Interface

Journal of the WTEA

Volume 56
Number 3
Spring 2017

ADVERTISERS

First Technologies, Inc.

Gateway Technical College

Goodheart-Willcox Publisher

Haldeman-Homme

LAB Midwest

Youngblood Lumber Co.

SUPPORT OUR ADVERTISERS

TABLE OF CONTENTS

Cover design by Howard Roloff, 116 S. Morris St., Stoughton, WI 53589 • hroloff1@yahoo.com

Interface, the journal of the **Wisconsin Technology Education Association,** is published & mailed from Stoughton, Wisconsin three times a year and is distributed to members of the **WTEA.** Individual subscriptions are available at $30 per year. For subscription information, back issues, or reprints please send requests by email to joe.ciontea@wtea-wis.org. Articles for publication should be sent to: Doug MacKenzie, 960 Yuma Circle, Stoughton, WI 53589, doug@wtea-wis.org.

WTEA Refund Policy

The WTEA Membership fee is not refundable. The WTEA School Subscription fee is not refundable, but is transferrable to other staff in the same school district. The portion of the non-member conference registration fee equal to the amount of the WTEA membership fee is non-refundable. Refunds for Conference Registration and/or Awards Banquet must be received by US Mail or by email at least 15 days prior to the event. Exhibit space cancelled after Jan. 10th will be subject to a $100 cancellation fee. No refunds will be given for exhibit cancellations within 45 days of the event.

2017 WTEA Board of Directors

WTEA Home Page www.wtea-wis.org

PRESIDENT - Steve Meyer
(W) 920-756-9238
(email) smeyer@brillionsd.org
Brillion High School

VICE-PRES./TECH COLLEGE REP. - Mike Cattelino
(W) 920-735-4887
(email) cattelin@fvtc.edu
Fox Valley Technical Colllege

SECRETARY/TREASURER - Matthew Schultz
(W) 262-359-8155
(email) mjschult@kusd.edu
Lakeview Tech. Academy, Kenosha

PRESIDENT-ELECT - Phil Bickelhaupt
(H) 715-570-9376 (W) 715-424-6715 x 1036
(email) phillip.bickelhaupt@wrps.net
Wisconsin Rapids School District

EXECUTIVE DIRECTOR - Joe Ciontea
(C) 920-904-2747
(email) joe.ciontea@wtea-wis.org
WTEA Office: P.O. Box 1312, Fond du Lac, WI 54936-1312

EXHIBIT COORDINATOR - Tom Barnhart
(W) 920-492-2955 Ext. 2089 (C) 920-615-1939
(email) tbarnhart@ashwaubenon.k12.wi.us
Ashwaubenon High School

PROGRAM COORDINATOR - Steven Johnston
(H) 608-689-3033 (W) 608-789-7700 x 3306
(email) johnston@mwt.net
Logan High School, LaCrosse

MARKETING CHAIR/DIR. AT LRGE - Bryan Albrecht
(W) 262-564-3610 (C) 262-496-4592
(email) albrechtb@gtc.edu
Gateway Tech. College

DPI REPRESENTATIVE - Brent Kindred
(W) 608-266-2683
(email) brent.kindred@dpi.wi.gov
Technical Education Consultant
P.O. Box 7841 Madison, WI 53707-7841

WEBMASTER - Michael Beranek
(C) 715-579-2273
(email) mkberanek@gmail.com

INDUSTRY REPRESENTATIVE - Vacant

UNIV. REPRESENTATIVE - Frank Steck
(W) 608-342-1246
(email) steck@uwplatt.edu
1 University Plaza, 411 Pioneer Tower, Platteville, WI 53818

DISTRICT A DIRECTOR/UNIV. REP. - Sylvia Tiala
(W) 715-232-5619
(email) tialas@uwstout.edu
224D Comm. Tech. Bldg., Menomonie, WI 54751

DISTRICT B CO-DIRECTOR - Brian Schiltz
(H) 715-453-2947 (W) 715-453-2106
(email) schiltzb@tomahawk.k12.wi.us
Tomahawk High School

DISTRICT B CO-DIRECTOR - Pete McConnell
(H) 715-536-2691
(email) mcconnell.pete@gmail.com
Prairie River Middle School, Merrill

DISTRICT C DIRECTOR - Mike Paquette
(C) 715-789-2497
(email) paquettem@peshtigo.k12.wi.us
Peshtigo Middle/High School

DISTRICT D DIRECTOR - Jon Larson
(W) 920-788-7600
(email) jlarson@littlechute.k12.wi.us
Little Chute High School

DISTRICT E DIRECTOR - Doug Kugler
(H) 262-790-9128 (W) 262-548-8031
(email) dkugler@waukesha.k12.wi.us
Waukesha County Juvenile Center, Waukesha

DISTRICT F DIRECTOR - Eric Sutkay
(W) 262-359-8155
(email) esutkay@kusd.edu
Lakeview Tech. Academy, Kenosha

DISTRICT G DIRECTOR - Travis Ray
(W) 608-838-4500 Ext. 4986 (C) 608-778-3760
(email) rayt@mcfsd.org
McFarland High School

DISTRICT H DIRECTOR - Tom Martin
(H) 608-874-4414 (W) 608-822-3276 x 242
(email) tmartin@cesa3.org
CESA #3, 1300 Industrial Dr., Fennimore, WI 53809

DIRECTOR AT LARGE - Doug Dimmer
(C) 262-388-0660
(email) doug.dimmer@huhs.org
Hartford-Union High School, Hartford

DIRECTOR AT LARGE - Alan Mamerow
(W) 262-246-6471 x 1496
(email) mameal@hamilton.k12.wi.us
Hamilton School District, Sussex

DIRECTOR AT LARGE - Dave Stroud
(C) 920-217-7439
(email) dstroud@ ashwaubenon.k12.wi.us
Ashwaubenon High School

INTERFACE EDITOR - Doug MacKenzie
(H) 608-873-9479
(email) doug@wtea-wis.org
960 Yuma Circle, Stoughton, WI 53589

From the President's Desk

By Steve Meyer, WTEA President

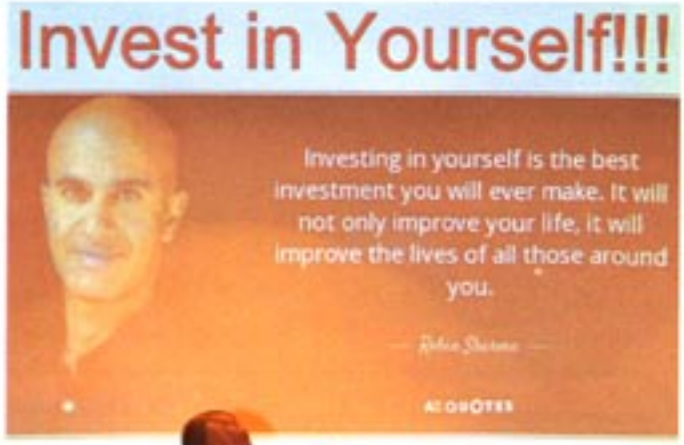
Hello WTEA members. I am writing this while catching up on things over Spring Break. It seems as though everything has been a whirlwind since the conference and all the prep that went into it. Before we know it, this school year will be over. The end of the year is always a rat race with Supermileage and Electrathon events, SkillsUSA, Spring Break, Prom, Spring Sports, final exams, and graduation. It is a stressful time of year, but also an exciting time. I hope the conference energized you and gave you the passion and drive to push through the rest of the year. I know it did for me.

This issue of the the Interface includes a lot of write-ups on the conference, along with pictures of the different events. Be sure to read about our award winners and check out the photos from the Awards Banquet. Check out what your district directors and other WTEA Board members are saying about the conference. Other articles include information related to leadership in administration in the areas of STEM education, the benefits of independent studies for your students, the undervaluation of TE, articles from university students, several opportunities, and many more interesting insights into our field.

With all the interest in the Project Showcase at the conference over the past few years, I would like to start a new section in the Interface that showcases a project that others can use in their classroom. For the next Interface issue, I will be looking to the membership for project plans that you would be willing to share with others.

In closing, thank you so much to all of the people that helped put on a bang-up conference. The enthusiasm was contagious. It was great seeing lots of old friends and creating many new ones. I ask that all of you keep the excitement going and stay in touch throughout the rest of the school year and into the summer. Let us know if the WTEA can help you in any way.

Take care. Steve Meyer, *WTEA President*



WTEA BOARD NEWS

Winter 2016-2017 WTEA Board Meeting Highlights

By Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Winter Board of Directors meeting held January 13 & 14, 2017 at Chula Vista Resort in Wisconsin Dells.

New Board Appointments & Elections:

- President-elect: Phil Bickelhaupt, Wisconsin Rapids
- Secretary/Treasurer: Matthew Schultz, Lakeview Technology Academy
- Director at Large - Alan Mamerow, Sussex/Hamilton High School

Bylaws Change

Voted to change the bylaws page 10 1C to read: "Honorary Life Membership will be awarded to all Past Presidents and all Lifetime Award Recipients of the Association. Additional Honorary Life Memberships may be awarded to other regular members of the association when approved by the Board of Directors of the WTEA."

