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Journal of the WTEA

Spring 2014

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Technology & Engineering for Everyone

by Jesse Domer, WTEA President

Teaching - what a great profession we have. Where else can you get lost in time, helping a student realize their potential, and if lucky – get dirty as well? I have been reflecting on our job as Technology & Engineering Educators recently, pondering what our identity is. Many argue it is teaching STEM education, others say it is Engineering, some hold firm to Industrial Arts, I personally believe it is career exploration and skill development. Although, as I push the broom around the shop floor pondering the thoughts in my head, continually answering questions about weld beads and lathe speeds, I realize Wisconsin has it figured out. One of my favorite quotes in life (told to me by Dr. Gomez) is “do what is good for students.” At the very basic level, as educators, we are striving to help the youth in our reach every day.

I recently attended the ITEEA conference with a group of great Wisconsin Teachers! There are so many things to learn from a conference at that level, bringing people in from around the world, and sharing each other's strengths as educators. Though it may be clear many look at our profession differently in various discussions, students often come out on the top of conversations. My point is take a moment to reflect on what you and your program are doing and compare it to the needs of your students, community and industry. It may be a fancy national curriculum, it may be a hot new venture others have success with, it may be struggling to stay afloat. Whatever your program is, be sure it is good for your students, and involving your industry to be the best it can, as I know Wisconsin does an excellent job showing the nation how it's done in Technology & Engineering Education.

As your newest WTEA President, I have frequently been asked “Jesse, What are you going to do?” To follow

up the previous paragraph, I want to strengthen what we have and where we have been in Wisconsin during my time here. One of my first priorities is to bring back “Hi-



Tech Weekends” for everyone to participate in. I strongly believe that bringing our educators together regularly helps strengthen our local programs. So, I encourage everyone to look at hosting or attending a HiTech Weekend over the next 12 months. Secondly, I want to support and strengthen our great leaders on the WTEA Board of Directors. These are some of the best and most passionate educators we have in Wisconsin, who want to ensure our profession is thriving around the state. Third, I am working to tackle the skills gap in Tech

Ed. We cannot make a dent in this problem alone, but together we can begin to turn it around. One of the first ways we can all help is to get in front of our students and talk about why we love our jobs and how they would be great educators in their future. If you are a leader of a student organization, or have a foot in any competitions at the Regional or State level, I encourage you to speak in front of these groups formally as a spokesperson for our profession. WTEA will be in front of SkillsUSA State Conference and all of the WEEVA events this Spring making a pitch for the profession in front of thousands of students.

WTEA has been very active lately. In this Interface you will read a letter your WTEA Executive Board sent on behalf of our membership to Wisconsin Superintendent Evers about recent legislation. WTEA is also hosting ITEEA 2015 in Milwaukee next March with GREAT registration rates for our members. WTEA is hitting the pavement strong this spring with travel to multiple events around the state promoting TEquity, Tech Ed, and more. I look forward to the next two years working with many of you and leading the WTEA forward.

- THANK YOU -

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WTEA BOARD NEWS

Winter 2013 - 2014 Board of Directors Meeting Highlights

by Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the winter 2014 WTEA Board of Directors Meeting held January 17th and 18th at the Chula Vista in Wisconsin Dells, Wisconsin.


- New Board appointments:
 - Hugh Hermann, Curriculum Specialist
Milwaukee Public Schools: Director at Large.
 - Travis Ray, Tech Ed instructor
McFarland High School: District G.
- Mike Cattellino, Fox Valley Technical College was elected WTEA Vice President.
- Doug MacKenzie, Interface Editor, is looking for more members to submit articles for publication in the Interface. A ten dollar credit towards membership renewal will be awarded to those members who get an article published in the Interface.
- WTEA will host a joint conference with ITEEA in the Spring of 2015 in Milwaukee.
- President-elect Jesse Domer previewed the board with his goals as future president.
- WTEA's manufacturing track is looking for a list of high schools who partner with colleges/technical colleges. WTEA specifically wants the names of the institutions and the contact. Email information to Tom Barnhart (tbarnhart@ashwaubenon.k12.wi.us).
- WTEA Foundation auction at the Spring Conference is always looking for items to be donated. Please contact Al Gomez if interested in donating.
- WTEA will be hosting a booth at this year's Skills USA Conference. The aim of the booth is to recruit future Tech Ed teachers. Contact Matt Schultz if you want to get involved (mjschultz@kUSD.edu).
- University reports: Technology Education enrollment is low across the state. Encourage students to consider the field of teaching tech ed.

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

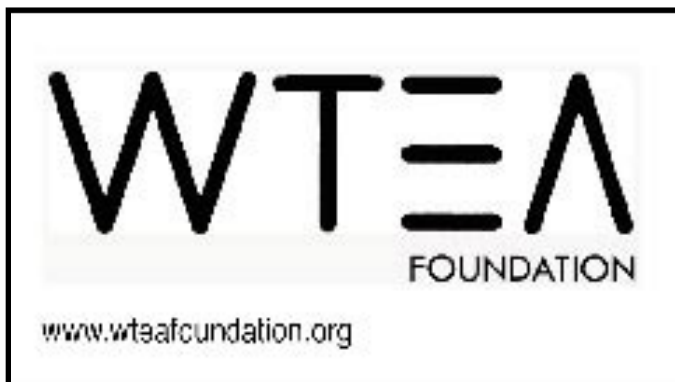
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DISTRICT NEWS

District A

Sylvia Tiala



Mike Beranek, Technical Instructor at Cray Supercomputer Company, hosted the spring meeting for WTEA's District A members on February 8th, 2014. In addition to learning about Seymour Cray we were able to see displays of some of the earlier designs of Cray computers (<http://www.cray.com/Assets/PDF/about/CrayTimeline.pdf>).

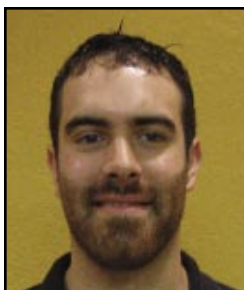
Mike gave a great tour of the facility while entertaining our questions about customers and careers related to CRAY supercomputers. You know all that snow we had forecast? There's a chance that data from a Cray Supercomputer helped inform that weather model. Hats off to Mike for a great tour and discussion and for giving his time on a Saturday afternoon!



