

# Interface

Journal of the WTEA

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Future

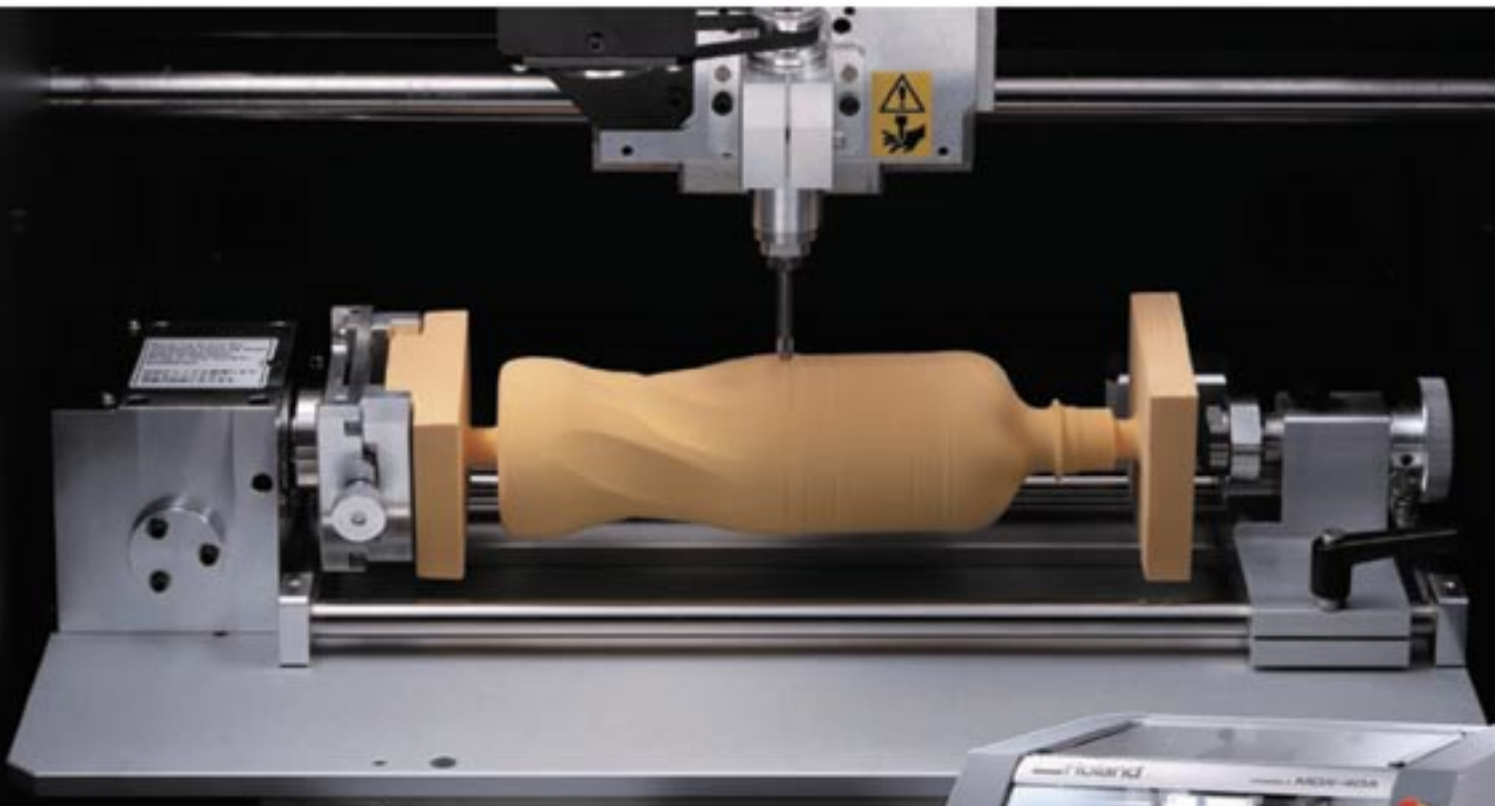
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WTEA



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*Interface* is the journal of the **Wisconsin Technology Education Association**. It is published and mailed from Stoughton, WI 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](mailto:joe.ciontea@wtea-wis.org).

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## What is the Skills Gap?

by Greg Groom, WTEA President

The latest buzz phrase is “Skills Gap.” What is it and how does it impact Technology Engineering Education? In some lives, the “Skills Gap” is as real as how will I feed, shelter and provide for my family. For others, this is only a buzz phrase and there is no “Skills Gap.” The manufacturing sector is saying the skills gap is real, as evidenced by the continuing high unemployment numbers even with the advent of the beginning economic recovery.

How is the phrase “Skills Gap” defined? It is the difference between what skills employers need in their industries and the talents of the available workforce. In some cases, this gap can be closed with “boot camp” training lasting only weeks to a few months. In other cases, it requires a degree program to adjust to the recommendations of forward thinking advisory committees. As another alternative, companies and unions need to step up and help train the needed skill within their own ranks.

In addition to the gaps in skills knowledge, employers look for some basic work skills in employees: critical thinking skills, teamwork, and passion. Employers want people that can critically think while completing their tasks. Employees must be team players, since no one works “as an island.” For the long term performance, an employee must have a passion for the job they are doing. These three threads run through any article or program on the “Skills Gap” from the viewpoint of manufacturers.

After working with many young people for decades and watching students grow with their skills, we can see those three threads develop in our classrooms. Along with addressing the skills gap, we need to address the threads for basic work ethics: critical thinking, teamwork, and passion for work. For too many years society has pushed the idea that in order to be successful, all students need a four year degree. Recently, there was an article discussing how a school valedictorian opted for a career as an electrician instead of a 4 year degree, and whether or not that is “success.” This student had a passion for his profession choice. His success is based on his vision of his own future. Other students are pressured away from their choices, by being told that success is a four year degree. I have seen my own students go off to college and they were turned off because they had no passion for what they were doing. The passion that people have for their career takes time to develop. For those of you that have been in our profession for a while, you have seen when that pas-

sion ignites. You have seen when it is first appears and becomes brighter when that student becomes more successful. But you may have also observed what happens when that passion is smothered under societal pressures.

As society changes its definition of success, we are seeing programs that are being forced to change in order to address highly needed skills. One area of needed change is class sizes. In order to develop a critical thinking, passionate, skilled worker it takes time with students - not only in lecture but also in skills lab. Instructors need to be there when students are having problems and need help, assessing skills and watching for that light to emerge and glow brighter. Anytime the class size is over 20 students, it is almost impossible to be 1:1 with a student. Look toward the successful programs, they are the ones with

18-20 students to one instructor.

Some schools are going all day with no prep time for teachers. For years, I have used that time to help students. Also, having students in my classroom after the bell at the end of the day is a routine thing. Having a teacher go all day and still have time after school for helping individual students is an impractical way to develop 1:1 time. Instead of prep time, we need to request office hours.

It seems to be a greater challenge to have students work in teams than in the past. Technology can be our greatest barrier to students working together and with us. The iPhone and MP3 player plug our kids in to their own worlds and separates them from each other. Students need to work on projects where success will be contingent on teamwork and not just on the final project. Unless they learn to work as a team, they won't learn it on their own.

Developing critical thinking skills has always been a trade mark of our discipline. Creating a metals project, designing a circuit, or planning a flow in a manufacturing cell have been projects of our discipline for a long time. Knowing what is next and making the plan better has been the focus of TEE programs. STEM education has taken critical thinking to the next level. Some of you have found your own way to address critical thinking, and I applaud you and your program. If critical thinking skill development is lacking in your students, then moving toward a STEM type program may help. The two that come to mind are STEM Academy and Project Lead The Way.

I hope this article helps and I look forward to leading the WTEA team one more year.



## Winter 2012 - 2013 Board of Directors Meeting Highlights

*by Matt Schultz, WTEA Secretary/Treasurer*

The following summary highlights the Winter 2013 WTEA Board of Directors meeting held January 11th and 12th at the Chula Vista Resort, Wisconsin Dells.

- Doug Dimmer, Cudahy High School, was appointed Director at Large.
- Matthew J. Schultz, Lakeview Technical Academy, was elected (running unopposed) WTEA Secretary/Treasurer.
- Jesse Domer, Watertown High School, was elected (running unopposed) WTEA President Elect.
- WTEA hosted a booth at the 2013 School Board Conference; discussion from administrators was "We need more Tech-ed Teachers." The WTEA wants you as educators to promote our field to your students.
- 40th annual WI SkillsUSA Conference: April 10th and 11th in Wisconsin Dells at Chula Vista.
- Fox Valley Technical College WEEVA event: April 26th and 27th.
- Road America WEEVA event: May 13th and 14th.
- WTEA lab coats are available for purchase on the WTEA website - [www.tinyurl.com/wtealabct](http://www.tinyurl.com/wtealabct).
- Watertown High School will be hosting a High-Tech Weekend: April 5th – 7th, 2013. Visit <http://www.wtea-wis.org> to register. Topic will be on advanced CNC operations.
- New WTEA Award: Community Service Award. Check out the awards page on the WTEA website for details.
- WTEA will be hosting the 2015 ITEEA Conference in Milwaukee. If you are interested in volunteering, contact Pete McConnell at [pete.mcconnell@maps.k12.wi.us](mailto:pete.mcconnell@maps.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 [mjschultz@kUSD.edu](mailto:mjschultz@kUSD.edu)*

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## Jump In

*by Mike Cattelino, WTEA Vice-President*

The skills gap, the fiscal cliff, Act 10, etc., etc. There are so many political and social-economic movements, trends, laws, and buzzes out there that we can find ourselves getting caught up in reactionary efforts rather than focusing our precious time and talent on proactive and sustainable initiatives.

