

MANUFACTURING TODAY WI™

Celebrating Manufacturing in Wisconsin

North Fond Du Lac School District *Oriole Enterprises*

Page 4 — Oriole Enterprises was started as a metal fabricating, in house, business that operates as part of the “Welding and Fabricating” class offering. Students in this particular class not only complete the required curriculum work but also design and fabricate many products that may get sold to teaching staff and the residents of North Fond du Lac or in some cases build equipment made to order for local manufacturers and businesses.



Franklin Public School District *Saber Manufacturing*

Page 8 — The development of a robust manufacturing program has become a vital part of the Franklin Public School District’s education for employment plan. By the end of the 2021-2022 school year, Franklin High School’s goal is to increase the number of students participating in a work-based experience in the manufacturing sector by 200%. Franklin’s ability to achieve this goal is dependent on a number of factors including the updating of the high school curriculum, expansion of their manufacturing space and equipment, and most importantly, strengthening their partnerships with Wisconsin manufacturers.



Pulaski Community School District *Raider Products Gives Valuable Knowledge to PHS students*

Page 14 — John Pitzen, Jared Marsh and Max DeHut, teachers of the wood, auto-mechanic, and metals portions of Raider Products, respectively, desired to implement classes in PHS that work with the community’s businesses. Inspired by other schools with similar classes, they proposed their idea with the Pulaski Community School District Board of Education five years ago to create the unique classes called, “Raider Products.” This is the first year the woods and autos classes are being run, and it has already shown promising success for the students.



Ellsworth Community School District *High School Fab Lab Coming Together*

Page 26 — The Ellsworth Senior High School Fab Lab (fabrication laboratory) is really taking shape as the staff and students have begun utilizing the equipment currently in the lab. Our fab lab is a small scale, high tech facility that offers our students and the community access to a variety of CNC (computer numerical controlled) equipment. The goal is to be able to design the part or your idea on the computer and use the various pieces of equipment we have in our facility to make or produce the part.



Oakfield School District *Oakfield High School Wins “Best in Show” for Project G.R.I.L.L.*

Page 16 — This is the second year that Oakfield High School Technical Education Instructor Al Kamenski has been involved in the program. “What I enjoy most about Project GRILL is the student presentations to all of the sponsor business leaders,” he said. “After presenting their plans for the grill, the students were able to interact with the business leaders, who gave many positive comments. It’s important to continue this relationship building between schools and manufacturers.”



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Celebrating Manufacturing in Wisconsin

Since the fall of 2013, *Manufacturing Today WI* has been exploring the depth and scope of opportunities Wisconsin's schools are offering their students in the area of manufacturing. The partnerships that exist between schools, colleges, businesses and communities are incredible!

In this issue you will find both new articles and highlights from the school-based manufacturing programs that we have covered in past issues. We will continue to feature more highlights in the Spring/Summer issue of *Manufacturing Today WI*. Watch for it in early 2019.

All of the school programs covered since the fall of 2013:

Algoma School District ★

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Appleton Area School District

Arrowhead Union High School District

Ashwaubenon High School ★

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Badger High School

Baldwin-Woodville High School

Beloit Memorial High School

Brillion Public Schools

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Denmark High School

Eleva-Strum School District ★

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Ellsworth Community School District ★

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Fond du Lac School District

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Hurley High School ★

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Hustisford School District ★

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Kaukauna High School

Kenosha Unified School District

Kimberly Area School District

School District of the Menomonie Area

School District of Michicot

Middleton-Cross Plains Area School District

Milwaukee Public Schools

Monroe High School

Mosinee School District

Neenah Joint School District

North Fond du Lac School District ★

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Northland Pines School District

School District of New Berlin

Oakfield School District ★

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Oshkosh North High School

Plymouth School District ★

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Pulaski High School ★

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Rice Lake High School ★

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Sheboygan Area School District ★

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School District of Sheboygan Falls

Slinger High School

Stoughton High School

Three Lakes School District

School District of Waukesha

Webster High School

★ Highlighted in this issue

All back-issues of *Manufacturing Today WI* can be accessed online at www.manufacturingtodaywi.com



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North Fond Du Lac School District Oriole Enterprises

Oriole Enterprises was started last year as one of a number of "In House" businesses that are presently running

at Horace Mann High School.

The other businesses are:

- Food for Thought Café
- Oriole Outfitters
- INCubatoredu
- OrioleTV and Web Construction
- Computer Repair
- Construction Trades Coop

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Paul Helm, a technology education teacher at Horace Mann, is in his 35th year of teaching and this is his second year in the North Fond Du Lac School District. He pre-

viously taught at Oakfield Middle School and the Fond Du Lac School District. Last year, Superintendent Aaron Sadoff approached Paul and asked about the possibility of starting a business. Paul had visited the Cardinal Manufacturing Program at Eleva-Strum some years back. Some of what he saw and learned there helped design the new business. Oriole Enterprises was born.

The district had recently passed a multi-million dollar referendum when Paul started



The most recent purchase for Oriole Enterprises was this Haas CNC Vertical mill.



In this picture former student Josh Thielke is shown with a "Chain Hoist" Oriole Enterprises designed and fabricated for a local steel distributor here in Fond du Lac.

at Horace Mann. As part of the referendum the Technology Education Dept. received \$300,000 to upgrade the equipment in the metals and Wood Technology labs. Using those funds Paul and Mike McDowell (Construction Trades Coop) were able to bring in

some state of the art equipment for their students to use and learn on.

Their most recent purchase was a Haas CNC Vertical mill that we are going to start

Continued on Page 8



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Hustisford School District

What Manufacturing Needs from a New Employer



Fall/Winter 2014

What are manufacturers looking for when hiring an entry-level employee? This is the question that I needed to answer daily when I stepped out of public education and into the manufacturing industry.

What does a manufacturer of dynamometers want with a high school Tech-Ed teacher? The owner needed 1 or 2 new employees a year with entry level skills and he couldn't find people with the basic skills needed to work for him. That's where I enter the scene. He had a vision of training several people with machine tool skills, retaining one or two to fill his production needs, and then 'selling' the remainder of the individuals to manufacturers in the Milwaukee region. I filled that vision by creating a training program for adults who possessed mechanical skills and had an interest in the manufacturing industry.

Bringing the Training Model to the Hustisford School District

Hustisford school district has a mission for me: Give their students the skills necessary to make informed decisions after high school plus the skills and attitudes to gain employment in the manufacturing industry. At this time we have a long-term plan to improve the current facility to handle the need for the equipment necessary for preparing our kids to go onto school or to move into the workforce. Since I just came to the district I am in the process of building relationships with local and regional manufacturers. This is occurring through a CTE advisory board and personal meetings with manufacturers. I know that I can provide the needed training for our kids at Hustisford so they have more than just an opportunity to be prepared for the manufacturing industry; they will have the abilities, interest, training, and motivation to be part of a great industry that exists in Southeastern Wisconsin.



Hustisford Tech Ed — Building a Durable Program with Manufacturing

Spring/Summer 2015

This past Fall I began the journey of determining the direction for our Tech Ed Program. By mid-year I gave our school's administration options for future programming. We could have opted for a heavy direction in STEM, a traditional Tech Ed program with a little of everything and specializing in nothing, or a program that has the goal of preparing our students for careers in manufacturing. I suggested, and am supported, in the latter option. The Tech Ed program at Hustisford Jr/Sr High School is now in the business of getting our students the training, experiences, and individual goal setting to prepare for careers in manufacturing

whether as a professional or for skilled positions in production.