Left to right is James Cornell of Spooner School District, Rick Marks of Granton School District, and Mike Beranek, Technical Instructor at Cray Supercomputer Company in Chippewa Falls.

District F

Eric Sutkay



Just a week before the state conference, the Gateway half of District F met at LakeView Technology Academy in Kenosha. Here the group had a great opportunity to hear from Gateway and Parkside instructors about the new up-and-coming 220 licensure that is being offered at both campuses. This

new exciting program should offer an opportunity for professionals interested in teaching technology education to enter the field, hopefully, within the next few months.

Matt Janisin was in attendance for the meeting and introduced the attendees to different certifications offered through Gateway that could be implemented in the high school classroom. For example, the multimeter training is easily applicable for application in the high school classroom and is a great way to offer an incentive to your students who are already learning to use the equipment in your classroom.

The evening also allowed us to explore different projects and demonstrations on the laser engraver, plasma cutter, 3d printer and 3d scanner. The Epilog laser, Torchmate plasma table and MakerBot 3D printer were all on hand cutting out, engraving and building different

parts and project ideas for attendees to take home from the meeting.



In all, the meeting was a great opportunity for educators to get together and discuss new programs, equipment and incentives to take back and use in their own school. We look forward to meeting during the summer for a high-tech weekend!



LETTER FROM WTEA



Wisconsin **TECHNOLOGY** Education Association, Inc.

Jesse Damer ~ President

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Phone 920-219-2922 ~ Fax 920-922-0779 ~ Web: www.wtea-wis.org

Dear State Superintendent Evers,

The Wisconsin Technology Education Association and the Wisconsin Department of Public Instruction have worked in harmony to bring award winning programming to the great state of Wisconsin. Our state has a rich history of providing support for teachers, administrators, school boards in partnership with the Department of Public Instruction. Together we work to ensure the youth of Wisconsin have strong college and career readiness. As we look to the future, the WTEA acknowledges the leadership that the Department of Public Instruction and their education experts provide our Association and we, the Wisconsin Technology Education Association, support State Superintendent Evers' stance on AB-810.

Sincerely,

The WTEA

Jesse Damer
WTEA President

Mike Catellano
WTEA Vice President

Greg Groom
WTEA Past President

Joe Ciortea
WTEA Executive Director

Matt Schultz
WTEA Secretary

WTEA EXECUTIVE DIRECTOR

Something's Brewing in Milwaukee!

by Joe Ciontea, WTEA Executive Director

I want to start by acknowledging the great job that Jeff Dowd, Steve Johnston and our entire Board of Directors did on the 45th annual Technology Education Conference last month at the Chula Vista Resort in Wisconsin Dells. It takes a team to put together an event like that. Two keynote speakers, over fifty break out sectionals, hands-on training, a trade show with 40 plus exhibitors, an awards banquet, the Presidents' Reception and foundation fundraiser, and let's not forget the project showcase!

So how do we top that next year? How about 4 days of sectionals, exhibits, tours, and activities in downtown Milwaukee? The WTEA Board of Directors will be hosting the 77th annual ITEEA Conference in March of 2015. Rather than have you choose between our state conference and the international conference we have put together a plan that will allow you

to attend both for one low fee (just a few dollars more than you paid this year). We will start with sectionals and one general session on Wednesday followed by our awards banquet that evening. On Thursday and Friday the ITEEA opens with a general session followed by sectionals, exhibits, and trade show. There are additional activities planned for Saturday. Plan now to attend every day; for most of you this will be a once in a career opportunity!

Our Wisconsin planning team is working hard on fundraising for the joint WTEA – ITEEA conference. Our efforts will create special scholarships for WTEA members to attend this event. To take advantage of the scholarship rates you MUST get your paperwork in by the posted deadlines. Watch our website and the listserve for registration information and forms, to be released by May 1st. Here's how the pricing will work:



Fee Schedule for Wisconsin Educators (if submitted before January 10, 2015)

ITEEA Electronic Membership (expires on April 1, 2015)	\$65.00
ITEEA membership scholarship for current WTEA members	-\$65.00
ITEEA member Early Bird conference registration fee	\$339.00
Partial registration scholarship for current WTEA members	-\$189.00
Conference Fee subtotal	\$150.00

To get the above rates your WTEA membership must be paid through 9/1/2016, or later. We have even sweetened the deal. If you renew your WTEA membership by check or school purchase order (no credit card payments) before August 1, 2014 you can add one year to your membership for only \$15. Use the form below:

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Questions? Just contact me by email: joe.ciontea@wtea-wis.org



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Gateway Only State College in Veteran Manufacturing Initiative

by Michael Burke, Racine Journal Times

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Based on its manufacturing boot camps and adoption of nationally recognized standards, Gateway Technical College has been named Wisconsin's only college involved in a national coalition of industry, educators and nonprofit organizations helping veterans discover careers in advanced manufacturing.

The Manufacturing Institute, a nonprofit affiliate of the National Association of Manufacturers, recently announced 50 colleges nationally participating in the Get Skills to Work Initiative.

Get Skills is a partnership among the Institute, GE, Boeing, Lockheed Martin, Alcoa and more than 500 manufacturing companies. The coalition will work with the colleges to further expand accelerated training and certification opportunities for U.S. veterans in advanced manufacturing.

For Gateway, the word "accelerated" refers to the manufacturing boot camps it started years ago to compress a course into several weeks, college President and CEO Bryan Albrecht explained. Gateway also gives veterans education credits for what they learned during their military service.

"At a time when the manufacturing industry has a well-documented skills gap, veterans represent an important pipeline of talented workers," the Institute states. "Many veterans have training and experience that match up to manufacturing careers, in areas as diverse as welding, machining, logistics and maintenance. For those veterans requiring additional training and industry certifications to prepare for the civilian manufacturing workforce, accelerated postsecondary programs can bridge the gap for transitioning veterans."