In his keynote address at the 2012 WTEA conference, Miller Electric President Mike Weller tasked our membership to reach out and seek partnerships and relationships outside the walls of our academic settings in an effort to change education. He also committed, as a business leader, to reach out beyond the walls of the business world to offer assistance to the education system in a different fashion.

The thought of executing that task can seem overwhelming as we consider increased class sizes, larger teaching loads and budget constraints, along with continued pressures to reform educational practices. There are examples and best practices all around our great state of high school teachers and students finding great resources and opportunities at local and regional businesses. There are also examples of secondary and post-secondary systems working together to form a clearer career pathway for students as they plan for and transition to their futures after high school. Youth Options, Youth Apprenticeship, and Co-op are all existing mechanisms for students to experience career preparation outside the walls of our high schools.

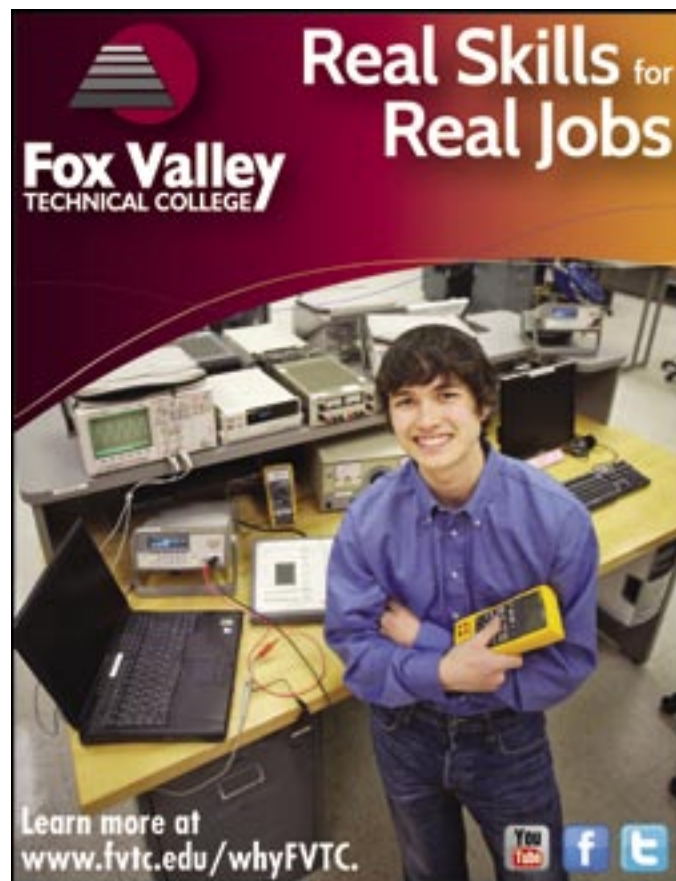
Fox Valley Technical College's Machine Tool Technician program is taking this to a different level. The instructional staff has constructed an initiative called a Career Jump Start in Machining. It is not a restrictive or constrictive program in that if a student does not follow all aspects they will be failed-out. It is a tool that will guide the right students down a path toward an outcome of employment in a high-demand field. It starts with the high schools being equipped and trained to teach the entry level courses in the college's program and the students earning transcribed credits while still in high school. This is not a small task, as the equipment may not be up-to-date and the teachers may not have the appropriate background or experience. The college is prepared to provide professional development, but the equipment will not be

as easily attainable. There are some possibilities, but the schools and local businesses have to work together.

Another aspect of the jump start program is the summer or after school component for the students. The concept is that they will find a local machine shop to work at in order to gain valuable entry-level experience in the trade of machining. The detail in the plan shows hours on lathes, mills, and various other equipment. This closely resembles youth and adult apprenticeship models and co-op structure.

In short, if a student is able to follow the path drawn out in the Jump Start initiative, they will have earned at least nine college credits and have completed five-hundred work hours before they graduate from high school.

It is possible to achieve more, but it will take commitment and effort. This model could be adapted to many career areas to a large extent. Are you ready to jump in?



# DISTRICT NEWS

## District C

Tom Barnhart



It has been quite some time since WTEA Northeastern Wisconsin District C Tech Ed teachers and partners in education have gathered together to simply “talk shop” along with several other subjects related in our profession. Therefore in partnership with NWTC and WTEA, we hosted our

1st annual WTEA District C Meeting on Thursday, February 7th from 5:00 - 6:30 at Northeast Wisconsin Technical College in Green Bay. Future meetings will be held at this site. A big thank you to Mark Weber and Brooke Holbrook for providing us with a home base at NWTC.

Considering the snow storm taking place during the meeting, it was well attended. Several details about WTEA membership, the Spring conference, NWTC opportunities, District C future goals, and TEquity were



among the topics covered. Elizabeth Baier and Barb Biters both lead a great open conversation about gender equity. Every time I hear Barb speak I realize how critical gender equity is if our profession is to sustain itself in the 21st century. If you haven't already done so, I urge you to check out the TEquity link on the WTEA website. It is a tremendous source of information when trying to grasp how to develop gender equity strategies. A big thank you to Barb for braving the snow and helping us out.

Connecting great N.E.W. Technology Education teachers and partners was what this was all about. Through



that connection comes a feeling of security and confidence while providing great opportunities for our students.

If you're a WTEA member from within District C that was not contacted about this meeting or if you are from another district and would like to come to future meetings, please send me an email with your name, school district, and title to [tbarnhart@ashwauenon.k12.wi.us](mailto:tbarnhart@ashwauenon.k12.wi.us).

Please don't be afraid to invite yourself.

## District H

Tom Martin



Winter weather made for difficult travel this year.

I would recommend that all Technology & Engineering Instructors meet prior to the beginning of next year to invest some time to determine a cooperative manner for which to address the new state Technology & Engineering State Standards, the Next Generation Science Standards, the Common Career Technical Core Standards and Student Learner Outcomes.

Why do this by yourself, when you can share the work cooperatively. I would work with my colleague Shari Torkelson from CESA #4 to compile a region curriculum. Shari and I will be reaching out to you late in the school year, so please stay tuned.

## Plan now to attend The 45th WTEA Annual Conference

### ***“Ready, Skilled, Working!”***

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•

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Wisconsin Dells



## District G (South - Madison Area)

*Ryan Ubersox, Director-at-Large*



Greetings WTEA Members!

District G (Madison Area) gathered at Madison College on February 27th to tour their new facility. We had an outstanding meal while listening to a TEQuity presentation followed up with MATC staff giving us updates on their programs. The new building can be described

somewhere between WOW and ridiculous! It is definitely a must see!

We will again be having our summer social at Travis Ray's house. Wives and kids are invited to the outing this year. Watch the WTEA District G (MATT) listserve for further details.

The fall meeting will take place at Oregon High School at 5:00 on Tuesday October 8th. More information will follow.



We are looking for a second meeting in the spring of 2014. If you are interested in hosting, or have a business in your area which would be beneficial for us to meet at, please contact me.

As always, please contact District G Representative Phil Bicklehaupt or me with any comments or questions.

## WTEA District Map



*WTEA Districts align with Wisconsin Technical College regions*



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# EXECUTIVE DIRECTOR

## A Message From The WTEA Executive Director

by Joe Ciontea

Retiring? Want to stay connected to the WTEA? Retired educators can renew their membership for only \$15 per year. Retired members receive free all member emails, mailings, and complimentary admission to the annual conference! Send an email to [joe.ciontea@wtea-wis.org](mailto:joe.ciontea@wtea-wis.org) for details.

### A world of thanks!

We had another spectacular spring conference with record setting participation. It takes a team effort from Jeff Dowd (Trade Show), Steve Johnston (conference speakers and presentations), Steve Meyer (Project Showcase), and the rest of your Board of Directors to make it all happen. Together they spend countless hours planning to provide you, the membership, with two days filled with opportunities for professional development, training, and networking so that you can return to your school with ideas and resources to strengthen your program. Many of the sectional presenters have shared their presentation materials. You can find them under the curriculum tab on our website.



Did you spend some time at the trade show in the exhibit hall? We had 42 exhibitors this year, many of them also advertise in our journal and sponsor other association activities. These businesses provide important financial support for our association so please remember to give them an opportunity to provide you with a competitive quote when you are purchasing products and services for your school.

I want take a moment to thank four other people: Corinne Dowd, Judy Jordan, Vern Jordan (Past President), and my wife, Jaye Ciontea.



The four of them arrive early on Wednesday and stay until everything is packed up and loaded after the conference. They volunteer their time to help with registration, set-up, communications



and whatever else needs to be done. Their help frees up the WTEA Board members so that they can introduce speakers, and assist presenters and exhibitors with last minute arrangements.



THANK YOU!

Planning for the 2014 conference has already begun. Plan now to attend, and bring a colleague with you.



