

Interface

Journal of the WTEA

SCIENCE

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ENGINEERING

MATH

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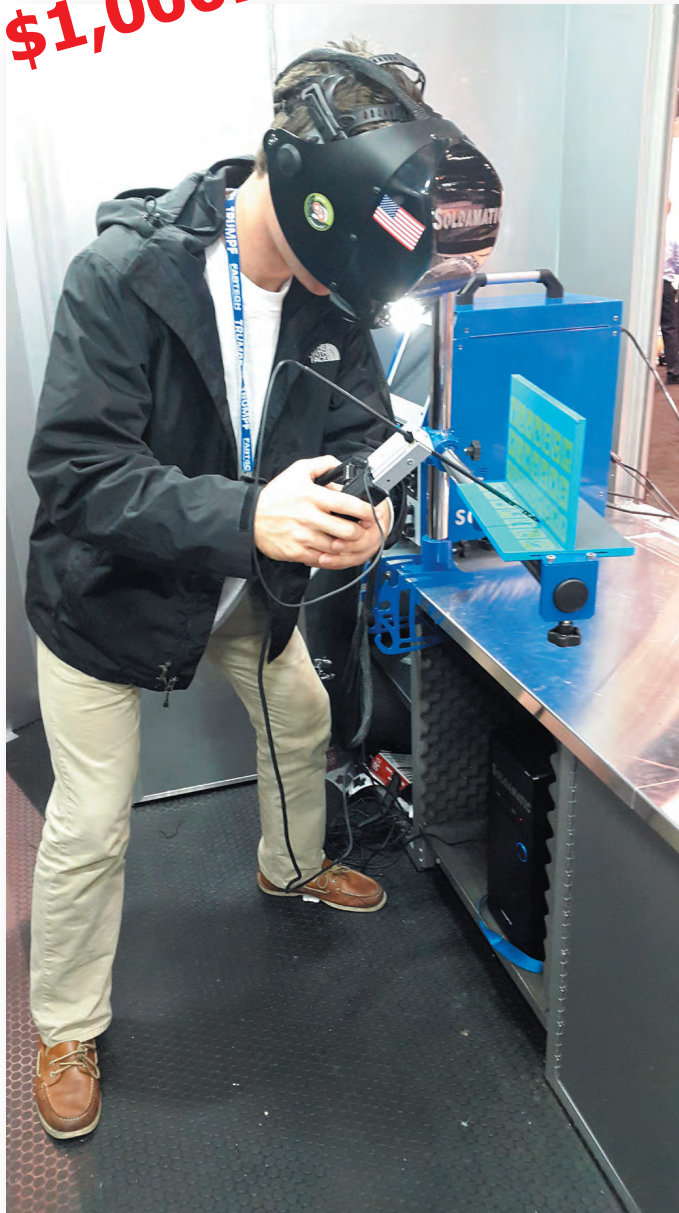
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TABLE OF CONTENTS

WTEA Board of Directors	2	Mitchell Airport	13
President's Message	3	Thank You Jeff Dowd	15
WTEA Board News	4	2016 Conference Highlights	16-17
New Board Member	5	Awards	18-19
UW-Stout	5	Middle School Prog. of Year	20-21
Interface Subscription	6	Educator of Year	22-23
Calendar	7	Lifetime Achievement	24-25
Integrating Tormach Machines	8-9	First Year Teacher at Conf.	26-27
Hagerty Grant at Freedom	10	Eagle Scout Project	28-29
Students - The End Product	11	Why Architecture?	30-31
Skilled Trades Workers	12	From the Archives	32

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From the President's Desk

By Steve Meyer, WTEA President

Hello WTEA members. I am writing this over a much needed Easter Break. I hope all of you have a little time off to spend with family and friends. The longer I teach, the more I realize how important that time really is. My wife is off with a friend to Arizona so I am home alone with my two boys Dane - 8, and Easton - 2. We will be spending each day out in the garage. I need to "summerize" the snowmobile and snow blower and get the lawnmower ready for Spring. My boys will be right with me with their tool sets helping out. The last time they "helped" I ended up with a mini-screwdriver shoved down the muffler of the fourwheeler that took me an hour to get out. These tasks would be much easier to just do myself. However, I want my boys to grow up to be tinkerers, technicians, and little engineers. The only way to do this is to let them experiment and fail . . . to *Fail Forward*. As I am required to be patient with my own children, I also become a better teacher along the way.

There are lots of events happening around the state to keep tabs on. SkillsUSA is going strong with its events and the Wisconsin Energy Efficient Vehicle Association (WEEVA) will be holding its Electrathon and Supermileage events in the next two months. If you have the opportunity to get your students involved in these, great. If you cannot do it this year, try to at least get to one of the events yourself or take some students along to just observe. That can be one of the best ways to help get young people excited and create the leaders for next year. Be sure to send your district representative an update if you have any events going on in your area. It is more important than ever to promote what we do.

There has been a lot of interest in elementary school STEM recently. I know many of you have started to work with your elementary schools to incorporate some units into their curriculum. For the last three years, I have been teaching at the elementary school for part of the day. It has been very refreshing and didn't take me long to find out the power of elementary school STEM. I encourage all of you to reach out to your administration and elementary school teachers and see if you can begin a relationship

centered around STEM education. It is a great way to lead in your district and to create the next generation of leaders in your classroom. If any of you are currently working with your elementary schools, please contact me as I would like to promote this in our association.

I want to reflect on a GREAT conference. I had such a fun time and learned a lot of things from members that I was able to put into practice right away. Everyone was very inviting and more than willing to help out and give advice as I take over the presidency. What I took away again is how important the relationships are that I have had the opportunity to make over the years. It is always so good to see old friends and catch up. To me, this is the best part of the WTEA and something that I hope to emphasize throughout my presidency. As

you finish out the last three months of your school year, remember to lean on your friends and colleagues in the WTEA for support. Thank you to everyone that made this conference possible with all of your hard work and dedication.

Have a great rest of the school year.

Keep it STEMy,

Steve



Elementary school students build a "low water alarm" for animals while studying electricity in third grade.

WTEA BOARD NEWS

Winter 2015-2016 WTEA Board Meeting Highlights

by Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Winter 2016 WTEA Board of Directors Meeting held January 8th at Chula Vista Resort in Wisconsin Dells.

- Mike Cattelino was re-elected Vice-President.
- Doug MacKenzie, *Interface* Editor, is looking for more general members to submit articles. A ten dollar discount on dues renewal will be rewarded for those members who get a published article in the *Interface*.
- New Teacher Licensure passed in Wisconsin.
- SkillsUSA has moved back to a two day event in Madison. It will be April 26-27, 2016 at the Alliant Energy Center.
- WEEVA Events:
 - o UW-Stout/TECA - April 15-16: Menomonie, WI
 - o FVTC/WIR - April 22-23: Appleton, WI
 - o UW-Platteville - April 29-30: Platteville, WI
 - o Road America - May 9-10: Elkhart Lake, WI
- Gateway Technical College will be hosting Sumo-bot Competition May 5.
- Transcript high school credits with local technical college. Contact your technical college to get this opportunity for your students started.
- The WTEA is encouraging members to host a "High-Tech" Weekend in your area. Topics can include a wide variety of subjects; CNC, Lasers, 3-D printers, Carpentry, Auto, Machining, Canoe Building, etc. For more information contact Jesse Domer: domerj@watertown.k12.wi.us

For additional information about this meeting contact any member of the Board of Directors.

Complete minutes are available from Matt Schultz at mjschult@kUSD.edu.

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WTEA BOARD

New WTEA Board Member



Hello, my name is Dave Stroud and I am in my 15th year of teaching Technology & Engineering at Ashwaubenon High School. I came to Ashwaubenon after my first year of teaching in Two Rivers. More often than not you will find me in the woodshop teaching traditional woodworking and construction courses, but I can also be found

teaching PLTW, IED, and POE. Every now and then the need arises for me to travel to Parkview Middle School to teach some courses as well.

