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Many careers in the freight industry are named as "Bright Outlook" by O*NET. These include Heavy and Tractor-Trailer Truck Drivers, Light Truck or Delivery Services Drivers, Cargo and Freight Agents, Operating Engineers and Other Construction Equipment Operators, and Logistics Managers. Openings for these area are projected to grow by 10% to 14%.

This Issue, Page 21

Just Add Water — New Teaching Tool Focuses on Engineering Merrill Area Public Schools

Students in Lynn Kurth's science class at Prairie River Middle School in Merrill, WI have the opportunity to learn the engineering process while learning about underwater ROV's (remotely operated vehicles) and Great Lakes maritime history. Kurth developed a series of lessons called ROVe (Remotely Operating Vehicles and Engineering) in order to provide her students with a rich learning experience aligned to engineering principles found in the *Next Generation Science Standards*.

Fall/Winter 2017

Westosha Central High School student does his solo in a plane that he helped build Westosha Central High School

Josh Engberg has been a quick learner, and he has always grasped the concepts quickly. I watched as he taxi'd back to runway 29, did a short run up, then was airborne! Josh's first solo flight went off without a hitch. Josh Engberg is the fourth student from the CHS Aviation Club that has completed their First Solo Flight in the RV-12 they helped build. He is also the fourth student from the program to complete his First Solo Flight in the last year.

Spring/Summer 2017

Badger High School Automotive Badger High School

The mechanical skills of the Badger High School automotive program were put to good use recently in the repair of a vehicle to be donated to The Time Is Now to Help, a local charity helping the less fortunate. The vehicle, a 2000 Ford Taurus, donated by Badger Visual Arts teacher Michael Kern, needed significant repairs to its fuel system. The students in Tom Sheeley's Auto III class took on the project of readying the car for its new owner —real-world examples of auto work offer teaching moments that do not happen in lab exercises.

Fall/Winter 2017

See inside for more highlights from the pages of Transportation Today WI

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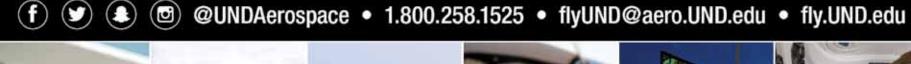


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Spooner High School Taking Flight

Spooner Area School District

In 2005, Principal Robert Kinderman (retired) approached Spooner HS Tech Ed teacher Jay Cornell with the idea of adding aviation to the curriculum. Within two years Cornell had his students doing a feasibility study and putting together their recommendations to build a twoseat airplane. A STOL (Short Take-off/Landing) plane and work began in the summer of 2008. Now, six years into the project, the plane is in the home stretch with its initial flight scheduled for some time in July of 2014."It's been a very interesting and exciting experience," said Cornell.

"The kids involved in this summer program have gained experience that is invaluable to their futures. I'm excited to see the plane get off the ground."

Winter 2013-14





Memorial Student Sets Sights on Dream Career

Eau Claire Area School District

Driver's license in hand, 16-year-old Eric Lee now is aiming for the skies — literally. The Memorial High School junior dreams of becoming a jet fighter pilot. Recently Eric practiced takeoffs and landings in a fourseat, single-engine Cessna 172 Skyhawk. His parents, Doug and Becky Lee, watched from the ground. Flying

five-minute circuits, Eric smoothly repeated the "touch and go" maneuver for slightly more than an hour Oct. 22, never completely stopping the small white plane on the runway until his final landing. Those spins through the skies marked the teen's third solo flight. Flying is a feeling hard to describe, he said.

Spring/Summer 2016

D.C. Everest Freshmen Lead Hands-On Rocket-Building **Session for Fifth Graders**





D.C. Everest School District

For three-and-a-half hours, fifth-grade students from Riverside Elementary became rocket scientists at the D.C. Everest Junior High Technology Lab — designing, sanding, molding, gluing, drying and assembling the various components of their unique rocket under the tutelage of Freshmen and their engineering and tech ed instructor Chad Brecke. The session began with a lesson in physics, engineering, aeronautics, design, math and creativity from Mr. Brecke. The fifth graders were then given the freedom to choose the design of their nose cone, the shape of their fins and the size of the rocket itself — and then set out to create each critical section of the rocket with the assistance of mentors.

Fall/Winter 2017

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Academies of Racine: Growing Racine's Future Workforce

Racine Unified School District

The Academies of Racine launched at RUSD's three comprehensive high schools; Case, Horlick and Park, in fall 2016. The Academies are designed to ensure students are better prepared for college and the regional workforce. Across town at Horlick High School, junior Damon Young gets ready to board the bus and head to the John H. Batten Airport. Sure,

Young has been to the airport before, but he's never actually been on an airplane, until now. Young is part of Horlick High School's new Aviation Pathway. This year, students will get the opportunity for hands-on learning as they dive deeper into the mechanics and aviation operating systems. "We'll get to spend the year learning how airplanes work. Those are pretty rare skills to learn, especially in high school," Young said.

Fall/Winter 2017



Pi in the Sky: Students Send a Balloon to the Edge of Space

Rice Lake Area School District

After participating in numerous inquiry-based labs meant to teach us the fundamental gas laws, our challenge was to design original experiments to learn about the layers of the atmosphere and engineer a payload to send up in a 1200 g helium balloon. This led to us launching three different helium balloons in the fall

of 2015. We attempted to send a balloon up three times and succeeded twice. We were able to determine that our balloon traveled to the upper stratosphere, roughly 30,000 meters above sea level. Luckily, both times we successfully launched we also had a GoPro camera in the payload so we still received stunning pictures. This project was immensely fun and challenging, allowing me and my fellow classmates to branch out, and open our minds to new ideas that we may never have thought about before.

