

# Interface

Journal of the WTEA

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Winter 2012 - 2013  
Volume 52 Number 2

WTEA

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## Making the Connection

by Greg Groom, WTEA President

We are now approaching the WTEA conference. The one challenge I gave each member attending last spring's conference, was to attend next year and bring one other person. Ideally, this should be another Technology Engineering Education professional, but there is nothing wrong with bringing along an administrator, school board member or a community member. I have been on the WTEA board going on 12 years. In that time, most guests have been impressed with the professionalism of our conference. Last spring, I had the opportunity to represent Wisconsin at the ITEEA Conference. I had several vendors ask how we host a successful mid-west conference. We are known across the nation for the outstanding job we do each spring.

The spring conference is a great place to share your talent and the great things that are happening in your classrooms. If you are being challenged with keeping enrollment in your sections or you need to revitalize your program, there is no better place than your conference. You can go online at the WTEA website to see what sectionals are planned for this year.

I need not go into the many changes that we are facing in education, but as a group nothing is insurmountable. We must work smarter - not harder. Through this organization, your District Directors can help with ideas. Locally, you can form groups to address the changes that are coming and how those changes affect your regional needs. We will have new state and national standards that we will be including in our curriculum, allowing us to address the needs in our local school districts.

These changes will occur, make no doubt. Be part of the solution, and make a commitment of your time and energy. Use the vehicle of your professional organization, the WTEA, to help you drive this change from within your program. Proposals driven by local groups will have more impact on your community and school districts.



The new technology engineering education standards will be released next summer. We will get a sneak preview at the spring conference. Now would be a great time to plan for those changes. We all know by now, the new Science Standards will also have engineering bench marks. The final science standards are not fully known yet, but now is the time to lay the ground work with your science department for future collaboration. I understand they will reach down into K-5. If you are not invited to these early meetings in both primary and secondary schools, ask to be invited and have a voice at these meetings.

The other hot button at this time is writing in the CTE classes to improve test scores. We all have heard from our students "Why does your class go so fast and other classes drag on?" It's because students have an interest in what they do in our TEE classes. For some of our students, our classes are the only reason they are in school. Why not work with the English department to collaborate on writing assignments? These assignments can come in the form of career plans, project proposals or research topics related to TEE content. We have the motivated learner and, in some cases, these are the same students that are not motivated in their English classes. We can influence our student lives.

The common thread in this message is making connections with others. If you are in a forward looking school district, by stepping forward you will be part of the solution, not part of the problem. We all work for the betterment of our students. The above information and the steps you take will help us to be successful with our students.

In closing, I look forward to meeting all of you at the spring conference where we will see new models and best practices being presented. We can all move forward by gaining new knowledge and skills.

**Plan now to attend The 44th WTEA Annual Conference**

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### Fall 2012 Board of Directors Meeting Highlights

*by Matt Schultz, WTEA Secretary/Treasurer*

The following summary highlights the Fall 2012 WTEA Board of Directors meeting held October 5th and 6th at Madison Area Technical College Innovation Center, Baraboo, Wisconsin.

- The Board voted to support hosting ITEEA in Milwaukee, Wisconsin, in spring 2015. The ITEEA Board will notify us when they complete final negotiations with the convention center and Milwaukee hotels.
- The Board is looking for members to volunteer to serve on planning committees for the ITEEA.
- 2014 WTEA Conference theme: Skilled, Ready, Working.
- We will hold elections for WTEA President-Elect and Secretary-Treasurer in Jan/Feb 2013.
- WTEA is currently creating a sub-bank of past/retired tech-ed teachers to be available to help sub your classes while you are out. If you have any suggestions please send names to past president Pete McConnell.
- WTEA is now on Facebook, Linked-In and Twitter, check us out!
- Stay tuned for your local district director to be planning a meeting in your district. Attend and see what is new in your district!
- DPI has generated new statistics focusing on STEM in Wisconsin and will be unveiling their findings at the WTEA Conference. For more information check out [www.stemforward.org](http://www.stemforward.org).
- DPI is currently modifying Wisconsin's State Tech Ed Standards, to be released in late spring or early summer.
- Our new electronic newsletter eInterface was launched this fall. Articles and photos can be sent to Joe Ci-  
montea.
- TEQuity; Technology Education Gender Equity initiative is unveiled. Attend your district meetings to see how you can improve the gender division in your classroom.

*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)*



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

### New WTEA Board Member



Hello, my name is Doug Dimmer and I am an Engineering and Technology Instructor at Homestead High School in Mequon, Wisconsin. I have been an employee at Homestead since 2000. Prior to teaching, I worked in the private sector for 11 years as an employee of three different industrial and service companies.

Currently, I teach PLTW IED, POE, and CEA classes, Photo 1 and 2, TV and Video Production/Seminar, and Highlander Printing. Highlander Printing is a full service printing shop which provides printed goods and services to all schools and private industries. I am the new teach-

er/advisor for the Homestead FTC Robotics Club and the school's WorkForce 2020 mentor. Along with being PLTW certified, I have worked with UW-Stevens Point's KEEP Environmental Education program, Marquette University's Upward Bound program, and participated in CERET/SEI PV Academy. I am an avid outdoorsman and have coached high school football for 12 years.

I received my Bachelor's Degree and #220 Teacher Certification from the University of Wisconsin-Platteville and a Master's Degree in Curriculum and Instruction from National Louis University. I am a certified PLTW instructor and have also pursued a certificate in Environmental Studies at UW- Stevens Point.

I am looking forward to promoting the growth of our profession in the state and working with the WTEA staff and educators in doing so. If you have any question, feel free to contact me at [ddimmer@mtsd.k12.wi.us](mailto:ddimmer@mtsd.k12.wi.us).



## Jump In

*by Mike Cattelino, WTEA Vice-President*

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

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

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

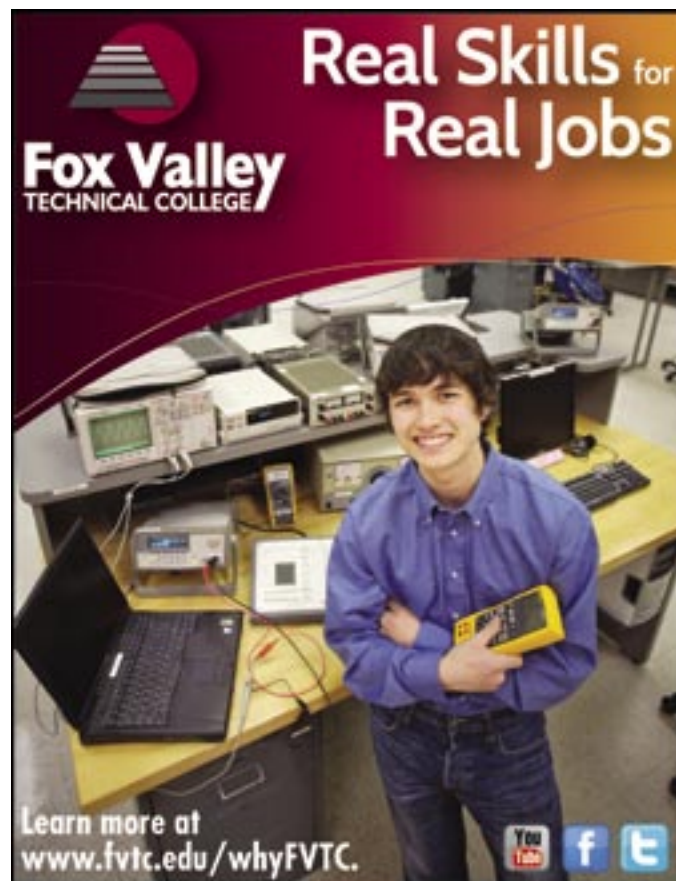
Fox Valley Technical College's Machine Tool Technician program is taking this to a different level. The instructional staff has constructed an initiative called a Career Jump Start in Machining. It is not a restrictive or constrictive program in that if a student does not follow all aspects they will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

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

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

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

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



## There's No Place like Home

I travel around the country and train professional educators to teach and understand applied learning techniques. It is an opportunity to expose teachers to methodologies that attract their students to learn and apply what they learn. This can be fun and fulfilling. I have learned a very interesting factor, however. There is no place like home. That is, coming Home to Wisconsin. There are a number of areas that I observe that remind me of this when I travel. I pay attention to teacher preparation, facility management, professional support staff, and teacher pride. There are certainly many other positive attributes to be discussed, but I find these areas important during professional development training.

Teachers are well prepared in Wisconsin.

I do very little remediation training when I work here. The level of exposure and understanding here is high. Teachers interact in discussions that demonstrate an enthusiasm and interest that is knowledgeable and engaging. I notice young educators being mentored by seasoned vets and I see the seasoned vets continue to develop and train in their respective content areas. Not all teachers like to be trained during their "summer vacation" and they resent the trainer who attempts to do that. I do not experience much of that attitude when I come home to Wisconsin.

The facilities and resources available are excellent in the Badger State. It can be difficult to "wake up buildings (and people) in the summer time. Air conditioning, utilities, summer work schedules, and internet service are only a few of the obstacles that summer trainers can deal with. I know these areas of concern are not atypical to any one area. However, when I call ahead and try to be prepared with a facility that is ready to go and function, I have not

yet been disappointed in Wisconsin. There seems to be an element of pride and high expectations for how we expect to treat outside guests. It is refreshing!



Professional and responsible staffing is an excellent resource in Wisconsin. I will sometimes hear people say "just a secretary" or "just a janitor" or "just a computer geek." There should be no secret that these three professionals make the world go around and there are many others that fit that same description. You know who I mean. The person you walk by and ask for directions and they point you in the right direction. In Wisconsin you get a personal escort along with a nice conversation along the route. Okay, so they talk about the Packers!

