

Interface

Journal of the Wisconsin Technology Education Association
Journal of the Wisconsin Technology Education Association



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Winter 2013 - 2014
Volume 53 Number 2



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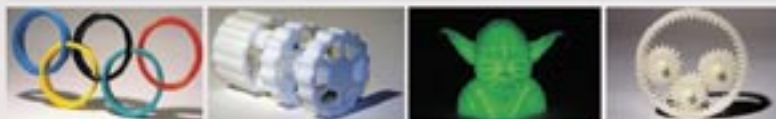
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The Train is Leaving the Station

by Greg Groom, WTEA President

I sit here, on this winter day, looking at the beauty of the new falling snow and at the birds of all kinds jockeying for a position to feed. I think this is what it is like to teach. Just as like-minded birds gather together, so do we as teachers. Many of you are feeling the pressure of cross walking New Standards with your curriculum. In addition, the objectives should also tie into the Common Core Standards and some other post secondary program. And don't forget to come up with meaningful School Learning Objectives (SLO) that are tailored to your program. When you have time, you need to maintain the updates to keep your program and yourself current. This can be overwhelming for even the veteran teacher.



This is the main reason you have the WTEA. We are gearing up for another great spring conference. We hope to have a break out session for each of the ten Technology and Engineering Standards with a background on how they came about, what they mean to your program and how to address them. We will have a program explaining the Wisconsin Common Career Technical Standards. How will these standards impact your program? Hands-on manufacturing will be back . . . bigger and better. Our trade show is the envy of other conferences.

I would like to see greater collaboration between members at this year's conference. We need writing teams to align their curriculum with the new TEE standards, then post them on the WTEA web site. This could work like the small library boxes that are popping up in our communities - "Take one, Leave one." Another needed resource would be a SLO resource, where our members could post an SLO and use another SLO. Some of you are already doing this on your own. Your entrance into this exchange is done, all you need to do is post. Another approach is to have a three to four member writing team use Google doc and collaborate in more detail. More teasers provided at the spring conference.

Another big part of the conference is our trade show.

For years the show exhibitors have been the life blood of revenue. Each booth is rented and gives the WTEA revenue steam. But with budgets tightening, many of us are turning to the internet for the cheapest price. Some are finding out the hard way the cheapest is not always the best. Many times the quality is not there or service is lacking. When your item does not work or isn't shipped on time, you have little or no recourse. We NEED to support our vendors who advertise and support our trade show. Without the vendors support our dues would be unmanageable and the WTEA could not hold down the cost. So PLEASE patronize our vendors with your business when you are looking to update your programs. Not only do they provide a great product and great personable service, they are also active participants at our conference in updating your skills.

By this time many of you have heard that the Legislature has increased the Mathematics and Science requirements for graduation. Some high schools already require three years of math and science, while others will need to increase their general requirements. But, did you know that this new legislation also counts some Career and Technical Education classes as math and science credits? If you already have some equivalency courses in your program great! But if this is something you had on the back burner or if other departments have blocked the request, you now can move forward with creating or requesting math or science equivalency credit for one or more of your classes.

In closing, I would like to do a shout out to the retired professionals of our group. If we have any retired professionals that would like to lend a hand helping out with programs, please send me an e-mail. I would like to start a list of people willing to help. This may take the form of mentoring, subbing, giving a hand, advising on equipment repair or helping with a SkillsUSA Chapter. Not all retired people will get this Interface. Feel free to contact anyone you know that might be interested in helping out in our Wisconsin programs.

- THANK YOU -

A special thank you to our advertisers, trade show exhibitors, and conference sponsors.

These vendors and organizations are vital to the WTEA.

Please show your support.

WTEA BOARD NEWS

Fall 2013 Board of Directors Meeting Highlights

by Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Fall 2013 WTEA Board of Directors Meeting held via conference call.

- New Board Appointments
 - o Travis Ray - Director at Large.
 - o Sylvia Tiala, UW Stout - District A Director.
 - o Frank Steck, UW Platteville - ITEEA Rep.
- WTEA will be attending the Annual School board Conference January 23-25, Delta Center Milwaukee, Wisconsin.
- Bill Prella from Case International will be Thursday's keynote speaker at the 2014 WTEA Conference.
- Vincent Canino, Vice President of Renewable Energy & Power Solutions from Trane will be Friday's keynote speaker at the 2014 WTEA Conference.
- Encouraging members to host High Tech Weekends. For more information contact the WTEA.
- WTEA will be revamping their booth at this year's SkillsUSA Conference with the aim to recruit more future technology educators. If interested in helping, contact Secretary/Treasurer Matthew J. Schultz.
- SkillsUSA Events: State competition moved to Alliant Energy Center in Madison, April 29-30, 2014.
- Fox Valley Technical College will be hosting their first ever SkillsUSA regional event February 21, 2014.
- WEEVA Events Schedule:
 - o UW Stout: April 18th - 19th.
 - o FVTC: April 25th- 26th.
 - o UW Platteville: May 2nd and 3rd (Tentative).
 - o Road America: May 12th - 13th.
- In efforts to cut costs, WTEA Board held the first conference call board meeting - a success! Special thanks to Fox Valley Technical College for allowing the WTEA to use their system.

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.

Green Engineering IN A BOX



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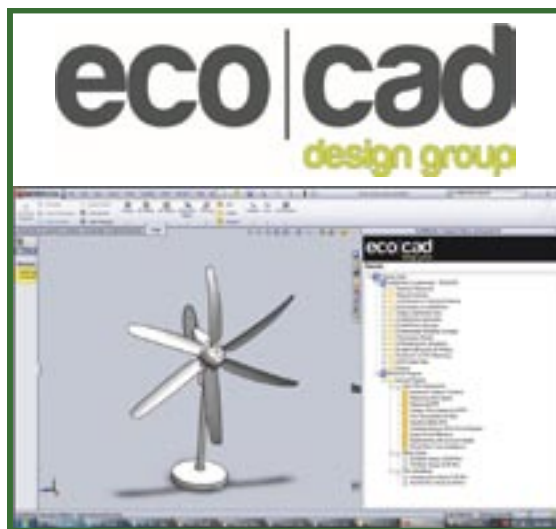
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Where Does Time Go?

by Mike Cattelino, WTEA Vice-President

As I write this, another calendar year is about to pass by. Another birthday is also looming, nearing that big number that everyone talks about, but I am not quite there yet. It makes me ponder, where does time go? I certainly cannot recover time that has passed, but hopefully I will have learned something from each moment as it does pass by. As we reflect on our time in education, how we work through the passing of time can define us. Some of us will do all we can, investing what seems like way too many hours to do so, in order to make sure that everything is in order. Others will let things roll along and in the end the outcome may appear the same in both cases. Before we realize it, our formal time in education is running short. I consider myself lucky in that I plan to be around education for quite a few years yet.