Poster Recruitment

"I want you to be a Technology and Engineering Teacher" poster. Contact Joe Cointea if you are interested in a poster for your classroom.

UW-Stout (Sylvia Tiala)

Barb Bauer is the new program director for the Tech Ed program. New department chair is Kimberly Martinez. New dean is Bob Salt.

Upcoming Dates

CTE Summit at UW-Stout, June 19-20.

44th annual WI SkillsUSA conference is April 25-26 at the Alliant Energy Center.

Formula Student (Formula High School) May 16-17 at Road America.

2017 WTEA Conference at Chula Vista March 2 & 3.

2018 WTEA Conference at Chula Vista March 7-9, 2018

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.

- Dates to Remember -

April 25 - 26	**44th SkillsUSA State Conference**	Madison, WI
June 19 - 23	**52nd Annual SkillsUSA National Championships**	Louisville, KY
July 10 - 13	**Automotive Technology Summer Institute**	Western Tech. College
October 22 - 23	**SkillsUSA Fall Leadership Conference**	Wisconsin Dells, WI
October 25 - 27	**Career Pathways Network National Conference**	St. Louis, MO
November 15	**WTEA Awards Nomination Deadline**	
December 6 - 9	**ACTE National Conference**	Nashville, TN
December 9	**Nomination Deadline for WTEA Vice-President** *(2018-2020 Term)*	
March 1, 2018	**SkillsUSA Membership Deadline**	
March 8 - 9, 2018	**49th Annual WTEA Conference**	Wisconsin Dells, WI
April 24 - 25, 2018	**45th SkillsUSA State Conference**	Madison, WI
March 6 - 8, 2019	**Celebrating our 50th Annual WTEA Conference**	Wisconsin Dells, WI

District G

Travis Ray

It was good to see many of you at this year's Spring Conference. Things throughout District G have been busy like always, but I just wanted to let everyone know about a meeting coming up on May 4th at Madison College. Details are currently being worked out, but one thing that is a go is a walk through of Madison College's warehouse. This building stores equipment that is not currently being used by college programs. Under the college's equipment loan program, some of these items may be available for use in high school labs. I have not seen what is in there, but according to Randy Way there is a little bit of everything. That night, any District G teacher attending the meeting will have an opportunity to go through the building and tag items that they would use in their schools. Randy will work out the details with all items that get tagged through Madison College and, pending program chair approval will be released to the high schools for student use. Please watch for future emails to come with more details.

WTEA VICE-PRESIDENT

Teaching and Leading

By Mike Cattelino, Fox Valley Technical College

The 2017 WTEA Conference seems like only yesterday, but yet an already somewhat distant memory. Steve Meyer, WTEA president, recently sent a message to the WTEA Board of Directors asking for a memory or two from this year's conference. The first one that came to my mind was that I had the honor of introducing and then listening to the opening session keynote speaker, Pete Uvaas, President at Fox Valley Tool & Die in Kaukauna Wisconsin. FVT&D was my previous employer, a company that I remain in close contact with to this day.

In case you missed the conference opening session, Pete did a nice job of reflecting on his career path that started more than 40 years ago as a Youth Apprentice. He also wove in his experiences on the family farm along with the experience of raising his own family. Like Pete, I have a farm background that I reflect on frequently. When I internalized his comments somewhat, I couldn't help but think about my nearly 12 years with FVT&D, my growth there, and the company's growth over the years before, during, and after my employment with them.

I also recalled, quite vividly, the conversation I had with Pete moments after I told the college I would accept their offer to be a Machine Tool Technician instructor back in 1999. Yes, it was moments later as I was on my way to Pete's office to talk to him about the position when I was paged to answer a phone call. The call was from the college's HR department. I then called my wife, followed by what seemed like a long walk to Pete's office to share the news. Ask me about that conversation sometime!

I don't dwell on the fact that I left FVT&D but there are days that I do miss roughing aluminum in a CNC milling machine and improving the 2-minute cycle time on the second of a two-piece run on a CNC machine by 20 seconds. What I do think about is how many people I have had the opportunity to connect with while teaching and what influence I might have had on their abilities to machine parts. I have heard from many of those past students, and the feedback was mostly positive. Some have left the trade for various reasons but most are still "making chips." I did not get to teach our son but I do get to hear about his days at work in a machine shop all the time. Moments I will cherish forever.

As I continue to reflect on Pete's opening session address, it reinforces that teaching is a life-time opportunity that we continue to develop over the years. I had seen Pete make a very similar presentation to middle and high school students on several occasions over the years. He was engaging with the students every time. The addition of the remote control for the conference address took it to another level. As I observed people completing their remote control assemblies near the end, I realized that he had just taught a lesson on measuring in about 30 minutes to a group of 200 people. Seems simple, right? We all know better, but it does show that someone without a teaching credential can be a good teacher. Granted, he had a long time to prepare for a 30 minute lesson. He also had a lot of support from the people at FVT&D to pull together all the resources that went into the presentation. To me that was clear evidence of leadership toward a shared goal. FVT&D needs talent, just like most skilled trades employers now days. The people at the company today see the need as well, and are poised to train the workforce that will sustain the company into the future.

The WTEA Board has ramped up efforts in recent years to promote the career path of teaching technical education. I hope that effort continues because as you have heard from many recent conference speakers, without tech-ed teachers, the manufacturing/engineering/STEM workforce of the future is going to suffer. Stay the course of promoting the career that you are passionate about.

Notice:

If you are not receiving the Technology Educators listserve postings, you can sign up by contacting Brent Kindred at: brent.kindred@dpi.wi.gov

Get Published & Save Money!

Write an article for the Interface and receive a $10 discount on your membership renewal. Submit articles and photos to Interface Editor doug@wtea-wis.org

Independent Study: Challenge and Opportunity

By Nels Lawrence, Kaukauna High School

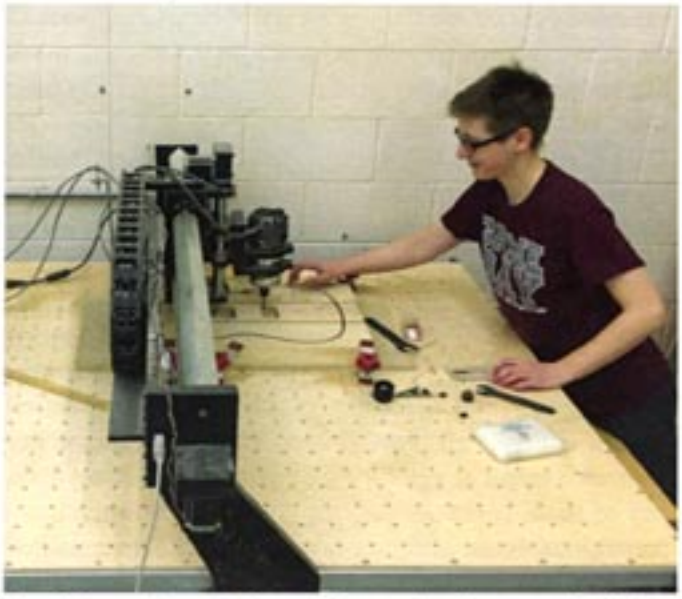
Every teacher has opportunities that are a result of igniting a new area of interest for a student or discovering a student's fascination with a topic. Sometimes the teacher has a special project that they have never quite found the time to develop. This is where the Independent Study option can make great things happen. Sometimes it takes a leap of faith or the willingness to try and perhaps fail to reach the desired goal. As I explained to a student, "I don't have all the answers to how your project will work because I have never done this before. We are learning together." This concept of collaboration with students who want to go beyond the boundaries of our curriculum changes the learning dynamic.

At Kaukauna, students with a project proposal may apply for a one period independent study for a term. They conference with a teacher/sponsor and outline a project based course of study which appears on the transcript with a grade. The teacher agrees to support the project but the student must have a proposal with a projected outcome. The proposals read much like an engineering project at the college level. The outcomes are not only a plus for the student but are a stimulus to other students when the project is shared. The teacher is able to develop new teaching tools and lab projects that can enhance the project based STEM curriculum. Sometimes the project require financial support, outside experts, specialized equipment and interdepartmental coordination. This has resulted in building better relations in our school with the Science and Math departments who now have a greater understanding and respect for what we do. In the community we found willing industry partners who encouraged our work. A good example of a current project is the Electric Guitar independent study. The student, a National Merit Scholar, enrolled in my DC Electronics to build the amp and guitar controls. She needed to learn how to program and create tool paths on the wood CNC. This was supported by Kevin Otradovec who teaches machine tool and computer classes. The woods/machine tool instructor, Craig Sackmann, helped her make the blank for the body and neck of the guitar. The excitement has already spread to another student who successfully made a circuit board and built a special effects pedal from scratch. The students are totally involved but so are all of our department members.