Spring/Summer 2016

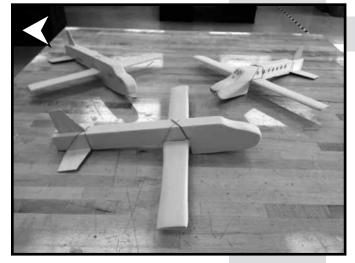


Flight Design at Port Washington

Port Washington School District

The students do something very challenging and cool when they get into their flight and space unit. They use a website designed by NASA that allows students to change an airfoil (wing) and see how lift is generated. "In the past, the students always liked completing projects like this however; a student's focus was always on making the objects and not really putting much time or effort into the design itself. Now, with the simulations, the designing is just as much fun as the building and testing phases, the students are enjoying the entire engineering and design process, instead of just one part."

Spring 2014



Rigor, Relevance and Robotics

School District of Janesville

Recently, the Craig High School "Rock 'n' Robot" programming team placed among the top 10 teams in the world in Zero Robotics. Zero Robotics teams create code for small robots to fly aboard the International Space Station (ISS). The robots, called SPHERES—roughly the size and shape of a basketball — run on compressed gas, and can be programmed to spin, revolve, hover, and navigate through the air. Researchers use SPHERES to test maneuvers for spacecraft

by performing autonomous rendezvous and docking. They fly inside the ISS cabin autonomously under the supervision of an astronaut. Craig's efforts, dedication and collaborations should be exemplified as a model for excellence to be imitated across all areas of education. The exposure to experts at MIT, NASA, ESA, and CASIS will help them as they pursue their interests and dreams long into the future.

Spring/Summer 2017



Westosha Central High School **STEM Aviation Program**

Westosha Central High School

The Central High School Aviation Program provides a unique venue for developing knowledge and skills in the area of science, technology, engineering and math, by the building of a Van's RV-12 aircraft. A group of teenagers eagerly signed up for this program. Some of them want to pursue a career in engineering. Others are looking for the guaranteed adventure. But all of them have an overall idea that captivates them. That idea is Aviation. The goal is to complete the aircraft by July 2015. Students who actively participated in its

construction will be given the opportunity to use the aircraft for flight instruction free of charge.

Fall 2014



The Westosha Central High Aviation Program —commonly known as the "Aviation Club" — is a program dedicated to teaching students the fundamentals of aviation in a unique way: students are given an opportunity to build an aircraft and fly it! We have not only finished the wings and the empennage, but we are well into finishing the fuselage. We have also started ground school, which is very challenging to the students. By the end of each class, we learn essential information about flying, which will help us be effective pilots. By being thoroughly trained, we will have a greater chance to save our lives and the lives of others in an emergency flight situation.

Summer 2015



Westosha **Central STEM Aviation Program**

Westosha Central High School

We started to building Falcon 1 in October 2014 and finished exactly 1 year, 1 month and 1 day from the time we set the first

rivet. Falcon 1, will stay local and student get to use it for flight instruction. F2" will take us a little bit longer than Falcon 1, because we enhanced the program with more opportunities for students. The goal is to have F2 done before summer 2017. After over a year of hard work, the CHS STEM Aviation Program students were able to enjoy their first flight in the newly built "Falcon One" Vans RV-12 aircraft. To date, most of the students have been able to experience flight with Jim Senft. They are excited about the unique and rare opportunity they have in STEM education.

Spring/Summer 2016



The Aviation Club at Westosha Central **High School**

Westosha Central High School

What makes for an exciting week in the life of two teenage girls? How about graduating high school with honors and distinctions and completing your First Solo flight in an airplane you helped build. That's exactly what Olivia Rasmussen and Nicole Jackson did early last summer at Central High School-District of Westosha. "Through-

> out the build of "Falcon One", I was exposed to real life engineering applications that further inspired me to pursue a degree in engineering. I was also introduced, quite unforgettably, to the world of aviation as I never would have imagined before, both through the build and in training for my license," said Olivia.

> > Fall/Winter 2016



Digital Electronics Class Takes on Power Problem with UAVs

LaCrosse School District

Students in Steve Johnson's Digital Electronics class are taking their skills up a level, literally. The Logan 10th through

12th graders are embarking on a project to design an unmanned aerial vehicle (UAV) that would be used to identify power line problems and obstructions. The students will start by researching vehicle designs as well as calculate power requirements and battery needs. "This is a real world technical problem that the students can relate to," Johnston states.

Winter 2014-15

What Did You Do Your **Summer Before Your Senior** Year in High School?

Westosha Central High School

Shortly before ending his junior year at Westosha Central High School in Salem Wisconsin, Josh soloed Falcon One for the first time. Josh is an amazing "Stick & Rudder" pilot. He can pull off every flight maneuver perfect every time in any wind conditions at any airport. He flies with smooth and precise control over the aircraft at all times. Josh capped off his summer by earning his FAA

Private Pilot license. On Aug 16th, after an hour long intense oral examination, Josh took off from Burlington Airport via runway 11 to show off his piloting skills. Josh flew a perfect flight exam (which was no big surprise to his flight instructor John Putra). This flight earned Josh his wings. This is super rare to earn your wings at such

Fall/Winter 2017

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Automotive Training Curriculum Gets Boost from Business

School District of Beloit

The School District of Beloit has revamped its Career and Technical Education program, with the help of the local business community. The late Ken Hendricks took interest in hands-on technical training programs, recognizing the now rapidly growing interest in the CTE career path. He used his passion and resources to renovate an old department store automotive garage, transforming it into classroom and garage space with the latest equipment for students to use. As a local community member phrased the change: "This isn't your dad's tech ed program!" In fact, many students completing programs will have certification upon graduation from high school, letting them enter the work force immediately, or with minimal training at a technical school or apprenticeship.

