

Interface

Journal of the WTEA



Winter 2011-2012
Volume 51 Number 2

WTEA



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WTEA- Visible and Aggressive!

by Pete McConnell, WTEA President

I am anxious (always) to move our association one step forward in developing curriculum, programs, and activities that assist our profession to grow and our students to learn. You might know me to be a forge ahead kind of person (not always with forethought I may add). There were several opportunities for me to research new discussions and opportunities this past fall. I have continued to seek out possible solutions to allow our membership to seek acceptance and provide proof of professional validity. In the middle of this quest I may have learned a very valuable set of skills and lessons.

The DPI and WTEA hosted a series of informational discussions around the state this fall. Brent Kindred does a great job communicating with all of us and the WTEA has been fortunate to tag along for the ride providing eats and goodies for the show. I paid attention at the session while at the Fox Valley Technical College and got involved in a great discussion about being visible and aggressive. Brent provided some tools to the participants to “arm teachers” with data demonstrating the validity of our profession to local communities, school boards, and anyone else who might benefit from this positive information. The Merrill Tech Ed program recently started sending an informational newsletter to its board every month to share what was going on and how the students were learning. Several other examples of local activities were shared. The data Brent presented is available to everyone on the DPI web site. When you find an angle that works for your district, jump on the WTEA website and share your success! The state Tech Ed list serve is a great vehicle as well. Thanks again Brent!

The second activity that hit me square in the eyes was an opportunity to investigate some new software at the WTEA Fall Board meeting. This past summer I was involved in making some connections to help schools identify some science cross walking with STEM curriculum and it was invigorating. I am always looking for more ways to help educators find opportunities to access cross walking and other curriculum opportunities for their programs. I admit that I get frustrated when I see opportunities that seem to be under utilized. So, I listened to this great presentation and I realized something that I should already know. It is not my job to find and enforce all of these programs. It is my job to encourage and to provide the opportunities. These opportunities are called resources! The WTEA should be in the business of providing

professional quality resources for its teachers and then encouraging them in any way possible to be successful!

These resources are readily available through our conferences, website, curriculum exchange, rigorous curriculum development and promotion, Wisconsin Tech College System, SkillsUSA, professional development activities, and Carl Perkins Funding mechanisms just to name a few. We also provide a structure of some of the finest Technology and Engineering professionals through our district reps and the executive board. The activities of the WTEA continue to define, create, and sustain activities and resources for our membership!

The third process that occurred to me was actually a byproduct of the first two. It came from this dialogue.

- What “matters” to a School District each year (it changes from time to time)?
- What does TEE in that district do that “matters”?
- How can TEE prove that they do what “matters”?
- TEE should develop and provide a portfolio of professional validity.

I believe this portfolio needs to get started now. It should be a collection of data and archives that prove that TEE does what matters. This year it might be to provide assistance like no other area can when it comes to the common core standards. Maybe what matters to a district’s policy is improving reading scores. How can TEE respond to that need? STEM initiatives continue to weave into the fabric of our educational lives. How can TEE prove that we can provide what matters for students in these different initiatives that “MATTER”? The data will change and our resources change as well. Regardless, TEE instructors are masters at our trade. We need to learn to convey that to a community of educational supporters that might not know what we do and how we can assist in collaborative efforts.

The climate is rich at this time now! We should assert ourselves and be visible and aggressive. Bang the drums, toot the horns, do your homework, chronicle the data, use the camera, show up at the local Optimist luncheon, - do whatever it takes. We are an important and vital component of the education system. Now is the time to develop the partnerships that will recognize and appreciate the validity of our profession. Know that the WTEA and all of its representatives will continue to work to provide the resources and information you need to stay visible and aggressive!



WTEA BOARD NEWS

Fall 2011 Board of Directors Meeting Highlights

by Ken Bremer, WTEA Secretary/Treasurer

The following summary highlights the Fall 2011 WTEA Board of Directors meeting held October 14 and 15 at Madison College, Madison, Wisconsin.

- Ken Bremer appointed Secretary/Treasurer.
- CAERT Presentation followed by discussion. Committee formed with Brent Kindred, Steve Meyer, and Pete McConnell to look at ideas for crosswalking curriculum, assessment, etc.
- Spring Conference update by Steve Johnston.
- Mike Cattelino gave Vice-president's report and explained new district map layout.
- Greg Groom gave President-elect's report focusing on a regional CTE meeting and Summer Summit.
- Joe Ciontea gave Executive Director's report including financial information.
- Logo contest for conference will be discontinued.
- Brent Kindred gave DPI report and handed out Fall Inservice agenda. He also presented information on Perkins funding and disciplinary literacy.
- The theme for the 2013 conference is "Connecting the Future."
- SkillsUSA officers made a presentation.
- Ken Starkman conducted a tour of the technical areas of Madison College and reviewed plans for new building – including the Ingenuity Center.
- Application process was discussed for DTE award from ITEEA.
- Mike Cattelino reported that engines donated to WTC system were to be distributed to schools.
- Engineering standards are included in Minnesota science curriculum. Wisconsin needs to keep Tech Ed as a stand alone entity. WTEA needs to be pro-active and interdisciplinary.

Complete minutes are available from Ken Bremer at kbteched@gmail.com

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DISTRICT NEWS

District G

Phil Bickelhaupt

Welcome to the New Year! Gosh, it's hard to believe that it has been 12 years since the whole "Y2K" scare. As I write this, I hope your 1st semester classes are finishing up their projects and that you are starting to plan for the 2nd semester of the school year! The 2nd semester always seems to be filled with many things including SkillsUSA competitions, ITEEA convention and of course the WTEA convention in March.



For those of you that teach in the Mid-State Tech College District or the greater Madison Area, you might be aware of the new district layout that went into effect this fall. I am now the main district director of this region. However, I am going to rely heavily on Ryan Ubersox of Waunakee to help me in communicating with the members in the Madison area. Ryan is still an active board member and is now an at-large director, so please feel free to still communicate with him or me about any concerns you may have about the WTEA, curriculum, and whatever else may be on your mind.

The best way to reach me is via e-mail at phillip.bickelhaupt@wrps.org. Ryan Ubersox can be reached at rubersox@waunakee.k12.wi.us. We look forward to hearing from you!

District H

Tom Martin

Happy New Year!

If it appears that my title is a misprint, I would like to remind you that the WTEA has consolidated districts. The former district 2 and 3 that make the southwest corner and the coulee region of the state is now District H. My goal is to host two meetings within the district in January.



I would like to recognize Mike Beranek, Blair Taylor and ITEEA Representative for WTEA and Shari Torkelson, LVEC, CESA #4. They have kept Technology & Engineering Instructors in the northern part of the district abreast of the latest developments. I owe them a great deal of thanks.

By this writing, several Wisconsin SkillsUSA District events will already be complete. West Salem High School hosted the District 6 event on December 6 and I'm certain that with the momentum SkillsUSA has, many students participated. If you do not have a SkillsUSA chapter, you owe it to yourself to begin one with a cadre of 'leaders' in your building to generate more enthusiasm for your program. Lauri Domer, Wisconsin SkillsUSA Assistant Director and the District 6 State Officer can come to your school to help with implementation.

I would like to remind you that Southwest Wisconsin Technical College (SWTC) hosts its regional on January 26 & 27. We anticipate several hundred students to join us for over 20 leadership and technical contests.

While there has been unprecedented institutional knowledge lost, the fallout has produced a degree of collaboration as unlike I've ever seen in my 17 years in education. For example, Scott Swan, SWTC Engineering Technologist Instructor led area Technology & Engineering Instructors to host Robot Wars at Iowa Grant and Platteville High Schools. Ten high schools participated and for highlights, please check out Southwest Wisconsin Technical College and find the album "Robot Wars" - <http://tinyurl.com/83l2xty>. Initially, Scott had a great deal of difficulty getting the program started, but now there is tremendous momentum and there is avid sharing between students and teachers alike.