Although there are many other attributes to celebrate about being home in Wisconsin, I would like to conclude with this sparkling gem. Wisconsin teachers are proud of their students. I have noticed that teachers seeking professional development constantly elevate their expectations for their students. The tools of the trade are changing. The rules of evaluation are changing. Technology and educational technology are demanding that educators try to stay in front of the curve. Wisconsin educators appear to adapt to change faster (and more happily) than in many other locations that I visit. It would be easy to give up the good fight. What I hear is "I'll go down with the ship fighting (fighting to stay learned and sharp!)" Wisconsin students are the direct benefactors of this attitude.

I am proud to be a technology education teacher from the great state of Wisconsin. I am proud to know many great technology teachers in this state.

*Pete McConnell, WTEA Past-President*

**"When you go to the hardware store to buy a drill, you do not actually want a drill. Instead you want a hole. They don't sell holes at the hardware store, but they do sell drills, which are the technology to create holes. We must not lose sight that technology, for the most part, is a tool and it should be used in applications which address educational concerns or problems."**

*Task Force on Technologies in Time for Results, The Governors' 1991 Report on Education, Washington, D.C., National Governors' Association, 1986.*



## A Personal Milestone

by Doug MacKenzie, Interface Editor

This issue of the *Interface* marks a milestone for me. It is the 50th issue published since I assumed the responsibilities as editor.

In 1996 when WTEA President Greg Quam asked me to help out as editor, he assured me that it was only a one year commitment. Almost seventeen years later I look back and feel a sense of accomplishment and pride. I have strived to make our magazine be a good professional journal. Technology has certainly played an important role in that. Information is sent to me as electronic files as opposed to the hard copy I used to receive. I am doing all the page layout on my home computer rather than having the printing company artist typing and creating the pages for us. The magazine is now printed in full color as opposed to

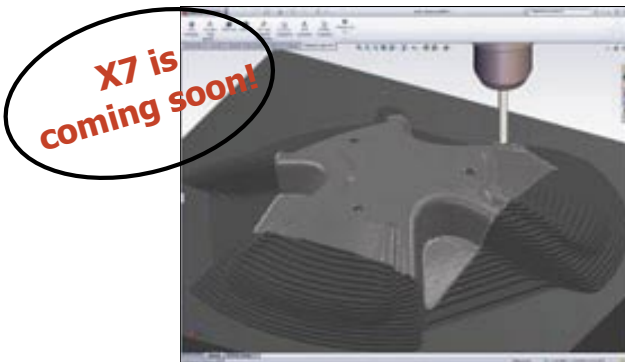


the black and white pages a few years ago. Also, the entire magazine is printed using a digital printing machine instead of an offset press. The machine even assembles, staples, folds and trims the completed magazine.

Perhaps the most important reason the magazine is a successful journal is due to the membership of the WTEA. It is the members who send me articles, photos, and other bits of important information. Without that participation, I would have no material to work with and therefore no journal to publish.

So, I'd like to say "Thank You" to all of you who have provided me with items for publication. You can be proud of your contributions to making the *Interface* the valuable professional publication that it is.

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# DISTRICT NEWS

## District B

*Brian Schiltz*



As you are reading this article, many of you may be hitting full stride in your classes, getting into the capstone projects of your curriculum. Yet, many of you may be beginning new semester classes looking to orient students to what they can expect in your classroom. Continue making those connec-

tions and lighting the small fires of passion within your students.

I would like to take this opportunity to encourage you to register for the 44th Annual Conference March 14-15, 2013 at the Chula Vista Resort in Wisconsin Dells. This conference is a great way for you to connect with other professionals in our careers and network with business leaders that support our vocation. There will be innovative sessions from teachers and industry leaders that are pioneering the way technology is evolving. I look forward to seeing you there.

I would also like to pass two links along worthy of your attention from the Wisconsin DPI. The first is from the Wisconsin DPI CTE Fall Workshop found on the DPI website. The second link is the DPI Technology Education webpage. They are packed full of great resources and excellent information.

[http://cte.dpi.wi.gov/cte\\_workshopresources](http://cte.dpi.wi.gov/cte_workshopresources)  
[http://te.dpi.wi.gov/te\\_home](http://te.dpi.wi.gov/te_home)

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## District G (South - Madison Area)

*Ryan Ubersox*



Thanks to all who met at Madison West on October 9th. We had good discussions and presentations. Thanks also to the Madison West staff for hosting. The next high school meeting will be in the fall on Tuesday, October 8th, 2013 at Oregon High School.

This spring we will gather for a meeting at Madison College on February 27. Ken Starkman promises great food and a tour of the new facility (as safety permits).

## District G (North - Wis. Rapids Area)

*Phil Bickelhaupt*



As I sit down to write this district update, I can't stop thinking about the tragedy that took place in Sandy Hook, CT. It is a reminder that we as teachers and leaders, must help facilitate keeping our schools safe. As I spoke with my wife about it this morning, she made a pretty good point. To sum

it up, this type of tragedy can happen anywhere and at anytime. I used to think it wouldn't happen here. But we have seen two recent shootings like this in Wisconsin alone in 2012. Believe me, I am starting to believe it can happen anywhere. With that said, please, please move to become proactive in keeping our schools secure and safe for our kids. I know you do a great job with our students everyday, so keep up the good work!

As for updates in the northern half of District G, I have a few. The first is that I have moved out of the classroom and into an administrative role as the Director of Technology for Wisconsin Rapids Public Schools. In my new role I will be overseeing much of the district's technology needs and initiatives. I am excited to help give our students learning opportunities while using technology to enhance those experiences. I hope that my new role will also allow me greater flexibility in helping to facilitate opportunities for our Technology Education teachers across my district and throughout the state.

Second update, since I have left my teaching position, look for an opening in the Wisconsin Rapids area this spring.

Third, for those of you in the Mid-State Technical College area, I am looking to hold a district meeting at Mid-State sometime in late January or early February to tour Mid-State's trade and industry wing, including their recent upgrades with renewable and green technologies. If you are interested, please let me know, and I will pursue it.

Lastly, for those of you that teach in the Mid-State Technical College District, please feel free to communicate with me about any concerns you have with 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.net](mailto:phillip.bickelhaupt@wrps.net).

## DISTRICT NEWS

### District H

Tom Martin



As I met with southern Wisconsin teachers in early September and Brent Kindred hosted one of his statewide DPI inservices in West Salem for our northern colleagues in October, I felt that the district had an ample opportunity to hear about the issues that lay before us.

My strategy will be to again host meetings in the south and north parts of the district prior to the State Conference. As it may be one of the state's largest districts, finding central locations will be difficult, but I will do my best to provide information to all Technology and Engineering instructors that are interested in attending.

Part of the evening will center around TEQuity training, conversation on student learning outcomes, the school report card, teacher effectiveness and standards

work. There is a great deal on the horizon for a Technology and Engineering instructor, but in working with the WTEA, much of this work can be assigned to where individual instructors address a fraction of what needs to be covered. In essence, many hands in your association can make light work.

SkillsUSA competition season has started in our region with a very successful district event at Prairie du Chien in which 65 youth from five schools attended. SkillsUSA is such a tremendous vehicle for student growth and I would encourage anyone that doesn't have a chapter to start in the middle school to grow your future nucleus of student leaders in your building.

If you are not receiving  
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)

## THE STEM ACADEMY®

*A National Non-Profit Status K-12 Education Program*

*The STEM Academy is pleased to sponsor a Solidworks instructor training session presented by  
Scott Gutschow of Bayport High School at the Chula Vista Resort in Wisconsin Dells*

**MARCH 12, 2013 IN WISCONSIN DELLS | TIME: 7:00 PM - 9:00 PM**

#### BENEFITS:

Attendees will complete a hands-on, ready to go activities to teach students the most relevant features of Solidworks. Part Design, assemblies, and FEA analysis will be covered through the design of common part.

#### ABSTRACT:

Come learn how to unleash the power of Solidworks for your students and increase community support for your program. Learn a step-by-step approach to create geometrically accurate (clean) parts, learn how to effectively assemble parts, and create drawings of your parts.



**SCOTT GUTSCHOW**

#### SPEAKER BIOGRAPHY:

*Scott Gutschow has taught Drafting/CAD/Engineering for the past 17 years and currently teaches Solidworks courses at Bayport High School. He is CSWA certified and has successfully prepared countless students to become certified as high school seniors.*

*Each attendee will receive an instructor copy of Solidworks and a 12 month 3D Solid Modeling course subscription from STEM 101.*



# CANDIDATE

## Candidate for President-Elect

### Jesse Domer



#### Jesse Domer

1517 Green Crest Drive  
Watertown, WI 53098  
(m) 920-219-2922  
DomerJ@watertown.k12.wi.us

#### Watertown High School

825 Endeavour Drive  
Watertown, WI 53098  
(w) 920-262-7500 x6339  
www.GoslingElectric.com

#### Education & Certification

B.S. Technology Education, University of Wisconsin-Stout, May 2003  
Student Teacher Supervision Certification  
PI-34 PDP Review Team Certification  
PLTW Certifications, IED-RIT, POE-UIC, CIM-RIT, EDD-St.Cloud  
MSSC Certifications, Safety & Quality

#### Professional Experience

Watertown High School, August 2006 to Present

Courses include; Manufacturing, Drafting, and IED, POE, CIM, EDD

SkillsUSA Chapter, Electrathon-Supermileage Team, FIRST Lego League, BattleBots

Colby High School – August 2003 to June 2006

Courses included; Metals, Drafting, Graphic Communications, Video Productions, & 7th Grade Tech. Ed.