Relationships are one of the most important assets that I have to help make my program a reality with the support of these manufacturers, school administration, and School Board. My approach is to have a goal of providing the training necessary to meet the need of manufacturing in our area. I am sharing this information to help any Tech Ed teacher who is working to make their Tech Ed program relevant to the manufacturing industry. Teachers must understand that manufacturers are looking for you just as much as you are looking for them; they don't always know how to help you out. You must be the driving force and be very forward about how your students will be trained to fulfill the needs of the manufacturing industry. When manufacturing companies see that you are serious about supporting the manufacturing industry they will go out of their way to help your program grow.



Husty Heavy Manufacturing Spring/Summer 2016

Change and growth are the common themes in our CTE courses at Hustisford High School. During the past school year the Tech Ed department has 'gathered' several machine tools and tooling; totaling more than \$25,000! Our goal to open a school-based manufacturing company, Husty Heavy Manufacturing, is coming to fruition. This undertaking has our small school reaching out to local and regional manufacturers, parents, school administration, school board, and collaboration with other teachers. This may not be a new template to success but it shows the level and breadth of commitment by many individuals, organizations, and industry.

This Fall semester I team-taught a class with our Business Education Teacher, Mrs. Denise Tribbey. We created a short term business called Hustisford and Spoon. We ran the class as an entrepreneur might with the goal

of creating a product(s), developing a business plan, designing, producing, sales and marketing, and the financing of the product(s). During this class we successfully produced spoon-and-fork salt and pepper shaker holders, and 'fish' wind chimes.

I know we are on the right track as our school board has approved the purchase of a CNC plasma cutter; the first major expense to the Tech Ed department since I started 1 1/2 years ago. Three of our local businesses have also stepped up by each donating \$500.00 toward the purchase of this \$10,000 machine. We are a small school doing our best to prepare our students for the world of work whether it is in production, engineering, or the business end of an entrepreneurial endeavor.

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- Machinist
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- Mold Setter
- Programmer
- Tool Designer
- Pattern Maker
- Mold Designer
- Press Operator
- Safety Manager
- EDM Machinist
- Design Detailer
- Shop Supervisor
- Project Manager
- Sales & Marketing
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Green Bay Area Public School District

Green Bay Students Explore the Manufacturing Industry



THIS
Girl
CAN

Manufacturing Alliance and a local technical college, Bay Link Manufacturing® allows

students to earn high school and college credit upon completion of the program.

Bay Link Manufacturing® is a high-precision manufacturing learning lab located at Green Bay West High School. The lab is equipped to complete projects for local companies in the areas of industrial welding, machine fabrication, and metals. Through sales, marketing, accounting, project planning, bidding, purchase orders, and customer service, students also learn the

business side of manufacturing. After being a part of Bay Link Manufacturing®, students are prepared to attend a 2- or 4-year college in the fields of manufacturing and engineering. They may also be prepared to enter the workforce in an entry-level position.

In February 2018, female students in the Green Bay area were invited to attend a DIY Lawn Art workshop held at Bay Link Manufacturing®. Mothers, grandmothers, older sisters, aunts, or female mentors were invited to join the students. During this workshop, students had an opportunity to use basic welding skills to create and design a lawn art project while learning about the manufacturing industry.

The workshop is part of a program called “This Girl Can,” which allows young women to explore non-typical female careers in the areas of manufacturing, computer science, and technology. Another workshop is planned for April 2018, and is geared towards computer science. Held at Preble High School, the Information

Technology (IT) and Fashion Design workshop will teach students how computer science and technology are used in the fashion industry. They will also build fashion-themed programs.

This is the second year that the Green Bay Area Public School District has held “This Girl Can” workshops to introduce young women to careers in the skilled trades. The program was so popular this year that a waiting list was created.

“This is the second year that the Green Bay Area Public School District has held “This Girl Can” workshops to introduce young women to careers in the skilled trades. The program was so popular this year that a waiting list was created.”

Bay Link Manufacturing® and “This Girl Can” are just two of many ways that Green Bay Area Public Schools are giving students oppor-

tunities to explore the manufacturing industry, and to become college, career and community ready. To learn more about Bay Link Manufacturing®, visit gbaps.org/baylinkmanufacturing.

Daniel Severance

*School & Community Relations Intern
Green Bay Area Public Schools*

Every year, juniors and seniors in the Green Bay Area Public School District are invited to apply for the Bay Link Manufacturing® program. Started in 2014, Bay Link Manufacturing® gives students the opportunity to gain real world experience in manufacturing, engineering, marketing, and business. Partnering with the NEW

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Plymouth School District

High-Tech Ed: LTC-Plymouth Science & Technology Center Trains Students, Adults



Plymouth High School students and community members are better prepared for a number of engineering and technical careers, thanks to the LTC-Plymouth Science & Technology Center.

"The facility allows us to provide a higher level of curriculum," said PHS technology education instructor Greg Gritt. "We are teaching the students a lot more application, using many different skills to perform tasks that they would not have been able to use before."

The \$1.2 million facility gives PHS students experience with all phases of the design process, taking projects from conception to completion. They design projects using industry-standard CAD programs, then create three-dimensional models and finally produce and finish projects using high-tech mills and a lathe. They also can learn metal fabrication in a professional welding training facility.

Engineering classes are taught by science and technology education teachers, all of whom are certified by Project Lead the Way. Students in Project Lead the Way classes can earn college credits and several vocational programs carry credits from facility partner Lakeshore Technical College. The state-of-the-art equipment in the facility also allows students to collaborate with local businesses.

Many benefit from center

PHS technology and engineering students aren't the only ones to experience what the facility has to offer. LTC offers classes for adults in the evening; especially popular is the Welding Basics & Beyond course, which includes extended practice with welding and cutting systems. Eighth-graders tour the facil-

ity each year, before they select their freshman classes, with hands-on activities in many of the labs.

Second-graders from neighboring Horizon Elementary School as well as Cub Scouts toured the facility earlier this year and assembled a wooden game (which had been designed on a CNC machine by a PHS student). The youngsters also tried their hands at screen printing; using a laser engraver; taking apart an engine in the automotive lab; watching a welding demonstration; and using Photoshop to alter their own photos. The activities were set up by Greg Gritt, Jake Sherman and Beau Biller but conducted by PHS students, who served as the teachers for the day.

Awards

The facility has not gone without notice. Shortly after it opened, the PHS tech ed program received the 2012 Brighter Image Award from the Northeast Wisconsin (NEW) Manufacturing Alliance.

Mr. Gritt and Mr. Sherman received the inaugural Golden Apple award from the Sheboygan County Chamber of Commerce in 2013.

The NEW Manufacturing Alliance honored the program with the Education Innovation Award in 2014, and named Mr. Gritt the 2015 Tech Ed Career Pathmaker.

The district won the Chamber's Golden Apple again in 2015, largely for working with area business leaders to address important issues such as workforce needs, economic development and curriculum, in order to prepare students for the workforce.

Plymouth High School Principal Jennifer Rauscher was honored with a Wisconsin Technology Education Association Technology Special Recognition Award in 2017 for her support of tech ed.

Mr. Sherman won an Academic and Career Planning Award from Lakeshore Technical College in 2018 for his role in helping students prepare for their futures.