Robot Wars is just one example of a new potency of cooperation. What are you doing in this new age?

In closing, I give you some suggestions for New Year's resolutions.

- 1) Market your program, market your program, market your program
- 2) Form an advisory council; if you are in small district, collaborate with your fellow CTE teachers to hold one. (BONUS: If action plans are formulated with industry, follow through with those)
- 3) Create dual credit, science and math equivalent courses to ensure that you aren't teaching more, but what you are teaching is value added, rigorous and relevant.

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

WTEA PRESIDENT-ELECT

Getting On The Bandwagon

by Greg Groom, WTEA President-elect

We are living in an interesting time. Now, more than ever before, we need our opinion to be heard. President Bush tried to eliminate Perkins in one pen swipe. After many phone calls and e-mails we got Perkins funds back for another year. The present administration is trying a new tactic by chipping away at it 10% at a time. Consequently, we currently are dealing with a 10 percent cut. In some political circles teachers are looked at as freeloaders. But it is our job to stand-up for the young people we welcome into our classroom every day. We have seen alerts in the form of "Call to Action," "a need to have your voices heard" or "Act Now." If we do not have the passion to have the best program for our students, then are we in a decline? I say "NOT UNDER MY WATCH." We only need to look at the Eisenhower Fund to see what could happen to us. If you don't know what the Eisenhower Funds is, it was the Federal funds set-up for the Science Area. About the same time that No Child Left Behind came about, those funds went away. Ask any senior science teacher how it felt when it went away. If you do nothing when Perkins Funds are cut, this program will go the way of the Eisenhower Funds.



Looking at it in hind sight, all the great programs started with the Perkins funds. I can name a plethora of students that have had a major change in their life because of programs I started using Perkins funds. I can recall using Vocational Education Act funds to help move my programs ahead. This type of funding has had a rich history of helping our programs. In the past, we were able to showcase our programs with our students competing in the SkillsUSA contest with the aid of these funds. Daily we hear that the U.S needs a well trained workforce, but then politicians cut the funds that have made our programs great. It just doesn't make good sense.

This spring I will be taking the helm for your WTEA organization. As your leader, I am going to ask you for more action than any other WTEA President has done in the past. The time we live in is like no other time. We are asked to do more with less. You will be working harder then you have ever worked. We need to work harder and smarter than at any other time. This may not be the time to ask "What can the WTEA do for me?" but rather "What can I do to help the WTEA - my professional organization?"

We are only as strong as our membership.

- Calendar -

February 15, 2012	SkillsUSA Membership Dues Deadline	
March 2012	Career & Technical Education Month	
March 6, 2012	Rube Goldberg Contest	UW-Stout
March 8 - 9, 2012	43rd WTEA Conference	Wisconsin Dells
March 15 - 17, 2012	ITEEA Annual Conference	Long Beach, CA
April 17 - 18, 2012	SkillsUSA State Conference	Wisconsin Dells
June 23 - 27, 2012	SkillsUSA National Conference	Kansas City, MO
Nov. 29 - Dec. 1, 2012	ACTE Conference	Atlanta, GA

Surviving or Thriving?

by Mike Cattelino, WTEA Vice-President

In any given year, any given budget cycle, any given political atmosphere, the question at some point becomes survive or thrive? Where do you see yourself in your TEE program or job right now? Has the answer to that question seemed to have changed recently? Now, look at the question behind the question. Who is responsible for the results? Can I, as a TEE teacher or an employee of a school district in the great state of Wisconsin, change something in order to move from survive to thrive?

For those that are thriving this may seem to be a rhetorical question, but I am one that prefers to share the wealth rather than to hide it. What does the future look like regarding resources in a program that is one of the most expensive to operate? I wish that I had the answer to all of the budget challenges at every district, but I don't. The suggestion that I can make is simple, A-S-K. I have operated under a motto for some time that states 'if you never A-S-K, you will never G-E-T'. Before you run and ask your local machine shop for a donation of a CNC machine, please know that is not quite that simple. The 'ask' has to be accompanied and driven by a plan for improvement, a passion for the career area, and a data supported need for the change. A simple hand extension looking for support will likely close more doors than it opens.

A network of connections can also uncover opportunities at times when you least expect it. The building and development of that network is certainly not a simple task. It boils down to relationships. An example that comes to the top for me is an equipment usage agreement that Fox Valley Technical College signed with Service Motor Company and Case IH in early 2010. We were the first technical college in the state to be offered this type of agreement. In brief, the open-ended ten year agreement entails more than \$2,000,000 worth of brand new Case IH equipment being made available annually through Service Motor Company for our students to use. Each year we will get a similar package of equipment, but it will be

brand-new units each year. Service Motor Company will then sell the units at a discount to their clients. Service Motor Company and Case IH came to us; we did not seek that out! How was that possible?

It is possible by continued relationship building and networking. We have had a long-standing and ever growing relationship with Service Motor Company for over forty years. When Case IH presented the lease agreement concept to Service Motor Company, they immediately referred them to us. What a great compliment that was. It is also a testament to all of the hard work that was put into building the relationships over the years.

Another opportunity came to FVTC recently; that without the relationships that were in place, likely would not have played out the way it did. Kohler Company contacted us regarding engines that they needed to remove from their inventory before the end of the year. Their intent was that these engines end up in the high school small engine shops around the state. There were conditions that accompanied the engines. They also had a very short turn-around time and we had to provide our own shipping. How many engines would they be willing to give away? 6,000! That is what I call an opportunity. Dale Drees and our hard working people in the Agriculture Center were able to work out a plan to offer two one-day classes for high school teachers. The teachers could also pick up a set of engines for their school through our college's foundation. There were some conditions that went along with the engines, but what an opportunity! Dale's connections at Kohler and connections at the high schools helped both ends of the process become a reality. To date, 100 schools have been able to gain knowledge about Kohler engines and add some new engines to their teaching tools inventory.

As resources are squeezed, consider what relationships you have to call on. I am hopeful and somewhat confident that you will not be disappointed in the outcome and your students' opportunities to THRIVE.



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CANDIDATE

Candidate for WTEA Vice President

Mike Cattelino

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WI Indianhead Technical College
Fox Valley Technical College
UW Stout
UW Oshkosh

Technical Diploma
Journeyman
BS
MS

Machine Tool
Machinist Apprenticeship
Career & Technical Ed.
In progress

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, Information, and Agriculture Technologies Division at Fox Valley Technical College, a position that I still hold. I am currently pursuing 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 VP since spring 2011
- Vice-Chair of the 2012 WI 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 all the time. I would like to focus on helping teachers 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 schools. 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.

SkillsUSA & WTEA ANNOUNCEMENTS

Fall into SkillsUSA

SkillsUSA Chapters started the year off running. In October, twelve chapters attended the Annual Fall Leadership Conference in central Wisconsin. This two day event taught students leadership at an individual and chapter level. Chapters were able to take an entire year's worth of activities and complete them in just two and a half days. It was an exhilarating time to see the talent of our students.

Then in November, we hosted our first Middle School Fall Leadership Conference. Five local middle schools attended a one day workshop where they were able to learn

more about SkillsUSA and all that it has to offer. Students learned more about themselves and how to work as a team.

To round out our fall, for the first time ever we hosted six district competitions around the state. Area chapters, along with the support of other chapters in their areas were able to provide quality competitions for new and veteran members. Winter High School hosted District 1 at the WITC Campus in Rice Lake, Chippewa Falls High School hosted District 2, Antigo High School hosted District 3, Portage High School hosted District 4, Hartford Union High School hosted District 5, and West Salem High School hosted District 6. In all we had 350+ competitors throughout the state! Thank you to all of the host schools and the advisors for preparing your students for these competitions. Your dedication helps makes this a better organization.