Fall, 2013





Reevaluating an **Automotive Program**

School District of Beloit

The Beloit School District and Beloit Memorial High Schools Career and Technical Education programming is in a state of redevelopment. Automotive program is one of these areas that we believe must be enhanced to meet the needs of our students and their future employers. Purple Knight Auto-

motive program is located at the Eclipse Center in Beloit Wisconsin. We have eight vehicle bays and five lifts (one of which is an alignment rack) that offer students a chance to work in an actual facility that was previously a professional automotive shop. We also have equipment that is representative of today's industry standards and are working with our advisory committee members to determine what other necessary equipment would benefit our program.

Spring, 2014

Transportation Program at Oshkosh West

Oshkosh Area School District

What has more electrical technology than the Apollo 9? Your car! That is the idea students are receiv-

ing in Mr. Boushele's Transportation courses at Oshkosh West High School. "A fundamental understanding of electricity and electrical concepts is of central importance for anyone who is considering a career path in transportation today." That is why Mr. Boushele is working with his students to develop their skills in electricity related to automobiles. Students use a variety of learning strategies and tools including digital multimeters, test lights and building electrical circuits on a specially designed electrical training bread board.

Summer 2014

A New Spin on Tradition

Franklin Public Schools

To say that I am excited for the future of this program is an understatement. One of my goals is to give my students more real world, hands on experience for my advanced classes. This is being done through the purchase, and donation of vehicles for my program. With these vehicles the students are able to learn problem solving skills, proper diagnosis of issues, working in a team, and



quality repair work. With the support of Franklin Public Schools, I have been working over the past few months to get new lifts installed in the shop to meet industry standards. Everything is now starting to take shape and next year we should have 3 new Rotary lifts including two, 2-post frame contact lifts, and one 4-post alignment rack. Future plans are to become certified by a national auto organization but it will be a long process to get there.

Spring 2014



Grafton High School Builds Auto Tech Leaders

Grafton School District

With a population of around only 12,000 people, Grafton sits smack dab in the middle of Wisconsin's 2nd smallest county. What takes place in the automotive program at the high school is nothing short of astonishing. Grafton High School has the record for the most top finishes in national automotive competitions. Carl Hader has been the Auto Shop Teacher there for 35 years and can say with certainty that it's been no easy task to

establish or to maintain national-caliber program integrity, but it has been great for our students, our graduates, our community and our school district. Through open enrollment, we attract students from all of the high schools in our county to Grafton. Career training is first and foremost in their minds when they enter here and they always get more than they expected.



Grafton High School Students Win Ford AAA **Student Auto Skills National Championship**

Grafton School District

Students from across the country gathered in Dearborn, MI last June to match wits and workmanship in a race against the clock — and one another — for the right to claim a National Championship and be named the top

young automotive minds in America at the 65th annual Ford/AAA Student Auto Skills National Finals at Ford World Headquarters. Justin Bublitz, 18, and Colt Morris, 17, representing Grafton High School, won the contest with a perfect score in the hands-on part of the competition. Bublitz and Morris were not the first to finish the hands-on event. They were, however, the first team to finish with a "perfect" car.

Fall 2014

Spring 2014

Dedication + Growth = Success: Two Generations and Still Growing!

Freedom Area School District

Bob Abitz began teaching collision repair at Freedom High School in 1972. Over a successful and highly decorated 35 year career Bob put Freedom High School on the map as a state and national leader in collision repair education. Industry connections outside of education is what gave him the edge, he understood what was actually going on in the industry. What makes Freedom High School Automotive special is its ability to do not only run of the mill auto mechanics, but full collision repair including refinishing. Projects range from late model collision repairs, to rare restorations, and even customizing motorcycles. The program has grown under the new instructor with the same last name; Jay Abitz. Bob's son Jay who studied in the program at FHS took over in 2007. Jay has blended the old with the new by doing many of the same things his father did as well as adding his own flavor.

Winter 2013-14



Freedom High School Wins Collision Repair Education Foundation Grant Freedom Area School District Freedom High School applied for the Collision Repair Edu-

cation Foundation sustainability grant sponsored by Akzo Nobel in the spring of 2015. The grant required the school to form a team of students plus a faculty advisor/mentor to demonstrate the idea for advancing sustainability within the school body shop, how it interacts with the environment, or within its community. The focus of the team at Freedom High School was to reduce the amount of solvent and hazardous waste created. Sustainability in the collision repair industry focuses on safety, efficiency, cost reduction, and conservation of resources.

Fall/Winter 2015



Birchwood Competes with a High Mileage Vehicle

Birchwood School District

Birchwood High School has taken part in the High Mileage Vehicle for over 10 years. Each year students get together and build or remodel a HMV car to try to get more miles per gallon then the year before. Last year our team started from scratch and built a new HMV car to compete with. This year we have fixed its problems and are ready to compete with it again. Students get to learn hands-on and work together as a team. We spend each class time we can to work on the HMV cars and sometimes a few hours after school. It's in these times that we bond and grow as a team.

Evolution of the Spartan **Power Center**

Madison Memorial High School

A big factor in this evolutionary process has been the training of instructors through a state automobile association. Other workshops and seminars throughout the year have also

helped keep us up to date with the changing technology of the automobile. Our courses are lab based with only a small amount of "sit and get" lecture instruction. Each course still has units of study, but each unit has a set of lab activities that relate to that unit. Each pair of students rotate through this set of activities. We are fortunate enough space and tools to have seven work bays, plus other work stations. We have some classes with 24 students, so we generally have 12 groups rotating through 12 stations.