Along with my teaching duties, I chair our department, help advise our SkillsUSA chapter, and am the school's Community Service Club advisor. Service to others is something I promote with all of my students, but especially our SkillsUSA members. Our kids park cars at Packer games for D.A.R.E., ring bells for the Sal-

vation Army, make holiday ornaments with the residents at the assisted living complex across the street from the high school, and build Little Free Libraries to promote literacy around our community. We are always looking for ways to give back to the community that supports us so strongly.

My educational background began with my graduation from UW-Platteville in 1999 with a B.S. in Industrial Technology Management - Safety Management. I soon discovered that nobody likes the "safety guy" so I headed up to UW-Stout to obtain my 220 certification. In 2012 I obtained my M.S. in Curriculum & Instruction from Concordia University Wisconsin, and am finishing up licensure for Principal and Director of Curriculum & Instruction from CUW as well.

I look forward to giving back to the profession that has giving me so much by serving on the WTEA board. If there is anything I can help you with, please feel free to contact me at dstroud@ashwaubenon.k12.org. Thank you.

UW-STOUT

UW-Stout's Career and Technical Education Summit Coming in June

By Sylvia Tiala, UW-Stout

Chancellor Meyer and UW-Stout's Career and Technical Education faculty are looking forward to hosting a CTE Summit in mid-June at UW-Stout. Over seventy leaders representing business/industry, K-12 schools, technical colleges, state government and the university are being invited to help shape the future of CTE programs at the university. The purpose of the two-day summit is to survey the current realities of Career and Technical Education in the state of Wisconsin and envision opportunities to move the university's CTE programs forward. Outcomes from the summit will inform follow-up meetings and action items for Stout's CTE programs and faculty. Stay tuned for updates!

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Interface School Subscription



The WTEA school (building or district) subscription provides you and your local colleagues with an opportunity to keep informed about technology education in Wisconsin. The more local technology educators you sign up, the more you save. An individual subscription is \$30, but you can sign up 6 people for only \$125 - that's a savings of \$55 (see fee schedule listed below). Each additional person beyond the initial 6 is only \$10.

How it works:

Complete the form below and list every technology educator in your building. If your department has teachers in more than one building, duplicate the form and provide us with the correct school address for each educator. That way separate buildings in the same school district can be combined to increase your savings. All names listed must be employees of the same school district. Tally the fees on the form and send it along with a check or school purchase order to the address on the bottom of the form. **To be eligible for all benefits of this special pricing, school subscriptions should be sent as soon as possible.**

What you get:

Each person receives: a personal copy of the *Interface*, all association mailings and notices, invitations to attend regional technology education meetings and workshops, unlimited access to the WTEA website, discounted admission to the association's annual technology education conference, and eligibility to receive all association awards (educator of the year, program of the year, award of excellence, 25 year award). All mailings will be sent to the school address on the form. This school year subscription will expire the following fall. This form will be published in the *Interface* each fall; it is also available on the WTEA website.

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Each additional person is \$10 each; names and school address may be attached on a separate sheet.

Please note: The Interface is published 3 times per year: fall, winter and spring.

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CALENDAR

- Dates to Remember -

April 15	WTEA Foundation Scholarship Application Deadline	
April 26 - 27	SkillsUSA State Conference	Madison, WI
June 13 - 16	Auto Collision Basics	Chippewa Valley Tech. Col.
June 20 - 24	SkillsUSA National Championships	Louisville, KY
July 11 - 14	Automotive Technology Summer Institute	Gateway T.C.
October 5 - 7	Career Pathways Network National Conference	Indianapolis, IN
Nov. 30 - Dec. 3	ACTE Career Tech National Conference	Las Vegas, NV
March 2 - 3, 2017	48th Annual WTEA Conference	Wisconsin Dells, WI
March 16 - 18, 2017	ITEEA Annual Conference	Dallas, TX



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Integrating Tormach Machines and HSM Software Into a CAD Class at Lakeview

By Matthew Vinson, Lakeview Technology Academy

Seeing machines at a trade show or getting a new machine/tool is always an exciting time. It is, also, always hard to decide where to spend your money with so many options. This is made evident by the many discussions and questions concerning this topic that come through on the listserve. I would like to share some of our experiences this year with our new machines. It was an exciting year at Lakeview for a number of reasons. Not least of which are the new Tormach machines we procured over the summer, which includes a new CNC Lathe and CNC Mill. With these new additions to our school, our courses and clubs have been able to provide students with more experiences and possibilities in their technical education.

CNC Software

As many other schools may be trying to do, we are working to consolidate the software we use for various machines. One piece of software we found to be very helpful is Inventor HSM (for Inventor) and HSMWorks (for SolidWorks). This is an add-on that can be integrated into Inventor or SolidWorks and can post to our CNC lathe, mill and router. It appears as a tab on the toolbar and allows you to create toolpaths, simulations and post the G-Code without ever leaving the program. It can do everything from a simple engraving to full 5-axis machining and is free for education. There are many alternatives but this has been working well for us so far. It is very intuitive and there are no file type conversions that need to be done except for posting the G-Code. I was able to learn the software on my own with very little prior experience by just experimenting and watching a few YouTube videos. The students in my CAD class picked it up very quickly as well. After they had a good foundation in CAD they were taught about tooling, speeds and feeds and different types of toolpaths. As a class we then went through creating toolpaths for a part and then the students applied what they had learned to their own unique part. After about 10 hours of class time, they were designing and machining their first parts.

Note:

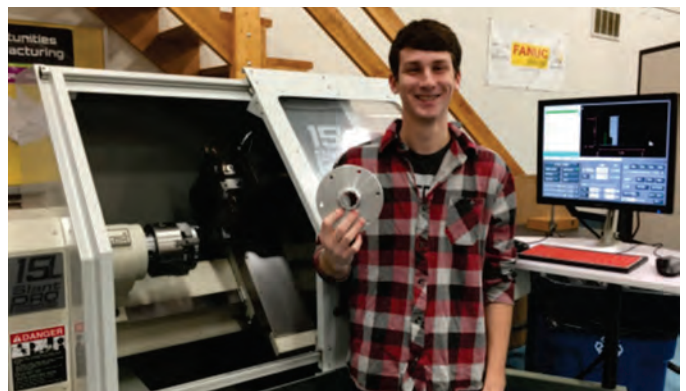
**WTEA Foundation Scholarship Application
Due Date is April 15.**

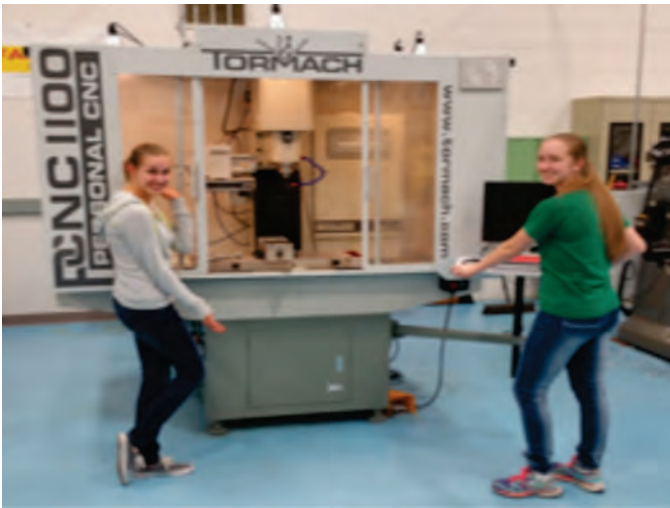


Tormach 15L Slant Pro Lathe

The CNC Lathe is a Tormach 15L Slant Pro with a turret style tool changer. This machine is a great addition to our tabletop lathes and allows our students to create cylindrical parts up to 6" in diameter and 12" long from plastic, aluminum, brass and steel with speed and precision. The cost of the machine was about \$18,000 with the addition of the turret. So far the machine has been working well and is less expensive than many of the alternatives of the same size. The conversational programming built into the control software (PathPilot) is more intuitive than some of the other machines we have.

