

# Interface

Journal of the WTEA

Winter 2015-2016  
Volume 55 Number 2

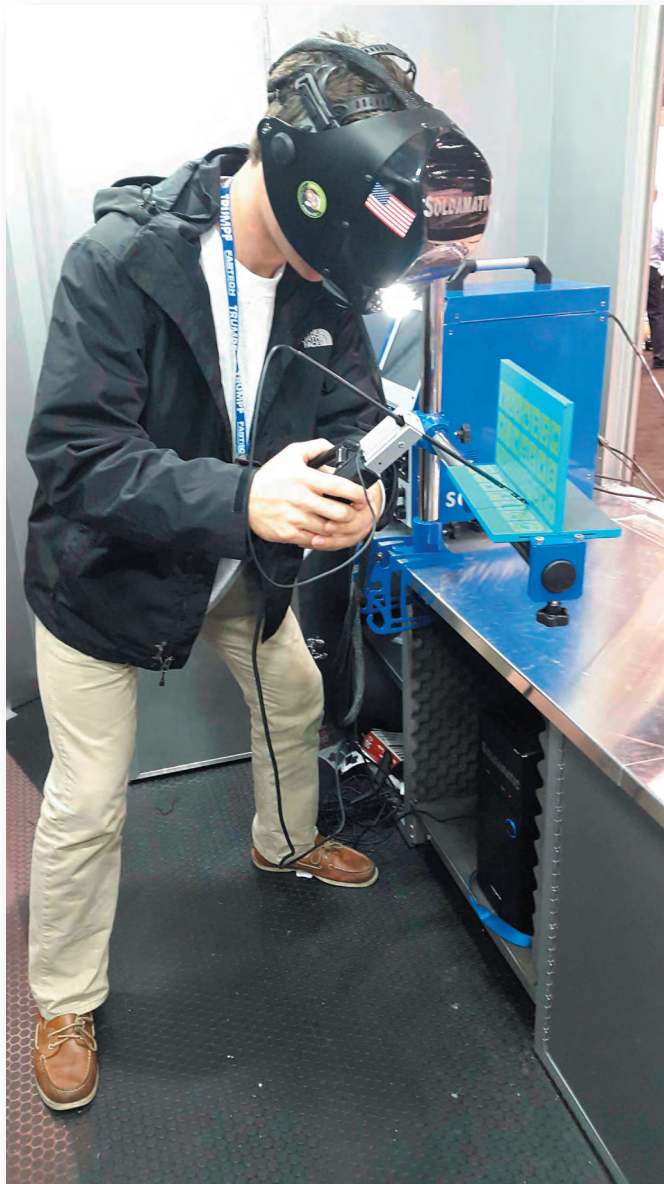
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Articles for publication should be sent to: Doug MacKenzie, 960 Yuma Circle, Stoughton, WI 53589, [doug@wtea-wis.org](mailto:doug@wtea-wis.org).

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Watertown High School  
825 Endeavour Drive, Watertown, WI 53098



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(W) 920-735-4887  
(email) [cattelin@fvtc.edu](mailto:cattelin@fvtc.edu)  
Fox Valley Technical College  
1825 N. Bluemound Dr., Appleton, WI 54912



**SECRETARY/TREASURER - Matthew Schultz**  
(W) 262-359-8155  
(email) [mjschult@kUSD.edu](mailto:mjschult@kUSD.edu)  
Lakeview Tech. Academy, 9449 88th Ave,  
Pleasant Prairie, WI 53158



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(W) 920-756-9238  
(email) [smeyer@brillionsd.org](mailto:smeyer@brillionsd.org)  
Brillion High School, W. 1101 Hwy HR, Brillion, WI 54110



**EXECUTIVE DIRECTOR - Joe Ciontea**  
(C) 920-904-2747  
(email) [joe.ciontea@wtea-wis.org](mailto:joe.ciontea@wtea-wis.org)  
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**CONFERENCE COORDINATOR - Jeffrey L. Dowd**  
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(W) 920-492-2955 Ext. 2089 (C) 920-615-1939  
(email) [tbarnhart@ashwaubenon.k12.wi.us](mailto:tbarnhart@ashwaubenon.k12.wi.us)  
Ashwaubenon High School  
2391 So. Ridge Road, Ashwaubenon, WI 54304



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(email) [albrechtb@gtc.edu](mailto:albrechtb@gtc.edu)  
Gateway Tech. College, 3520 30th Ave. Kenosha, WI 53144



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(W) 608-266-2683  
(email) [brent.kindred@dpi.wi.gov](mailto:brent.kindred@dpi.wi.gov)  
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P.O. Box 7841 Madison, WI 53707-7841



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(email) [steck@uwplatt.edu](mailto: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](mailto:tialas@uwstout.edu)  
224D Comm. Tech. Bldg., Menomonie, WI 54751



**DISTRICT B DIRECTOR - Brian Schiltz**  
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Tomahawk High School, 1048 East Kings Rd.,  
Tomahawk, WI 54487



**DISTRICT C DIRECTOR - Mike Paquette**  
(C) 715-789-2497  
(email) [paquettem@peshtigo.k12.wi.us](mailto:paquettem@peshtigo.k12.wi.us)  
Peshtigo Middle/High School  
380 Green Street, Peshtigo, WI 54157



**DISTRICT D DIRECTOR - Jon Larson**  
(W) 920-788-7600  
(email) [jlarsen@littlechute.k12.wi.us](mailto:jlarsen@littlechute.k12.wi.us)  
Little Chute High School  
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**DISTRICT E DIRECTOR - Doug Kugler**  
(H) 262-790-9128 (W) 262-548-7759  
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Waukesha Cty Juvenile Ctr, 521 Riverview Dr.,  
Waukesha, WI 53188



**DISTRICT F DIRECTOR - Eric Sutkay**  
(W) 262-359-8155  
(email) [esutkay@kUSD.edu](mailto:esutkay@kUSD.edu)  
Lakeview Tech. Academy, 9449 88th Ave,  
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**DISTRICT G DIRECTOR - Travis Ray**  
(W) 608-838-4500 Ext. 4986 (C) 608-778-3760  
(email) [rayt@mcfds.org](mailto:rayt@mcfds.org)  
McFarland H.S., 5103 Farwell St., McFarland, WI 53558



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(email) [tmartin@cesa3.k12.wi.us](mailto:tmartin@cesa3.k12.wi.us)  
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**DIRECTOR AT LARGE - Doug Dimmer**  
(C) 262-388-0660  
(email) [techteachdd@gmail.com](mailto:techteachdd@gmail.com)  
Hartford-Union H.S., 805 Cedar St., Hartford, WI 53027



**DIRECTOR AT LARGE - Phil Bickelhaupt**  
(H) 715-570-9376 (W) 715-424-6715 x 1036  
(email) [phillip.bickelhaupt@wrps.net](mailto:phillip.bickelhaupt@wrps.net)  
510 Peach Street, Wisconsin Rapids, WI 54494



**DIRECTOR AT LARGE - Pete McConnell**  
(H) 715-536-2691  
(email) [mcconnell.pete@gmail.com](mailto:mcconnell.pete@gmail.com)



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



## Compass or GPS

*By Jesse Domer, WTEA President*

It is nearing the end of December as I reflect on how few times in my life there was no snow in the front yard by now. I think back to deer hunting this year with no snow on the ground. I think about Christmas morning and my kids not having a snow bank to play in after presents. I have joy in not having to struggle with the old snowblower in the back of the garage yet. I think about change - and how change has been such a part of life recently.

Though the fog may be moving on in our careers from last year's political movements around Teacher Licensure for Technology & Engineering Education, it is still lingering for others around us. As many of you are, hopefully, aware by now, Madison is at it again in duplicating their efforts to all CTE areas. The WTEA encourages you to write your representatives and express your opinions on this matter, as I know many of you did last Spring. The standards in Educator Licensing are being watered down by Madison and this will have an impact on our classrooms and students' futures around the great state of Wisconsin. I also encourage you to reach out and support your fellow CTE staff members, positively reinforcing their greatness and keeping their eyes focused on kids as they go through stresses we are familiar with.

I ask you once again to encourage a colleague, in your school or across the state, to continue positively changing lives of students in our classrooms. We often talk about our troubles in Technology & Engineering Education as political in Madison, or budgetary in our schools, or turmoil in the educational climate of Wisconsin. Though those are all great reasons for concern and for the WTEA to focus our efforts, I ask how many colleagues have you lost from our wonderful teaching profession in the past few years as they cross over to industry or other areas? I have personally had many conversations the past 12 months with friends, colleagues and mentors about their decision to leave the classroom recently. I realize everyone has to follow their heart, support their families, and put food on the dinner table, as great reasons for the directional change in careers. My fear is we have lost many more teachers, and no one was there to reach out or converse with them or support them through their decision. I plead to everyone in the WTEA to call out, email, drop

in, write and say hello again to a neighbor or local tech ed teacher and remind them we are in this together. It is through togetherness the WTEA is successful.

There are many wonderful things happening across Wisconsin revolving around Technology & Engineering

Education and I am super excited to hear about those stories at our Spring WTEA Convention on February 25th & 26th. I know everyone is excited to be back at the Chula Vista Resort and network with everyone from around the state. Though we are going back to some familiarity with our typical WTEA conference, we are also trying to keep some of the ITEEA ideas in what we do - including more pre-conference sessions, a stronger presence on our "project showcase" and an amazing awards banquet to celebrate our members. If you

have not yet registered for this year's convention, please do so before you forget!!!

As my last official written "WTEA Presidential Address," I ask you to reflect on your personal and professional goals. One area that finds me in limbo is the idea of the "mentee" becoming a "mentor," and how to be successful in that transition. A challenge I present to you is setting a goal for leadership in Tech Ed! There are so many great organizations that could use your expertise from WTEA to WEEVA to FIRST and much more. Whether you choose to host an event or become a director or fight the fight politically, we need more leaders in Tech Ed! I am honored to be a WTEA board member for the majority of my career and excited to work side by side with many great educators, past and present.