Spring 2014



Oshkosh School District is Busy Building a Strong **Apprenticeship Program**

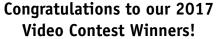
Oshkosh Area School District

The Oshkosh Area School District hasn't historically had a strong apprenticeship program, because the curriculum wasn't developed enough to meet their requirements or there weren't employers to sponsor them. Still, businesses in Oshkosh have

consistently been involved in employing students through cooperative education programs, or coops, Marc Stanga, a senior at Oshkosh West, is an apprentice at a local dealership in Oshkosh. He works for a few hours each day after school and on Saturdays, where he's learning alongside a mentor to become a GM-certified auto technician. "My whole life I've wanted to be an auto mechanic," he said. He thinks the youth apprenticeship will be a big help to getting a job in the future and hopes to receive a scholarship from the program as well.

Spring 2014







Research & Education Division Winner: "The Future of Transit: Jacksonville's Skyway" - Alex Slupski & Shabbar Syed, Stanton College Prep, Jacksonville, Florida



Women Leaders Council Winner: "Design Your Future" Chloe Arrojado, University of North Carolina at Chapel

The 2018 contest is now open and accepting applications!

The ARTBA Foundation supports two student video contests to promote the U.S. transportation design and construction industry.

The contests are aimed at helping students get a better understanding about the importance of transportation infrastructure investment to the U.S. economy and quality of life, and to learn more about the industry and potential career opportunities.

ARTBA's Research & Education Division (RED) sponsors one video contest, and the Women Leaders Council (WLC) sponsors the other. The RED contest has two categories: general transportation impacts, trends, funding; and transportation safety. The WLC contest is focused on why young people should pursue a career in the transportation design and construction industry.

Both contests are divided into two age groups: elementary, middle or high school students; and post-secondary, college and graduate students. Winners are selected for both age groups, for a total of six first-place videos.

Each winner receives a cash prize and winning entries are shown during ARTBA National Convention..

Deadline: Video Submission Deadline: August 15, 2018 Website: www.artba.org/foundation/student-video-contest





About ARTBA

The American Road & Transportation Builders Association (ARTBA) was established in 1902 by Michigan public official Horatio Earle with this express purpose: to advocate for construction of a federally-led "Capital Connecting Government Highway" that he said would connect "every state capital with every other state capital, and every capital with the United States Capital — Washington."

Earle's vision was achieved—in what is arguably the greatest association accomplishment ever-when President Eisenhower signed the 1956 law authorizing the Interstate Highway System and creating the Highway Trust Fund to finance its construction.

View previous Contest Winners at: www.artba.org/foundation/student-video-contest/video-contest-winners



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New Richmond Transportation Program Continues to Grow

New Richmond High School

We are so fortunate to have twenty five donated engines to support our program. The engines are very useful in teaching the operation of a four stroke. Each student is assigned an engine to take apart, measure and examine all the parts. When the engines are disassembled and all guidelines are met the reassembly begins.

All students test run their engines when they are complete. We have been working on relationships with our local dealerships, and auto service centers. We also received a nice donation from a community member of twelve starters, twelve alternators, and twelve drive axels. All of the donations help in the learning of students giving them hands on real life experiences in the automotive area.

Fall/Winter 2015





West Salem Career **Academy Provides Needed Training**

West Salem School District

Over the past three years, West Salem High School Career Academy has trained and educated over 60 high school students in the automotive and diesel mechanics field. The course enabled all these students to become Student Automotive Service Excellence (StudentASE) certified. The class, which takes place at West Salem High School in the automotive shop, enrolls students from numerous other area school districts that

recognize the advantages of the program. Paul Liethen, the lead instructor of the Career Academy, accredits local auto and truck dealerships for the strength of the program. These businesses contribute to the program by providing instructors, tools and equipment, facilities, and internship opportunities for students. The internships are built into the student's school schedule for approximately three hours each day. In addition to being paid an hourly wage, interns take advantage of scholarships provided by the businesses they work for.

Fall/Winter 2017

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Eleva-Strum's **Transportation Program Evolving Into a Student-Run Business**

School District of Eleva-Strum

Eleva-Strum's Tech Ed teacher Craig Cegielski continues his mission to turn his transportation program into one similar to the highly successful Cardinal Manufacturing program currently in place at the high school. Along with the professional setting students have been working on their soft skills. Employability, professionalism, hand shaking, eye contact, attitude, and attire are key. Being a problem solver is very important in the transportation industry and is a big focus in Craig's program.

Fall/Winter 2015





Automotive Education Plans Power Through at Eleva-Strum

School District of Eleva-Strum

The Technical Education program at Eleva-Strum High has moved forward with its plans to purchase and install an automotive lift on the shop floor. The lift was recently installed and is now functional. Now that the lift is at Eleva-Strum, Cegielski is focusing on building up the automotive class to accompany it. "The program is not intended to make students into automotive mechanics," Cegielski explained early on. His plan is to create a class that teaches students about, "being an informed consumer."

Summer 2014

Filling the Pipeline With Qualified, **Prepared Students** and Future Employees

Badger High School

The BHS automotive program has been transformational, turning an elective program into a rigorous and invaluable program for those students pursuing careers or post-secondary education in the field of automotive maintenance and repair. In an auto shop outfitted with a 4 service bays with lifts, computer diagnostic equipment and Snap-on tools, students progress from general maintenance to basic and tire service in Automotive Technology I, to brakes, steering and suspension in year 2, and finally to electronics, computer, ignition, fuel, and emission systems in year 3. The curriculum follows National Automotive Technicians Education Foundation (NATEF) Automotive Service Excellence (ASE) standards and students take an online qualification exam for the opportunity to participate in the Technicians of Tomorrow competition

Spring/Summer 2016

SCHS Car Show Rolls In!