What more could SkillsUSA have left to offer? Still to come are three Regional Competitions and the State Conference! If you missed out on the district competitions, you can still get in on Southwestern Tech, Gateway Tech, or UW-Stout Regional Competitions coming up in the next two months.

Don't be left behind. Check out the SkillsUSA website for more details: www.SkillsUSA-WI.org.



WTEA Foundation Scholarship

The WTEA Foundation is offering a \$1200 scholarship for a high school senior who commits to pursue a career as a K-12 Technology & Engineering educator.



Eligibility

- Spring 2012 high school graduate
- Wisconsin resident
- Enroll in technology education at UW-Platteville, UW-Stout, or Viterbo University and start the fall 2012 semester
- Submit completed application form and 250 word essay prior to April 1, 2012

Details of the scholarship and the application form can be found on the WTEA Foundation website at www.wteafoundation.org or scan the QR code.



Graduate Credit Opportunity for Conference Attendees

The Board of Directors has partnered with the Office of Continuing Education at UW-LaCrosse to provide WTEA Conference attendees an opportunity to earn one graduate credit. Course participants will be expected to attend the annual conference and submit a follow-up paper by April 20, 2012. The registration fee for 1 graduate credit will be \$130. Specific course details and registration procedures will be posted on the WTEA website by February 1, 2012. For more information contact Joe Ciontea, WTEA Executive Director.



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PROGRAM ACTIVITIES

Project Grill

by Paul Helm, Oakfield High School

Oakfield High School is presently involved in the fourth year of "Project Grill," the name being derived from "Growing Readiness In Learning and Leading." The goal of the program is to get local businesses and area high schools hooked up with the common goal of creating a custom usable charcoal grill. The grills can be just about anything of the students choosing and need to be functional. This year the students in the Manufacturing classes at Oakfield High School are designing and fabricating a replica of a steam powered tractor with the grill located in the boiler of the tractor. This year there are eight teams comprised of eight area schools teamed up with eight area businesses and Oakfield teamed up with J.F. Ahern of Fond du Lac. The grills will be unveiled in conjunction with a car show held in May at Moraine Park Technical College. Moraine Park is also offering a credit to students involved in Project Grill that can be applied toward one of their programs of study.

The project has been a huge success. Many of the students involved have gained employment with these businesses safter graduating. Another benefit is that students have the opportunity to tour all of the businesses involved

and network with many of the employers. The Fond du Lac Association of Commerce is managing the project. Their website is http://www.fdlac.com/project_grill.html.



Four Oakfield High School manufacturing students and the start of the steam powered tractor grill.

Denmark Middle School Students Tour FABTECH

by Angela Arneson, Denmark Middle School

Recently Denmark Middle School eighth grade Building and Construction classes visited 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

lar specific career tracks. The tracks focus on developing technicians for Caterpillar rental services, engine repair, construction equipment service, electric power generation and marine engine service. All of the participating students benefitted from this wonderful experience.



PROGRAM ACTIVITIES

Connecting Business and Education

by Jeff Capelle, Brillion High School

Recently, the Kohler Company donated small gas powered engines to Wisconsin High School Technology and Engineering Departments for opportunities to educate students in design, training, and servicing engines and other types of power equipment. This donation was made possible through the Fox Valley Technical College Foundation. Brillion High School was one of schools that will prosper from this donation. A huge thank you goes out to the Kohler Company, FVTC Foundation, and all of the people that helped make this happen. This is another great opportunity for business and education to connect and help educate our young people for the 21st century.



Creating the Solution

by Brian Schiltz, Tomahawk High School

Students enrolled in the Tomahawk Technology Education department recently put their practical and learned knowledge to the test. When one of the classrooms needed extra tables to support the number of students in the class, it was time to PDCA (Plan, Do, Check, Adjust) to create a solution. Instructors Mr. Bruce Bradley and Mr. Andy Peissig engaged every student in a real world problem-solving scenario where they needed to design

and manufacture tables that would be sturdy enough for a Technology Education atmosphere, yet have the aesthetics and functionality of the other tables in the room. "It was a culmination of many students, instructors, and class periods that made the idea a reality," quotes Mr. Bradley, the metals instructor. A great learning experience and job well done by all who were involved.



PLTW Training at UW-Stout



Technology Education students (from left to right) Devin McKinnon, Joe Premo, Kody Kamm, Nolan Otremba, and Aaron Yusten took advantage of a nice fall day to investigate rocket fuel as part of their Project Lead the Way (PLTW) training at UW-Stout. The Technology Ed-

ucation program incorporates PLTW curriculum into their undergrad program providing pre-service teachers the ability to receive PLTW training in Gateway to Technology (GTT), Introduction to Engineering Design, Digital Electronics (DE), Principles of Engineering (POE), Civil Engineering and Architecture (CE & A), or Computer Integrated Manufacturing (CIM). Since the fall of 2009 UW-Stout's Technology Education program requires two PLTW areas of training to be completed with the option to complete additional areas of training. Seminars held toward the end of pre-service teachers' four-year program allow students to pull course work into a portfolio, take end-of-course exams, and review PLTW curriculum. To date UW-Stout's PLTW pre-service teacher training effort has resulted in thirteen students trained in DE, five students trained in GTT, three students trained in IED, three students trained in CIM and 1 student trained in POE. The number of PLTW-trained teachers is expected to increase as the first graduates of the 2009 program revision reach their graduation date.

TECA Members Compete

UW-Stout's Technology Education Collegiate Association (TECA) members Jeff Martin of Prairie du Chien, Justin Hanger of Dickeyville, and Eric Sabel, of Kewaskum prepared to compete against five other college teams in mid-November. An annual eleven-hour trek took the TECA group to the 69th annual Four State Regional Technology Conference at Pittsburg State in Pittsburg, Kansas to compete against other university students from Pittsburg State, Fort Hays State, University of Wyoming-Casper, Wayne State-Nebraska and the University of Arkansas-Fayetteville. In addition to student competitions the conference hosted teachers, vendors and industry representatives from the central United States with the theme "Advancing Technology Through STEM (Science, Technology, Engineering and Mathematics) Innovation and Imagination." Over the course of two days the team took a first place in the problem solving division, a second place in robotics and a third place in both the transporta-

tion contest and the Quiz Bowl. "They did a great job representing UW-Stout," said Sylvia Tiala, TECA adviser and an assistant professor in the School of Education.



Plan Now to Attend the 43rd WTEA Annual Conference

***"Building Wisconsin Strong"* • March 8 & 9, 2012 • Chula Vista Resort**

NATEF Standards – A New Model Approaching!

by Carl Hader, Grafton High School

The National Automotive Technician's Education Foundation (NATEF) is the "school arm" of the National Institute for Automotive Service Excellence (ASE). In the 1980's a model was developed for testing and certifying automotive repair, collision, and truck repair technicians. Every three years, an area has its standards for topics and tasks updated to meet the dynamics of the transportation service industry. 2011 was the year to update automotive repair standards. Early in the year, NATEF convened a team of program evaluation team leaders from across the country to serve on a strategic planning committee whose goal would be to take a critical look at the automotive standards model and recommend an approach to meet the changing industry demands.

I traveled to Leesburg, VA to serve on the strategic planning committee. After three full days of sifting through data as well as face-to-face presentations by automotive service industry leaders, we came away with a draft for an educational model that would change the way both secondary and post-secondary programs meet the needs of industry while educating students for the rigors of current technology.

After months of reviews by industry and education, the model is close to rolling out. Some of you with educational interests in the automotive service industry have no doubt seen and heard things about the new NATEF model. We are eagerly awaiting the finalization of the model as well as the next update of automotive topics and tasks.