Stretching the limits and exploring new areas is what Technology & Engineering teachers do. It is obvious if you saw the project area at the 2017 WTEA Convention. If students can be recruited to do some of these projects it can be a game changer for both student and teacher.

Current and past projects examples at KHS include:

- Current project Spring 2017 student uses wind tunnel, CAD 3d printing to explore airfoil design with computer data acquisition via Vernier.
- Current project 2017 Valedictorian (never took a Tech Ed credit before) building a museum quality display of 40 years of computer science using our collection of working units going back to Commodore 64 - working together with Outagamie County Museum.
- A Programmable Logic controller based working model of a community water distribution and purification system – student now at UW-Platteville in Engineering.
- Water Quality research in cooperation with Metro Sanitary District. Student currently at UWO in Environmental Science, completed a paid Youth Apprenticeship in Water Quality and an Independent study of instrumentation at the High School.
- CAPP Engineering prototype class ran as an Independent Study for UWO 2016-17.



An Independent Study student using the wood CNC to make her guitar body.

ARTICLE

Mistaking Diamonds for Water – The Persistent Undervaluation of Technical Education

Randy Way, Madison College

My whole professional life has been devoted to one goal – building the better technician. There exists a litany of evidence that when technical colleges are able to recruit people into our programs, we do a great job of advancing this goal. However, in my roles as a public school teacher, college faculty member, and now as a higher education administrator, I've consistently encountered formidable barriers to attracting young people to these excellent programs. This article aims to explore some of the reasons that this might be. It will draw on concepts from Psychology and Economics, neither of which are within my scope of expertise. If there are any readers who are knowledgeable in these fields, I'd be forever indebted for their help in improving the weaker arguments advanced within the following text.

I want to be clear that my intent here is not to attack general or liberal arts education. The cost of admission to a democratic society is in becoming a tamper-resistant member of the electorate. And, our quality of life is as much a product of the success of the Arts and Science as is it of our roofer's ability to keep the water out when it's raining. My aim here is to talk about differences in perception of the two approaches to education. It is not my intent to diminish the standing of anything people work hard at – be it developing technical skills pursuant to a trade or learning to ply one's craft in the Fine Arts... well executed conduit bending and a polished performance on the piano are equally beautiful to me. Rather, I would like to talk about the myopic perspective our society takes when considering these pursuits.

My neighbor's kid went to Oberlin for Oboe (neither his institution, nor his instrument, but I like the alliteration). Another local young man I know became an apprentice carpenter after leaving high school. Imagine for a moment the parents of these two young men at a cocktail party. Who has the best bragging rights? The parents of the carpenter's apprentice can talk about near guaranteed employment, high wages, benefits, union representation, lack of college debt, etc. The parents of the music performance major at a private institution cannot brag about any of these benefits. So, why is it that entrance into a prestigious music program is more highly esteemed than entrance into a secure an lucrative career?

I would argue that what we are witnessing here is a modern day manifestation of an original quandary of Economics – namely, the diamond-water paradox. Consider for a moment the diamond. Unless you're trying to drill granite or burnish tool steel, it is for all intents and purposes useless. On the other hand, without water you'll be dead in three days. So why is it that diamonds, which an economist would describe as having near zero apparent utility, are more expensive than water? The answer is of course scarcity. Diamonds are valuable because they're rare. I would argue that it's the same for educational programs. Music performance at a prestigious private institution is highly valued because it's elite – lots of people want to do it, but only a few top competitors get to. A carpenter's apprenticeship, on the other hand, is long on utility but lacks the exclusivity of the university club. The effects of these views represent a classic distortion in people's ability to assess utility.

So, why might people be prone to this distortion? I believe it's a matter of slipping into a heuristic when an algorithm would be a better approach. So, what's the difference? Consider the following question: are you a good driver? When you try to answer this question you likely use a mental shortcut – a heuristic to use the term of art – something along the lines of "it's been a while since I've gotten a ticket, so I'm a pretty good driver". The actuarial scientist at your insurance company, on the other hand, is more rigorous. He or she would consider you a good driver if your probability of filing a claim was one standard deviation below the mean.

So what? Suppose there is merit to this theory that people use a biased heuristic when assessing educational opportunities. What difference does it make? It matters because this understanding can drive our recruiting strategy. For years we've been promoting career and technical education as though we are talking to algorithm wielding completely rational actuarial scientists. We talk about high pay and good benefits, about how the construction trades cannot be offshored, etc. The problem is that when parents, who in the aggregate play a tremendous role in the educational choices of their children, ponder what their kids will do after high school, they are not law-and-order Chicago School of Economics rationalists. In short, they fall into the old diamond-water paradox, rendering our pitches about the utility of the career inert.

So, what's the fix? While I don't claim to have a definitive answer, I believe a piece of the puzzle has to be

in changing people's perspectives about the social status of technical careers. To paraphrase Bill Clinton "It's NOT the economy, stupid". Social status has little to do with compensation. Rather, it's all about helping people understand that our current standard of living requires people of every stripe, doing every conceivable type of work. Consider my former discipline – firefighting. This is a career that consistently polls near the top as the most respected professions. While I enjoy the good will that firefighters receive from the public, this represents a distorted view of our contribution. Occasionally, firefighters I know get a little big for their britches and I need to remind them that pound for pound the folks in our community who save the most lives every year work at the water and sewer utility. So, why aren't people beating down the door to get into that field, like they are to become firefighters? You guessed it – heuristics before algorithms.

If we accept the hypotheses advanced above as being true, then the work before us becomes to reframe how we present technical disciplines' contribution to society. Perhaps a reminder is in order? Such as the fact that the philosophers of antiquity were able to enjoy their posts because of the economies of scale brought about by large cities, supplied with water via aqueducts. We really are all standing on the shoulders of plumbers, but because they do their job quietly it's easy to forget. If we're going to turn the tide, now is the time for us to be a little less humble as the technical folks who grease the wheels of our society's infrastructure.

Eagle Fab Lab and Eagle Manufacturing - Creating Dynamic Opportunities

By Joshua Fuller, Northland Pines High School

Great things are happening at Northland Pines High School in Eagle River, Wisconsin. NPHS has always bolstered a strong Technology Education program focusing on four core areas of Wood Technology, Engineering and Drafting, Metal Manufacturing, and Transportation Technology. Recently the school district has stepped up in a big way to offer even more opportunities to both students and community members of the Eagle River area when they applied for and received a Wisconsin Economic Development Corporation (WEDC) Fab Lab grant in 2016. Since receiving the grant, the District has been making great strides to build and provide a Fab Lab that rivals others in the state.

The Tech Ed Department at Northland Pines has always been fortunate, beginning with a referendum in 2004 to build a new high school. With the new school came state of the art Tech Ed labs and many new pieces of equipment. Through great support from administration and the school board, the department added several pieces of "fab lab" equipment in recent years as well. These included a vinyl cutter, laser engraver, 3D printer, and sublimation heat press. With the awarding of the WEDC grant, the department has added another 3D printer, a CNC plasma cutter, a vinyl printer/cutter, and a set of 10 tablets for design work. The department was also awarded another grant through the Milwaukee Society of Plastics Engineers to add a third 3D printer. Matching funds for the WEDC grant came solely from the Vilas County Economic Development Corporation, and additionally a generous donation was also received from the Eagle River Chain of Lakes Association. Above and beyond the grant funds, the district again showed their support and commitment by remodeling the room that houses the Eagle Fab Lab, including a new floor, knocking a hole in a wall to make a doorway from a computer lab to the Fab Lab, new cabinetry, and new paint.

In the first year of having a Fab Lab, Northland Pines is using it in two separate but overlapping ways. First, the Eagle Fab Lab is used in traditional fab lab or maker space design, to offer anyone and everyone an opportunity to design and create anything to meet a specific need. This includes offering the lab to all classes within the district. The lab is also available to the community to learn about and use the equipment for whatever needs people may have. Also, the Tech Ed Department, along with the Art Department, is utilizing the lab and the equipment wherever applicable in their current curriculum. So far the lab has been used by most Tech Ed classes grades 6-12, several Art classes, all Eagle River Elementary 5th grade classes, and one very excited Kindergarten class. Several different student groups have also used the Eagle Fab Lab for various projects.

Along with traditional fab lab use, the Northland Pines High School is also running a student entrepreneurship opportunity, called Eagle Manufacturing. Eagle Manufacturing runs as a business within the high school in which students use the fab lab to produce custom products. To date the students have produced sublimated and laser engraved plaques, vinyl decals, CNC plasma cut projects, and a variety of other laser cut and printed products for several local businesses, community groups, and events. Students are involved in the bidding, manufacturing, billing, and general oversight of the whole process. This has been an ever-growing endeavor and all involved are excited to see where this leads us.

In short, there are great things happening at Northland Pines High School. The opportunities available to the students, the community, and local businesses are abundant because of the Eagle Fab Lab and Eagle Manufacturing. None of these opportunities would be possible without the great support from the school district and the Eagle River and surrounding communities, and especially, the students of Northland Pines.