In parting, I reflect on a few stressful recent moments in my day-to-day, where a common theme arose. Other teachers tend to find it strange when the Tech Ed teacher is the one saying, "We need to get back to pencil and paper." Don't get me wrong, technology is in everything we do and we should be the champions in our schools for technology. I do question though why we are bringing laptops to staff meetings to watch a google doc that is up on the projector just so someone can say we are technological. I encourage you to enforce the use of a GPS to your students or fellow staff while still showing them metaphorically what a compass is at the same time.



# WTEA BOARD NEWS

## Fall 2015 WTEA Board Meeting Highlights

*by Matt Schultz, WTEA Secretary/Treasurer*

The following summary highlights the Fall 2015 WTEA Board of Directors Meeting held at Fox Valley Technical College.

New board members appointed.

- John Larson - District C
- Mike Paquette - District D
- Tom Barnhart - Conference Tradeshow Coordinator
- Steve Meyer - President Elect

Work to bring back "High Tech Weekends" either formal or informal. If interested in setting up a high tech weekend at your school, contact Jesse Domer at [domerj@watertown.k12.wi.us](mailto:domerj@watertown.k12.wi.us).

Skills USA Events: 42nd Annual State competition moved back to 2 day event - April 28th & 29th, 2016.

WTEA is working with Senator Darling on Tech-Ed licensure. Contact Jesse Domer if you would like to get involved. Email [domerj@watertown.k12.wi.us](mailto:domerj@watertown.k12.wi.us).

Gateway Sumo-bot Competition May 5th 2016.

Contact Pat Hoppe to register: [hopperp@gtc.edu](mailto:hopperp@gtc.edu).

WEEVA Events Schedule.

- Dyno build at Lakeview Technology Academy January 15-16
- UW-Stout: April 15 - 16 (Supermileage only)
- FVTC: April 22 - 23
- UW-Platteville: April 28 -30
- Road America: May 9 -10

*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).*

## New WTEA Board Member Jon Larson, Little Chute High School

Hello WTEA! I am one of your newest board members. My Name is Jon Larson and I am from Little Chute. I am a 2005 UW-Stout graduate and did my student teaching with our next WTEA President, Steve Meyer. Upon graduation I left Wisconsin and took a job teaching Technology Education in Rawlins, Wyoming. I taught there for 8 1/2 years and really enjoyed life out west. I stayed connected with teachers back here in Wisconsin and through those connections I made my way back to the Fox Valley and landed a job at my alma mater, Little Chute High School. I currently teach Welding, Machining, 8th Grade Tech Ed, and PLTW for our charter school. I was recently asked to serve on the board and I look forward to meeting teachers in District C and working with our great Board of Directors.



## Next Person Up

*By Mike Cattelino, WTEA Vice-President*

In the Fall Interface, there was an article about the succession plan for LAB Midwest. Dale Kirchner was “the face” of that company longer than I can remember.

The article reminded me of life in general. With the passing of my father in the late summer of 2015, it hit home that in my family I am the next person up to lead the family into the future. One statement that Dad would often use was “in case I’m not around . . .” followed by a nugget of wisdom or direction. Now that he has gone to a better place, I try to recall all those nuggets that he intended to pass along. I truly wish that I had taken a moment to record at least some of them.

As we mature with our respective educational roles, are we prepared for succession when we transition to something else, or retire? It is not about us or those that follow us, it is about the students. If we leave nothing for the next person, they will eventually figure it out, but in the meantime what is the collateral damage to the students, the program, and the TEE careers in the local area? The old-school tradesmen that mentored apprentices and less experienced employees were notorious for withholding information because they were sometimes not secure in their jobs. I had some

experience with that coming through the machining trade. In the long term, that cost the company money. How much knowledge left or was left behind?

I know that there is curriculum documented, assessment results archived, data, etc., but have we set up the next person to assume our role and make the transition as seamless as possible? Would the impact of our departure be minimal on the students?

Here are my recommendations going forward. Start by getting a less experienced teacher involved in WTEA activities. Invite them to the annual conference, maybe even to do a breakout session. If we, the WTEA, have something to be proud of, it is the networking and support that we have for our members. Despite not being a K-12 teacher,

I have certainly benefitted from that often. Next, encourage your students to become teachers. Jesse Domer had this message as an emphasis throughout his current term as WTEA president. Lastly, when that time comes, be the example of positivity. I haven’t found a better example of this regarding teaching than Pete McConnell. Learn from him how to pass on the passion of teaching to the next generation of educators.



### - Dates to Remember -

February 25 - 26	<b>47th Annual WTEA Conference</b>	Wisconsin Dells, WI
March 2 - 5	<b>ITEEA Annual Conference</b>	Washington, D.C.
April 26 - 27	<b>SkillsUSA State Conference</b>	Madison, WI
June 20 - 24	<b>SkillsUSA National Championships</b>	Louisville, KY
July 11 - 14	<b>Automotive Technology Summer Institute</b>	Gateway T.C.
October 5 - 7	<b>Career Pathways Network National Conference</b>	Indianapolis, IN
Nov. 30 - Dec. 3	<b>ACTE Career Tech National Conference</b>	Las Vegas, NV



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# DISTRICT NEWS

## District A

*Sylvia Tiala*



This fall has been a busy one in District A. Back by popular demand was the tour of Riverside Machine in Eau Claire, Wisconsin. Elisia Gonsowski, Jason Swan and Joe Crosby of Riverside Machine spent time taking STEM educators on a tour of the facilities. Discussion about creating a STEM pipeline

relative to manufacturing careers was the focus of the dinner discussion following the tour.

In December students from Rice Lake's Northern Lakes Regional Academy presented their Pi in the Sky project to faculty at UW-Stout. The student presentation helped kick off a two day symposium that focused on research skills targeting inquiry. Activities held during the research skills symposium helped clarify how the design and engineering process used in K-12 schools could be mapped onto the Research Skill Development Framework (<https://www.adelaide.edu.au/rsd/framework/>).

Don't forget to join us at the WTEA conference.



**At Riverside Machine on Thursday, October 15**

**Back row (L - R):** Steve Michaud (CVTC Instructor), Jeff Allram (Prairie Farm T & E teacher), Sylvia Tiala (UW-Stout Tech Ed), Richard Erickson (Cornell Agriculture), Mikel Cobb (Chetek Weyerhaeuser Tech Ed), Joe Crosby (Engineering Manager Riverside Machine).

**Front row (L - R):** Jason Swan (Production Manager Riverside Machine), Elisia Gonsowski (Human Relations Riverside Machine), Bill Munch (Physics Chetek-Weyerhaeuser). Photo by Urs Haltinner (UW-Stout Business and Marketing Education).

## District Director-at-Large

*Phil Bickelhaupt*



Greetings! My name is Phil Bickelhaupt, WTEA Director-at-large. I am currently the Director of Technology for the Wisconsin Rapids Public School system and have been in this position for over 3 years now. Prior to that I taught auto mechanics, electronics, computers and networking, STEM

courses and various other courses for 12 years in Wisconsin Rapids. As a Director-at-large I represent all members of the WTEA, not just the members in the central Wisconsin area, so please feel free to connect with me on any issue you may have statewide that you feel needs to be addressed by the WTEA! I am still very much involved with STEM and CTE education in my district and I have a pretty good pulse on things happening at the state level in terms of education. With that said, I encourage you to be vigilant of changes in education at the state level. One very good resource for this is a website called Wisconsin

School Administrators Alliance run by John Forester. The web address is <http://wsaa.org/saa>. I encourage you to bookmark it and periodically visit the site. You will find very good information that is updated regularly. As many of you may know, the legislation being put forth (AB 581) in terms of alternative licensure expands the scope from technology education to include many CTE certification areas. My guess is the expansion of this licensure pathway is because many districts are still having a difficult time filling these positions and need options. Obviously this option perhaps is not in the best interest of students or our profession, but it is an option. My call to action to you is this, encourage your students (as best you can) to pursue a teaching career in technology education and for that matter, anything in the CTE arena. The pendulum is starting to swing the other way and these positions are highly sought after and I believe will become very well compensated positions in the near future! I hope to see you in February in the Dells to continue the conversation. Until then, keep doing what you do for our students!

# CANDIDATE

## Candidate for WTEA Vice-President

### Mike Cattelino

Associate Dean at Fox Valley Technical College  
1825 N. Bluemound Dr.  
Appleton, WI 54912  
(W) 920-735-4887  
cattelin@fvtc.edu



#### Education & Certification

WI Indianhead Technical College	Technical Diploma	Machine Tool
Fox Valley Technical College	Journeyman	Machinist Apprenticeship
UW Stout	BS	Career & Technical Ed.
UW Oshkosh	MS	Educational Leadership

#### Professional Experience

I grew up on a small dairy farm in northern Wisconsin. I started my career path as a Journeyman Machinist in the private sector where I worked for over fourteen years. My interest in teaching brought me to Fox Valley Technical College in 1999 as an instructor in the Machine Tool Technician and Machinist/Tool and Die Apprenticeship areas. While teaching, I earned a Bachelor of Science degree in Career, Technical Education and Training from University of Wisconsin - Stout. In 2005 I followed this interest in leadership and was selected as an Associate Dean of the Manufacturing and Agriculture Technologies Division at Fox Valley Technical College, a position that I still hold. In 2014 I completed a Master's Degree in Educational Leadership at University of Wisconsin - Oshkosh.

#### Leadership, Awards and Recognition

- Served on the WTEA Board as the WTCS representative since 2007
- WTEA Vice-President since Spring 2011
- Current Board member of the Nuts, Bolts & Thingamajigs Foundation
- Vice-Chair of the 2012 Wisconsin Farm Technology Days
- Post-Secondary representative on two local charter school governance boards
- 10-plus years on the FVTC school-wide marketing council
- Scholarship selection committee
- Modern Education Committee at Hortonville Area School District
- Light up the Fox Committee
- FOCUS Committee (Focus Our Community's Understanding of STEM)
- Strategic Planning Committee at FVTC

#### Position Statement

I would like to do my part to assist and lead WTEA members in finding and sustaining success. That could mean different things to different people but that is the reward of working with a group like this, it is something different and positively challenging all the time. I would like to focus on helping educators connect more with industry in order to try to find a support mechanism that can enhance their programs. I have extensive experience working with 'business and industry' and have gotten to understand how they view education as it relates to sustaining a workforce. The success of education and business is codependant. I am also not shy to ask for whatever is needed and not afraid to hear the answer. My motto is "if you never A-S-K, you'll never G-E-T." I feel that I am a fairly straight forward person to work with and that is based on my background which is: I am a farmer by BIRTH, machinist by TRADE, and educator by CHOICE. I look forward to the future of the WTEA and hope that in some way I can remain involved in shaping the years to come.