SkillsUSA Chapter, Supermileage Team

#### Leadership, Awards and Recognition

SkillsUSA Advisor of the Year, '06

SkillsUSA State Officer Advisor, '04, '06, '12-'13

SkillsUSA National Competitors, '05-'07, '09, '11-'12

SkillsUSA Wisconsin Executive Council Member

WI SkillsUSA Alumni Founding Member

WEEVA Executive Director, '06-present

Precision Metalforming Association (PMA-WI) Education Chair, '10-present

WTEA District 5 Director, '05-'06

WTEA Student Org. Committee Chairperson, '06

WTEA Secretary/Treasurer, '07-'09

WTEA Award of Excellence, '10

WTEA Foundation Secretary, '11-present

Herb Kohl Teacher Fellowship Candidate, '13

#### Position Statement

What are you proud to be a part of? Where does your passion glow? The WTEA has been a home to my career for the past 15 years and gave me a vision of my future before I was a teacher. From networking to training, the WTEA has always been a staple in my career.

Though we may be in exciting times in Technology & Engineering Education, the WTEA is needed more today than many can remember. I plan to continue the forward movement of our organization in supporting and strengthening our profession among the many curricular areas we cover across Wisconsin. One area I hope to help bring back is High Tech Weekends and Summer Workshops for our teachers. Watch for this in manufacturing at this year's conference.

If elected WTEA President, I plan to support and encourage your directors in the WTEA to continue planning for the future. I look forward to helping our teachers implement the upcoming Technology & Engineering standards for Wisconsin. I am excited to host the ITEEA Conference in Wisconsin for 2015. I wish to continue building local and state partnerships with Education and Industry. I thank you for your support and encourage you to say hello this year.

## Candidate for Secretary/Treasurer

### Matthew J. Schultz

#### Matthew J. Schultz

6707 15th Ave. Kenosha, WI 53143

Home Phone: 262-945-2814 Work Phone: 262-359-8155

E-Mail: mjschult@kUSD.edu

#### Education & Certification

Associate Degree: 2005 UW Waukesha

Bachelors Degree: 2009 UW Stout Technology Education 220 license

Masters Degree: 2012 National Louis University



#### Professional Experience

My name is Matthew J. Schultz and I am a 4th year High School Technology/Engineering Instructor at Lakeview Technology Academy in Pleasant Prairie, Wisconsin. I have been a member of the WTEA since my sophomore year in College in 2005, and just finished a one year interim position as Secretary/Treasurer of the WTEA.

I started at Lakeview Technology Academy in the Winter of 2009, and since then have made many contributions. My first full year at Lakeview I started up a Fuel Efficient Vehicle Club, the first of its kind in the Kenosha School District. I did so with no funding from the district and the help of a few willing students. Since then the club has grown to ten members and we are building our second vehicle after taking fourth last year at Road America in the Unlimited Class. My second year at Lakeview I designed and built our new Engineering Lab to help support our PLTW track. Also my second year at Lakeview I started an afterschool Underwater Robotics club. Our first year we placed 7th and every year after we have increased our standings taking 3rd place last year. I have also been a co-advisor for our SkillsUSA Chapter, seeing 8 students take the podium at the State Conference and three students go on to Nationals. I currently am the Model Rocketry Chair at the State competition for SkillsUSA as well.

I am an avid advocate for education and explanatory learning and hands on education. I recently finished my Masters in Education in Curriculum and Instruction. I continue to take courses in my curriculum area as I received training last summer in VEX Robotics.

#### Leadership, Awards and Recognition

I have been active in curriculum development at Lakeview. I designed an Introduction to Engineering course to help aid our PLTW track, specifically the Principles of Engineering class. Since the integration of that course at our school, it is now offered at four other high schools in my district. I am lead teacher for that course and train the teachers from the other schools so that they are able to offer it at their schools too.

#### Position Statement

Ever since I first attended the WTEA conference as a sophomore in college with UW Stout's TECA Chapter I have wanted to be involved in the WTEA. It has been a personal goal of mine to work side by side with some of the greatest educators in the state. I want to help make Technology Education the best subject in school. I want to help tomorrow's workforce succeed.

In my first half term as Secretary/Treasurer I have helped to streamline our WTEA Awards nomination and decision process. In my next term I would like to continue the efforts to help recognize our state's deserving educators. As well I would like to do my part to help support when the WTEA hosts the ITEEA Conference in 2012. My overall vision as a WTEA board member would be to help educators and future educators be the best teachers they can be by providing them with a strong association support. I strongly believe in the brother and sisterhood that I feel embodies the WTEA. This association and its members are a very important part of my success as an educator.

Please consider me for the Secretary/Treasurer position for the WTEA.

## SkillsUSA Fall Leadership Conferences

*by Brent Kindred, DPI and Lauri Domer, SkillsUSA Assistant Director*

Once again this year, we held our High School Fall Leadership Conference from October 3-5 at the Lion's Camp in Rosholt. In total we had twelve schools and eighty-six participants learn about leadership and what it takes to run a high quality SkillsUSA chapter at their schools. We were also fortunate to have SkillsUSA alumni assisting and mentoring students on their journey in learning about the SkillsUSA program of work and improving student's leadership skills.



**High School Fall Conference Ropes Course, building new relationships with new schools.**

Overall, the conference was a great success stretching the students to accomplish more than they ever thought could be done in two and a half days. The students were placed in a group with many students they didn't know at and by the end of the conference had made many new lifelong friends and someday colleagues. The students



**High School Fall Conference community service project.**

participated in fundraisers, community service projects, and team building activities. Next year we will be having this event at Rosholt once again, and we encourage new and veteran chapters alike to come join the great learning opportunity next year.



**Middle School Fall Conference team building activity.**

The Middle School Fall Conference was held at the Madison Area College in Madison this year. Four schools and twenty-six students were involved in a fun filled day learning more about SkillsUSA. Though not as rigorous as the high school conference, students learned about the workings of the program. Students focused on what the middle school program offers, how to run a chapter meeting, and went away with a prepared agenda to use at their next chapter meeting that included ice breakers and information about upcoming events. The middle school students also went on a tour of the campus.



**Middle School Fall Conference team building activity.**



## UW-Stout FABLAB Design Challenge

*by Cory Halvorson and Laurence Charlier, UW-Stout Technology Education Program*

This January, UW-Stout will welcome a new addition to its campus facilities. It will mark the opening of the university's digital fabrication laboratory, or FABLAB. The FABLAB will offer students access to a variety of cutting edge technologies, with equipment such as mini-mills, 3-D prototyping, laser engravers, and a ShopBot. UW-Stout FABLAB administrators appealed to Technology Education majors to assist in the early stages of planning with a design challenge. The design briefs have concluded and several aspects of the student designs are being incorporated into the lab's final layout. Student-designed FABLAB furniture will be produced during the official opening this January to showcase some of the lab's unique features and capabilities.



**Cory Halvorson and Laurence Charlier present their refined designs to the FABLAB administrators. Their adopted designs will be manufactured during the lab's opening.**



**Eric Sabel and Laurence Charlier presenting their initial design briefs to FABLAB administrators.**

Beyond the physical products which the FABLAB will enable students to produce, the UW-Stout FABLAB promises to shape future technology educators and serve as a catalyst for innovative STEM curriculum. The potential of this facility and its state-of-the-art technology is exciting and there is a great deal of energy circulating here with anticipation of the lab's opening. Our next challenge is to explore and exploit that potential and to design curriculum which will leverage that potential and enhance our knowledge as future technology education teachers.

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# CONGRATULATIONS

## 2012 Apprenticeship Association Hall of Fame Inductee

### Karen P. Morgan

On August 8, 2012, in Louisville, Kentucky, Ms. Karen Morgan was inducted as a member of the United States Apprenticeship Association Donald Grabowski Hall of Fame. She was nominated by the National Association of State and Territorial Apprenticeship Directors and joins a prestigious group of members who have provided outstanding service to apprenticeship throughout the nation.

Ms. Morgan is only the 4th Apprenticeship Director in the 101 year history of the Wisconsin Bureau of Apprenticeship Standards (BAS) in the Department of Workforce Development. She has guided the State's apprenticeship system in adapting and changing to meet the demands of the 21st Century workplace. She led a review and re-invention of the State's apprenticeship system shortly after her appointment as Director, almost 20 years ago, that led to the incorporation of innovative technology in registration processes, including the review of programs and apprentices, better communication with companies and apprenticeship committees and the development of a modern database.

Ms. Morgan's efforts challenged the State's Apprenticeship Council to re-think its role and purpose in maintaining quality and integrity to the State's system. This led to creation of "The Wisconsin Model" which developed a State structure for major trades under Statewide Advisory Committees of business, labor, education and community group members, collectively responsible for enhancing the quality of training. These Committees resulted in partnerships that led the trade sectors in the promotion of registered apprenticeship, diversity and outreach in apprentice recruitment as well as updating trade curricula and classroom training.

Karen assisted the U.S. Department of Labor on several national initiatives such as the Apprenticeship Impact Project which gathered comments and suggestions from stakeholders on shaping the country's apprenticeship program. She served as President of NASTAD and as a member of the U.S. Department of Labor Secretary's Advisory Committee on Apprenticeship for 8 years. Karen's accomplishments were also recognized with the Wisconsin Virginia Hart award in 2003, which is given to women in state government for outstanding accomplishments. Karen continues as the Director of BAS and an active member of NASTAD.

The WTEA congratulates Karen Morgan on being inducted into the United States Apprenticeship Association Donald Grabowski Hall of Fame, and thanks her for her years of service.



### WEEVA 2013 Events


Wisconsin Energy Efficient Vehicle Association (WEEVA) is proud to announce this spring's events calendar. If you are interested in learning more about Wisconsin Supermileage or Wisconsin Electrathon – visit our website at [www.ChallengeWisconsin.org](http://www.ChallengeWisconsin.org)

**WEEVA Booth @ WTEA, March 14th**

**WEEVA @ UW-Stout, April 19th & 20th**

**WEEVA @ FVTC/WIR, April 26th & 27th**

**WEEVA @ Road America, May 13th & 14th**



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# ANNOUNCEMENTS

## 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 2013 high school graduate
- Wisconsin resident
- Enroll in technology education at UW-Platteville, UW-Stout, or Viterbo University and start the fall 2013 semester
- Submit completed application form and 250 word essay prior to April 1, 2013

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 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 lesson plan based upon your conference activities. The written activity is due by April 25, 2013. 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, 2013. For more information contact Joe Ciontea, WTEA Executive Director.