Albrecht said the college was identified as a partner because of its ongoing efforts in advanced-manufacturing education. The Institute encourages technical colleges to align their programs with specific manufacturing standards, which Gateway has done. That gives each graduate in those programs both a degree and a credential that he/she was in a certified program. "Programs like this are in high demand throughout our community, and veterans are strong candidates for career success," Albrecht said.

State Funding

Gateway has also been tapping into state Fast Forward funding, round by round as it is released, Albrecht said, to provide additional boot camp training in areas including computer numerical control, robotics, maintenance technician, wastewater treatment plant operator, electrical technology, tool and die, and medical coding.

Another use of that funding has been to recruit, train and support veterans and help them with job placement.

This school year, 541 different veterans have either taken classes or are enrolled in particular programs, according to Albrecht.

Last fall the college announced that, for the third straight year, it was designated a Military Friendly School by Victory Media, a publisher of magazines for military personnel making the transition into civilian life. The list honors the top 20 percent of colleges and universities which are doing the most to embrace America's military service members, veterans and their spouses to ensure their success as students.

"Gateway provides credit for prior learning, including skills mastered serving our nation," Albrecht said. "Veterans earning credit for their training in the military can apply that credit to a degree and move faster into the workforce." Gateway was recently approved to hire veteran students for work study.

The Get Skills to Work effort "acknowledges Gateway's support services for veteran students," Albrecht said. "The approval provides Veteran Affairs funding to support the work study program."



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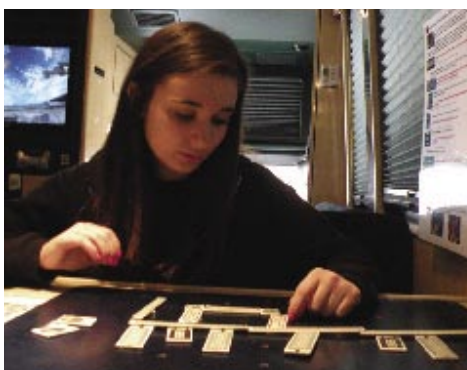
Dream Flight USA STEM Shuttle at WTEA Conference

The Spirit of Education, the innovative Dream Flight USA student shuttle/space station, made a return visit to the WTEA conference on Thursday, March 6, 2014 and was on display in the parking lot at Chula Vista. The 45 foot long Spirit of Education is the focal point of the Dream Flight USA Foundation.



The mission of the Wausau, Wisconsin based foundation is to motivate students in the upper elementary grades to learn by offering hands-on activities using space travel and aviation as a catalyst. The vehicle travels to schools and events wherever requested.

Recently the Dream Flight USA student shuttle/space station made a visit to Athens Middle school in Athens, Wisconsin. The photos on this page show the students involved in various activities on board the shuttle.

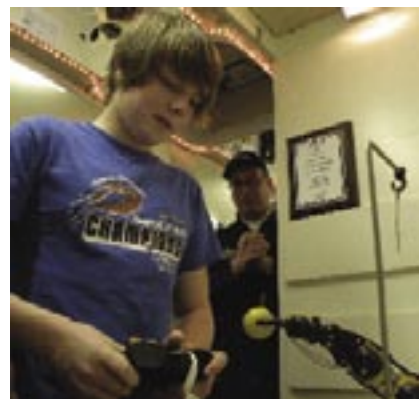


The 44,000 pound shuttle/space station is just over 13 feet high and 8.5 feet wide. On board, visitors will find study areas and work stations where students participate in a variety of activities. The program is designed for grades 4-8, with up to 20 students at a time spending from one hour to 90 minutes rotating through the work stations on board the shuttle. Sharon Ryan, a 5th grade



teacher in Wausau, Wisconsin, created the Dream Flight USA program. She is also the Chairwoman of the Board of the Dream Flight USA Foundation.

Dream Flight USA is in its 8th year of shuttle operations. June marks the beginning of the 9th year. The STEM shuttle visits schools throughout the state, and during the summer it appears in parades and various community events.



For more about Dream Flight USA or to schedule a mission at your school, visit www.dreamflightusa.com.



Establishing A Tech Ed Advisory Board & Putting It To Work

by Tom Barnhart, Ashwaubenon High School

There's never been a better time for educators in our profession to build or make use of an existing advisory board. I've taught Technology Education at Ashwaubenon High School for almost six years. By far the most important achievement I've accomplished with our program is working with my department to establish and put to work our Technology and Engineering Advisory Board. Prior to my experience in Ashwaubenon, I had the privilege to work with and be mentored by Dave Dixon in the Racine Unified School District. Through the use of an effective advisory board, Dave and his team were able to establish one of the first NATEF certified automotive programs in the state. This endeavor required revising the program's curriculum and facilities. By witnessing this program's success I was able to understand the impact advisory boards have on our profession. I offer these guidelines as suggestions to implementing an effective advisory board, based on my experience.

Starting out

In hindsight, forming our T & E advisory board was backwards from how it should have been done. As a department, we simply created and contacted people from a suggested members list and asked them to participate as an advisory board member to help our program. If I could go back in time, I'd have suggested that our department come up with a mission statement to present to suggested members so everyone knew ahead of time what they were getting into. Luckily it turned out good for us.

During our first few meetings we informally discussed why we were all there and then collaboratively worked on creating a mission statement and formulated goals. This is what the mission and goals turned out to be:

<p>Mission</p> <p>To prepare Technology & Engineering students to be contributing members of tomorrow's workforce in N.E.W. by partnering with higher education, business, and the community.</p> <p>Goals</p> <ul style="list-style-type: none">• Give students authentic experiences.• Sustain our local workforce with quality employees through student preparation.• Expose students to training opportunities and jobs.• Educate students on the needs/demands/skill sets required for tomorrow's workforce.

Who sits on the advisory board?