PHS Awarded \$25,000 Fab Lab Grant

Plymouth High School students soon will gain experience with a high-tech router, thanks to a \$25,000 Fab Lab grant from the Wiscon-

sin Economic Development Corporation.

Those in attendance for the announcement included district and school officials, PHS technology education teachers and students, city officials, Lakeshore Technical College leaders, and numerous business partners.

PHS Principal Jennifer Rauscher acknowledged those present. "We are grateful for your ongoing support as we strive to help students become innovative designers and skilled technicians who will positively impact our community for years to come," she said.

Plymouth Superintendent Carrie Dassow noted that many of those same people were involved in the creation of the school's Fab Lab, known formally as the LTC-Plymouth Science & Technology Center.

The district's strategic plan calls for all students to be prepared to enter post-high school education in order to find personal success in a global society, Dr. Dassow said. "Because of all of you here today and the state of Wisconsin's innovative spirit to develop the Fab Lab grants, we will continue to make this goal a reality," she said.

The grant will help purchase a Computer Numerical Control router, which students will program to cut wood very precisely. It is expected to be installed in the fall and to be operational by the start of the second semester.

The router will put the PHS woods/construction curriculum on par with other PHS technology education and engineering programs in the Science & Technology Center, which already features two CNC mills, a CNC plasma cutter, a CNC lathe, two CNC simulators, a 3-D printer, a welding training facility, engineering/CAD Labs, and an industry-standard automotive lab.

The industry-standard machine will benefit primarily in the woods/construction curriculum, but also will factor into other PHS classes, community projects, and continuing education classes for adults, said PHS tech ed teacher Jake Sherman.

The router is a single piece of equipment but will be part of an overall experience that develops well-rounded students, including engineering students who are excited about shop projects, and vocational students who are able to see the design process that precedes the hands-on work, Mr. Sherman said.

In recent years, the PHS tech ed program has seen increased enrollment, increased enthusiasm for manufacturing and skilled trades, and increased participation in Youth Apprenticeships and co-ops, Mr. Sherman said.

"We're thankful for this opportunity," he told those gathered. "We're very excited about this grant, and we're very excited to take the next step."

The state defines a fab lab as a high-technology workshop equipped with computer-controlled manufacturing components such as 3D printers, laser engravers, computer numerical control routers, and plasma cutters.

WEDC received 63 grant applications, which were evaluated based on readiness and long-range planning, curriculum, business and community partnerships, financial need, and previous awards. Individual school districts were eligible for up to \$25,000.

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Rocking the Manufacturing Scene

Whether it's physically manipulating a robotic arm or using laser or hand-held welding equipment to produce a product or participating in hands-on projects related to a variety of manufacturing careers, young people will be able to experience the ever-changing world of manufacturing at **Manufacturing Rocks**, a day-long event sponsored by Lakeshore Technical College in Cleveland.

Open to all middle school and high school-aged students from within the LTC district, Manufacturing Rocks will be held on Friday, October 5 from 9 a.m. to 2:15 p.m. at the LTC campus.

Now in its tenth year, **Manufacturing Rocks** began as a way to demonstrate to students interested in the Welding program how the discipline works and how it has changed in the past few years, according to Manufacturing Rocks program coordinator and LTC Welding Program Instructor David Saunders. "It started as an evening program describing what a great career path welding was," Saunders said.

Eventually, **Manufacturing Rocks** changed to a full-day event and includes six different career paths at LTC. In addition to Welding/Fabrication, the event gives students a chance to have hands-on experiences in the following disciplines: Electro-Mechanical Technology/Robotics, Machine Tool/CNC, Maintenance Mechanic/Millwright, Mechanical Design Technology/CAD and Sheet Metal.

Held in conjunction with October Manufacturing Month, Saunders designed the day to be an opportunity for students to actually try something. He specifically made it a more intimate event, limiting the students to



a workable number so that every student get a feel for what each discipline had to offer. "They spend a Friday out here, roughly a six-hour day, and they go to three stations in the morning, three station in the afternoon, spending about 45 minutes at each station. There's pizza for lunch, some raffle drawings and it's just an enjoyable day," Saunders said.

Saunders said that while the event is really targeted for sophomore, junior and senior high school students, middle-school students are also welcomed. "We take them all," he said. "I feel it's my job, to change their perception of manufacturing. They all think it's their grandfather's dark, dirty job. No. These are high-end, high-tech, critical thinking jobs in a clean environment. So we're teaching all these great problem-solving jobs."

Saunders said that he feels this event helps show how the skills for these "super, opportunity-filled" jobs can be learned in sometimes less than one year. "It's also a fun event," he said.

In addition to the hands-on activities Saunders said the day also provides an opportunity to share information on local manufacturing scholarships, and other programs available through LTC like Youth Apprenticeship and Start College Now, which allow high school districts to send students to LTC for credit-based courses in manufacturing areas that are not offered in their high schools.

Saunders emphasized the importance of getting young people excited and interested in manufacturing careers. "The average age in all of manufacturing is 56 years old. Employers are looking for good workers, and there are so many options for career paths," he said.

These careers are wide open for both girls and boys, Saunders said. In the past the boys far outnumbered the girls. "It's getting better," he said. "I don't think it's 50/50 yet, but we've seen an uptick in the number of girls looking to explore these careers."

Through the years, Saunders said he has also seen younger kids in middle school coming through the day, as well as kids returning from year to year. "I believe it's popular because the students are actually doing hands-on activities."

In what Saunders describes as a "little extra incentive," this

year, manufacturers from the area are invited to come to the event. "This has a two-fold advantage in that the manufacturers can use it as a recruitment event and more importantly, all the employers are in one spot so the students can see all these potential areas that they could branch into. Employers can also help change the perception of manufacturing," he said. Saunders estimated that between 20 and 30 representatives from area manufacturing companies will be at the event.

Saunders said he hopes students will take advantage of this day. "It's exploration, and it's really meant to be fun and festive . . . try it. You never know where you'll uncover a career passion!" Saunders said.

Registration is required and registration information is available at:

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Registration deadline is October 1.



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Pulaski Community School District

Gaining Hands-on Experience:

Raider Products gives valuable knowledge to PHS students



Jaclyn Willems and Brooke Steeno,
Class of 2018 Graduates
Pulaski News

Raider Products, a newly introduced class at Pulaski High School, has connected Tech Ed students to surrounding businesses and given them valuable real-world experience for careers while still in high school.

John Pitzen, Jared Marsh and Max DeHut, teachers of the wood, auto-mechanic, and metals portions of Raider Products, respectively, desired to implement classes in PHS that work with the community's businesses. Inspired by other schools with similar classes, they proposed their idea with the Pulaski Community School District Board of Education five years ago to create the unique classes called, "Raider Products" currently offered at Pulaski High School. This is the first year the woods and autos classes are being run, and it has already shown promising success for the students.

Raider Products offers juniors and seniors the ability to work in a real-world business position where they create wood and metal products as well as work on automobiles for

customers and the general Pulaski community. Each student in this class had to take prerequisites of two classes in the respective area of woods, metals, or autos to be enrolled in Raider Products and was selected through an interview process.

In the class, students work on doing interviews with clients, making a resume, working with invoices and budgeting costs of materials — all real-world skills that come with having a career in this field. This class gives a taste of what working in these jobs will be like in the future.

For those going onto a Tech Ed-related career like senior Matt Vanden Langenberg, the classes hold significant benefits for his immediate future. Working during school to draw out construction plans and find materials for his wood products, Matt explained, "It's like a real job. You get to work with customers one on one and have a real-world experience. It also prepares you for interviewing in future jobs. I can even move onto my own cabinet business and have training because of this class."