As I reflect on the opportunities that I have had to make better use of my time in education, it always takes me back to the students. Did they miss something because I was not effective or efficient? In those times I would utilize my errors as learning opportunities with the students. We would review what happened and I would facilitate a discussion about how it could have been different. It was usually a humbling experience but I found that it added credibility to the instruction and the college. I had a similar opportunity just this week with my son as



he assisted me on a community based project. He is in his first semester in the Machine Tool Technician program at FVTC. I had drawn some very basic sketches of the three different parts that I needed him to machine while I was working nearby on another aspect of the project with several volunteers. A seasoned machinist should have been able to complete the parts in less than an hour. It took him considerably longer and I could tell it really bothered him in the end that it had taken so long. We reviewed this on our drive home afterwards. Ultimately, the delays he experienced did not hold up the progress of the overall project by more than a few minutes, so he better understood that it was okay. His frustration turned into thinking of how to improve in the future. He is hard on himself, just like someone I know.

I hope that we all take some time on regular intervals to consider how we could have used our time differently. In the end, I also hope that we can feel good about the time we have spent educating others. I remind my three great kids all the time that as they grow older they will find the opportunity to learn from their challenges, to be more and more condensed. Priority setting becomes more crucial as we continue to shape our existence. I hope that you can balance your commitment to family and friends, teaching, and being good to yourself and others. Take the time, because before we know it, time will run out.



Plan now to attend

The 45th Annual Conference

WTEA

March 6 & 7, 2014

Chula Vista Resort • Wisconsin Dells

DISTRICT NEWS

District B

Brian Schiltz



Teachers and students alike have had great opportunities to participate in various events in the area this past fall. It was great seeing many of you from our district during these events. If you have an event or an article you would like to publish in the Interface and share with the rest of Wisconsin,

send submissions to me or our editor, Doug MacKenzie.

Don't forget about the upcoming conference Ready, Skilled, Working in Chula Vista, March 6-7. Would love to see you there and if you would like to be a future presenter, contact Mr. Steve Johnston (johnston@mwt.net).

Also of interest is ITEEA 2015. Watch for updates about the 2015 ITEEA conference in Milwaukee.

Heavy metal Tour

In October, for Manufacturing month Nicolet held its 2nd annual Heavy Metal Tour. The purpose of the event was to introduce the students to the various manufacturing careers and industries found in the northwoods of Wisconsin. Hundreds of students from Arbor Vitae-Woodruff, Crandon, Elcho, Lac du Flambeau, Laona, Mercer, Minocqua-Hazelhurst -Lake Tomahawk, Nativity, Northland Pines, Phelps, Rhinelander, Three Lakes, Tomahawk, and Wabeno participated in the daylong event visiting local businesses. The event was made possible through partnerships with PK-16 coordinator Teri Phalin at Nicolet, Grow North Regional Economic Development Corporation, North Central Wisconsin Workforce Development Board and local businesses. A few businesses students toured included: CASE, Northland Stainless, Hypro, Oldenburg, NEX, ABX, Superior Diesel, Northstar Steel, and the welding lab on Nicolet campus.



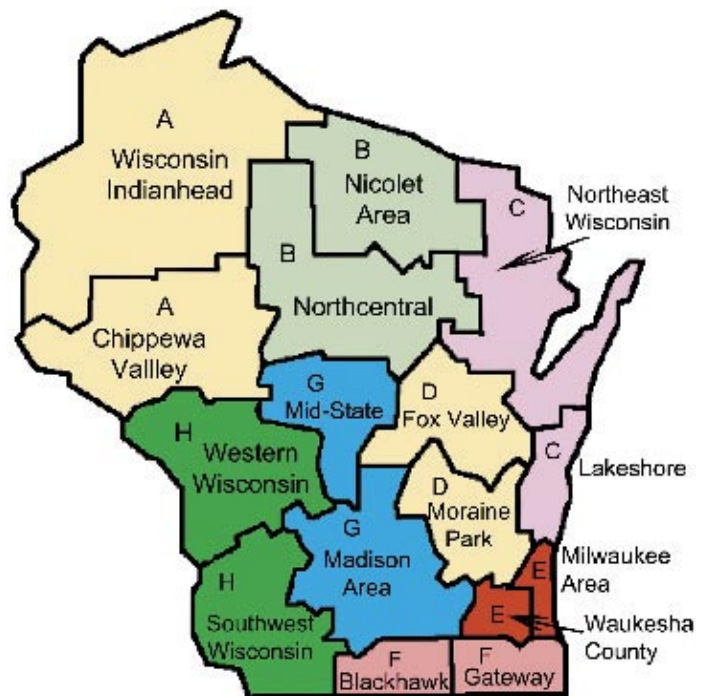
F.I.T.T. (Females in Technology & Trades)

Females with an interest in technology and trades gathered at Northcentral Technical College to explore programs offered at the campus. Students toured the labs and were introduced to the content areas of Architectural Design & Technology, Automotive Technology, Electromechanical Technology, Graphic Communication Technologies, Machine Tool Technics, Mechanical Design Technology, Residential Building, Refrigeration, Air Conditioning & Heating Service, Sustainable Architecture, and Welding. Learn more about this experience by reading the article "High School Girls Learn About Tech and Trades" found later in this Interface.

DPI Inservice

This fall CESA 9 hosted another DPI-WTEA inservice. Brent Kindred from DPI delved into great points of interest that you can access at the following link: http://te.dpi.wi.gov/te_technology-and-engineering-fall-service-resources.

WTEA District Map



WTEA Districts align with Wisconsin Technical College regions

DISTRICT NEWS

District C

Tom Barnhart



On October 21st Northeast Wisconsin Technical College hosted a high school instructor day. The event was coordinated by Brooke Holbrooke that included several opportunities for Tech Ed teachers to develop partnerships between their school with NWTC. Topics of discussion included CIM Mobile Lab Usage, Welding & Woods Curriculum Updates, Summer Train the Trainer Course Opportunities, and a Mech Design/Prototype program overview. The day also provided the group with two local Industry tours of the MEGTEC Systems and the C.A. Lawton business. The tours provided an insight to the skills specific to their manufacturing needs. This was an extremely valuable experience showcasing the relevance to programs NWTC offers its students. There were approximately 25 Tech Ed teachers from the northeast Wisconsin area in attendance. I can't say enough about the passion for education and how great the people involved in this event are.

The SkillsUSA District 3 competition was hosted by Ashwaubenon High School in partnership with NWTC. The event took place December 3rd. The event provided an experience in keeping with the SkillsUSA guidelines to prepare our students for regional and state skill competitions. Eleven Schools including Wabeno, Pulaski, Oshkosh North, Kewaunee, Green Bay East, Green Bay West, Green Bay South West, Bay Port, West DePere, Bonduel, and Ashwaubenon registered students and competed.



Competitions included: Job Interview, Technical & Architectural Drafting, Power Systems, Photography, Cabinetry, Team Problem Solving, and CNC Technology. A special thanks to all the school advisors, Lauri Domer, Tim Zoch with UTI, Mike Applebee with North West Mutual, Mark Weber with NWTC, and Ann Franz with the N.E.W. Manufacturing Alliance who all made this event such a great experience for the 57 students competing.



New WTEA Board Member



My name is Travis Ray and I recently joined the WTEA Board as a Director at Large. Here's a little background on myself. I have been teaching for 10 years now. I graduated from UW-Platteville. I have bounced around a bit in my teaching career along with taking a couple of years off. However, I am now back at McFarland High School and loving it everyday.