The 45th  
**WTEA**  
Annual Conference  
March 6 & 7, 2014  
Chula Vista Resort - Wisconsin Dells



## My Farewell Message

by Pete McConnell, WTEA Past-President

*Editor's Note: At this year's Spring conference, WTEA President Greg Groom thanked Pete McConnell for his service as a 4 year term WTEA President. Pete showed the crowd the step stool he was presented four years ago by board member Doug Kugler. The stool reads "Presented to Pete McConnell, Reaching New Heights." Pete put the stool down and stood on top of it to the reception of cheers and applause from the crowd. He proceeded to deliver the following farewell message.*

I had a health event in 1999 that caused me to look at mortality in the face. I wondered often at that time what people would have said at my funeral. If I had made a plan and asked my lovely wife Barbara to display symbols of importance in my life, what might they be? Maybe our wedding picture, pictures of our sons, a Brewers' hat, a musky rod, my dog Molly, my tool belt and safety glasses, a picture of my F-Troop buddies, a Wauzeka Hornet wrestling shirt, or my garden trowel.

As I move away from a leadership role in this association, what will you say? How will you reflect on my role as a leader in the WTEA? Will you remember my enthusiasm and energy? Will you know of my dedication to teacher training and development? Will any of these reflections have an impact on the health of the association? Will it improve membership?

The WTEA is a first rate organization that provides fantastic opportunities for its members. There are many organizations that strive to operate and function like the WTEA. It is imperative in the current educational environment for all of us to participate in and support the WTEA. Get involved with teacher development. Encour-

age, invite and support new young educators. Stimulate the growth of the organization by increasing membership and activity in the organization. Prove to your students and your communities what really matters and why Technology and Engineering curriculum is crucial to the development of our children and our country. Take the torch and pass it on. Continue to strive forward. Technology and Engineering curriculum should be a required credit in every school district across this state!

What will you do with what you have learned here at this conference? Will you step up to be a leader? Will you prove to those in your community what matters and how it can affect their lives? Will you continue to work hard to be the very best teacher every single day? Contact your district representatives or any board member. Hey, you can even call executive director Joe Ciontea. Sign up your buddies and work with a new teacher. Get involved! Thank you for all of your support of me and my family during my years of service here. I wish all of you the very best and will look forward to continued service of the WTEA as we move forward to bring the ITEEA 2015 conference to Milwaukee Wisconsin! Have a great conference!



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## ARTICLE

### WTEA Community Service Award

During a WTEA Board meeting in 2009, Dr. Francis X. Steck suggested that the WTEA should consider a new award. Called the WTEA Community Service Award, it was intended to recognize Technology Education programs that provide service to the local community.

The WTEA Board decided to present this award annually to a high school and a middle school that serve their local community in some meaningful manner. The award will be first presented at the WTEA Conference, March 6-7, 2014 for service performed during the 2013 calendar year. The award provides recognition to programs that contribute in significant ways to the community, but may not meet criteria for program of the year.

There are two primary criteria for selecting schools: 1) How many students are involved in the service project, and 2) How many people in the local community are being served by the activity. The WTEA Board and Awards Committee hope to recognize at least one high school and one middle school for their community service. A winning program may not receive the award again for at least three years.

To nominate a high school program or a middle school program for the award, go to the WTEA website (<http://www.wtea-wis.org>) and nominate the program. The electronic nomination form makes the process very easy. Schools that choose to pursue the award must then

submit documentation of service projects. Examples of documentation are (but are not limited to): portfolios, student reflections, videotape, newspaper clippings, letters of recommendation/support from the local community.

Nominations shall include: Name of School, supervising teacher(s), names of students involved, timeline, photos/video, summary of activity's impact on local community, and budget.

To be considered for this award, teachers must be current members of WTEA. Applications must include letters of recommendation from at least one of each: administrator, parent, and community member impacted by the service project.

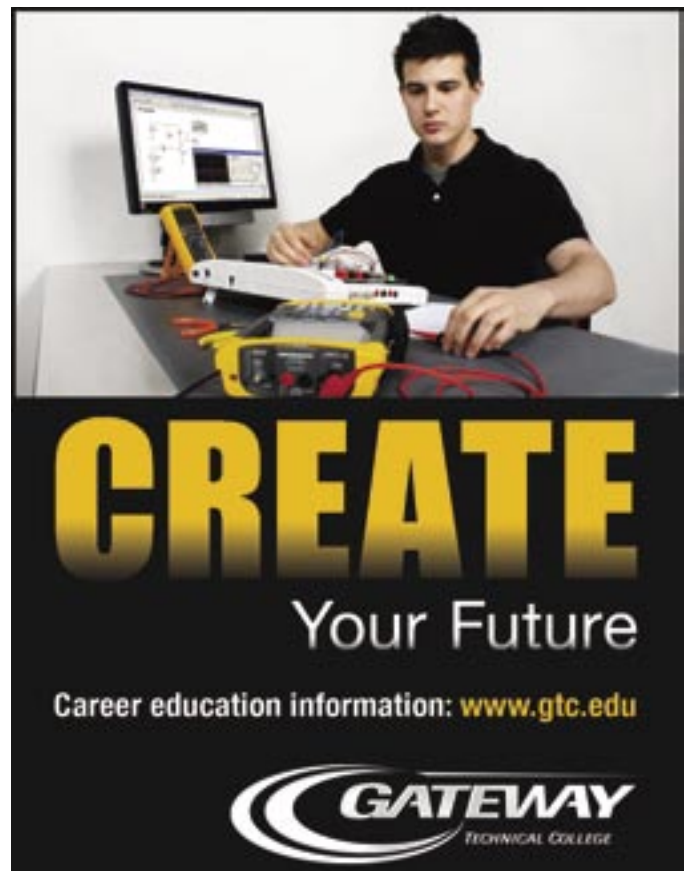
For more information about the new WTEA Community Service Award, contact Dr. Francis X. Steck at 608-342-1532, or send materials to:

WTEA Awards Committee  
PO Box 1312  
Fond du Lac, WI 54936  
Fax: 920-922-0779

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## An Open Letter

by Pete McConnell, WTEA Past-president

*Editor's Note: The following letter from Past-president Pete McConnell was presented to attendees at the recent District G - South meeting held at Madison College February 27th. Pete's message is worth sharing with Interface readers.*

WTEA District G and Madison Area Technology Teachers! I am delighted to have all of you attend this meeting at the Truax Campus. I understand there should be 30-40 of you who attend these meetings a few times a year. I noticed that the summer meeting is at Travis Ray's house. Is that the same skinny kid named Travis Ray that wrestled for Seneca High School? No way Ray!

It is my honor to welcome you to this winter MATT meeting on behalf of the WTEA. There is a value in these meetings that you may not realize for a long time. Take stock in the people, information, and resources that are shared here. It can sometimes be difficult to understand what you need to know and when it matters.

In the early 1990's a buddy of mine from Prairie du Chien called me up in Wauzeka. "Hey, I got this computer called a Macintosh, maybe I should take it over to Southwest Tech and we could call some of the other shop teachers in the area and see if we could figure out how to make this thing work". I said, "I'll call ten and you call ten and we'll go from there". Deal! That was the beginning of a group called "Beg, Borrow, and Steal". We met monthly for maybe 8-9 years. We explored and investigated all of the latest and greatest from laser communication tools to video productions and construction activities. I think we actually had the guy from Wisconsin Brick and Block come in and show us how to mix mud and swipe mud on blocks on a snowy Wisconsin night in January. We were all pretty much scared to death of this new gig called Tech

Ed, but we knew how to "fix" problems. We rolled up our sleeves and dug in our heels. Some of my dearest friends in the business came from those days.

Your meeting tonight is relevant and necessary. Enjoy! What you learn and who you share it with will change the lives of many. Some are sitting in this room. Some you will greet in your classrooms tomorrow. Encourage one another. Take the lines out of the sand when discussing different deliveries and methodologies. What works for some, may not for others. Celebrate the energies that each of you bring to this meeting. Invite more to follow your lead and welcome them to this group again in the future.

I applaud your efforts. Thank you to the leaders who pulled this meeting together. I encourage you to bring these ideas to the WTEA Spring conference and share them. Continue to look to the WTEA for ideas in Technology and Engineering that effect how we work with students in the field. Be sure to check out the activities involved in Skills USA Wisconsin. Your Technical College System is ready to serve at any time. The DPI staff continues to share and deliver timely and important information for all of us around the state. Get involved with one of the many activities this Spring. Robots, competitions, Rube Goldberg, FLL, PLTW, STEM, whatever it may be! Bring your students and celebrate Technology and Engineering in Wisconsin!

Have a great meeting and remember to contact the WTEA at any time to let us know how we can help out!

### - Dates to Remember -

June 24 - 28, 2013	<b>49th SkillsUSA Natl. Conference</b>	Kansas City, MO
July 8-11, 2013	<b>WATDA Auto Tech Summer Institute</b>	Fond du Lac, WI
October, 2013	<b>National Careers in Construction Month</b>	
October 16-18, 2013	<b>SkillsUSA Fall Leadership Conference</b>	Risholt, WI
December 4-6, 2013	<b>ACTE National Conference</b>	Las Vegas, NV
March 6-7, 2014	<b>45th Annual WTEA Conference</b>	Wisconsin Dells, WI
March 27-29, 2014	<b>ITEEA Conference</b>	Orlando, FL
April 1-2, 2014	<b>SkillsUSA State Championships</b>	Wisconsin Dells, WI
March 26-28, 2015	<b>ITEEA Conference</b>	Milwaukee, WI

## WTEA Goes to ITEEA in Columbus!

The WTEA has been granted the host association for the 2015 ITEEA conference in Milwaukee, Wisconsin. There is much work and research involved in setting up this endeavor, so we sent an experienced group of super sleuths to Columbus, Ohio to find out how it's done. The team from Wisconsin included Director at Large, Dr. Bryan Albrecht; Vice President Mike Cattellino; District Director, Steve Meyer; ITEEA 2015 co-chair, Francis Steck; Director at Large, Ryan Ubersox; WTEA President Greg Groom; ITEEA 2015 Co-Chair Mike Beranek; WTEA Past President Pete McConnell; and ITEEA Program Chair Ken Starkman. The goal of the group was to see the physical set up of the conference and visit with the local planning committee from Ohio. There was also the opportunity to meet the conference planning committee from Orlando who will host the conference in 2014.