Joe Deboth, another senior who plans

on using this class to his advantage, hopes to pursue the metals business in North Carolina. Joe said, "I have built too many things to count in this class — everything from grills to soccer goals. I feel ready to work on my own."

Similarly, Will (Patrick) Warren, a senior who plans on moving south and finding a shop job after graduation, said, "This class puts you out there and gets you ready for what you need to know."

Even for students not interested in future Tech Ed occupations, the class holds unmatched experience opportunities.

Logan Bellow, also a senior at PHS in the woods section of Raider Products, has learned how to apply his classroom experience to the world by communicating effectively with customers and mastering Computer Numeric Control -- something that may be helpful in his engineering-focused future.

"This class has taught me the business side of everything. It is a great experience, and it's different than just sitting in a class learning about it. You're actually applying it here in running your own business," explained Logan.

The students in the class both do projects on their own and work in teams. The projects

these students have been working on this year vary greatly within Raider Products. Bellow is working on engraving shuffleboard sides, Mitch Hirt is working on new jump boxes for the high school, and Will Warren is working on a cabinet.

The community comes to these students and asks for their help on projects like a new Polka Days float for the Lion's Club. This class is treated as a real business from the beginning to the end of each project, and these projects are actually products for Pulaski's organizations and its people.

Although the class has only started, it illustrates a promising connection between students at PHS and Pulaski's businesses and helps discover their potential as valuable workers in the greater world.

These students are all taking a step outside the classroom and into the workforce while still in high school with Raider Products.

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Oakfield School District

Oakfield High School Wins “Best in Show” for Project G.R.I.L.L.



Project G.R.I.L.L. (Growing Readiness in Learning and Leading), is an initiative of Fond du Lac Works, a program of Envision Greater Fond du Lac, and is designed to introduce high schoolers to career opportunities available in manufacturing. For the full school year, students are tasked with designing and building a working charcoal grill from scratch. There are 85 area high school students, from eight participating high schools with eight sponsor companies that offer support and assistance to the students on the project.

The schools revealed their finished grills at the Project Grill, 10th annual unveiling celebration on May 11, 2018 in Fond du Lac, Wisconsin. There were grills of all shapes and sizes. The Oakfield High School grill was designed, and built to mount in a truck’s trailer hitch receiver.

Oakfield High School was teamed up with business sponsor, Kondex, and was named Best of Show WINNER, as voted by the manufacturing representatives and students. The winner is based on the points earned against several judging criteria, some of which include portability; airflow controls; durability; creativity; inclusion of program, sponsor, and school logos; presentation and display; and budget management.

The Lomira, WI based company is one of the eight sponsoring partners of the Project G.R.I.L.L. program. Their objective is to assist in the production of the grill, from project ideas, to final assembly. Kelly and Rick are employees at the company and they worked with the Oakfield H.S. students by giving advice on the manufacturing aspect as well as

coming to the school a couple of evenings to work with our students during assembly.

This is the second year that Oakfield High School Technical Education Instructor Al Kamenski has been involved in the program. “What I enjoy most about Project GRILL is the student presentations to all of the sponsor business leaders,” he said. “After presenting their plans for the grill, the students were able to interact with the business leaders, who gave many positive comments. It’s important to continue this relationship building between schools and manufacturers.”

Mr. Kamenski works with his students to teach the fundamentals of “GRIT” (Passion and Perseverance), as well as professionalism, and leadership. All the students must follow the curriculum based on learning the aspects of, relationship building, communication, teamwork, 3D mechanical design, metal fabrication, marketing, and presentation. The students growing in these objectives throughout the year is the purpose of the project, but it also creates a foundation for these students to build on for future success.

The students are required to use Solidworks (3D mechanical design software), to create a model of the grill, and work out any design concerns prior to building. Once the students have their design full built within the Solidworks software, they have to create a presentation for the business sponsors, to show their project design. They explain how it will be built, the materials needed and the price figures to build this grill. This year the students were required to take one part for the design, and have it sent out to be constructed

by one of the Project G.R.I.L.L. sponsoring companies. This new aspect opened the student’s eyes to the importance of communication, and sharing of data in the business of manufacturing. Professionalism is most important to the presentation, because this is the greatest opportunity for the students to meet face to face with the business leaders of our community. Finally, the built grill must follow all of the criteria set by the rule book, and all students are required to present the grill to the judges on the presentation day.

“We built our grill for portability and practicality for tailgating, camping, and any other event where you want to show off your truck and have a grill to go,” said Brandon Anderson, a student at Oakfield High School and project manager for the team.

There were 15 students signed up with the project this year, with ten of them being seniors. Mr. Kamenski is proud to have five of his 2018 graduating, Project G.R.I.L.L. students to have been offered great employment opportunities from sponsoring businesses of the Project G.R.I.L.L. program. “I feel extremely successful, having half of our PG graduates with job offers” a quote from Instructor Al Kamenski. “These employment opportunities bring a great wage and an expanding future within those businesses.”

www.oakfield.k12.wi.us
(920) 583-4117



Algoma School District

Algoma Wolf Tech

Nick Cochart, Superintendent

Over the last 2 years, Wolf Tech, a student run business specializing in CNC machining, woodworking, and light duty fabrication has tripled its productivity and revenue. With the help of strategic business partners the future looks bright for this student run business. Wolf Tech is recognized as a valuable asset for our partners in subcontractor work, design, and programming. Wolf Tech operates after school hours and throughout the summer, proceeds are managed by the students and contribute to the sustainability of the business.

The summer of 2018 has been very lucrative for Wolf Tech, particularly a donation from one of our business partners, in the form of a new HAAS ST-15 Lathe (\$62,000). The new equipment will complement our current HAAS CNC machines: TM-2P vertical mill, VF-3 vertical mill, ST-20 lathe, and Mazak lathe. We are honored to have amazing partners like D&S

machine as they recognize the unique opportunities our students are afforded through Wolf Tech.

As a testament to the success of Wolf Tech our graduates have been hired by our partners with post-secondary training and certification 100% covered by their employers. For a small rural school district our investment in innovative practices is very consistent and deliberate. We cannot ask students to have the skills necessary for a successful career without providing the equipment, space, resources, and highly skilled instructors to develop that talent.

Wolf Tech is at the forefront of an educational revolution that is focused on producing graduates with industry recognized credentials and the skills necessary to have significant career earnings. Our goal of providing the workforce for the future has exceeded all expectations and drives us to innovate even further in providing the best possible educational experience for our



students. If you wish to visit Wolf Tech, please don’t hesitate to contact us.

Spring/Summer 2015

Algoma Wolf Tech (2013) and Lakeview Regional Technical Academy (2014) both call Algoma High School home. Wolf Tech is

a student run business that specializes in CNC machining with the help of local businesses. Currently, we employ students on a full and part-time basis depending on our workload. Students apply for available positions within Wolf Tech and develop into level 1, 2, or 3 machinists

Continued on Page 21

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Sheboygan Area School District Taking Vision to Reality



*Nicole Sondalle
Marketing & Communications Specialist
Sheboygan Area School District*

It often takes the perfect set of conditions to achieve the greatest accomplishments. Such is the case in Sheboygan, Wisconsin as industry and education have come together to form a landmark collaboration known as Red Raider Manufacturing. Family-owned companies that value community involvement and a progressive-thinking school district that recognizes its role in preparing students for a diverse set of post-secondary options, all set in a climate of trust and mutual respect where working together is the norm, not the exception.