The new model and related updates should be finalized by the time the spring 2012 WTEA conference is held. I will present the finalized model to automotive instructors and administrators at that time. Expect the depth of coverage to be lessened, but to be broadened in scope for high school programs. Expect the coverage to stay the same for post-secondary programs with the addition of updates to meet current skills and industry trends. Creating a "timeless document" in a dynamic field such as automotive is no small task, so it's been quite an interesting and challenging process.

I am hopeful that the updated task & topic automotive coverage will allow even more high school programs to achieve basic certification, although it will be broadened into all automotive areas of repair, A1 through A8. The jury is still out on what requirements there will be for instructors who wish to certify their programs. Be assured

that if there are additional certification demands, such as ASE certification in more (A4, A5, A6, & A8) areas than there are now, that we will be able to provide the necessary training to bring instructors along. As with all standards-based subject areas, this is a welcome change since it not only provides the direction that it always had for our programs, but it also lets us tune into the technology of the D2Y2k (2nd decade of the 21st century).

I am personally very excited about the change to the NATEF model and I'm looking forward to the updated tasks and topics. This will keep the automotive area of technology and engineering education on the cutting edge by defining for us what our students need to succeed both in their internships or entry-level careers as well as their high-end post-secondary education and on-going career training.

Look for my break out session on the "New NATEF standards – changes to tasks, topics, and program goals" at the WTEA spring conference.

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WTEA 43rd Annual Spring Conference and Trade Show

Building Wisconsin Strong

The WTEA invites you to participate at the 43rd Annual Spring Conference to be hosted at Chula Vista Resort in Wisconsin Dells. The conference program is packed with two days of 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 or administrator 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.

The conference will be kicked off with a general welcome to all members given by President Bettsey L. Barhorst, Ph.D., Madison Area Technical College.

Our first general session will be a presentation by Mike Weller who is the President of



ITW Welding North America Miller Electric Mfg. Co. His presentation will cover skill sets of our future workforce and leaders. Mike will lead us in exploring the vital need for technology/engineering, as well as vocational training. He will also discuss developing a strong cooperative relationship between business and education.

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 numerous 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 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 \$25. This is a great way to show appreciation and support for your peers. Immediately following the banquet will be the President’s Reception in the Grand Ballroom.

On Friday following the traditional UW-Stout, UW-Platteville and Viterbo University sponsored breakfast, we will begin the day with diverse sectionals and vendor sponsored workshops.

At mid-day, we will have a luncheon sponsored by Madison Area Technical College. Our luncheon keynote speaker will be Paul Gabriel, Executive Director of the Wisconsin Technical College District Boards Association. Paul will discuss public policy and advocacy trends affecting technology education.



The 2011-2012 legislative session dramatically changed the education landscape, including the landscape of technology and engineering education and the environment in which educators work. His presentation will focus on emerging trends affecting technology education at all levels of instruction and on the increasingly important role effective advocacy plays in our future.

This year’s conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin sharing their expertise on topics such as: Wisconsin Advanced Manufacturing Pathway Education Network, Same Gender Classrooms, SkillsUSA, Energy Education Resource Grants, Residential Trades Skills, Retirement Planning, Leveraging Business & Industry Partnerships, Robotics, Future of Electric/Hybrid Electric Vehicles, New Teacher Boot Camp, and much more!

Put March 8-9, 2012 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 \$105 for members and \$135 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, 4031 River Road, Wisconsin Dells, 1-800-388-4782

Online conference registration at: www.wtea-wis.org



43rd Annual Technology Education Conference and Trade Show

Tentative Conference Overview

Wednesday, March 7th, 2012

7:30 p.m. Pre-registration

Thursday, March 8th, 2012

7:30 a.m. – 3:30 p.m. Conference Registration
 8:00 a.m. – 3:30 p.m. Trade Show
 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
 4:00 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, March 9th, 2012

7:30 a.m. Conference Registration
 6:45 a.m. – 7:45 a.m. WTEA Breakfast
 7:45 a.m. – 8:15 a.m. General Welcome
 8:15 a.m. – 12:15 p.m. Project Showcase
 8:45 a.m. – 12:15 p.m. Concurrent Sessions and Vendor Demonstrations
 12:30 p.m. – 1:45 p.m. 2nd General Session/Luncheon
 2:00 p.m. – 3:00 p.m. Concurrent Sessions
 WTEA Board Meeting



Thursday Keynote Speaker:

Mike Weller, President,
 Welding North America -
 Miller Electric Mfg. Co.



Friday Keynote Speaker:

Paul Gabriel, Executive Director
 Wisconsin Technical College
 District Boards Association

Session Topics Include: Green Technologies, Video Editing, Electronic Game Design, Building Construction, Robotics, Invention and Innovation, Graphic Arts, Manufacturing at The High School Level, Projects Designed to Teach Concepts, Automotive Technologies, Alternate Energy Sources, Standards & Technology, Building High Mileage Vehicles, Project Lead the Way, Skills USA, Middle School Roundtable, Middle School Engineering, Communication Technologies, New Teacher Boot Camp, and much more!

WTEA Membership Application & 2012 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

☐ \$105 members ☐ \$135 non-members \$ _____

WTEA Awards Banquet (Thursday, March 8, 2012) ☐ \$25 \$ _____

☐ 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**

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Project Showcase

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I Want Your Projects!!!

Join us for the 3rd annual **Project Showcase** again this year at the WTEA conference. As Technology and Engineering Teachers, we all love projects. So . . . we are asking that you bring projects that we can display. Bring projects such as cribbage boards, Vex Robots, student poster board displays, electronic circuits, graphic arts and printing projects, CO2 cars, airplanes, 3D CAD drawings, 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. This is different than the former Curriculum Exchange. **WE WANT TANGIBLE PROJECTS.** Drop off the projects Friday morning by 7:00 AM in the Grand Ballroom. They will be displayed throughout breakfast and should be picked up after the luncheon. Please email Steve Meyer at smeyer@brillion.k12.wi.us if you have any questions. Please consider supporting this activity.

Bring a project to display and be entered to win a prize!

Growing the Economy by Up-Skilling the American Worker

by Bryan Albrecht, President of Gateway Technical College

Job creation! We hear about it everywhere, especially from Washington D.C. Job creation is what America needs; however that is not the full story. Job creation is just the beginning of the story to address how America responds to workforce needs today and in the future. It is an invitation to examine our current and future workforce needs in an effort to fill available jobs, lessen the skills gap and provide industry-driven credentials to meet labor demands locally, regionally and nationally.

Today's educational institutions must take an innovative approach to combat the current economic challenges across the nation, by partnering with industry to define industry needs in order for real change to take place. If lasting change is to occur at the local, regional and national levels, we must look for partners in places we have not looked before—and we must connect the dots between these partners. While not a big surprise to most readers, in order to achieve true lasting success, silos must be dissolved; unprecedented alliances must be formed, nurtured and sustained, and we must strive to only invent the wheel once.

Top labor force issues facing America are the current and impending skill gaps resulting from the approaching mass exodus of baby boomers, the negative stigma of manufacturing and technician jobs, and the perception of technical colleges as a viable educational option. We are collectively challenged to meet the training needs of the emerging and incumbent workforce with high-quality, industry-supported credentials that are stackable. These credentials help workers as they navigate their personal career pathway.

The current state of the economy shows an estimated 3.2 million open positions in America, including 515,000 positions in trade, transportation and utilities as of June 2011. The government forecasts the supply and demand for 'mid-level' jobs annually. For example a Level 2 job is defined by the Federal Bureau of Labor Statistics as those requiring more than a year of postsecondary training or education, but less than a bachelor's degree. This level contains significant gaps. The projected 2013-2018 skill gaps are extremely grim for those in maintenance, repair and installation (at 34 percent) and manufacturing professions (at 37 percent). Mid-level jobs are not the only positions affected. Today there are nearly 600,000 open jobs in education and health services. The projected skill

gap in science and technology is anticipated to be 79 percent in 2013-2018. In spite of challenges in the aviation industry, a recent Boeing press release highlighted future labor requirements to sustain the industry: "...airlines will need an average of 23,000 new commercial jet pilots and 32,500 new technicians per year to maintain and fly an expanded world fleet expected to grow to nearly 40,000 airplanes over the next 20 years, as well as replace the coming wave of retirements."