The fact finding was fun and informational. We had a chance to attend the Presidents' breakfast and many varied sessions. The Wisconsin award winners were represented well in the Program Excellence and the Teacher Excellence Award presentations. It was a good time to snap some photos and shake hands in congratulations. The Wisconsin social, organized by Mike Beranek, was a huge hit and an opportunity to visit with professional friends from around the globe. We visited lots of booths with familiar faces. Many of the exhibitors are the same representatives who participate in our conference.

The ITEEA has an executive staff that is excited to work with the WTEA to bring a quality and successful conference to Milwaukee in 2015! We have scheduled a pre-planning meeting in Milwaukee the weekend of April 26/27, 2013. There are lots of discussions to have and ideas to share. We know that there will be lots of work



to do, but in Wisconsin we know not only how to work, but how to get it done in style! There will be many jobs to help with as we prepare for ITEEA 2015. It is time to speak up and throw your name in the hat to volunteer! Please send volunteer inquiries to WTEA Past President Mr. Pete McConnell at [pmbdmerrill@charter.net](mailto:pmbdmerrill@charter.net). We are already assembling a list of donations and volunteers in preparation for the conference. Please also refer any questions and suggestions to the planning committee members or the WTEA board members listed on our website and in this Interface magazine. Look for much more information to follow the summer summit planning committee. ITEEA Milwaukee, March 26-28, 2015.





## WTEA takes Lead in Equipping Professionals to Grow Wisconsin's Manufacturing Sector

by Jesse Domer and Tom Martin

While the state's economy has been sluggish at best, manufacturing has been vigorous throughout the recession, with some companies experiencing record growth. However, while the state's unemployment rate has been high, it has been well documented that Wisconsin's manufacturers are finding it difficult to fill critical manufacturing jobs.

Recent studies (The Sullivan Report, BE BOLD 2) indicate potential long-term solutions to the skills gap phenomenon may well lie within our education system. Your WTEA, in partnership with the Tool, Die and Machining Association of Wisconsin and the Wisconsin Energy Efficient Vehicle Association hosted a CNC High Tech Weekend, April 5 – 7th at Watertown High School to take a lead role providing skillsets to our educators in order to equip millennial human capital with the tools necessary to fill these crucial gaps.



Lead Instructor and WTEA President Elect Jesse Domer led colleagues toward the design and machining of a round aluminum beverage coaster using Softjaws in a CNC Vice.

Teachers from our high school and Technical College programs converged on Watertown. They learned to design the round aluminum beverage coaster, transfer that design to the jaws, code and machine the jaws, then code and machine the part.

Instructors from the course provided some invaluable testimonials:

"The experience has been extremely deep in terms of expanding my knowledge base in the use of Mastercam and AutoCAD. Pardon the pun, but the course really took the design process to a third and even fourth dimension for me." *Cory Bussan, Fennimore*

"For as an advanced topic as CNC Machining is, Jesse broke it down to where everyone involved gained full comprehension. Jesse Domer should be commended for taking a leadership role and guiding us."

*Travis Ray, Sun Prairie*

Teachers were also provided a tour at K & S Tool, Die and Manufacturing in nearby Ixonia. Kevin Mullen, Vice President, and Pete Heiden, Supervisor, gave teachers a real glance at the projects, the skills necessary to complete projects as well as pleaded with instructors for their help.

"We [industry] aren't looking for button pushers. We are looking for your students who have the ability to design and draft and redesign to increasingly tighter tolerances. We need them to take a part and tool it using GD & T (Geometric Dimensioning and Tolerancing) protocols. You [teachers] can start the process by calling us [industry]. We may not get to you right away, but this [the skills gap] is a huge issue for everyone."

*Kevin Mullen, K&S Tool, Die & Manufacturing*



To conclude, many organizations made this weekend possible. The Wisconsin Energy Efficient Vehicle Association provided Saturday's breakfast, the Tool Die Machining Association of Wisconsin provided local food from Glenn's BratHaus, TEquity sponsored Saturday's supper and our great friends at Haas Factory Outlet provided Sunday's breakfast.

Jesse and I would once again like to thank the instructors for giving up their weekend. We found the experience extremely beneficial and both of us are considering another offering for the future.

## ARTICLE

### Time Banking . . . Another Means to Cash In

by Tom Martin, District H Director

As an intermediary, having districts form and maintain sustainable CTE advisory councils is frankly about as easy as collecting late homework. The sad reality is that many of my schools and others across the state do not engage with industry. Whether it's a lack of time or a common agenda for which to meet, I do not hear or see the degree of collaboration that's necessary in today's increasingly complex workplace. Advisory Councils should be formed and maintained to engage internal and external partners as to your past program accomplishments, present work and future goals. If you have a working advisory council, congratulations! Pass onto the next article because the remainder of the article isn't for you.

For those without active advisory councils I recommend a new approach to collaborative partnerships: Time Banking. Time Banking is a service exchange process that uses units of time as 'currency'. Time Banking may well provide our profession with an approach that would lend itself well to the technology and engineering instructor's character. In my years as an educator I have observed that the Technology and Engineering professional is more comfortable demonstrating a skill, process, etc. than presenting before members of industry.

Simply put, technology & engineering instructors are themselves generally tactile in how they learn. What Time Banking would allow our profession to do is have meaningful conversations with local industry around service. It could start out as simple as volunteering to refresh an industrial campus. Soon the relationship evolves into student-centered discussion leading to projects that they [industry] do not have time to do. Where these relationships go depends on the professional's motivation, but, rather than set up a formal agenda, Time Banking involves a

more tactile exchange between education and industry.

While I fully grasp the assets of advisory councils, perhaps we've [CTE] been trying too long to fit a round peg in a square hole. Many of you became a Technology & Engineering professional because you enjoy demonstrating and then engaging students with a relevant contextual curriculum. Perhaps sustainable partnerships could be approached in a similar manner. Time Banking with local industry would engage both you and your local community around activity. The 'currency' from your service may well be meaningful conversations where industry needs converge with your program goals to create a perennial

outcome of human capital that immediately benefits your local economy.

I know what some of you may be thinking. "Well, if my students and I are doing these projects, what about child labor concerns or the fear of being taken advantage of?" Both are valid concerns, but as long as your students' work does not displace incumbent workers, then in my mind, you are not violating the law. As to being taken advantage of, perhaps this may happen. You do have the right to walk away. Generally speaking, industry and particularly your local industry knows that their number one concern is future human capital. How and where industry secures talent ready for the 21st century will always be a challenge.

Let's be clear, Time Banking takes a commitment. With that said, if you are not comfortable with formal meetings, Time Banking may be a viable alternative. As an intermediary, if I hear that my CTE programs are engaging with industry in this tactile manner, in my mind, Main Street, you the professional and most importantly, the student benefit.



*In the past a leader was a boss. Today's leaders must be partners with their people . . . they can no longer lead based on positional power.*

- Ken Blanchard

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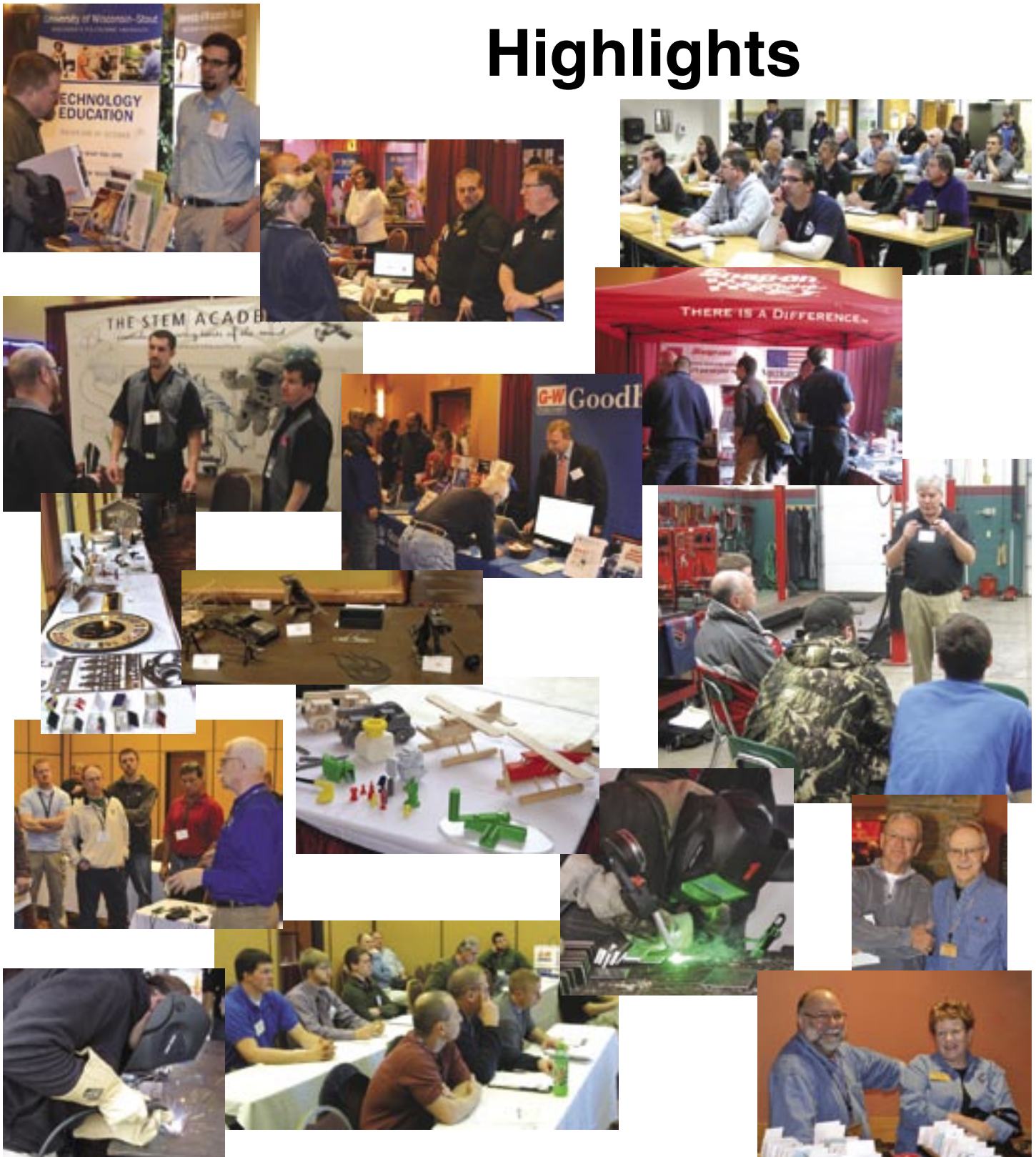


