions.

Engineering Roles

Engineers are integral to the energy industry. These technical thinkers are responsible for planning for the future of our nation's power delivery and today's challenges related to replacing aging infrastructure and supporting clean-energy advancements. The industry needs engineers of all disciplines – chemical, civil, mechanical, and electrical – and this need is growing.

Those considering an engineering path in the industry will need to earn an engineering degree. Students may find it helpful to intern in an energy company. during their college career to help determine where their skills and interests will be the best fit.

Business Careers

Those interested in business careers – accounting, Human Resources, legal, Information Technology, marketing, public policy, and others – will find there are many paths to success in the energy industry. Some professionals find their way through a career change, starting in another industry and transferring their skills to an energy employer. Others find employment in entry-level roles after high school, while other positions will require additional education, depending on the position. It is also common in the energy industry to see business professionals "climb the ladder of success" into operational and leadership roles.

Article courtesy of Center for Energy Workforce Development, Get Into Energy

Energy Career Clusters

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.

Electrical Power-Line Installers and Repairers

Install and fix cables and wires that are used in electrical power or distribution systems. May put up poles and transmission towers, identify and fix defects.

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*

THE 2022-23 TEACHING TODAY WI DREAM CAREER ESSAY CONTEST

OPEN NOW FOR SUBMISSIONS

SHARE YOUR "DREAM CAREER" WITH OUR READERS!

Submit your essays and you could win cash prizes to use towards your future "Dream Career" and have your entry featured in the "Dream Career Contest" section of the website and in the print edition of *Teaching Today WI.*

OPEN TO ALL WISCONSIN MIDDLE AND HIGH SCHOOL STUDENTS

High School Contest:

- **$150.00 cash prizes will be awarded to each of the six winning entries.**
- **$50.00 cash prizes will be awarded to each of the six Honorable Mentions.**

Middle School Contest:

- **$100.00 cash prizes will be awarded to each of the six winning entries.**
- **$25.00 cash prizes will be awarded to each of the six Honorable Mentions.**

High School essays are to be between 500 and 600 words in length. Middle School essays are to be between 400 and 500 words in length. A Word document or PDF is preferred. We will be featuring the winners and honorable mentions on our website and in the late-winter and spring issues of *Teaching Today WI.*

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

Deadline for submissions is Monday, January 9, 2023 at 5:00 pm! Submit your essay soon!

SEND ENTRIES TO:

dreamcareers.teachingtoday@gmail.com

For any questions please contact:

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THE 2021-22 TEACHING TODAY WI

DREAM CAREER ESSAY CONTEST WINNERS

Thank you again to all of the high school and middle school students that shared their Dream Careers with us! Thank you again to the teachers who inspire them!

Choosing the Winning and Honorable Mention entries is always a very difficult task. Some entries bring a laugh, a smile and even a tear. What has really stood out has been the passion, sincerity, and heart that is present in the words from so many of these young people.This competition is open to all Wisconsin middle school and high school students. It is held annually from September until early January.

High School Winners:

Cheyanne T. — Psychologist
Prairie du Chien High School

Brandon G. — Actuary
Ronald Reagan High School

Nathan G. — Automotive Service Technician
Arrowhead Union High School

Khloe K. — Greenhouse Business
Cornell High School

Rachel M. L. Agriculture/Veterinarian
Cornell High School

Marijke de V. — Architect
Arrowhead Union High School

High School Honorable Mentions:

Annie B. — Criminal Justice, and Psychology
Arrowhead Union High School

Nina A. — Nurse
Arrowhead Union High School

Allison M. — Cyber Security Analyst
Prairie Du Chien High School

William D. — Electrician
Cornell High School

Jadyn G. — Doctor
Prairie du Chien High School

Jack B. — Engineering
Arrowhead Union High School

Middle School Winners:

Stella B. — Mental Health Counselor
River Ridge Middle School

Zoey N. — Children's Therapist
River Ridge Middle School

Tyler J. M. — A Builder
River Ridge Middle School

Hailey M. — Actress
Bay View Middle School

Addalyn B. — Astronaut
Bay View Middle School

Griffin S. — Mechanic
Bay View Middle School

Middle School Honorable Mentions:

Ella M. — Ultrasound Technician
Bay View Middle School

Ava N. — Sports and a Personal Trainer
River Ridge Middle School

Reese M. — Personal Care Aide
River Ridge Middle School

Anna K. — Police Officer
River Ridge Middle School

Cassidy G. — Photographer
Bay View Middle School

Peighton L. — Interior Designer
Bay View Middle School

It's FAFSA Time Again

What is the FAFSA?

To apply for federal student aid, such as federal grants, work-study, and loans, you need to complete the Free Application for Federal Student Aid (FAFSA®). Completing and submitting the FAFSA is free and easier than ever, and it gives you access to the largest source of financial aid to pay for college or career school.

In addition, many states and colleges use your FAFSA information to determine your eligibility for state and school aid, and some private financial aid providers may use your FAFSA information to determine whether you qualify for their aid.

What will I need to fill out the FAFSA?

To complete the Free Application for Federal Student Aid (FAFSA®), you will need:

- Your Social Security Number
- Your Alien Registration Number (if you are not a U.S. citizen)
- Your federal income tax returns, W-2s, and other records of money earned. (Note: You may be able to transfer your federal tax return information into your FAFSA using the IRS Data Retrieval Tool.)
- Bank statements and records of investments (if applicable)
- Records of untaxed income (if applicable)
- An FSA ID to sign electronically.

If you are a dependent student, then you will also need most of the above information for your parent(s).

What is an FSA ID?

The FSA ID (account username and password) allows students and parents to identify themselves electronically to access Federal Student Aid websites.

While you aren't required to have an FSA ID to complete and submit a FAFSA form, it's the fastest way to sign your application and have it processed. It's also the only way to access or correct your information online or to prefill an online FAFSA form with information from your previous year's FAFSA form.

Parents: If you previously created an FSA ID when you were a student, you don't need to create another one. You can only have one FSA ID linked to your Social Security number.

FAFSA® Deadlines (2022–23)

To be considered for federal student aid for the 2022–23 award year, you can complete a Free Application for Federal Student Aid (FAFSA®) form between Oct. 1, 2021, and 11:59 p.m. Central time (CT) on June 30, 2023. Any FAFSA corrections or updates must be submitted by 11:59 p.m. CT on Sept. 9, 2023.

However, many states and colleges have earlier deadlines for applying for state and institutional financial aid. Check with your college or career school about its deadlines.

Because of the variation in state and college deadlines, it's highly recommended that you fill out the FAFSA form as soon as you can after Oct. 1 to ensure that you don't miss out on available aid.

For all things FASA go to https://studentaid.gov

Youth Apprenticeship Offerings — 14 New Occupational Pathways for Students

DWD

Department of Workforce Development

DWD announced that Wisconsin high school juniors and seniors will have 14 new occupational pathways that local employers can support. The goal of these latest youth apprenticeship pathways is to strengthen the connections among employers, educators, students, and communities.

Working in collaboration with school consortiums, employers, the Wisconsin Technical College System, and other partners, DWD has modernized the framework for a total of 75 Youth Apprenticeship (YA) program pathways to help industries like construction, health sciences, marketing, science and engineering, and transportation find and develop home-grown talent.

DWD has been working closely with industry leaders to review and update the YA training framework to ensure students continue to learn the skills employers are looking for.

DWD's YA Program Modernization Initiative resulted in 14 new occupational pathways in which local employers can offer apprenticeship opportunities to students. These include:

- Agriculture, Food, and Natural Resources, new pathways: Arborist and Dairy Grazier.
- Architecture and Construction, new pathways: Gas Distribution Technician, Heavy Equipment Operator/Operating Engineer, and Utilities Electrical Technician.
- Arts, Audio Visual Technology and Communications, new pathway: Media Broadcast Technician.
- Health Science, new pathways: Phlebotomist and Resident Aide.
- Information Technology, new pathway: IT Broadband Technician.
- Manufacturing, new pathway: Electromechanical/Mechatronics.
- Transportation, Distribution, and Logistics, new pathways: Airport Operations and Management, Aviation Maintenance Fundamentals, Aviation Airframe and Powerplant Technician, Aviation Avionics Technician.

"For years, our industry has been asking the question, 'How can we reach youth and get them interested in trees and the arboriculture industry?'" said August Hoppe, co-chair of the Wisconsin Registered Arborist Apprenticeship Advisory Committee and Wisconsin Arborist Association workforce development coordinator. "It was a no-brainer to work with DWD to help create the nation's first youth arborist apprenticeship. It's exciting to see the program now gaining traction. The YA is yet another pathway for new people to obtain the skills necessary for our industry. We are excited for the future."

To update existing program curricula, DWD staff reached out to YA participating employers, industry associations, and other relevant stakeholders to gather feedback and input regarding the training and education needs.

The YA program is coordinated and provided around the state by consortia that often consist of school districts, technical colleges, and chambers of commerce. Of the 421 public school districts, 321 districts, or 76.2 percent, had students enrolled in YA for the 2021–2022 school year.

Key elements of the youth apprenticeship:

- Industry-developed skill standards
- Exposure to multiple aspects of the industry
- Skilled mentors assigned to train the students
- Paid on-the-job work experience
- Related classroom instruction concurrent with work-based learning
- Curriculum guidelines for all programs
- Performance evaluation of demonstrated competencies
- State-issued skill certificate

Employers interested in becoming a youth apprenticeship sponsor can find more information here.

dwd.wisconsin.gov/apprenticeship/ya-employers.htm

Students interested in becoming a youth apprentice can find more information here.

dwd.wisconsin.gov/apprenticeship/ya-applicants.htm

Grow-Your-Own Educator Internship Takes Flight Continued from Page 1

special education class. "I feel like it's important to be part of someone's day, being someone to talk to."

Milena Gutierrez

Relationship-building is also top-of-mind for senior Milton Lewis who has already learned, "there are so many things going through their little heads, you really have to get to know them before you know what's going on with them."

"I've been placed in a resource room so I get to work with kids who have a variety of disabilities," he says. "I get to see how teachers are planning."

His advice to fellow students? "If anyone is on the verge of wanting to do an internship, just do it!"

Milena agrees: "There are so many job opportunities throughout the grades: cooking, nursing, and other subjects."

"We know in urban education, we need a diverse workforce," says DeBaker, "If we look out 4, 5, 6 years, [our internship program] should start to make a change."

Article courtesy of the DPI

www.rusd.org

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.

Lorrie Otto Seeds for Education Fund

The Wild Ones environmental organization annually awards small grants through the Lorrie Otto Seeds for Education (SFE) Fund. Projects must focus on appreciation for nature through the use of and teaching about native plants. Projects must involve students and volunteers in planning and carrying out the project. Projects must increase the site's educational value.

Awards range from $150 to $500.

Deadline: Applications are accepted July 15th – November 15th, 2022.

Website: wildones.org/seeds-for-education

Bee Grants

The mission of the Bee Cause Project is to provide youth with opportunities to understand, engage, and learn from honeybees to connect with the natural environment while developing science, technology, engineering, art, and mathematics skills. The program offers the following four grant options: indoor observation hive, outdoor observation hive, traditional outdoor Langstroth hive, and monetary grants.

Awards vary.

Deadline: Applications are accepted through October 15, 2022.

Website: www.thebeecause.org/programs

School Garden Grants

Safer Brand offers School Garden Grants to schools that want to create and start a school garden. Interested schools should explain their reasoning for a school garden and how they would use the grant.