## Wisconsin Team Presents Disruptive Innovations at the National Press Club

By Sylvia Tiala, UW-Stout

A seven-person team, sponsored by Gateway Technical College and Snap-on tools, was on stage as the national Disruptive Innovation in Higher Education summit began on November 9, 2015 at the National Press Club in Washington, D. C. The summit brought over 200 leaders from business, non-profit, government and higher education institutions together to showcase exemplars of disruptive practices that help strengthen a STEM ecosystem and align higher education with industry needs. In addition to keynote speakers, panelists focused on topics such as: Aligning college majors to in-demand jobs; Broadening participation of diverse populations; Research, the forgotten STEM career; Retaining talent in the STEM ecosystem; Industry and experiential education and STEM – Technology is central (<https://stemconnector.org/shec/disruptive-innovation-higher-education-summit-2015>).

Greg Herker, Fab Lab program coordinator, described the Fab Lab and how it is being used at Gateway Technical College during the panel discussion Aligning College Majors to In-Demand Jobs. Sylvia Tiala, Associate Professor at UW-Stout commented about the role of Fab Labs in changing the nature of teacher preparation from a product-based endeavor to a process-based endeavor and the potential impacts on teacher preparation programs. Roger

Tadajewski, National Coalition of Certification Centers, tied the remarks together by commenting on the need for education to be prepared for new industry skills like those learned in fab labs.

**Matt Schultz, Kenosha Lakeview Technology Academy, engages Disruptive Innovation participants with examples of student projects and insights into student engagement in his project-based classroom.**



Bryan Albrecht, president of Gateway Technical College, led the Wisconsin contingent in the panel discussion relating to scaling STEM success and Nurturing and Retaining STEM Talent. Bill Hittman, principal of Kenosha's Lakeview Technology Academy, described the Lakeview model and the partnerships with Gateway Technical College and universities. Matt Schultz, Lakeview Technology Academy instructor, provided examples of project-based learning that engaged student in achieving high levels of success. The panel emphasized how project-based learning and partnerships between K-12, post-secondary institutions, and business/industry partners can serve as disruptive innovators to help students succeed.

The Disruptive Innovation in Higher Education summit and the forthcoming report builds on the February, 2015 release of the Advancing a Jobs-Driven Economy book. To learn more about the STEM Higher Education Council and STEMconnector, visit <http://stemconnector.org>. To learn more about Clayton Christensen's (1995) Disruptive Innovation concept please visit: <http://www.claytonchristensen.com/key-concepts/> or [https://en.wikipedia.org/wiki/Disruptive\\_innovation](https://en.wikipedia.org/wiki/Disruptive_innovation).



Greg Herker (Gateway Technical College), Matt Schultz (Lakeview Technology Academy, Kenosha Unified School District), Bryan Albrecht (Gateway Technical College), Bill Hittman (Principal of Lakeview Technology Academy), Rick Secor (Snap-on Inc.), Roger Tadajewski (nc3).

## And the 2015 Winner Is . . . Bryan Albrecht NACCE Entrepreneurial President of the Year!

*Reprinted by permission from Community College Entrepreneurship - A Publication of NACCE  
Fall - Winter 2015*



A community college president sets the tone for the entire institution and understands that an entrepreneurial culture is a critical component in the college's success. Gateway Technical College President and CEO Bryan Albrecht has proved his entrepreneurial mindset – and action – to earn NACCE'S 2015 Entrepreneurial President of the Year award.

"President Albrecht has demonstrated a deep commitment and support for entrepreneurship initiatives that have impact across the college and the community," said NACCE President and CEO Rebecca Corbin. "He has invested significant time, energy and resources to foster innovation at Gateway Technical College and invigorate the area's startup community."

Albrecht has been at the helm of Gateway Technical College in Kenosha, Wisconsin since 2006. Gateway provides innovative strategies to support student success, community development and workforce solutions. Over the past nine years, he has driven development of business and education initiatives at Gateway that include:

- Establishing a President's Leadership Advisory team for Entrepreneurship at Gateway
- Supporting the development of a FabLab within Gateway's SC Johnson integrated Manufacturing and Engineering Technology Center
- Serving as president of the Racine County Economic Development Corporation
- Co-founding the National Coalition of Certification Centers (NC3) ([www.nc3.net/](http://www.nc3.net/))
- Championing the development of the "Launch Box," a growth accelerator located in southeast Wisconsin
- Hosting events such as the women led SBA conference, the U.S. FabLab Symposium, FastPitch competitions and youth camps on starting your own business
- Supporting the expansion of entrepreneurship curriculum and articulation
- Supporting Gateway's participation in "The Commons," an entrepreneurial skill accelerator program for students.

Of his many notable achievements at Gateway, Albrecht is most proud of the work the college had done with the development of its portfolio of services under the accelerator model.

"We have not only implemented accelerator services but added growth wheel training, a drop-in center, small business services support, and business competitions. We also opened a FabLab, formed a student-led BIZ Squad, created international entrepreneurial partnerships and secured startup funding investment for our clients," he said. "Building a culture of entrepreneurship is a building block process. It takes many people and multiple solutions to build a solid foundation."

### Providing Access to Entrepreneurial Resources

President Albrecht's leadership and commitment to entrepreneurship are evident on a daily basis, as he inspires his faculty and staff to develop new programs, enrich opportunities for Gateway students and nearby communities, and explore entrepreneurial ventures.

"Bryan's commitment to providing access to entrepreneurial resources to Gateway students and the community is evidenced through his support of co-working space, growth accelerators and business development activities," said Debbie Davidson, vice president of Gateway's Business and Workforce Solutions Division. "He is a champion for business startups and considers Gateway's role in entrepreneurship extremely valuable to the economic development of Gateway's tri-county district."

Albrecht has also generated broad exposure of Gateway's commitment to entrepreneurship when testifying before Congress on workforce issues and serving as a representative of the country's community colleges as a guest of the White House. He has a commitment to both





the development of the college and the community as a whole, serving on boards of civic and professional organizations at the national and local levels. For example, he serves as a board member of the American Association of Community Colleges, the National Manufacturing Institute, Biopharmaceutical Technical Institute, the National Center for Occupation Research and Development, the Boys & Girls Club, Boy Scouts and the United Way.

President Albrecht feels his involvement in numerous boards and service organizations helps him as an entrepreneurial leader. "Being involved in professional organizations has two purposes for me," he explained. "First it is my way to give back to the profession that has afforded me so much. I have enjoyed my career and people that have helped me achieve success. Second, it is the best way to stay current and seed our college with new opportunities. I thrive on looking for the next 'big thing' for Gateway. It has been said many different ways but if you are not moving you are standing still and if you are standing still while others are moving you are falling behind."

#### **Open Door Policy and Willingness to Explore New Ideas**

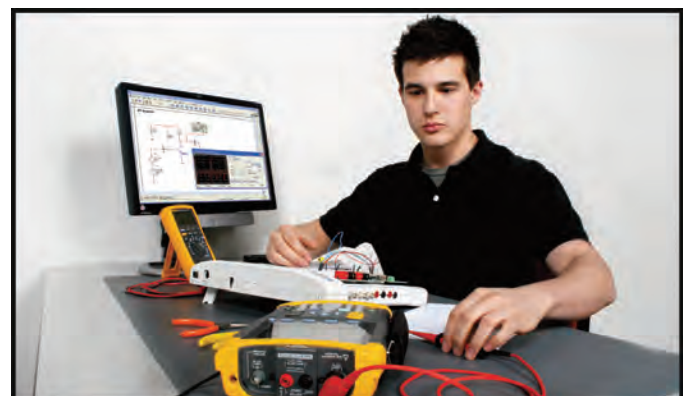
Albrecht has been recognized as a Distinguished Educator by the International Technology Education Association and was the first person in his community to receive the United Way Distinguished Leader Award. He has his B.A., Master's and Education Specialist degrees from the University of Wisconsin and a doctorate from the University of Minnesota.

"It's clear from President Albrecht's credentials, achievements and awards that he is a very accomplished leader in entrepreneurial endeavors," said Corbin. "But it is interesting to note that despite his board commitments and administrative duties as a community college president, he maintains an open door policy at Gateway. Employees, faculty and staff are invited to share their ideas with him openly and without formality. This willingness to explore new ideas and opportunities for Gateway and the communities the college serves epitomizes his entrepreneurial spirit and makes him the innovative leader deserving of the NACCE Entrepreneurial President Award."

Albrecht's leadership embraces creating opportunities for growth. "When serving in a leadership role you must

keep all aspects of organizational success on your dashboard," he observed. "Current circumstances can provide new opportunities that may be missed if you only look to the future. Having said that, the creative side is always looking to what the future may hold. Setting a vision for your organization that responds to current conditions and also sets a new runway for growth is what keeps employees engaged and excited to grow with you."

For more information about NACCE, please contact Director of Membership, Guin Griswold at [griswold@nacce.com](mailto:griswold@nacce.com).



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the Technology Educators listserve postings,  
you can sign up by contacting  
Brent Kindred at: [brent.kindred@dpi.wi.gov](mailto:brent.kindred@dpi.wi.gov)



**Plan now to attend the 47th WTEA Annual Conference**

**February 25 & 26, 2016 • Chula Vista Resort, Wisconsin Dells**

## Get to Know Your President-Elect

### Steve Meyer Takes Office as WTEA President at Annual Conference

I have been teaching Technology and Engineering for fifteen years. Although I have spent half of my life in Wisconsin, I am still a die-hard Hawkeye fan as I grew up in a small town in Iowa. My undergraduate degree is from Luther College in Decorah, Iowa and from there I earned a Master's Degree from UW - Stout. My teaching career began at Nekoosa High School and I was there for two years. After a year in Washington, DC at the National Academy of Engineering, I raced back into education, teaching for the Brillion School District. While in Brillion, I married my beautiful, very patient wife Jen, and had my two sons Dane (8) and Easton (2). I have been in Brillion for 12 years and consider myself very lucky to be in such a wonderful community.