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## **Highlights**



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# AWARDS

## 2013 WTEA Awards

Presented at the Awards Banquet - March 14, 2013

### WTEA 25 Year Award

*"For 25 Years of Service to Education"*

Jeff Allram

John Glynn

Greg Kuhk

Brian McAlister

John Rosenthal

Paul Coenen

Steve Johnston

Todd Lukoski

Steve Mitchell

Kerry Staehler

• • •

### WTEA Future Technology Educator Scholarship

Emily Mae Steward, UW-Stout

• • •

### WTEA Award of Excellence

*"For Exemplary Achievement in Technology Education"*

Stephen Hadfield - Pittsville High School

• • •

### ITEEA Program Excellence Award

*Presented on March 7, 2013 in Columbus, OH*

Templeton Middle School - Sussex

• • •

### ITEEA Teacher Excellence Award

*Presented on March 7, 2013 in Columbus, OH*

Tom Andreska - Merrill High School

• • •

### WTEA Special Recognition Award

*"For Contributions and Service to the WTEA"*

Pete McConnell - Merrill High School

• • •

### WTEA Special Recognition Award

*"For Contributions & Service to Technology Education"*

Barbara Bitters - Retired, Wisconsin DPI

• • •

### Special Thanks

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

### Middle School

#### Program of the Year

*"Outstanding Middle School  
Technology Education  
Program"*

Kennedy Middle School  
Germantown, WI



### High School Program of the Year

*"Outstanding High School  
Technology Education Program"*  
Slinger High School



### Technology Educator of the Year

*"For  
Outstanding Contributions  
to Technology Education"*  
Jesse Domer  
Watertown High School

### Lifetime Achievement Award

*"For Distinguished Achievement & Leadership  
in Technology Education"*



Carl Hader  
Grafton High School



# WTEA EDUCATOR OF THE YEAR

## WTEA Technology Educator of the Year

### Jesse Domer

Watertown High School

*The WTEA is proud to honor Jesse Domer as our 2013 Technology Educator of the Year. Congratulations!*

It is an honor to be selected WTEA Educator of the Year for 2013. Fifteen years ago as I argued with myself about future career choices, education worked its way to the top of the list. There are many to thank for the successes I have experienced in the past years. Many have taken me “under their wing.” My students, however, are why I love my career.

After graduating from Eau Claire North High School in 1998, a passion for engineering and design became an area of interest. After student teaching in Thorp HS/MS, I graduated from UW-Stout with my B.S. in 2003. I was fortunate to teach alongside Ken Laventure, a seasoned teacher prior to his retirement at Colby HS/MS. My hope is to have the same passion after 30 years in education and into retirement. While in Colby I was able to continue with the SkillsUSA Chapter and institute a Supermileage team. College experience with WTEA led to positions as District Director and later Secretary/Treasurer while in Colby.

In 2006, an opportunity to teach in Watertown brought new challenges. Accomplishments in Colby then provided direction for opportunities at Watertown High School both in and out of the community. Watertown students have since then progressed in many areas such as national skill competitions, and opportunities to speak to individuals in high level engineering and manufacturing sectors. Students are currently involved in Project Lead the Way which includes: Introduction to Engineering Design, Principles of Engineering, Computer Integrated Manufacturing and Engineering Design and Development.



**WTEA Past-President Pete McConnell, Watertown High School Assistant Principal Daniela Stuckey, Jesse Domer, and WTEA President Greg Groom.**

Other courses students may take are traditional Manufacturing 1 & 2 as well as Drafting 1. The combination of Engineering and Manufacturing, I feel, go hand-in-hand. As advisor to SkillsUSA, Supermileage, Electrathon, FIRST Lego League and BattleBots, I am fortunate to have the assistance of many willing hands.

There are other areas of passion that benefit the community of Watertown and reach across the state. I am

honored to sit on numerous boards including: Education Chair for Wisconsin Precision Metalforming Association, Executive Director for Wisconsin Energy Efficient Vehicle Association, President-elect for the WTEA, Board Member for Wisconsin SkillsUSA Alumni, Treasurer for Watertown SkillsUSA Alumni and Secretary for WTEA Foundation. On a personal realm, I enjoy being president of C&R Bass Anglers of Watertown.

My career can be summed up in one word, YES. This is a strong word in my vocabulary. If it is good for kids, and generally not taking me out of the classroom, my answer is yes. My challenge is for everyone to look at who you currently mentor. Does anyone look up to you? Does anyone come to you for support or advice? Do you seek out others to keep them strong in our profession? It is because of mentors in my life that I know the word yes and use it to support the youth in our great state of Wisconsin.

I look forward to working with many of you in the future and seeing you at upcoming WTEA, SkillsUSA, WEEVA, BotsIQ, FLL and more functions to come.

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# LIFETIME ACHIEVEMENT AWARD

## Lifetime Achievement Award Recipient Carl Hader

Carl Hader, Grafton High School, was awarded the WTEA Lifetime Achievement Award at the association's annual awards banquet on Thursday, March 14, 2013. The Lifetime Achievement Award was established in 2001 to recognize individuals whose career demonstrates a commitment to our profession that goes beyond the classroom and their own students. Carl is the seventh professional educator to receive this award from the WTEA.

Carl shares his knowledge and expertise with any educator who asks. He is a regular conference presenter, teacher trainer, curriculum developer, and textbook contributor. He is a contributing member of the Grafton teaching staff and is actively involved in community and church activities. Here are some highlights of the award nomination credentials that were reviewed by the WTEA Board of Directors:

- Over 33 years teaching at Grafton High School
- Grafton High School SkillsUSA coordinator/advisor for 18 years
- Ozaukee County Educator of the Year - 2002
- Herb Kohl Fellow 2006
- State of Wisconsin Educator of the Year – 2007
- Certified NIASE Master Automotive Technician, Engine Performance Specialist, and Master Engine Machinist for over 25 years, currently certified through 2015
- Coaching students in over 110 automotive competitions since 1984
- Coaching 31 students who placed in the top 10 in national automotive competitions; six students were national champions
- Grafton High School is the only school to win all three national automotive competitions in the United States (Ford – AAA, GNYADA, and SkillsUSA)



### Carl Hader's Educational Philosophy Statement

I believe that:

All students can succeed.

All teachers in all subjects can make a difference every hour of every day.

A great hour of CTE instruction or lab can make a student's day, week, year, and their career.

Expertise in educational pedagogy, as well as subject matter skills, is important to program success.

Career-directed instruction can be a student motivator.

Success-oriented instruction and class experiences should be a mainstay of all education.

God, Family, and Friends are some of the most important things in life & I'm thankful for them all!

I also believe that I am blessed to have had a career where I could exercise my skills and follow my beliefs to make a difference in students' lives.

Over the years, I have tried to do the best with what I was given.



### Previous WTEA Lifetime Achievement Award Recipients

**Len Sterry**  
April 2002

**Fred Schroedl**  
March 2007

**M. James Bensen**  
March 2004

**Doug MacKenzie**  
March 2008

**Jeff Dowd**  
March 2005

**Dennis Skurulsky**  
March 2012





### Comments received by the WTEA

It is with great pleasure that we write this letter to recommend Carl Hader for your lifetime achievement award. Very few educators put their stamp on a school district in the manner that Carl has. I can't imagine that you could find a more dedicated teacher for this award. It seems that a lifetime achievement award should recognize a teacher who has not only gone above and beyond in his school, but one whose efforts have impacted education more globally. Mr. Carl Hader meets that definition.

- Terry Ziegler, President, Grafton Board of Education



He (Carl) has instilled in his students a love of learning, a respect for demonstrated skills on a day to day basis. More importantly he promotes a desire for community. "What you take from here is not about 'me' it is about 'us' and the skills we have, we use and then pass those skills on to those who follow." Carl Hader provides opportunity that encourages this each and every minute of his teaching life!