ARTICLE

Training the Next Generation:
Precision Plus and Gateway Technical College Forge New Partnership

Reprinted by permission from Production Machining Magazine and Precision Machined Products Association

Like many technical education machining and manufacturing programs, Gateway faced a difficult challenge in 2014: Invest in a vision for the future of advanced machining on its Elkhorn Campus or close its doors to manufacturing and leave employers to find solutions to training their workforce.

The program and facility had fallen behind the ever-changing needs of industry, and local employers were no longer interested in hiring graduates with outdated technical skills. Industry expectations of occupational standards and individual certifications were not part of the program expectations. In a pivotal meeting between Gateway president, Bryan Albrecht, and Precision Plus President Mike Reader, a new vision was established.

New Vision

This new commitment to revitalize the manufacturing program has not only established Gateway as a leader in precision machining technology, but transformed the college culture around quality and industry-recognized skill standards. This new foundation serves as a platform to upskill faculty, develop strategic alignments with area employers and invest in facilities and equipment to allow for worldclass student training.

RPM Center

In 2016, Gateway opened the Reader Precision Machining and Manufacturing Center or RPM Center for short. The RPM Center is the catalyst for advanced machining, precision measurement, welding and engineering technology. Gateway students learn on state-of-the art equipment from highly trained faculty with industry mentors from Precision Plus. Area high school students are engaged in CNC classes to earn college credit and workplace skills through paid internship and youth apprenticeship opportunities.

This newly expanded footprint has allowed Gateway to be competitive in investing in new equipment, expanding certification credentialing in the areas of manufacturing skill standards (MSSC), occupational safety, LSS Yellow Belt certification and Starrett precision measurement. Together, Gateway and Precision Plus had made a commitment to the students, employers and the communities they serve.

Foundation of Trust and Commitment

Strengthening the core competency of students enrolled in the machining and manufacturing programs is at the center of this relationship.

"Building this partnership around a common set of principles was critical to our long term success," says Bryan Albrecht, president of Gateway.

These principles include leadership, commitment throughout all levels of each organization, shared expectations, standards that drive measurable outcomes and transparent communications that ground our daily decision making.

"Mike has been an inspiration to me and a champion for our college. His passion and drive to help youth is admirable," Mr. Albrecht says. These principles have led to national recognition by the PMPA and other industry leaders. Speaking at the American Association of Community College's national convention last March, Mike shared his enthusiasm for the future of precision machining and the commitment he has made to the profession through the RPM Center partnership.

"Upskilling the American workforce is at the core of our nation's economic prosperity," says Mike Reader, president of Precision Plus. "Through partnerships we can address the skilled worker shortage and build confidence in future generations that there are great careers in manufacturing."

Results

The RPM Center partnership has demonstrated positive early results, including support of and involvement with the PMPA Education Foundation. Early in the development of the partnership was setting a goal of increasing the knowledge and access to training for programs in manufacturing and precision machining at Gateway.

With the development of the RPM Center and the inclusion of new CNC equipment, Gateway has added new courses and expanded services to area high schools. Current year enrollment has doubled in the college's CNC program through new course offerings and dedicated short-term training programs.

The college, in partnership with Precision Plus, held several career open house sessions for high school stu-

dents, parents, teachers, counselors and the community. They have hosted state dignitaries including the Wisconsin Technical College president, Wisconsin's lieutenant governor and state and local elected officials. Gateway has benefited from additional instructor training and mentoring from Precision Plus around the knowledge and skills in Swiss machining technology expanding the capabilities and skills training. A secondary positive return on this investment has been the expansion of the college's welding and engineering programs, adding to the network of opportunities for students to build career paths in manufacturing.

Partnerships like these change the way students and their families view manufacturing and create a new vision for the development of skilled professionals in the precision machining industry. Precision Plus and Gateway Technical College are members of the PMPA Education Foundation and are encouraged by the leadership of the PMPA in supporting educational partnerships like the RPM Center.

Contributors

Bryan Albrecht, Ed. D., serves as the president and CEO of Gateway Technical College. Gateway is located in southeast Wisconsin and is known for having strong partnerships with businesses and industry. Michael Reader serves as president of Precision Plus Inc., a world-class manufacturer of Swiss precision machining components located in Elkhorn, Wisconsin.

Forging a new partnership.

Gateway Technical College to Host 2018 ATEA National Conference

Gateway Technical College will be hosting the 2018 American Technical Education Association national conference March 21 - 23, 2018.

ATEA is an autonomous, non-affiliated international association devoted solely to the purpose of postsecondary technical education. It is an organization dedicated to excellence in the quality of postsecondary technical education with an emphasis on professional development. ATEA is a driving force behind workforce development.

ATEA was founded in Delmar, New York in 1928 and incorporated as a non-profit professional education association in 1960. In 2012 the national office moved to Dunwoody College of Technology in Minneapolis.

OPPORTUNITIES

Investigations for Students in Energy Efficiency (I-SEE)

Building STEM Skills Through Inquiry-Driven Learning

By Jenny Christopher, Wisconsin K-12 Energy Education Program (KEEP)

Through technology already in students' schools and homes, I-SEE helps ignite curiosity and interest of tomorrow's analysts, scientists and engineers. Leveraging their own real-life energy consumption data through experimentation, students build knowledge, skills and confidence to reason through modern challenges and make a real difference, right now.

Schools who participate in the program gain access to STEMhero, a website curriculum that provides guidance to implement energy-saving behaviors and houses a personalized energy-tracking dashboard. They also participate in an all-day, hands-on student energy auditor training workshop where students learn about energy efficiency and consumption in their schools. It includes a tour guided by a school facility personnel and a student led energy audit of a selected area of the school.

To learn more about how you can bring this program to your school visit, https://www.uwsp.edu/cnr-ap/KEEP/Pages/Student-Involvement/isee.aspx or contact the Wisconsin K-12 Energy Education Program at 715-346-4770 or keep@uwsp.edu.




Free Video on Precision Machining

The Precision Machining Products Association Education Foundation is providing a free video to all educators. This high impact video is designed to encourage youth, parents and schools to become game-changers in promoting careers in precision machining. The video can be accessed at http://youtu.be/6LBHtivd3Nc.

The video features 2015 WTEA keynote speaker Mike Reader, President and CEO for Precision Plus located in Elkhorn, Wisconsin. Mike is a strong supporter of the WTEA and advocates for the vaue of technical education throughout the country.

The PMPA Education Foundation is a charitable organization formed for educational and research purposes related to the Precision Products Industry. The mission of the foundation is to promote and fund education, training and career opportunities in manufacturing. Grant funds are also available to assist in education and training related to the precision machining industry.

To learn more about PMPA check out the their website at http://www.pmpa.org/ careers/pmpa-foundation.

EDUCATION PMPA FOUNDATION

PRECISION MACHINING PRODUCTS ASSOCIATION EDUCATION FOUNDATION

Teach the Teacher Summer Institute

By Jason Kraus, Hartford Union High School

Are you looking for a hands-on learning opportunity this summer? If so Hartford Union High School will be hosting the second annual Teach the Teacher Summer Institute. This year's class will focus on the wood working industry, more specifically cabinet making and the technologies that are involved. You will have the opportunity to learn, collaborate, and earn credit towards professional development for license renewal.

We will construct from scratch an End Table. Class experiences and activities will include Panel Processing, 32mm/European Cabinetry, Vacuum Veneering, and Drawer Construction. We will also discuss quality control, room layout and material utilization.

The cost of the class will be $125 plus a $5.00 administration fee and will include the curriculum and instruction materials along with supplies for a complete end table. An industry tour and group dinner will be planned.

Two credits will be available through UW-LaCrosse. The cost of the two credits is $250.00.

You can enroll in the institute at:

http://tinyurl.com/SummerTEEInstitute

The First Annual Teach the Teacher Institute conducted at Hartford Union High School in the summer of 2016 focused on Metal Fabrication.

48th Annual

Spring Conference & Trade Show

Highlights

Plan now to attend The 49th Annual WTEA Conference

***"Educate, Inspire, Innovate"* • March 8 - 9, 2018**

MY FAVORITE THINGS

Bryan Albrecht, Mrktg Chr/Dir at Large

My favorite thing about the conference was seeing all the engagement by fellow technology education teachers to bring new ideas to their students and the sincere expression of gratitude by the award winners.

Eric Sutkay, District F Director

My favorite thing about the conference was the motivation and excitement that Peter Uvass from Fox Valley Tool and Die exuded during the keynote address. Having someone in industry with that type of support, energy and dedication to our profession, creating such a buzz in the room at the beginning, resonated throughout the conference.

Pete McConnell, Dist. B Co-Director

My favorite thing about the conference this year was the keynote speaker Pete Uvaas. His message and delivery were fantastic and the audience of 200+ were very engaged and excited. I love to attend the banquet and learn about all of the awesome awards and achievements that are getting recognized. It reminds me how proud I am to be a Technology Education teacher. The awesome job and leadership provided by Joe Ciontea, Steve Johnston, and Tom Barnhardt every year at the conference is amazing!!