“Schools often come to us and ask ‘How did you do it?’” commented Jason Duff, Sheboygan Area School District Academic & Career Plan-

ning Coordinator. “It began, not with us asking our local employers to build a facility. It started with us going to industry with humility and asking how can we better prepare our students for the careers of tomorrow.” That initial question sparked discussions about curriculum which, in turn, led to a realization that the existing facilities and equipment did not meet the needs of the proposed student learning outcomes.

It was only then that the group embarked upon an ambitious capital campaign to raise \$4.2 million. The Sheboygan Area School District Board of Education made its own sizable commitment by allocating nearly \$1 million from the district fund balance, allowing the \$5 million facilities to break ground in March 2016 without the need to levy additional taxes. 12,400 square feet of additional space was com-

pleted and unveiled to the public in October of that same year. The spaces at Sheboygan North and Sheboygan South High Schools, house state-of-the-art manufacturing and engineering equipment to prepare students for successful local college and career paths.

Make no mistake, Red Raider Manufacturing is not as simple as ‘if you build it, they will come.’ An oversight committee comprised of influential business and educational stakeholders meet monthly to discuss ongoing efforts to revise curriculum, align with middle school programs, and measure progress toward goals. During the 2017-18 academic year, special attention has been paid to rebranding the advanced manufacturing programs in our schools. Duff remarked, “We are finding that many students carry a stigma about manufacturing careers — that all the jobs are dirty, monotonous, and low-paying. We’re working to create awareness of the significant changes that have occurred, especially in the companies in our area, which have led to careers requiring advanced technical skills that earn family supporting wages.”

An important tool that has aided the marketing efforts has been Inspire Sheboygan County. Inspire is the connecting tool between local career coaches and students in the county. Students can learn about careers and companies through their own research or by communicating questions directly to career coaches. The usage of the tool, which is embedded into the Career Cruising platform, has skyrocketed over the last two years.

The development of work-based learning activities coordinated by Inspire has become invaluable to the area schools’ academic and

career planning efforts. These include career experience days hosted by local companies as well as the increasingly popular co-op. Inspire coordinated 73 unique co-ops over three quarters of the 2017-18 academic year, up nearly 40% from the previous year when it was first offered. In a co-op, a student works and learns at a company for a minimum of 75 hours over the course of ten weeks. “We have come to realize that some of the most valuable learning for a student can take place outside the traditional walls of a school. These experiences for students are perfectly matched with our goal that every graduate is college and career ready.” commented Duff.

Back in October 2016 when the ribbon was cut, one might have been inclined to dole out congratulations for a job well done. However, the team of educators and industry knew then, which continues to be reinforced daily, there is much work ahead. The sky is the limit in Sheboygan. But only by working together is the shared vision becoming reality.

For more information, contact: Jason Duff, Academic & Career Planning Coordinator, Sheboygan Area School District. jduff@sasd.net

Visit our Red Raider Manufacturing website below:

[www.sheboygan.k12.wi.us/
RedRaiderMfg](http://www.sheboygan.k12.wi.us/RedRaiderMfg)
(920) 459-3500



Ashwaubenon School District

Ashwaubenon Tech Ed Departments Receive WTEA Awards

Ashwaubenon’s Tech Ed departments at both Parkview Middle School and the High School received Wisconsin Technology Education Association’s (WTEA) Program of the Year award. This award honors education professionals who have demonstrated outstanding service and commitment to Technology Education. The awards were presented to both of the district’s Tech Ed Departments at the WTEA Awards Banquet on March 7th in Wisconsin Dells.

The Middle School Program of the Year award provides recognition to one middle school which delivers an outstanding program that provides students with an introduction to the areas and concepts of technology and engineering. Phillip Layden and Corey Hansen, the teaching duo that makes up Parkview’s Tech Ed Department, have been recognized by the association for

their innovative work with students.

The high school Tech Ed Department, consisting of educators Tom Barnhart, Jeremie Meyer and David Stroud, will receive the High School Program of the Year award at the banquet on March 7th. This award shows recognition to a high school that provides an exceptional program which offers students rigorous training and skill development in the areas and concepts of technology and engineering.

Ashwaubenon’s Technology and Engineering Education programs allow students to look through the lens of an engineer to solve technical problems. Some of the courses offered include Automation & Robotics, Manufacturing, Green Architecture, Engineering Design & Development, Woodworking, Car Care and Welding. Instruction and student learning focuses on STEAM

(Science, Technology, Engineering, Art and Mathematics) and incorporates the Project Lead the Way program to prepare students for their future. Corey Hansen states, “We work hard to provide a relevant and engaging learning environment for our students every day. We are doubly proud to be selected the same year as our high school technology and engineering department. Our two programs have worked hard to create a single 6th-12th grade program that partners with higher education, business, and the community to offer students opportunities that will prepare them to be contributing members of tomorrow’s workforce.”

For more information, please contact Phillip Layden, Parkview Tech Ed teacher, at 920-492-2945 extension 4214 or playden@ashwaubenonk12.org.

Establishing A Tech Ed Advisory Board & Putting It To Work

Fall/Winter 2014

There’s never been a better time for educators in our profession to build or make use of an existing advisory board. I’ve taught Technology Education at Ashwaubenon High School for almost six years. By far the most important achievement I’ve accomplished with our program is working with my department to establish and put to work our Technology and Engineering Advisory Board.

In hindsight, forming our T & E advisory board was backwards from how it should

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Eleva-Strum School District Cardinal Manufacturing



Cardinal Manufacturing Class Picture 2017-18

Years ago, the shop at Eleva-Strum High School, laid in much the same state that many school shops struggle 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.

In 2007, this was the scene Craig Cegielski took in the day he accepted the job as Tech Ed Teacher. It was humbling, to say the least. But 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, though. Today, his program has become a nationwide epitome of what can happen in any school shop, with the right blend of work and ingenuity.

Cegielski's aim hasn't strayed from its mark. His mission is still the same as it was the day he first stepped through those garage doors. "(The intent was always) to run a higher-end manufacturing program, to close the skills gap, and to teach how a business works."

"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."



The application process includes creating and submitting a resume, project portfolio, and a letter of recommendation. Once accepted, student participants are assigned a role that may include:

- Quoting jobs
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- Invoicing
- Customer service
- Accounting
- Marketing
- Maintaining work hours

Cardinal Manufacturing Cardinal Manufacturing has hosted multiple workshops sharing our model of education to many schools around the country. School administration, school instructors, career counselors, and industry partners all attended from 6+ states. Interested in attending a workshop? Come join Cardinal Manufacturing instructors, students, industry perspectives, and administrative perspectives as they host a Cardinal Manufacturing, Starting or Growing Your School-Based Enterprise Workshop. Many teachers, administrators, and industry partners contact Cardinal Manufacturing each year to learn how to create a program like it in their own districts. We will be holding a workshop on Thursday, October 11, 2018 to show you how we started and how we do things today. Please visit the Workshop Registration page on www.cardinalmanufacturing.org or contact us to register!

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Besides the great experience gained, the students receive a profit sharing check at the end of the school year based upon number of hours worked and other measurement tools. Only a portion of Cardinal Manufacturing earnings are paid to students after expenses and upcoming needs are covered. Most of the money earned supports the purchase of materials, equipment and facility needs to continually grow and improve Cardinal Manufacturing.