One project of interest was done by a Super Mileage Vehicle student in his CNC class. He programmed and ran a CNC mill and lathe to create a hub adapter used by the Super Mileage Vehicle club. A major issue that many clubs, as well as our own, run into is that there is not an off the shelf part that will allow us to attach our large gears to a bicycle hub. A hub adapter was designed by the club and the student produced more than 20 of them. The club has now marketed and sold them to other clubs for over \$200 a piece.





Tormach PCNC 1100 Mill

The CNC Mill is a Tormach 1100 with an optional turret style tool changer, a coolant pump, automated drawbar, full enclosure and control unit. All together this machine was also about \$18,000. This machine allows students to engrave, bore, tap, drill, mill, slot and create complex contours from foam, plastic, aluminum, brass and steel stock in sizes over 12" by 6" by 12". The machine is capable of moving in steps of just one ten-thousandths of an inch! During the WEEVA Dyno Workshop this winter, we used this mill to create a variety of different parts to be incorporated into the Dyno. The machine was programmed using HSM to create a slotted and counter bored rail for the pillow block enclosures to attach to. The machine was able to center drill, face both ends, drill and counter bore the bar in a single setup.



So far the new machines have been working great. They are generating a lot of excitement and learning opportunities. The school is very fortunate to have such resources. I don't doubt that giving students an opportunity to use these machines has sparked a passion in some of them that will lead them into careers in design, manufacturing and engineering that they may not have otherwise pursued.

Here are some resources of interest: NYC CNC and AutoDesk HSM CAM youtube channels.



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Freedom High School Automotive Awarded Hagerty Education Grant

By Jay Abitz, Freedom High School

Freedom High School Automotive has been awarded a \$10,000.00 education grant from the Hagerty Education Program at America's Car Museum. Freedom High School was chosen from a nationwide pool of applicants for this year's award. The grant will play a key role in funding the replacement of Freedom High School's paint booth. FHS Automotive has been fundraising for years to replace the booth which has served the program well for over 40 years, but is in need of an update. The paint booth is a key piece of equipment for the program which is the only one of its kind in Wisconsin able to do full collision, refinishing, and restoration at the high school level.

More information on this ongoing project is expected to be released over the next few months.

Hagerty Education Program at America's Car Museum



The Hagerty Education Program at America's Car Museum was established by the Collectors Foundation Board of Directors on January 1, 2014 by convert-

ing the Collectors Foundation to the Hagerty Education Program. It carries forward the legacy and mission of the former Collectors Foundation, which was founded by Hagerty in 2005.

The Hagerty Education Program is a supporting organization of LeMay-America's Car Museum designed to help ensure that critical skills necessary to preserve and restore collector vehicles are not lost by providing scholarships and educational grants to students and organizations committed to hands-on training of the skills and trades.



Freedom High School Automotive Program

The Freedom High School Automotive program came to life in 1972 under the guidance of Bob Abitz, who built the program over an outstanding 35 year career. Over the years this program has grown into one of the most



renowned and accredited programs in the state and even the nation. FHS is probably best known for its success through the SkillsUSA collision repair contest with 22 state champions (state record) and multiple finishes inside the top 10 at nationals. One of the things that make the FHS automotive program special is the focus on collision repair. Since 1972 FHS has taught collision repair techniques such as panel replacement, metal working, welding, plastic repair, cosmetic repair, and refinishing. Students also experience restoration and custom work emphasizing skills like metal and composite fabrication, rust repair, and custom painting and refinishing. It is the goal of the automotive program to expose students to a variety of hands-on experiences in preparation for a career in the automotive industry or personal vehicle maintenance and repair. Students use a variety of current industry standard repair techniques, tools, and materials to complete repairs on vehicles. Current instructor Jay Abitz has taken the program to the next level by introducing new curriculum, teaching practices, tools and technology, and continuing to grow the program.

To learn more about this partnership, please contact Jay Abitz at Freedom High School. Phone 920-788-7940 or email jabitz@freedomschools.k12.wi.us.



Students - The End Product

By Mike Paquette, WEEVA President

Students are why we do what we do - you know it, I know it. How can we make them better? How can we offer more? Why not build a car.

The Wisconsin Energy Efficient Vehicle Association has been in existence for over 10 years. In that time we have grown to host events in every corner of the state. Forty or more schools participate with about 80 cars being built in the state. Schools bring high end hybrid vehicles, others bring frames, ready to ride. We've seen wide smiles on the podium, and grimaces due to a mechanical failure. We've seen teams work on vehicles for hours straight, to make it one time around the track. We've spent our weekends or free time to make it happen. Why?? When we ask our students "Why are you involved," they answer "because it's fun."

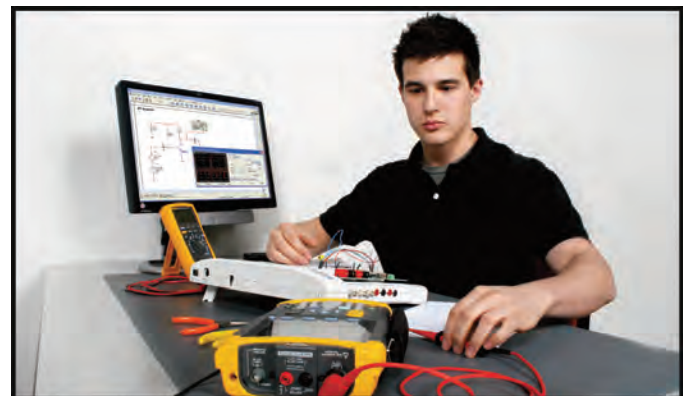
Upon my wife's insistence I asked my teams "Why do you spend your free time and spring break at school working?" Resoundingly the answer I received from the students is "it is fun." I probed a little and I still received the same answer - the rookies gave the same answer as everyone else.

The answers I received reminded me of an influence in my life, like all of you have experienced. In my case it was my Dad. He taught for 30 years at NTC as a welding and mechanical design instructor. I roamed the halls there many times in my youth, and up until recently, I have had the phone number to my father's former office memorized. He used to tell me "sometimes you have to trick them into learning." He did this with me, and my three sisters. He would find something we wanted to do then help us research it and know everything there was to know about the subject. For a class project, I once spent 3 hours with a laser expert which Dad helped arrange.

So how can we do this with students? How can we trick them into learning, how can we make it fun? Well, honestly we can not make it fun all the time. But by giving them a task that will challenge them and give them an opportunity to shine, learn and develop as a person, the fun will be in the success. We can help to prepare them for

future challenges down the road. For my programs, over the last 10 years or so, the WEEVA program has allowed my students to have fun and push themselves. We build a small car and have the opportunity to drive it. We do burn-outs in the parking lot, we practice driving, we tech it up with computers, or sometimes try to and fail.

So, remember what you do is important. How you do it is important, and that you do what you do is important. I have a lasting rapport with many students and the question I most often get asked is "How is this year's car?" Parents ask it, former students ask it, and when they do you know that building a car together was a wonderful thing they will never forget.



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What is a Skilled Trades Worker? And Why You Should Care

By Hank Brancaccio – PMSMCA (Plumbing Mechanical Sheet Metal Contractors' Alliance) Board of Directors

Most people know what a teacher does; what a fireman or policeman does; what a doctor or lawyer does; but does everyone know what a skilled trades person does on the job every day? More importantly, do they know what a rewarding, well-paying career a life in the trades offers?