Grants of $500 are awarded.

Deadline: Applications are accepted September 1 through December 1, annually.

Website: www.saferbrand.com/articles/how-to-start-a-school-garden

SeedMoney Challenge Grants

SeedMoney awards Challenge Grants to support public food garden projects, including youth, school, community, food bank, and shelter gardens. The grant size is determined by the amount that a particular garden raises using SeedMoney's crowdfunding tools over a 30-day period from November 15 to December 15, 2021. A total of 270 grants will be awarded, with grant amounts based on ranking.

Awards range from $100 to $1,000, with total funding of $75,000.

Deadline: Applications are due November 12, 2022.

Website: seedmoney.org/apply

Civic Engagement and Environmental Impact Grants

The First Solar Corporate Charitable Fund of the Toledo Community Foundation, Inc. focuses its grant making on programs that support green education initiatives, access to clean energy and water in underserved areas, and furthering the development of innovative and sustainable technologies. Priority is given to organizations that make a significant impact in communities that share these giving values.

Grants of $10,000 and greater are awarded.

Deadline: Applications are due February 1, May 1, August 1, and November 1, annually.

Website: www.toledocf.org/grants-2

Environmental and Science Education Grants

Waste Management, Inc. supports environmental and science education programs, such as science fairs and Earth Day projects targeting middle and high school students. There is also interest in proposals to preserve and enhance natural resources. Local facilities may identify and support other causes that are important to the immediate community.

Deadline: Applications are accepted year-round.

Website: www.wm.com/us/en/inside-wm/social-impact/community-impact

ecoTech Grants

The Captain Planet Foundation (CPF) is offering grants to support inquiry-based projects in science, technology, engineering, and mathematics (STEM) fields that leverage technology or use nature-based designs to address environmental problems in local communities. Ideal projects are youth-led, project-based, and integrate technology to address an environmental problem that results in real, demonstrable environmental outcomes.

Grants up to $2,500 are awarded.

Deadline: Applications are accepted March 15 through July 15 and September 15 through January 15, annually.

Website: captainplanetfoundation.org/grants/ecotech

Energize the Environment Grants

Quadratec is sponsoring Energize the Environment Grants to invite individuals and organizations across the United States to explain the environmental efforts they are making and how a grant can enable or extend that work. This grant program is part of the Quadratec Cares environmental initiatives, including the "Tread Lightly!" trail responsibility program. To compete for a grant, the required submission is an essay of 1,000 to 1,600 words that describes the applicant, the environmental commitment, anticipated accomplishment, and how a grant would be applied.

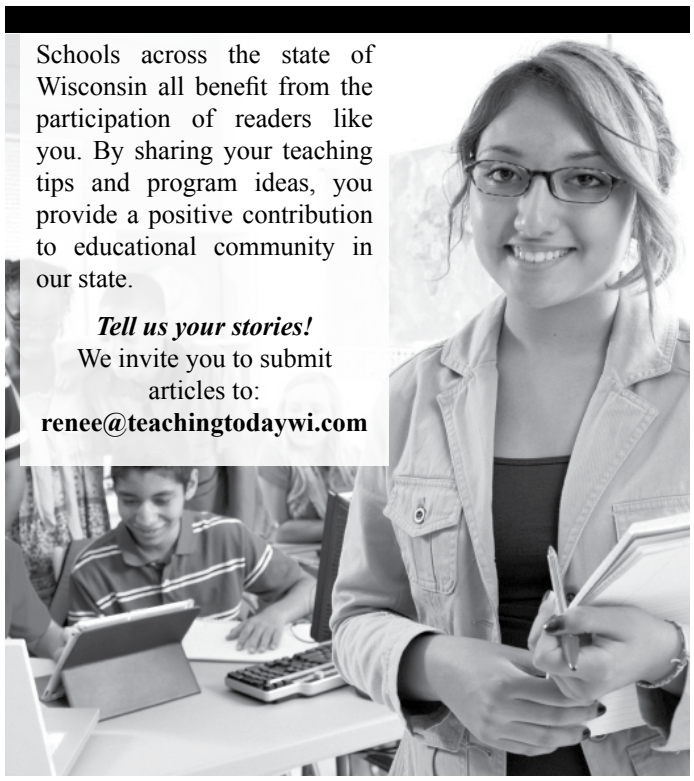
Two grants of $3,500 each are awarded.

Deadline: Application essays are due June 30 and October 30, annually.

Website: www.quadratec.com/page/quad-ratec-cares-grant-program

Find more Grant Opportunties on our website

teachingtodaywi.com



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Five Educators Named 2023 Wisconsin Teachers of the Year

Congratulations!

The Wisconsin Department of Public Instruction announced that five exemplary educators have been named 2023 Wisconsin Teachers of the Year.

These five educators were surprised by the State Superintendent in separate announcements at their respective schools. "It was an incredible experience letting them know they are 2023 Wisconsin Teachers of the Year, and I congratulate them on this achievement," she said. "These past two weeks have been so fulfilling because I heard stories firsthand from students about how each of these educators has positively impacted their lives. I know they will continue to have a significant impact in their new role as Wisconsin Teachers of the Year."

Teachers who receive Herb Kohl Fellowship Awards are eligible to be considered for Teacher of the Year Awards from the Wisconsin Department of Public Instruction. Honorees are selected by a diverse committee to represent voices, contexts, and perspectives as educational leaders throughout Wisconsin. The Teacher of the Year's spend the following year serving as a representative of teachers and public education. They attend several ceremonies in their honor, engage in ongoing professional development as a cohort, and participate in many local and statewide activities.

The 2023 Wisconsin Teachers of the Year are:

Kaelee Heideman, school counselor at Carl Traeger Elementary School, Oshkosh Area School District

Kaelee Heideman

In her fifth year as a counselor at Traeger, Kaelee Heideman is one of five teachers, across the state, to receive the prestigious "Teacher of the Year" award from the Department of Public Instruction.

Heideman is a leader at the school and within the district, co-facilitating the social emotional learning team and providing professional development around equity, trauma-informed care, and positive behavioral interventions and support.

Nominated by the school principal, Brenna Garrison-Bruden, Heideman has been dedicated to her students from the first day she arrived at Traeger Elementary.

The dedication that she showed to her colleagues as well as students during the pandemic was a factor in her selection. Heideman composed individual letters to every student in the school, and she and her dog, Milo, regularly dressed up and sent messages of encouragement to the school community as well.

"I just wanted to stay connected somehow because the world just flipped on its head and so it was a great way for me to write to them. And then the really cool thing was that some of them wrote back to me," she shared in talking about writing to her students.

"I have so many dreams for what I can do with my students. I just want to support them however they need it, roll with it and be flexible in whatever that looks like for them and giving them the best parts of me always."

—Kaelee Heideman

www.oshkosh.k12.wi.us

Sarah Kopplin, geography teacher at Shorewood Intermediate School, Shorewood School District

Shorewood Intermediate School World Geography teacher Sarah Kopplin has been recognized as one of five recipients of a 2023

Continued on Page 14

2023 Wisconsin Teachers of the Year Continued from Page 13

Sarah Kopplin

Wisconsin Teacher of the Year award.

Kopplin has a passion for social studies education and finds innovative, resourceful ways to provide opportunities for all students.

One initiative that Kopplin was a part of was when a student environmental club that she serves as a staff advisor for managed to introduce composting to her school's lunchroom. After lunch periods, the students donned gloves and picked through trash to catalog what could be composted versus what should be recycled or thrown away. They figured out that 25% of the food thrown away was compostable. Students did more research, collected more data, and discovered that if all the aluminum cans were taken out of the school's trash and recycling to instead be crushed and resold, it would offset the cost of the composting program.

In addition to serving on the school's instructional leadership, Kopplin also is a member of several district, state and national organizations advocating for social studies education and has a sincere commitment to improving outcomes for students.

"Mrs. Kopplin received this award because of her passion for social studies education and the innovative, resourceful ways she provides opportunities for all students," read an article on the Shorewood School District website. "Through her commitment to providing authentic learning opportunities, students in her class leverage their leadership, voice and choice to guide their individual learning experiences."

shorewood.k12.wi.us

Lori Danz, biology teacher and school forest coordinator at Superior High School, School District of Superior

Lori Danz

The Wisconsin DPI has announced Wisconsin's representative to the National Teacher of the Year Program is Lori Danz, a biology teacher at Superior High School and the school forest coordinator for the district.

With more than 20 years of experience in education, she 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 and representatives from partner organizations.

"When I first met Lori, I was so impressed by her ability to inspire her students to think critically and creatively about the natural world around them. We had the pleasure of visiting the school forest with her students, and I agree with them – there really is something magical about learning science in the woods," State Superintendent Dr. Jill Underly said. "After seeing her passion for outdoor education and how she builds community in her district, I am so excited that she is going to represent Wisconsin educators at the national level."

As the coordinator of the school forest in the Superior community, Danz has worked to make improvements to the forest since its creation, making it a place for students and educators to enjoy outdoor education. At the onset of the COVID-19 pandemic, she set up a camera system for classrooms across the district to observe the forest virtually and created various video lessons for classes.

"Being named Wisconsin's representative for the National Teacher of the Year

Continued on Page 15

Nominate an Educator for a Kohl Award
Herb Kohl Foundation

We are currently accepting nominations of Wisconsin teachers and principals for 2023 Herb Kohl teacher fellowships and principal leadership awards. The nomination deadline for 2023 awards is October 4, 2022 at 5:00:00 p.m. central time. If your nominee chooses to apply, he or she will be considered for a $6,000 personal grant and a $6,000 matching grant for his or her school. The Herb Kohl Foundation annually selects 100 teachers and 16 principals to receive awards.

2023 Excellence Scholarship Applications
Now Available

Wisconsin high school seniors can now apply for the 2023 Herb Kohl Educational Foundation Excellence Scholarship. The submission deadline is November 8, 2022 at 5:00:00 p.m. central time. The foundation will award one hundred $10,000 college scholarships to selected award recipients in early March, 2023.

Wisconsin Teacher of the Year Programs

Public school recipients of Herb Kohl teacher Fellowships automatically become candidates for the Wisconsin Teacher of the Year (TOY) program, and a State Selection Committee selects five Teachers of the Year using the pool of Kohl Fellowship recipient applications. The five selected teachers are interviewed by a committee of reviewers to determine Wisconsin's nominee to the National Teacher of the Year Program.

Herb Kohl Foundation Awards

Herb Kohl Educational Foundation, Inc.

Herb Kohl Teacher Fellowship and Principal Leadership Awards recognize excellence and innovation in PK–12 Wisconsin schools. Nominations accepted through October 4, 2022 at 5 p.m. for 2023 grants of $6,000 to recipients and matching grants to their schools.

Please visit our web site for deadlines, information and nomination process.

www.kohleducation.org

2023 Wisconsin Teachers of the Year Continued from Page 14

program is a very emotional experience," Danz said. "This recognition validates not only my years of working as an educator, but just as importantly, it recognizes and validates all the talented and generous teachers who I have had the opportunity to work with. There has never been a more important time to be an educator, as we face not only the recent and alarming teacher shortage nationally, but also as a time to work together with our families and community leaders to address a recent, divisive culture. We have to focus as one, on our children."