Working with industry leaders, Cardinal Manufacturing has added a great deal of CAD software and other equipment, including a CNC lathe and two brand new Haas CNC milling machines. They have received a lot of media attention, including two episodes on the Titan American Built television show. We have also benefited from publications like *Manufacturing Today WI*, *Modern Machine Shop*, and several others. They have all helped to draw attention to the program and spread the word to other schools and industries that this model of education is working here and can work anywhere in the country.

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Chetek-Weyerhaeuser Area School District Technical Education Changes Boosting Skills in Schools

Spring/Summer 2015

Two years ago, the Chetek-Weyerhaeuser High School Technology Education Department sought out a path that would give students another opportunity for postsecondary success. Almost one third of Chetek-Weyerhaeuser's graduating seniors had no plans to continue their education after high school. While the CWHS technology education department offered a broad range of classes that gave students an introduction to several different areas, the curriculum lacked depth, rigor, and advanced skill development. After hearing about a drastic need for welders, the technology education staff and administration started looking into welding certifications. A push for machinists became the next goal of the department, but required drastic changes to the curriculum. The department transformed its metal working program from two classes to ten.

This type of program would not be possible without support from businesses, technical colleges, the school board, and administration. Tech Ed instructor Bob Morehead also sees a bit of change in the mentality toward technical education that has helped spur interest in advancing and changing the curriculum offered. "There was a point in the past where it was believed every kid needed to go to a 4- year college, and those who worked blue collar jobs were looked down upon and considered second-class," notes Morehead.

"Now there is a shortage of skilled workers. We need to re-educate students and parents that there is a demand for skilled labor and change the mentality of society. The opportunities are out there. It is pushing schools to look at what we are teaching and what we should be teaching."

Education with the Skills that American Manufacturing Needs

Spring/Summer 2017

Four years ago, the Chetek-Weyerhaeuser High School Technology Education Department set out on a mission to overhaul their technical education department. Since the renovations to the technical education curriculum and department were completed, students, teachers, and administration have worked closely with local manufacturing companies to develop graduates with the knowledge and technical skills to help fill the needs of the local industries. Those partnerships have led to a number of new and exciting opportunities that will allow students to get a head start on life after high school.

In December, the CWHS technical education department received an \$8,500 grant from the Gene Haas Foundation. Two years ago,

CWHS purchased a Haas TM1-P CNC machining center. Without the generous support and educational discounts offered by the factory retailer, a small school like CWHS would be unable to purchase such a piece of equipment.

Regional and local partnerships have also yielded great success. A company near Chippewa Falls, and another in Chetek have continued to offer scholarships for any student wishing to continue their education in the machine tool industry. This is also the second year of Chetek-Weyerhaeuser's manufacturing youth apprenticeship program. The apprenticeship program continues to expand and has grown in popularity. It offers students real-life, paid work experience while providing them with technical skills and knowledge. The program also allows a student to try out an occupation before making a decision about the direction of their post-secondary education.

In the spring of 2016, CWHS graduated the first three students earning American Welding Society SENSE Level I welding certificates. CWHS is one of the only high schools in



the state to graduate students from the SENSE program. Only students who complete all of the advanced welding courses have the opportunity to earn a certificate, and not all students who take the classes will become certified. It is a very rigorous process that involves passing several written tests as well as performance welds using multiple welding processes.

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Algoma Wolf Tech Continued from Page 16



responsible for programming and production of contracts. Wolf Tech operates after school hours and throughout the summer. Proceeds are managed by the students and contribute to the sustainability of the business.

Lakeview Regional Technical Academy (LRTA) students participating in the academy program have the opportunity to earn in excess of 20 dual credits as a direct conduit to a number of career pathways. Students also have the option in taking NIMS (National Institute of Metal Working Skills) credentialing courses in various areas.

Wolf Tech and LRTA have had the privilege of building exceptional partnerships with

local companies. These relationships have blossomed into career opportunities for our graduates with the benefit of paid post-secondary training in many cases. Both of these initiatives have proven to produce the well-rounded highly skilled employees necessary to drive further manufacturing growth. To date, 100% of our graduates have gained employment prior to graduation from high school. As a testament to the success of both Wolf Tech and LRTA, the Algoma School

District just completed a 30,000 sq. foot expansion of the high school building which includes a new 10,000 sq. foot manufacturing lab equipped with the latest CNC machines.

Our goal of providing the workforce for the future has exceeded all expectations and drives us to innovate even further in providing the best possible educational experience for our students.

algomawolves.org
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Ashwaubenon Tech Advisory Board

Continued from Page 18



have been done. As a department, we simply created and contacted people from a suggested members list and asked them to participate as an advisory board member to help our program. If I could go back in time, I'd have suggested that our department come up with a mission statement to present to suggested members so everyone knew ahead of time what they were getting into. Luckily it turned out good for us. In summary, advisory boards can be one of the best ways to create effec-

tive partnerships for a Technology Education program. Create a vision as an educator and make the vision become reality with your advisory board.

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Hurley High School Northwoods Manufacturing



Spring/Summer 2014

Northwoods Manufacturing is a student run business just getting underway in Hurley, Wisconsin and doing it quickly. One year ago local Industry had a vision for what they would like to see in their local school system. These industries, like many around Wisconsin, were seeing the skilled labor shortage hit home.

These industries pooled their efforts and approached the school with an idea. This idea was to start a successful technology education program which trained students to fill jobs in their area. From the start, the school and the current technology education teacher Roger Peterson were on board. They began doing research on other schools in Wisconsin that have successful technology education programs which targeted skilled trades. They found that school in Eleva-Strum. Teacher Craig Cegielski had found that by creating a student run business, students get the training they need, and the shop gets the updates it needs within a normal school budget. The local industry and school members took a tour of Eleva-Strum and liked what they saw. Soon after, they began to make plans to create a program similar to Cardinal Manufacturing at the Hurley High School. During their visit of Cardinal Manufacturing, they were brought into contact with student-teacher Jacob Hostettler.

With Jacob's previous involvement with Cardinal Manufacturing and Roger Peterson's (Current technology education teacher at Hurley) vision and experience they were soon collaborating for the future of the Hurley High School's Student-run business.

Fall/Winter 2014

Since last year a lot has happened in the Hurley School shop, A complete transformation you could say. The shop went from being a typical high school technology education classroom to an advanced manufacturing learning department. A lot of this is due to the industry support the school was able to receive throughout the year. On top of the Industry support many members of the community also got involved and donated money to the cause. Because of this, the school was able to raise over 100,000 dollars to help revamp the shop and boost the start of Northwood's Manufacturing.