Over the past four years we've had multiple people sit for a length of time on the board. Generally, I like to see the number of people somewhere close to 12. With this number I find it easiest to:

1. Move efficiently and effectively through agenda items. Too many members can create frustration in

this realm and the last thing you want to do is make members feel like a number.

2. Allocate enough members to run an effective meeting by offering multiple perspectives in the event that a few members cannot attend.
3. Create enough room to have representation from multiple Career Cluster Pathways.

What role does an advisory board play in your program?

Feedback from an advisory board as it relates to curriculum, facilities, equipment, job opportunities, and private sector trends is extremely valuable information for your program. I've always thought of our advisory board as a checks and balances system for these kinds of subjects. By gathering feedback from the advisory board, your program can be designed to satisfy all stakeholders.

Influence school boards and administration with your advisory board

Several times during my career I've wondered how much influence I personally had with my fellow staff and partners in education. In my opinion, an organized group of people teamed together can achieve greater things and provide greater influence.

Creating a task force within the advisory board

It's extremely important once you've established an advisory board to put your team to work. Board members need to know their time vested in the group is accomplishing something. These are just a few things that creating a task force within the advisory board can do:

- develop curriculum
- help attain certifications
- design and upgrade facilities
- advise and possibly purchase equipment related tasks
- support student awards and recognition
- create student job shadow and apprenticeship opportunities

Once artifacts, like curriculum updates and facility upgrades, have been accomplished, board members have something to be proud of and showcase to the entities they represent.

In summary, advisory boards can be one of the best ways to create effective partnerships for a Technology Education program. Create a vision as an educator and make the vision become reality with your advisory board.



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The STEM Academy

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UW-Platteville

University breakfast & conference pens

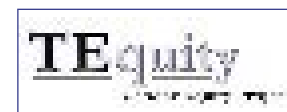
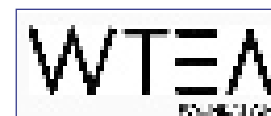
UW-Stout

University breakfast & conference pens

WI DPI

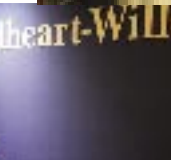
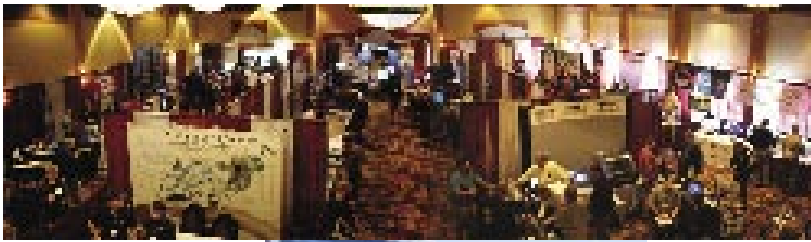
Sectional presenter expenses and TEquity notebooks

We would also like to thank all of our members who shared their knowledge and expertise by presenting sectionals, displaying in the project showcase, and creating items for the silent auction.





45th Annual Spring Conference & Trade Show



Plan to Attend the WTEA - ITEEA Joint Conference • March 25 - 28, 2015

March 6 & 7, 2014

Chula Vista Resort - Wisconsin Dells

“Skilled, Ready, Working!”

Highlights



“Building Technology & Engineering STEM Partnerships” in Milwaukee

AWARDS

2014 WTEA Awards

Presented at the Awards Banquet - March 6, 2014



WTEA 25 Year Award

"For 25 Years of Service to Education"

Don Anderson
Gerald Hause
Kevin Kerwin
James Skuban
Dan Strobel

Charlie Cleereman
Patrick Hensen
Julia Sherwood
Mike Spoerke
George Troupis

Special Thanks

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



WTEA

Special Recognition Award

*"For Contributions
and Service to the WTEA"*

Ryan Ubersox - Madison College

WTEA

Special Recognition Award

*"For Contributions &
Service to Technology Education"*

Chuck Carr

Rice Lake High School

Sue Swaton

Kenosha Unified School District



High School Program of the Year

*"Outstanding High School
Technology Education Program"*
Wausau West High School



Technology Educator of the Year

*"For Outstanding Contributions
to Technology Education"*

Duane Elfering

Barneveld High School



WTEA Award of Excellence

"For Exemplary Achievement in Technology Education"

Mike Dodge - Grafton High School

Dan Klecker - McFarland High School

Pat Lowery - Wabeno High School

Ryan Stodola - Monona Grove High School

...

ITEEA Program Excellence Award

Presented on March 27, 2014 in Orlando, FL

Kennedy Middle School - Germantown

Slinger High School - Slinger

...

ITEEA Teacher Excellence Award

Presented on March 28, 2014 in Orlando, FL

Jesse Domer - Watertown High School

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WTEA EDUCATOR OF THE YEAR

WTEA Technology Educator of the Year

Duane Elfering

Barneveld High School

The WTEA is proud to honor Duane Elfering as our 2014 Technology Educator of the Year. Congratulations!

Education:

University of Wisconsin-Stout, May 1996

MS - Industrial/Technology Education

University of Wisconsin-Stout, May 1991

BS - Technology Educ., Vocational Educ.

UW-Madison, Farm and Industry Short Course

One-Year Certification of Graduation

Professional Awards/Honors:

(2013) WTEA Presenter

(2011) WEEVA Advisor of the Year Award

(2009) WTEA Presenter

(2009) WTEA Award of Excellence

(2007) WTEA Presenter

(2002) Briggs & Stratton Factory Service Graduate

(2001) Vocational Education Evaluator for CESA 3

(2000) School to Work Appreciation Award

(1998) WTEA Program of the Year Award

(1998) WTEA Presenter

(1997) Technology Study of the United Kingdom

(1997) Barneveld Teacher of the Year Award

(1997) Who's Who Among America's Teachers

(1997) Outstanding Educator of Wisconsin Award

(1995) Barneveld School Building Project

Appreciation Award

(1995) UW Stout Presenter

(1994) UW Stout Presenter

Current Committees/Community Involvement

Barneveld/Brigham Fire Dept. Board President

Building and Grounds caretaker St Mary's Church

Knights of Columbus member

4-H Project Leader

ITEEA and WTEA member

Badger Steam & Gas Engine club member

Technology Committee member

District Admin. Advisory Committee member

K-12 STEM Committee member

Code Blue team member

Continuous School Involvement Committee member

WI DPI T & E Standards Leadership team member

WEEVA Electrathon Coordinator

This I believe about technology education in preparing students for their future:

I see two things we as Technology & Engineering Educators need to do.