UNIVERSITY of WISCONSIN  
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### - Dates to Remember -

January 18, 2013	<b>SkillsUSA Regional Competition</b>	No. Cent. Tech. Col.
Jan. 31 - Feb. 1, 2013	<b>SkillsUSA Regional Competition</b>	S.W. Tech. Col.
February 15, 2013	<b>SkillsUSA Regional Competition</b>	Gateway Tech. Col.
February 15, 2013	<b>SkillsUSA Membership Dues Deadline</b>	
Feb. 28 - Mar 1, 2013	<b>SkillsUSA Regional Competition</b>	UW Stout
March 7 - 9, 2013	<b>ITEEA Conference</b>	Columbus, OH
March 14 - 15, 2013	<b>44th WTEA Conference</b>	Wisconsin Dells
April 10 - 11, 2013	<b>40th SkillsUSA State Conference</b>	Wisconsin Dells
April 11 - 12, 2013	<b>WACTE Prof. Development Conference</b>	Middleton, WI
June 24 - 28, 2013	<b>49th SkillsUSA Natl. Conference</b>	Kansas City, MO



# WTEA 44th Annual Spring Conference and Trade Show

## *Connecting The Future*

The WTEA invites you to participate at the 44th Annual Spring Conference to be held at the 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.

On Wednesday evening from 7-9 PM, The STEM Academy will be sponsoring a Solidworks instructor training session as part of a pre-conference workshop presented by Scott Gutschow of Bayport High School who has 17 years teaching experience and is CSWA certified.

Attendees will complete hands-on, ready to go activities designed to teach students the most relevant features of SolidWorks. Additionally, each attendee will receive an instructor copy of SolidWorks and a 12 month 3D Solid Modeling course subscription from STEM 101. Enrollment will be limited to 24 teachers so make plans early to attend this workshop.

The conference will be kicked off with a general welcome to all members given by the President of Western Technical College - Lee Rasch, EdD.

Our first general session will be given by - Jim Johnson, President, Pierce Manufacturing who will discuss Succeeding in the "New Normal" Economy. Today's economic times have created a "new normal" for professionals in all industries, both public and private. Resources have diminished while expectations of performance have increased. Those who survive and thrive in the future will be the ones who step up as leaders and chart a new course for their profession, their teams and their own careers.

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 pro-

gram 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 College (MATC). Our luncheon keynote will be Jim Morgan, President, WMC Foundation who will discuss "It Can Be Done: Solving the Workforce Paradox." The workforce paradox in Wisconsin has now been well documented: unemployment over 7% and yet employers unable to find skilled workers. Paradoxically, career and technical education, the course area that is key to solving the workforce problem, is being threatened in some schools. Yet, all over Wisconsin, great things are being accomplished. How is it being done? How are employers being engaged? What strategies are being used?

This year's conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin sharing their expertise on topics such as: How to build a CNC Plasma cutter on a budget, Middle Level Technology and Engineering Curriculum Implementation, The Foundry: Molten Metal Magic, TEQuity Project, New TE&E State Standards, SkillsUSA at the Middle School Level, Harvesting the Wind, Advocating For and Promoting Your Program, New Teacher Boot Camp, and much more!

Put March 14-15, 2013 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 \$110 for members and \$140 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 - [www.chulavistaresort.com](http://www.chulavistaresort.com)**

**Room Reservations: 1-800-388-4782 Ask for WTEA Conference Rate**

**WTEA online conference registration at: [www.tinyurl.com/wteaestore](http://www.tinyurl.com/wteaestore)**



## 44th Annual Technology Education Conference and Trade Show

### Tentative Conference Overview

#### Wednesday, March 13th, 2013

7:30 p.m. Pre-registration  
7:00 - 9:00 p.m. Solidworks Instructor Training Session

#### Thursday, March 14th (evening)

7:00 p.m. – 9:00 p.m. Awards Banquet  
9:00 p.m. (following banquet) Presidents Reception

#### Thursday, March 14th, 2013

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  
8:55 a.m. – 10:00 a.m. Welcome & 1st General Session  
10:15 a.m. – 3:45 p.m. Concurrent Sessions  
3:45 p.m. – 5:00 p.m. WTEA Membership Meeting

#### Friday, March 15th, 2013

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



#### Thursday Keynote Speaker:

Jim Johnson, President of Pierce  
Manufacturing Inc.  
& Executive Vice President of  
Oshkosh Corporation



#### Friday Keynote Speaker:

James Morgan, President,  
WI Manufacturers & Commerce  
Foundation  
Vice President, WMC

Session Topics Include: TEQuity Project, The Workforce Paradox, Business and Education Partnerships, TE&E Standards, Robotics, Steamfitters and Apprenticeships, Graphic Arts, Manufacturing at The High School Level, Innovation and Design, Automotive Technologies, Alternate Energy Sources, Welding and Machining, 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 & 2013 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 :**

☐ \$110 members    ☐ \$140 non-members    \$ \_\_\_\_\_

**WTEA Awards Banquet** (Thursday, March 14, 2013)    ☐ \$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**

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

**Register on-line with your credit card at [www.tinyurl.com/WTEAestore](http://www.tinyurl.com/WTEAestore)**

# Project Showcase

## WTEA

***Galloping Greg Groom says . . .***



***I Want Your Projects!!!***

Join us for the 4th 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](mailto: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!**



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## Technology Education Summer Training Institutes (STI)

*by Ken Bessac, New Richmond High School*

The year 2012, manufacturing has and is changing at an incredible rate. Of course, I don't have to tell anyone that. I have had the opportunity over the past year to tour over two dozen manufacturers, and spent a week doing an externship at Bosch Packaging, a worldwide packaging machine builder. I had the opportunity to work with a number of departments from engineering, assembly, machining, finishing and management. It was very refreshing to spend some time working with people who are in the trenches and have the opportunity to ask questions and affirm what Technology Education teachers do. I was also thinking that the technical career opportunities that exist in manufacturing for students today are incredible. The story that I heard over and over from every manufacturer is they are concerned and worried that they will not be able to fill the technical positions that are open today or will be available soon. During the week that I spent at Bosh, eleven employees retired on the same day. But what was more incredible was the combined 426 years of work history at Bosh of these eleven retirees. While in some ways management was glad some history and tradition was leaving, the technical skills and knowledge these employees possessed would be lost forever. I asked the question "Why didn't they hire new employees to train under the soon to be retiring employees for a period of time so some of the technical knowledge would be passed down to the new employees?" I got several responses, but the one that seemed to be #1 was "Show me someone with technical skills, the ability to work in teams, good communication skills, problem solving skills and the desire to work, and we will hire them today." I definitely walked away pumped and ready to head to the class room and share what I learned with students.

My summer didn't end with just touring businesses though. On the first night of the WTEA spring conference and after several beverages of choice, I threw out this crazy idea to several colleagues to share what we know (combined 40 years of experience roughly) and teach a very intense one week summer training institute (STI) with graduate credit. Each of us had knowledge and techniques to share and after a few phone calls and a few hours of planning we had a rough layout for the STI "Building an Electathon and a super mileage car in a week." This past August, twelve teachers converged on Brillion High School for a week of hands-on learning.



The days were long, and we were swarmed by police officers' guns drawn at 1 am (ok no guns, but don't take a bathroom break in the middle of the night at Brillion High School). The officers decided that 12 teachers with blood shot eyes and bags under their eyes, holding power tools at the ready posed no threat and let us continue. It was an incredible week of teachers sharing knowledge, problem solving, and sharing ideas. As crazy as it seemed, we built one electrathon and one super mileage car and were driving them around the parking lot that Friday afternoon. That led to another crazy thought - could we do this again and could we do an STI in other areas, hmmm?

So here I am really pumped up from an incredible summer, wondering what I could do, that will pump students up as much as I am. I started looking at what I do in my Machine Tool 1 class and decided that tradition had to go. Not that what I was doing wasn't good, it wasn't getting them excited about manufacturing and machine tool careers in the 21st century. I have done lots of machine tool projects that have stood the test of time - hammers, screw drivers, tool boxes, etc. All good stuff, teaching technical machine and fabrication skills with cross discipline applications in math, reading and writing. Problem is, kids were not excited. Many times the quality was very poor, and I often heard "What am I going to do with it?" In other words, kids were going through the motion, but not getting excited enough to consider the opportunities that exist across Wisconsin in manufacturing. So I thought what do most students have in common today?

ming - give them a game and they will play. I remembered that my goal though is to excite them about machine tool and fabrication technical skills, not play games. With that in mind and a few weeks of designing, a remote rock'm sock'm robot was born. Okay the name is not new but the concept is. As I designed the robot, I focused on developing it into as many different basic machining and fabrication concepts as possible to include print reading, drilling, threading, layout, mill and lathe work, CNC programming, bench work, math, some electrical work and quality control etc. While still in the infant stage, I introduced the project to students at the beginning of this year in hopes that it would be well received and that it would excite students about machine tool and fabrication careers. I designed the bot for teams of two students to build, but since I had a small class this year, I had each student build their own. Three months into the school year and well over half a rock'm sock'm robot complete, kids are excited and have taken ownership in the project. The first thing I have seen is the focus on quality. They soon realized the tolerances that were given are important and must be followed if parts they made would fit together. I have had students coming in outside of class to work and they have been asking questions like "What if I did this?" "Can I do this?" They are thinking, they are learning, they are applying the skills taught in class and they are excited to have a boxing competition at the end of the semester. I have had other students stop in and want to know what class this was because they want to build one.