When you walk through a building like an elementary school, high school, or a hospital, things you take for granted were probably installed, serviced, or handled by a skilled trades person. When you turn on water, plug in a light or phone charger, adjust the temperature on a thermostat, or trust that if there was a fire in the building that life safety systems will protect you; all of these items were installed by a skilled trades person. They include plumbers, electricians, steamfitters, sheet metal workers, sprinkler fitters, or carpenters. These are the men and women in the construction and service trades that make you more comfortable while in a building every day.

Unfortunately not many young people are considering a career in the skilled trades in this day and age. This is a problem that will only continue to grow. Many of the

current workers in these trades are close to the end of their careers, and finding quality young people to replace them has become a challenge. The Manufacturing Institute, an affiliate of the National Association of Manufacturers, reports that currently in the U.S. there are 600,000 skilled jobs, such as those for electricians, roofers, siding installers, landscapers, plumbers, carpenters and masons, going unfilled. By 2020, the study suggests there will be a need for 10 million new skilled workers. The good news is, the growing demand for skilled workers makes now an ideal time to get into the trades.

Part of the reason few young people consider a career in the trades is lack of exposure to them. When I was growing up, I was in a family of plumbers; so helping my dad on plumbing projects was an everyday occurrence. I also had the opportunity to take tech ed classes in junior high school and high school, which exposed me to things like woodworking, metal shop, machine shop and mechanical drawing. Today, many students do not get the same exposure to understand what a skilled trade person does and needs to know. To be successful in the trades today, a candidate should be good at math, think three-dimensionally, have a good work discipline, enjoy working with their hands, and not be afraid to get them dirty.

Another reason today's youth fail to consider going into the trades is ignorance of or misconceptions about what great career opportunities the trades provide. All skilled trades people go through some type of apprenticeship (classroom and on the job training), which is typically five years long. While in school, apprentices are also working during the day and getting paid good wages. When they graduate, they typically have no school debt and have jobs that pay \$60,000 to \$70,000 a year, plus generous benefits (including defined benefit pension plans). I'll say that again: trades apprentices graduate debt-free with starting salaries of \$60,000 to \$70,000 a year. And that's only the beginning. Top workers who are willing to work overtime, run projects, or manage others can make \$80,000 to \$100,000 a year. For those who are interested in earning college credit, some apprenticeship programs provide the opportunity to earn an associate degree simultaneously with the apprenticeship.

So please encourage your students to consider a career in the skilled trades. To learn more, visit:

www.buildingadvantage.org/ or www.pmsmca.com/



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General Mitchell International Airport in Milwaukee offers a number of family-friendly trips and educational experiences for kids and adults of all ages. Owned and operated by Milwaukee County, Mitchell International Airport serves more than 6.5 million passengers every year. Mitchell is a dynamic airport to visit, and it's exciting to learn about the many different career tracks that involve aviation.

Whether it's a spring break trip to the many attractions near Orlando, sightseeing in New York City, stargazing in Los Angeles, visiting the National Aquarium in Baltimore, re-living history at the Rock n' Roll Hall of Fame in Cleveland, or exploring the World of Coca-Cola in Atlanta, Mitchell Airport offers non-stop flights to 37 destinations across North America.

Before your trip, be sure to visit the Mitchell Gallery of Flight museum and gaze at the historic aircraft hanging from the ceiling throughout airport's Main Concession Mall. It's fun to browse the children's section at Renaissance Books, which offers great deals on new and used books. After going through the security checkpoint, enjoy one of the Children's Play Areas located on each of the three concourses.

Visiting Mitchell Airport is also a great way to learn about the many careers in aviation. Airline employees at Mitchell service flights for Air Canada, Alaska, American, Delta, Frontier, OneJet, Southwest, and United. Many pilots and flight attendants get to see the world as part of their jobs. Airlines also employ customer service representatives, gate agents, baggage handlers, & mechanics.

The airport employs maintenance workers that maintain the airfield, mow grass in the summer, and plow snow in the winter. Airport firefighters are on duty 24/7 and handle paramedic calls within the airport, while Sheriff's Deputies patrol the entire complex. Federal employees at the airport include Air Traffic Controllers and Transportation Security Administration (TSA) screeners.

You'll find other employees working at one of the many shops and restaurants in the terminal, for cargo air-

lines, for rental car companies, or at the 128th Air Refueling Wing of the Wisconsin Air National Guard, located on the eastern side of the airport. Speaking of our armed forces, Mitchell Airport is named after General William "Billy" Mitchell, a United States Army general who grew up in Milwaukee County and is widely regarded as the father of the U.S. Air Force.

Mitchell's nonstop flights mean you can board an aircraft in Milwaukee and fly straight to one of 37 destinations, ranging from New York to Los Angeles, Fort Lauderdale to Seattle, Toronto to Cancun, and dozens of other cities in between. Plus, there are convenient connections to hundreds of additional destinations worldwide. Wherever you need to go, Mitchell Airport is the best place to launch your adventure.

The next time you're looking to take a family trip that is both fun and enriching, take a look at how easy travel from Milwaukee can be. Mitchell Airport has a great mix of nonstop flights to business and vacation destinations coast-to-coast, and travelers enjoy taking advantage of Mitchell's low fares and easy travel experience. In fact, fares from Milwaukee are quite a bit less than the national average!

Mitchell International is conveniently located off of I-94 south of downtown Milwaukee. There is plenty of affordable parking with a free shuttle to the terminal. The airport even has its own stop on Amtrak's Hiawatha line! Visit mitchellairport.com to download a self-guided tour booklet, explore the destination map, and book your trip today!

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THANK YOU

*Thank you Jeff Dowd
for serving the WTEA for 38 years as
Trade Show Coordinator*





47th Annual Spring Conference & Trade Show



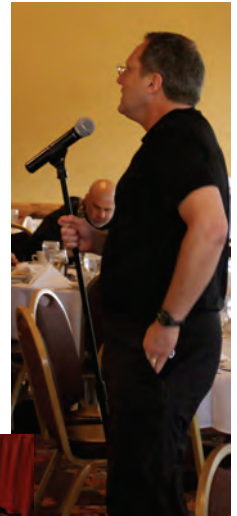
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Highlights



“Moving STEM Forward”

• **March 2 - 3, 2017**

AWARDS

2016 WTEA Awards

Presented at the Awards Banquet - February 25, 2016



WTEA 25 Year Award

"For 25 Years of Service to Education"

Duane Elfering	Mike Gorney	Robert Karl
Dirk Kermitz	John Miller	Kurt Prein
Dave Richman	Dan Strobel	Thomas Whelan

Special Thanks

The WTEA would like to thank First Technologies, Inc. for sponsoring the 25 Year Award.

.....

Future Technology Educator Scholarship

Dexter Karban
UW-Stout



.....



WTEA
Appreciation Award
"In Appreciation for Many Years of Loyal and Dedicated Service to Technology Education"
Dale Kirschner
LAB Midwest

.....

ITEEA Program Excellence Awards

Presented at the ITEEA Annual Conference March 2 -5
Lakeview Technology Academy, Kenosha
Kromrey Middle School, Middleton-Cross Plains

WTEA Special Recognition Award

"For Contributions & Service to Technology Education"



Kent Kindschy
Turtle Lake School District



Robin Kvalo
Portage High School



Paul Nistler
Brillion High School

Jared Balin - Eagle Supply & Plastics, Inc.
Maurice Veilleux - Turtle Lake School District

.....