Credentialing and Stackable Credentials

One of the Department of Labor's (DOL) proposed solutions to this dilemma is to increase industry-recognized stackable credentials with a clearly-defined system of competencies linked to employment opportunities and advancement. The DOL suggests as part of the increasing value of credentials that state and local workforce agencies "work with local and regional employers around identification of in-demand credentials...(which) may involve developing or customizing competency models."

In an effort to increase credential completion rates and movement along a career path, the DOL encourages training providers to "modularize curricula into chunked curriculum" and into "small units each of which are stackable and linked to other modules that culminate in an industry-recognized credential."

Workforce solution initiatives are trickling down from the highest peaks in Washington— with community colleges and collaboration being a key theme in responding to the current economic situation. At a news conference in June 2011, President Obama announced a major expansion of Skills for America's Future, an industry-led initiative aimed at dramatically improving industry partnerships with community colleges and building a nationwide network to maximize workforce development strategies, job training programs and job placements.

As one of the key partners of Skills for America's Future (an initiative of the Aspen Institute that was launched by the Obama Administration last year), The Manufacturing Institute announced an effort to help provide 500,000 community college students with industry-recognized credentials that will help them secure jobs in the manufacturing sector. Several other partners of Skills for America's Future and The Manufacturing Institute will also help enhance these efforts through their own initiatives to bolster our nation's manufacturing workforce. *(continued)*

“Last year, we launched Skills for America’s Future to bring together companies and community colleges around a simple idea: making it easier for workers to gain new skills will make America more competitive in the global economy,” said President Obama. “Today,” he continued, “we are announcing a number of partnerships that will help us make this a reality, by opening doors to new jobs for workers, and helping employers find the trained people they need to compete against companies around the world.”

National Coalition of Certification Centers

Skills for America’s Future is only one example of how collaboration, leading to credentialing, responds to our current economic situation. This plan of action is not limited to manufacturing; it transcends across all sectors, rippling into the greater labor pool of America. Gateway Technical College, in Wisconsin, has responded to this call for action by positioning itself in partnerships which are beneficial to all stakeholders. One initiative Gateway has embraced is being an active proponent of the National Coalition of Certification Centers (NC3). NC3 represents a move forward for public/private training partnerships and is the next step in technical training in the U.S.

What started as a partnership between Snap-on Incorporated and Gateway Technical College, and soon thereafter, Francis Tuttle Technology Center, in Oklahoma, and Shoreline Community College, in Washington, today includes more than 40 advanced technical education centers, community colleges and manufacturer-sponsored training programs across the country. NC3 develops, implements and sustains industry-recognized portable certifications built on national skill standards defined by industry. NC3 connects the dots between industry, America’s technical training needs and education institutions. Member institutions have built curricula for diverse industries, including transportation, aviation and energy, and by its nature of portability reaches into other sectors such as manufacturing. The goal of NC3 is to develop and implement sustainable training that is industry-recognized, stackable and crosses industry sectors. Targeted fields for immediate curriculum development include advanced propulsion systems, renewable energy, and aviation.

Several NC3 trustees attended the Presidential press conference to demonstrate how addressing this new model of cross-pollination between industry, government and organizations equates to partnerships which net results. Serving as the chair for NC3 aligns Gateway closely with the current and future national network of colleges, organizations and industry leaders.

In February 2011 Francis Tuttle Technology Center hosted an NC3 Transportation train-the-trainer event, and the first NC3 Energy Train-the-Trainer was held in partnership with the Midwest Renewable Energy Association (MREA) in Wisconsin in June 2011. NC3 is building momentum with each subsequent training in each industry sector. The most recent NC3 Transportation Train-the-Trainer event hosted at Gateway in July 2011 provided certifications to more than 50 instructors from around the nation, and Puerto Rico. While primarily targeted at automotive instructors, the transferability of these skills was evidenced by representatives from the energy sector, healthcare, manufacturing and oil industries in attendance. NC3 is gaining international attention. In addition to recent visits from instructors from South America interested in the training, assessment and certification model, a grant-funded train-the-trainer was held at the ESTO-Ecole Supérieure de Technologie Oujda in Morocco in September 2011. The NC3 growth strategy includes certification to be offered to dislocated and incumbent workers, embedded in community college degree programs, and eventually reaching into area high schools in order to prepare them for the technology they will encounter at the two-year college and in industry.

Community Colleges’ Partnerships With Industry

The common denominator of the members and certification centers that comprise NC3 is progression and innovation in developing relationships with industry in all sectors. An example in the transportation sector is Shoreline’s General Service Technician Program for students interested in a career in automotive services. Industry partner Puget Sound Auto Dealers Association is on site—linking students directly to industry partners. This program has placed nearly 90 percent of graduates into jobs in spite of the economy.

The National Center for Aviation Training (NCAT) at Wichita Area Technical College (WATC), in Kansas, offers success stories in aviation. Partnerships with companies like Cessna, Spirit, Bombardier, and Hawker Beechcraft allow WATC to offer its students state-of-the-art training in composites using practical training specific to what they will encounter in the workplace.

Francis Tuttle Technology Center has paved a path in emerging technologies in the energy sector with a Turbine Technician program. In partnering with companies engaged in the wind energy sector, such as PCG Wind, this unique program was developed in an effort to meet the anticipated demand of wind to produce 20 percent of total electricity by 2030 (according to the U.S. Depart-

ment of Energy). The program has cross-trained national ironworkers, and serves as a center for local employers to train new hires. The training received in electrical, mechanical and hydraulic torque technology is applicable from the oil fields to the top of wind towers, down to the manufacturing floor. Industry's stamp of approval endorses that these credentials meet high standards such as those found in NC3's Snap-on's Torque Technology Curricula.

The North Dakota State College of Science (NDSCS), home to one of the leading diesel technology programs in the country, has partnered with industry leaders such as John Deere and CAT to offer programming on state-of-the-art equipment. Partnering with industry helps absorb some of the costs of these multi-million dollar pieces of equipment, while producing the skilled workforce required by these organizations. Working with government, NDSCS has reinforced its commitment to excellence in programming and expansion of its current facility.

The stories of the progressive nature of the grassroots leadership of NC3 can be told many times over. The common factor is that they each recognize the value of increasing educational efficiencies and effectiveness for their organization by using the coalition as a means to an

end. While we cannot do everything individually, together we can work in a deliberate and calculated manner which subsequently increases our reach exponentially.

Turning Concepts into Reality

When discussing the economy, we all have a role to play. Educational institutions are responsible for producing a highly skilled labor pool for local and regional businesses. Businesses sustain local and regional economies which feed into the national economy. It is a cyclical process that includes local and national governments, community-based organizations, educational institutions, and workforce development organizations working together to lessen the skill gap; this enables the United States to sustain its economy and compete at a global level. Collectively we can meet industry expectations and grow our economy through up-skilling the American worker.

Bryan Albrecht, Ed.D., is president of Gateway Technical College. He can be contacted at albrechtb@gtc.edu

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“That’s Impossible!”

by Dick Anderson, Retired Woods Tech Instructor

As a life long learner and diehard problem solver, these words are music to my ears. Building “bridges to the future” in high school technology classes has been the opportunity to practice 21st century skills for real life. For the “school as we know it” thinkers, some things are too bold, too complex, impossible. Turn education and learning inside out and upside down, I say! This is a real mold breaker for many policy makers and those in charge. Like skydiving - jumping out of a perfectly good airplane at 10,000 feet - makes no sense to many school board members, so it is with educational changes. Impossible!