- Steven L. Kittleson, Grafton HS Principal (Retired)

Carl is an excellent decision-maker who always places the best interests of his students first. His non-defensive style of engagement, interpersonal skills, positive attitude and collaborative work ethic make him one of the most successful teacher leaders in the school district, state, and nation. He shares and passes on his passion along with the knowledge and expertise to make a positive difference in the lives of his students. Mr. Hader is much more than a teacher to those who are fortunate enough to learn in his classroom. I wish that every student who attends Grafton High School could have this exceptional educator as a teacher.

- Jeffery M. Pechura, Ed.D.  
Superintendent, School District of Grafton



The Wisconsin Technology Education Association is proud to present the Lifetime Achievement Award to Carl Hader. We congratulate him and thank him for his commitment and passion for teaching and providing learning opportunities to his students as well as sharing his knowledge with other T & E teachers.

# WTEA HS PROGRAM OF THE YEAR

## 2013 WTEA High School Program of the Year Slinger High School

Slinger High School's Technology and Engineering Department's mission is to provide students with the technology and engineering related skills and knowledge necessary to succeed at the post-secondary level, in a career, and as a citizen living in a technological society. To achieve that, we offer a variety of courses from introductory level experiences to increase career awareness, to more in-depth skill development and pre-engineering concepts utilizing the new nationally recognized STEM Academy ([www.STEM101.org](http://www.STEM101.org)) curriculum.

Without a doubt, the most significant factor in our recent success as a program is the formation of an industry advisory board six years ago, followed by lots of promotion. After careful self-evaluation, visits to other schools, visits to area industries, and researching engineering curriculum, we concluded that we needed to make some major changes in our equipment and our courses. The advisory board helped us raise over \$250,000 in donations for new, high-tech equipment. This includes various CNC mills, a CNC lathe, 3-D Printer, CNC plasma cutter, laser engraver, new welders and booths, two-color offset press, shaper, wide format printer, and assorted other machines. They also provided much expertise and insight into what industry is doing, and what they needed in future employees. The school district supported us with infrastructure and remodeling, as well as updated technology in the form of new computers and professional level software. It has been a gradual but steady transition and we are not yet finished! Enrollment has always been strong and is now growing.



### Promotion

We have made many efforts to promote our program. This includes doing a tour of our department for all freshmen as part of their freshmen seminar class. At 8th grade parent night, held by our guidance counselors each year, we present our TE program. Both presentations occur just before scheduling of classes begins. We



conduct a Technology Summer Camp for middle school students and it is held in the high school using our new equipment. It gets them and their parents excited about our offerings. We also maintain a web site (<http://www.slinger.k12.wi.us/faculty/apeldua/technology-engineering.cfm>) and regularly publish articles about our program and our various TE related clubs in the high school newsletter and local newspapers. Our advanced graphics class designs and prints brochures about our TE program that we distribute at parent conferences and 8th grade parent night. The brochures are also in the visitor waiting areas of the high school and district offices. Lastly, we design and print posters promoting facts about technical careers and post them around the building.

We offer courses in each of the following subject areas: CAD, engineering, architecture, woodworking, construction, metals, machining (manual and automated), fabrication, welding, power equipment, electricity/electronics, graphics, and photography/video.

## STEM Academy

Slinger researched multiple pre-engineering programs over several years to increase our rigor in the classroom and better prepare all students for entering two or four year schools, or those entering the workforce directly. In 2011 we purchased five courses from The STEM Academy: Introduction to Engineering, 3D Modeling, Design for Manufacturing, Architectural Design and Principles of Engineering. Each course is designed to be year-long, but the curriculum is flexible enough that we are able to spread it throughout other content areas and multiple classes. We have the option to use STEM academy curriculum as is,



or blend some of our own projects and ideas, as we feel necessary. We are infusing the STEM Academy curriculum into existing Technology and Engineering classes and some core content areas. Students who take the Principles of Engineering course receive one science credit, with the potential of receiving college credit as well. This nationally recognized curriculum was a good fit for our school. It offers flexibility to teachers.

Hearing presentations and watching students work through the engineering activities is amazing. They are using existing knowledge and applying it to projects in the STEM Academy curriculum. This is establishing engineering habits and thought processes without trying to turn them all into engineers. That is what makes it a unique program. Create thinkers, doers and problem solvers. If some students become engineers, great. If others become technologists, awesome. If they all walk away with a better sense of problem solving, Slinger and the STEM Academy accomplished our goals.

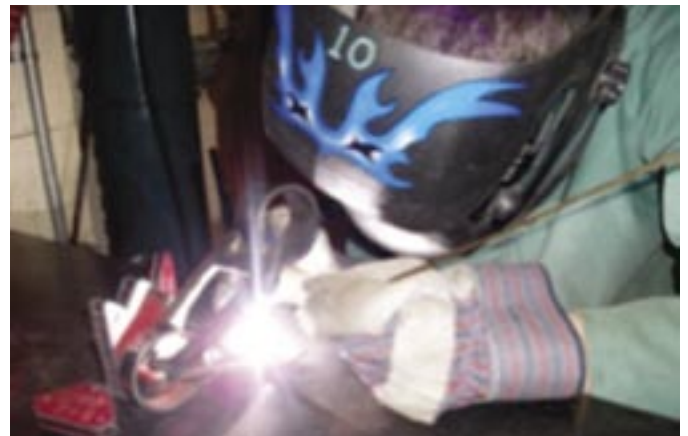
We offer two levels of 3D Modeling, where 2D and 3D designing is taught. Upon completion of these courses students are prepared to take the Solidworks certification test (CSWA). Design for Manufacturing blends 3D modeling with CNC machining using a Haas mill and lathe. Automated Manufacturing is a CNC machining class.

Students can earn technical college credits for 2D and 3D design as well as for Computer Aided Manufacturing. Architectural Design has two levels. The first level covers residential and the second introduces civil engineering, remodeling and commercial architecture.

We have purchased many new pieces of equipment over the last few years, thanks entirely to donations from industry. The Haas CNC mill and lathe mentioned above have prepared students for manufacturing. Students become proficient in programming using MasterCAM and setting up and running parts on the machines. A 3D printer allows us to design using Solidworks and print out parts to check for tolerance and other mistakes or manufacturing issues.

## Metals, Machining, Welding

Students at Slinger who have an interest in working with metal or are planning to pursue a career in a metals related field have many opportunities through the following courses: Metals Technology, Welding I & II, Metal Fabrication and Introduction to Automated Manufacturing. The new equipment and tools allow the students to learn basic and mastery level skills in sheet metal, forging, casting, welding, metal fabrication and machining. The skills they learn directly prepare them for careers and some of our students are already working for local industries. Along with a fully equipped lab we have an adjacent classroom for lecture. Our lab is set up to accommodate 16 students per class in Stick, MIG and TIG



Welding processes. We have one hydraulic shear, one 4' x 8' CNC plasma cutter and one 5' - 40 ton hydraulic brake press. The machine shop area consists of 6 manual lathes, 2 manual mills, 2 CNC mills, 2 surface grinders, 2 drill presses and a vertical and horizontal bandsaw. Both areas of the shop share metal finishing and grinding equipment. Fabrication students plan, produce, and sell a product each semester as well.



### **Woods/Construction Lab**

The woods/construction lab at Slinger serves multiple classes throughout each day. There are two levels of construction and three levels of woodworking classes that use the facilities. Adjacent to the lab is a classroom that was built by a construction class in 2006. The construction class also has an outdoor fenced-in area for various construction projects, but mostly for custom sheds/garages that are pre-built on the school site. Over the past few years the lab has acquired a new shaper, router table, table saw with a sliding table, miter saw station, and various hand tools and Milwaukee power tools.

The Woods Technologies course is for any student, most of whom have very little experience in woodworking. Through a variety of projects, students learn machine safety, basic machining, joinery, and finishing. Cabinet-making and Advanced Cabinetmaking are more independent courses. Students in the upper classes design and build projects of their choice.

There are two construction courses offered at Slinger. One is an introductory course that covers basic construction techniques and processes. Students learn safety, tools, materials, foundations, floors, walls, and roofs. They work in small groups to complete projects that include: building layout, concrete, wood framing, steel framing, truss design, drywall, and stair framing.



The second construction class is for junior and senior students only. The intro construction class is a pre-requisite as students take what they learned in the first level and apply it to more advanced techniques and processes that they use to construct custom garages and sheds for people in the Slinger area. The sheds are built at school and at the end of each semester, students collapse their building and put it on a trailer to transport to the owner's site. Students have two days to reconstruct their building and apply all finish materials needed, which typically includes doors, windows, siding, soffit, and shingles.

Second level construction students also learn masonry. Groups of students practice using mortar and brick to build walls before they build their assigned project. Construction classes use techniques, tools, and follow codes that would be used in the construction industry today.



### **Graphics and Photography/Video**

Graphic Arts at Slinger was created in 1990 due to the high number of printing companies in this part of the state. We offer three levels of Graphics, plus a Digital Photography/Video course, each one semester in length. Students can also take independent study courses in Adobe Photoshop and Illustrator for technical college credit.