I look forward to working as your representative on the WTEA Board of Directors. As a WTEA Director I serve primarily the southern half of District G. This is the area around Madison. I can be contacted at McFarland High School or by phone. My school phone number is 608-838-4500 Ext. 4986, and my cell number is 608-778-3760.

Hope to see you at the conference!

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 2014 high school graduate
- Wisconsin resident
- Enroll in technology education at UW-Platteville, UW-Stout, or Viterbo University and start the fall 2014 semester
- Submit completed application form and 250 word essay prior to April 1, 2014

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



Graduate Credit Opportunity for Conference Attendees

The 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 26, 2014. 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, 2014. For more information contact Joe Ciontea, WTEA Executive Director.



UNIVERSITY of WISCONSIN
LA CROSSE

- Dates to Remember -

January 30-31	SkillsUSA Regional Competition	S.W. Tech. College
February 7	SkillsUSA Regional Competition	N.C. Tech. College
February 14	SkillsUSA Regional Competition	Gateway Tech. College
February 21	SkillsUSA Regional Competition	F.V. Tech. College
February 27-28	SkillsUSA Regional Competition	UW Stout
March 6-7	45th Annual WTEA Conference	Wisconsin Dells, WI
March 27-29	ITEEA Conference	Orlando, FL
April 29-30	SkillsUSA State Championships	Madison, WI
June 23-27	SkillsUSA National Championships	Kansas City, MO
March 26-28, 2015	ITEEA Conference	Milwaukee, WI

ANNOUNCEMENTS

CTE Month and Advocacy Resources

The Wisconsin Department of Public Instruction and Wisconsin Technical College System are using February's observance of Career and Technical Education Month in Wisconsin to highlight the wide range of exciting opportunities available to youth in the state who wish to explore their career options and the benefit of those programs to Wisconsin industry and communities.

Please check back often as we update the resources on our page. Use the time between now and February to plan your CTE month celebration in your school and community.



For additional CTE Month resources, please visit the ACTE website at <https://www.acteonline.org/ctemonth/#Challenge>

Our CTE advocacy website offers a vast array of resources you can use throughout the year. The value of CTE should be highlighted to inform students, parents, school personnel and counselors, community members, and legislators about CTE programs, student success, and the impact on college and career readiness. On the website, there are a variety of tools that can be used on a regular basis.

Better Buildings: Better Business Conference

The Better Buildings: Better Business conference, sponsored by the Energy Center of Wisconsin, will be held at the Kalahari Resort on March 6-7, 2014.

The Better Buildings: Better Business conference focuses on:

- How to build homes that deliver the energy savings customers want.
- Renewable energy technologies that reduce energy costs.

- How energy efficiency and green building practices keep you competitive.

Do you need a graduate credit? Attend this conference and complete a final assignment to earn one graduate credit from the University of Wisconsin-Stevens Point for only \$50! A registration form will be sent to you if you are interested in this option.

To learn more about this conference, visit <http://www.betterbuildingswi.org/>.

Tech Day with the Milwaukee Bucks

Presented by Wisconsin Technology Education Association

Monday, March 3rd, 2014 – BMO Harris Bradley Center – Milwaukee, WI

Tech Day with the Bucks is an event that you and your students won't want to miss!

Tech Day will include a special afternoon of guest speakers from within the Milwaukee Bucks organization talking about the operations behind running a professional sports franchise and a world class arena.

Following the speakers, students will tour of the BMO Harris Bradley Center and each student will get to shoot a free throw on the court!

Tech Day Timeline:

- 1:00-2:00pm: Arrival/Registration
- 2:00-3:30pm: Guest Speakers
- 3:30-4:30pm: Tours and Free Throw Opportunity
- 7:00pm: Bucks vs. Jazz Game

ONLY \$18.60 Per Person! Price Includes:

- Speakers from the Milwaukee Bucks organization
- Tour of the BMO Harris Bradley Center
- Free Throw on the court



Questions? Contact Jessica Blengino
414-227-0595 or jblengino@bucks.com

ITEEA & WTEA

Leverage Your Association Participation:

Take Advantage of WTEA and ITEEA Unified Membership!

These are exciting times for technology and engineering educators. With the focus on STEM, we have a unique opportunity to make a difference and to make the public and those in our field aware of what we do, with particular attention on the role we play in STEM education. Our voice will be far better heard by the masses if we can also come together in numbers to create one unified voice. Therefore, the International Technology and Engineering Educators Association (ITEEA) and Wisconsin Technology Education Association (WTEA) have joined forces in order to offer Wisconsin technology and engineering educators the opportunity to join WTEA and ITEEA for ONE low price.

With this membership, you will continue to receive the benefits you've always received as a member of WTEA, but in addition, you will NOW also receive these benefits:

- A complimentary annual print subscription (8 issues) to Technology and Engineering Teacher (TET), ITEEA's flagship publication [students and advocates/retirees receive an electronic subscription].
- A strong advocate for technology and engineering education on Capitol Hill and in Connecticut that will support your voice and position in leading technology and engineering in STEM education.
- Insurance Programs – \$40k free term life insurance for new members and greatly reduced rates for Professional Liability Insurance.
- Eligibility to receive grant and scholarship funds.
- ITEEA publications, product, and Engineering byDesign™ course and unit discounts available through the ITEEA eStore.
- “Members Only” access to the IdeaGarden listserv and ITEEA's extensive online library including publications, standards documents, conference presentations, white papers, and more.
- Free resume posting on ITEEA's website.

ITEEA Annual Conference-Specific Benefits:

- Savings on ITEEA Conference registration.
- Eligibility to present on a topic of interest or take part in ITEEA's Teaching Technology and Engineering STEM Showcase – an exchange of best practices in the field.
- Eligibility to receive awards and special recognition.

The REDUCED, professional, unified membership rate will be \$100 for one year/\$200 for two years, and you will receive a series of email notices when your membership is due to renew. Renewing will be easy by way of a simple checkbox for WI under Unified Membership on ITEEA's membership application and your renewal will include dues for both WTEA and CTEEA. Student and advocate (retirees) can join for \$40 for one year and WTEA life members can join at the very low price of \$15 for one year.

We look forward to serving you and are committed to helping you on your journey to professional success. If you have any questions, please call 703-860-2100 or email cmaggio@iteea.org or Joe Ciontea at joe.ciontea@wtea-wis.org.



The graphic features the WTEA logo at the top, which consists of the letters 'WTEA' in a stylized font with a red circle containing a white 'T' between the 'W' and 'E'. Below the logo, the text 'Wisconsin Technology Education Association' is written in black. Underneath that, 'Join WTEA and ITEEA for only \$100' is written in green. Further down, 'Follow the link on the WTEA homepage for details' is written in green. At the bottom is the ITEEA logo, which includes a red sunburst icon to the left of the word 'ITEEA' in blue.