Mike Cattelino, Vice-President

Two things stood out at this year's conference for me. The honor of introducing the president of the company that I previously worked for and then watching and listening to his engaging message was a time I won't soon forget. Secondly, it seemed to me that the WTEA Board was more extensively involved in the conference changes, and execution of those changes, under the leadership of our association president, executive director, conference coordinator and trade show coordinator. Nice job on a well done conference everyone.

Travis Ray, District G Director

My favorite thing about the conference was catching up with old friends and discussing the direction that life has taken them. I also always enjoy looking through the Project Showcase and seeing what amazing things students are doing across the state.

Frank Steck, University Representative

I was struck by the number of attendees at each presentation. Rooms were full, more often than not. My students complained there were too many choices, forcing them to choose between sessions.

Phil Bickelhaupt, President-Elect

My favorite thing about the conference was networking with technology education teachers and hearing about all the amazing activities they are doing with their students!

Sylvia Tiala, District A Dir., Univ. Rep.

My favorite thing about the conference was watching the pre-service teachers in their networking and enthusiastic participation in the conference. A close second was watching the veteran teachers interact with, and mentor, these emerging professionals. Finally, I sincerely and truly love the collegiality that I see among WTEA members, conference participants, vendors, and speakers. What a great group to be associated with!!

Brian Schiltz, Dist. B Co-Director

My favorite thing about the conference was seeing and catching up with old friends and meeting new friends, learning from others in the classroom and in industry during the breakout sessions and keynote speakers, as well as seeing all the projects and ideas in the Project Showcase.

Doug Kugler, District E Director

My favorite thing about the conference was seeing old and new friends (it seems like a Tech Ed reunion party). Every year Project Showcase gets better with great project ideas. We had great and interesting break-out sessions - I had trouble picking which ones to choose.

Matthew Schultz, Secretary/Treasurer

My favorite thing about the conference this year was talking with folks at the Project Showcase about exciting projects and curriculum they are implementing at their schools. My most favorite time is talking with friends about sharing the same passion we all have - inspiring, motivating and empowering students!

AWARDS

2017 WTEA Awards

Presented at the Awards Banquet - March 2, 2017

WTEA 25 Year Award

"For 25 Years of Service to Education"

Dale Belisle, Scott Benitz, Scott Beranek
Chuck Carr, Vern Louis, Kelly Murphy
David Teske, Eric Varrelmann, Chuck Wais
Richard Weisjohn

Special Thanks

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

Future Technology Educator Scholarship

Bryan Lammers
UW-Stout

WTEA Inspire Award

"For Fostering Future Technology Educators"
Sponsored by Haldeman-Homme, Inc.

Tom Karban

Duane Leeser

Mike Roth

WTEASpecial Recognition Award

"For Contributions & Service to Technology Education"

William Hittman
Lakeview Technology Academy

NEW
Manufacturing Alliance

Dr. Jennifer Rauscher
Plymouth High School

Dr. Deborah Markos - *Lacrosse Logan High School*
Martha Olsen - *Madison LaFollette High School*

High School Program of the Year

"Outstanding High School Technology Education Program"
Westosha Central High School
Sponsored by Goodheart-Willcox Publisher

ITEEA Program Excellence Awards

Presented at the ITEEA Annual Conference March 16-18
Shell Lake Middle School

ITEEA Teacher Excellence Award

Presented at the ITEEA Annual Conference March 16-18
Thomas Juran, *Elmbrook Schools*

AWARDS

WTEA Award of Excellence

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

Dennis Haakenson
Oregon High School

Russ Hermann
Slinger High School

Doug Kugler
Waukesha School District

Steve Pennekamp
McFarland High School

Matt Poppe
Oostburg High School

Technology Educator of the Year

"For Outstanding Contributions to Technology Education"
Corey McCauley -Hartford Union High School
Sponsored by Goodheart-Willcox Publisher

Lifetime Achievement Award

"For Distinguished Achievement and Leadership in Technology Education"
Bob Abitz - Freedom High School *(Retired)*

Special Thanks

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

First Technologies, Inc.

Auer Steel

Haldeman- Homme, Inc.

Goodheart-Willcox Publisher

HIGH SCHOOL PROGRAM OF THE YEAR

The WTEA is proud to honor Westosha Central High School as our 2017 High School Program of the Year.

Westosha Central High School

Department Members

Bert Christensen
Garrett Pongratz
Eric Andersen
Scott Kessler

Mission Statement

The Central High School Technology and Engineering Department mission is "Skill in Motion." By working tirelessly to acquire and develop new equipment, technologies, and teaching methods, we are able to teach a variety of real world skills to a broad range of students through a variety of innovative and cutting edge methods, provide relevant and modern career related educational opportunities for all, and allow students to apply the skills they have learned in new and interesting ways.

State, National, and Industry Standards

Some things we are doing go beyond state standards, and in that case we reach out to local colleges, professional organizations, and local businesses to develop curriculum and teach what is relevant and in demand. For example, our woodworking program has partnered with WCA (Wood Career Alliance of North America) to align the program with national standards in woodworking skills and we are able to certify students so they can show an employer that they have those skills. Our metals program has partnered with Scot Forge to find out what manufacturing employers want students to know and give advice on what is actually happening in the industry and how to bring that to the high school level. We also use SkillsUSA standards and work those into our curriculum wherever possible, to add those industry developed skills and standards to the curriculum. We are partnered with colleges like MATC and Gateway Technical College (GTC) to align our curriculum with theirs.

Extracurricular Activities and Community Service Projects

SkillsUSA

We have been involved in SkillsUSA since 2009 when we received our charter. We have really been focused on getting the club going in recent years and have finally grown to where we now have officers and competing members. We first entered competitions in the 2014-15 school year having students compete in the GTC Regional. This past year we had our first medalists at the District 5 competition for Screen Printing and everyone who competed at the GTC Regional event earned a medal. We earned 2nd in precision machining, 3rd in welding, and a 2nd and 3rd place in the Team Engineering Challenge. We then competed at State for the first time and had a strong showing there as well. We had a 4th place finish for Team Engineering Challenge, 2nd place in Welding Fabrication, and 4th place in Welding Sculpture. So far this year we have had a 3rd place finish in Team Engineering Challenge at the District 5 competitions.

Our club this year has a group of officers who are motivated and doing everything they can to grow the club and expand into community service and begin putting fundraising plans in place. They are trying to get community service ideas like food drive for veterans, adopt a family, and fundraising events for local charities. They are also coming up with ideas for items we can make and sell in house to support the club. Things have been looking up for this particular chapter! It takes a lot of work, but things are definitely moving in the right direction!

Habitat for Humanity

With over 500 Campus Chapters across the United States, Westosha Central High School Campus Chapter is the only High School Chapter in Wisconsin. Organized in 2012, this student run organization is dedicated to the elimination of substandard housing. Through their work the chapter has raised over $7500 to support the work of their affiliate, Habitat of Kenosha County. The group has also gone from hitting the books during the school year to hitting nails during their summer vacation by participating in several Collegiate Challenges. The group has worked on-site building houses as well as serving in the local Habitat ReStore. This unique one week volunteer program offered an education all its own. The students learn about poor living conditions and how decent, affordable housing builds strength, stability and self-reliance for families. The Collegiate Challenge is an incredible experience that the group will never forget.

The campus chapters set the foundation for Habitat's work related to the school. This includes helping set up volunteer opportunities, educating the school and community around issues related to housing and Habitat, fundraising in our local area to support more housing opportunities and speaking with the community officials to prioritize shelter.

Dream It Do It

"Dream it. Do it." is a national initiative sponsored by the National Association of Manufacturers. Its focus is to increase awareness of the high-paying, high-quality career opportunities available in manufacturing. Often overlooked or disdained as an industry characterized as being dark, dirty, and dangerous, manufacturing has changed and continues to evolve as a high tech field requiring knowledgeable, highly skilled people dedicated to making a difference.

Wisconsin is the 20th state to implement the program, which aims to create a single, powerful brand for manufacturing careers in support of local workforce development efforts. Our region is full of thriving, state-of-the-art companies which utilize high-tech, advanced manufacturing processes that result in quality products that compete in the global market.

At Central High School, we have been partnering with industry to build our program and help show students what is waiting for them after school. Dream it Do It just puts a "brand name" on our work and gives us more structure moving forward. We currently have 4 student ambassadors that are willing to help out for special events in our department. Two of these student ambassadors are also in an internship program with one of our local industry partners. Our school hopes to continue building our student ambassador program, industry partnership pool, and to work towards increasing enrollment in the STEM courses we offer.

Community Building Projects

We also work cooperatively with the Town of Salem. They pay for the materials and approve the plan and our construction students build 12' x 12' gazebo style pavilions to place in the local parks for the public to enjoy. The woodshop also builds projects for local non-profits. For example, they have made 28 batting helmet racks for local little league teams.