Middle School Program of the Year

"Outstanding Middle School Technology Education Program"

Shell Lake Middle School - Bob Forsythe, Instructor
Sponsored by Goodheart-Willcox Publisher



ITEEA Teacher Excellence Award

Presented at the ITEEA Annual Conference March 2 -5
Craig Cegielski
Elva-Strum Schools

AWARDS

WTEA Award of Excellence

"For Exemplary Achievement in Technology Education"
Sponsored by Goodheart-Willcox Publisher



Eric Andersen
Central High School
Westosa



Nels Lawrence
Kaukauna High School



Nathaniel Lease
Oregon High School



Joseph Mink
Edgerton High School

Technology Educator of the Year

"For Outstanding Contributions to Technology Education"

Thomas Juran - Elmbrook Schools
Sponsored by Goodheart-Willcox Publisher



.....

Lifetime Achievement Award

"For Distinguished Achievement and Leadership in Technology Education"
Joseph Ciontea



Special Thanks

The WTEA Foundation would like to thank the Awards Banquet sponsors:

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MIDDLE SCHOOL PROGRAM OF THE YEAR

The WTEA is proud to honor Shell Lake Middle School as our 2016 Middle School Program of the Year.

Shell Lake Middle School

By Bob Forsythe, Technology Education Instructor

Shell Lake Tech Ed Mission/Philosophy Statement

We want students to understand the role of technology in everyday life, and to be consciously aware of it as they strive to think, and question, like a “Technologist” and a productive Problem Solver. They do this by using critical thinking skills and realizing there are many possible solutions to a problem - not a “one size fits all” solution.

State, National, and Industry Standards Alignment

As these courses are exploratory in nature, the objective is to give students a glimpse into the world of technology. In the seventh grade more emphasis is put on Communication and Transportation while in eighth grade the emphasis is on Manufacturing and Construction. With that as our guide, we try to incorporate as many standards as possible within the time frame the students are in the program. This, hopefully leads them to desire to continue on and learn more in the high school years.

Procedure and Time Cycle for Revising and Rewriting Course Curriculum

The nice (and sometimes difficult) part about teaching Technology Education is that it is an ever-changing field. Courses are reviewed and aligned with various standards within the budget and time constraints of the program. With that being said, the curriculum is evaluated every year after having been taught. It is then modified as needed to continue to meet the changing student population and various needs that they currently have and will have in the future as they are being thrust into this brave, new world we are making for them.

Course Descriptions

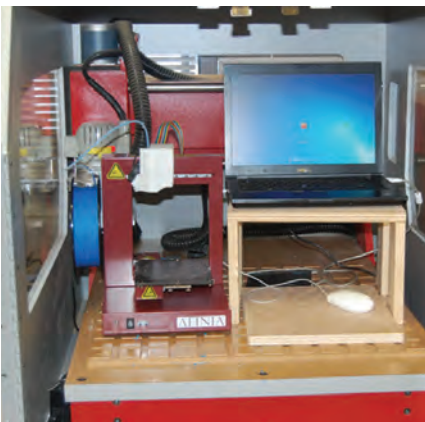
The Shell Lake Middle School Tech Ed program is an exploratory rotation for all students in 7th and 8th grade. In the exploratory classes, students are exposed to many different areas of Technology Education in order to give them a broad overview of what they may want to follow up on in a high school CTE elective course. 7th grade students explore Communication and Transportation while 8th graders focus more on Manufacturing and Construction. There is much Problem Solving that goes on as they learn and then apply ideas and concepts to various projects they work on.

Extracurricular Activities

Shell Lake Middle School Tech Ed as an exploratory course there is no related extracurricular activities at the middle school level. As a school, Shell Lake participates in a “Give Back” Day within the community and many of the Tech Ed students use their hands-on abilities to help in the construction related areas like painting and cleaning, as opposed to reading books to the younger students or serving food.

Facilities

The room is fairly large and open with plenty of space for students to work in various areas. For a small school district, we have a lot of variety and support for our Tech Ed program. As you can see from the pictures, there are a variety of work areas including a darkroom that the 7th graders actually get to use in making a photograph, to various other pieces of technical equipment.





On a More Personal Note

A somewhat apprehensive junior high school student in his first tech ed class taught by a Vietnam veteran, is where I was almost 40 years ago. The man, unknowingly, was an influential person who helped shape me into having the confidence to try new things, work with tools, and eventually become a glazier two weeks out of high school. A couple years later and I found myself learning how to be a cabinet maker. Nine years after graduating high school, having married my lovely wife Laurine, and finding myself living in Menomonie teaching Sunday School to middle school students and enjoying the satisfaction from completing high quality, custom millwork jobs, I felt called to go to college and become a teacher of the craft I enjoyed.

As a safety compliance officer, and new-hire trainer for my employer, we talked and he was willing to let me go to school during the day and supervise a new night shift. That continued for four years as I went to UW-Stout. Two children and four years later, I was a newly graduated Technology Educator looking for a job. The small school of Shell Lake was looking for someone, and I interviewed and was offered the job. We packed up the family, left Menomonie and headed north to this little gem located in Northwestern Wisconsin. Twenty years later, after being the sole instructor in a 7-12 shop/lab, middle school basketball coach since hired in 1995, and Driver Ed Instructor the last twelve years, here I am.

I lay that all out there to let people know that we all have a different race to run. I can totally relate to the students who have no idea what they want to do after they get out of school. My goal is to try to give them life skills that they can take with them and use no matter what path they choose to follow - be it college, military, or on-the-job training. Problem solving and looking at things from multiple perspectives is a huge concept that I try to get them to grasp. As I see the incredible changes that have happened in the last 20 years, my mind spins. While the pace of change isn't slowing down, we can all still make a difference, one student at a time, with many young people that come through our doors and into our classrooms and shops.

We are all in a place where we can impact and influence students - those who have a passion for Technology and Engineering, and those who are just checking us out for whatever reason. They are in our classes, and we can ignite a passion to embrace change at a pace that is like no other time in history. We have a great opportunity and how we respond can and will influence the future.

There are many of you who are far better teachers than what I am, or ever will be. I know that, and willingly accept and embrace it. I am very humbled and honored by being having my program nominated, and actually receiving the award of Middle School Program of the Year 2016 by the WTEA. I could not do it without all of you who are great mentors, colleagues, and future teachers.



Pressin' On . . .
Bob Forsythe
Shell Lake Educator



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TECHNOLOGY EDUCATOR OF THE YEAR

The WTEA is proud to honor Tom Juran as our 2016 Technology Educator of the Year.

Tom Juran

Brookfield Central High School

Technology and Engineering

Education for our Students' Futures Firmly Rooted in the Past

Receiving the 2016 Technology Educator of the Year Award and subsequently being asked to write an article for the Interface caused me to both pause and reflect on the state of technology education, our programs, and most of all, our students' futures. The job-specific tasks required of our students have changed drastically in my 30+ year teaching career. However, the methods to engage them, spark lifelong interest, and impart the skills necessary for their future success, remain largely unchanged.

The Manual Training movement, a precursor to vocational training programs that started in the 1870's as a method to train engineers, eventually transitioned into the vocational programs that continued for over 100 years until they started to lose favor to a more rigid, prescribed college preparatory type experience for students. As the pendulum in education has swung away from career readiness and towards college preparation, our students have lost opportunities and skills that our programs had delivered effectively for over 150 years. Recently, however, the pendulum has begun a slow swing back towards career readiness as society begins to question what gaps exist in our methods of

preparing students and looks to address these deficiencies in our workforce. (I personally would trade two points

on our school's composite ACT score for an increase in two points on our yet to be assessed "Common Sense, Employability and Problem Solving Exam"). Our continued role, as technology and engineering instructors, in this new educational "renaissance" is to help create collaborative problem solvers equipped with the skills necessary to succeed, not only in college, but in the high-demand careers of this century.