As Wisconsin's National Teacher of the Year representative, Danz will receive $6,000 from the Herb Kohl Educational Foundation, and 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.superior.k12.wi.us

Peggy Billing, library media specialist at Lakeland Union High School, Lakeland Union High School District

Peggy Billing, library media specialist at Lakeland Union High School, has been recognized as one of five recipients of a 2023 Wisconsin Teacher of the Year award.

Billing has been an educator for nearly 20 years and has spent many of those years building relationships, collaborating with colleagues, and incorporating relevant and cultural activities into a variety of classes.

Peggy Billing

Her students say she's always challenging them to be critical thinkers. "She has helped me in so many ways to find a creative outlook on different situations," said student Teiya Farmer.

"We just had great experiences, she has helped me with databases and I've used her a lot for resources relating to book projects and makers space, as she mentioned," said student Bo Peterson.

The award was completely unexpected for the librarian. "The teachers here are amazing, I mean they've all been incredibly supportive in different ideas, fun to work with. Definitely willing to try some unique things that, you know, we can come up with and it's really a collaborative effort," said Ms. Billing.

Lakeland Union Principal Chad Gaurke describes Billing as an "outside the box thinker" who successfully utilizes STEAM activities to enhance her classes. Billing is credited with helping design and launch a statewide low-cost collection of audio, eBooks, and digital magazines through the Wisconsin Schools Digital Library Consortium, which she has served on since the group's inception in 2018.

www.luhs.k12.wi.us

Dustin Anderson, art teacher at Grant Elementary School, Wisconsin Rapids Public Schools

Dustin Anderson

Anderson has a passion for art and uses it to help students and the community learn and grow.

He has also been recognized as one of five recipients of a 2023 Wisconsin Teacher of the Year award.

Grant Elementary Principal Nicole Calteux credited Anderson for being a leader in the district, working tirelessly to provide the best education for every student.

In 2020, Anderson was selected as Wisconsin Elementary Art Educator of the Year by the Wisconsin Art Education Association and represented fellow educators on the organization's board. In the role, he coordinated and assisted with professional development opportunities for teachers across the state and provided valuable insight and suggestions.

"This job is so rewarding, every day we come home and we learn something new. I love bringing in things that I learned from other places and traveling and through the Wisconsin Art Education Association, bringing those to the classroom and watching the kids take it in their own directions," said Dustin Anderson.

Anderson hopes that by being named Teacher of the Year, it will motivate his students to continue to do well in the classroom and accomplish their goals.

www.wrps.org

Information Courtesy of the WI DPI

The Creation of the STEM Shuttle

Retired teacher Sharon Ryan, Created the Dream Flight USA Foundation 18 years ago and is still traveling the state teaching students the about wonders of space and helping them better understand the "why" behind the core knowledge they are obtaining each day in class.

> *"Bringing this experience to the school is a game changer that had a huge impact on a large number of our students. The activities were very engaging and could be completed with little direction. This allowed students the opportunity to apply scientific thinking by testing, observing, collaborating, and retesting. The STEM shuttle crew members were helpful and informative. Their conversations with students supported deeper, contextual learning."*
>
> — Dr. Jo-Ellen Fairbanks Ph.D.
> Superintendent,
> Cochrane-Fountain City School District

Throughout her 40-year teaching career, Sharon has created programs such as "Around the United States in 80 Days", where students "visited" points of interest around the country, including those states with major sporting events, industrial centers, and famous tourist attractions. The students traveled to these destinations via a flight simulator. The students also were given a check book to fund their expeditions, and quickly learned the value of a dollar.

It was her creation of a Space Fair, where students worked to create satellites, planets, and even moon buggies, that eventually led to the Dream Flight USA Foundation and the STEM Shuttle. Learning of Sharon's Space Fairs at the Rib Mt. Elementary School, the superintendent of the Wausau School District came to Sharon and challenged her to include all of the district's elementary schools in her program.

So, in 1990, Dream Flight Wausau was born. A used school bus was painted in the colors of a NASA shuttle, complete with wings, that served the students in the district for 10 years. After the district, under new leadership, dropped the program, Sharon created the Dream Flight USA Foundation and the STEM Shuttle.

Sharon is the recipient of both the Wisconsin Elementary Teacher of the Year honors, and the prestigious Presidential Award. She is a firm believer in enhancing classroom instruction with hands-on learning opportunities.

If you are interested in bringing the STEM Shuttle to your school or event, please call or text 715-845-6392, or email stemshuttle@gmail.com.

Wisconsin Teachers Receive National Recognition for Inspiring Students in STEM

Elementary teachers from Milwaukee, Waupun honored by White House

Two Wisconsin teachers were recognized by the White House for their role in encouraging and supporting students in science and mathematics.

Lois Womack, mathematics teacher at Marvin E. Pratt Elementary School in Milwaukee Public Schools, and **Leigh Kohlmann**, science teacher at Rock River Intermediate School in the Waupun Area School District, were named 2020 recipients of the Presidential Awards for Excellence in Mathematics and Science Teaching by The White House on Feb. 8, 2022. Womack and Kohlmann, along with three other teachers, were named state finalists for the PAEMST in December 2020.

First presented in 1983, PAEMEST is considered the highest K-12 award teachers in the mathematics and science (including computer science) fields can receive from the United States government. The 2020 awards honored teachers in kindergarten through sixth grade. The application process asks nominees to demonstrate their content knowledge while showing their ability to adapt to different learners and teaching environments. Each recipient receives $10,000 and a certificate signed by The President.

Congratulations Leigh and Lois!

Leigh Kohlmann
K-6, Science
Waupun Area School District

Leigh Kohlmann brings over 30 years of dynamic teaching experience to the Waupun Area School District. Her passion—and pedagogical strength—is teaching science to Rock River Intermediate School students. She particularly enjoys working with sixth graders because she thrives on their energy and pliable sense of discovery. She began her career at Waupun Middle School and then taught two years at Waupun Area High School before joining the staff at Rock River Intermediate 12 years ago.

Leigh transforms "I notice and I wonder . . ." statements into purposeful learning by leveraging the curiosity-driven 'dot-dot-dots' to promote student exploration and develop the scientific explanations embedded in the ellipses. Leigh is consistently grounded in her purpose: to guide all students and fellow teachers toward reaching their highest potential by embracing each individual learner and maximizing the experiences and knowledge they bring with them.

Leigh promotes science as a way of knowing by facilitating local, state, and national workshops. Her advocacy for education extends into the greater community where she has led multiple referendum committees, wrote and received over $40,000 in grants to fund the Oakfield Community Foundation, and spearheaded a districtwide well water-testing project. Leigh's educational excellence and innovation was recognized in 2004 when she was awarded a Kohl Fellowship.

Leigh is a devoted Wisconsin Badger and holds a B.S. in elementary education. She continues to serve her alma mater as the scholarship chairperson for her local Wisconsin Alumni Association board. She also holds a M.A. in teacher development and educational technology. Leigh attained National Board Certification in 2018.

www.waupun.k12.wi.us

Lois Womack
K-6, Mathematics
Milwaukee Public Schools

Lois A. Womack has been a fourth and fifth grade mathematics teacher at Marvin E. Pratt Elementary School for the past five years. Prior to that, she worked at Starms Discovery Learning Center for 11 years, six as the school's Mathematics Teacher Leader and five as a fifth grade teacher. Lois was an Elementary Mathematics Assistant Coordinator and Mathematics Teaching Specialist, supporting mathematics teaching and learning districtwide, for five years. She spent six years at Hi-Mount Community School, where she began her teaching career.

Lois is passionate about teaching mathematics and building relationships with students. Her goal each day is to make the mathematics concepts and skills explicit in order to enhance students' understanding. Building relationships with students allows her to focus on their strengths and weaknesses in mathematics to improve achievement. Watching students develop and mature, both socially and academically, is her inspiration.

During her tenure at Marvin E. Pratt Elementary, Lois was appointed the Math Champion; was the chair of the Mathematics Committee for three years; and provided professional development for staff. Additionally, she conducted professional development sessions on working with advanced learners in mathematics and creating equitable and accessible mathematics classrooms for teachers and administrators throughout the district. In March 2021, she received the Excellence in Education award from the Milwaukee Board of School Directors.

Lois holds a B.S in education and an M.S. in curriculum and instruction. She is certified in elementary and middle grades education, elementary through ninth grade mathematics, and mathematics education.

www5.milwaukee.k12.wi.us/school/pratt

Information courtesy of PAEMST (National Science Foundation) and the WI DPI

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— Kate G., 2022 graduate

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— Tyler L, 2022 graduate

✦ ✦ ✦

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Advanced Manufacturing Technical Education Equipment Grants to Serve More Than 1,400 Students

Eleven Wisconsin school districts will receive more than $414,000 in grant funding to increase the number of students in career and technical education programs. Funded through the Wisconsin Fast Forward Program, the grants will help prepare more than 1,400 students for a wide range of high-wage, high-skill, and high-demand careers.

These grants will broaden educational and employment opportunities for some 1,400 students in more than a dozen rural and underserved communities statewide, according to the DWD. The Wisconsin Fast Forward grants are part of the DWD's strategy to expand Wisconsin's future workforce.

High school students will train in advanced manufacturing fields to prepare for stable careers while they obtain dual enrollment credits, industry-endorsed certificates, and technical endorsements on high school diplomas. Advanced manufacturing refers to a family of manufacturing activities that depend on the use and coordination of information, automation, computation, software, sensing, and networking, and/or use cutting-edge materials and emerging production capabilities enabled by the physical and biological sciences (e.g., nanotechnology, chemistry, and biology). This involves both new ways of manufacturing existing products and manufacturing new products emerging from advanced technologies.

The new awards include:

Medford Area Public School District, Taylor County | $50,000

The Medford Area Public School District will use grant funds to purchase a ShopSabre Sidekick 4 Plasma System, an Auto Electronics Trainer, a Grizzly G9933-3HP Three Spindle Shaper, a Grizzly G0490X - 8" x 76" Jointer with Parallelogram Beds and Spiral Cutterhead, and a ShopSabre RC-9 Router System for its technical education program, allowing students to become familiar with cutting-edge technology used in manufacturing, construction, and automotive industries.

Whitehall School District, Trempealeau County | $42,550

The Whitehall School District will use grant funds to purchase a FANUC Fenceless CERT Cart that features a six-axis mechanical robot with 180-degree work envelope, a R-30iB Plus controller, 25 Roboguide handling tool software seats, and an Industry 5.0 Advanced Automation Mechatronics System to increase student capacity of its existing industrial robotics and automation program.

Clintonville Public School District, Waupaca, Shawano, and Outagamie Counties | $50,000

The Clintonville Public School District will use grant funds to purchase several Amatrol Industry 4.0 Learning Systems, including a Portable AC/DC Electrical trainer, a Portable Electrical Control trainer, a Portable Pneumatics trainer, a Pneumatic Hand Tool Package, a Portable Measurement Tools package, a Skill-Boss and Hand Tool Package, and a Portable Electronic Sensor to enable students to obtain Manufacturing Standards Skills Council (MSSC) and Smart Automation Certification Alliance (SACA) certifications.

Augusta Area School District, Eau Claire County | $50,000

The Augusta Area School District will use grant funds to purchase additional equipment to for its Industry 4.0 curriculum, including a Hydraulics Trainer, a Skill Boss Manufacturing Trainer with Hand Tooling package, a Creaform Academia 20 Scanner Package, a LJCreate Injection Molding Trainer, and LJCreate Engineering Construction Kits.