Graphics I students learn the basics of layout/design, offset and screenprinting, and related processes. In addition to printing, Graphics 2 students do a group package design project using a laser engraver, and go into more depth on various printing processes and careers. The Graphics 3 students are each responsible for doing at least one print job for an actual customer which is typically someone in the school district or an area non-profit organization. This teaches the importance of deadlines, accuracy, and communication. They take on more challenging printing projects and also learn sublimation-dye printing which allows them to print on mugs, mouse pads, license plate frames, shirts, etc. We regularly utilize guest speakers and field trips to industry and/or technical colleges.

The Graphics classroom has 21 computers, scanners, a sublimation dye printer, and digital platemaker. The lab holds two 4-color screen presses, a single color offset press, 2-color offset press, platemaker, electric paper cutter, screen exposure unit, and a shirt dryer, as well as a flatbed heat press and a mug press, both for doing sublimation dye printing. We also have a separate screen exposure room, darkroom, and a studio used for still photos and video work for doing green screen effects. In photography class students learn digital photography techniques and Photoshop, plus some basic video editing using Adobe Premier software.

### **Power Equipment Technology**

The Power Equipment class focuses on internal combustion technology of engines. Students are given opportunities to disassemble engines, analyze and assess component wear, and reassemble an engine so it is working to industry standards. Through that process, students experience problem solving situations and strategies relevant



to engine technologies. The tear-down and rebuilding of engines also affords students the opportunity to perform engine operation diagnosis, repair, and the evaluation of a variety of engines including two and four cycle engines that are prevalent to power equipment used for industrial and recreational purposes. Students are allowed to bring in a variety of engines that include marine engines, motorcycles, riding mowers, snowmobiles, and ATVs.

### **Basic Electricity and Digital Electronics**

This class can be taken for college credit through an articulation agreement with Moraine Park Technical College (MPTC). Students are able to experience concepts of electricity through designing and building circuits including series, parallel, and series / parallel circuits. Students are also introduced to magnetism, its relationship to electricity and electric motors. During that learning process, students plan, design, build and revise their motors after assessing the efficiency of the motor. Home wiring is also taught where students simulate wiring a home by wiring 2x4 walls. Various electrical switches, receptacles, home wiring tools, and electrical equipment are used while following electrical codes. Students create an electrical mapping plan for a typical three bedroom home and learn how to calculate total energy used on all appliances in that home.

Digital Electronics is for the student interested in electrical engineering, science, or electronics in general. Bread-boarding and computer design software (MultiSim) is used to test circuit designs. Students will also study gates, encoders and decoders, binary addition, memory

and digital-to-analog converting. At the end of the course students create a custom video game and controller. It is taught in a lab with 12 computers and work areas.

### **Co-Curriculars**

#### **BotsIQ**

Students can further develop their technical skills in design, machining, welding, fabricating and Solidworks by joining BotsIQ. Bots IQ is a robotics education program that is a spinoff from the popular BattleBots(R) TV show. Students learn valuable teamwork and troubleshooting skills working in groups to build combat-type robots and compete against other teams to see which team has designed and built the best product (<http://wi-robotics.org>). We have been very successful with many 3rd, 2nd and even 1st place victories over the years. Last year Slinger competed at the National Robotics League in Indianapolis. The typical membership is about 12 students, freshman through seniors, male and female. We have many local sponsors that fund the program.

#### **SkillsUSA**

The Slinger SkillsUSA Chapter consists of about 30 students and prides itself on promoting technical skills, leadership, and citizenship. We accomplish that by competing against other high schools in a variety of technical fields and leadership contests, and through promoting good citizenship by performing various community service projects and fundraisers for charity.

Competitions consist of a "District" contest held at a high school in our region in the fall. Regionals are at either UW-Stout or at a technical college, typically in February. The State contest is in April, in Wisconsin Dells. Students finishing first at State can compete at Nationals in June, in Kansas City, MO.

We are proud to say that we have had two national champions, a bronze medalist at nationals, and one or more state champions all nine years of our existence!

#### **Graphics Club**

Students in Graphics Club learn the importance of teamwork, troubleshooting, communication, deadlines, and working with customers. Yet they have fun while learning as they further their skills in layout, design and printing shirts. This dedicated group of students works during study halls or after school to screenprint shirts for various clubs, organizations, and athletic teams at Slinger High School. Money earned by the club goes toward extra equipment or supplies, and to fund a scholarship for a senior enrolling in a graphics-related program after high school.

## Gateway Opens Expanded iMET Center

**SC Johnson contributes \$1.7 Million for new Center, supports extended Gateway regional programming**

Gateway Technical College celebrated the grand opening of its expanded SC Johnson integrated Manufacturing and Engineering Technology (iMET) Center, Sturtevant, Wis., today. The region's first flexible manufacturing training center—Tarnowski Hall— includes training in computer numerical control (CNC) machining, welding, metal fabrication, automated manufacturing systems, and industrial robotics.

SC Johnson, a 127-year-old family-owned company in Racine, has a nearly 20-year partnership with Gateway and is a major contributor to the project. Over the past 10 months, SC Johnson has contributed \$1.7 million to support Gateway programming, including the iMET Center expansion and programming, such as Gateway's high-impact manufacturing-related boot camp.



"We are proud to support organizations like Gateway that are doing such good work within our community," said Fisk Johnson, Chairman and CEO of SC Johnson. "Through their programming and hands-on learning approach, Gateway brings much needed, well-prepared graduates to the local workforce, strengthening the overall quality of life and economy of the area."

Johnson, who joined in the grand opening festivities, discussed Gateway's commitment to helping students reach their potential by creating opportunities to progress in the manufacturing field. He said these efforts also help

address the area's skills gap—the dichotomy of high, unmet demand for skilled workers by manufacturers during times of equally high unemployment.

"Gateway Technical College values its partnership with SC Johnson to accelerate our efforts to close the employment skills gap in our region," said Dr. Bryan Albrecht, president and CEO of Gateway Technical College.

"The continued commitment to community demonstrated by the SC Johnson contribution is remarkable. We are excited about creating the region's first flexible manufacturing lab at the SC Johnson iMET Center and honored by SC Johnson's trust in Gateway's ability to deliver results to our communities and its employers."

To date, Gateway stands on a record of accomplishment. Its CNC boot camp is one of Gateway's most successful programs with Racine Workforce Development, reporting an employment placement rate of 95 percent since the program began in 2006. The sixteenth CNC boot camp was completed in January, 2013.

The nearly 18,000-square-foot addition, which brings the facility to 61,000 square feet, features the College's first Fab Lab, focused on industrial design and rapid prototyping, Gateway's engineering technology educational programs and CNC and welding and fabrication boot camp accelerated training.

For more information about the SC Johnson iMET Center or the training offered there, contact: Debbie Davidson, Gateway vice president Workforce and Economic Development at [davidsond@gtc.edu](mailto:davidsond@gtc.edu); (262)564-3422.



**Hands-on demonstrations such as this one in robotics were conducted prior to the grand opening ceremony.**



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## ARTICLE

### Entrepreneurship Through Technology Education

*by James Buchanan, Madison West High School*

Where will the new jobs come from in Wisconsin's future? The traditional source of new jobs has come from the small business sector. As a Technology Education instructor I believe that we are in a great position to work with our academic counter parts to increase the success rate of that sector. I spent eleven years owning my own small businesses and way too much time reinventing the wheel. There are many young people attempting to follow their own dreams that don't include working for an employer.

I had wanted to share not only my experiences in technical education but my years of experience as a small business owner. To this purpose I began about a year

ago to hatch an idea that would combine education and small business at our high school. I knew that if the project centered on my commitment only it would fail. First I looked for possible people that have expertise in areas that I lacked. First stop was with the assistant superintendent, and the district lawyers both were very helpful and supportive. Next we contacted the district's chief web designer in the IT department to help build our web site West High Market Place.

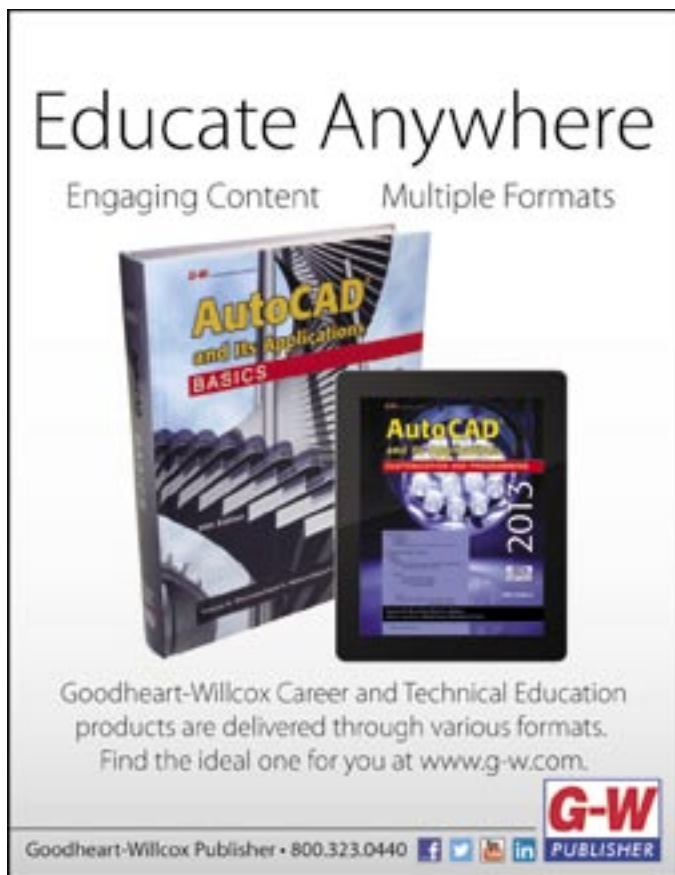
They are finishing up the site now including the shopping cart, and we plan to use PayPal for payments, and the post office, if it fits it ships, for our shipping. So what about the idea of incorporating it into academics? Well, here it is so far: The marketing department now has a tool to give an opportunity for students to find out if their ideas work. Best campaign could be the product of the month, allowing a group of students to evaluate how well the campaign worked.