Examples of various projects are on display in school showcases.

TECHNOLOGY EDUCATOR OF THE YEAR

The WTEA is proud to honor Corey McCauley as our 2017 Technology Educator of the Year.

Corey McCauley

Harford Union High School

College Degrees
MS Voc. Education UW-Stout 2001
BS Tech. Education UW-Stout 1994

Years in Education - 22 years

Educational Awards
ITEEA
- Program Excellence Award 2012

WTEA
- HS Prog. of the Year Award 2011

Certifications
Solidworks Associate Mechanical Design Certification
Project Lead The Way Digital Electronic Certification
First Aid and CPR Certification

Coaching/Co-Curricular
SkillsUSA Co-Advisor
Assistant Wrestling Coach
Assistant Football Coach

Local Community Education Connection
Hartford TEE Advisory Committee Member

Goals

1. To educate students with the technical and employability skills they need to be successful in the ever-changing global marketplace.
2. To keep the Hartford Union High School's Technology & Engineering Education curriculum current according to the needs of our local industry and the Wisconsin State Technology and Engineering Education Standards.
3. To collaborate with other academic teachers to create lessons that link multiple subject areas together creating a real world atmosphere.
4. To promote Technology & Engineering Education to increase community awareness and increase the number of students involved.
5. To support other Technology & Engineering Education instructors with their curriculum and/or project needs.

Statement of Belief/Philosophy
I believe that Technology & Engineering Education is essential for all students. Regardless if a student is college or career bound, every student will gain real world skills that they can use. The best way to teach these skills is using project based learning. Lessons should include modern technology and hands-on techniques that are currently used in today's workforce. Whenever possible, projects need to be designed with differentiation in mind to challenge all students. My desire for all students is that they will leave my classes with the skills and confidence to be successful in whatever career they choose.

The learning Environment:
The learning environment in the Technology & Engineering Education department at Hartford Union High School is top notch. In 2000 the local industry and Hartford Union High School teamed up and went to referendum for the new Technology & Engineering Education Wing. The referendum was passed and our facilities went from old and dated to modern and innovative. I was involved in this addition from conception to finish and I am lucky enough to be still teaching in this facility. No matter what is going to be covered in class that day, students come in to a classroom for attendance and announcements to establish a home base. If there is classroom learning that day, they get their information and go out to the lab to apply their learning. If it is a lab day, they go to work using the new updated equipment. As a teacher, I move from student to student checking for understanding and making adjustments to their interpretation of the lesson. Each room has a well-organized tool room for smaller items that we have accounted for by the end of each hour. Each room also has a storage room for student project or tools/equipment not being used for that particular project. Students, for the most part, are working on the same project that is outlined with detailed blueprints designed to be as comprehensive as they would see in the real world. When the hour is almost over, there is a seven minute cleanup bell. When

this bell rings, students clean up their area according to a cleanup chart displayed in the lab area. Students will put their project in their locker located in the classroom, wash their hands, and sit in their seats for a wrap-up conversation. This type of classroom organization and management allows students of all learning styles to reach their true potential.

I believe that with the right opportunity and inspiration every student can successfully learn anything. Being a successful teacher means that you are able to differentiate the lessons so they are better suited for students with different learning styles. Because of the environment described above, it allows me more time for students that require personal attention and the freedom for the other students that prefer independent work. This means that the students that are struggling with the lesson can spend one on one time with me in the classroom or the lab and students that are excelling can continue to work on their personal skills or projects without being slowed down. We also have a school wide resource period at the end of the day that allows students to seek help from any teacher for questions that require more explanation than the time given in class. Many of my students come to my room and continue to work on their projects or to seek more individual help from me on that day's lesson. In order to give students every opportunity to learn, I continue to make myself available after school, if needed, and encourage peer coaching to help struggling students that need a different prospective. I encourage peer coaching because it creates positive relationships and culture in and out of the classroom. Once students have a positive result from peer coaching, they will often continue to go to that person in the future when they have questions. This technique strengthens both students' understanding. By using all of these techniques together, I am able to meet the needs of every student's learning styles.

Creativity

When I am creating the curriculum for classes, I ensure that the project requirements are designed throughout the levels to allow creativity and individuality. For example, students in my Fabrication Methods class love to make signs and miscellaneous projects for their home. This year we took this to a new level and took on a community project. The Hartford Chamber Of Commerce wanted to make a Holiday River Walk and asked my students to be creative and make picture stands. The students had to do some research and come up with some creative ideas. The class divided into teams and each group made a stand. They all turned out great! They are now on display by the river for all our community to enjoy. The students learned that they can be very creative and use their skills to beautify the city. Now the community has a positive outlook on what is happening in our school and our department. By the end of our Welding/Fabrication curriculum, the students are expected to consider the end user of each and every product. They will spend hours drawing and laser cutting projects for home and/or friends. Once other students in the school see the ability of these students, it sparks their interest and they start coming in during the school-wide resource period, where the current students teach others how to draw and cut out the projects that they want. Seeing the freedom for creativity encourages the new students to take this class in the future. Just like that, the creativity that happens in class helps to recruit new students to our TEE program. As you can see allowing creativity in my classes has created a win win situation for the school, community, and my students.

LIFETIME ACHIEVEMENT

2017 Lifetime Achievement Award Recipient

Bob Abitz

Bob Abitz was awarded the WTEA Lifetime Achievement Award at the association's annual awards banquet on Thursday, March2, 2017. 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. Bob is the tenth professional educator to receive this award from the WTEA.

The following is a summary of the 35+ year career of Bob Abitz in Technology Education at Freedom High School. It reflects an outstanding career of dedication, innovation, achievement, and true dedication. Bob was and is highly regarded by those in education and industry at a local, state, and national level. We are proud to honor Bob Abitz with the WTEA Lifetime Achievement Award.

Education & Certification

- BS and MS from UW-Stout 1972.
- Wisconsin's first Youth Apprenticeship Collision Repair instructor.
- State Master Teacher in Collision Repair (1 of 5).
- Established and taught dual credit program with FVTC.
- PI-34 mentor and team member certification.

Leadership, Awards and Recognition

- Life-time career member of WTEA (since the 80s)
- Active participant of WTEA High Tech weekends
- Presenter at WTEA conference 2007
- NOCTI standards and test writer (90s)
- FHS buildings committee 1996
- Union President and negotiator
- Golden apple award nominee
- WTEA Excellence in Education award winner (2002)
- Outstanding community service award (2009)

SkillsUSA

- Started Wisconsin SkillsUSA collision repair contest
- Started SkillsUSA chapter at FHS in 1978
- Wisconsin collision repair/refinishing chairman (1979-present)
- 18 state champions, 3rd place finish at nationals (WI and national records)
- National Education Team original member (1993-present)
- Business and industry partner award winner (2002)
- WI Advisor of the year award winner (2007)
- National Honorary Life Membership Award winner (2012)

Professional Experience

Bob Abitz started teaching at Freedom High School in 1972 and built his program from the ground up. Bob always had a unique angle because of his collision background and his involvement in racing. Freedom High School quickly became the leader in collision repair education and for many years FHS graduates were the most sought after employees in the local industry, many of which went on to open their own businesses still in operation today. Bob worked at a service station and repair shop in his youth and got much of his experience from racing, doing maintenance and repair of his and others' race cars. Later Bob established his own business, Abitz Motorsports, to house his racing operation and the repair of salvage vehicles known as re-builders, which he repaired, drove, and sold on the side for many years while teaching.

His impact to the school and community is unmatched. Over his 35-year career he not only built a successful and well-known program at the local, state, and national level, but also launched the careers of an unknown number of his students. There are over 15 of his former students who own businesses in the industry, just in the Fox Valley area. Bob put FHS on the map and attracted students from other districts just to participate in his program. Freedom High School and the community embraced him. He is known and respected everywhere he goes and was even given a Community Service award in 2009.

His involvement in SkillsUSA started in 1978, judging an automotive contest, then forming a chapter and starting the state collision repair contest and competing in automotive repair at the same time. He has been the collision repair state chairman since 1979 and his students

have won 18 state championships (national record) and finished as high as 3rd at nationals (state record) with dozens finishing inside the top 10.

Bob was a leader in the industry partnering with anyone that would help advance his program and educational goals. Bob is highly regarded by industry and has formed many partnerships to provide curriculum, tools, materials, and equipment to Freedom High School and has helped many other programs over the years. His industry connections were also used through SkillsUSA in the collision repair contest at the state and national level. His partnership with Miller Electric brought the welding portion of the contest to where it is today! Each year these partnerships earned over $10,000 for FHS and SkillsUSA. It would be hard to put a number on his total contributions, but it would be close to a million dollars in donated tools, materials, equipment and curriculum to SkillsUSA and FHS. Bob's industry connections were key to keeping his curriculum and program relevant and up-to-date with the industry.