New Auburn School District, Chippewa County | $15,645

The New Auburn School District will use grant funds to purchase a Haas Mini Mill EDU Vertical Machining Center, with coolant pump kit and software, for its CTE facility.

Continued on Page 24

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BAY LINK MANUFACTURING

A Partnership Linking Education and Manufacturing

Green Bay Area Public School District

Bay Link Manufacturing® is a high-precision manufacturing learning lab equipped to complete projects for local companies in the areas of industrial welding, machine fabrication, and metals. Students learn about the business of manufacturing through sales, marketing, accounting, production planning, bidding and purchase orders, and customer service. Bay Link Manufacturing® immerses students in relevant, real word experience in high tech careers in manufacturing, engineering, marketing and business.

The program was founded seven years ago by Green Bay Area Public School District, Northeast Wisconsin Technical College (NWTC) and the NEW Manufacturing Alliance. Students receive high school credit as well as college credit from NWTC upon completion of the program

Bay Link Manufacturing® Coordinator Andy Belongia runs the program. Belongia has some strict requirements for Bay Link Manufacturing: he requires the potential group of juniors and seniors to submit a resume and

cover letter to be a part of his class. "Students learn how to machine things, learn how to operate CNC machines. They're learning how to weld, and fabricate," said Belongia.

Based on how well the Bay Link Manufacturing® business does each year, students are eligible to receive a profit-sharing scholarship for their work in the program. "The student scholarship component of Bay Link really teaches our kids responsibility, and the cause and effect of a job well done," said Belongia

"Bay Link is capable of full service. The students provided design services and shop drawings right through fabrication. Using Bay Link gives us an opportunity to help us control some of our costs while also building skill in the community." Bay Link customer

Belongia expressed his excitement for a new laser engraver purchased through grant funds for the West High School Technical Education Department. "The laser engraver will be a great learning tool for our students," Belongia said. "Companies typically like to have their part numbers engraved directly on the part, and this piece of machinery will allow us to do that for our customers."

Belongia hopes to connect with more local companies to show them what Bay Link Manufacturing® has to offer. "Sometimes when company representatives tour our shop, they are surprised at the equipment capabilities, the machines we have, and the abilities of our students to complete real-world work," said Belongia. "Our shop contains quality industrial equipment which allows us to produce products efficiently, accurately and at a competitive cost."

Students enrolled in Bay Link Manufacturing® are typically prepared to attend a 2- or 4-year college to pursue education in the field of manufacturing and engineering or may be prepared to enter the world of work in an entry-level position. To learn more about Bay Link Manufacturing®, visit gbaps.org/baylinkmanufacturing. To contact the shop regarding a business opportunity, email sales@baylinkmfg.org.

www.gbaps.org

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Kickapoo Teacher, Students Find Passion in Tech Ed

As a technology education teacher, Ken Krings enjoys finding innovative ways to reach his students.

Krings, in his 21st year of teaching at Kickapoo High School, said one of the things he likes most as a teacher is to facilitate learning through a hands-on approach.

"I want my students to be problem solvers and free thinkers," Krings said. "I hope that the exposure to these skills piques an interest that leads to further exploration and subsequent skill development. This can sometimes culminate in attending further training at a technical college or a four-year university, and sometimes straight into the workforce."

It's that same teaching goal that has not only helped his students learn, but also grow as learners.

"Tech ed has given me leadership abilities that I can utilize in other classes," Kickapoo junior Helen said. "I've learned great measures of independence that come into play in other aspects of my life. When working in the shop, you are expected to both rely on Mr. Krings when necessary, but also learn things on your own and grow individually."

For Krings, being a teacher is more than a profession. He said he takes pride in observing students start with an elaborate design, and witnessing them work to create something unique.

"Some students I work with hate school, but they love tech ed and being in an environment that allows them to use experiential learning to make real world connections," Krings said. "I like the fact that we can take ideas, turn them into drawings and learn the tools and skills needed to make it a reality. In this process, kids learn to research and identify a problem, plan solutions, create prototypes, test and evaluate, and improve the final product. Most students who give shop classes a try really find joy in making a product from a drawing."

From using different techniques to make metal signs, to edge and end grain cutting boards, to a wooden desk, Krings' students are never bored or short on learning experiences.

"It's a great way to be hands-on and learn about the real world," Kickapoo senior John said.

After a year in college and unsure about what he wanted to do with his career, Krings took the advice of his uncle, an art teacher at the time in Antigo, and switched programs to technology education. The rest is history.

"Being a tech ed educator allows me to expose students to these different vocations that they may have never thought about pursuing," Krings said. "We need these skilled tradespeople to come into schools and do presentations to our students."

Article courtesy of WI DPI

kickapoo.k12.wi.us

Advanced Manufacturing Technical Education Equipment Grants

Continued from Page 19

Cedar Grove-Belgium School District, Sheboygan County | $50,000

The Cedar Grove-Belgium Area School District will use grant funds to purchase an industrial CNC Mill and an industrial HVAC Learning System to launch two credit-aligned CNC and HVAC career pathways at the district's new Rocket Academy Charter School, a regional advanced technology training center serving Sheboygan and Ozaukee counties.

Westby Area School District, Vernon County | $10,305

The Westby Area School District will use grant funds to purchase an Amatrol Skill Boss Mechatronics trainer that will introduce students to Industry 4.0 and lead to industry-recognized certifications from the Smart Automation Certification Alliance (SACA).

Unified School District of Antigo, Langlade County | $50,000

The Unified School District of Antigo will use grant funds to purchase a Scotchman Model D095/140-24M Ironworker, two TRAK K3EMX Knee Mills, and a HAAS ST-10 CNC Lathe to update its metals lab and department.

Fall Creek School District, Eau Claire County | $38,840

The Fall Creek School District will use grant funds to purchase a FANUC CERT Fenceless mechatronics cart to teach foundational industrial robotics with the ability to certify students through the Smart Automation Certification Alliance (SACA) and the National Occupational Competency Testing Institute (NOCTI).

Northern Ozaukee School District, Ozaukee County | $12,835

The Northern Ozaukee School District will use grant funds to purchase a FANUC LR Mate 200iD/4S Fenceless CERT Cart to enable the study of robotics and automation.

West Allis-West Milwaukee School District, Milwaukee County | $44,540

The West Allis-West Milwaukee School District will use grant funds to purchase eight Haas-Desktop CNC Mills and twelve Thimble robotics classroom sets of kits to provide students with CNC operations experiences.

Article courtesy of the DWD

West Bend East and West High Schools Manufacturing Classes

Nancy Kunkler
Communications Manager
West Bend School District

The Introduction to Manufacturing class at West Bend East and West High Schools in West Bend, Wisconsin gives students a view of what is offered as they learn how to work with metals and plastics and create items such as a hammer, key chain, and thread gauge. This "taste" of what manufacturing classes and experiences has to offer is quite good as a number of students choose to add to their discovery of manufacturing and take advantage of the great depth in the East and West High Schools' program. In fact, completing the classes can put them on a direct path to a technical college degree and/or a high-paying job upon graduation.

The goal of the East and West High Schools' Introduction to Manufacturing class is to teach students how the raw materials are made and how to process them. Students also gain experience with cutting, grinding, and machining. They learn to use manual equipment such as milling machines, lathes, and drill presses while also learning to work with CNC-controlled milling machines.

When they move on to Advanced Manufacturing and Design and Automation in Manufacturing classes, the learning moves to a new level by increasing the knowledge of basic machine tools, such as the mill, lathe, and drill press and adding more. The students also learn new processes such as plasma cutting, machining, injection molding, and casting. They also learn the basic process of programming a CNC machine using G and M codes.

After completing the manufacturing classes, students are eligible to take the Manufacturing Capstone course, which is designed to give students exposure to the production pathway of manufacturing. Students work in small groups to simulate small business enterprise and production manufacturing, even selling their products.

While in high school taking these courses, students can earn transcripted credit through a local technical college. In several cases, students have earned numerous credits towards a technical degree before graduating from high school.

Students are invited to display their skills and enjoy competition through participation in the Skills USA and Bots IQ clubs. Bots IQ allows students to create a robot using engineering, manufacturing, and design. They compete against other student-made robots in order to see which robot survives.

The main goal of Skills USA is to help establish a skilled workforce. It partners students, teachers, and industry officials to hold competitions related to a variety of areas in technical education.

The numerous partnerships that staff of East and West have established help immeasurably. Whether it is donating materials or funds, offering training, or supplying expertise and guest speakers, manufacturing and engineering partners are key to this successful program.

East and West students in 11th or 12th grade can complete a Youth Apprenticeship that integrates school-based and work-based learning to instruct students in employability and occupational skills defined by Wisconsin industries. Students are simultaneously enrolled in academic classes to meet high school graduation requirements, in two youth apprenticeship related courses, and are employed by a participating employer under the supervision of a skilled mentor. Upon successful completion of the one- or two-year program, students will receive a high school diploma, technical college credit, and a state certificate of occupational proficiency in the related industry.

As an integral part of the robust Career and Technical Education program of West Bend East and West High Schools, manufacturing classes offer students not only an understanding of the important role of manufacturing, but also ensure these students have

the skills to apply in a variety of skilled trades or post-secondary education.

west-bend.k12.wi.us

21 Wisconsin School Districts Awarded Fab Lab Grants

Continued from Page 1

Bowler School District – $25,000

A groundbreaking ceremony was held May 31st for a 3,800 square foot Tech Ed addition that will feature a new auto and metals lab and a 4,500 SF Agricultural addition featuring an aquaponics lab, greenhouse, and additional farm resources.

School District of Elmwood – $25,000

Joint School District Number 8, Village of Fontana, Towns of Delavan and Walworth (Consortium) – $32,399

See page 4 for the story about Fontana Elementary

School District of Iola-Scandinavia – $25,000

"This grant will provide our students and community with upgrades to our Technology Education classroom. The upgrades will give our students opportunities to develop the skills needed to succeed in today's workforce." Ray Przekurat, District Administrator.

Kewaunee School District – $25,000

The Kewaunee District will use the grant money to upgrade some of its technology education equipment and purchase new equipment. This includes an improved plasma cutter, engraver and screen printer. The district also was planning to create a student-run school store and improved or new technology equipment may allow students to print T-shirts. and other equipment, to cut plates and engrave. items that could be sold in the store.

Lake Mills Area School District – $25,000

The director of teaching and learning said not only will the fab lab grant provide more opportunities for students already enrolled in the technology and engineering programs to use updated technology they may use in a future career, but also help grow the program and get more students to enroll in those courses. *"We want to just really widen the scope to let kids know there are so many different careers out there in the field of technology and engineering. This is really giving them real world application and can lead to youth apprenticeship and work experience for them; they can earn certifications so they can further their career."* – Lake Mills Leader

School District of Manawa – $25,000

School District of Mauston – $25,000

This is their third Fab Lab grant! Mauston added a Fab Lab 1 course after receiving their first grant. This course focuses on basic designing and learning to use machines such as laser engravers, 3D printers, CNC routers and vinyl cutters. After receiving their second grant, Fab Lab 2 and Golden Eagle Enterprises courses were added. Fab Lab 2 expands on designing and adds a vinyl printer, CNC plasma cutter, dye sublimation, with the option of use of a programmable embroidery machine. Golden Eagle Enterprises (G.E.E.) is a student-run business where students apply what they have learned from Fab Lab 1 & 2 to create custom products for local people and businesses. Some of the products created include vehicle decals, road signs, custom storage boxes and various banners. Business students are also a part of the G.E.E. class and help take care of tasks such as advertising, ordering materials, creating invoices, estimating costs, and more.