I currently teach a variety of classes including: Computer Aided Design and Manufacturing, STEM, Engineering, Electronics and Robotics, and Automation, among others. I have taught at the high school, middle school, and elementary school levels. My passion is getting young people excited about learning. I consider myself a jack of all trades but master of none and often feel as though I am merely a few minutes ahead of my students all the time.

For the past two years, I have been working halftime at the elementary school working with teachers on implementing STEM education at the K-5 level. It took me about 10 minutes to realize the power of STEM education with young children and the influence it can have on our field. I also realized that elementary school teachers are some of the hardest working, most important people in the world when it comes to the development of children! Working with elementary school teachers and students

has been a nice change in my career.

In my free time I enjoy working on old motorcycles, four-wheeling, snowmobiling, jogging, coaching, and just plain tinkering. I have recently started a small business called STEMy Stuff LLC with my good friend Ryan, a science teacher in Brillion. It is a great outlet that allows me to give my wife a "good" reason for staying up late and tinkering.

Thankfully, Robert Hendricks and Len Sterry introduced me to WTEA years ago and I am fortunate to still be involved fifteen years later. Over the years I have made many of my best friends through the WTEA. Without the camaraderie and support from this group, I probably would not still be in the teaching field. It is easy to overlook how fortunate

our field is to have such a strong association. It is my goal as president to continue this tradition.

Jesse Domer, along with other previous presidents and board members, has done a tremendous job at maintaining and strengthening the WTEA. Last year was a HUGE year with the joint WTEA/ITEEA conference in Milwaukee. As an association, we need to make sure that we build upon that momentum and allow it to take us to new heights. It is my goal to make sure this association empowers its members to do just that. I challenge each of you to find one way to give back and pay it forward to the association. Can you present at a conference, bring a project to the showcase, or recruit a new member? Let's work together to continue making the WTEA an outstanding association. Thank you for giving me the opportunity to be president of the WTEA – let me know what I can do to help YOU!





## Northern Lakes Regional Academy Students Aim High With Pi in the Sky Project

*By Sylvia Tiala, UW-Stout*

Styrofoam boxes, sensors, Raspberry Pis, camera modules and battery packs were some of the equipment that three students from the Northern Lakes Regional Academy (NLRA) brought to the Wednesday, December 2, 2015 District A meeting of the WTEA. Starting with a request for funding, the students described the methods, materials, and processes they used to launch a helium balloon into the upper stratosphere. Students were able to tie their experiences to the integrated math, science, technology, and communication skills necessary to complete the project. Letters were written to local business people describing the project and soliciting funds. Science principles relating to gas laws and temperature were studied. Programming Raspberry Pis to interface with probes and collect data was described. Computer programs to utilize balloon tracking and select appropriate launch sites were explained. Team work was an overarching theme in the presentation.

Supporting the students in their project were NLRA instructors Jeremy Peterson, Meg Olson, and Mark Beise. Additional support provided by Principal Curt Pacholke and Superintendent Larry Brown. Together, the students, teachers, and administrators were able to describe the school structure and philosophy that allows students to select and pursue a project of personal interest.

The Northern Lakes Regional Academy team and their problem solving approach helped kick off UW-Stout's Student Research Skills Symposium taking place on December 3 and 4 of 2015. In attendance at the NLRA's Pi in the Sky presentation was John Willison, developer of the Research Skill Development framework (<http://www.adelaide.edu.au/rsd/>) and his colleague Dorothy Missingham from Adelaide, Australia. Three school districts interested in project-based learning and digital fabrication along with UW-Stout faculty interested in developing student research skills mapped the students' project onto the RSD framework with insights into integrating the approach into K-16+ classrooms.

For more information on the Northern Lakes Regional Academy see <http://www.ricelake.k12.wi.us/nlra/index.cfm>. Video for the Pi in the Sky project can be found at: <https://www.youtube.com/watch?v=3F9Fvo4CvdI>.



**Matt introduces NLRA's Pi in the Sky project giving visitors an overview of the project and a history from project inception to today's efforts.**



**Christian and Darrell describe payload components, problems and solutions encountered with the multiple iterations of instruments incorporated into the high altitude balloon project.**

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[doug@wtea-wis.org](mailto:doug@wtea-wis.org)

## TEECA Plans Spring Events

*By Alan J. Mamerow, TEECA Vice-President*

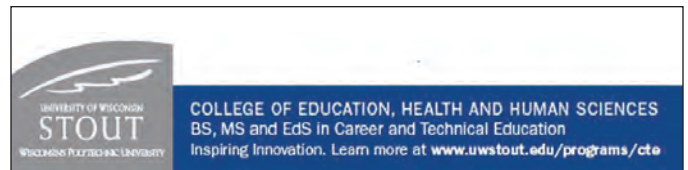
UW-Stout's Technology and Education Collegiate Association has another busy spring semester scheduled. Students in the organization will be hosting several events.

The 33rd UW-Stout Regional SkillsUSA competition will be held on February 25th & 26th which also coincides with the Wisconsin Technology and Engineering Education state conference at Wisconsin Dells. Several TEECA members will be attending the WTEA conference while others stay in Menomonie to attend and help support SkillsUSA.

On March 8th TEECA students will be looking to area schools help open umbrellas at UW-Stout's 8th annual Rube Goldberg Machine contest. We are looking forward to see how different school districts can turn this simple task into an engineering wonder.

The UW-Stout Supermileage is April 15th and 16th of 2016. Safety testing and presentations will be on campus on Friday with the vehicle competition occurring on Saturday at the Menomonie airport. The addition of the airport space is allowing us to add the Electrathon to the venue.

The TEECA organization continues to increase in membership and promote leadership opportunities for students enrolled in UW-Stout's Technology Education program.



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## 47th Annual Spring Conference and Trade Show: Technology & Engineering: Architects of the Future

The WTEA invites you to participate at the 47th Annual Spring Conference to be hosted at Chula Vista Resort in Wisconsin Dells. The conference program is packed with excellent presenters offering a variety of topics to help inspire and motivate each of us. Attend the WTEA conference with a fellow art or science teacher and your guest will be charged the same WTEA member rate if they are currently a member of their respective state professional organization. All they have to do is present their current membership card at the time of registration. Bring your administrator! We will provide a complimentary registration for your administrator as long as one or more district Technology Educators are registered attendees.

We start things off on Wednesday, February 24th with our Pre-Conference Workshops. These workshops are sponsored by First Technologies, LAB Midwest, Whitebox Learning, and UW-Milwaukee School of Architecture.

On Thursday, February 25th, the conference will be kicked off with a general welcome to all members given by WTEA President Jesse Domer.

Our first general session will be given by Michael Reader, President of Precision Plus, Inc. who will discuss "The Renaissance of Technical Education." Mike will look at how you define success, and how technical education programs are now being recognized as a worthy career path. However, to fully realize this, many outdated stereotypes must be corrected. Changing these perceptions will take time but partnerships between education and business are making a difference. Join him for a frank conversation about why this is so important and how you can make a difference.

Thursday is also the key time to visit the trade show. Our vendors are extremely important to our association and our programs. The WTEA Trade Show features over 40 vendor booths with professionals exhibiting up-to-date products and services for our field. This is the best "one stop" to bring an administrator or school board member looking for input to update a program. Closing out the afternoon will be the WTEA membership meeting, and at its conclusion, the popular vendor sponsored SHIPS program of door prizes. Will you be one of the lucky winners this year?

Later on Thursday evening the WTEA recognizes all of our outstanding award winners during the Awards Banquet at 7:00 p.m. We honor our colleagues for their outstanding contribution to technology education. The banquet cost is \$27. This is a great way to show apprecia-

tion and support for your peers. Immediately following the banquet the WTEA Foundation will host the President's Reception in the Grand Ballroom featuring live entertainment, complimentary refreshments, and a silent auction to benefit the foundation's scholarship fund.

Friday will begin with our complimentary Early Riser Breakfast followed by a short General Session. The day will continue with diverse sectionals and vendor sponsored workshops.

At mid-day, we will have our final General Session and included luncheon. Our keynote speaker will be Kent Rader, author and comedian who will focus on stress reduction for educators in a keynote titled "Let It Go, Just Let It Go." Kent is both entertaining, yet informative. Recent surveys report more than half of all employees hate their jobs. The number one reason cited is the stress associated with today's business environment. Kent shows participants the origins of stressful feelings and how humor is a proven tool in combating these feelings. Kent offers practical ways to include more humor in your life, along with stories that are guaranteed to make you laugh.

This year's conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin and the nation sharing their expertise on topics such as: STEM Geometry, Retooling Technical Education and Future Expectations, Safety Videos with QR Codes, Google Tools to Enhance Instruction and Organization, Using Social Media to Promote your Program, Game Making Using Design Thinking Processes, Pathways to Teaching Technology Education, Infrared Cameras for Technical Education Usage, House Flipping: A School and Community Partnership, Teaching for DoDEA (Dept of Defense Education Activity), Grow Your Program: Implementing Engineering into the Elementary School, Laser Cut and Engraved Acrylic Clock Project, New Teacher Boot Camp, and much more!

Put February 25-26, 2016 on your calendars, get your release days approved, and fill out and send in your registration form today if you have not already done so. The convention fee is \$150 for members and \$180 for non-members. As a final reminder, please contact Chula Vista Resort early to reserve your room; often we are not the only event taking place at this busy resort. We hope to see you there!

Chula Vista Resort, 2501 River Road, Wisconsin Dells, WI 53965, (877-745-6998) <http://www.chulavistaresort.com/> Reserve your room early and request the WTEA conference rate.