Whether or not I am doing the right thing remains to be seen. I hope to see the instructors that took the STI "building an electrathon and super mileage in a week" with students this spring competing at one or all the competitions. I am looking forward to seeing the rock'm sock'm robots come to a successful completion in a few weeks. I have been asked to present this spring at the WTEA spring conference and maybe teach a STI on machine tool and fabrication with rock'm sock'm. We are in a time when manufacturers are stepping up to the plate and are wanting to support our efforts locally and politically. Technology Education programs are either thriving or dying. Technology Education preparatory programs are strapped for time and many young Technology Education teachers are ill prepared to teach many of the skills manufacturers are looking for. In thinking about Bosh, we have many teachers in the state with so many skills, and cool, exciting, and relevant 21st century projects. As teachers we need to be proactive and share with other teachers the knowledge so that we can change the lives of students across the state, not just in our own towns. STI information will be presented this spring at the WTEA conference. Consider sharing your skills by hosting an STI. Contact your district rep or me if you want to know more.

## **Manufacturing at WTEA**

The WTEA Conference March 14 & 15  
has a delight for  
Manufacturing Teachers in attendance.

A committee of teachers from around the state have been working hard to provide a trac of sessions for this focus. There will be lots of sessions related to manufacturing including green manufacturing, cnc projects, welding hands-on, fabrication and bots.

**Now is the time to register for the  
WTEA Spring Conference!!!**

***Connecting the Future***

**March 14 & 15, 2013**

**Chula Vista Resort, Wisconsin Dells**



## Heavy Metal Tour

*Submitted by Brian Schiltz, Tomahawk High School*

During the month of October a person would have seen students state wide learning about manufacturing through fieldtrips, various activities, and guest speakers. These efforts were designed to educate students about the wonderful world of manufacturing and the future it could hold for them. Getting northern Wisconsin involved was Nicolet Technical College and the surrounding school districts. School districts that choose to participate in the

*Originally written -10/9/2012*

### **‘Heavy Metal Tour’ draws eighth graders to Nicolet**

#### **College, area manufacturers hope to get students thinking about career options early**

Get them while they’re young.

That’s the philosophy behind an event to be held Wednesday at the Nicolet Area Technical College campus and eight area manufacturing facilities that is expected to draw approximately 350 eighth graders from 10 different school districts.

Nicolet College is partnering with the Grow North Regional Economic Development Corporation and the North Central Wisconsin Workforce Development Board to put on the event. The goal is to address a problem that has plagued the manufacturing industry in recent years - a declining skilled workforce.

In recent months, Nicolet College has received \$1.3 million in grant funds to help bolster the type of manufacturing training the school can offer. Wednesday’s first-time event, dubbed the “Heavy Metal Tour,” aims to address the other aspect of the problem which is attracting people to apply for manufacturing positions.

“The manufacturing sector has been declining in the number of employees,” said Bruce Trimble, employer services director of the North Central Wisconsin Workforce Development Board. “One of the things we’re charged with is changing that. We thought we should try targeting younger people. Most (manufacturing jobs) are nice, family-sustaining wages and kids don’t think about it like they used to.”

Wednesday, students from Rhinelander, Tomahawk, Northland Pines, Lac du Flambeau, Wabeno, Arbor-Vitae-Woodruff, Elcho, Crandon, Laona and Mercer will come to Nicolet’s Rhinelander campus to learn about the different career paths available in manufacturing. They will tour Nicolet’s facilities and they’ll have an opportunity to visit the sites of several area manufacturers including

“Heavy Metal Tour” allowed middle school students to witness firsthand how local industry engages itself in the Manufacturing Sector.

Prior to the date of the “Heavy Metal Tour,” local reporter Kyle Rogers of The Northwoods River News wrote an excellent article on the need and importance of immersing younger students in experiences and focusing them on career paths revolving around manufacturing.

Superior Diesel, Oldenburg Group, ABX, NEX, HyPro, Northstar Steel, Ponsse and SFC Industries.

“This type of event was done by the Marathon County Economic Development Corporation last May with juniors and seniors,” Trimble said. “We felt it was better to target eighth graders because they’re still making career choices and developing ideas.”

And some of those students may have misconceptions about what a job in manufacturing means as technology has produced a lot of changes in the last couple of decades. “It’s not like the stereotype people have of manufacturing,” Trimble said. “The work is not piece-work, it’s not the same repetitive job over and over. It’s a lot more technical. There’s a lot more computerization. There are a lot of robotics that require a lot of computer skills. A lot of young people don’t know about that part.”

Steve Pawelko, vice president of operations at ABX in Rhinelander, agrees. “I think a lot of people have the misconception manufacturing is dirty, low-level,” Pawelko said. “It’s anything but. Obviously, perceptions need to be changed and I think (the Heavy Metal Tour) is a good start.”

When students come Wednesday to tour the ABX facility, which manufactures packaging materials, Pawelko said they’ll get the basic overview of what the company does. “Unfortunately, we have a short time period to introduce them to the technology, what we do and walk them through the environment,” Pawelko said. “Basically, we’re going to give them the overview that this is not dull. You’re not doing repetitive motions. It’s working together with computers as a team to create an important product. I think the environment will demonstrate itself.”

HyPro, which does engineering and manufacturing

for various machining components, will also be emphasizing the high-tech approach to its work. Mike Sutton, engineering manager at HyPro's Rhinelander facility, said there are many different career paths available at the company and HyPro is always in need of skilled workers.

"Grow North has been working closely with Nicolet College to provide that training, but it's kind of after the fact," Sutton said. He said he likes the approach of the Heavy Metal Tour and trying to get students thinking at a younger age about the opportunities available in manufacturing. "Many good jobs are just overlooked."

A recent wage survey by Grow North revealed that manufacturing maintenance jobs in the Northwoods currently pay an average of about \$35,000 a year. "We just want to show (the eighth graders) that it's high-tech work, that their education is important and they can get most (of what they need for manufacturing) through their K-12 education," Sutton said.

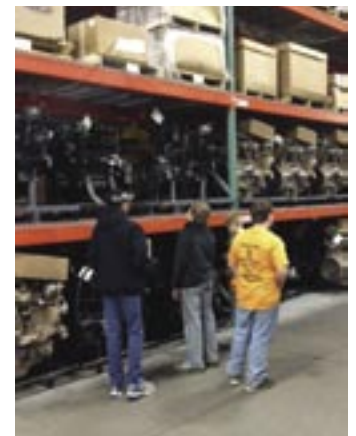
Pawelko said it's important to show students various career options and that not everything requires a four-year college degree. The system has historically directed students down the path of a four-year college, he said, but it's not the right path for everyone. "We need to focus on those students and a career path for them," Pawelko said. "It's a positive, not only for the education system, but the people going through it." According to Wisconsin Manu-

facturers and Commerce, about 70 percent of the jobs in the state don't require a bachelor's degree.

Trimble said it's encouraging that 350 students will be participating in Wednesday's event. He said he thought 200 would have been a high number. "The fact that many kids want to see what manufacturing is like shows there may be strong interest in it," Trimble said. He said the hope is to make the Heavy Metal Tour an annual event locally and perhaps expand it to other counties. Another Heavy Metal Tour is also planned to occur Wednesday in Wood County. It was organized by the Heart of Wisconsin Chamber of Commerce and Mid-State Technical College. "We have to look at this four or five years down the road," Trimble said.

Educating students about the manufacturing industry now could mean more students considering that a viable career option in the future. "I don't know what's in the mind of a middle-schooler," Pawelko said. At minimum, he said he thinks students will be impressed by some of the technology ABX uses. In five years, that could manifest into a few new recruits to the world of manufacturing.

*More information can be found at <http://www.rivernewsonline.com> & search Heavy Metal Tour. Permission to republish granted from Kyle Rogers 12/11/12. Kyle Rogers may be reached at [kyle@rivernewsonline.com](mailto:kyle@rivernewsonline.com).*



**Heavy Metal Tour student participants learn about career opportunities in manufacturing from local business and industry representatives.**



# The Technical College Effect

Wisconsin's Technical College System has 370,000 students — the largest higher education system in Wisconsin.

Nearly 9 of every 10 graduates live and work in Wisconsin.

## Immediate Success For Graduates

Strong job placement: 9 out of every 10 graduates are employed within 6 months of graduation, even in a tough economy.



Great student investment: For every dollar students invest in their technical college education, nearly \$5 (\$4.90) is returned as higher future income over their careers.



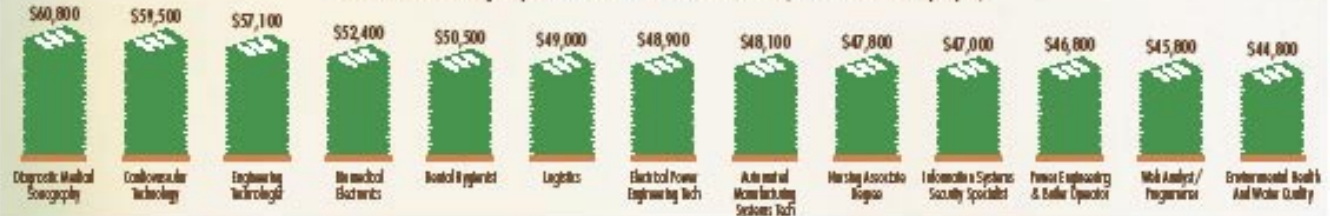
Graduates are valued and rewarded: Median salaries for associate degree grads are \$36,000 right out of college.

**\$36,000**

Impressive salary growth after five years: Median salaries of more than \$44,000; a 48% increase since graduation.



Wisconsin's Technical Colleges Top Median Salaries 6 Months After Graduation (2011 Graduate Follow up Report)



## Immediate Payback For Taxpayers

Great taxpayer investment: Wisconsin's taxpayers receive \$12.20 in benefits for every dollar invested in the technical colleges.



Degrees in demand: At least 54% of Wisconsin's jobs in the next decade require technical education.



Head start in high schools: Nearly 19,000 students carried some college credit with them from high school to a technical college.