Bob worked closely with industry to bridge the gap and was a leader in I-CAR education, being one of the first high schools in the country to use its cutting-edge curriculum and training practices. He served on the NOCTI board assisting in the writing of tests and standards for collision education. He has served on the advisory board for Fox Valley Technical College for over 20 years and has built a relationship that helps both schools and their students.

Community Service

Bob Abitz is one of the most beloved and revered figures in the town of Freedom. Since the 70's, everywhere Bob goes near or far he runs into someone that knows him. Most of those run-ins involve a story of how Bob taught or helped them along the way. He has impacted hundreds of students in many ways. Many of his students started a career because of what they learned from Bob and others even opened their own business.

One of the things that makes Bob unique is his involvement in racing. Bob owned and raced his own car from 1960-1983. During the 70's and 80's Bob brought his race car into the classroom sharing the experience with his students. He shared racing knowledge and cutting edge technology on how to build, set up, maintain, and repair race cars at a high level. Bob not only had personal success on the track against some of the best in the industry, but he also had students building and working on the cars at the same time! This was a unique and revolutionary idea that many programs have copied over the years. Bob built special relationships with many of those students that still last today. Some of his former students have even gone on to racing careers of their own with Bob's help. Bob has lived in Freedom since 1972 and has been a pillar of the community. His door is always open and people always stop by for help, advice, or just to catch up. He was honored with the Community Service Award in 2009, the only teacher or school employee to ever receive this award.

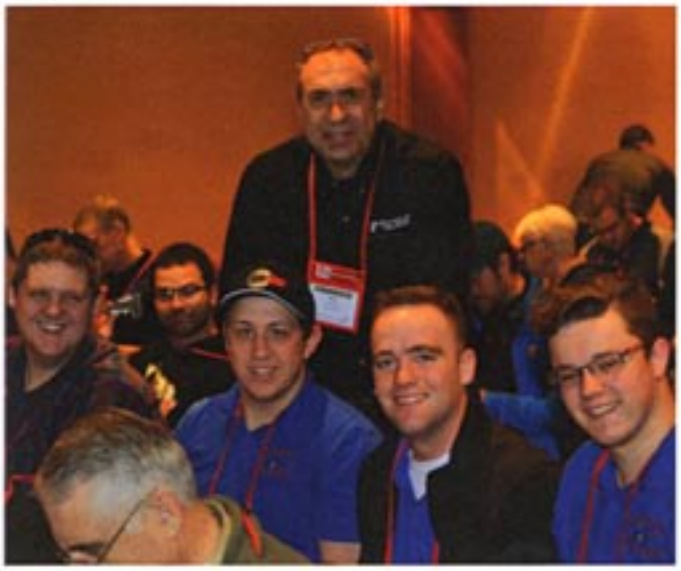
Within the district, Bob was always a leader. He served the union in multiple positions including President and negotiator and was a key leader during referendums and building projects including one of the districts largest in 1996. The school district has kept him close after retirement. He was hired as the district's first mentor to assist in the PI-34 transition and to guide young teachers. He served in this role for 10 years until the program was expanded and multiple teachers were hired in his place. He was a kind and generous mentor to dozens of new teachers not just in this role, but to many others during his teaching career, including Pete McConnell and Bob's own son and replacement, Jay Abitz. Bob set the example for many teachers past and present and his affect will be felt for years to come.

After his racing career, Bob went on to become a tech official. He inspected cars for competition across the state and Midwest working with famous names like Lowell Bennett, Steve Carlson, Robbie Reiser, Dick Trickle, and Matt Kenseth. His career advanced in 1998 when NASCAR hired him to be an official and assistant tour director for the Midwest tour series. Since then Bob has moved up to work for other NASCAR touring series including what is now the Xfinity and Camping World truck series. This racing experience has always been shared in the classroom and brought a unique and interesting perspective to Bob's career.

Bob also started an after-school community outreach program in conjunction with local police "Beat the Heat," which was a high school drag racing program. Students and police officers work together building and maintaining race cars, then race them on the drag strip. This program gave many students a place to belong and connect with other students, teachers, and local police. Bob and his crew spent many hours after school and on the weekends building and prepping their cars for racing, then they went out and raced! During his time, it was a highly successful program providing many excellent experiences for his students.

Technology Education Students Learn a Great Deal As They Enjoy the Conference

Every year the Technology Education students at the University of Wisconsin-Platteville anticipate the annual WTEA Conference in the Wisconsin Dells. This year lived up to, and went beyond, all of our expectations. Natalie Elfering of UW-Platteville said, "The keynote speaker on Thursday morning was spectacular! The way he incorporated learning how to use a dial caliper with the aluminum remote was very interactive and gave current teachers and future teachers, like me, the opportunity to come up with our own creative ways to combine learning with fun." Peter Uvaas from Fox Valley Tool and Die talked about how important it is to educate students and prepare them for work in industry. He handed out dial calipers and "remotes" that his company had spent their own time manufacturing. Students were shocked when they received the package, and even more surprised when they found out that they got to keep its contents. Students loved the activity and were excited to attempt similar activities in their classroom.



Thursday continued with a plethora of breakout sessions. Which included WTEA President Steve Meyer's session on becoming a new teacher. Steve did a tremendous job giving insight into different aspects of teaching, including classroom management, how to preform assessments, and how to interact with students on a level that is respectful and professional. Steve's ability to make everyone comfortable with talking and answering questions, as well as his story telling, made this session one worth attending. We highly recommend that any current, or soon-to-be teacher attend this session. It was filled with so much valuable information on how to manage a class, and create meaningful connections with students that it would help anyone at any point in their teaching career.

Other sessions included how to make architecture fun using 3D printed parts, as well as pieces cut on laser engravers. There was a side-by-side comparison between Inventor and Solidworks, showing the software similarities and differences. Another session that was incredibly interesting was about how Edgerton Gear and Edgerton High School had created a collaboration where students would go and learn about industry and what it took to work in the field. Students learned about what goes into gear manufacturing while also learning valuable skills, like measurement and machining right in Edgerton Gear's facility.

The SHIPS drawing was a fantastic time. UW-P senior, Jack Kendall, won a book about CAM and CAD print reading. "This book is filled with so much valuable information. Being able to take this book with me and all that it has to offer is going to be a tremendous help when planning lessons next year."

We are excited to see what next year brings to the WTEA conference. Everyone you meet has so much enthusiasm for teaching Technology and Engineering. This is a great time to make connections with other teachers and leaders in industry, as well as get ideas to take back to the classroom and make it better than before.

UW-STOUT

TECCA Members Learn Much at Conference And Are Excited to Become T & E Teachers

This past March, our University of Wisconsin-Stout Technology Education organization (TEECA) attended the annual WTEA Conference at the Chula Vista Resort in Wisconsin Dells. For many of us it was our first year attending the conference. Most of us, not knowing what to expect, went in with positive attitudes and were eager to learn. Previously, the only technology education teachers we knew were either our high school teachers, college professors or our peers, so being surrounded by so many experienced technology education teachers was a new experience for all of us.

The first meeting we attended was the general welcome hosted by Steve Meyer, the WTEA President. Then we attended the Keynote Address by Pete Uvaas of Fox Valley Tool & Die, Inc. Mr. Uvaas talked about hands-on education in a remote controlled world. He handed out calipers to everyone in attendance, which was well over 200 people, and led a lesson in being very exact in our measurements. We even got to keep the calipers!

The most important meeting for us was the New Teacher Seminar hosted by Steve Meyer. This seminar was informative, insightful, and quite honestly, got a lot of us excited to become teachers. Some of the topics covered were seeking employment, elements of teaching, methodologies, how to handle certain situations, and more. Steve Meyer was very helpful in answering all of our questions along with answering questions we didn't even know we had.

The rest of the conference was filled with talking to teachers. Most of the TEECA members spent a great deal of time talking to teachers at the Project Showcase. There was a ton of different student projects put on display for conference attendees. A highlight was when we met with Jeff Greuel of Little Chute High School. We talked about the conference and looked over the many projects his students made in his woods class. Mr. Greuel even gave us five different project plans that had everything from cost of materials to assembly.

This conference got us hyped up, excited, and eager to get out into the field of technology education. Everyone from TEECA had a great time and are all looking forward to attending the conference in the future.

Check out
the WTEA Home Page
www.wtea-wis.org

Hands on Education in a Remote Controlled World

By Pete Uvass, President, Fox Valley Tool & Die, Inc.

Before the memory fades, I would like to express a huge measure of gratitude to the WTEA for the opportunity to address your conference at Wisconsin Dells in March. The welcoming reception, enthusiastic participation, and kind words of acknowledgement were all contributors in making this long awaited event exceed my highest expectations.

When Steve Johnston first contacted me in November of 2015 with the speaker solicitation, I was flattered to say the least. As a person who can't resist an open microphone, the WTEA conference sounded like a great venue to talk about precision manufacturing. With over a year to prepare, my visions of presenting a complex dissertation complete with powerpoint of the latest state of the art processes had my mind going in several different directions. With so many innovations in metalworking over the years, my selection list of which discipline to write about was overwhelming.