## 47th Annual Technology Education Conference & Trade Show

February 25 & 26, 2016 • Chula Vista Resort, Wisconsin Dells

### Tentative Conference Overview

#### Wednesday, February 24, 2016

7:00 - 9:30 Pre-Conference Workshops

7:30 p.m. – 9:30 p.m. Pre-registration

7:30 p.m. – 9:30 p.m. Project Showcase setup

#### Thursday, February 25, 2016

7:30 a.m. – 3:30 p.m. Conference Registration

8:00 a.m. – 3:30 p.m. Trade Show

& Project Showcase

8:55 a.m. – 9:05 a.m. General Welcome

9:05 a.m. – 10:00 a.m. 1st General Session

10:15 a.m. – 3:45 p.m. Concurrent Sessions

3:45 p.m. – 5:00 p.m. WTEA Membership Meeting

7:00 p.m. – 9:00 p.m. Awards Banquet

9:00 p.m. (following banquet) President's Reception

#### Friday, February 26, 2016

7:30 a.m. – 10:00 a.m. Conference Registration

6:45 a.m. – 7:45 a.m. Early Riser Breakfast

7:45 a.m. – 8:30 a.m. Morning General Session

8:45 a.m. – 12:15 p.m. Concurrent Sessions,

Vendor Demonstrations, & Project Showcase

TBD – Hands-on workshops at Portage HS

12:30 p.m. – 1:45 p.m. General Session/Luncheon

2:00 p.m. – 3:00 p.m. Concurrent Sessions

& WTEA Board Meeting

#### Thursday Keynote Speaker

Michael J. Reader,  
President & Owner  
- Precision Plus, Inc.



#### Friday Keynote Speaker

Kent Rader  
Professional Speaker  
- Stress Reduction  
in Education



### Chula Vista Resort

4031 River Road, Wisconsin Dells

[www.chulavistaresort.com](http://www.chulavistaresort.com)

Room Reservations: 1-877-745-6998 Ask for WTEA Conference Rate



## WTEA Membership Application & 2016 Conference Registration Form

Membership year runs from September 1st through August 31st

Last Name \_\_\_\_\_ First Name \_\_\_\_\_

Home Phone (\_\_\_\_\_) \_\_\_\_\_ Local Tech College District \_\_\_\_\_ # years teaching \_\_\_\_\_

School Dist. \_\_\_\_\_ School Name \_\_\_\_\_

School Address \_\_\_\_\_

School City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ E-mail: \_\_\_\_\_

**Check the appropriate boxes below and total amount due.**

**Membership Fees:**    ☐ 3 year membership - \$75.00    ☐ 1 year membership - \$30.00    \$ \_\_\_\_\_

**Spring Conference Registration:**

☐ \$150 members    ☐ \$180 non-members    \$ \_\_\_\_\_

**WTEA Awards Banquet** (Thursday, February 25, 2016)    ☐ \$27    \$ \_\_\_\_\_

☐ Bill my school district - purchase order is attached    ☐ payment enclosed    **Total \$** \_\_\_\_\_

Send completed form with payment or school purchase order to:

**WTEA, P.O. Box 1312, Fond du Lac, WI 54936-1312**

Phone (920)-904-2747    •    Fax (920) 922-0779    •    E-mail [joe.ciontea@wtea-wis.org](mailto:joe.ciontea@wtea-wis.org)

To complete an electronic version of the WTEA membership/registration form go to [www.tinyurl.com/WTEA-Conf](http://www.tinyurl.com/WTEA-Conf)

### WTEA Foundation Scholarship

The WTEA Foundation is offering a \$1000 scholarship for a high school senior who commits to pursue a career as a K-12 Technology & Engineering educator.



#### Eligibility

- Wisconsin resident
- Enroll in technology education at a Wisconsin University and start the fall semester
- Submit completed application form and 250 word essay prior to April 15

Details of the scholarship and the application form can be found on the WTEA Foundation website at [www.wteafoundation.org](http://www.wteafoundation.org) or scan the QR code.



### Graduate Credit Opportunity for Conference Attendees

The WTEA has partnered with the Office of Continuing Education at UW-LaCrosse to provide conference attendees an opportunity to earn one graduate credit. Course participants will be expected to attend the annual conference and submit a written document within 30 days of the conference. The registration fee for 1 graduate credit will be \$130. Specific course details and registration procedures are available on the WTEA home page. For more information contact Joe Ciontea, WTEA Executive Director.



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### UW-Milwaukee School of Architecture to Feature 3-Dimensional Laser Scanner

Architecture students are makers. They use cutting edge technology including laser cutters, 3D Printers and CNC machines. However, our students also build and draw with their hands almost as much as they do with a computer mouse. So, what happens when they make something organic and visceral and then want to translate this to the computer? In the past we have had few options, but this year the UW-Milwaukee School of Architecture and Urban Planning Design Lab was given an amazing gift from an alumnus, a 3-Dimensional Laser Scanner.

The new scanner allows students to document complex and ornate architectural elements and forms. From the gathered scan data we can create a digital model that can be reproduced, repaired, restored, archived, scaled, and modified. Unlike many traditional methods of documentation or reproduction, the laser scanning digitizing process occurs without physically touching the object.

We are excited to bring this equipment to the WTEA Conference this February where we will demonstrate how we utilize this in a variety of ways at the school. Join us on Wednesday, February 24th at 7PM or on Thursday at the trade show. We look forward to seeing you there!



**Students scan ornate architectural elements during their fall studio in Chicago.**

*— photo courtesy of Professor Gil Snyder*

### LAB Midwest Presents

#### “What Tech Ed Truly Needs From Industry – and Vice-Versa”



When it comes to filling the “Skills Gap” some in industry are quick to point the finger – at public policy makers, at parents and even at technical education professionals – asking why more isn’t being done to supply much-needed skilled industrial talent. But if the “Skills Gap” is to be filled, industry needs to recognize the significant role it must play. As the leadership columnist for *Products Finishing* and *Production Machining* magazines, LAB Midwest president Matt Kirchner recently authored a piece entitled “The Skills Gap is Your Fault” outlining the eleven ways that many industrial employers are perpetuating the shortage of skilled talent.

Before joining LAB Midwest in 2015, Kirchner spent more than two decades leading sizeable Wisconsin-based industrial manufacturing companies, including 7 years as CEO of American Finishing Resources in Chilton and 10 years as CEO of ABQC Corporation in Milwaukee. This

experience puts him in a unique position to view the skills gap from the side of education and of industry.

This workshop begins with a review of the aforementioned “Eleven Ways” and continues with a discussion of what technical education needs from industry if we are to rebuild our skilled workforce.

In addition, LAB Midwest recently conducted a survey of over eighty leaders of Wisconsin industrial companies asking what skills, abilities and personality traits are most needed in young people entering the industrial workforce.

The results of the survey will accompany LAB Midwest’s announcement of its new and innovative portfolio of curriculum, eLearning tools and equipment intended to create a bridge between what industry needs and what technical education should reasonably be expected to provide.







## Pre-Conference Workshops

Wednesday 7:00pm - 9:30pm

### First Technologies, Inc. to Offer Two Pre-Conference Workshops



Wednesday Evening 7pm - 8pm

#### 3D Scanning + 3D Printing = Reverse Engineering

Struggling with 3D scanning and getting your data into a CAD Software? Come and join us for this one hour workshop that will show you what tools are available to get this task done. We will discuss hardware, software and go through the entire process.



Wednesday Evening 8pm - 9pm

#### Augmented Welding Simulator

Experience what we call “augmented” welding simulation for student learning. This welding simulator includes tools that none of the others have . . . student tracking, in-helmet assist, video capture, immediate success/fail reports, and so many more teacher tools to help you introduce welding to your students.



### Whitebox Learning Presents “Engineer. Then Build.”

Wednesday Evening 7:30pm - 9:30pm

Engage your students in the complete Engineering design process. Whitebox Learning is a standards-based, web-based, project-based STEM/Engineering curriculum and learning system that allows students to **Engineer and Simulate** their designs virtually, before building. Students can compete virtually, from any browser, 24/7, all around the world. How cool is that?!

#### STEM Applications include:

Gliders2.0

Prosthetics2.0

Dragster2.0

Structures2.0

GreenCar2.0

Rockets2.0

MousetrapCar2.0

Rover2.0

SurvivalShelter2.0

KidWind 2.0.

A fully-integrated web-based Learning Management System (LMS) that measures the link between content knowledge and knowledge application is included. Join us for this workshop from 7:30pm – 9:30 pm.



# Project Showcase



Join us for the 7th Annual *Project Showcase* at the 2016 WTEA annual conference in Wisconsin Dells. This year the showcase will be a

## **TWO DAY EVENT!!!**

We will have a designated breakout room Thursday and Friday to display the projects. We will organize the room into Elementary, Middle, and High School sections. Tables and power will be available. So . . . we are asking that you bring projects that we can display. Bring projects such as cribbage boards, Vex Robots, woodworking items, student poster board displays, electronic circuits, machining projects, welding samples, or even digital pictures of projects. These can be student made projects or samples made by instructors. You are welcome to include supporting curriculum, but it is not required. Watch for more information on the web and the DPI listserve as time gets closer. Please email Steve Meyer at [smeyer@brillionsd.org](mailto:smeyer@brillionsd.org) if you have any questions.

Please consider supporting this activity.

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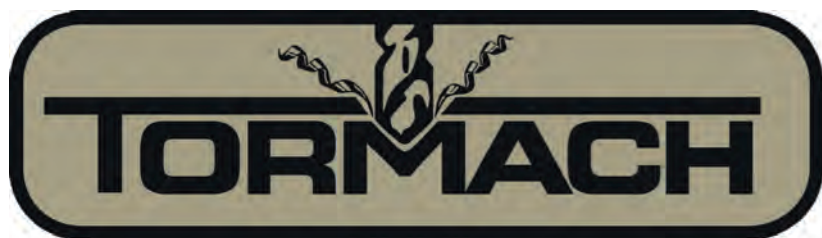
### New Office Associate at DPI

We would like to introduce to you Ms. Cassandra (Cassie) Fabian, who began working this fall as our new Office Operations Associate, taking over the role formerly held by Christina Hinkley. In her role, Cassie provides program assistance in the areas of Technology and Engineering and SkillsUSA. I know many of you have already been communicating with Cassie and have had the opportunity to meet her. Here is a brief introduction.