Getting individuals back in the workforce: Wisconsin Technical Colleges served 8.7% more displaced and unemployed workers over the last decade (22,000 to 40,000).



## Immediate Results For Employers

Skills employers want: Business and industry representatives serving on advisory committees help ensure graduates have the skills employers need for success.



Apprenticeship for graduates: 93% of employers are satisfied or very satisfied with the education and training and would hire technical college graduates again.



Value of technical colleges: 96% of employees say their local technical college is important to the overall success of their businesses.



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## TEquity Speakers Spring Conference - We Want You!

*by Eric Sutkay, Lakeview Technical Academy*

Half of the year is over and the excitement of the spring conference is building. As the year winds down and the school year reaches its midpoint I am reminded of the joy and excitement that I see on the students' faces in my Technology and Engineering Education classes when they see that Math is actually useful. If you have picked up a copy of the last Interface hopefully you saw the article about the gender equity project titled TEquity, and hopefully you had an opportunity to talk with your district director about it at your last event. If not, look one more time, and ask them at the next event.

As we start and continue to have this discussion about gender equity in our classes, we see that it only has positive repercussions. We see increased enrollment in our sections allowing our classes to run, introducing non-traditional students a field that may interest them, a more diverse, broad perspective in our courses, or just the presence of another viewpoint or opinion when we are problem solving with students. We are reminded that this is a process. It will take some time and it is not going to be easy. We want to provide gender equity support, the resources and really the meat and potatoes of what you are going to be doing in your classroom. You can find some of these support and resource materials on the WTEA website under the TEquity tab at the top right. There you will find a variety of different resources, presentations, articles, videos, events and different contacts around the state who you can invite to come and speak to your female students.

At the state conference on March 14th-15th you are going to find that we have set aside a 2-hour block with a panel discussion to talk about gender equity. We want you to share your resources, your curriculum, your materials, research you have done and even just provide some time for general questions and answers that you may have. There are some great programs around the state that have

tremendous female enrollment. We would like to have those people come forward and be the main representatives on the panel. We want you to come and tell your story. How are you doing it? What is working well? What have you done that has created the greatest response? What can I do? These are all questions that I hear when I talk about gender equity in my school, my district, my WTEA district, and when I travel around the state talking to other people in our profession.

If you are one of these people that I have mentioned above, WE WANT YOU! Please volunteer to be on the panel because if you are doing GREAT things, then you should be recognized for it. Share with the rest of us. We want to be as successful and be able to share our stories. If this is something that you are interested in please contact myself or Brent Kindred at DPI. If you have not had a chance to check out TEquity on the web, do so now [www.wtea-wis.org](http://www.wtea-wis.org), click on the TEquity tab.

Thanks and have a great rest of the year. I can't wait to see you at the conference!

The advertisement is titled 'Educate Anywhere' in a large, serif font. Below the title are the phrases 'Engaging Content' and 'Multiple Formats'. The central image shows a 3D rendering of a textbook titled 'AutoCAD and Its Applications BASICS' and a tablet displaying the same content. Below the images, the text reads: 'Goodheart-Willcox Career and Technical Education products are delivered through various formats. Find the ideal one for you at [www.g-w.com](http://www.g-w.com).' At the bottom right is the 'G-W PUBLISHER' logo. At the bottom left, it says 'Goodheart-Willcox Publisher • 800.323.0440' followed by social media icons for Facebook, Twitter, YouTube, and LinkedIn.

# SCHOLARSHIP



## Competitive Educational Scholarship

The Wisconsin District - Precision Metalforming Association (WI-PMA) is seeking to encourage high school students to pursue careers in Manufacturing Related fields by providing financial assistance in the form of (4) \$500. These are competitive in selection.

### Eligibility:

- (a) The applicant must be a high school Senior.
- (b) The applicant must have had a minimum of one Manufacturing related course in High School.
  - a. Letter of recommendation required of Technology & Engineering Teacher.
- (c) The applicant must be a Wisconsin resident.
- (d) The applicant must have fulfilled the proper requirements for acceptance of this scholarship listed below.
- (e) The applicant must be pursuing further education for a career related to manufacturing in a post-secondary educational institution located within Wisconsin. (2-year and 4-year programs acceptable, all students are encouraged)

### Requirements:

- (a) Completed Application Form
- (b) 250 - 500 word essay with the focus around your Manufacturing experiences.
  - a. Topics to consider including are: professional & skill development, past and future goals, best experience in class, desired career path.
- (c) (2) Two letters of recommendation prior to the application deadline.
  - a. One of which is from your Technology & Engineering Teacher and Second is a non-relative adult.

### Selection Process:

- (a) Applicants will be judged on the basis of the information provided in the application, personal essay, and letters of recommendation.
- (b) All applications received prior to the application deadline will be reviewed and scored by the WI-PMA Education Committee. The committee will select the scholarship recipients.

### Award Procedures:

- (a) The recipients will receive payment in full of their scholarship upon written confirmation of institution desired.
- (b) The check will be mailed to the student and made payable to BOTH the student and the college or university.
- (c) Awardees may be posted on the WI-PMA website with pictures and a write-up of themselves.
- (d) Notification of awardees will be by July 1<sup>st</sup>, after the WI-PMA Summer Board Meeting.

### Instructions:

- (a) Complete the top half of the Application Form & Sign the authorization line.
- (b) Write a 250 – 500 word essay focusing on your experiences in Manufacturing.
- (c) Provide a letter of recommendation from your Technology & Engineering Instructor.
- (d) Provide a letter of recommendation from one other adult. (non-relative)
- (e) Place all of the items above in the same 9 x 12 envelope and mail to:

Wisconsin Precision Metalworking Association (WI-PMA)  
C/O – Scholarships  
1517 GreenCrest Drive  
Watertown, WI 53098

*All scholarship applications must be post-marked by June 1<sup>st</sup>, 2013*



## Educational Scholarship Application Form

Student Name _____		
Permanent Address _____		P.O. Box # _____
City _____	State _____	Zip Code _____
Phone # 1 _____	E-mail _____	
Phone # 2 _____	Parent / Guardian Name _____	
High School Name _____		
School Address _____		P.O. Box # _____
City _____	State _____	Zip Code _____
Phone # 1 _____	Fax # _____	
High School Graduation Date _____	College / University Seeking ? _____	

### Authorization to release information:

- (a) In submitting this application, I authorize my high school to make available to WI-PMA information concerning my graduation status and living address upon graduation if needed.
- (b) I hereby grant permission to WI-PMA to publish my name, the name of my school, the name of my advisor and my picture with a write-up.
- (c) I hereby certify that statements contained herein are true and correct.

\_\_\_\_\_  
*Applicant's Signature*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Parent/Guardian's Signature (if under 18)*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Teacher's Signature (Student took Mfg related course)*

\_\_\_\_\_  
*Date*

*All scholarship applications must be post-marked by June 1<sup>st</sup>, 2013*

**Plan now to attend The 44th WTEA Annual Conference**  
***“Connecting the Future”***

**March 14 & 15, 2013     •     Chula Vista Resort     •     Wisconsin Dells**

**Room Reservations: 1-800-388-4782   Ask for WTEA Conference Rate**  
**WTEA online conference registration at: [www.tinyurl.com/wtea2013](http://www.tinyurl.com/wtea2013)**

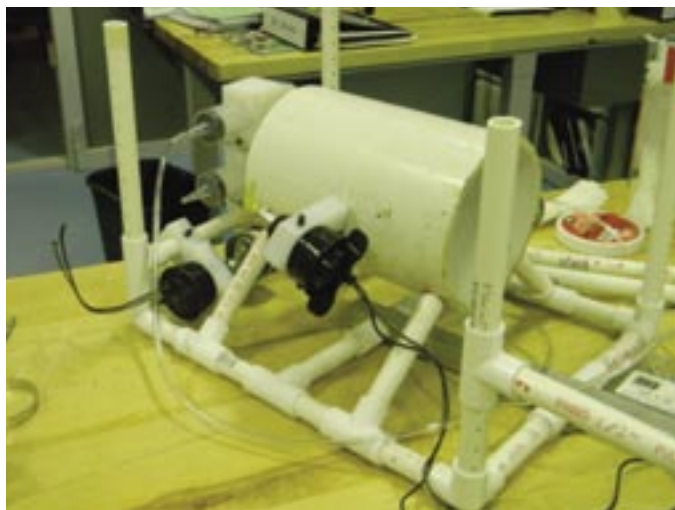


## Building an Underwater Robot in Your Class for Under 100 Dollars

*by Matthew J. Schultz, Lakeview Technical Academy*

Interested in a cheap, easy to assemble, fun and interesting robotic project for your students? Would you like to build a robot in your class, but don't have the budget to do so? Are you uncomfortable with your knowledge of robotics, and are looking for a good stepping stone to get you started? If you answered yes to any of these questions, building an underwater Robot is just for you.

Building an underwater robot isn't as difficult as it seems. Getting started in underwater ROV's (Remotely Operated Vehicles) can be as easy as visiting your local hardware and favorite sporting goods store. For one hundred dollars you and your students can be on the way to competing in your first ever underwater robotics competition.



For your first Underwater ROV, I strongly recommend you start small and simple. Design your ROV using simple affordable materials. 3/4" PVC is an awesome, affordable material for frame construction. PVC is easy to use, it comes with many elbows, and is affordable to even the smallest school budget. Motors can be found easily too at your favorite outdoor sporting goods store. Bilge pump motors come already water proof and make great propulsion systems for your ROV. Propellers for your bilge pump motors can be found at your local hobby store. Controlling your ROV is simple too. Just pick up some double-pole double-throw switches at your local electronics store. While you are there pick up a couple rolls of 100 foot speaker wire and the supply list for your robot is almost complete. A cheap car battery will suffice



as a sufficient portable power supply. If your budget allows you can also pick up a cheap water-proof back-up camera. Allow your students to design and fabricate a unique ROV that is nice on the pocket book.