1) We as Technology & Engineering teachers need a PR campaign for good TEE teachers. Look at the openings for TEE teachers we had at

the beginning of this school year and it's not just TEE - its all of CTE. As the skills gap increases, especially here in Wisconsin, we need to encourage our students to pursue a career in Technology & Engineering Education. More CTE teachers to teach that 3rd year of Science and Math are now required. Additional CTE classes will increase our workforce. It's like planting a seed of corn - in time it produces many seeds. We need to be good role models in the classroom, as well as in our communities, to show students how successful our careers are and encourage them to go into education. I really believe more CTE teachers would produce a stronger workforce.

2) We need to change the image of the blue collar working person. Many students/parents still look at the assembly/factory/trades jobs as hard work, under paid unappreciated jobs. That's so far from reality. In recent years, the trades provide some of the better paying jobs, including benefits like a person's pride of accomplishment. My building trades class built a chapel for the Camp American Legion this past fall. Although there were many hours of hard work, the students look back with pride as veterans on Veteran's Day thanked them for a job well done. We need to instill an image of success and pride and encourage students to go into these types of jobs too. An engineer/inventor/genius may come up with a cool idea, but it will never amount to anything if we don't have our skilled workers to manufacture the product and let them take pride in producing the product.



My goals for teaching technology education:

- 1) Make learning fun, yet practical.
- 2) Help students follow their passion and encourage them.
- 3) Portray “skilled workers” and “trades people” as heroes and promote job shadowing.
- 4) Put the responsibility of learning on the student and allow them to feel proud of their accomplishments.
- 5) Be a role model, both in the classroom and out. A good work-ethic needs to be demonstrated.

My learning environment:

I am a one person department and teach 7-12th grades. I have a 50'x90' lab with traditional woodworking and plastic equipment on one end and metal working/foundry equipment on the opposite end. The center has CNC equipment, hand tool cabinets and work tables. In addition, there is a classroom attached to the lab with various stations at the walls and computers on large tables in the center. Also attached to the lab area is a 1 1/2 car auto shop (large enough to pull in a school bus and do maintenance). The traditional equipment is in great shape. Several CNC pieces of equipment, laser engraver, 3D printer, VEX robotic kits etc. add to the list.

After proper training, students come in and go right to work most days. When I see a problem reoccurring or I see additional training/instruction needed, I gather everyone around and we talk/demo about the issue and students go back to work. Students typically work hard in my classes, I try to start new projects/lessons/activities a day or two before they finish the previous project. By doing this, students are spread out and not crowded around a particular machine. Students who excel can work at their own pace and also assist students who fall behind if needed. My advanced students in each class also earn extra credit by assisting community members who bring projects into the shop. We are a small school in a small town with limited industry, so multiple times a week community members bring in projects for the students or work side by side with students in fixing or building something using the shop equipment. For example, students recently put four new tires on the township's pickup, fixed a flat tire on one of our school buses, glued up a cabinet door, repaired a chainsaw, and a farmer stopped by to have a bearing pressed off a shaft for his silo-unloader. Many times we do these projects for nothing, but are always willing to take a donation for the SkillsUSA chapter. The community knows I have an open door policy and someone is willing to help in the shop at any time. In our small community it's sometimes referred to as “the fix it shop.”

My effectiveness:

I expect every student to give 110% of their ability when they are in my classes. I let them know there is a time for play and a time for work. I allow students to create their own destiny and help them achieve their passion. Students all have different abilities and I allow them to share that with other students and praise them for working together and helping each other learn. I want all my students to be well rounded, but realize they all have to find their own niche and then excel at it with practice. My SkillsUSA and WEEVA students consistently perform well at competitions as individuals and as a team. I set high expectations and continuously praise students, by name, in front of peers and community members. Students crave attention and I want them all to know I am proud of them when they work towards their passion, whether it is welding, designing using SolidWorks, machining or even a sport.

My assessment:

With my focus on Project Based Learning, I have found the student assessment/time card I created to be very effective and efficient. Students score themselves by filling out a sheet and handing it in the last day of each week. I treat it like a time card and pay them with a grade. If they fail to turn one in, they don't get paid and a zero appears in the grade book. Rarely, do I need to override a grade. Students are honest for the most part and grade themselves properly. If a student doesn't perform well in class, he or she knows I'll be looking for a deduction in points on Friday when I look at the time card. If they miss a day, they don't earn the points for that day either. I expect them to be in class. When I worked in the trades, I didn't get paid if I didn't go to work. Parents know my system and try to schedule doctor and other appointments around my classes.



WTEA PROGRAM OF THE YEAR

The WTEA is proud to honor Wausau West High School as our 2014 High School Program of the Year.

The Transformation of the “Ghetto Hallway”

Wausau West High School was built in 1970. Like many high schools across our state and nation, Vocational Education had a place in the curriculum. Also, like many high schools across our state and nation, it was determined that the best place for these classes was in the back of the school, secluded and isolated from the rest of the school to insulate core academia from the sights, sounds and smells of students at work. Aligned with the location of the classrooms' isolation and seclusion was its representation as the place to send “those kids” to keep them busy and out of trouble. Because of this implied “dumping ground” and the inherent nature of the clientele, the hallway earned the reputation as a road to nowhere. It certainly bears noting that this reputation predates any of the current Technology Education & Engineering staff, but it is a stigma within our building that must be overcome to this day.



career readiness for students. Rather than simply providing a place for “those kids” to keep busy and out of trouble, we are holding our students to a higher standard and providing them practical knowledge and skills to make them successful and contributing members of society when they leave our school.