Candidate for WTEA Vice President

Mike Cattelino

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Education & Certification

WI Indianhead Technical College	Technical Diploma	Machine Tool
Fox Valley Technical College	Journeyman	Machinist Apprenticeship
UW Stout	BS	Career & Technical Ed.
UW Oshkosh	MS	Spring 2014

Professional Experience

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

Leadership, Awards and Recognition

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

Position Statement

I would like to do my part to assist and lead WTEA members in finding and sustaining success. That could mean different things to different people but that is the reward of working with a group like this, it is something different and positively challenging all the time. I would like to focus on helping educators connect more with industry in order to try to find a support mechanism that can enhance their programs. I have extensive experience working with 'business and industry' and have gotten to understand how they view schools. I am also not shy to ask for whatever is needed and not afraid to hear the answer. My motto is "if you never A-S-K, you'll never G-E-T." As we gear up for the 2015 ITEEA conference in Milwaukee, we hope the emphasis of connecting businesses to education is more evident than ever before at that venue. I feel that I am a fairly straight forward person to work with and that is based on my background which is: I am a farmer by BIRTH, machinist by TRADE, and educator by CHOICE. I look forward to the future of the WTEA and hope that in some way I can remain involved in shaping the years to come.



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CONGRATULATIONS

Carl Hader Named Instructor of the Year

Carl Hader has been selected as the 2013 Byrl Shoemaker/ASE Industry Education Alliance Instructor of the Year. This inaugural award was created to recognize an outstanding individual whose dedication and passion advanced excellence in career and technical education



through involvement with NATEF program accreditation, the Automotive Youth Educational Systems (AYES) initiative and ASE professional certification. This award is named for Dr. Byrl Shoemaker, the founder of NATEF, former ASE Director, NATEF Trustee and Consultant and former CTE Director for the state of Ohio, and is given by the

ASE Industry Education Alliance and its family of organizations including ASE, AYES, ATMC and NATEF.

Carl Hader was recognized at the annual ASE Technician Recognition Awards on November 20th at the Fairmont Hotel in Newport Beach, California.

Hader also spoke at the national gathering of the ASE Service Professional's Council and at the awards presentation with regard to the state of high school auto tech programs and the important need for mentors for young people aspiring to enter the auto technician career path.



Pictured are from left to right: Chuck Roberts (President & CEO, AYES); Trish Serratore (President, NATEF); Carl Hader; Sally Hader; Darrell Parks (Educational Consultant, NATEF).

Wisconsin AYES Grad Makes World Class Showing

Kieron Kohlmann, Racine AYES grad and a student at Ferris State University represented the United States in Leipzig, Germany in the Automobile Technology competition during the biennial WorldSkills Competition. This international event was held July 2-7, 2013.

Kohlmann was awarded the gold medal and received "best in nation" in Auto Service Technology in November 2012 during the WorldSkills Americas Competition in Brazil where the United States competed against 23 other countries in preparation for the WorldSkills Competition.



His WorldSkills efforts in Germany resulted in the award of excellence, the equivalent of a fourth place. The competition was fierce with distance between Kieron and the gold medal winner just a matter of a few points.

"As an AYES automotive instructor and SkillsUSA advisor, I feel very fortunate to have been part of the automotive education for a student the caliber of Kieron Kohlmann," said Dave Dixon. "Kieron is the perfect choice for the WorldTeam. He absolutely loves anything automotive and has a tremendous understanding of how to diagnose and repair automobiles." And, Gottfried Georgi added, "Kieron and the other successful students are the reason I still teach, mentor and volunteer."

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

WTEA 45th Annual Spring Conference and Trade Show

Skilled, Ready, Working!

The WTEA invites you to participate at the 45th 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.

The conference will be kicked off with a general welcome to all members given by the Department of Workforce Development Secretary Reggie Newson.

Our first general session will be given by Bill Preller, Senior Director, Specialty Business - Case IH NAFTA. Even in the times of what should be a hiring environment, finding, developing, and recruiting capable talent for growth has become increasingly difficult. A variety of tactics have been employed by those seeking to fill their growing need for talent such as in-house development plans, partnerships with schools, other third parties, and more aggressive recruiting and retention plans. Bill will talk about developing strong relationships outside of normal recruiting channels, and building and growing programs both inside and outside the company.

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

Later on Thursday evening the WTEA recognizes all of our outstanding award winners during the Awards Banquet at 7:00 p.m. We honor our colleagues for their outstanding contribution to technology education. The

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

On Friday, following the traditional alumni breakfast, we will begin the day with diverse sectionals and vendor sponsored workshops as well as our annual Project Showcase. On display are projects by students as well as demonstration projects made by instructors.

At mid-day, we will have a luncheon with keynote address by Vincent J. Canino, VP Renewable Energy & Power Solutions – Trane. Vincent will speak on the topic of "Work Force Requirements in the Renewable Energy and Power Generation." Trane's Renewable Energy and Power Solutions business will be discussed with an overview of resources needed to complete these transactions from development to operation and maintenance. Skills sets needed, functional disciplines and types of course work to consider when creating a renewable energy/power generation curriculum will be covered as well.

This year's conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin sharing their expertise on topics such as: Video Games for Learning, Fab Labs, Manual Arts to Technology Education - A Brief History, Rethinking Welding Education, Robotics, SkillsUSA, New TE&E State Standards, STEM for Middle and High School, Building a Six Hour Canoe, Google Drive Applications, Nanomanufacturing from an Ordinary Benchtop, Focus on Manufacturing, New Teacher Boot Camp, and much more!

Put March 6-7, 2014 on your calendars, get your release days approved, and fill out and mail your registration form today, if you have not already done so. The convention fee is \$120 for members and \$150 for non-members. As a final reminder, 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!

Thanks to this year's conference sponsors: Gateway Technical College, Madison College, First Technologies Inc. CDX Automotive, STEM Academy, and WI-DPI/WTEA TEquity Project.

Chula Vista Resort, 4031 River Road, Wisconsin Dells - www.chulavistaresort.com

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

WTEA online conference registration at: www.tinyurl.com/wteaestore

Project Showcase

WTEA

Galloping Greg Groom says . . .



I Want Your Projects!!!

Join us for the 5th annual **Project Showcase** again this year at the WTEA conference. As Technology and Engineering Teachers, we all love projects. So . . . we are asking that you bring projects that we can display. Bring projects such as cribbage boards, Vex Robots, student poster board displays, electronic circuits, graphic arts and printing projects, CO2 cars, airplanes, 3D CAD drawings, machining projects, welding samples, or even digital pictures of projects. These can be student made projects or samples made by instructors. You are welcome to include supporting curriculum, but it is not required. This is different than the former Curriculum Exchange. **WE WANT TANGIBLE PROJECTS.** Drop off the projects Friday morning by 7:00 AM in the Grand Ballroom. They will be displayed throughout breakfast and should be picked up after the luncheon. Please email Steve Meyer at smeyer@brillion.k12.wi.us if you have any questions. Please consider supporting this activity.

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

Manufacturing Track Update for 2014 WTEA Conference

by Tom Barnhart, Ashwaubenon High School

This year we will continue to offer a manufacturing based track of break-out sessions. The goals of these manufacturing specific sessions are to:

- Showcase trending Wisconsin K-12, Technical College, and private sector articulation & partnership opportunities.
- Collaborate and share successful program strategies, actively engage educators with a hands-on learning experience related to skills specific to the manufacturing track.
- Promote awareness of student opportunities in manufacturing due to the high demand for skilled workers.