Shawano School District

SCHS put on a car show May 19 for both classic and new model cars. The event has a number of classes that different cars can compete for the win. Antique, muscle, late model import, and custom are the classes to compete. The custom class was the biggest with the widest variety of cars. Any car that has modifications would be able to qualify: anything from exhaust to bodywork and engine performance. A few students decided to enter their rides in the show. One being sophomore Tyler Wagner's beautiful all black Chevy Silverado. "It's a very sharp looking truck. I would love to own it," said senior Colt Olson.

Fall/Winter 2017





Building Fuel Efficient Cars; Projects Beyond Achieving Mileage

Kenosha Unified School District

Lakeview Technology Academy is in their fifth year building fuel efficient vehicles. Achieving mileage has always been the goal of the competition. Building cars lighter, with minimal rolling resistance has always been a push to the students. This year the focus has expanded. The team has set out to work on a few major projects that might not give them optimum mileage but will definitely challenge their creative and ingenuitive abilities. This year has sparked a creative fire in my students, the use of; lasers, 3d printers, CNC equipment, EDM, Plasma table, and micro-processers have inspired countless achievable ideas.

Collaboration in Transforming Mr. Keiper's Truck

Unified School District of Antigo

I was contacted by our former school board president Mr. Keiper regarding a project he wanted help in completing. He acquired a 1995 Chevrolet pick-up truck that he wanted to transform into a tow vehicle for his Corvette which he takes to car shows. Our presentations included everything from lowering

the truck in every way possible including notching the frame, to supercharging, to lambo door conversion kits, which coincidentally he had on his corvette. Our students were able to take leadership roles in working with Mr. Keiper as he came to the shop weekly to deliver parts, check on progress, and at one point he even got his hands dirty. Seeing the pride the students take in their projects is what keep educators going.

Spring/Summer 2016





Kaukauna High School **Continues to Develop New Transportation** Curriculum

Kaukauna High School

At a time when auto shop classes are harder to find across the state Kaukauna High School continues to develop new curriculum for their long running Transportation Program. Dan VanBoxtel teaches course work that is articulated with a local higher education institution for credit. Students

have 10 to 12 cars in the lab for extensive service and repair learning skills that they can transfer to on the job opportunities. Once a student acquires some basic skills the local dealers are anxious to hire them as part time employees. The New Green Academy track at Kaukauna High School which is aimed at 2016-17 will include students learning Engineering and Sustainable Architecture with transportation efficiency as a key part of the mix in the Power and Energy class in the automotive area.

Winter 2014-15

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Green Bay East High School's Automotive **Technician Program Jumpstarts Student's Careers**

Green Bay Area Public Schools

Since its inception, students have been flocking to Green Bay East High School's automotive technician program, taught by technical education teacher Rich Sawyer. The hands-on program offers students the opportunity to take three years of classes to get a jumpstart in the automotive field. "In this class we teach the fundamentals, like how to identify the parts of a car and how they work together to make it run," said Sawyer. "After the basics, we are able get into how to diagnose, service, and repair a car and understand its systems better."

Fall, 2013



New Automotive Lab Generating Excitement in Green Bay

Green Bay Area Public Schools

The Green Bay Area Public School District is proud to announce the expansion of the automotive technician lab at East High School to form City Stadium Automotive. City Stadium Automotive will have five bays and five lifts. We anticipate the facility and new equipment will be in place by the first day of school, September 1, 2015. CSA, under the guidance and direction of our advisory team, has been designed to resemble the automotive repair areas just like the ones you experience at a local car dealerships or automotive repair shops.

Summer 2015

City Stadium Automotive

Green Bay Area Public Schools

Students enrolled in City Stadium Automotive focus on the diagnosis and troubleshooting of faults in automotive systems while receiving high school and college credit. City Stadium Automotive at East High is certified by the

> National Automotive Technician Education Foundation (NATEF) for Maintenance and Light Repair Program Standards. Students have the opportunity to work at major dealerships while still enrolled in high school. The hands-on, real-world experience students receive centers around technical research, automotive workplace skills and practices, and preparation for post-secondary education.

> > Fall/Winter 2016

Green Bay East High School Launches City Stadium Automotive

Green Bay Area Public Schools

On October 16, East High School officially opened the doors to City Stadium Automotive. The extensive renovation project nearly doubled the size of the lab, and enabled City Stadium Automotive to house five lift stations, a small engines room, and a computer lab. The updated three-year program includes 540 hours of training through three one-year courses that

combine direct instruction with hands-on lab work. Throughout the courses, students are placed into mock business scenarios, and learn about vehicle diagnostics, repair cost quoting, and making vehicle repairs.

City Stadium Automotive

Fall/Winter 2015





Green Bay Area Public Schools At the instructor's discretions, students enrolled in City Stadium Automotive® can bring their own cars into the shop. This opportunity allows students to receive hands-on problem solving skills for a variety of automotive issues on a day-to-day basis, while allowing them to work with contemporary shop equipment. The equipment includes: car lifts, computer diagnostic tools, basic hand and air tools, oxy acetylene torches, and more. Students learn about everything from changing the oil and installing new brakes, to rebuilding engines and diagnosing electrical problems. Spring/Summer 2017

City Stadium Automotive at East High to Offer Students 24 College Credits with **New Partnership**

Green Bay Area Public Schools

The City Stadium Automotive® program at East High School is proud to announce that new this school year is the opportunity for students to earn 24 college credits toward the one-year Automotive Maintenance Technician technical diploma program through a new partnership between the Green Bay Area Public School District and Northeast Wisconsin Technical College (NWTC). "This partnership is a great opportunity for automotive students at Green Bay East High School to not only earn college credit but also be within three credits of earning a technical diploma in Automotive Maintenance while still working toward high school graduation."