The underwater ROV can be utilized in a number of areas in your school's curriculum. It can be used in a robotics class, an engineering class, in science and biology classes, and if your robot is really good, you can compete in local underwater Robotic Competition through the Marine Advanced Technical Education Center. Check out <http://www.marinetech.org/missions--specs/> for more information on competing in Underwater Robotic Competitions in your area.

If you are really interested in building an Underwater ROV with your students, please attend my break out session "Building an Underwater Robot" at this year's WTEA Conference. During the session I will demonstrate how to get your school started in underwater robotics. Other topics will include: how to build a basic ROV, advanced techniques in underwater ROV's such as alternative frame components and advanced control systems. I will also showcase forums and suppliers for all the materials necessary and many more fun and useful tips to help you get started. So please come and check out "Building an Underwater Robot" and leave with a suitcase of knowledge and information to help get your school's underwater robot started.

### Wisconsin's New Technology and Engineering Standards

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



Our technology and engineering programs have a rich history and foundation for preparing young adults for the next steps in their lives and the world of work.

Over the past year, a dedicated group has worked diligently on our new technology and engineering standards. In December, 2012, the workgroup had their final meeting to review and make any final changes. The standards in the document set a new standard for knowledge and skills necessary for successful transition to post-secondary programs leading to and/or direct entry into high-wage, high-demand, and highly skilled careers.

The National Association of State Directors of Career and Technical Education Consortium has identified five guiding principles that should drive the development of quality CTE programs. Wisconsin supports these principles as spelled out in the NASCDTEC's Reflect, Trans-

form, Lead: A New Vision for Career and Technical Education. These principles listed below, have helped guide the development of our new standards:

- Critical to ensuring that the United States leads in global competitiveness;
- Actively partnering with employers to design and provide high-quality, dynamic programs;
- Preparing student to succeed in further education and careers;
- Delivered through comprehensive programs of study aligned to the National Career Clusters framework; and
- A results-driven system that demonstrates a positive return on investment.

Our new standards have a tentative timeline of June, 2013 for adoption and release. There will be a standards overview preview session at the WTEA Spring Conference, so be looking for more information as the conference gets closer. This will be a one-hour preview of the proposed new standards.

An advertisement for Epilog Laser systems. The background is a dark blue with white splatters. At the top left, the text "LASER IT!" is in large, bold, white letters, followed by "Cut it. Engrave it. Mark it." in a smaller font. Below this, the text "Laser Engraving, Cutting and Marking Systems from Epilog Laser" is written. Further down, a paragraph describes the capabilities: "From creating and personalizing 3D models, to engraving photos on keychains, to marking high-tech gadgets, our laser systems create the products you see here and more!". To the right, there is a large white Epilog Laser machine with the "zing LASER" logo. In front of it are several examples of laser-processed items: a wooden helicopter, a metal keychain with a car photo, a metal keychain with a cartoon character, and a metal keychain with an iPod. At the bottom left, the "FIRST TECHNOLOGIES INC." logo is displayed with the tagline "Putting Education... FIRST". Next to it is the website "www.firsttech.com" and the phone number "1.800.787.9717". At the bottom right, the "EPILOG LASER" logo is shown, followed by the text "Contact Us Today!" and "MADE IN USA".



## Wisconsin's Workforce Paradox: Opportunity Dressed in Overalls

by Ryan Ubersox, Waunakee High School

**work force** or **work-force** (wûrk' fôrs) n.

1. The workers employed in a specific project or activity.
2. All the people working or available to work, as in a nation, company, industry, or on a project.

*Example sentence: The workforce in manufacturing in Wisconsin includes 425,000 employees that have a good work ethic, good social skills, good problem solving skills, a high mechanical aptitude, high tech skills, and the ability to pick up rapidly changing techniques.*

**par-a-dox** (par'e-doks) n.

1. A seemingly contradictory statement that may nonetheless be true.
2. One exhibiting inexplicable or contradictory aspects.
3. An assertion that is essentially self-contradictory, though based on a valid deduction from acceptable premises.
4. A statement contrary to received opinion.

*Example sentence: Wisconsin has 7% unemployment partially because of the paradox of what our Wisconsin manufacturers' need as a workforce.*

For years many parents have pushed their children to "the better life." Many parents thought this life was paved through college. Some of these parents were from family farms and factory jobs with no college experience while others knew little of anything but college life. In my own case, my grandfather has an eighth grade education while my father went to a one year technical college program. My parents wanted what they thought was best for me and pushed me beyond high school. In fact, I believe I'm the only grandchild in our large family with a master's degree. While my path was good for me, is it necessary for my children? In the back of my mind, I keep in mind that in Wisconsin right now, 70% of open jobs require less than a bachelor's degree.

I find it interesting that our schools are primarily driven by the core content educational standards and measured by standardized tests that require no work experience and measure no real application of knowledge or skill in any career, by any student.

I find it interesting being a technology and engineering education teacher in Wisconsin right now. While schools are working with less funding, they are surely considering some very difficult decisions that include cuts to career based education. We hear about tech-ed programs being cut throughout the state this year, yet our businesses are continuing to scream for more skilled employees.

This concept of where Wisconsin jobs will be in the next 10-20 years is a real problem. Thankfully, technolo-

gy and engineering teachers are great problem solvers and we have businesses asking for our help! This "workforce paradox" gives us a great opportunity to bridge the gap between our technology and engineering programs and the businesses in our local communities. We can do this, if K-12 education, technical schools, colleges, and businesses (especially our manufacturers) all work together to fill our workforce with highly skilled and technologically intelligent individuals. But how do we do this?

Thomas Edison said "We often miss opportunity because it's dressed in overalls and looks like work." Let's show the state that the work technology and engineering teachers do every day is the opportunity Wisconsin needs to fill our workforce gap. Let's ensure that every student, parent, business owner, principal, superintendent, and school board member understands that in order to fix Wisconsin's workforce problem we need to increase participation, so that 100% of Wisconsin students participate in at least one middle school technology education course and at least one more while they are in high school.

It has to begin with us K-12 educators and our business partners. Schools need to start discussing current program identities with local business partners and have an open and honest discussion as to whether or not it matches the local economic development plan.

The WTEA has worked with business partners from around the state to help develop a toolbox for teachers and business partners to use. We have helpful hints on how to talk with businesses, staff, students, parents, principals, chamber of commerce, school board members, and superintendents about our local future job outlook. We can supply data from the DWD showing what jobs are in demand and will be in demand in Wisconsin. See the resource links at the end of this article to get a head start!

I hope you all take advantage of this "opportunity dressed in overalls" to help solve Wisconsin's workforce shortage. Start locally by picking up the phone or walking into that business you drive by every day.

### **Resources to help you start the discussion:**

- Wisconsin Paradox Informative PowerPoints:  
[www.wmc.org/programs/workforcedevelopment/workforceskillsshortage/](http://www.wmc.org/programs/workforcedevelopment/workforceskillsshortage/)
- WI Dept of Workforce Development (projections)  
[http://dwd.wisconsin.gov/oea/employment\\_projections/](http://dwd.wisconsin.gov/oea/employment_projections/)
- WTC System Projections (based on graduate responses)  
<http://www.projectionscentral.com/>



## WTEA Manufacturing Committee

*by Ryan Ubersox, Waunakee High School*

Due to the demand of manufacturing jobs, and the lack of experience of many of our technology and engineering professionals in Wisconsin, the WTEA formed a Manufacturing Committee in late 2011. The committee has attended many listening sessions with businesses including Wisconsin Manufacturers and Commerce in their “Workforce Paradox” themed conferences and meetings.

The committee has focused on two main things for the WTEA membership:

1. Manufacturing sessions during every time slot for the upcoming WTEA conference including hands-on sessions Friday at the conference.
2. Annual summer training institutes for technology and engineering teachers.

While the WTEA conference sessions are set up, we will be requesting some information from technology and engineering teachers in the state regarding the knowledge and skills to focus on in the 2013 summer training institute.

Our committee’s hope is to raise the manufacturing I.Q. of the state’s technology and engineering teachers and students. WMC’s focus through the Workforce Paradox is to build business relationships with school districts in order to have more highly qualified and skilled workforce for Wisconsin manufacturers. In the end, we hope a multifaceted approach will move our state toward a higher level of education for everyone and a more productive workforce.

### Joint Membership – WTEA and ITEEA

WTEA

ITEEA

#### WHAT ARE THE ADVANTAGES TO JOINING BOTH WTEA AND ITEEA?

- Receive one renewal notification
- Write one check
- Save money

#### HOW DO I JOIN?

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- Select Joint Membership
- Select ONE or TWO year rate
- Check the box for WI

#### QUESTIONS?

- Contact your Affiliated Association President or ITEEA Membership at 703-860-5028



*Editor's Note: The following was printed in the Fall 1987 issue of the Interface.*