Milwaukee Board of School District – $25,000

New Auburn School District – $24,963

School District of Omro – $25,000

Last year, the Fabrication Lab used by middle and high school students tripled in size in a relocated space, with new furniture and equipment funded by referendum dollars and grants from national STEM awards.

School District of Phillips – $25,000

Phillips students now have a new technical education wing thanks to a successful referendum. The wing is part of a new two-story addition to the school's east side. *"It's a great opportunity for our teenagers to be exposed to things our own community offers as opportunities for work, with really well-paying jobs right in their own town,"* said Phillips School District Superintendent Rick Morgan. – WXPR

School District of Pittsville – $25,000

The 2021–22 school year brought the opening of our new Career and Technical Education (CTE) Facility, students were excited to learn, design, and create. A few highlights from last year include new machinery for students to utilize, multiple large sign projects designed and constructed by the Manufacturing class, new welding tables fabricated by our welding students, a variety of creative projects by our Women in Tech. Ed. students, and multiple projects completed by our Building and Construction class.

As we look forward to the 2022-2023 school year, the technology education department is excited to announce that we recently received a Fab Lab Grant from the Wisconsin Economic Development Corporation (WEDC) to officially create a Fab Lab at Pittsville School District. The grant will provide resources and opportunities for students to continue to learn hands-on skills with state-of-the-art equipment.

School District of Prentice – $25,000

School District of River Falls – $25,000

This is the second year the School District of River Falls received a fab lab grant from WEDC. Last year's Fab Lab grant helped to support the purchase of three Tormach 770MX milling machines at the high school.

"We are grateful and excited to be recipients of this grant, said Melisa Hansen, SDRF college and career readiness coordinator. "This current grant, along with $10,000 we received from the AnnMarie Foundation, will allow the purchase of a Tormach 15L Slant Pro Lathe. These items will help complete our Fab Lab at RFHS and allow for us to embrace current manufacturing trends and empower students and members of our community to learn more about the advanced manufacturing industry and the vast potential in that field. "

St. Francis School District – $25,000

The St. Francis School District Fab Lab is located at Deer Creek Intermediate Schools. The lab allows students to create and manufacture prototypes to enhance lab work in the study of science, technology, engineering, art, and mathematics. Additionally, the Fab Lab increases the design and manufacturing capacity of the St. Francis School District (SFSD) Robotics Team comprised of students in grades 4-12.

Stoughton Area School District – $10,667

Fab Lab Stoughton is located in Stoughton High School and opened to students in 2013. A state-of-the-art makerspace, the Fab Lab offers courses to students, as well as workshops for community members. It is the first public high school in Wisconsin and second in the nation to have a lab entirely dedicated to makers grades 9-12. The facility features equipment for all matters of making, including 3D printers, laser and vinyl cutters, electronics, woodworking, and more.

School District of Three Lakes – $25,000

School District of Turtle Lake – $25,000

Waukesha School District – $25,000

The 21 public school districts are receiving a total of $508,030 in Fab Lab Grants from WEDC. Individual school districts were eligible for up to $25,000, and consortiums of two or more districts were eligible for up to $50,000. The program requires matching funds from each district.

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

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

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SCAN ME

Here They Come! Potosi Students are Learning "Real-World" Skill Sets

Potosi School District

Technical education instructor, Dakota Bockenhauer, came to the Potosi School District (PSD) in January of 2018. The Tech Ed Program and facilities were in a kind of stasis. By the end of his first semester, the importance of the program itself and the need to have the ability to produce career-ready students was evident.

In 2019 a referendum was passed with the support of the community, and the district began updating. The Tech Ed facilities were remodeled with new flooring and wall coverings, electrical, lighting, exhaust, plus other utilities. Student workspaces were reworked to maximize safety and efficiency.

They added to and replaced the existing equipment lineup to include state of the art equipment readily found in industry. PSD also received a Fast Forward Grant that allowed them to add computerized and automated machining to the program. This included 3D printers, laser engravers, a vinyl cutter, a CNC router table, and a CNC plasma table.

Project Based Learning (Project Management)

Students begin with what Dakota calls the core shop courses. These include Woods, Metals, Welding, Mechanics, and Structures. 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. For example, Woods students will design and build a keepsake box to highlight certain tools and joinery techniques. Metals students will demonstrate their knowledge of different metal properties by milling metal by both mechanical and chemical means. Welding students develop their metal cutting skills by constructing welding fillet gauges that they'll use as they develop their welding skills.

"I like using a wide array of projects that emphasize certain skills and tools. This gives students more time in the shop and more practice to turn knowledge and know-how into a physical skill set," says Dakota.

Students in Robotics or Engineering Design focus more on the engineering design life cycle. Again, students are armed with basic techniques and theories and are given opportunities to turn them into skills through guided projects. Then students display their skills through projects like engineering, constructing, and coding a robotic pancake printer or perhaps by creating a 3D printed prototype in Engineering Design.

Getting ready to work in the "Real World"

What about soft skills? Working with the public? Deadlines?

Opportunities like these come through Dakota's advanced courses such as Advanced Shop or Project Management.

"Here we begin with skills like researching, designing/drafting, constructing a project schedule, constructing a bill of materials, budgeting, pricing, and other "behind the scenes" of constructing a project. At this point it is all about making the connections and carrying those over from student's other courses."

Students then head to the shop to execute their plans.

In Advanced Shop, students are able to work on their own projects. A lot of students use this time to design and build a larger piece of furniture they may cherish for the rest of their life. Some use it as time for maintenance or upkeep on equipment for their own or families' farms or businesses. Some even use the time to work on projects they themselves will sell.

In Project Management, students follow the same format, but students work as a company (group) to give a product or service to a customer (public, school, etc.). Requests and opportunities to work with those around the area are a constant. "We have had the privilege of doing work for our school, our community board and committees, our local businesses, our local residents, and even other schools," said Dakota.

Students form their companies and are given a project that was requested. Students compose a design and bid for the project. They then propose these to their client, make any needed changes and begin construction once an agreement is made. When the project is completed, students make out an invoice and compose letters detailing and thanking the customer for their project. The program has completed a wide array of projects in the past including shepherds' crooks to sell in conjunction with the FFA plant sale, marquee letters for the junior class, a memorial bench for a local resident, welding job boxes for a local business, tourism props for our chamber of commerce, and signage for a neighboring school.

In the rare event they don't have a current project in motion, student companies construct proposals of interests such as constructing a public swimming pool complex for our community. Students really enjoy these classes and opportunities plus it's a great way for them to interact with those around them.

College and Career Ready

Dakota shared this – "My goal is to make student as college and career ready as possible. I think industry approved certifications and youth apprenticeships are a great way to do that. We currently offer Snap On and Starrett Precision Measurement Certification in our Metals class, the Brotherhood of Carpenters Residential Carpenter Level 3 Certification in our Structures class, and Briggs and Stratton Master Service Technician in our Mechanics class. We are also currently working on a certification to be added to our Robotics course. These certifications give specialized skills and resume highlights to students pursuing either college or a career alike. 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."

"Career and technical education programs focus on ever changing industries. It's important our courses and programs continue

Continued on Page 32

Warhawk Manufacturing

Technology and Engineering Education Dept.
Arrowhead Union High School

Warhawk Manufacturing is located in Arrowhead Union High School in Hartland, Wisconsin. This student-run business is a "small job" shop that makes products for the school, the community, and its business partners. At the completion of the senior-level capstone course, students are given a manufacturing scholarship to use for the next level of education or tools for the workforce. This course is unique to Arrowhead as it allows for students to experience business from different perspectives as they work throughout the year for the student-run company and for themselves.

Like most who experienced the shutdown of 2020, we were forced to adapt and use different methods to produce work and educate our students. The instructors, Anthony Christian and Jeff Luetschwager coached the students to develop their own businesses through the platform of Etsy. Each student created their own product that could be made from their home, marketed, and sold through their Etsy website.

The students launched their businesses in late October of 2020. Several students found great success in this model. Their drive, passion, and dedication to their work were clearly evident and it provided powerful teaching opportunities for the instructors.

One of the students, Jack, launched his site on a Friday afternoon and by Monday had 3 orders for his firewood rack. At the time, he was virtual and asked Mr. Christian for advice through Zoom. "Mr. C. I have some good news! I have three orders!" "Really! Where to?" Mr. Christian said. "My neighbor, Indiana, and New York!" "That is awesome! What's the problem?" "I don't know how to ship them there?" What a great learning experience! After re-engineering his original design and coaching him through the shipping process, he took his original design which cost $924 to ship to NY, his knockdown version shipped for $56 and allowed him to make a profit. This is one of several success stories they have had. Students have seen this opportunity, and the potential it has. They have taken ownership of it.

Not only do they work for themselves, but they work for the student company as well. They research, design, produce, market, and sell items such as garden art, outdoor furniture, and seasonal items. They also plan, schedule, engineer, order materials, provide customer service, package, ship, and do all of the accounting for the business. They run as much of the business as possible and are overseen by the instructors who act as CEOs, mentors, and advisors.

They also work with business partners to produce low-volume, non-sensitive parts.

One of the students, Kyle, who is a laser operator just completed his first order of 1000 parts for D&H. The part is a supplement to their crosswalk panels that they produce. "We can't thank them enough for providing the opportunity to bid on a job, back-plan production, produce and meet deadlines, and fulfill the order. Real work is the best way to teach some of these real business skills." said Anthony Christian. Timelines, schedules, routings, communication, and teamwork all come into play in order to meet the demand. "This has been a wonderful opportunity for our students as they are learning things that I cannot replicate or simulate in the classroom. They are experiencing it first-hand and working through the day-to-day challenges a business has."

Arrowhead's administration has been very supportive by dedicating two tech ed teachers to this course. Each instructor has their own expertise and are able to mentor and coach students to be successful employees as they tackle the projects presented to them. This aids in supervision as some students go off-site, work in different labs and require machine training. That expert can work one on one with them to get them up to speed so they can work independently.

Warhawk Manufacturing Website: https://warhawkmanufacturing.ecwid.com

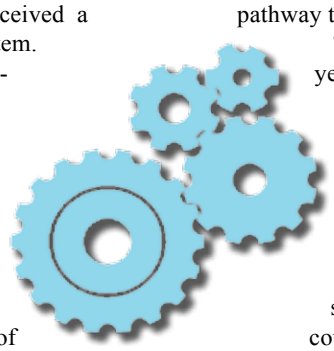
arrowheadschools.org

Racine Case High School Helps Fill Skills Gap with SME PRIME

Racine Case High School in Wisconsin may have been forced to delay implementation of its SME PRIME (Partnership Response in Manufacturing Education) program due to COVID-19, but the school has been making up for lost time.

In the past year, Racine Case has formed a machine-repair career pathway, implemented new courses and received a Festo equipment training system. In addition, a representative of Butter Buds — a Racine food manufacturing company that is also an SME PRIME partner and donor — visited one of the school's manufacturing classes. And in May, a dozen students visited the local production facility of another PRIME partner and donor, E.C. Styberg, a leading manufacturer of drums, rotors and hydraulic components.