In order to provide these sessions, we have partnered with technical colleges, and, as a result, we're able to do some



pretty cool stuff like utilize the NWTC CNC mobile lab and electrical mechanical lab simulators. More information at <http://www.youtube.com/watch?v=Gxr2xs3jMoQ> There will also be Wisconsin Technical College staff on hand to present and support session needs. Please consider the manufacturing track sessions during the 2014 conference.

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ALL-NEW 2013 PRODUCT LINE

Stoughton High School Opens New Fab Lab

by Brad Seehafer, Stoughton High School

Stoughton High School has proudly opened its fab lab - the second public high school fab lab in the world. There are about 125 of these MIT inventions located mostly in colleges, universities and public/private partnerships around the world. Two exist in Wisconsin at UW-Stout and Fox Valley Technical College. So, what is a fab lab? According to the Fab Charter, "Fab labs are a global network of local labs, enabling invention by providing access to tools for digital fabrication."

Fab lab is a concept designed to enhance digital fabrication skills of both students and the general public. The overall concept, ideas, tools and techniques differ little from what we have been emphasizing in Tech Ed for decades - design, prototype, refine and build. The core of fab lab revolves around five pieces of equipment that its developers feel can make just about anything. This equipment would be familiar to most Tech Ed teachers, and includes a CNC router, laser engraver, vinyl cutter, small milling machine and a 3D printer. With these five pieces of equipment a student can take an idea and turn it into reality. What it has done for SHS is to bring together the equipment that allow students to solve problems in a creative way and see the finished product while engaging students and building skills with the latest tools. The emphasis is shifted from hands-on building skills to more of a "you design it and let the machine(s) do the building" concept.

The idea of a fab lab was brought to our attention by an engineer working at the Cummins Company, a local employer. After a visit to and experiencing first-hand what happens in a fab lab, his first thought was "the skills being developed here are exactly what we want to see in future engineers." He went on to describe the problem of finding engineers who have a hands-on and a designing skill set that he has found present in the best engineers. Our fab lab was funded entirely through donations by six community businesses and foundations and many smaller donors. When presented with the concept and explicitly shown what a fab lab can do, these groups saw value in the idea and more than \$200,000 was raised over a summer. This idea went from concept to a fully functional lab occupied by students in 1 1/2 years. Next year we will open the facility to the public for community/business use, the idea being to use the lab for prototyping but not production, allowing ideas to be incubated, developed and refined or simply allowing community members to experience the latest technology.



Since the fab lab is a district wide initiative and encompasses a wide subject matter, integration of other departments' curricula in the use of the tools and techniques is a goal. Besides the technology & engineering department, the art, science and math departments are the biggest users of the lab. They have created or revised a few lessons to include the new equipment, thereby exposing and making relevant what we do in T & E to non-traditional

T & E students and other departments, many of whom have taken a sudden interest in our program. Time will only tell, but we suspect that this exposure will help enrollment in our more traditional programs. In accordance with this interdepartmental harmony, three teachers, one each from T & E, math and science were enrolled in the Fab Academy, a live world-wide video conference based at MIT. The intensity of this course can best be described by its 35% graduation rate.



Currently, we offer two specific fab lab courses, an introductory course and an advanced course. The machines by themselves are well and good, but when they are used together to build and control assemblies, the heart of fab lab and T & E becomes apparent. The courses will focus on the engineering process of designing, prototyping and refining a product until it would be ready for manufacturing. In addition to familiarization with the tools and engineering basics, electronics also plays a large role, such as controlling and programming simple circuit designs like an LED controlled in various patterns by a button, a temperature sensor or controlling a small DC motor. In addition to the electronics and the machines, composites, molding, casting and 3D scanning will be combined into a comprehensive project, incorporating most of or all of



these topics into a problem-solving or design project at the end of the semester in preparation for the advanced course which will go deeper into electronics and complex project development.

What is amazing is how the creation and operation of this lab has touched upon just about every major theme that is highlighted at the WTEA



convention each spring. STEM, PLTW, partnerships, share your message/tell your story, gender equality, rigor and relevance - fab lab incorporates parts and concepts of each and has especially strengthened the partnerships and community involvement. Many community organizations and businesses are involved and have moved beyond the financial and material aspect to a true partnership with local engineers coming into our school and spending time with students. This reinforces that the concepts of engineering we teach are valid and also emphasizes how soft skills like communication, teamwork or just showing up on time are valued by employers.

These partnerships have proven vital to spreading our message. We have found that people who are exposed to what we do spread the word more efficiently and widely than we ever could, which has led to a productive advisory team that has produced ideas, concepts and excellent communication. This group has exposed the entire T & E program to a wider audience and has led to collaborative efforts, improvements and growth.

These high tech tools and engineering emphasis may be nothing new for many of your programs that already have this technology; but for a program that until last year had no CNC technology of any kind, a leap of this degree in a short time frame is an extraordinary and shocking departure from where we were and will serve as the path to move the SHS community into the 21st century.



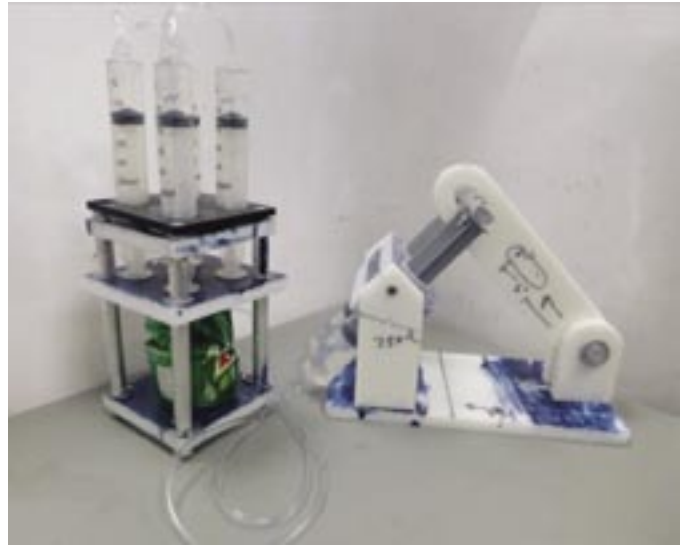
Creating a Real World Manufacturing Experience For Your Students

by Matthew Schultz, Lakeview Technology Academy

After three years of teaching a Fundamentals of Manufacturing class that modeled more a materials and processing class, I decided it was time to make a change. I felt that, even though materials process was important, the class itself was missing some vital aspects to what manufacturing really is. I decided to hit the drawing board and revamp the class to better teach manufacturing fundamentals. While at the development stage, I tried to think of all the cool things I could do with my students in a machining shop that could relate to the big picture of manufacturing. I knew how I wanted the final practicum project to work; I wanted my students to design, prototype, mass produce and distribute a product that could potentially revenue funds for our program, all the while giving the students a real world experience with manufacturing.