On top of the updated facility, both teachers Roger Peterson and Jacob Hostettler have seen an increase in class numbers and a complete moral change within the students. Hostettler says, "The students are much more focused on learning and self-progression than at the start of last year". Since the start of the program behavioral issues have went down drastically and students take more pride in being in a "SHOP CLASS". It's something that they can look forward to and be proud of at the end of the day. After all, a program like this would never be possible without the students. "So far the Program has been a huge success; we are excited for our first year in business and can't wait to see what the future for Northwood's Manufacturing holds". For more information about Northwood's Manufacturing Please visit our Website or email: northwoodsmfg@hurley.k12.wi.us

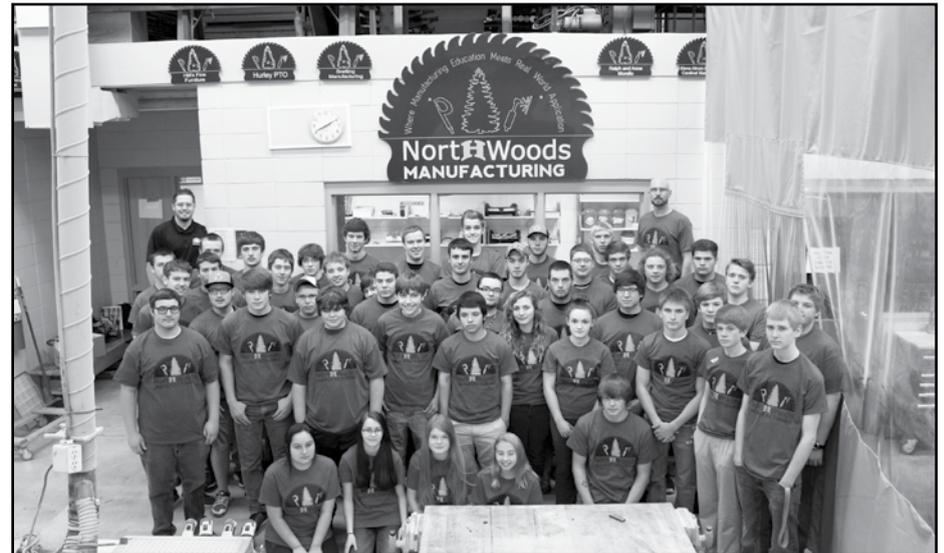
Fall/Winter 2015

In only its second year of operation, the business is gaining recognition. In January, Northwoods Manufacturing received the 2014 Business of the Year Award from Iron County. "Our mission is to provide students with real world manufacturing experiences that will prepare them to enter the work force with production skills and work ethic to make them desirable candidates for industry," said Teacher Roger Peterson. At Northwoods Manufacturing, the emphasis is on "real world application." Students are learning manufacturing skills by producing products for their business. "This type of program has been great for student morale and skill level as they see an immediate purpose to the skills they are being taught".

Northwoods Manufacturing's students showed off their skills at the Second Annual Northwoods Manufacturing Open House on March 15th. "All the kids down there, about 40 or so, are doing live demonstrations on all the manual equipment," said Hostettler. "We also have some of the stuff we've made throughout the year on display." "It's a lot of fun," said one Hurley senior. "It's easy work if you put your mind to it. There's plenty of opportunity for jobs out there. They're looking for people constantly. It's a fun field to get into."

Spring/Summer 2017

Northwoods Manufacturing is in its fourth year of operation, and has seen some new improvements over the years since the beginning such as the addition of more digital read-outs for the lathes. Improvements have also been made on the mills with the purchase of power feed for the axes, KURT work-holding vices, and even a new mill from SHARP. Northwoods also has a Browne & Sharpe coordinate measuring machine for precise quality control, and other new measuring tools. Another change to the program since the start is teaching the



National Institute of Metalworking Skills curriculum. There are around 15 students that are certified in various levels of the NIMS credentialing system.

Northwoods has also expanded its business from machine tool operations into welding and fabrication by creating custom trailers, bike racks, and even a lightweight, aluminum framed, ice shack.

Looking into the future, Northwoods plans to move their operations to a larger facility, purchase another CNC mill, and more fabrication equipment. Northwoods also plans to continue the NIMS Certification curriculum with the goal

of certifying 70% of all students with at least 4 level one certifications. One of Northwoods Manufacturing instructors Jacob Hostettler also hopes to add community education classes to the program.

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From High School Students to Trained Professionals

Employees share how work opportunities in high school led them to the careers they have today at Rice Lake Weighing Systems.



Luke Brundidge, Sr. Robotics Technician at Rice Lake Weighing Systems

Rice Lake Weighing Systems is a scale manufacturing company that was founded in the heart of northwest Wisconsin. With employees across the globe, the company's corporate headquarters and main manufacturing plant are located in Rice Lake, Wisconsin. With positions ranging from production to sales and office support, Rice Lake Weighing Systems knows the importance of finding and retaining skilled employees to keep business running smoothly.

To fill this need for skilled employees, Rice Lake Weighing Systems adopted the model of hiring quality people and training them in the skills needed to become experts in manufacturing trades. This model has not only proved successful, it has also become a cornerstone to the continuous training and education corporate culture at Rice Lake Weighing Systems. Providing training for skilled trades has benefited Rice Lake Weighing Systems, but it has also greatly changed the lives of the students who have taken advantage of these opportunities.

Luke Brundidge and Tony Blake are two Rice Lake Weighing Systems employees who began their careers as high school students, each participating in work education programs through their schools and Rice Lake Weighing Systems.

When he was a senior in high school, Luke (pictured above) knew he wanted a job that wasn't in the retail or food industry. When his technical education teacher told him about the Wisconsin Youth Apprenticeship Program, which came with a manufacturing apprenticeship at Rice Lake Weighing Systems for school credit, Luke was convinced that was the path he should

take. "For my senior year of high school, I wanted a real job in manufacturing where I could earn money while getting school credit," says Luke. "I signed up for Youth Apprenticeship and worked in manufacturing at Rice Lake Weighing Systems." During his apprenticeship, Luke gained real-world manufacturing experience in many departments, including paint prep, material handling and CNC. Because of Luke's interest in engineering and manufacturing processes, he applied for an engineering internship at Rice Lake Weighing Systems during his apprenticeship. During that internship, Luke learned many skills including design engineering, production processes and how to use engineering software. "After my apprenticeship ended," Luke continues, "I was offered a full-time job at Rice Lake Weighing Systems."

Just two years after graduating high school, Luke has been promoted to a senior robotics technician. "If you have good work ethic and do the job right, the opportunities are limitless," says Luke. "My favorite part about working at Rice Lake Weighing Systems is that I'm always learning something new, every single day. When there were opportunities to learn more and receive more training, I went for it, and today I have a good job I really enjoy."

Another Rice Lake employee who began at Rice Lake Weighing Systems as a senior in high school, Tony Blake (pictured at right) also shares how on-the-job training has allowed him to have the welding career he has today. "I started working at Rice Lake Weighing Systems while I was a senior in high school," says Tony. "My dad and grandfather welded, and I always liked working

with metal, so I enrolled in the Welder Training Program at Rice Lake Weighing Systems during high school and became a welder." Tony was able to enroll in work study credits as a senior in high school and spend half of the school day at Rice Lake Weighing Systems learning to become a welder. The Rice Lake Weighing Systems Welder Training Program allows trainees to earn money while being taught how to weld by seasoned, professional welders onsite at Rice Lake Weighing Systems. The training program is extensive and extremely hands-on.

"I joined the Welder Training Program because I knew becoming a welder was a realistic and skilled job I could do after high school," says Tony. After graduating from high school and finishing the Welder Training Program, Tony was hired on as a full-time welder in Rice Lake Weighing Systems' live-

stock scale welding department. Tony spends his days welding metal frames together to manufacture large animal scales used to weigh cattle and other livestock on ranches. When asked what he likes best about his job, Tony says, "Once I finish welding a livestock scale together, I can stand back and say 'I built that.' There's a lot of pride in the work I do."