The Wausau West community is realizing the benefits of a vibrant TEE department in the development of student core content mastery. For

the student that struggles to find relevance during math lectures, we are providing the practical application to connect the content to their life and answer the question, “When are we going to use this?” And from the perspective of the math department, we have now engaged the student in their content area and hopefully provided connections that will lead to success in their class. Beyond the engaging activities, we have now formally developed collaborative curriculum with the math department and will be offering a team-taught class called “Applied Math and Manufacturing.” This will offer students who successfully complete the class two transcribed credits from Northcentral Technical College (NTC) in their Machine Tool Applications 1 class as well as two credits in their Machine Tool Calculations class.



Today, Wausau West Technology and Engineering Education is many things, but secluded, isolated and a dumping ground are not among them. And though we are still at the end of the “Ghetto Hallway,” we are proving that outstanding opportunities exist for those that choose to come our way. The department has worked hard to be included in conversations regarding appropriate college and



The department and the district have also devoted significant efforts to developing relationships with the community at large. Through involvement in multiple NTC advisory committees, Wausau Area Chamber of

Commerce initiatives, Marathon County Business/Education programs, and Youth Apprenticeship, among other activities, we have built a network of committed stakeholders interested in partnering with our TEE program in the hopes that we will continue to provide the human resources needed to ensure the sustainability of their own companies. In fact, just recently, we attended an event hosted by the Central Wisconsin Metal Manufacturers Alliance and the message was loud and clear: business and education need to work together to ensure the workforce is prepared and available to continue to grow the local economy. We have seen a dramatic surge in business and industry looking to partner with K12 education throughout our area, which will help all parties involved. The employer is reaching further up the talent pipeline to identify and attract potential employees, the TEE program is granted the resources to align its curriculum to industry needs, and in our eyes, the primary benefit from these partnerships is that our students are given opportunities to succeed beyond their time in high school.



Yet another paradigm shift in our educational philosophy is our role in the character and skill development of our students. In an effort to develop critical thinking and problem solving skills in our students, we are offering opportunities for students to express their creativity in course curriculum. Rather than perpetuating “convergent thinking” in which there is one right answer to a given problem, opportunities are now being offered throughout all levels and disciplines that encourage “divergent thinking.” Presenting a problem that has no right answer prompts students to think creatively, work collaboratively, develop solutions and engage in design process thinking. Granted, these are qualities that are not necessarily measured on

any standardized test, however, when listening to stakeholders from the community, these are the qualities needed to be a successful member in a globally competitive, team oriented, highly adaptive business environment.



Our development as a department is due to many factors and is truly a team effort. School and district administration has offered unwavering support for our department. They approved many initiatives put forth by the department who has had the foresight and vision of developing well rounded, highly skilled graduates. The community as a whole has embraced the transformation of our TEE program. The fact that approximately 300 people attended our department open house in February speaks to the level of support present in our community. And most importantly, our



students have driven much of our development as well. Many are seeking opportunities to expand their knowledge of manufacturing, engineering, and graphic design, and we are beholden to them as responsible, professional educators. Yes, indeed we are still at the end of the same remote hallway, but have become a central figure in the education of the students of Wausau West High School.



Highlights of the ITEEA Conference

Orlando, Florida March 27 - 29

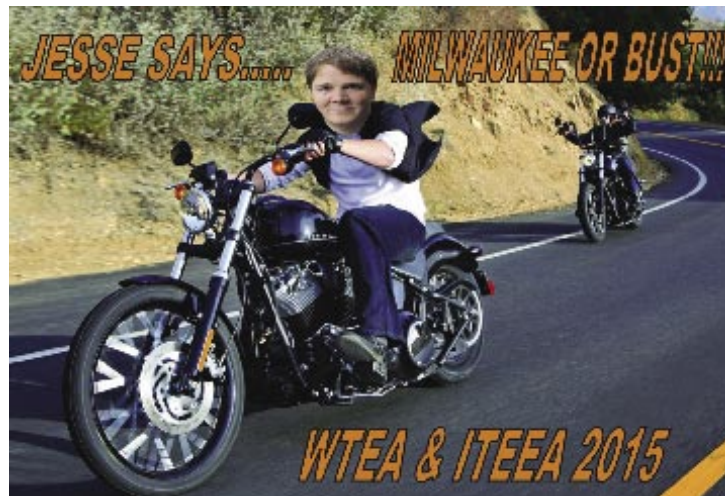
Recently a delegation from the WTEA attended the ITEEA Conference in Orlando. Slinger High School and Kennedy Middle School in Germantown received ITEEA Program Excellence Awards. Jesse Domer received the ITEEA Teacher Excellence Award. Sylvia Tiala and Steve Meyer presented sectionals. Several WTEA members promoted the 2015 conference by manning a booth and presenting a short skit encouraging ITEEA members to come to Milwaukee for the conference next year.



ITEEA Looking Forward to Next Year

by Steve Meyer, Brillion High School

I recently attended the ITEEA annual conference in Florida with a number of WTEA members. A grand time was had by all. There was lots of excitement from ITEEA members about next year's conference in Milwaukee. People are already expecting a knock down – drag out show and together the members of WTEA are going to give it to them!!! With this in mind, I want to start creating excitement about one of the events that will be happening next year. On the tradeshow floor, we will have a large area to showcase some of our best practices and student projects. This event will be very similar to the Project Showcase that we have at our WTEA conference, only bigger. One of the things we



would like to do is show people from all over the world all the great business, industry, and education partnerships we have going on here in Wisconsin. As the time gets closer, I will be contacting many of you to help me with this endeavor. My plans are to blow the doors off of any expectations that people have on what this could look like. GO BIG OR GO HOME will be our philosophy for this event!!! If you have some interest in helping me with this, please contact me at smeyer@brillion.k12.wi.us. Look for more information in the future through emails, the Interface, on the web, and over the list serve. Get ready ITEEA . . . you are about to see how we do it in Wisconsin!!!