With the big picture in mind, I still needed the necessary material and information to get us there. I broke the class into three main sections: Section One; What is manufacturing/manufacturing systems. Section Two; a mini-manufacturing unit. Section Three; Practicum - manufacturing a product for distribution.

In Section One students learn about manufacturing both within the US and globally. Students are introduced to many sub systems within manufacturing - systems like product design, material processes, marketing, and distribution. During this section the class toured manufacturing facilities like Case New Holland and Gateway Technical Colleges IMET Center. The main goal of this unit was to paint the picture.



In Section Two we developed a company within the class and mass produced a “Hydraulic Can Crusher” The aim of this section was to take a product, reverse engineer it, fix any flaws and then mass produce it. My goal was to turn my class into a manufacturing company. The class was broken up into two main teams; parts production and assembly. Students had specific job responsibilities within each team. The parts and productions team was divided into groups of two students who were given a part that they had to reverse engineer, prototype, refine the design, make a jig and then mass produce. The assembly team then took all those parts and put them together to make a can crusher. The project went off without a hitch, I have not had a class who was so focused and so dedicated. At the beginning of each class the students were literally licking their chops to get started. During the project I started to hear conversations between the teams talking about tolerances and quality control. The students were actually taking a vested interest in the product, it was the coolest thing to see. By the end of the section we had mass produced thirty hydraulic can crushers.

Section Two was not just fun and games. The students had to create a project portfolio as a class. Items in the portfolio included; a prototype to design chart, an order of operations for each part, tooling and materials needed, a CAD rendering of the part, a time chart, and a cost analysis. Each team was responsible to submit this information



which we then compiled to determine the overall cost, and time to manufacture the can crusher. The portfolio looked very professional, so professional that I decided to have it printed and spiral bound at Kinkos.

At the end of Section Two, my students now knew what it took to manufacture a product; they were excited to start the practicum, and when I say excited that is an understatement. On a side note, this class has been the most fun to teach in my short five year experience. I looked forward every day to getting into class and seeing what cool things my students would come up with. The energy in the class was definitely contagious.



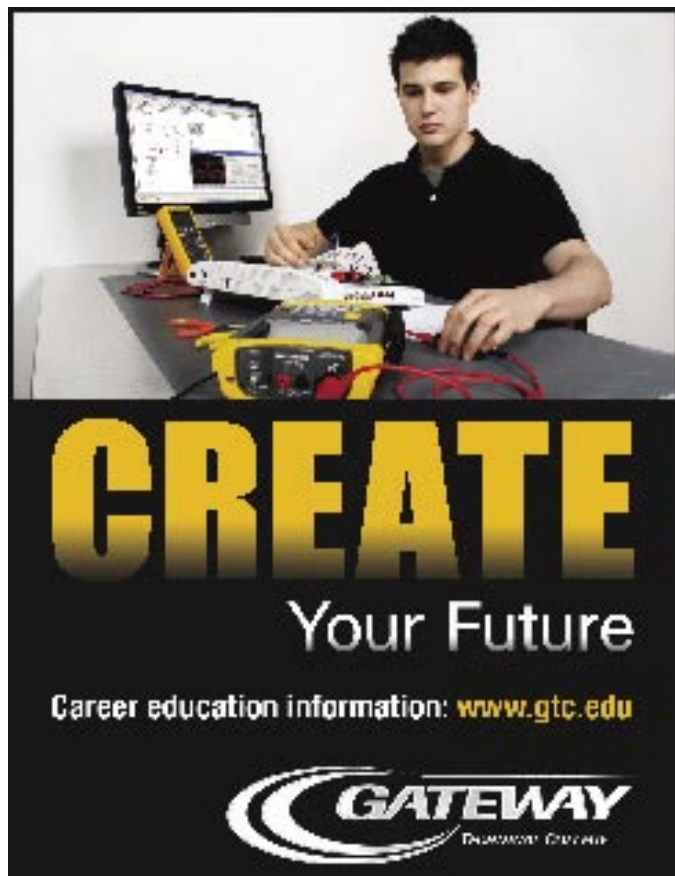
Section Three just started. In this section the class is again set up like a manufacturing company. Along with the parts production and assembly, I added a marketing team. Marketing will now be responsible for advertising our product and developing all of the material needed to sell the product. We decided to go with a project that uses both our CNC laser engraver and our CNC plasma table. With the end of the semester approaching fast we needed to utilize the speed and precision of CNC systems. The product we came up with is a sheet metal replica of a Volkswagen Beetle, and we are calling it "Yard Art."

Section Three has been no different than the previous section in regards to the student's excitement level. With the sale of each "Rustic Beetle" the class will net \$20.00 in profit. With the profits we voted as a class to get company works shirts, just another aspect to the project that gets the kids pumped.



With the class not finished, and my editors deadline for this article I am afraid that you will not hear how this project wraps up. But what you can do is attend my session on "Creating a Real World Manufacturing Experience For Your Students" at this spring's annual WTEA Conference in the Dells. During this session I will outline this class providing examples that you can take home to your class, as well as some free giveaways of our products and some free curriculum to use.

See you at the conference!



High School Girls Learn About Tech and Trades

by Keith Uhlig, Wausau Daily Herald Media

Reprinted with permission

More than 50 girls from nine central Wisconsin high schools learned Friday what it would be like to be welders, mechanical designers, machinists and other professionals in the manufacturing and technical fields. They were taking part in a program called Females in Technology & Trades at Northcentral Technical College. The idea was to expose the girls to professions that are in what have been traditionally male-dominated fields to ensure that they know of all the career opportunities available to them.

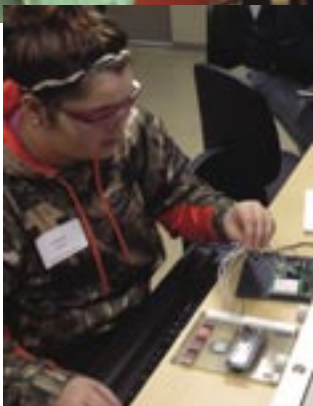
The program was organized by Laurie Schulz, a mechanical design instructor at NTC. Schulz worked as a designer for years and said she had no problems working in a male-dominated field, but not all young women know that such careers are even possible. The F.I.T.T. program, Schulz said, was meant to change that by both exposing the girls to all of the programs NTC has to offer and giving them a chance to do some hands-on activities, such as welding.

Maddy Krueger and Katherine Russell, both juniors at Tomahawk High School, participated in the program to find out what they might do after graduation.

"I think this is really interesting," Krueger said. "I'm in a shop class at school, and I'm interested in mechanical comprehension and design. So I thought that would be interesting to learn."

Russell wants to become a materials sciences engineer, designing materials that can do new things. "There's a need for more women in engineering fields, so I wanted to learn more about that. And I've never welded before, so I'm really nervous," Russell said. "I really learned a lot today about what NTC had to offer. I didn't know we had an engineering and STEM (science, technology, engineering and math) school so close as Wausau."

The program was beneficial for female students, Schulz said, so that "they can see what types of options are out there for them that are nontraditional, compared to what they may normally do."