## Scenario:

### A Day in the Life of a Technology Education Teacher in the Year 2001

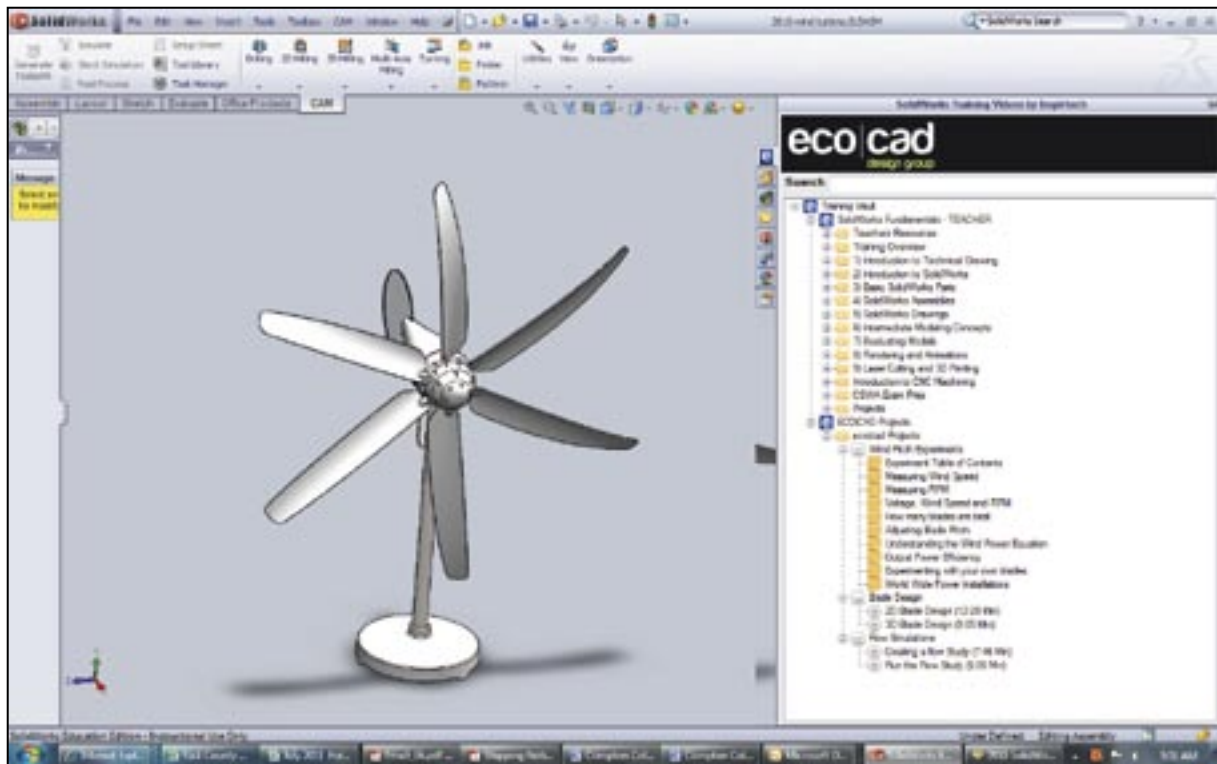
*by Michael Waldschmidt, Fond du Lac, WI*

- |            |  |            |  |
|------------|--|------------|--|
| 7:30 A.M.  | Running late, so I take a breakfast pill instead of making breakfast.  |            |  |
| 7:35 A.M.  | Take electric car to school.   | 10:55 A.M. | Class went well after demonstration.   |
| 8:00 A.M.  | First class, communication.  | 11:00 A.M. | Final class of the day, transportation.  |
| 8:02 A.M.  | Students start coming in to classroom. Electric beam scans students blood vessels for attendance and identification. Automatically transmitted to office. Two students put a piece of tape over the laser beam, so I have to call the office and make all the students get scanned again.  | 11:05 A.M. | Through interactive laser discs, students view instructional material on magnetcall levitated at laboratory desk.  |
| 8:15 A.M.  | Because of student prank, students are restless. Get them all seated at their laboratory desks.  | 11:40 A.M. | Have good discussion on maglev. Students seem real interested about maglev. Nice to get the students' input.   |
| 8:20 A.M.  | At teacher station, I send individualized learning material to each student's laboratory desk. Students are working on fiber optics project. From my teacher station I am monitoring the progress and am providing immediate feedback to them.   | 11:55 A.M. | Class ends, time for lunch.  |
| 8:45 A.M.  | Classroom robot tells several students to keep working because there is still 10 minutes left of class.  | 12:00 P.M. | Have 15 minutes to eat because I have lunch duty this week. Good to eat a full meal instead of taking a pill.  |
| 8:55 A.M.  | One class finished, three to go.   | 12:40 P.M. | Student comes up and tells me about family problem.  |
| 9:00 A.M.  | Second class, communication.   | 12:55 P.M. | Stop at counselors' office to inform them about the student's family problem. Enjoyable to talk face-to-face with counselor.   |
| 9:25 A.M.  | Everything going smoothly this hour.   | 1:00 P.M.  | Get in electric car to check on students involved in work-site education program. Car is back-firing, will have to take a look at it.  |
| 9:30 A.M.  | Monitor progress of students. Five students are done with fiber optics project. Send them test that is scored automatically, with automatic repetition of any material that the student has failed to absorb.  | 1:35 P.M.  | First stop is at Pickett Engineering. Student is working on upgrading a hydrogen engine with three other engineers.  |
| 9:55 A.M.  | Second hour ended.   | 2:00 P.M.  | Second stop is at the local electric company. Student is doing a good job, but I wish they would give her more responsibility.   |
| 9:58 A.M.  | Talked to three seniors down the hall making fun of a freshman. Other teacher watches but ignores what is going on. Does not want to get involved.   | 2:40 P.M.  | Next stop at C.J. Enterprise. Student is doing test and gathering data on an efficient heating system for a large industrial plant. Student is finally realizing how important education is and that it is a lifelong process. |
| 10:00 A.M. | Third class, transportation.   | 3:10 P.M.  | Last stop of the day is at Miles Cable Television. Student working on cutting down the time between customer submitting a grocery order and the time the consumer gets the merchandise.  |
| 10:03 A.M. | At teacher station, I see if students did their homework. Students submit their homework over the phone lines via a modem attached to their home computers. Five students not done with their homework. One student gives old excuses of computer malfunction. Allow students who are done with their homework assignment to interact through the computer with each other about their assignment. | 3:35 P.M.  | Leave to go home in electric car.  |
|            |  | 4:22 P.M.  | Arrive home and personal robot informs of messages.  |
|            |  | 5:45 P.M.  | Personal robot makes supper for my wife and me.  |
|            |  | 6:35 P.M.  | Call up information on air cushion vehicle from regional data base for next week's lesson plans.   |
| 10:05 A.M. | Students working on fuel cells project at laboratory desks. A lot of students having problems with this project, so I give the class a demonstration to help clear things up. Also, tell them to call up   | 8:45 P.M.  | Play chess with personal robot because wife is gone visiting friends.  |
|            |  | 9:48 P.M.  | Time for bed.  |



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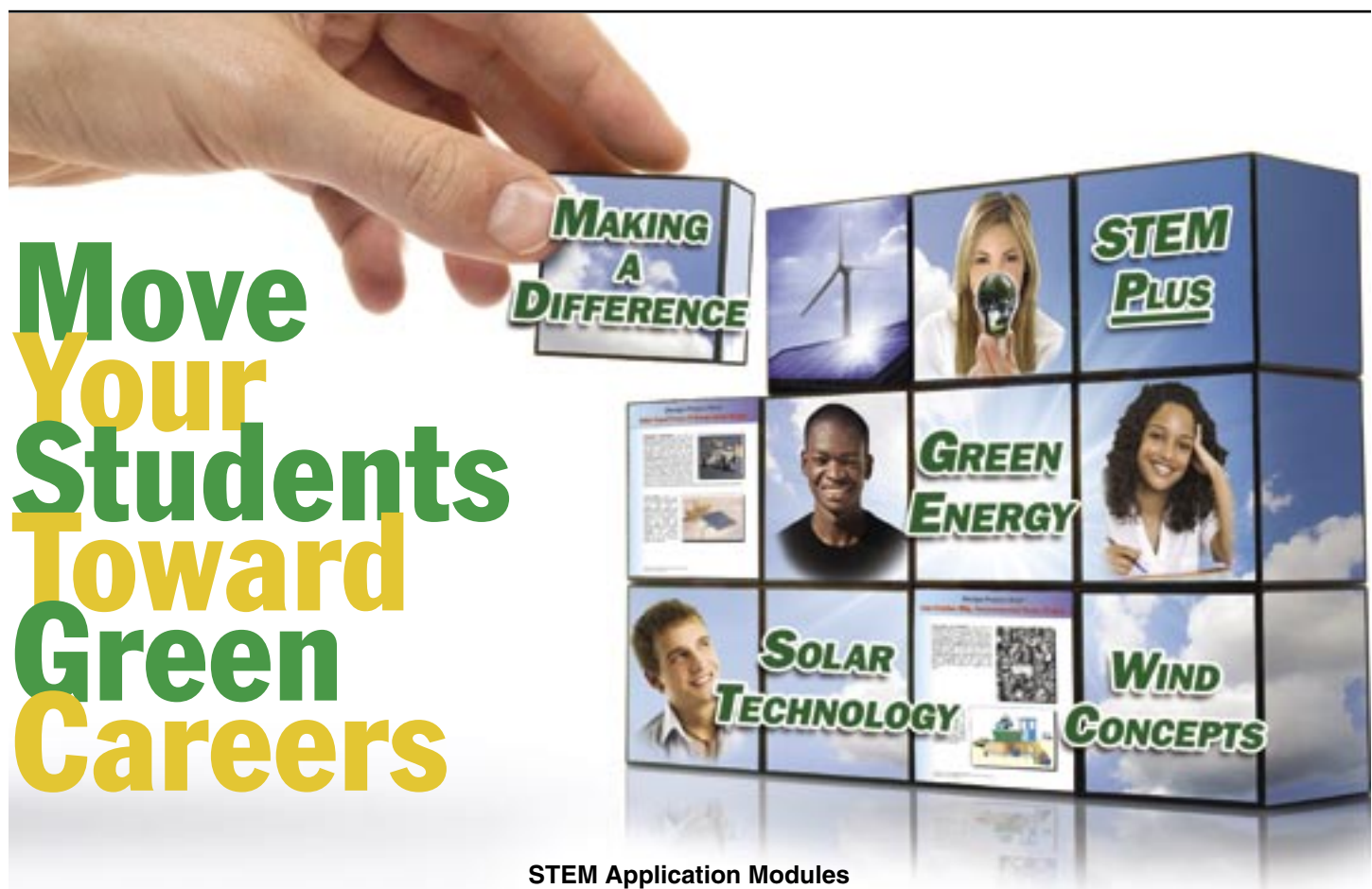
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