In our tech ed office, we jokingly keep a whiteboard filled with over 30 items that we as educators are asked to do by our administration in an effort to improve our instruction and raise student achievement. We may kid about the artifacts we need to

collect as part of the Educator Effectiveness program, the blogging we should be doing to share with colleagues, or the latest "best practices" in grading and assessment. But,



we are serious about our commitment to what we do and recognize much of what is "new" on our board is actually "old" in that, as technology, engineering or "shop" teachers, we know that the methods employed in our classes have been an effective and integral part of what we have done for a very long time. Authentic, problem-based,



driven, personalized activities have been the core of what we do every day in our classes. We realize it is those truly valuable life skills that students are not learning or being provided when they don't have the time or opportunity to take our courses.



As we look to and prepare for the future, we as technology educators need to ride the wave of the makerspace and fab lab movement to reenergize, revamp and reiterate the importance of what we do and the value that it brings to all our students. Many others in the state continue to plan for the creation of a Fab Lab or MakerSpace,



giving more students the opportunity to do what tech ed students have done for the past century, whether in a wood shop, manufacturing, auto or graphics lab, to collaborate, problem solve, design and fabricate. These are the necessary and vital skills that have always and should continue guiding what we do to prepare all students for continued success not only in college, but in life.



Tom Juran teaches digital imaging, design and reproduction at Brookfield Central High School. He holds a B.S. Degree in Technology Education, a M.ed. in Curriculum and Instruction and a C.A.S. in Educational Leadership. He advises the awardwinning Legend yearbook and is on the Board of Kettle Moraine Press Association. He is the proud father of two daughters and lives with his wife in Wind Lake, Wisconsin.



**Check out the WTEA website
wtea-wis.org**

LIFETIME ACHIEVEMENT

2016 Lifetime Achievement Award Recipient

Joseph Ciontea

Joe Ciontea was awarded the WTEA Lifetime Achievement Award at the association's annual awards banquet on Thursday, February 25, 2016. The Lifetime Achievement Award was established in 2001 to recognize an individual whose career demonstrates a commitment to our profession that goes beyond the classroom and their own students. Joe is the ninth professional educator to receive this award from the WTEA.

The WTEA is a strong, professional association because of the commitment Joe has made to our association. This marks the twentieth year he has served as the Executive Director of the WTEA. With a great deal of thanks, we are proud to honor Joseph Ciontea with the WTEA Lifetime Achievement Award.

I want to thank the WTEA for honoring me with the Lifetime Achievement Award. I have worked hard to serve my community and our association throughout my career. To have my name listed along with the previous recipients of the award is humbling. This award is truly the highlight of my career. I am proud to be part of the WTEA and all that it stands for.



Professional Accomplishments

- Graduate of UW Stout: B.S. 1976, M.S. 1984
- Wisconsin Association of School Councils - Meritorious Service Award, May 1996
- Milwaukee School of Engineering - Excellence in Teaching Award, Nov. 1997
- WTEA Award of Excellence - Site Based Learning, April 1999
- WTEA High School Program of the Year Award, Co-recipient
- Wisconsin SkillsUSA Technology Literacy Award, April 2005
- Served the Fond du Lac School District for 35 years: Technology Education, Alternative Education, LVEC, student council advisor, SkillsUSA advisor, district technology committee, and ticket manager
- Adjunct instructor for MPTC, Silver Lake College and UW-LaCrosse
- Career Program Specialist for the Foundation of the Wisconsin Auto & Truck Dealers Association
- ITEEA 2015 Milwaukee - Conference Registration & Local Arrangements Chair
- Member of the WTEA Leadership team since 1988 serving as Regional Representative, Vice President, and Executive Director





Previous WTEA Lifetime Achievement Award Recipients

Len Sterry
April 2002
Doug MacKenzie
March 2008

M. James Bensen
March 2004
Dennis Skurulsky
March 2012

Jeff Dowd
March 2005
Carl Hader
March 2013

Fred Schroedl
March 2007
Pete McConnell
March 2015

A First Year Teacher Attends the WTEA Conference

By Anna Vitale, Dodgeand High School, Juneau

I attended my first WTEA Conference in February. It is important to me to share with the WTEA membership the experiences of a first year teacher attending the Conference.

I will preface this by stating I have been a special education teacher for 11 years, Cross-Categorical (all across the board from students with mild learning disabilities to students with severe cognitive and physical disabilities, paraplegic, Down's Syndrome, varying degrees of the Autism spectrum, EBD, violent/aggressive, ADHD, ADD, etc.) and have attended numerous workshops and conferences for all areas of special needs. I've attended the routine district workshops on Writing Strategies, Differentiation, RtI, Math Implementation, etc. Prior to special education, I was in Early Childhood Education, and attended, as well as taught, workshops in Southeastern Wisconsin for many years.

The WTEA Conference was by far the most valuable and useful conference I have ever attended. New teachers and teacher education students in college should join the WTEA and go to the conference next year. Access the WTEA database of curriculum and resources. Get the support and resources from your colleagues who have "been there, done that." Get on the CTE listserv email. WTEA is the organization that helps you through those first years as a technology education teacher.

There is a tried and true saying that mentor teachers will tell us: pay attention to what the experienced veteran teachers tell you. Don't go into your first year trying to change the world. Get your bearings, then later on make your changes.

In a new teaching position, I found I desperately needed input from experienced CTE teachers. Colleagues suggested I join the WTEA. Doug Devine (Eau Claire North HS), who had inspired and motivated me to pursue my dream of having technology education certification, had been encouraging me for over a year to join. I finally did, not realizing that joining the WTEA and attending the Conference was the key to the support, the resources, and the accessibility of everything I needed to develop as a new CTE teacher.

Within the first two hours of the Conference the whirligig of my first year Tech Ed teacher-world stopped it's giddy spinning. I attended Pete McConnell's (Prairie River MS, Merrill) New Teacher Seminar - both sessions.

Not only did he provide curriculum ideas, project/activity guidelines and insight, but he did it from the perspective of a new teacher because he had never taught middle school before (he retired, and then was called back to teach middle school). He kept reiterating how he was a seasoned teacher, a professional, and these were his challenges - funny thing, some of them were exactly what I had encountered my first semester! It was as if a cloud was broken up, and the sun shone through and the message was, "I can do this! It's not me, doubting and questioning my abilities as a tech ed teacher, no matter how badly I've wanted this! This is happening to other people, who've been in tech ed!"

Then, later in the day, I listened to first year teacher, Jacob Schumacher (Logan HS, LaCrosse), telling about his experiences in "Build A Tiny House with Your Construction Class." I realized the "adventures" I had with my Construction class building an ice shanty and deer blind, were similar to what Jacob experienced (albeit, the breadth and scope of his tiny house is far beyond our mere ice shanty and deer blind! Hats off, Jacob!) Again, the message, "I wasn't alone!"

The connections and 're-connections' at the conference were significant. Tech Ed teachers I have known for years through SkillsUSA, and new acquaintances, offered support, ideas and resources. I couldn't write or absorb information fast enough. I had the opportunity to meet one of my professors for this semester, Barb Bauer (UW-Stout), and I only wish I would have had a chance to sit and talk - time went too quickly! I also met Dr. Stricker (UW-Stout), and again, I was able to put faces and personalities to names on my computer screen. It was also very meaningful for me to speak with Dr. Brian Albrecht, from Gateway, whom I knew back in the 80's, when he was possibly a new teacher and I was heavily involved in VICA (SkillsUSA).

The Project Showcase was amazing. I was blowing up my phone, snapping photos, to show my students, "Hey, look at what other schools are doing! We can try this! Let's do it!" It gave them a vision for what their peers are doing in other schools and the type of work being produced by students who will be their competitors for jobs in a few years. I plan on making that hit home even more, when I start my SkillsUSA chapter next year. In the meantime, this was a great opportunity to introduce my students to

the thought of healthy, skill-related competition, and encourage the drive to strive harder.