Photos by Brian Schiltz

Robot Donation by The Fisher Barton Group to Watertown High School Supports STEM Education Practices

Submitted by Jesse Domer, Watertown High School

Students and faculty at Watertown High School celebrated the newest addition to their technology and engineering classroom Thursday, September 26, 2013 with a ribbon cutting ceremony at the high school: an ABB IRB120 high-speed robot donated by the Fisher Barton Group (Fisher Barton). The company made the donation in an effort to aid Science, Technology, Education, & Math (STEM) education practices, increase students' exposure to robotics, and offer continued support to the community in which it was founded 40 years ago.

"In a meeting with the Watertown Economic Development Organization (WEDO) and the Watertown Unified School District (WUSD), we identified a gap in exposure to robotics at the middle and high school levels," noted Mark Lessner, VP of manufacturing at Fisher Barton. "We wanted to donate the robot in hopes that it would generate excitement in the students as they gain exposure to the fields of robotics and manufacturing."

Students enrolled in a technology and engineering class at Watertown High School will have the opportunity to use the 60x60 inch, compact, multipurpose industrial robot. The robot will be integrated into the curriculum as a training tool, allowing students to learn programming techniques and gain an understanding of its mechanics. The ABB IRB120 is mounted on a table with a template pattern for the development of several different material applications and programming capabilities.



"The ABB robot is an invaluable addition to our classroom, giving students educational opportunities that were not previously available at WHS," said Jesse Domer, Watertown High School teacher of technology and engineering. "My hope is that the students will become comfortable with the technology and start independently creating their own programs."

Domer, a faculty member at WUSD since 2006, was the 2013 recipient of the Wisconsin Technology Education Association's Teacher of the Year award. Additionally, he led the winning team of students in the SkillsUSA competition last year. His technology and engineering classes teach students about manufacturing, drafting, and engine design and development.

Faculty at WUSD plan to grow and strengthen the engineering and manufacturing programs in Watertown through an initiative called Vision2020. Vision2020 is a collaborative effort between WUSD, industry partnerships and community organizations. It's through networks like these that the robot donation was made possible.



Pictured left to right: Kim Erdmann (WEDO); Dave Vitale (WUSD); Scott Mantei (Principal, Watertown High School); Jesse Domer (Instructor, Watertown High School); Jeff Russell (Fisher Barton); and Mike Porsky (Fisher Barton).

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Gateway Celebrates October's Manufacturing Month

by Matthew Schultz, Lakeview Technology Academy

October in Wisconsin is Manufacturing month - an entire month dedicated to manufacturing awareness. To celebrate, Gateway Technical College held their first annual Manufacturing Expo Day at their new Integrated Manufacturing and Engineering Technology Center (IMET). The event took place over a period of two days with over three hundred middle and high school students attending. The purpose of the event according to Debra Davidson, event coordinator, "was to facilitate a middle and high school student interaction with local manufacturers in order to create an awareness of manufacturing as an industry, the local manufacturing presence, career opportunities, and skills required to prepare students for manufacturing careers."



The event was a great opportunity for my manufacturing class students. After the event I was able to discuss the opportunities that are out there for my students, as well as what types of courses they should be taking at the high school level to prepare them for the workforce or continuing education in the field of manufacturing. My students are very excited with the opportunity they have at Lakeview Technology Academy because of our partnership with Gateway. There are a number of courses they can take as a high school student through Gateway at Lakeview to help them prepare for the future.

All in all the event was a huge success in giving students a look at the opportunities that are in front of them in the field of manufacturing. Gateway plans to host more events like this in the future to help keep the awareness of manufacturing in Wisconsin strong.



Gateway invited over 20 members from local industries with informational booths for students to visit. Some of the industry members included Harley Davidson, XTEN Industries, Case New Holland, Bradshaw Medical, In-sinkerator, Kenall, Centrisys, Ocean Spray and Asyst Technologies.

During the event the IMET showcased their new facility with open labs to all of the students. Demonstrations on equipment were given by actual Gateway Instructors allowing students to see what types of cutting edge equipment the new facility has to offer. My student's favorites were the "Fab Lab" and the "Manufacturing Lab."

President of Gateway, Bryan Albrecht was there as well, taking time to discuss career options with students on a one on one basis. He even posed for a picture with my students rocking the air guitar.



In the month of October the IMET hosted more than 400 students in manufacturing related events! Keep it up Gateway!

TEquity Project Strategies You Can Use

by Eric Sutkay, Lakeview Technical Academy

It is always good to be thinking about gender equity in your technology education classrooms. The number of female students is hopefully increasing as a result of new exciting curriculum, ongoing gender equity efforts, and more positive motivational energy. Many have asked about strategies that work when trying to promote gender equity in their classroom and the TEquity team has come up with a “Top Ten List” of strategies to attract and keep girls and young women in Technology/STEM Education and Careers. This list is a great place to start looking and exploring. Remember to look for TEquity on the web at www.wtea-wis.org and click on the TEquity tab. You will find some great resources including presentations, articles and other strategies for gender equity. We intend to provide more detailed info on each of the ten strategies on the TEquity web page. Please share examples of how the strategies have worked in your location.



Top Ten WTEA Strategies to Attract and Keep Young Women in Technology/ STEM Education and Careers

1. Educate yourself about gender equity issues. Be positive and gender inclusive in your language, attitudes, and materials.
2. Actively engage with girls - find them, talk to them, learn what is important to them including future career opportunities. Express enthusiasm and clarify STEM possibilities related to their interests, etc.
3. Analyze your materials, instructional practices, curriculum content and activities to assess the match between girls' needs and interests as well as contemporary careers. You may need to create new courses to overcome stereotypes about the content or related careers of existing courses. Provide semester length courses to encourage exploration. Build autonomy and choice into projects and activities.
4. Build allies in the school and community to support gender equity activities. Counselors, other teachers, parents, and those employed in nontraditional careers should be working with you to educate girls and young women.
5. Establish a classroom “code of conduct” and enforce it impartially. Emphasize equal treatment - all students must feel valued and safe. Treat all students with respect and expect the same from them.
6. Ensure the classroom and lab environments are clean, neat, and professional (orderly).
7. Determine how your program is perceived. Take steps to counter misperceptions and connect with related career opportunities. Develop recruitment materials. Involve students in creating promotional materials with diversity representation. Go beyond equal to affirmative representation - e.g. a poster aimed at girls.
8. Encourage and mentor every student to connect their interests to the class and to careers. Emphasize effort and not talent, neutralize gender stereotypes, support student confidence, etc.
9. Bring real world, successful, female guest speakers to the class. Prepare those speakers ahead of time with tips on what students need to hear most, including: a description of the path from high school to the current career; the contribution of their career to society; the ability to balance work, family and community life; available career advancement opportunities; description of any barriers and solutions to any barriers the speaker encountered.
10. Contemporary career development related to technology education and engineering. Connect students to web-sites of interest based on their career choice and their gender, race, or disability.