"I'm a graduate of UW-Madison with bachelor degrees in Zoology and Art. My professional experience after graduation includes lots of customer service, some substitute teaching, work at the Madison

Children's Museum, and conservation education at Disney's Animal Kingdom. My hobbies include cross stitch, woodworking, and costuming/prop-making for a local interactive theater group."

When you get the opportunity, please welcome Cassie! She can be contacted by phone at 608-266-7262 or by email at [Cassandra.Fabian@dpi.wi.gov](mailto:Cassandra.Fabian@dpi.wi.gov).



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## Budget Outdoor Classroom

*By Eric Sutkay, Lakeview Technical Academy*

Anyone who teaches a construction class knows there are some really fun projects you can do with the students and a lot to be learned. Last year, I focused my Construction Planning class and efforts on building a shed, for which we received a \$3500 grant to build. This year was a completely different project. This year I teamed up with the Physical Education teacher to work on a project that my construction class could build and her health students could maintain through service learning. The grant that we received this fall was for an outdoor classroom.

Instead of only building a shed, I decided to look into different projects and grant sources. I knew that there were various options available and I had spoken with the Physical Education teacher in the past about working on a project together. We had discussed building a low ropes course somewhere on the school property or also the possibility of exercise stations along the short school trail. Ultimately we settled on an outdoor classroom design. An outdoor classroom can be quite elaborate. Some are large shelters with seating and tables and others are almost like mini amphitheaters. There are also many types of grants available for creating an outdoor classroom. Knowing the location of our school (in an industrial park) and the hoops that I had to jump through to get the village and industrial park board to allow us to put a shed on the property, I knew that we would not be able to build something permanent. I knew that the classroom would need to be low cost, low

maintenance, movable and be able to accommodate some of our classes that exceed 48+ students. The outdoor classroom would require the construction of a seating area, done by the Construction Planning students, and the maintenance of the classroom area, done by the Health class students as part of their service learning requirement.

I worked with the Physical Education teacher to create the initial classroom and bench design for the grant. The design of the classroom is somewhat simple. In order to meet the requirements listed above and fit into the lower

cost budget for the \$500 grant that we received, it could not be too elaborate or extravagant. This is why we decided on the Leopold Bench design. There are a lot of different variations to the Leopold bench,

but we decided on one that would comfortably fit 2 students with room for them to work. The construction students did some research on outdoor building materials, fasteners and finishes, as well as some research on Aldo Leopold himself. They found out about some of the great things he did and his background and history in Wisconsin. After receiving the grant, the students finalized the design plan, list of materials, demonstrated their measuring and safety skills with the saws, and we were well on the way to the construction of our outdoor classroom.

The outdoor classroom acted as a great tool for the students to learn some very valuable construction and building skills. The students learned the need to be precise with measuring and cutting, we

discussed different types of wood and materials for the outdoors, we talked about fasteners for treated wood, circular and miter saw safety, and shop safety, since none of the labs in our school really accommodate a construction class. As a class, with the \$500 funds from the grant, we were able to build 24 benches. The students worked in groups of two and each student built one bench. The students also learned some new software skills on our CNC router where each student engraved the name of the person who constructed it and the year it was built onto the bench.





There are about three weeks left of this nine week class and the class has now finished with the benches and has started our shed project for the Village of Pleasant Prairie compost site. The students are very ambitious about learning construction techniques and skills and are excited and motivated to finish the framing of this shed before the



end of the quarter. Construction Planning is the only construction class that we offer at our school. It does not really fit into any of our tracks (IT, Biomedical, Engineering or Manufacturing),

but I was able to get the class approved so I could build a foundation of skills to lead into my Civil Engineering and Architecture class. Over the past three years it has gone from one section to two full sections and we went

from building model houses out of balsa wood to building things like storage sheds and an outdoor classroom. This has by far been one of the more enjoyable classes for me to teach and the project was no doubt beneficial for the students and the entire school. Each teacher has been talking about the outdoor classroom and even before we could get the benches finished, teachers were taking their students out there on some of the warmer fall days. This project was inexpensive, educational and enjoyable for everyone involved. In future construction classes we will be adding to the classroom with a teacher station, tables and planters. It will be used by many classes and can facilitate multiple curriculums. I would highly suggest constructing one at your school.



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## Heavy Metal Tour has a Huge Impact

*By Jon Winter, Wausau Schools*

Nearly one in five workers in Wisconsin is directly employed in manufacturing. In recognition of October's Manufacturing Month, various organizations from North Central Wisconsin came together to help change the perception of manufacturing careers from dirty, dumb and dangerous to clean, high-tech and safe. All in an effort to try to begin filling the talent pipeline for local manufacturers. This year's fourth annual Heavy Metal Tour saw a record number of students and businesses participate; over 3,800 students and 55 manufacturers ranging from Portage County to Vilas County. The event has proven to be a great way to increase exposure to careers in manufacturing not only to students, but also to teachers, counselors and administrators as well.



### Day of the Event

On October 7th, eighth grade students from various schools in North Central Wisconsin loaded buses and each toured two different high-tech manufacturing facilities. After the tours, students traveled to their local technical college for lunch and presentations from local business leaders.



Prior to the event, business representatives met at the technical colleges and developed a list of essential talking points, including:

- The importance of math and literacy skills on the job
- The value of technology education, engineering, and STEM classes, hands-on learning that applies to the workforce
- The different career opportunities in manufacturing
- Great education opportunities at a technical college
- Soft skills and interpersonal skills are extremely important in the workforce.
  - o Quality
  - o Punctuality
  - o Strong work ethic
  - o Working on a team
  - o Communication skills
  - o Meeting deadlines
  - o Problem solving skills
  - o Positive attitude
  - o Being a team player
  - o Flexibility
  - o Self confidence
  - o Ability to accept and learn from criticism
  - o Working under pressure







### Impact

The goal of this event is to break the perception of manufacturing as a dark, dirty occupation, and replace it with the idea of a high tech, clean and viable career by exposing students to robotic arms, automated processes and modern digital fabrication.

One of the hidden gems of this event is that schools include ALL eighth grade students and teachers. Bringing teachers from English, Math, Science and Social Studies provides a connection to the relevance of Career and Technical Education classes.

School district manufacturing programs are seeing the benefits through improved relationships with businesses, increased and earlier exposure to local STEM opportunities and support from district and community groups. Being a part of this event has had wide-reaching implications for students, programs, businesses, technical colleges and the community. In several instances, local manufacturers handed out business cards, encouraging further conversation, and offered to donate scrap metal to local high schools for their welding classes.

It's a winning formula for the technical colleges as well. While they host lunch and the industry presentations, they also are increasing exposure for students to the opportunities at their facilities, as well as offering campus tours and highlighting their programming and modern facilities.

With the right people at the table this event has proven to be a valuable opportunity for the entire community. The planning committee was made up of representatives from the North Central Wisconsin Workforce Development Board, three area technical colleges, and Career and

Technical Education Coordinators from both Wausau and Stevens Point. Though the cost of the event was covered collectively by the manufacturers and the technical colleges, the return on their investment will play out in the coming years as, hopefully, an increased percentage of students will now see manufacturing on a local level to be a viable option for their future.

The following organizations participated:

- North Central Wisconsin Workforce Development Board
- Central Wisconsin Metal Manufacturing Alliance: 55 local manufacturers in Central WI (Portage County to Vilas County)
- Technical Colleges: Northcentral, Midstate, and Nicolet
- Wausau Chamber of Commerce
- Marshfield Area Chamber of Commerce and Industry
- Grow North Regional Economic Development Organization
- Centergy
- 14 different school districts in Central Wisconsin.

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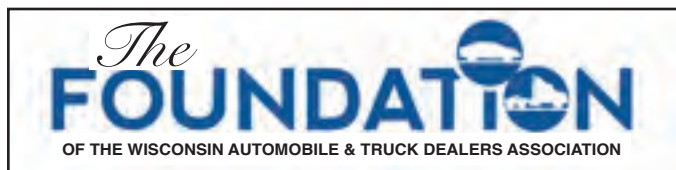
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## Three AYES Grads Now Heading Their Programs

*By Gary Beier, Vice-President, Foundation of WATDA*

The Automotive Youth Educational Systems (AYES) program has entered its 20th year in Wisconsin. Three of our graduates are now heading up the programs from which they graduated.



### **Nick Pellman | McFarland High**

I started my apprenticeship in 2003 and finished in 2005 while attending Marshall High school, (an AYES/McFarland consortium partner site), and working for Ben's Auto Service in Sun Prairie. Upon completion of high school, I attended MATC in Madison from 2005 to 2007 and received an associate degree in Automotive Technology. While attending MATC, I worked for J & L 4-Wheel Drive Center in Sun Prairie and then began working at Don Miller Pontiac GMC of Madison in the spring of 2006. After graduating from MATC, I attended UW-Stout from 2007-2012 while also working for Don Miller Subaru. Currently, I am employed at McFarland High School teaching Technology Education and also teaching the Youth Apprenticeship course through the Dane County School Consortium.

### **Jeremy Hodkiewicz | Shawano High**

I graduated from Shawano High School in 1994. I was never really interested in cars until I had taken auto with Fred Beyer my junior year of high school. By the time I graduated, I knew that I wanted to be a technician. I enrolled in the diesel program at Fox Valley Technical College. I graduated from the diesel program one year later and started my career as a diesel technician at Quality Truck Care Center in Appleton.

I worked as a technician for about five years then decided, with Fred Beyer's advice, that I wanted to become a high school teacher. I went to UW-Stout and earned my Technical Education degree, and completed my student teaching at Oconto Falls High School.

**Check out the WTEA website  
[wtea-wis.org](http://wtea-wis.org)**

I got my first teaching job at Two Rivers High School. There I taught small gas engines, automotive, machine tool, and welding for five years. Then I received a phone call from Shawano. Fred Beyer was retiring and they would like me to consider moving back home and taking over the program.