After much procrastination, decision evaluation, and unsuccessful power point attempts, I decided to apply the KISS method - Keep It Simple Stupid! Let's descend the ladder of complexity, ditch the powerpoint and talk about some basics which never change. Go with what you know.

This plan was a good choice. First, the text pretty much wrote itself with some fond reminiscing. Second, the evolution of the remote was a group effort by the crew at Fox Valley Tool & Die. The remote started off as a completely different "hands on" exercise, until a programmer suggested, "in keeping with the title theme, why don't we make a remote assembly. My instant reply, "That's Perfect!" From there the guys on the Shop Floor transformed the idea into reality. Once again, nothing is impossible for the man who doesn't have to do it himself.

Finally, the most indispensable ingredient for any successful presentation recipe is the audience. You folks were great! I had some concerns that my simplistic approach would be too basic for trained professional educators, but the positive feedback received confirms the fact that there will always be a need for "Hands on Education in a Remote Controlled World."

Thank you for my inclusion. Until our paths cross again, take care.

ARTICLE

Leadership in Technology and Engineering Education

By Paul Nistler, Assistant Clinical Professor, MSOE

I had the opportunity to attend the WTEA Annual Conference this past March. I would like to thank WTEA president Steve Meyer for inviting me. I was Steve's principal for 13 years at both Nekoosa and Brillion High Schools. Because of my experiences as a high school principal observing what Steve and others were able to accomplish in Technology Education/STEM, I was and continue to be an enthusiastic proponent of this critical part of our educational curriculum. I have seen the results of promoting Technology and Engineering/STEM education with all K-12 students, the enthusiasm it creates and the hands-on experiences that this kind of learning promotes.

There were a number of things that impressed me with the conference. I was able to attend some of the presentations. The first thing that I noticed is what an important learning experience the convention was for its attendees. They were able to learn about innovative and best practices in STEM education from their peers. They learned from business and industry leaders who were there to present. They also had the opportunity to listen to representatives from postsecondary education. There is no doubt that those teachers in attendance learned many new techniques and skills they could integrate into their programs at their schools. It was a wonderful opportunity for professional growth.

I remember attending this same conference about seven or eight years ago. That time there were omly a few exhibitions set up in the Project Showcase. This year there were many of them. Technology and Engineering Educators from around the state shared impressive examples of student work and hands-on curriculum opportunities they have integrated into their courses. Seeing the opportunities that the exhibitors were providing for their students and the high quality of work that their students were doing, not only provide new opportunities for instruction, but spark other ideas that teachers can use when they go back to their own classroom.

As I listened to presenters and speakers, I noticed the continued emphasis on career education. This included more opportunities for high school students to participate in real life learning while still in school. Collaboration between schools and industry is growing, while providing students with numerous opportunities to job shadow, to learn more about future employment possibilities and to actually work in different kinds of jobs while still in school. I noticed the increased number of relationships being developed between technical colleges in Wisconsin and school districts. Not only do these expanded relationships offer high school students a wider educational experience, but they also offer them opportunities to earn college credits while still in school, giving them a head start on their post secondary education, and at the same time saving them money.

I also observed how Technology and Engineering Educators are using STEM to reach out to those students who would not traditionally be interested in taking a Tech. Ed. class. Opportunities for females and those students who are on a traditional 4 year college track (and in the past not interested in the "Tech. Ed." department) are much more interested in taking STEM kinds of classes. They are beginning to understand the importance of STEM learning and of having hands-on opportunities in their education. They are learning that these experiences lead to more possibilities for them to be successful and happy with their career and education choices for the future. The diversity of students taking STEM courses today compared to years ago is good for everyone.

After retiring as principal of Brillion High School in 2014, I began work with the Milwaukee School of Engineering in an innovative program designed to help teachers earn an MBA and become certified as school principals. The degree is the MBAEL or MBA in Education Leadership. The idea is to bring the best practices from business and education together to help develop school leaders who understand the modern educational environment and to lead positive change in education. As a school principal, I understood and promoted the importance of STEM education for all students no matter what their career or educational interests were after high school. I appreciate what our Technology and Engineering Educators today are doing to promote the kind of learning that helps all students reach their goals.

Another reason I attended the conference was to share what we are doing at MSOE in our MBAEL program and to encourage anyone with a Technology and Engineering background who is also interested in being a school principal to look into our program. We need people with your experience along with educators from Business Ed., Agriculture, F.A.C.E. and Computer Programming to become school principals to promote STEM education. You can learn more by visiting this site: msoe.edu/mbael.

THANK YOU

The WTEA thanks our conference sponsors.

Support them throughout the school year.

Platinum Level Sponsors

HAAS Automation Inc.

GATEWAY Technical College

AUER STEEL & Heating Supply Co. — Serving Since 1940

Gold Level Sponsors

FIRST TECHNOLOGIES INC. — Putting Education ... FIRST

Fox Valley Technical College — Knowledge That Works

Wisconsin Technical College System — we are futuremakers

G-W PUBLISHER

University of Wisconsin STOUT — Wisconsin Polytechnic University

new north

MORAINE PARK TECHNICAL COLLEGE

Northeast Wisconsin Technical College

Silver Level Sponsors

JONES & BARTLETT LEARNING CDX Automotive

the STEM academy®

HALDEMAN & HOMME, INC — Technical Products Division WISCONSIN

SkillsUSA WISCONSIN

Chula Vista Resort & Waterpark

ARTICLE

Life After the Classroom

After a career filled with 100+ students per year, staff meetings, parent conferences, in-service, SkillsUSA events, WTEA conferences, and much more, teachers eventually retire and leave the classroom. College students graduate and a new cycle begins. We created this column to show life after the classroom by highlighting one or more of our retired colleagues. Maybe you met them at an event, worked with them, or even had them as your classroom teacher and inspiration. If you know a retired colleague and would like to help us feature them, contact the Interface editor, Doug MacKenzie.

FYI, did you know that a retired TEE teacher can become a WTEA Alumni member for only $20 per year? Membership includes free registration to the annual conference. Contact Joe Ciontea for details.

Do You Remember Ken Bremer?

I knew in high school that teaching was my calling. Starting out in college with dreams of being a music teacher, I discovered I spent more time working on keeping my MG running than practicing the piano. Graduating with a history degree, I found that I would be one of 1000's applying for the same job - and I wasn't a coach. I spent some time reflecting, and talked to Jim Rokusek, the department chair at Eastern Michigan University and learned that Industrial Arts was a field that had job opportunities. Graduate school for my wife brought us to Madison, and we have been here ever since. I have had the opportunity to work with rural kids and city dwellers. Naturally there were differences in the environments the students lived in, but when it came down to it, there were far more similarities.

We have an exciting profession to say the least. Every day it seems that there are changes in technology and it is both difficult and fascinating to keep up with them. Shortly after my "official" retirement, I spent three weeks in Vermont learning the craft of making a guitar and through it discovered the joy of working with hand tools. We planed a spruce top for a guitar down from 1/4 inch to less than an 1/8 of an inch. We used a spokeshave and chisels to carve the neck. We sculpted the bracing for both the top and the bottom of the guitar. Through this experience I discovered that we had missed something important as we moved from traditional Industrial Arts to Technology Education. Just as pianists practice exercises to develop their hand's ability to play beautiful music, skilled craftspeople need to spend time working with their hands to create.

After my "official" retirement I had the opportunity to job-share with my good friend and colleague Mike Roth. We had both run the gamut from traditional to high technology, and found ourselves teaching freshmen woodworking. What a blast! Our philosophy was similar - sure there was a need for students to learn CNC technology and design, but learning how to square a board and solve a problem when one piece out of four is too small seemed to have a place in students' learning also. Students used planes, chisels, and hand saws in addition to power tools and computers. Three years ago I left teaching completely, not because of the students, who I enjoyed immensely, but because it was time to move on to new things.

Now fully retired, I stay close to what is happening in education, but have found many other things in life to be also important. We have traveled to Mexico several times, Italy, Germany, France, and of course our own country. I have found that volunteering for Habitat every Wednesday with a group of retirees has been a great outlet for the use of my skills and giving back to the community. I enjoy woodworking and making furniture and instruments - my latest being a ukelele. I stay close to the Tech Ed community of teachers and business people, and enjoy the friendships acquired through outings with the First Technology F-Troop.

For those of you nearing retirement, my advice is simple. Know your benefits through the excellent State of Wisconsin Retirement System, your Social Security and Medicare options, and stay active! For those who are a long ways off, enjoy the craft of teaching and stay involved in your professional organization. Put as much away as possible in a good mutual fund. You will be pleasantly surprised when retirement comes and you have options you never dreamed of. Stay active with your local union for it is through them that you have one of the greatest retirement systems and benefits. And don't give up - stick with teaching - we need you!

WTEA
960 YUMA CIRCLE
STOUGHTON, WI 53589

CHANGE SERVICE REQUESTED

PRSRT. STD.
U.S. POSTAGE
PAID
Permit #24
Stoughton, WI