Fall/Winter 2017



Plymouth Auto Program Benefits From, Helps Community

Plymouth Joint School District

Thanks to the support of a local auto dealer, the project-based transportation program at Plymouth High School offers an opportunity for students to work on various types of vehicles in an expanded automotive lab. The lab was expanded in 2012 and two state-of-the-art hydraulic vehicle hoists were installed. The asymmetric hoists – of the same quality found

in professional auto shops allow for simultaneous student projects. As the community has given to the PHS auto program, the students have in turn given back to the community. Each fall for the past 20 years, students have provided free vehicle winterization inspections, checking fluid levels, wipers, belts, hoses, batteries, tires and lighting system. The program is sponsored by the Plymouth Police Department.



Fall/Winter 2016

STEM at Somerset High School – Meets "The Bus"



School District of Somerset

Recently, our students in our Biotechnical Engineering, Metals, and Art courses began working together on a bus for the Cedar Lake Speedway Bus Race. The speedway hosts an annual bus race where schools in the area can modify a bus for the competition. As the metals and art students and teachers began laying out the plan for the bus, a question if producing our own fuel for the bus was raised. The teachers approached our Biotechnical Engineering teacher about the idea. This led us to producing biodiesel for our bus. This one project had the students using many different skills related to the engineering problem solving process and skills that will be beneficial to their futures.

Fall 2014

Plymouth High School Formula Car Takes First Place!

Plymouth Joint School District

Plymouth High School took first in the Modified Class of the Formula High School challenge May 15-16. Three different drivers behind the wheel of PHS car S-66 averaged 45.83, the second fastest time in any class. The car was designed, built and raced by members of the PHS Tech Club, created a few years ago as an umbrella extracurricular for various tech ed-related projects. The club provides handson experience with real-world problems for those interested in engineering and motorsports, but also draws on math, welding, CNC, manufacturing, physics, language arts.



Fall/Winter 2017

Tesla Students Place Second in **Engineering Competition**

Appleton Area School District

Tesla students Cara Kloes, Brooke Hoernke, and Suet Lee spent their 2015–16 school year working on a way to reduce the incidences of texting and driving. Their solution to the problem was a free, downloadable app that illustrated the dangers of texting while driving. They took second place in the 2016 Wisconsin Engineering Competition. Along with this recognition they received a \$2000 award and a feasibility review of their product. Phill Reisweber, Tesla Technology Education Instructor said that "As a group, they went above and beyond on a consistent basis and were able to implement the engineering process and document every phase of development of their app."

Fall/Winter 2016



The autonomous vehicle was designed and fabricated in the Logan High School Technology & Engineering Department. It

can be controlled from a remote transmitter and navigate to a destination using a Live View system with a wireless link to a GoPro mounted on the vehicle. The AV has a GPS system with software that allows the vehicle to be con-trolled by a computer or Android-based phone. "This is probably one of the highest level engineering problems we have worked on," said Steve Johnston LHS Technology Instructor. "It involved metal fabrication, electrical wiring, digital logic, programming and problem solving."





Rebuilding the Life of a 1967 Mustang!

Chippewa Falls High School

The automotive program at Chippewa Falls High School has recently acquired a 1967 Ford Mustang for a project car. The car was purchased using funds generated from the annual Chippewa Falls High School car show and will be a long-term, student-centered project for the newly formed Auto Club. The club will be in charge of planning, designing, and restoring the car. Once the restoration is completed, the car will be

sold as a fundraiser for the auto program. We meet every week to go over updates on the Mustang project along with general car discussions as well. We work on many various projects throughout the school year which range from basic maintenance and minor repairs all the way up to engine and transmission replacements.

Winter 2014-15





Oconto Falls High School Successful **Motorcycle Program**

Oconto Falls School District

The culmination of the instruction sequence at Oconto Falls High School involves completing tearing down a new motorcycle and ultimately putting the motor and the machine back together. The past/fail test of that work is whether or not the familiar motorcycle rumble can be heard when start button is pushed. The program has been featured

at statewide conventions. Partnerships have been established with two Harley dealerships where Oconto Falls High School students have found employment. Karban's expertise is valued so much on the state level that he coordinates an annual Motorcycle Service Competition where students in high school and technical colleges face off to win the right to compete at the national level.

Summer 2014

Access back-issues with the full versions of these articles at www.transportationtodaywi.com

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Memorial High School Club Promotes a Can-Do Attitude

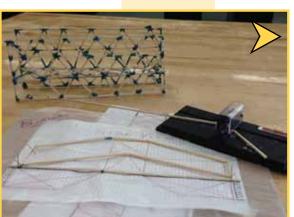
Eau Claire Area School District

Tire iron in hand, Jessica Lavorata loosened the lug nuts on a beat-up old car Wednesday inside the auto shop classroom at Memorial High School. The Memorial senior was practicing in case she ever needs to change a flat. Lavorata was joined by about 25 fellow students, all female, who came to the shop room after classes to learn how to change a tire from retired driving instructor Dan Strehlau. The students belong to a new activities club at the school called Self-Sufficient Women. If any of the students need to change a flat tire, "we don't want to have to call our fathers," Lavorata said Wednesday while she rubbed at a bit of tire grease smeared on her hands.