Call for Presenters at the 2015 WTEA - ITEEA Joint Conference

by Steve Johnston, WTEA Program Coordinator

Next year the WTEA has undertaken the exciting opportunity of hosting the 2015 Wisconsin Technology Education Association and International Technology Engineering Educators Association Joint Convention in Milwaukee, Wisconsin on March 25-28, 2015. This conference could be a once in a lifetime experience for educators as business and educational leaders throughout the state are coming together in a partnership to organize this international event with a "Wisconsin Feel." A trade show with vendors from around the nation and a presenter lineup with speakers from around the world will be a few highlights you don't want to miss in 2015.

On March 25th we will host the Wisconsin segment of the conference featuring speakers, awards banquet, general business meeting and more. WTEA members will receive a discounted price to attend the conference.

Our website will display an online "Call for Presenters" form at <http://www.wtea-wis.org/bapresenter.html>. As you continue to innovate and develop new ideas, you are invited to consider going to the website to apply to be a presenter in 2015.

The deadline for submitting your presentation application is June 30, 2014. The date is much earlier to accommodate ITEEA's print deadline for a conference of this magnitude.

WTEA Program Coordinator Steve Johnston will be organizing speakers for the Wisconsin segment of the conference program, so please feel free to contact him with presenter questions (johnston@mwt.net).

Watch the WTEA and ITEEA websites along with the Interface for future updates and put March 25-28, 2015 on your calendars! We look forward to seeing you in Milwaukee in 2015!



Maker Faires: What Are They and Why Should We Care?

by Sylvia Tiala, University of Wisconsin - Stout

What is a Maker Faire?

According to makezine.com, 2014 is the year of 100 Maker Faires. So, what are Maker Faires and why should any of us care? Maker Faires are a hybrid of science fairs, craft shows, and county fairs where people come to display what they have created and talk about what they learned. According to makerfaire.com it's a family friendly festival that is "the greatest show and tell on earth." Maker Faires are designed for people who are "do-it-yourselfers" who work in places such as shops, garages, kitchen tables, schools, science clubs and the like, while they invent and innovate with new technologies, science, engineering, art performance and a variety of crafts (<http://makerfaire.com/makerfairehistory/>).

A look at categories from the 2013 World Maker Faire helps one grasp the diverse nature of Maker Faires. Some topics such as furniture, energy, electronics, biology, chemistry, robotics, tesla coils, rockets, and the like seem very familiar. Among the 80 plus topics at the 2013 World Maker Faire there are those topics that aren't so

familiar such as Arduinos, Beaglebones, Steampunk, MaKey MaKey, Up-cycling, diy-drones and more (<http://makerfaire.com/new-york-2013/maker-info/>).

Dale Dougherty started the Maker Movement in 2005 when he started publishing MAKE magazine. The following year the first Maker Faire was held in the San Francisco, CA area. In addition to the magazine and Maker Faires, there are blogs, videos, project sites, education initiatives, and an online Maker Shed Store. Dougherty's goal is that, "all people . . . come to see themselves as makers, creators and doers because . . . the people who have the skills and knowledge to make things have the power to make the world a better place" (<http://makerfaire.com/be-a-maker/>). The Maker Movement is growing in momentum as seen by the increasing number of attendees at a growing number of Maker Faires as shown in Figure 1 below (<http://makezine.com/2014/01/01/the-year-of-100-maker-faires/>).

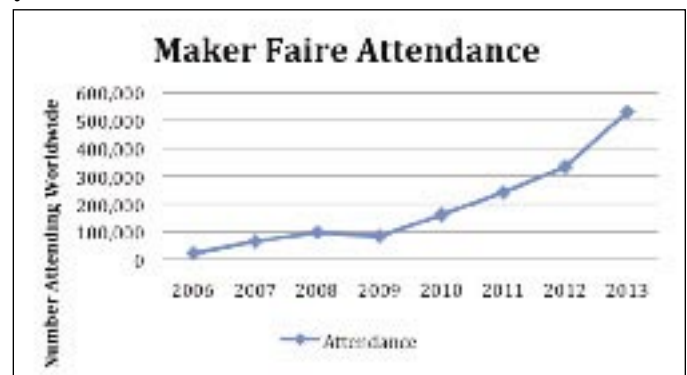


Figure 1: Number of attendees at worldwide Maker Faires from 2006 - 2013

Why Should We Care?

National attention was brought to the Maker Movement when President Obama announced the first White House Maker Faire would be held in 2014. The impetus behind the event is to inspire more people to pursue careers in science, technology, engineering, and math (STEM), to become entrepreneurs, and to pursue careers in design and advanced manufacturing (Kalil & Miller, 2014). These goals are similar to those of Technology and Engineering programs across the nation. Tech Ed classrooms around the state, and nation, have the existing infrastructure to support the design, innovation and entrepreneurial skills that the United States is looking for and that the Maker Movement supports.

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Technology educators can learn, and perhaps partner with, individuals involved in the Maker Movement as they impact economic development, and educational initiatives. Maker Faires bring in a lot of people to a local venue which increases revenue. The ideas brought to the Maker Faires help support local innovators and entrepreneurs, as they provide impetus for economic development and to local startups. According to Merlo (2014), six Chambers of Commerce organized local Maker Faires in 2006. If Technology Educators and their programs were involved in coordinating a local Maker Faire, more positive attention and an increased sense of “value added” may be brought to the Tech Ed program.

The Maker Movement is impacting education. Harvard’s Graduate School of Education is documenting ways students’ cognitive development is strengthened by design thinking and tinkering and Maker Faire organizers recently helped pass local School Board legislation to increase STEM curriculum (Merlo, 2014). Maker Corps (<http://www.makered.org/makercorps/>) and Maker Vista link students in high poverty/high need areas with the maker community. School-community partnerships are developed through after school programs, youth-serving organizations, and mentors to define and share best practices related to youths’ exposure to making opportunities (<http://www.makered.org/maker-vista-project/>). Findings

from projects such as these will begin to impact the way students are educated and the way pre-service teachers are prepared for teaching. Integrated STEM curriculum with a student-centered approach for exploration, innovation and entrepreneurship will become a more common approach in classrooms.