Tony and Luke are just two stories about how the many trainee and apprentice opportunities

at Rice Lake Weighing Systems lead to real-world careers. From the CNC and Welder Training Programs to Youth Apprenticeships, the opportunities to earn while you learn at Rice Lake Weighing Systems are limitless. Ask your high school about working at Rice Lake Weighing Systems for credit or visit www.ricelake.com/careers to start your manufacturing career today.

"Providing training for skilled trades has benefited Rice Lake Weighing Systems, but it has also greatly changed the lives of the students who have taken advantage of these opportunities."

Work While You Learn at Rice Lake Weighing Systems

“I started working at Rice Lake Weighing Systems while I was a senior in high school. My dad and grandfather welded, and I always liked working with metal, so I enrolled in the Welder Training Program at Rice Lake Weighing Systems and became a welder. Now, once I finish welding a livestock scale together, I can stand back and say ‘I built that.’”

Tony Blake, Welder



Opportunities for Working Students at Rice Lake Weighing Systems

- Apprenticeships in the Wisconsin Youth Apprenticeship program
- Paid welder training internships and opportunities for positions after completion
- Real-world job experience during the school day for independent study credits
- Flexible positions available during the school day plus evenings and weekends

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Rice Lake High School The Welding Pathway

A pilot program is underway at Rice Lake High School (RLHS) that addresses the needs of an often overlooked portion of the student population: students who, for whatever reason, are reluctant to commit to post-secondary education. The RLHS 'Pathways' initiative will include many tracks — from agriculture, to business, to manufacturing — all focused on giving students skills that can be immediately applied in the workforce. Years in the making, groundwork for the first 'welding pathway' began in earnest this spring, thanks to the added efforts of Technical Education Instructor Chuck Carr, and the cooperation between Rice Lake School District and local manufacturer Rice Lake Weighing Systems (RLWS).

Rice Lake Weighing Systems continues to be a great supporter of the Rice Lake High

School Welding Program. Kevin Larson, welding engineer at Rice Lake Weighing Systems is a great resource whenever there are any questions. Kevin also is our contract for any materials that are needed for the welding students. Rice Lake Weighing Systems supplies an endless supply of I beam cutoffs whenever needed to the welding classes. These materials provide our students with a tremendous amount of welding which is needed to become proficient in the welding field.

"Rice Lake Weighing Systems continues to be a great supporter of the Rice Lake High School Welding Program. Kevin Larson, welding engineer at Rice Lake Weighing Systems is a great resource whenever there are any questions. Kevin also is our contract for any materials that are needed for the welding students."

Since May of 2013, RLHS instructor Chuck Carr has been undergoing continuing education of his own, working closely with Kevin to learn the specialized skills required of a welder. While mastering these skills and immersing himself in modern manufacturing culture, Carr has also partnered with the manufacturer to develop a comprehensive welding



curriculum for the high school.

Another program that is currently supported by Rice Lake Weighing Systems is the Student Internship Program at Rice Lake High School. Lori Katcher, Rice Lake Weighing Systems Human Resource Employee, works with Rice Lake High School to place students in areas of Career Interest to our students with the Rice Lake Weighing Systems Employees. Rice Lake Weighing systems has placed students in areas such as, Manufacturing Engineering, Mechanical Engineering, Packaging

Engineer, Software Engineering Electrical Engineering, Marketing, and much more. These students get a great out of the classroom, real life experience with Rice Lake Weighing Employees working alongside them to see what their career consists of. For many of these students, it has given them a solid direction toward a career path with their future education.

We are working with Wisconsin Indian-head Technical College's Welding Academy

Continued on Page 26

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Ellsworth Community School District High School Fab Lab Coming Together

The Ellsworth Senior High School Fab Lab (fabrication laboratory) is really taking shape as the staff and students have begun utilizing the equipment currently in the lab.

In April 2017, the District received a \$25,000 grant from the Wisconsin Economic Development Corporation (WEDC) to help develop a fabrication laboratory (Fab Lab). The District also received additional financial support from the local Ellsworth School Foundation, the Ellsworth Area Chamber of Commerce, as well as Pierce/Pepin Cooperative, and the Anne Marie Foundation.

Our fab lab is a small scale, high tech facility that offers our students and the community access to a variety of CNC (computer numerical controlled) equipment. The goal is to be able to design the part or your idea on the computer and use the various pieces of equipment we have in our facility to make or produce the part.

The equipment we currently have in our lab:

- **CNC Router:** Similar to a hand router, only it is computer controlled. It can cut and router with a variety of bits, including end mill, v-bit, and ball nosed bits, to give you a variety of shapes and designs

for your materials. The router can cut and router a variety of materials such as: plastics, woods, metals, composites, and foams.

- **CNC Mill:** Milling is a machining process similar to both drilling and cutting. Milling uses a rotating cylindrical cutting tool and advances into the material being machined. The mill also uses a variety of cutting bits like the router, including end mill bits, V-bits, ball nosed bits, as well as drill bits. The mill uses a wide range of materials including, composites, aluminum, plastics, and metals.
- **Large Format Printer:** This printer can print on a variety of products, including banners, stickers, static cling material, canvas, as well as regular paper. The maximum width it can print is 30" x however long your paper is. This is great for creating all sorts of banners, posters, and stickers.
- **Plasma Cutter:** The plasma cutter is used to cut metal. It can cut up to $\frac{3}{8}$ " material and as large as 4' x 8'. This can be used to make signs, fire rings, and anything else

you can cut out of metal.

- **Large Metal Roller:** This roller will roll up to 10 gage metal. The plan is to use this in conjunction with the plasma cutter. Once a fire ring or any other material, that needs rolling, is cut out on the plasma table, you can then take it to the metal roller and make a ring out of it. Then it will go to the metals lab for welding.
- **3D Printer:** The 3D printer will allow you to make a part in a CADD software program, and export it to the printer. The printer will then take the file and make a 3D representation out of plastic.
- **Laser Engraver:** The laser engraver, can etch and cut a variety of materials. On thinner materials, such as wood and plastic, it can cut almost any design you want. It will also etch or engrave, glass, wood, and plastic.

We also have a variety of other smaller



equipment in the lab as well. A heat press to make iron on transfers, an injection molder to inject plastic into small molds, as well as a vinyl cutter to make stickers to apply to vehicles, notebooks, water bottles, or anywhere a sticker is needed.

The Fab Lab held an Open House on May 7th to demonstrate the capabilities of this lab and the types of experiences the students will get through the availability of this advanced technology. We are also currently developing a schedule of evenings in which the lab will be open to the local businesses and general public use.

www.ellsworth.k12.wi.us
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The Welding Pathway Continued from Page 25

program. The Welding Academy offers an introduction to the basics of Shield Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW), emphasizing accepted applications in butting and joining metals using standard welding techniques. There are a total of 11 transcribed credits – in addition to SMAW and GMAW, courses include Print Reading and Math.

This program is taught in the high schools by dual certified instructors, developed with the input of area companies to include the welding skills they require of their employees.

On completion, the students will acquire two Technical Diplomas: Shielded Metal Arc Welding and Gas Metal Arc Welding. This will enable them to get an entry level position in welding and/or work part-time while completing the one-year welding technical diploma at WITC.

Rice Lake High School and WITC Technical Welding Instructor Ric Eckstein have also brought Technical Students from WITC to Rice Lake High School to work



with the Rice Lake High School Welding Students on many different welding processes and techniques.

The Pathways goal? Get students the skills necessary to earn an entry level position, in a field of their choosing, upon graduation. The hope? Put graduates to work locally.

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