Winter 2013-14







Rice Lake Warrior Engineering and Technology Education Center

Rice Lake High School

One of the several pathways Rice Lake offers is the transportation pathway. One of the more enjoyable projects is building Geodesic canoes also known as a skin on canoes. The design utilizes geometric engineer principles that provide a ridged but extremely light canoe. After the main frame is built a heat shrink Dacron fabric is applied. This same fabric is used to cover small aircraft. One of these single person canoes weigh in at 12 lbs. The canoe project also makes for a nice break between classroom and hands on lab time. Each year several canoes are donated to charitable causes.

Fall/Winter 2016

Turtle Lake High School Students Crash Cars

Turtle Lake School District

The Engineering students in Mr. Koehler's class have transitioned to a transportation related problem. The great egg car crash is an activity used by Mr. Koehler's classes for many years and at two different schools. He stated "this transportation activity allows the students to learn about car

> crashes; the forces and energy of a real car crash. It allows students to use the engineering process to design their cars". Testing each of the student's cars is done by using a CO/2 dragster cylinder to power it and drive it straight into a block wall. The estimated speed the car hits the wall at is 35 mph. Designs students create use restraints, crush zones, bumpers, roll cages and other protective ideas.

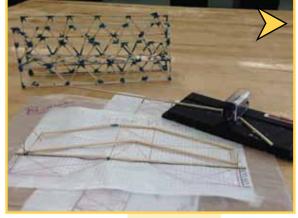
> > Fall 2014

Engineering and Design from Junior High to High School

Three Lakes School District

Three Lakes Tech Ed Teacher Mike Gorney has his students learn about transportation principles through hands on work in several of his classes. One project that he uses to have students use multiple modalities of learning is his mousetrap car project. Student models are all very different, and the students really see how design and testing go hand in hand to create a product that does what it is supposed to as efficiently as possible" says Gorney. "This is a project that really whets students' appetites to do more, and to dive into the engineering design process, we're laying the foundation

here for students to evaluate more than just the looks of vehicles, but also how and why they work the way they do" says Gorney.



Bridging the Classroom and Real Life

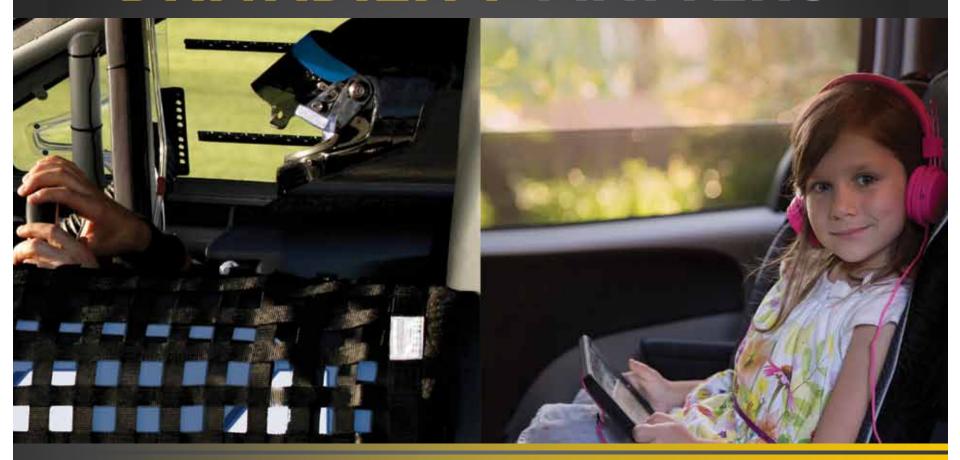
Port Washington School District

Eighth grade students at Thomas Jefferson Middle School in Port Washington, WI get to do some pretty cool things in their Technology and Engineering class. Last semester students designed their own bridges constructed out of balsa wood. Students were able to use a simulation program called West Point Bridge Design to first learn about bridge designs that are used in the real world. "What I like most about this project is that the students are all basing their models off of real world designs," says Alec Belling, "They get to see the

bridges perform and then I connect their designs and the test results with the math and science they are using in the other classes."

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Back to the Future

Wausau East High School

Three former Marion High School Industrial Technology teachers each received a surprise invitation from former student Mark Poppe, an instructor at Wausau East High School. He wanted to invite them to attend and celebrate the opening of his school's new and renovated Career and Technical Education labs and classrooms for automotive/ diesel collision, manufacturing, metals, and graphics at an open house. As they drove into the parking lot a little early, Mark was outside the new Auto Mechanical Building waiting for us. He wanted to give them a one on one tour before the open house. As they entered the

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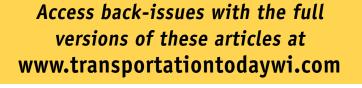
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building and viewed the interior, all they said is "WOW!" what a layout! It looked like a Technical College Shop. On our right was a state of the art spray booth with paint mixing room. Next to that was a dust controlled area for sanding automobiles in the collision instruction area. As they continued into the room there were a number of lifts or hoists to be used to work on the auto/trucks, gas or diesel. Even large diesel trucks.

Fall/Winter 2016







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UGHS Auto Shop Tries Bronco Speed and Chopper Shop

Union Grove Union High School

The first projects brought to our program were some motorcycles leaving the training fleet of our local tech college. After the usual tune-ups and carburetor cleanings, the bikes ran well enough to become a source of well supervised parking lot entertainment. A 1984 Monte Carlo is in the process of construction to compete against other local high schools at the local dragstrip. Our car started as a rolling shell made from several 80's G-bodies. Power will be delivered by a 350 Chevy built by the advanced auto

> students with the typical go-fast parts. Much of the machine work and parts have been donated by local race shops, community members, parents and auto parts store owners.