The vendors provided a multitude of resources, and I was shocked to find that I could even access free “stuff.” There was so much to look at, and explore, and talk to ‘real people’ about the material rather than reading it on-line. The partnership, support and rapport of the vendors for WTEA was remarkable.

I left feeling I was not alone, struggling through my first few years as a Tech Ed teacher. The whirligig had stopped, and the panorama of learning from this year and envisioning my future years was coming into focus. These were colleagues, Tech Ed teachers who ‘had my back’ and understood what was happening, offering help (along with the dry, ironic humor that makes our profession so endearing!) I know that if I am at a loss, or need some help, tech ed teachers and the WTEA are the group

of teachers that will be there, offering the help, checking on me, ready to help me and my students succeed.

I am so proud to be able to say, “I’m a Technology Education Teacher.”

Note:

Anna Vitale is currently pursuing an Add-On Certification through the Distance Learning Program at UW-Stout. She was heavily involved in VICA throughout high school (Drafting and Leadership), had a little “side business” in high school of advertising design, and worked in the advertising print industry for a few years after high school. She comes from a “construction” family and was very involved, growing up with practical knowledge and an understanding of residential construction. For the past five years, on “off-school” days, she is an assistant to a master carpenter.

THANK YOU

Thank you WTEA. You have made me appreciate all of you every day for the last 4 decades. You have further humbled me with your award at the February WTEA Conference. Thank you.

At the conference a member came up to me and reminded me of how we had worked together on projects at his High School. He mentioned he was 17 years old at the time and had been working hard to be proficient as a Tech Ed student and working on his Boy Scout Eagle project. While thanking me for my help he nailed my heart with the statement “I am now 50 years old.” WOW, that told the whole story.

Thank you for so many great memories.

Dale Kirchner



Eagle Scout Project Enhances Technology-Engineering Department

By Jeff Thielke, Kennedy Middle School, Germantown

Schools give kids an opportunity to gain the needed educational skills necessary to be productive citizens later in life. Yet, how many kids look at the school, classroom or programs and feel the environment they learn in is as important as the content they study. There was one such student, Sam Mathney from Boy Scout Troop # 271, Germantown, Wisconsin, Potawatomi Area Council.

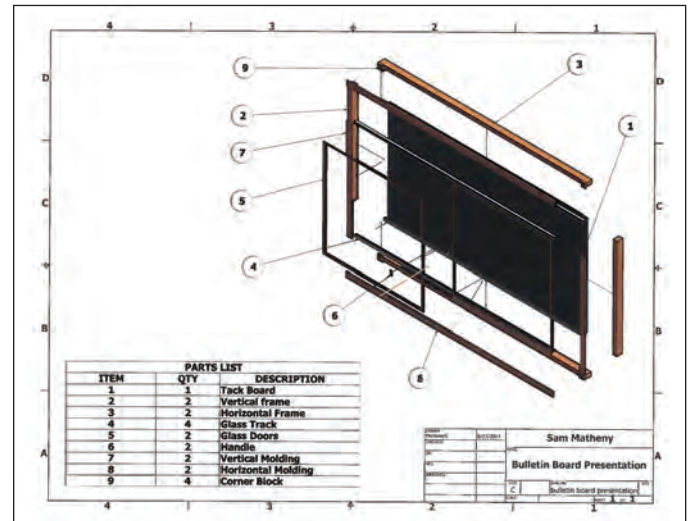
Sam, a Sophomore at Germantown High School started his Eagle Scout project when he was an 8th grader at Kennedy Middle School, in Mr. Thielke's Technology-Engineering classes. Mr. Thielke agreed to mentor Sam throughout his Eagle Scout project, which was completed in two phases.

Phase One was to assist with enhancing the Technology-Engineering facility at Kennedy Middle School. For three days, Scouts from Troop # 271 worked with Instructor/Mentor Jeff Thielke to improve the educational environment. By weeks end, the Technology-Engineering facility was "shining." Eagle Scout candidate Sam Mathney organized the Scouts, including the following completed work:

- Assemble new equipment
 - Miter Saw and Stand
 - 2 Floor Drill Presses
 - Belt/Disc Sander and Stand
- Paint baseboards in Production Lab
- Repaint Production Lab floor
- Replace safety lines around work areas
- Resurface maple top work areas



Phase Two was the design, fabrication and installation of a Public Relations Display for the Technology-Engineering Department. Sam began this phase of his Eagle Scout project by doing all the CAD Drawings for the oak frame, molding, back, glass and track of the display.



A cost analysis of all the materials that would be needed was organized. With needing over \$600.00 to complete the display, fundraising now became Sam's priority. This part of the final phase involved an entire school year. During the summer after Sam's freshman year in high school, materials were purchased and donations from supporting businesses were acquired.

- Home Depot – (Menomonee Falls)
- Wisconsin Shower & Door - (Menomonee Falls)
- Nue's Building Center - (Menomonee Falls and Germantown)



The beginning of Sam's sophomore year saw fabricating of the oak frame, back and molding taking place in Kennedy Middle School's Production Lab. Scouts from Troop #271 assisted Sam with cutting, sanding and drilling all of the parts.

A schedule was established for Sam to meet with Mr. Thielke and complete the staining, lacquering and painting of all the parts in preparation of fastening them to the wall.

Once the bulletin board frame had been securely fastened to the wall, Wisconsin Shower & Door performed the measurements needed to install the donated tempered glass panels, frame and hardware.

Within a few weeks workers arrived from Wisconsin Shower & Door, installed the frame and glass panels into the display. The following week, the final finish molding was installed; nail holes filled and touch-up of any imperfections on the display.



Now it was time to utilize the display, promoting Technology-Engineering articles that highlighted student and program successes. Sam's Eagle Scout Project was acknowledged by a decorative plaque, displayed next to the Public Relations Bulletin Board.



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Why Architecture?

By Erica Chappelear, High School Outreach & Recruiting Advisor, UW-Milwaukee

Each time I present in a high school classroom, I put myself in the shoes of the students and wonder how they see architecture fitting into their life. Do they live in a small community or a large city? Have they been exposed to tall structures on their morning commute or pastoral landscapes dotted by wildlife? How could studying architecture change their perspective and enhance their life? Then we dive in and get our heads thinking about famous architects and their design processes. We get our hands busy sculpting, and creating and imagining what could be done with simple materials. When all is said and done, we discuss how, and why, and what we have done, and how all of it relates to the “act of making” in architecture school and in the careers beyond.

These classroom experiences are a lot like architecture school. Crazy. Confusing. Amazingly fun. They also open up conversations about studying architecture in college and some common questions I am asked about an architecture education and my own time in the field.



I'm not sure about architecture, why should I study it in college?

A degree in architecture is a gateway to many fields, including construction management, interior design, real estate, lighting design, structural engineering, even sales and higher education. You will learn skills like problem solving, time management, and communication that are transferable to many careers. Students in architecture school are also exposed to the world. We study everything from ancient structures to new technologies in sustainable design, and in the process learn a whole new language to describe our work. You'll engage in hands-on project based learning that allows you to explore in ways you never imagined.

What should I do to prepare myself for architecture school?

1. In high school, work hard; developing your work ethic and time management skill here will make college in any field much easier.
2. Take a variety of courses including math and physics and whenever possible, tech ed and art.
3. Shadow. Shadow. Shadow. Find professionals to follow around for a day or more. If possible, shadow multiple professionals to see what different work environments feel like.
4. Visit schools of architecture. Yes, of course, UW-Milwaukee, and also other programs to find the learning environment best for you.
5. Consider an architecture summer camp. At UW-Milwaukee we offer a one-week camp that includes time in a design studio with faculty and graduate student mentors, tours of interesting architecture in and around Milwaukee, and meetings with architectural professionals.