Next, the accounting students could do real life exercises on real products and money. They learn to account for cost of goods sold, production hours, and materials cost, etc. This helps the Tech Ed area with costing out things such as laser engraving on glassware or plaques.

Next, we are working with staff and students in the art department for all of our graphics needs. Similar to CTE, those art students interested in an art career gain valuable experience in commercial art work.

Now the pay off...each department charges a fee for their students services which is added to the cost of goods sold. This way their students gain real life experience through running the company and each department involved will get a pay out three times a year for their services.

Eventually, it would be great to have other classes included such as business law, business writing, manufacturing that would lead to a state certificate for entrepreneurial studies. Students would take a series of classes during the four years of high school that would equip them with the skills to be a great employee or employer.



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## Denmark Middle School Tours Fabtech and Fox Valley Technical College

by Angie Arneson, Denmark Middle School

On December 4, 2012 Mrs. Arneson took her 8th Grade Building and Construction classes to FABTECH Service Technician Education Center in Oshkosh. The students were able to tour the center and experience first-hand what is involved with the training there.



FABTECH is part of the Fox Valley Technical College and offers four Caterpillar specific service technician career tracks. The tracks focus on developing Caterpillar rental services, engine, construction equipment, electric power generation and marine engine service technicians. The course can be accomplished in a year's time and it is priced very competitively with other tech schools in the area.



From FABTECH, we then traveled to Fox Valley Technical College to tour some of the different trade areas. The students saw the Automated Manufacturing, Electricity and Electrical Apprenticeship, Machine Tool, and Diesel Engine trades areas. The students were able to talk directly to some students that are in the Electrical Apprenticeship program, see a working robot, watch a CNC machine, listen and watch a diesel engine run and so



much more. The entire learning experience allowed for the students to get a taste of what different opportunities await them at the Technical College level. It was a wonderful experience for all of the students that went. If you are on the fence on whether or not to take your students on a field trip, I would encourage you to do it!! Your students will appreciate it!!





## Brillion High School Senior Reaches Out to a Special Freshman

*by Steve Meyer, Brillion High School and Dawn Soto, CESA 7*

Derek Knifke, a freshman at Brillion High School, is deaf, in a wheelchair, and recently lost his vision. Derek's parents, Bill and Cathy, have had to adjust, along with Derek, to blindness. This adjustment is not an easy one, as we all tend to take our vision for granted. Vision is the most complex sense and much of our social interaction with others is visual in nature. The adjustment to blindness can be very difficult alone, not to mention when additional disabilities are present.

However, every so often in life, paths cross and miraculous work is done! This is exactly what happened when high school senior, Madison Mroczynski, met Derek. Madison is a senior who will be attending Michigan Tech next fall to pursue a degree in Biomedical Engineering. She observed Derek in the hallways and thought she could do something to help make Derek's high school experience more valuable.

Madison met with Derek's Special Education teachers to find out more about how Derek learns. She studied the philosophy of "Active Learning" derived from the Dutch psychologist Lilli Nielsen. As a child, Lilli Nielsen had younger siblings who were also blind. Lilli knew that children who were blind must be taught very differently than children who are sighted. When a child is blind, especially if that child has multiple disabilities, everything that happens "to" them is initiated by someone else. However, when a child is exposed to an active learning setting, they are in control and make things happen for themselves. These active learning settings allow for the child to learn spatially where objects are located and to find those same objects again without the use of sight. Because Derek is in a wheelchair and because of his other disabilities, current active learning modules traditionally used in schools would not work with Derek. This research prompted Madison to raise money, design, and fabricate a custom active learning space for Derek in the form of a "Sensory Box."

Madison's goal was to make an open box (mini-room) that Derek could go into that would allow him to manipulate a wide variety of objects and to interact with different devices to enhance his cause and effect abilities. Madison obtained funding for the project from the Brillion Optimists Club. Then, hours upon hours of research and prototyping went into the design of the sensory box. Madison investigated ergonomics and measured Derek's body,

reach length, wheelchair height, the room space available, etc. She designed the mini-room so Derek could use it in his wheelchair and while lying down. She also spent a lot of time investigating different textured items such as shag carpet or sandpaper so Derek could use his sense of feel to help him learn. She even designed an electric circuit system that consists of multiple large paddle switches, a power supply, and different output devices. Derek can now push a button and feel the wind from an electric fan. He can push another button and the walls of the sensory box will vibrate helping him independently increase his cause and effect awareness.



On January 3, 2012, Madison and a host of Technology Education and Engineering students began to move parts of the learning room into the special education classroom. Several students operated drills and Madison guided them as they assembled the learning space in its new home. With Derek's new sensory box environment, he now does not have to rely on others to "give" him objects to explore. Derek is now able to make things happen on his own, which is a critical step in the learning of a child who is deaf and blind.

### A Teachers Perspective

In order for Madison to successfully complete this project she had to:

- Investigate a problem/opportunity.
- Use proven research to formulate solutions to the problem/opportunity.
- Study human nature.
- Actively obtain ergonomic data.
- Research and obtain funding.
- Use the design process.
- Use 3D modeling software to create virtual designs.
- Use prototyping methods to develop tangible models and prototypes.
- Understand the properties of various materials.
- Use a wide variety of tools and machines to process and assemble materials.
- Understand, design, & construct electrical circuitry.
- **Most importantly . . . have the character, passion and desire to help someone.**

As noted in some of my earlier articles, I often times have trouble explaining exactly what Technology and Engineering Education is. However, I know what it looks like when I see it, and with Madison's development of Derek's sensory room, I saw it!!!

Happy Trails,  
Steve Meyer

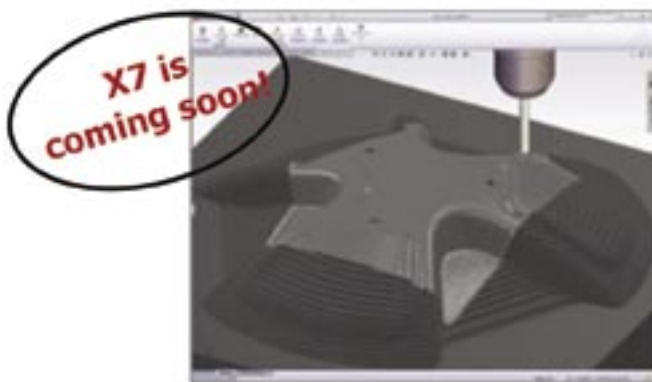
*Steve Meyer is a Technology and Engineering Teacher at Brillion High School.*

*Dawn Soto is a Teacher of the Blind and Visually Impaired at CESA 7.*

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## ARTICLE

### A Proud, Enduring Legacy Keeps Freedom Ringing

by Tom Kercheval

*Reprinted from SkillsUSA Champions magazine and used by permission*

**One is a legend. The other is well on his way. Meet two generations of SkillsUSA advisors who share a passion for what they teach, pride in the success of their students . . . and more.**

Educational coordinator Bill Ratzburg was persistent. So was Bob Abitz, who taught collision repair at Freedom (Wis.) High School.

"I don't have time," Abitz repeated.

"Make time," his colleague retorted.

"I don't ... have ... time," Abitz said firmly.

Then Ratzburg pulled out the big guns: "Do it for the kids." With that, Abitz waved the white flag and agreed to go to his first SkillsUSA state competition.

"I was a judge for the automotive contest. It was amazing," he now says.

After that day in 1978, Abitz embraced SkillsUSA with the same gusto he'd used to turn a struggling automotive program into one of the state's best. Wisconsin didn't have a Collision Repair contest, so Abitz led the effort to design one. A year later, one of his students claimed gold.

By the time Abitz retired in 2007, he'd produced 18 state champions and a national bronze medalist. He served on the Collision Repair national education team for 18 years. In 2012, SkillsUSA presented him with its highest recognition, honorary life membership.

However, his most cherished accomplishments are found closer to home.

"You drive through Freedom any given day in the summer, and you'll see a former student working on a car. A lot of them own their own shops. That's what we do." These words come from Abitz's successor, a man who shares much with him, including his DNA.

Jay Abitz was one of his father's best students — and the only SkillsUSA competitor in Wisconsin to win a gold medal at the high school and college/postsecondary levels. Bob influenced him to pursue teaching, but when Jay interviewed for Bob's position in 2007, he was asked



bluntly, "How are you going to get out of your dad's shadow?"

Bob remembers his son's response fondly. "He looked them in the eye and said, 'I'm gonna take it to the next level.'"

The younger Abitz has since produced a SkillsUSA state champion every year. His program has been featured in national magazines including *Hot Rod*, and he's brought new technologies to an already top-tier program.

"There's a lot of my dad in me, but there are a lot of ways that I'm different," Jay points out. "But I'm constantly checking myself, 'Would Dad do it like this?' That's the biggest part of him that I take with me: just being conscious of how I treat people, why I'm teaching what I'm teaching and why I value it."

"He's definitely taken it to the next level," Bob says, beaming. "He's done an awesome job." As people of Freedom will happily confirm, they both have.



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