According to Scott Wyma, technical education teacher at Racine Unified School District, The Academies of Racine at Case High School, it all started about three years ago. That's when a representative of SME PRIME contacted Wyma and they began talking about implementing the PRIME program. The SME Education Foundation then conducted a survey of manufacturing employers in the Racine area to find out what local companies were looking for in employees. After compiling the results, Racine Case decided to switch from a CNC-based career pathway to a machine-repair pathway.



"This year is the first real year of implementation as far as classes go," notes Wyma. "Last year, we were finishing up passing through all the students who had been in the CNC pathway, getting that done and out of the way. This year, we started with a couple of courses that we're going to use for our pathway now." Those courses are Mechatronics, taught in Racine Case's first semester, and Mechanical Skills, taught in the second semester.

Describing the Mechatronics course, in which about 30 students are enrolled, Wyma says, "What we do is construct programmable logic controls on a computer program. Then we have some small machinery apparatuses that we plug into and make it operate."

The second course, Mechanical Skills, is a hands-on industrial machinery lab where students — 17 in the 2021-22 school year — put together and take apart different Festo systems, working with chain drives, belt and pulley drives, and gear drives. "We learn how to make calculations so that we can come up with the belt sizes and chain sizes," says Wyma. "We can calculate speeds and torques, and we have a unit here where we put everything together. The students learn how to align everything properly, gauge it all and make sure that things are working as they should."

Wyma has firsthand knowledge of putting together and taking apart mechanical systems, having worked in various industries in manufacturing for close to 35 years. "I ran a couple of different machine shops and I worked for some larger companies," he says, noting that along the way he earned an industrial engineering degree, a business degree, and a master's degree in employee training and development.

According to Wyma, his hands-on background provides him with an advantage when it comes to his training-related responsibilities at Racine Case. "When I was in industry I did a lot of on-the-job training, so that's where my hand works out pretty well," he says.

Wyma is looking forward to next year, when the high school's previous career pathway, CNC, will have been completely phased out and machinery repair will become the primary focus.

In the meantime, this year has been a critical one for the program, as the school was again able to bring students into a physical environment for hands-on labs after essentially missing a year due to COVID-19.

Now that in-person labs are up and running again — and students have the opportunity to earn certifications — Wyma looks forward to helping fill the area's manufacturing skills gap in the not-too-distant future. Of his PRIME students who are currently sophomores and juniors, he points out, "The majority are going to be going into industry."

Article courtesy of the SME PRIME Foundation

www.rusd.org

Fitting the Growing Manufacturing Needs of the Future in Fall River

Brian Anderson
Technology Education Teacher
Fall River School District

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

In the first 15 years, we slowly added engineering software on ten computers. We secured the donation of a metal lathe and milling machine to expand our program to machining as well as welding and fabrication. We also purchased a computer numerical control (CNC) wood router, and CNC plasma cutter to give students experience in programming CNC machines. In addition to the renovated shop areas, the district did purchase the community's retired fire station. We then were able to utilize part of that building to move our small engines and automotive workshop to this new space which increased our square footage for our manufacturing area, but we were still in need of a dedicated shop area for wood fabrication.

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

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

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

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

www.fallriver.k12.wi.us

Brown Deer — A Rich History of Teaching in the Trades

Courtney Krueger, Communications and Community Coordinator
School District of Brown Deer

Change and growth are the common themes for Brown Deer High School's Career and Technical Education (CTE) program. BDHS prides itself on growing its program based on the current demand of the trades industry. Our program allows our students an opportunity to experience the possibilities of a local, highly skilled career. Our CTE program at Brown Deer is set up to help graduating seniors prepare for today's job demands. While exposing students to different trades and industries, they will be able to choose a career path that fills them with joy and provides a comfortable income.

Brown Deer has always had a rich history of teaching in the trades. Our high school began with traditional woodshop classes centered around carpentry. Years later, an automotive shop was added to the high school. The high school auto shop thrived as many community members and staff serviced their vehicles through our shop. We started our first partnerships with local auto shops as they hired our students as interns and who later became employees or colleagues in the automotive industry. Brown Deer at the time offered ten courses to high school students in automotive, woods, construction and carpentry.

As the need for tradespersons in manufacturing increased, our then superintendent, Dr. Deb Kerr, created a space for a metal fabrication lab in the 2018 referendum. In this lab, students are trained in various metal fabrication machinery. This lab is where our students learn to weld and even build motorcycles. The addition of this program has also created partnerships creating more opportunities and career paths for our students.

During the referendum, equipment and classroom spaces were reconfigured to maximize hands-on learning and to ensure space for added machinery in the future. We also upgraded the HVAC system to increase the exhaust capabilities. With reconstructed classrooms and tech spaces, the facilities were able to accommodate more classes, including middle school. Brown Deer added 7th and 8th grade tech ed courses allowing younger students to be exposed to the manufacturing equipment.

The goal of adding real life manufacturing experiences came with the need to add machinery. Brown Deer was the recipient of two (2019 and 2020) state grants totaling $50,000 to fund new fabrication laboratory (fab lab) facilities funded by The Wisconsin Economic Development Corporation (WEDC). Fab Lab grant in 2019 has supported the purchase of start-up equipment within the Fab Labs including 3D printers, a 3D Milling Machine and a laser engraver. The District provided matching funds to purchase: zSpace Laptops and software (AR/VR laptops that can be used in Science and Trades/Manufacturing); a CNC Machine; Vinyl Cutting Machines; a 3D Scanners. The 2020 award allowed Fab Lab equipment to purchase to support student-driven, hands-on inquiry-based learning. Additionally, the district invested in a Knee mills with ProtoTRAK conversational CNC controls, engine lathes ProtoTRAK conversational CNC controls and a hydraulic sheet metal shear. This new equip-

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Inspiring, Training, and Guiding Youth to Be Extraordinary

Robert Judson, Riverside Machine & Engineering, and Metal Craft

Do you remember back when you were seventeen?

Of course, some of us might have to remember harder than others, but I can guarantee you that there is one question you were asked, "What do you want to be when you grow up?" This question, for some, can be a daunting task to answer. Although being put on the spot and asked to give an answer to one of life's biggest questions is almost a rite of passage, there is not always a straightforward answer. Everyone from your teachers, friends, and even that aunt who wears too much floral perfume want to know what great things you will do in the future.

For the past few years, **Riverside Machine & Engineering,** and **Metal Craft** have been at the forefront of setting Wisconsin youth up for success and discovery.

Riverside Machine & Engineering, along with our sister company **Metal Craft**, have been a leader in manufacturing industry for over 40 years in the fields of aerospace and medical manufacturing. We do everything

I really like the people I work with and the stuff we make is cool.
—Kylee, Youth Apprentics

from CNC Machining, wire EDM, vacuum aluminum brazing, and more.

You might want to know about our people and our passion — and the fact that if you have a passion for machining and engineering, for service and excellence, for precision and innovation, you're going to get along pretty well with us. This passion was the personal philosophy of Jack Mowry — Captain Jack — our founder and original CEO. Jack knew machining, he knew craftsmanship, and if someone said something couldn't be done, he knew they were wrong. Today, Sean and Trisha Mowry continue these values into the next generation of Metal Craft and Riverside.

We have a history of partnering within our communities in Eau Claire, WI and Elk River, MN and into the Twin Cities. We have collaborations with everything from K-12, to youth programs, to our community technical schools and colleges such as Dunwoody Institute of Technology. We embrace introducing the manufacturing of today to learners of all ages, from pre-teen through to adults looking for a new opportunity.

Riverside Machine & Engineering has partnered with the Department of Workforce Development's Youth Apprenticeship program. YA allows Junior and Senior High School students the opportunity to build skills, college credits and get paid while in the program. In addition, we provide first-hand, real-world experience that can help determine and develop a student's passions and skills.

Riverside Machine & Engineering currently has five students working in all areas. One of those students is Kylee; she started YA and plans to attend a technical college for welding and prefabrication after graduation. I asked her what she thought of the program so far. *"I knew I wanted to get a job in manufacturing or prefabrication. I want to be a welder, and I plan on going to the technical college for welding and prefabrication; this job has been a good fit. I really like the people I work with, and the stuff we make is cool."*

Riverside Machine & Engineering's Elisia Gonsowski, Human Resource Generalist, shared this, *"One benefit of YA is that it is a good opportunity to introduce high school students to manufacturing. YA's usually start at Riverside as floaters. Floating gives students real-world exposure to different areas of the manufacturing floor. Students can then share their experiences with other students and create more interest in manufacturing."*

We hope that as students work with us, they take this passion for doing impossible things with them. We are very proud of our students and look forward to being a part of a future we can build together.

If you are interested in the YA program or want to know more about an exciting career with **Riverside Machine & Engineering** or **Metal Craft**, visit us at https://mcandrs.com/ or call us at 715.726.2066

Potosi Students are Learning "Real-World" Skill Sets Continued from Page 28

to change with them. We continue to make plans for new additions and remodels to our already new facilities and equipment, so we can keep up with this ever-advancing industry. All as we continue to strive to better our program and our student outcomes."

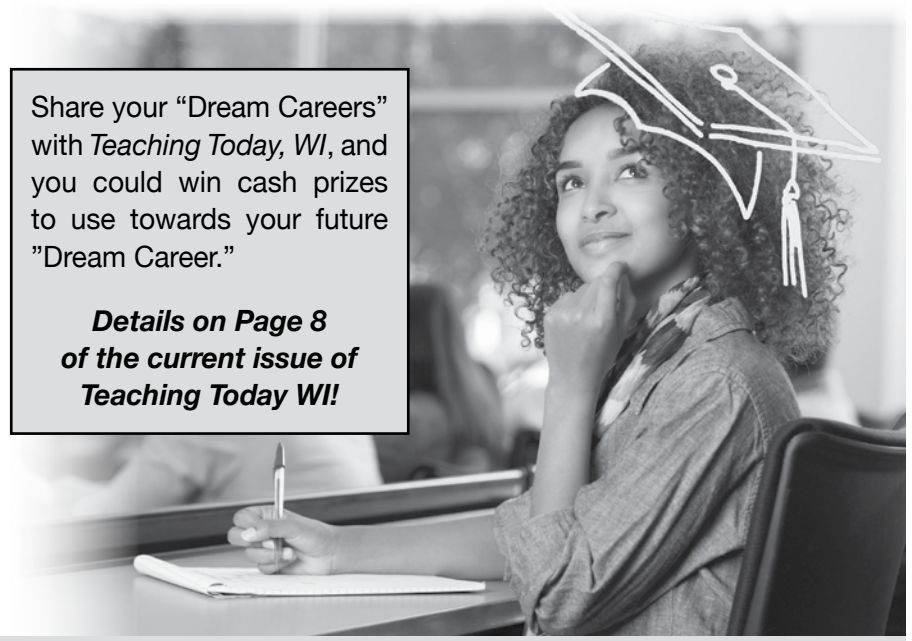
Kurt Cohen, Superintendent "Our tech ed program is an integral part in our overall system to help our students become career and college ready. While some may still think of technical education as an alternative to a 'regular education' tract, we know that in reality, tech ed works hand-in-hand with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

Brent Curtis, local business "The Potosi Tech Ed program is a great program that is preparing students with lifelong skills. Gondola Train sends our job boxes to them to be bent back to original shape, welded back together, and painted. Their high quality and efficient work on the job boxes exceeded our expectations."

potosisd.k12.wi.us

ENTER OUR 2022-2023

DREAM CAREER ESSAY CONTEST



Share your "Dream Careers" with *Teaching Today, WI*, and you could win cash prizes to use towards your future "Dream Career."