Imagine for a minute, a school board run by a group of skydivers! Imagine the track being extended to include a runway. Imagine teachers being required to get a pilot’s license to teach. Impossible!

However, designing, planning and building a timber framed covered bridge, I now know is possible. The process is a real application of 21st century knowledge and skills that are needed and valued in the work force today. Plus, look at what you have for your time and effort when you’re finished. People hear about a covered bridge and they want to see it. People see it and they can’t believe that high school students do this. Impossible? I say, “Awesome!”

There is no doubt in my mind that designing, planning and building this bridge gave the students and community members a 21st century learning experience. Considering that I am retired from teaching, have no students or class-

es, live in Darlington 20 miles away from South Wayne and the money and labor for this project was all donated, could projects like this be “dangerously irrelevant” to 21st century education or just “impossible”?

For more details and pictures of the step by step process visit my [bridges2thefuture](#) blog and remember, “Crossing a bridge in your future will be a bit easier after you have built one or two.”



The finished bridge is located in the South Wayne Community Park next to the Blackhawk High School. The project was completed by students of the author’s Woods Tech classes.



A timber side truss is laying on it’s side on the concrete footings in preparation for assembling the bridge. Raising the assembled 3,000 pound 32’ long truss was a community affair on a Saturday morning.



A student drives a peg into one of the trusses for the covered bridge.

Disciplinary Literacy

by Brent Kindred, Technology and Engineering Consultant, Wisconsin Department of Public Instruction

The State of Wisconsin introduced the new Common Core State Standards for Literacy in All Subjects in mid-September, with a brand-new resource pages available for educators in early October, 2011. Also called “disciplinary literacy,” this increases concentration on reading, writing, listening, speaking, and performing in all content areas, from kindergarten through twelfth grade as a way to enhance learning of specific content and concepts. It not only strengthens reading, writing and communication skills, but also increases comprehension in subject areas. Originally part of the Common Core State Standards in English Language Arts, Wisconsin is a front-runner in expanding these standards for all areas and grade levels.

General information regarding this initiative can be found at the agency website at: <http://dpi.wi.gov/standards/disciplinaryliteracy.html>. The site has links to the entire standards document (<http://dpi.wi.gov/cal/pdf/las.pdf>) as well as individual sections of the document. Wisconsin’s Foundations for Disciplinary Literacy outline the goals of the agency in regards to this initiative.

In addition, technology and engineering education in Wisconsin has a Google website of resources and classroom activities for you to use. The site was developed by DPI, along with technology education teachers Greg Granberg/Madison Metropolitan Schools, Angela Arneson/Demark School District, and Ryan Huseby/Tomahawk School District. I would also encourage you to submit your literacy resources and share them with your colleagues. The site is located at: <https://sites.google.com/a/dpi.wi.gov/tee-dl/home>.



2011 WTEA/DPI Fall In-service Recap

Our annual fall in-services are complete for another year. In total, I traveled to five locations around the state and enjoyed every minute. I want to personally thank everyone for attending these important sessions. They really are a great way to discuss technology and engineering for an entire day and hopefully everyone leaves with some great information to take back to your school and communities. We always have great conversations and it is inspirational for me to see how passionate everyone is about our profession. Teaching really is one of the noblest professions anyone can have.

To recap, below are some of the topics we discussed:

- Our SkillsUSA events and initiatives for the 2011-2012 school year.
- Common core initiative, what it means for you, and the work you can do in your district right now. We talked about the work some technology and engineering departments are doing in their school right now. Here is the short video we watched during the in-service. <http://www.youtube.com/user/TheHuntInstitute#p/a>
- Disciplinary Literacy Resources - <https://sites.google.com/a/dpi.wi.gov/tee-dl/home>

- Carl Perkins federal funding update, both at the state and national level.
- Data, data, data and how to show your administration, school board, and community the good work you are doing every day and to show them real number and statistics about your program. These discussions at each location took about an hour, but were worth every minute.
- Work-based learning programs (e.g., youth apprenticeship, state certified coop, and leads into adult apprenticeship). At some of the in-services we had ABC of Wisconsin and actual apprenticeship workers or apprentices recently out of the program. It was great to hear about the apprenticeship program from men and women in their early to mid 20's. A very powerful, real life message.

As MANY of you have mentioned, the conversations and presentations that happen at our in-services would be impossible to replicate over e-mail. Thank you again for everything you do, and I will see you next fall at a WTEA/DPI Fall In-service location.

The Technician Beneath Our Wings - or is that Blades?

by Lee Colony, Gateway Technical College and John Foster, Ph.D., NOCTI

Today's trained technicians in alternative energy fields are finding even more career opportunities open to them as the United States and the world turn to green technology to power their homes and businesses. Wisconsin's Gateway Technical College is preparing students for those new and emerging "green collar" careers. Gateway has taken a leadership position in training for geoechange heating and cooling systems, the wind power industry, sustainable energy systems and fresh water resources. In each case, Gateway has found an area of the career with training needs—and found a way to address it. As an example, Gateway's torque and geoechange drilling training was found to be a skill in demand. After Gateway finalizes development of the program, it will be shared across the nation through national curriculum development and training of other instructors.

Gateway's Wind Energy courses are another example of green career development. These courses follow Wisconsin Technical College System-approved curriculum and core competencies, giving students a foundation for future training and career development. Students receive training in wind theory, energy of wind, turbine siting, technology, design and construction of large and small wind turbines. From there, they can focus their education and training, through Gateway Technical College, on the skills that best meet their career goals.

"The intention of this program is to give students some understanding and knowledge about the wind industry and then explain to them some of the specific career paths available to them," says Gateway Technical College Wind Energy instructor Bob Braun.

Braun says because of the emerging nature of the wind industry, career paths are less clear than more traditional careers—but points out that that may mean even more opportunities in the near future in the years that lay ahead.

"Those career paths are becoming more defined as the industry grows," says Braun. "We are identifying those career paths which best prepare our students for the job market."

Braun points out the wind industry requires a variety of skills. Large wind projects often need a larger team of technicians with specific areas of expertise. Technicians in torque, hydraulics, pneumatics, programmable logic control, engineering, construction and even marketing are

needed to create, build and maintain wind energy projects. Small wind systems typically require a small team of individuals with a broad base of skills. The entry-level technician will likely be required to climb turbine towers that are 250 feet high, so safety and climbing are of utmost importance.

Assessing Skill Competencies

NOCTI (formerly the National Occupational Competency Testing Institute) sensed the industry's need to be able to adequately assess the overall skills of an individual either starting a program as a wind technician or completing a training program as a wind technician. NOCTI assessed the needs of the education field and began a dialogue with a variety of industry resources including AWEA (American Wind Energy Association).

NOCTI began to participate with AWEA's education working group, and AWEA was able to help NOCTI locate subject matter experts from a variety of educational institutions and industry in the United States and Canada; the experts could work as a team to develop an assessment that would be reflective of the current knowledge of the field, and measure the competencies needed by an entry-level wind turbine technician.

Generally speaking, the written and performance tests cover the areas of safety (both written and performance), equipment operation, electrical systems, mechanical systems, appropriate hand tool usage, equipment maintenance, technical writing and computations, start/stop switching motors, materials and fasteners, and torque. Within these general topics are embedded specifics like laser shaft alignment and programmable logic control boards, as well as the rigors of safely climbing a wind turbine tower. Each test item is linked to a specific test area to ensure the test measures the competencies needed by an entry-level wind turbine technician. Like Gateway's program, NOCTI's assessment covers the basics of the industry.