> > Summer 2015





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Bus and Truck Mechanics and Diesel Engine Specialists

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Mobile Heavy Equipment Mechanics

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Automotive Master Mechanics

Repair automobiles, trucks, buses, and other vehicles. Master mechanics repair virtually any part on the vehicle or specialize in the transmission system.

Cargo and Freight Agents

Expedite and route movement of incoming and outgoing cargo and freight shipments in airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform. Prepare and examine bills of lading to determine shipping charges and tariffs.

Driver/Sales Workers

Drive truck or other vehicle over established routes or within an established territory and sell or deliver goods, such as food products, including restaurant take-out items, or pick up or deliver items such as commercial laundry. May also take orders, collect payment, or stock merchandise at point of delivery. Includes newspaper delivery drivers.

Crane and Tower Operators

Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions.

Hoist and Winch Operators

Operate or tend hoists or winches to lift and pull loads using power-operated cable equipment.

Weighers, Measurers, Checkers, and Samplers, Recordkeeping

Weigh, measure, and check materials, supplies, and equipment for the purpose of keeping relevant records. Duties are primarily clerical by nature. Includes workers who collect and keep record of samples of products or materials.

Dispatchers

Schedule and dispatch workers, work crews, equipment, or service vehicles for conveyance of materials, freight, or passengers, or for normal installation, service, or emergency repairs rendered outside the place of business. Duties may include using radio, telephone, or computer to transmit assignments and compiling statistics and reports on work progress.

Shipping, Receiving, and Traffic Clerks

Verify and maintain records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.

Paving, Surfacing, and Tamping **Equipment Operators**

Operate equipment used for applying concrete, asphalt, or other materials to road beds, parking lots, or airport runways and taxiways, or equipment used for tamping gravel, dirt, or other materials. Includes concrete and asphalt paving machine operators, form tampers, tamping machine operators, and stone spreader operators.

Source: O*NET OnLine www.onetonline.org



Proud Tradition: Antigo Offerings in Transportation **Programs**

Unified School District of Antigo

Antigo High School has a proud tradition of offering a wide variety of courses that are available to our students in the CTE area. Our Transportation pathway is one of very high interest. Our high level courses,

Automotive Technician II and High Performance Small Engines II, focus on running the program like a working business. Customers come in; the students interview the customers working on questioning and communication skills, verify the complaint, trouble shoot the problem, order parts, perform the repair, verify the complaint and finally explain to the customer what the problem was and what they had to do to fix it. The students are using the same technology that is being used in industry. The students also have the option to participate in our Youth Apprenticeship program where they work side by side with our local technicians in the industry they plan to pursue.

Winter 2014-15



Shawano Community High School — Technology **Education Department**

Shawano School District

Through a strong partnership with our school board, administration, and local business leaders we were able to add an additional 9500 square feet of space to be able to provide more opportunities for our students at Shawano High School. The addition to the building has allowed the automotive program

> to grow. Some very important donations have been made to the auto program in order to help us grow and provide students with more opportunities. We are in the process of becoming Maintenance and Light Repair (MLR) national automotive certified. This fits our program very well and there will not need to be any significant changes to the program. Most of the pieces are in place and the goal is to have a national automotive organization come and complete the evaluation early next school year.

> > Spring 2014





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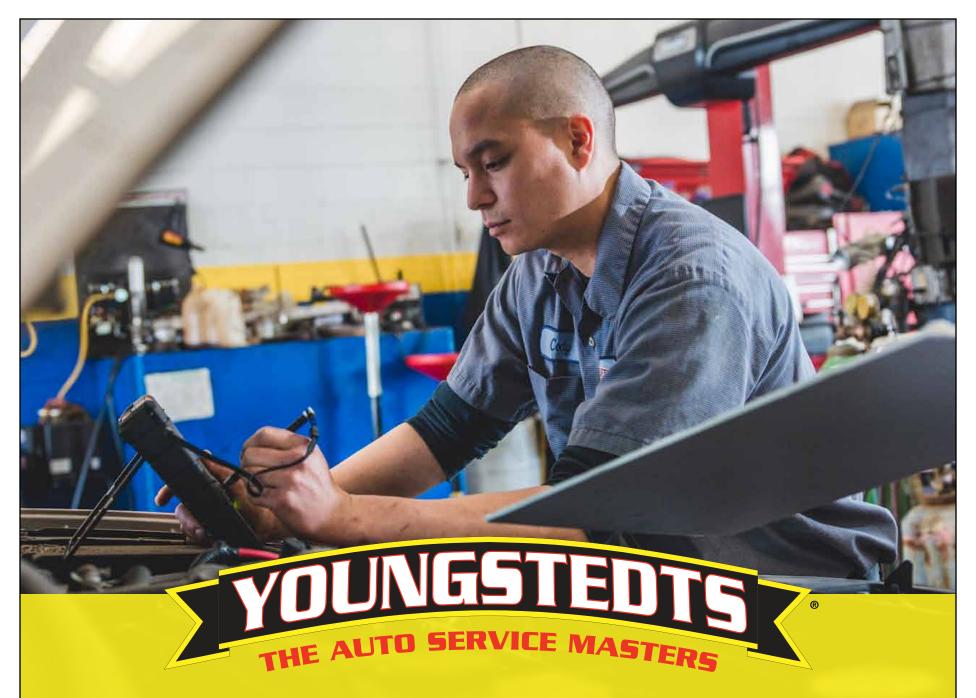
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