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

If you are not receiving the Technology Educators listserve postings,
you can sign up by contacting

Brent Kindred at: brent.kindred@dpi.wi.gov



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WEEVA Advisor Workshop

by Matthew Schultz, Lakeview Technology Academy

WEEVA, Wisconsin's Energy Efficient Vehicle Association hosted a one day workshop for new and seasoned advisors. The workshop took place at Kimberly High School's beautiful tech facility. The workshop covered many topics including; why start a team, promoting and funding your team, incorporating it as a club or a class, vehicle design tips and tricks and many other useful topics. More than 15 advisors showed up for the event that was sponsored by WEEVA and put together by their exec panel. President Mike Paquette, Supermileage Coordinator Jay Olenski, Electrathon Coordinator Duane Elfering, Secretary/Treasurer Kevin Janota and Director Jesse Domer led the sessions offering advice from their combined 100 years of experience in designing and building energy efficient vehicles.



Kevin Janota gave an excellent presentation on making a fiber glass mold for your vehicle, while other advisors added their own experiences with fiber glass and body coverings. Duane Elfering brought many of his home made projects to share such as a homemade motor controller and a hydraulic dyno that he made from a power steering unit. Watertown brought a number of their vehicles to put on a show for advisors to look at and to discuss different strategies. Kimberly showed off their "Urban Concept Vehicle" and talked about their trip with it to the Shell Eco-Challenge in Texas.

This workshop has been one of many that WEEVA puts on for their advisors. WEEVA does an excellent job helping new teams get started. Many veteran teams offer vehicles to new teams to help them get started by reverse engineering a completed vehicle. I have never seen an organization whose members are so willing to share



information and help new teams. You would think that it wasn't a competition with the amount of information shared, but in fact, it is quite competitive.

The event was a success and offered a lot of information to both new and seasoned advisors. On my long drive back home from Kimberly to Kenosha my mind couldn't stop racing with ideas on what I wanted to incorporate to my team. It is events like this that keep me excited about teaching, we have one of the greatest professions and definitely the greatest people teaching in it. The tech-ed brotherhood and sisterhood is exemplified in WEEVA. If you don't believe me, just attend one of these workshops for yourself.

A special thanks to WEEVA for sponsoring the event and Kimberly High School for opening your doors and allowing us to tour your amazing facility.

Dates for upcoming WEEVA Events:

UW Stout April 18th-19th

FVTC April 25th-26th

UW Platteville May 2nd-3rd (Tentative)

Road America May 12th-13th



FROM THE ARCHIVES

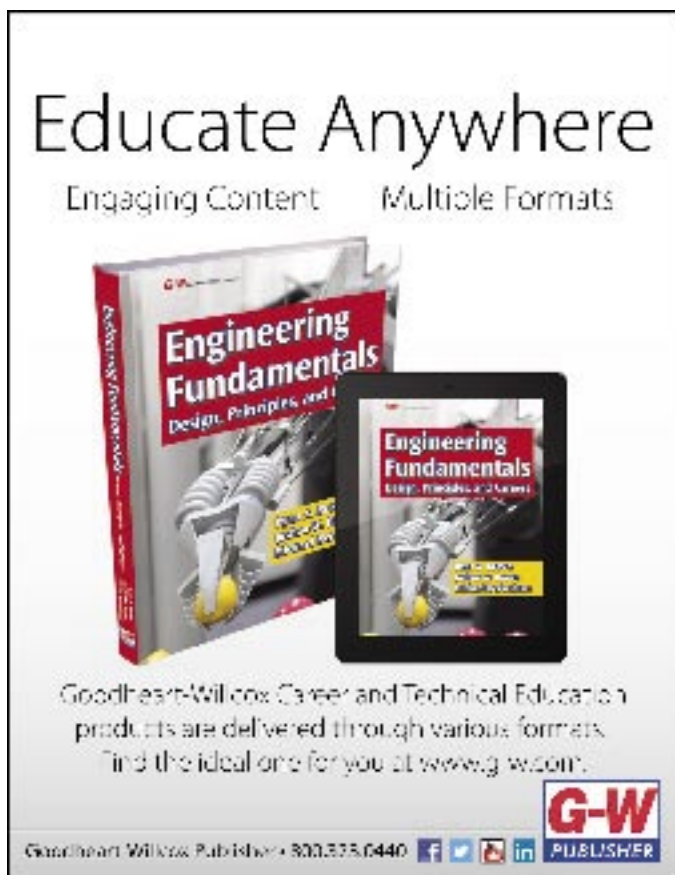
Editor's Note: The following article is reprinted from the Winter 1994 issue of the Interface.

Wisconsin Starts Engineering Pilot Program

This past summer four educators from Wisconsin participated in a National Science Foundation Workshop In Stoney Brook, New York, that introduced them to a new program in engineering for high school students. The course has been developed in response to national studies which suggest implementation of pre-college courses that survey and stimulate interest in careers associated with engineering and technology. During this one year course, students will explore the relationship between science, technology and engineering. The course is an integrative hands-on laboratory based set of case studies for academically able Junior and Senior students. Participants from the Eau Claire and Appleton school districts have returned home with a complete curriculum and will be piloting this program for the State of Wisconsin during the 1994-95 school year. "Principles of Engineering" is designed to expose students to the important elements associated with all engineering disciplines. The course is an attempt to show students interested in this occupational

area case studies that are typical examples of the type of work that an engineer would be involved in. Case studies include Auto Safety, Machine Automation, Structures, Ergonomics of Communication Technology, Energy Systems and Bio-Medical Technologies. Through the study of these case studies, students are exposed to the major engineering concepts of modeling, systems, optimization, technology society interaction, design and ethics. Both pilot schools have chosen to use a team teaching approach with an instructor from Tech Ed and an instructor from Math and/or Science teaching this curriculum.

Interested instructors who would like to learn more about this exciting new course will have the opportunity during 1994. Dennis Skurulsky, technology education instructor from Eau Claire, will be offering a workshop at the Fond du Lac conference, explaining key elements of the curriculum and sharing activities that are associated with student growth in this area. He will also be offering a week long workshop at the Cray Academy in Chippewa Falls, the first week in August. The Cray workshop will give instructors an opportunity to try hands-on activities associated with the course, preview class materials and take home the entire curriculum outline.



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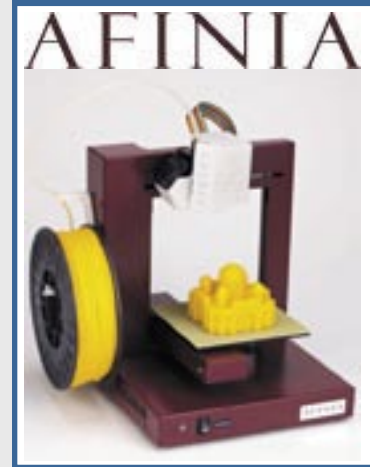
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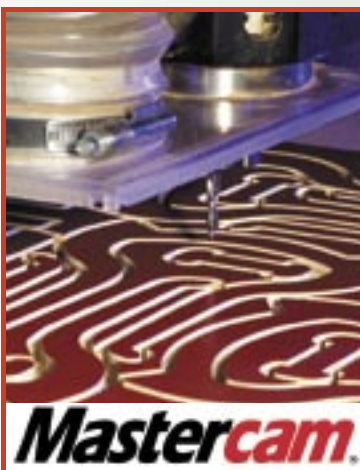
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