I have now been at Shawano High for eight years. I have taken the program from where Fred left off and pursued NATEF and AYES accreditation. I have gained a lot of support from administration, school board, and the community in taking the program to the next level.

Fred and I are still very close. He stops in from time to time to visit or use the shop. We try and go for lunch a few times each year and share stories. I owe a lot of my success to Fred getting me started on this career path. It has been an honor to come back to Shawano and take the automotive program to the next level.

### **Luis Vallejo | Milwaukee Pulaski High**

As a student at Pulaski, Luis became interested in automotive service technology. He got into the AYES program and soon after received a Youth Apprenticeship slot in the service department of Andrew Chevrolet, working under the guidance of Service Director Brian Davis. After nine years of professional experience, Luis has come back to the Pulaski High AYES program to teach the advanced automotive service course. His old boss, Brian points to his accomplishments with a lot of pride.

We are proud of these three students who have now joined our Team Wisconsin transportation service technology education team. One of the great novelist Thomas Wolfe's classics is "You Can't Go Home Again." Wonder what he'd have to say about these three great guys?

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## Shawano High –Wisconsin's Newest AYES Site

*By Gary Beier, Vice-President, Foundation of WATDA*

Shawano Community High School's new Automotive Youth Educational Systems program was officially recognized on Wednesday, October 21, 2015, making it Wisconsin's 14th AYES program. AYES and WATDA Foundation representatives, students, school officials, district board members, Ford Motor Company and Snap-on Tool Corporation officials, local dealership representatives, and community members gathered for the official start of the program, recognizing the efforts of automotive technology teacher Jeremy Hodkiewicz in particular.

The AYES program allows automotive students to receive paid on-the-job training from local dealerships and automotive businesses, partnering school and community. It also affords participating schools a greater opportunity to receive donated training equipment from manufacturers. This year the AYES schools had 57 interns working at dealerships throughout southern, eastern and central Wisconsin. Program sites also shared in \$165,000 in equip-

ment from manufacturers and special grants through the program's connection to the Forest County Potawatomi Foundation.

For more information contact: Gary R. Beier, Foundation of WATDA (414) 520-7870.





## Implementing a Technology Requirement into your School District

*By Phil Bickelhaupt, Director of Technology, Wisconsin Rapids Public Schools*

Today's students have something many of us did not have when we were their age in the Seventies, Eighties and Nineties - Technology. Sure, we had technology; it was in the form of the Sony Walkman™ or playing Oregon Trail on an Apple IIe computer. Today's high-paced world of technology and social media is transforming our students' lives in unimaginable ways. Our students are growing up in a completely different era than we did. As educators, we need to make sure our students have a basic understanding of how these things work, how to manage them all and, ultimately, when to use them and when not to use them. The question for our District became, "How do we make sure all of our students get some type of technology instruction before they graduate?" The answer was simple; create a mandatory technology requirement for high school graduation.

### Why?

The impetus for implementing a technology requirement was initially driven by our high school graduation committee's recommendation during the 2013-2014 school year. The committee was reviewing the graduation requirements needed to graduate from Lincoln High School (LHS). The committee was made up of administrators, counselors, and teachers from many content areas. The goal of the committee was to make sure the high school graduation requirements met the DPI's requirements set forth in Agenda 2017, as well as legislation changes requiring an additional math and science credit. The committee recommended several changes including a required half credit of technology, specifically a course titled IT Fundamentals I. The Wisconsin Rapids Public School (WRPS) system's process for making changes of this magnitude required approval from many other District level committees and final approval from the school board. Throughout the process, the requirement to take IT Fundamentals I for graduation did not come to fruition during the 2013-2014 school year as the school board tabled it for further review.

The following year, our district-level Instructional Technology Committee (ITC) decided to study the idea from our perspective. With this in mind, ITC went to work developing a plan that would hopefully lead to a technology course requirement for high school graduation. The goal of ITC was to develop a rationale of why we needed students to have a technology requirement to graduate from high school.

### Rationale

In developing a rationale we identified several key items that supported the requirement for a technology course for graduation.

1. *Meets the standards identified in the following areas:*
  - a) *Wisconsin State Standards for Information Technology and Literacy*
  - b) *Computer Science Teacher Association (CSTA) 2011 K-12 Computer Science Standards*
  - c) *International Society for Technology in Education (ISTE) National Educational Technology Standards for Students (NETS-S)*
  - d) *Common Core Standards*
  - e) *Next Generation Science & Engineering Standards.*
2. *Capstone course for WRPS Information Technology Course Sequence.*
3. *Meets the objectives identified in the WRPS K-12 Information and Technology Literacy Scope and Sequence.*
4. *Meets e-Rate guidelines in relation to Digital Citizenship education.*
5. *Exposes all students to basic technology skills required to succeed in all courses.*
6. *Misconception that our students are "Digital Natives" and already know these concepts.*
7. *Reinforces computer skills used for Computer-Based Testing (CBT).*
8. *Learning Management System (LMS) exposure:*
  - a) *Students will have the ability to use an LMS. Content for this course is housed in Moodle, the LMS used in WRPS.*
  - b) *All students will use an LMS at some point in their lives. This course will add exposure to using an LMS.*
9. *Local Employment Demands.*

As we started to present these rationale statements to teachers, administrators, staff and various committees, three key items rose to the top. The first is the misconception that our students are "Digital Natives" and already know these concepts. To gather some data to support our point we gave a pretest to the ninth graders (Class of 2018) that were enrolled in IT Fundamentals I. (Side note: This pretest ultimately became our test out exam, which you will read about later.) Of the 96 students tested, the average score was 49%. The students did the best in questions related to basic file management such as deleting,



renaming and moving a file. The worst scores came in the areas of programing, basic computer concepts and web browsing. Our point was driven home once the data was revealed. The data from our test can be found at <https://goo.gl/lfHDQ0>.

The second key item was driven by a survey given to local area employers. The overwhelming majority of them supported a requirement. In the survey we asked 7 questions about skills students would learn in this course and left room for comments. We asked them to answer on a scale of 1 (strongly disagree) to 5 (strongly agree) and 3 being Neutral. Perhaps the two questions that solidified our stance were related to digital citizenship knowledge and technical troubleshooting ability. Each of these questions received many 5's and even a few 5++ as noted in the comment section. The last question of the survey was a very pointed one. We asked, "Do you feel all students should have a half credit informational technology course required for graduation from Lincoln High School?" The answer was yes. Ninety-four percent of the employers that answered our survey agreed that we should have a required informational technology course to graduate from LHS. Having local employers involved was a huge factor in making this happen. They are the ones that hire our students. Their input was a very valuable tool. If interested, the questions and data from our survey can be found at <https://goo.gl/PDbAoT>.

The last key item was a combination of reinforcing skills needed for CBT and exposure to an LMS. As many of you well know, testing is moving online. In the past students didn't have to know how to open up a separate window to scroll through a graph to find an answer or read a passage. We did not want the computer getting in the way of students ability to effectively show their knowledge on the exam. Additionally, after graduation many students (if not all) will be subjected to some type of online course work or filling out online forms. We wanted to make sure all students received some instruction on using an LMS and submitting and filing forms in an online fashion before graduation.

### **Questions and Concerns**

Along with these key items came many questions and concerns. Many came from other content areas about FTE and number of sections and how this will impact other courses. The answer was relatively easy. Through a simple data mine within our Student Information System we identified that nearly 68% of our current seniors (Class of 2015) had already taken IT Fundamentals I, so we did not see it having a significant impact on student enrollment in other areas or significantly increasing FTE's.

Other concerns included students who felt they already had the knowledge to "test-out" of the course. To address

this question we developed a "test-out" option. Students who felt they possessed the skills to test out could take the test. If they received an 80% or greater they would not have to take the course and their technology requirement would be waived. (Note: No students tested out for the 2015-16 school year.)

Another large concern was students who transfer into our District. Would they have enough time to complete this course before they graduated? To answer this question we developed an online course that could be taken anytime, including summer. We also noted that if the student had taken an equivalent course from their previous school we would honor that course.

### **Final Result**

As time neared when ITC needed to present to the school board, we developed a statement of impact.

*This course will give all Lincoln High School students basic computer literacy skills including the use of operating systems, file management, and internet basics. Additionally, the course will provide basic skills in word processing, spreadsheet use, designing presentations and using databases. Lastly, students will be exposed to the topic of Digital Citizenship. Students will learn how to manage their "digital footprint" and the ethical implications that a poorly managed digital footprint can mean for students. Knowing when to post something to social media and when not to in today's society is crucial. This course covers numerous topics that students can apply in the classroom (secondary and postsecondary) and the workplace.*

In the end, several committees recommended to the school board to require students to take IT Fundamentals I in order to graduate from Lincoln High School. Furthermore, the Board of Education recommended it be taken during grades nine or ten. They felt the skills learned within the scope of this course were skills that could be utilized in every course they took at the high school level, and receiving those skills sooner rather than later would be a benefit to students and teachers.

In closing, the decision to require a course for high school graduation was a large task. Many stakeholders were involved including parents, teachers, school counselors, administrators and the school board. Many opinions were shared and discussed at great length. As WRPS moves forward with the requirement, we will be reviewing the curriculum, how we deliver the course and how our students are using technology to help them be better learners and digital citizens. If you are interested in learning more about the process we used to implement this course requirement, I am more than happy to share our experience!

## The Academy for the Art of Metal Shaping

*By Tom Barnhart, Ashwaubenon High School*

Mark Gerisch resides in Green Bay, Wisconsin where he teaches the Art of Metal Shaping. His passion for the skilled trades is fueled by a desire to close the skills gap the United States is currently facing. Mark's ability to give anyone interested the straight talk about the importance for skilled trades inspired me to facilitate a connection with my High School program.



Last October Mark spoke to over 100 students and staff about the importance for 6-12 grade students to know what they want to do after high school. Developing a career pathway in something skilled that interests you is key to our nation's survival and success. Supporting his message was an extremely amazing portfolio that provides an eye opening example of what can be achieved following a pathway with passion and developing handcraft skills.