Details on Page 8 of the current issue of Teaching Today WI!

Deadline for submissions is January 9, 2023, at 5:00 pm! Submit your essay soon!

D.C. Everest's Everest Enterprises Simulates Running an Actual Metal Fabrication Business

D.C. Everest Area School District

In 2020, the D.C. Everest Senior High launched a new hands-on learning opportunity for students — running a student-operated custom metal fabrication business as part of a year-long course. The DCE Enterprise course was developed by Technology Education instructor Steve Kmosena who has a background in welding and machining. "The course is designed to give students a full-scale experience in running a small business. They form a business plan and carry it out for the school year," notes Kmosena. "Students are exposed to every aspect of a small business. They order raw materials, manage receiving, bookkeeping, billing, production and fabrication, finishing, and shipping. I try to ensure every aspect of the class mimics what is happening in the industry today."

When the course was first offered two years ago, students assumed a leadership role in launching the business — known as Evergreen Enterprises — itself. Besides creating a business plan, they designed a company logo, built a presence for their business on social media, and developed a website. The student-led marketing efforts and high levels of customer satisfaction have created a robust school-based business enterprise that produces everything from custom metal signs, decorative garden waterfalls and fire pit grates to picnic tables, trailers, benches and aluminum truck topper cargo hauling baskets for organizations, families and businesses across the nation.

One of the most compelling aspects of the course is that students can concentrate on advancing their skills in a particular portion of the business that is of most interest to them. While all students learn about the entire enterprise, "each of them will get a different takeaway from this course because they're all focusing on something different. Each will have an experience unique to them," he adds. Students can focus on product design, CNC manufacturing, finishing and coating, welding and fabrication, shipping and receiving, website development, advertising, marketing and finance.

Steel fabrication services and a machine shop to produce custom machine parts were added recently." This expansion has broadened their clientele and the product design and manufacturing opportunities for students. With those opportunities, of course, come new challenges. As the enterprise has expanded beyond custom metal signage, students have had to address the problems posed by repairing trailers on behalf of clients, designing custom aluminum cargo hauling baskets for trucks, building utility trailers and more. When students produced their first truck cargo hauler Kmosena observed, "It took a bit of learning and trial and error, but it turned out great. That's the whole point of this course — to create learning opportunities where they make an end product. If students just stand in a booth and learn how to weld, they begin to question 'why am I here?' But when they learn the skill and can apply it to something, it's a very different experience."

Another benefit of the student-led enterprise is the relationships built with local manufacturers and businesses. One example of that is when Evergreen Enterprises assisted the Bridge Street Mission in their efforts to launch a welding training program for those they serve. Kmosena assisted them in tracking down the materials they needed to launch the program and the Everest Enterprise students built a custom welding table and donated it to the Mission. "It was our way of helping the Mission promote welding and manufacturing, and help individuals gain employment skills."

Custom welding table for the Bridge Street Mission

Asked for his thoughts on the progress the student enterprise has made since 2020 he adds, "I'm really pleasantly surprised that it's going as well as it has. The enterprise has gotten off the ground much faster than I expected and every aspect of the business is running well. It's a credit to our students because they handle every single aspect of this business — working in the office, managing our finances and IT, creating our advertising and marketing, overseeing shipping and customer service, and producing the custom designs for our customers."

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

For more information, visit:

- Facebook: DCE.Enterprise
- Twitter: @DceEnterprise
- Instagram: DCE.ENTERPRISE
- Website: https://dceenterprise.weebly.com

www.dce.k12.wi.us

Cardinal Manufacturing Writes the Book on Tech Ed Success – Seriously!

School District of Eleva-Strum

Located in the School District of Eleva-Strum is a tech ed program that is the definition of success. They have been operating this student-run manufacturing business out of their technology education department for the past 15 years. Its name is Cardinal Manufacturing.

The shop runs like a well-oiled machine. Jobs flow in at a steady rate. Students are stepping up to leadership responsibilities. The younger students are getting excited earlier about Tech Ed class, hoping that they, too, will make it into the program. This excitement has boosted both attendance and grades across the board. Oh, and BTW, it pays for itself too.

It wasn't always that way.

In 2006, the shop laid in much the same state that many school shops have struggled in. Underequipped and out of date, the shop needed to catch up with the times. The machinery that was there needed a tune-up. Some pieces needed cleaning; others, replacing, and many pieces weren't even there. The lighting was awful, heating was questionable, and air conditioning was unheard of.

Then Craig Cegielski accepted the job as Tech Ed Teacher.

Cegielski had a mission. He'd come to plant an idea in this place, and with dedication, effort, and a love of getting his hands dirty, he would spur this program to new heights. Cegielski spent many extra hours bent over a worktable late in the night to meet deadlines. At other times, he was out in the community building partnerships with the local businesses.

It's all paid off for him and the district. Today, his program has become a nationwide epitome of what can happen in any school shop, with the right blend of work and ingenuity.

Every year, Cardinal Manufacturing seniors are graduating with priceless experience that can't be taught in a classroom. These seniors enter college with the experience of running a business under their belt.

"Students in Cardinal Manufacturing are the cream of the crop." Cegielski states. "We only take the best. People wanting to get in need to go through an interview process, just like at a real business, and our admittance is limited."

This rigorous admission procedure may seem like a chore to some, but one student sees them much like the Pearly Gates. "It's like judgment time, to see whether you make the cut. Do you get in or don't you? I mean, once you make it, it's like any shop student's dream. To work during school . . . for a paycheck." It's true. Students do get a part of the profit.

It's clear why only the best get into this prestigious program. Responsibility is key. "These projects are not just something they're turning in for a grade." Cegielski explains. "They've got the paycheck to work for. If they mess it up, they're the ones in the truck going for more material, they're the ones staying after to get it finished, and in the end they'll have to look that customer in the eye whether they finished his work order or not."

And now there's a book.

Cardinal Manufacturing has a new book, Dream Big. Have Fun. It is now online on studentrunbusiness.com and soon will be added to cardinalmanufacturing.org. The book takes a look inside this established program and 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.

Cardinal Manufacturing, as this student run business was christened 15 years ago, is a glowing example of Tech Ed success.

esschools.k12.wi.us

Upcoming Workshop!

This model of education that Cardinal Manufacturing presents is working extremely well and many schools visit each year with plans to replicate. A student-run business gives students real-life work experience and teaches them both the in demand technical skills and the very valuable employability skills, while funding the program.

Come join school administrators, instructors, students and industry leaders to learn how this program works and how you can start your own student run business. The next all day workshop, Starting or Growing Your Student Run Business will be held on April 20th, 2023.

Please visit our website www.cardinalmanufacturing.org for more information.

Cardinal Manufacturing's core values are the Nexen ***Ten Commandments of Career Success:***

- **I.** Be Positive — Attitude is everything
- **II.** Show Up — On time, every day, reliably
- **III.** Work Hard — Earn your keep, get something done
- **IV.** Get Along — Play together nice in the sandbox
- **V.** Pay it Forward — Do more than is expected today, and you will receive more than you expected
- **VI.** Be Flexible — Willingly take on different tasks
- **VII.** Figure It Out — Be a problem solver, not a problem asker
- **VIII.** Join the Club — Be proud to be a part of your organization
- **IX.** No Whining — Communicate positively and well, don't be high maintenance
- **X.** Keep Learning — If you don't keep up, you will become obsolete

Tiger Manufacturing

Webster School District

Tiger Manufacturing has been gearing up to produce metal parts. In 2006 Tiger Mfg started and primary used a 5 foot by 8-foot Computer-Numerically-Controlled (CNC) machine to cut custom wood cabinet parts. That student run business paved the way for Tiger Mfg to purchase a brand-new Haas 3-Axis Mini Mill to expand the business into the metals area. Three staff members, Mr. Dorn, Mr. Honeysett and Mr. Ward attended a three-day class at the Haas Factory Outlet in Plymouth, MN to get customized training on the operation and programming of the new CNC machine.

Students have been transformed into machinists by learning how to read blueprints, use and read inspection equipment, design and program parts on the computer, create fixture to hold parts, set up and operate both manual and CNC lathes and mills. Students rotate to one of five adults to give them a technical level education opportunity in high school. Al Rand and Larry O'Connell volunteer daily to teach the students on the manual equipment. We are also fortunate to have a retired Nexen employee, Gene Stanchfield, who oversees the CNC production and inspection. Mr. Honeysett works alongside students on the new Haas CNC mill. I teach students in the classroom how to design and program the parts to be machined.

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Haas Mill Brings 21st Century Metals Skills to Badger High School

Students learn to program the Haas and utilize it to enhance their projects and build relevant skills for the workforce. In addition, they are earning the Haas Basic Mill Operator certificate which qualifies for Technical Incentive Grant reimbursement.

Badger High School

Through the Technical Incentive Grant (TIG), Badger High School's Metals program has added a Haas Mill to the machine shop bringing 21st Century technology and curriculum to an already strong program. Instructor Clint Geissler partnered with the local technical college to enhance curriculum opportunities for students including the Haas Basic Mill Operator Certification which is also TIG approved.

Utilizing funds earned through TIG MSSC Safety Certification reimbursements, Geissler saved enough money to purchase the Haas. Already trained in CNC plasma cutting technology, students easily adapted to the computer-based CNC milling machine. Project enhancements have included students programming and machining the dots of a dice project, drilling, countersinking and tapping a hole in their hammer project. They also use the CNC mill to machine a bolt head so they can easily mount R/C wheels onto their axles for their angle grinder dragsters.

Badger High School recently put tremendous effort into creating The Academies of Badger, pathway maps encompassing transcripted credits aligned to technical colleges, industry certifications, work-based learning opportunities, and CTSO experiences. The Academies of Badger provide our students with a roadmap to success in pursuing stackable credentials such as: certificates, technical diplomas, and even associate degrees in some pathways. Through working with business and post-secondary partners, gaps were filled with curriculum and experiential learning to help students progress in their career area of interest.

The manufacturing curriculum has been aligned in such a way that the students enrolled in the program are eligible to receive industry certifications in both the Haas CNC content as well as the MSSC Safety Module. When students graduate from Badger these certifications, along with the transcripted credit opportunities, prepares them for life sustaining, gainful employment.

The manufacturing industry has been eager to employ Badger students in Youth Apprenticeship and retain them post-secondary. Business partner Scot Forge also provides in-house opportunities for students to take courses to further their education after graduation. Through Badger's Youth Apprenticeship partnerships students have the opportunity to take their education and training to the next level and apply it to the workforce. The state provides an "On-the-Job" learning program which the employers adhere to in order to expose the student-worker to real life experience and become career ready on the day they graduate from Badger.

The Badger manufacturing lab and department is currently entrenched in an effort to modernize the equipment and opportunities at the students' disposal. Within the next two to three years, we are aiming to include machinery and equipment to better simulate a real-world work environment, equipment such as: a powder coating oven, a laser cutter, additional CNC machines with varying processes, and more.

bhs.badger.k12.wi.us

Tiger Manufacturing Continued from Page 24

Our relationship with Nexen has always been great. For me it started in 1998 when Dan Conroy came and introduced himself and asked if there was anything Nexen could do for our program. He said, stop over at Nexen anytime and I'll give you a tour. We were always in each other's spaces simply because we cared about each other. Nexen was a huge partner in getting Tiger Mfg off the ground in 2006.