"Gateway is currently a NOCTI assessment center and believes in the value of occupational skill credentialing," says Gateway Technical College President Bryan Albrecht. "Expanding the NOCTI assessments to emerging industries like wind and geoechange will enhance Gateway's ability to certify technicians. I am pleased that NOCTI is playing this important role for America's workforce training systems."

Braun points out that the skills and career opportunities needed in the industry are more than just technical—marketing specialists knowledgeable about the industry are needed to work with consumers as well as local governments to meet all necessary regulations. Some students may discover they already have skills from former careers, and NOCTI's assessment may be an excellent diagnostic vehicle.

“Displaced workers are already coming in with skills that can be used in the wind industry,” says Braun. “They go through our wind courses and see how their skills can be applied in that industry, or where they need additional training to fast track their careers.”

Braun says Gateway is developing certifications in wind energy-specific applications— such as torque technology— but points out that existing certifications within specific technical careers apply as well.

“Everyone who comes through wind courses will re-

ceive torque certification,” says Braun. “We talk about the importance of bolting and using proper turning force. Wind turbines are very complex machines, and technicians who work on turbine systems need to know the consequences of improper use—or torque— and the correct way to work on turbines. We teach students at certification standards so they can achieve certification.”

Meeting the Demand

Like much of the technical skill training that Gateway performs for its constituents, there is an underlying assumption that these programs will benefit the individual and the economy. That is one of the reasons Gateway makes use of awareness programs with surrounding secondary education programs and “bootcamp” training programs to upgrade dislocated workers quickly.

The field of alternative energy is growing quickly in its technical complexity, and Gateway wants to do its part to contribute.






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Madison Area Technical College Facility Expansion

by Ken Starkman, Madison Area Technical College

On September 21, 2011, community leaders, administrators, faculty and staff of Madison Area Technical College broke ground on several new facility improvements. At the Truax site four new buildings are underway:



Health Education Services Education Center

- 170,000 square feet
- Construction Cost - \$28.7 M
- Community Health and Dental Clinic
- Virtual hospital training center with simulation labs
- Geothermal heating / cooling system
- Heat recovery HVAC system
- 13,300 square foot green roof
- Completion August 2013



Ingenuity Center

- 62,000 square foot addition
- Construction Cost with Truax Gateway - \$31.1 M
- New home for Advanced Manufacturing
- Hands-on CNC training center
- LED lighting / day lighting and skylights
- Exterior sun shading devices for improved HVAC performance
- LEED Silver equivalent design and construction methods
- Completion August 2013



Protective Services Education Center

- 81,400 square feet
- Construction Cost - \$13.7 M
- Apparatus and training bays
- Simulation & scenario rooms
- CSI and cyber security labs
- Defense tactics training
- Geothermal heating / cooling system
- LEED Silver equivalent design and construction
- Completion December 2012



Campus Gateway

- 88,000 square feet
- Construction Cost w/ Ingenuity Center - \$31.1 M
- Welcome center
- Registration area
- Campus library
- Student gallery
- Electrical vehicle charging stations
- LEED Silver equivalent design and construction methods
- Completion August 2013

In addition to the new buildings at the Truax campus, the Reedsburg, Portage, Fort Atkinson, and Watertown campuses will be expanded. There will be opportunity for area Technology and Engineering teachers and WTEA members to use the new facilities. Watch future issues of the Interface and the WTEA web site for announcements.

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Ruby's Ride . . . A Teacher's Perspective

by Steve Meyer, Brillion High School

We can all use a “feel good” story from time to time. Here is a good one for you. A few months ago, a teacher’s dog named Ruby, fell off a bed and slipped a disk in her back. Her hind legs became paralyzed, leaving her unable to walk anymore. The owner was told there was a surgical procedure available to help Ruby, but at a cost of more than \$4000, with only a 50-70% success rate. The owner was very sad to think her sweetheart of a dog would never walk again. She continued to look for alternatives to the surgery, including acupuncture but was unsuccessful. Ruby had not walked in months. The dog, which is like a child to the owner, is only four years old. HOUSTON WE HAVE A PROBLEM!!! Sounds like a perfect design task for the Technology and Engineering Department!!!

Immediately, two students at Brillion High School started researching and prototyping doggy wheelchair designs that would help Ruby walk again. After researching numerous designs on the Internet, they decided on using PVC to create their prototypes. Eventually, Ruby was brought to the high school to try on her new wheels. It took some coaxing to get her to try them, but once she did, her little face showed how happy she was to be mobile again. Within ten minutes, the dog was scampering around the school hallways faster than anyone could keep up. The dog could turn around, walk backwards, and even go through the grass without a problem. There is still some tweaking to be done to Ruby’s wheels, but the owner can once again enjoy watching her beloved friend run around the house. Check out Ruby and her ride on YouTube at http://youtu.be/hqe_bEu6B3U.

This is probably one of the neatest student design activities I have ever been a part of. First, it is a “real life” problem. Secondly, it culminated in a “feel good” solution. Third, it is one of the richest STEM content experiences I have ever observed. Let me explain with a list.

During this activity, students had to . . .

- start with a real life problem.
- research previous designs.
- take data on the size of the dog.
- use traditional sketching and 3D modeling to model their ideas.
- work around engineering constraints such as material cost, weight, etc.
- understand the anatomy of the dog.
- understand ergonomics and comfort.
- understand Physics and the forces that were placed on the dog’s back and front legs.
- use Geometry and measurement to place the axle fulcrum in the correct location.
- process materials with a wide variety of machines to fabricate the device.
- perform “real life” testing of the device.

At times, I have trouble explaining exactly what Technology and Engineering is. However, I know what it is when I see it . . . and with Ruby’s Ride, I definitely saw it.

Happy Trails!



“If we have high school students missing out on the opportunity for good-paying careers and a career that can support a family, we’re missing out on a huge thing, and it’s important for our economy, not just the students.”

Tony Evers, Wisconsin Superintendent of Public Instruction

Manufacturing Applications of the Makerbot

by Nels Lawrence, Kaukauna High School

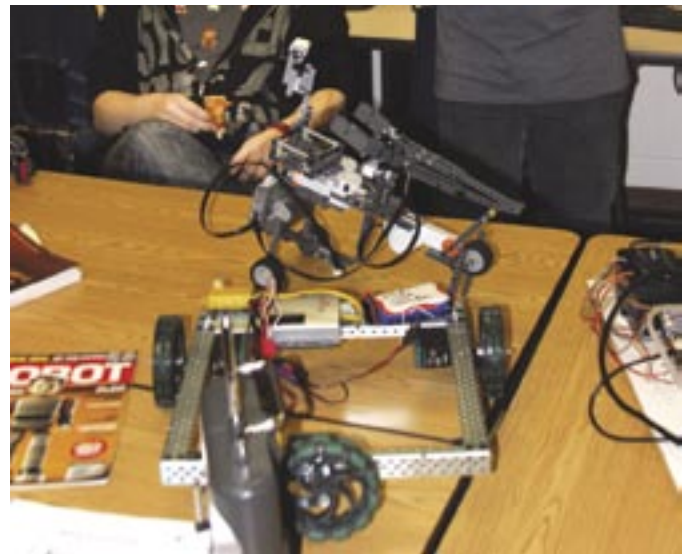
One of the problems in teaching the technology of manufacturing is that the traditional tech ed classes are down the hall in the big, sometimes noisy, heavy metal shops. Many students never find their way to those classes, yet are candidates for high technology, high skill careers or engineering college. The modular classroom labs were an attempt to make technology accessible to a larger group of students. Most instructors would agree that it was not all that successful. The advent of engineering curriculums with labs has been the current push, but again cost and commitment to a packaged program makes this difficult for many districts. A student built, home grown option is available, the Makerbot, a kit built prototype machine.