The last real Ferrari GTO rolled across the auction block for a little over \$38,000,000.00. This is an aluminum recreation of that car - the closest replica in the world. Mark utilized his master coachbuilding skills to craft all of the body panels.

Witnessing this example of art and craftsmanship in addition to a demonstration of metal shaping by Mark, motivated Nicole Lucious, a junior at AHS, to learn more. Since last October Mark has served as mentor to Nicole in shaping sheet aluminum to form fenders for a vehicle project her Tech Ed class is building under the leadership of instructor Jeremie Meyer.



The Academy for the Art of Metal Shaping is where students learn to master the skill of shaping metal through primary use of the power hammer, English wheel, hand tools, and welding. The mastery of these skills has decreased since World War II, yet the product generated is relevant to the 21st century. The focus of AAMS is heavily transportation yet the skills taught have applications far exceeding that field. A unique feature of AAMS is the architecture of its studio lab as it celebrates metal working skills and disproves misconceptions that skilled trades only take place in dark and dirty environments.

Mark will be at this year's WTEA conference as both a presenter and vendor representing the AAMS in addition to Balleigh Industrial Tools. I encourage you to meet with him and be inspired by his passion and amazed by his portfolio.



Nicole shaping metal with the power hammer and English wheel.



## Build an Affordable Dynamic Testing Unit for Your School's Energy Efficient Vehicles

*By Matt Schultz, Lakeview Technology Academy*

In the past WEEVA (Wisconsin Energy Efficient Vehicle Association) has hosted a number of Advisor camps to help make Wisconsin's energy vehicles advance. Whether it was a weeklong build at Brillion or Kimberly High School, or one day at Barneveld, WEEVA believes in hosting workshops to help Wisconsin teams become more successful.

After much discussion with advisors on the topic of what the next workshop could be, it was decided that a dyno needed to be designed and built. Many advisors got together and designed and built a prototype for a dyno that could be built in 2 days, and would cost less than 350 dollars. With the idea in mind of function, price, and an appropriate build time, WEEVA has come up with a dyno that will meet all those criteria.

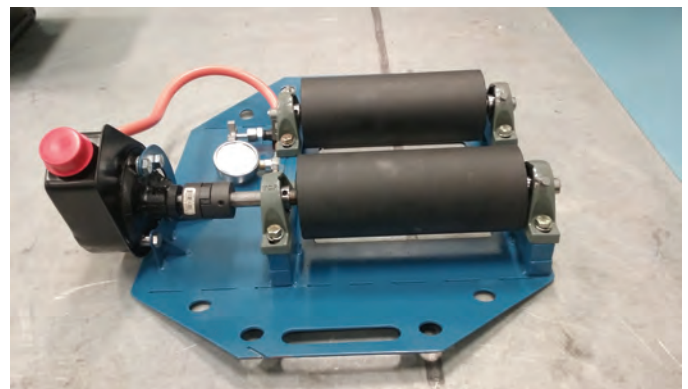


Most teams are looking for a dyno for a number of reasons: One, collecting data. The dyno designed will allow teams to operate both their electric and gas vehicles. They can collect the run time and with simple math, calculate the mileage traveled. Two, supply a load. The dyno uses a hydraulic pump to apply a load. The load can be measured in psi, and with the small added cost of a flow sensor you can collect pressure and flow to calculate horse power. The dyno comes with a pressure gauge, a hydraulic pump and reservoir, a flow control valve, and two adjustable rollers to allow for multiple size tires, and multiple settings for securing any vehicle while being tested.

Lakeview Technology Academy in Pleasant Prairie has been planning to host a two day dyno build workshop to be held January 15 & 16. The workshop includes work on multiple machines including manual lathes and



mills, CNC Plasma Cutter and CNC Milling, MIG and TIG welding. Attendees who attend will build their own dyno for their school and leave with a finished product. The cost of the workshop will cover the materials needed to build the dyno. Lodging and meals will be at the cost of the attendee.



The workshop will also cover the latest rules for both supermileage and electrathon. The two day build is expected to be a fun opportunity for advisors to get together and collaborate on Wisconsin's already great energy efficient vehicle association.



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## What's in Your Tool Box?

*By Pete McConnell, Prairie River Middle School, Merrill, WI*

I started teaching grades 6 through 8 Technology and Engineering at the local Middle School in town after retiring from a long and successful career teaching 7-12 Technology and Engineering. I know there was a faction of teachers in the district that wondered if the old guy had what was needed to do the job. After the first nine weeks of some the most challenging educating I have experienced in a career that spans 35 years, I wanted to share these reflections about teaching that may be a summation that can help each of you to reflect in a similar manner.

I wanted to honor the efforts of the retiring teacher, so I spent much of the summer time trying to fit in to the curriculum that was taught here for the past 19 years. A week before the students arrived, I decided to bring my own strengths and challenges to the show and present what I thought was the best. What I learned was, even though it may be foreign for them, it would bring a sense of comfort and confidence to me. This is a good recipe for getting rid of new job jitters. This methodology works for old guys like me and new teachers alike. Bring the activities and ideas that you know you can facilitate in a professional delivery. Remember that a beginning is just that. You can tweak and replace as time marches on. Develop what is appropriate for the standard-based curriculum that matches your strengths and experiences. Build on that!

Identify what tools you possess and turn those into your signature. For example, I am strong with facility management, assessment, curriculum development, and social interactions. I realized, however, that I did not know where stuff was, who my advocates on the staff were, and how this new group of students “smelled.” They did not know me and I did not know them. These are elements of a new working environment and you need to work hard to bring the learning curve to an early resolution. The unknown is more stressful. Focus on the tools that work and create solutions for the unknown. The previous teacher would line up students to dismiss to the classroom. I

thought I knew how to line up students and I intended to follow this process. No luck after two weeks. I tried being stern, explaining, and even redirecting my expectations. I woke up one Monday morning and decided on a new direction. I declared in all of my classes that we would no longer line up. I dismissed them from the lab to the classroom with no standing in line ahead of time. Problem solved. I had that tool in my bag. I just did not know that I needed to pull it out.

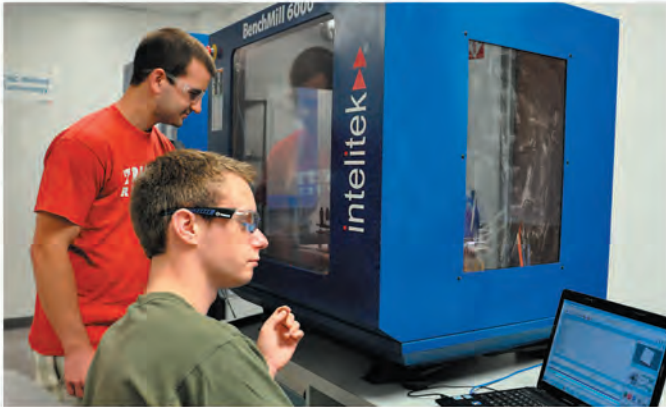
What tools do you possess that makes you an effective educator? It might be courage, understanding and precise communication. Maybe you are willing to access the vast resources that are provided by SkillsUSA, the DPI, the Wisconsin Technical College System, the WTEA, or all of the links provided by the ITEEA. Do you trust the leadership in your district? Do you ask for support and assistance from the appropriate teachers and administrators that are willing to help you move forward? I was impressed to learn that a member of our custodial staff was willing to help sub for my morning homeroom so that I could go to an Educational Technology Training offered by the IT department.

I am learning that being a good teacher and understanding the pedagogy of Technology Education and Engineering is only part of the success equation. Scoping out the landscape and determining what tools and tricks you need to be successful is also very important. Look for and seek solutions from your building colleagues and remember to access your professional organizations as well. You know who to call. Make that call. Check the DPI listserve. Let the WTEA know how they can help. Be strong. Be confident. Know that every day, every week, every quarter provides you with experiences and a system of checks and balances that will help you to be reassured with your progress. Work hard and be diligent in your efforts. Do not be afraid to call an “old guy.” Just remember that this “old guy” might be calling you!



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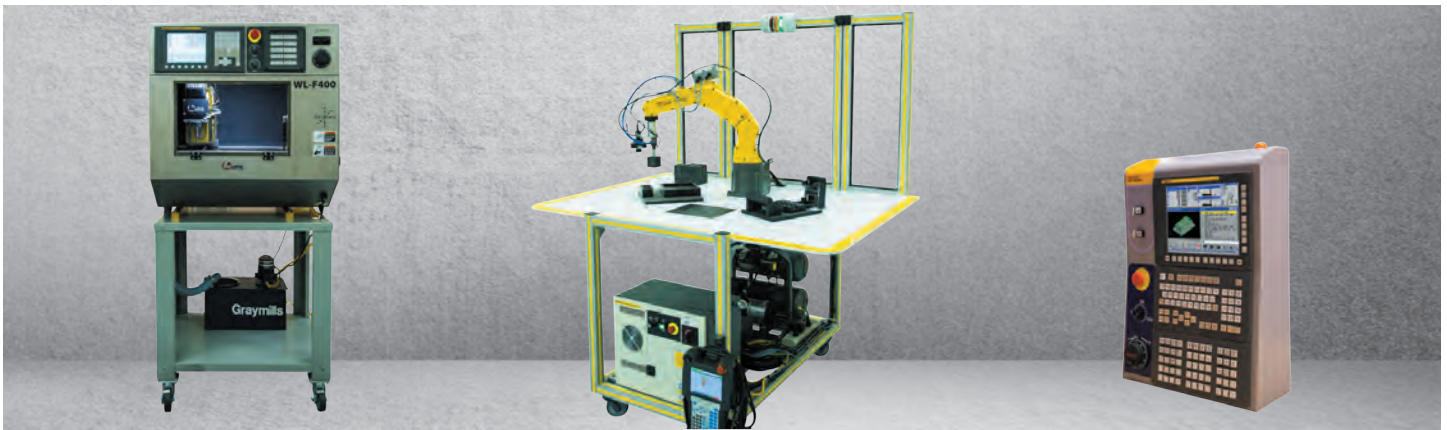


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