When the students need material for a project, tooling is needed, something breaks, Nexen is always willing to help. They have supported our program in so many ways, it is nice to be partnering with them.

Some of our new projects:

The 2022 Hawthorne Trap Club trophies are finished and ready for delivery. This team did an outstanding job on this project! They've been working on this project since the second day of school!

Some of our students made signs for Wren works to be put on their boat.

Working on a picnic table.

www.webster.k12.wi.us

Advanced Manufacturing Course at Ladysmith M-H School Coming Soon!

Kyle Jeffress started as the Ladysmith Middle-High School TechEd teacher in the 2013–14 school year. It was his first year out of college.

Kyle: That very first year we got a 3D printer free to the district through a grant program. It was dropped off one day, early afternoon, and the kids had it 3D printing by the end of the day. That was kind of "our spark" into this innovative, fab lab arena.

By the end of that year, we actually had a contract with a Ladysmith bank to print a thousand keychains. We charged them five hundred dollars, took that money and some Carl Perkins funding and bought two additional 3d printers. That sparked the idea for a manufacturing course.

We decided we wanted to build an entrepreneurship manufacturing type of class. I approached the superintendent at that time, Kurt LIindell, he said this is cool, but I don't know if we can build a business around keychains and 3D printers.

I wanted to purchase some bigger equipment. Like a CNC plasma cutter with a price tag of 15,000 dollars, which was a lot of money.

Kurt invited me to go to a committee meeting later that week where he thought we might have some of the same interests. That committee ended up being the Ladysmith Community Industrial Development Committee (IDC) where I met a lot of faces for the very first time as a first-year teacher.

Another organization that ended up being there. They went there to talk to the committee as they were having a hard time getting employees, trained employees, so they were having a workforce crisis.

> ***"That very first year we got a 3D printer free to the district through a grant program. It was dropped off one day, early afternoon, and the kids had it 3D printing by the end of the day. That was kind of "our spark" into this innovative, fab lab arena."***

I just happened to be there pitching a manufacturing program and everything just came together.

A fab lab consists of a lot of CNC controlled equipment. We've got the lathe engravers, CNC routers, CNC plasma cutter, 3D printers, vinyl cutters. It was all super expensive, it was a $70,000 project. The IDC saw the value in it and they said they'd put in $12,500. The city contributed $12,500 and there were some other grants and industry donations totaling about $20,000. We were able to bring the price tag down to $25,000 for the district and start to establish the fab lab.

the 2016-2017 school year we decided to expand the fab lab and applied for a grant. We added the CNC milling machine, and 5 additional 3D printers. With the grant money and additional funding from the LIDIC, we were able to do a $30,000 project for $7500 to the district.

We won a Channellock contest a few years ago which generated a lot of good publicity and press for our program. It was an online social media contest that we ended up winning by submitting a video about our impact on the community. Because of the fab lab, we've had a pretty positive impact on the community by doing community projects. We earned $5,000 for the win and the community jumped right in and turned it into $10,000.

Continued on Page 38

WTEA Recognizes Badger Tech Ed as 2022 State Program of the Year

Pictured above are instructors Tom Sheeley, Autos; Clint Geissler, Metals; Mike Smith, Printing & Graphics; Ryan Bouzek, Construction & Woodworking; and Jake Popanda, Computer Science. Not pictured, Arnie Oswald, Construction & Woodworking.

Badger High School

The Badger High School Technology Education Department was being recognized as the 2022 Wisconsin Technology Education Association (WTEA) High School Program of the Year. Announced in an email from Matthew Schulz, WTEA Awards Chairperson, the Badger teachers were honored at the Annual WTEA Banquet in March.

"The Wisconsin Technology Education Association annually honors education and industry professionals who have demonstrated outstanding service and commitment to Technology Education," Schulz said in his email. "I am pleased to announce that you have been selected to receive the WTEA High School Program of the Year Award."

Members of the Badger Tech Ed Department include: Clint Geissler, Metals Technology and Department Chairperson; Ryan Bouzek, Construction & Woodworking; Arnie Oswald, Construction & Woodworking, Jake Popanda, Computer Science; Tom Sheeley, Automotive; Mike Smith, Printing & Graphics; Glen York, Architecture & Engineering, and Marie Collins, CTE Director (now retired).

"One of the great things about the Geometry and Construction program is that there are two teachers. We have a math teacher and a tech ed teacher. So as the math teacher teaches a concept, the tech ed teacher can then show them how to apply it to the project at hand," said Collins.

AJ Curtis, Math and Geometry & Construction Teacher shared, " Watching these students actually go and apply what they're taught with triangles, and use perpendicular lines, use parallel lines, and understand where they all are in the world."

Principal Jenny Straus said, "The WTEA Program of the Year Award is recognition and celebration of the quality of instruction provided by our Tech Ed Team."

Highlights of the Badger Tech Ed program include highly qualified instructors, widespread transcripted credit and industry recognized certifications embedded into the curriculum in each area. In addition, the recently created Academies of Badger have helped students group high school courses while they are at Badger to earn up to 36 college credits prior to graduation. These commitments to excellence in tech ed add value to the programs already offered to students at Badger.

In 2001, Badger was also named WTEA Program of the Year, and was named the International Program of the Year in 2002.

To learn more about Badger's Tech Ed Department and The Academies of Badger visit our website at the link below.

bhs.badger.k12.wi.us

Advanced Manufacturing Course at Ladysmith M-H School Coming Soon!

Continued from Page 37

DWD Grant

This $40,000 grant from the Department of Workforce Development (DWD) will allow us to implement a new Advanced Manufacturing course at the high school. This project will give our students the chance to get a jump start on their career aspirations by developing their skills in machining and having the chance to earn an industry-recognized certification from the National Institute for Metalworking Skills (NIMS) through the new course.

To be able to pull off this project we enlisted the help of the Ladysmith Community Industrial Development Corporation (IDC) to help cover the match requirement of the grant. The IDC has been an invaluable asset to our CTE program over the years. The IDC will cover $65,000 of the match and the School District of Ladysmith will contribute $15,000 toward the match giving us a total of $80,000 in matching funds towards the $120,000 project. The IDC is working with local industry employers to help cover this expense.

The new equipment will replace some of the oldest machines we have in our shop. We will also be increasing the total number of each machine which means there will be more students learning by doing rather than just watching. The addition of these new machines will accent our existing Tech Ed facilities and programs very nicely. We are very grateful to have a community and partners such as the IDC and our local employers who support our students and potential future workforce by supporting programs and projects such as this to bring these great opportunities to our district.

Students will be able to register for the new course this winter and take the new course next school year.

"This is incredible news for the students in Ladysmith that are interested in manufacturing. We are thankful for the DWD grant, but even more grateful for the support our students, teachers, and school district receive from our community."

—Laura Stunkel, Superintendent,
Ladysmith School District

ladysmith.k12.wi.us

Brown Deer — A Rich History of Teaching in the Trades

Continued from Page 31

ment was purchased and supported through industry partner donations, district funds and DWD's Fast Forward Grant. Students are able to take an idea from design to finished product in this space with industry relevancy at each of the process.

Building high quality facilities offered students a higher level of curriculum. After the 2018 referendum, the high school added several manufacturing courses including Metal Fabrication I, Metal Fabrication II, and Falcon Enterprise. Falcon Enterprise is a capstone course designed as a student-run business, where student machinists, welders, woodworkers and entrepreneurs regularly collaborate with community members to manufacture the parts, equipment, and products based on community needs.

While these changes provide tremendous opportunities for students, the most critical factor in the current and future success of the Brown Deer High School manufacturing program lies in its relationships with the community. We have worked with many local companies that support our program. These companies provide the district trade professionals to assist with classroom instruction and career exploration, facility tours, donations, and interview/hire youth and registered apprentices.

Partnerships like these help the district match our students to an apprenticeship/work-based opportunity in the trades career of their choosing. Every year we invite 50 local partners or potential partners to join us for our Industry Advisory Breakfast. This breakfast provides the chance for our partners to tour our facilities and meet with our CTE students who discuss their current projects as well as their future aspirations in the trades industry. Industry Advisory Breakfast helps us build these relationships and exposes our high school students to advanced opportunities in hopes of increasing Youth Apprenticeships, Registered apprenticeship opportunities and participation in work-based experiences in Manufacturing.

The School District of Brown Deer will continue to blaze trails and provide leadership to close opportunity gaps and create a pipeline through K–12 education to strengthen the skills trade workforce. Every student will be prepared to leave the School District of Brown Deer in pursuit of his or her career choice. Starting in 2022–2023, Brown Deer High School will be adding Advanced Metal Fabrication as a manufacturing regional career pathway. The Pathway goal is to provide students with the skills necessary to earn an entry level position, in manufacturing, upon graduation. With the evolution of our manufacturing and trades programs, Brown Deer is forging ahead full force in the local trades industry.

browndeerschools.com


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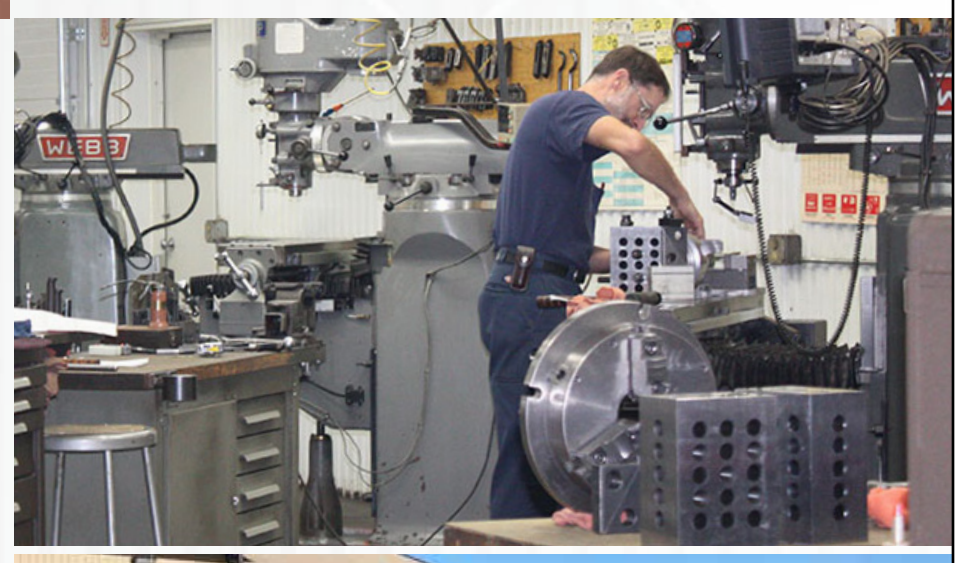
At JBC Machine, we believe the right combination of people is key to creating a great team! Our management philosophy is one that advocates equally for our customers and employees. The continued investment that JBC Machine makes toward state of the art equipment, and software along with our relentless approach toward employee training truly sets us apart.

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

WE OFFER:

- Clean, organized, air-conditioned work environment
- Minutes from the Fox Valley in Hortonville
- Top wages with overtime opportunities and shift premium
- Normal schedule is 6:30-2:30 Monday-Friday 1st shift
- 4 ten-hour days, Monday–Thursday, 3pm–1am, 2nd shift
- Full benefits, including medical, dental, and retirement plans
- Paid vacation and holidays
- Safety glasses and safety shoe allowance
- Tuition assistance for job-related courses

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