Our goal was to integrate manufacturing, design, electronics and computer applications in a lab setting. Once we tried it, we found some uses that we had not previously considered. Our newly launched Engineering Design class attracted not only good students but students that would by any measure be the core candidates for a gifted and talented class. They zipped through the college level curriculum in Solidworks and were in danger of wasting the remainder of the term. With the help of the machine tool students in the class, the computer hackers, and the electronics whiz kids, they began to produce prototype models of what they drew. Some of the students even borrowed the machine and the cart it is on to do a demo for other classes and in the commons. The students were able to see, understand, and apply the processes of manufacturing and engineering design.



Here at Kaukauna we read about the Makerbot in Make Magazine. It is a simple table top prototype machine that you can build yourself. The product was called the CNC

Cupcake at first because the process was somewhat like a cake decorator. The extrusion head on the Z axis melts ABS plastic and deposits it on the build platform to create the product. The Z starts at the build plate and layers the plastic as the head slowly moves up. The shape is controlled by the X-Y movement of the build platform. Anything that can be drawn in Solidworks, Blender, or any program that exports a DFX file can then be processed in Skenforge to create a tool path. We are currently running it in Ubuntu, but any computer platform works. At the time we purchased our collection of parts the designers had something that was a prototype of a product that was available for sale at about \$900. The high cost of commercially available 3D prototypers made this project an interesting alternative. We were one of the first in the country to build one and it was a challenging electronics and programming project. The multiple generations since have made the task easier and the finished products better.



The outcomes for this project have expanded student understanding of processes and engaged students who might otherwise have skipped this area. It was an amazing tool for the gifted students, who never tired of designing new products. Our next project is the use of a Torchmate plasma cutter, not as a metal cutting tool, but as a clean lab 3D tool to create foundry patterns and prototypes on a larger scale. The engineering students now understand the connections between our labs and what that big Mazak machine down the hall is really all about.

Renewing Ourselves

by Dan Nelson, WTEA President 1990 - 91

Editor's Note: The following article is reprinted from the Winter 1991 issue of Interface.

I'm sitting here at my desk, at home, reflecting upon changes in our clientele and profession. I am glad today is Saturday. You know, that day when we are free to catch up and be renewed.

As I reach for my latest copy of the Interface, I realize this is one of my sources for renewal. I encourage you to read each copy of the Interface, from cover to cover. Not all at once of course, but a little each day. Let it renew you, keep in touch with your profession, initiate new ideas for your classroom, and renew your enthusiasm. It all starts with attitude. The Interface has served me well. I know that the rest of the work will get done when I'm renewed.

Renewing myself is my responsibility. Only then can I be any good to anyone. How can I expect my students to read if I don't? How can I expect them to be rested and alert if I am not? How can I expect my students to be disciplined if I am not? You need to care. We need to renew our respect for ourselves, what we do, our profession, and the importance of the individual student and what he or she can mean to the future. They may be awful at times now, but they will make terrific adults.

Teaching starts with an attitude of caring, and needs daily renewal. I believe teaching is the most important profession on the face of the earth. Take time to remember that, and renew yourself daily. During that hour, you

are the best teacher your students have. Give them your best and then expect the same from them. Each one of our students has an invisible sign hanging around their neck. It reads, "Please, make me feel important." In the midst of our teaching, let's remember to look for the invisible signs and in so doing, we renew ourselves.

I challenge you all to a renewed interest in our profession.

Renewal suggestions:

- Buy yourself a new pen
- Take a different route to school
- Clean out a desk drawer
- Change the room around
- Wear something different
- Do something fun in class
- Be happy to see your students, they need you
- Have fun visiting with students
- Come to the conference to share and receive
- Attend a workshop or regional meeting
- Read about business, life, and use in your classroom
- Dream about what your program could be, make it happen
- Fire up
- Get a decent night's rest
- Get to school early enough to settle in
- Lighten up, expect to enjoy your day
- Take a walk during lunch
- Allocate energy, as well as time

***** Happy Renewal *****



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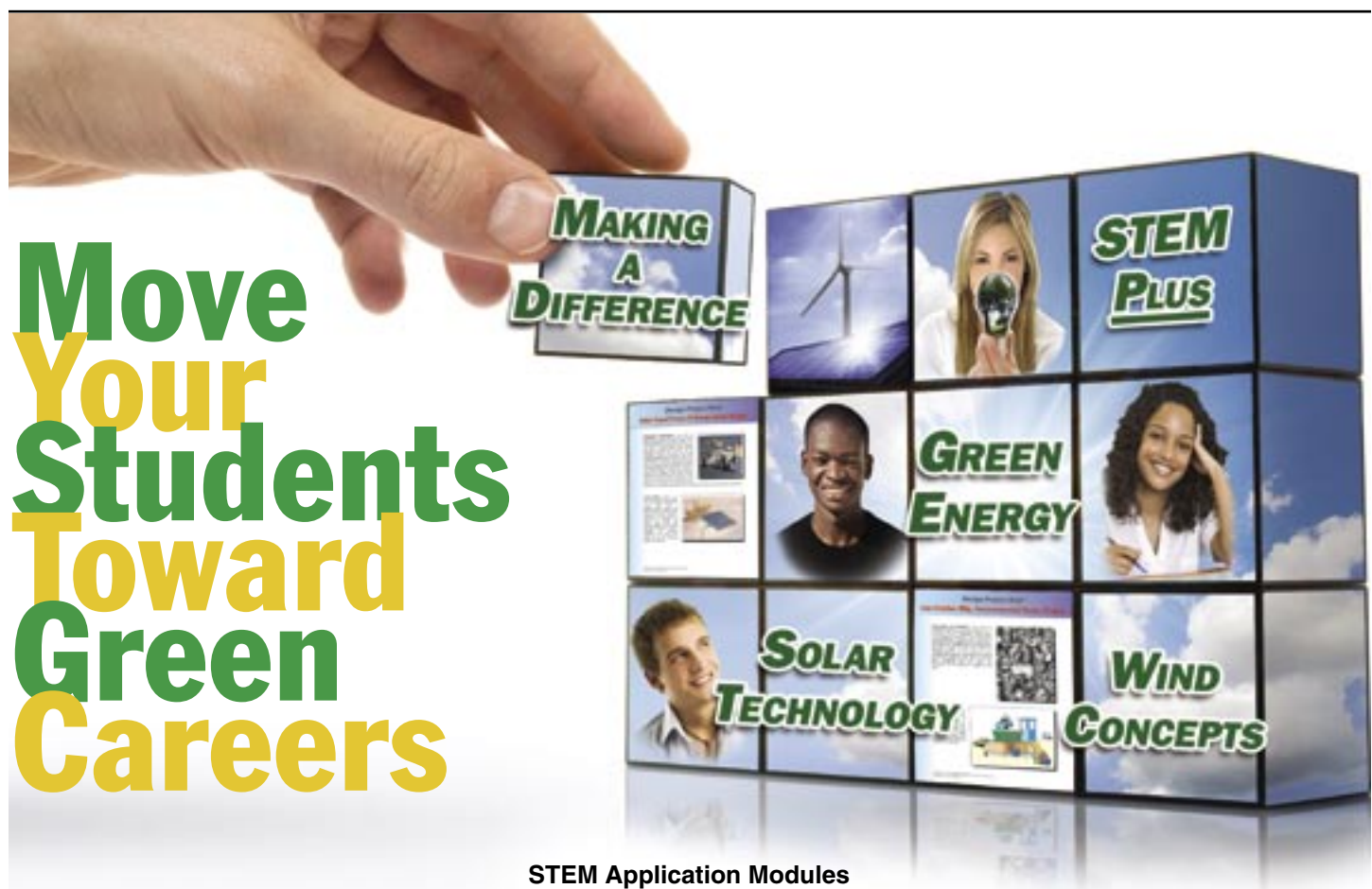
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