The current Maker Movement and the associated Maker Faires are places for people to share their inventions and innovations in a creative and collaborative setting. They impact economic development and education at a local level and have caught the attention of national policy makers as well as the every-day citizen. Technology educators have a knowledge, material and methodology infrastructure at their disposal that may help forge a mutually beneficial partnership between local makers and their school’s Technology Education program. Is it possible that the Maker Movement is the future of Technology Education?

References:

- Kalil, T. & Miller, J. (February 3, 2014). Announcing the first white house maker faire. Retrieved March 15 from <http://www.whitehouse.gov/blog/2014/02/03/announcing-first-white-house-maker-faire>.
 Merlo, S. (January 1, 2014). The year of 100 maker faires. Retrieved March 29, 2014 from <http://makezine.com/2014/01/01/the-year-of-100-maker-faires/>.

- Dates to Remember -

April 29 - 30	SkillsUSA State Championships	Madison, WI
June 16 - 18	National Career Clusters Institute	Phoenix, AZ
June 23 - 27	SkillsUSA National Championships	Kansas City, MO
June 30	Deadline for 2015 Conference Presenter Applications	
July 8 - 11	WATDA Auto Tech Summer Institute	Milwaukee Area Technical. College
November 19 - 22	ACTE CareerTech Vision 2014	Nashville, TN
January 10, 2015	Deadline for ITEEA Conference Registration Scholarships	
March 25 - 28, 2015	WTEA/ITEEA Conference	Milwaukee, WI
March 25, 2015	WTEA Awards Banquet	Milwaukee, WI

Tiny House on Wheels

by Douglas Giese, Stoughton High School

During the 2012-2013 school year students in the Residential Construction and Remodeling Technology Class at Stoughton High School spent the year working on a tiny house on wheels. The students built the entire house, from repurposing an old travel trailer frame, framing and installing walls, doors and windows to the plumbing and wiring of the structure. As the end of the project approached, the interior was finished with reclaimed barn boards that were cleaned up in a surface planer. When summer arrived the house was complete. The little house was transported to a homeowner's property where it is being used by an artist as a studio.



Students began the process by researching current sizes and configurations of tiny houses on the web. A travel trailer frame was found and the class planned how it needed to be shortened to support the live and dead loads of the structure. The frame was cleaned, prepped, welded, primed and painted by students in the class. The project moved along with the panels being cut to fit on the bottom. Rim boards were cut to fit on the sides of the platform. Plumbing for a toilet, shower, and sink drain was routed in the trailer frame. The class met with a local insulation contractor about the possibility of using spray foam and learning more about that process.



The class decided to buy a spray foam kit to insulate the floor, walls, and ceiling to better fit into their schedule. After the panels were installed on the bottom of the frame, floor joists went in and a 3/4" subfloor was put in place with adhesive and screws. The perimeter of the foundation has anchor bolts welded in to clear framing members. Before the walls were installed, a reclaimed maple tongue and groove hardwood floor was installed and refinished with a floor sander and edger. The floor was stained and polyurethane coats were applied with buffing in between coats. At this point all of the reclaimed windows and doors were purchased so the walls could be sketched for rough openings.



Framing all the walls was next. All framing members were joined together with adhesive and screws. The roof consisted of trusses landing on top of the stud locations without any overhang front or back or on the drip edge. The walls and roof assemblies had diagonal metal braces installed wherever possible for added strength. The walls and roof were covered with 3/8" plywood that was glued and screwed. The walls and roof were then covered with a rubber ice and water adhesive membrane. Next came the installation of the windows with all flanges taped and trimmed out with smart trim.



The new owners transported the little house over one hundred miles on back roads to its new location.



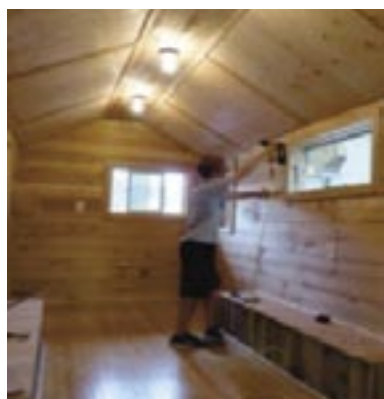
The front door and added front steps.



The interior of the artist's studio.

With all the windows and the door installed, students consulted with an electrician on wiring the structure. The receptacles and light circuits were installed along with a plumbing supply line and vent stack for the drains that are under the floor. The bathroom and kitchen can be added at a later date if the current use as a studio is over. The interior was then prepped for spray foam insulation.


The metal siding used was galvanized roof panels I bought at an auction years ago. After trimming out the windows, the siding was installed. With the finished floor protected and the spray foaming completed, the reclaimed barn boards were cleaned up and installed. Window and door trim, as well as quarter round, was made of the same material in our shop.



My goal for this project was to see how inexpensive it could be. We finished at the \$4000 mark and the new homeowner covered all the costs including a tool donation to the program. Also, I wanted a project we could work on from start to finish at school. The only drawback with this was the house's overall height. We could have gone 13 feet tall, but the garage door of our shop limited us to just under 12 feet. We hooked up trailer lights and pulled it out with a 1/2" to spare under the door frame.

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TEquity Strategies You Can Use

by Eric Sutkay, Lakeview Technical Academy

As the year comes to a close and the planning is beginning for the 2014-2015 school year, now is the time to begin thinking about how you are going to attract female students to your courses. This may be the difference between a class running and being cut. Now is a great time to encourage girls with a summer STEM camp, guest speaker role model or an evening with the counselor where you present all of the great things that they can do in your class. As a reminder, the TEquity website is a great place to look for resources (www.wtea-wis.org, click on the TEquity tab), as well as the “Top Ten List” below. If you are looking for additional information or would like to discuss a summer STEM camp, please do not hesitate to contact me.

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

1. Educate yourself about gender equity issues and 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, and 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 girl's 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 and 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 the their career to society; the ability to balance work, family and community life; available career advancement opportunities; a description of any barriers and solutions to any barriers the speaker encountered.
10. For 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.



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