What projects have you designed?

Though I have worked in the world of higher education and non-profits for the past 12 years, I was at one time in an architectural firm. We had a wide range of work, and I specifically worked on projects at the county courthouse, a food court redesign at a technical college, and a high-end residential project. I also assisted with the management of the firm's website and marketing pieces.



Why should I choose the School of Architecture and Urban Planning at UW-Milwaukee?

You should choose it, because it feels like the best fit for you. At UWM, you'll be in an urban setting, which is great for learning about architecture, and our campus is in a very residential beautiful part of the city, so it doesn't always feel so urban. You will get a quality education, at a reasonable cost. We've been called one of the best small schools in the Midwest for architecture. If you want to explore beyond Wisconsin, we offer many study abroad experiences that involve traveling with faculty to learn in places like Europe, Japan, and even Cuba.

You'll be in a large campus with lots of opportunities to minor in areas such as business, structural engineering, or art and design, plus we have a spectacular Honors College that offers high achieving students small discussion based learning experiences. Some of the best resources for students can be found in the School of Architecture and Urban Planning: computers at every studio desk with all the software you will need, an in house not-for-profit supply store, a full wood shop, two types of 3D printers, a vacuum former, laser cutters, CNC machines and a new digital scanner to take students' physical models into a

virtual world. Finally, our faculty and staff make learning challenging and fun. Personalized attention in design studios, the photography studio, and resource center, give you the support needed to explore and create through your design.

Finally, we have amazing job opportunities for you. Architecture is a growing field and firms in Milwaukee and Chicago are continuously asking for our students to work for them. During your time in school we'll help you connect and network through student organizations like the American Institute for Architecture Students (AIAS), and our Externships connect you with firms for week-long experiences during spring and winter break.

How to set-up a classroom visit for your students

I bring hands-on activities into classrooms, generally within a 3 hour radius of the Milwaukee area. I am also exploring Skype presentations and can sometimes visit beyond that radius, if there are a number of schools to visit in an area. We also host school groups in the School of Architecture and can give your students a hands-on experience and tour of the building during your time with us. Finally, we offer individual student tours throughout the year. Please feel free to contact me at ericac@uwm.edu for more details!



photos by Professor Nikole Bouchard



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FROM THE ARCHIVES

Editor's Note: The following Activity is reprinted from the Winter 2000 - 2001 issue of the Interface.

This project was developed in an 8th grade Tech Ed class while discussing the history of manufacturing and how we take things as simple as shoes for granted today. The assignment was given on a Friday and was due the following Monday. The students used various materials from their homes to make anything from wooden shoes to a newspaper creation. Many students thought it was frustrating but very enlightening.

If you have questions or ideas for improving this idea, email Bob Forsythe at forsythe@shelllake.k12.wi.us.

Make Your Own Shoe!

Assignment:

In this assignment you will be doing some real thinking and problem solving. The idea is that you are to create your own footwear. You are to design a shoe that fits the criteria we discuss as a class (like it looks good, durable materials, fits well, easy on & off, traction, two colors, creative, etc.), make some sketches, and actually produce the shoe. You are free to ask others their opinion and get ideas from anywhere.

On the day it is due, you will be required to put it on and walk around the room displaying your shoe. We will all see how well it fits and how comfortable it is "on display." You will then do a self evaluation and put down some of your thoughts and ideas from the experience.

Evaluation:

Please rank your shoe using the following criteria:

- 0 - doesn't meet objective at all
- 1 - slightly address objective
- 2 - meets objective adequately
- 3 - just exceeds objective
- 4 - greatly exceeds objective

Fits your foot _____

Durable materials _____

2 colors (list) _____

Light weight (weight) _____

Removable (how) _____

Brand name (what) _____

Traction _____

Looks good _____

Creative _____

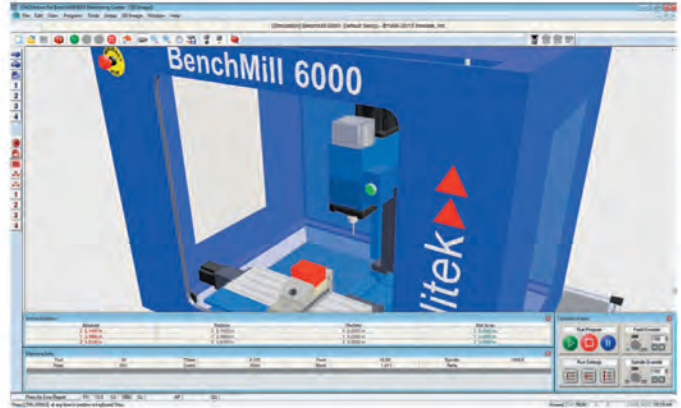
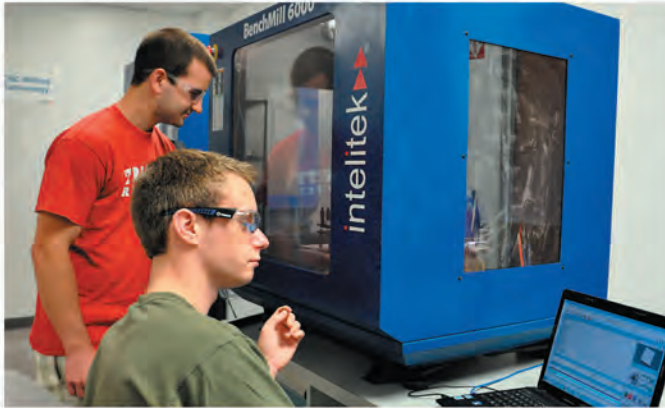
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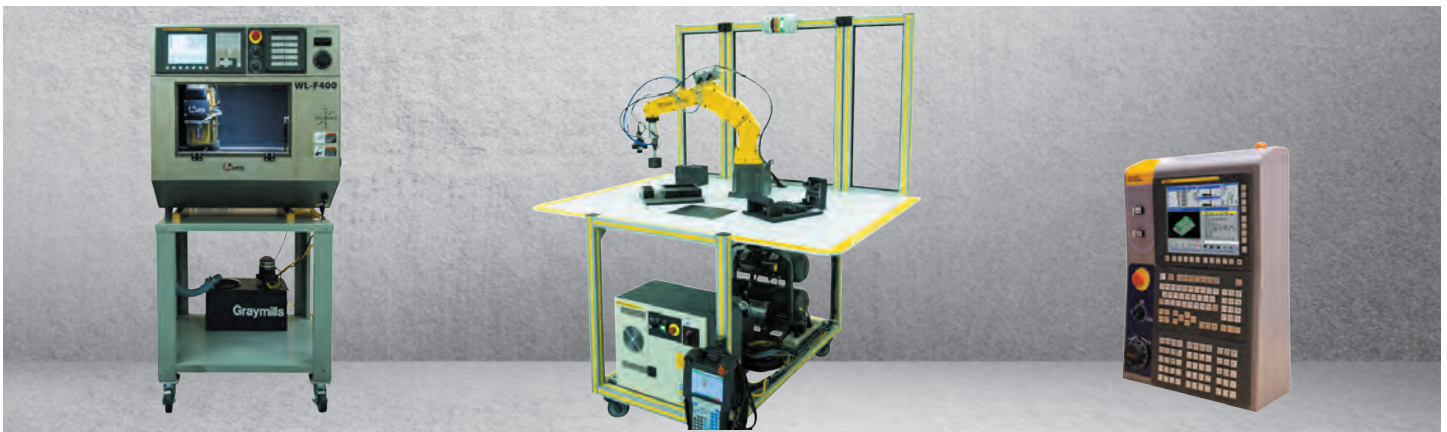
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