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Journal of the WTEA

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Fall 2012
Volume 52 Number 1





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TABLE OF CONTENTS

WTEA Board of Directors	2
President's Message	3
WTEA Board News	4
Calendar	4
Vice-President's Message	5
CTE	6
District News	7
Executive Director's Message	8
Subscription & Membership	9
Scholarship	10
SkillsUSA	11-13
DPI News	13
2012 Conference Highlights	14
2013 Conference Registration	15
UW-Stout News	17
ITEEA	18-19
WEEVA	20-22
NCATC Fall Conference	22
TEquity	23
Partnership Paths	24-25
Auto Summer Institute	26
Solving the Workforce Paradox	27
Archives	32

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Embrace the Future

by Greg Groom, WTEA President

I hope as you read this, you have had a great start to a new school year. I am a person that looks at the past performance of an organization as the portal to the future. We are experiencing significant changes in education, secondary education and technology education. Our subject area has the opportunity to move to the forefront of the School-to-Career momentum. This requires us to seize the moment and advocate for our programs. We need to be more visible in our communities and districts. But along with this, we need to make some changes and adapt.

During this summer, the Wisconsin Department of Public Instruction was granted a waiver to "No Child Left Behind". In this waiver, all Wisconsin Schools will require three credits in Mathematics and Science. Now is the time to review your curriculum and see which of your courses have enough content to also grant Mathematics or Science equivalent credit. We have such a unique program in Wisconsin. Many other states are looking at us and following our lead. During my round table discussion at the ITEEA National Conference, many of the other state Presidents had never thought of recreating themselves into the type of program we are becoming. We are creating a new reality for technology education. We have a forward looking state and only you can make this a success.

The other partnership that is taking shape in Wisconsin is between the WTEA and the Wisconsin Manufacturing Council (WMC). One of the hot topics in the news this summer is jobs. We are seeing high unemployment with large gaps in skilled workers. For years, it has been almost impossible for our programs to take tours of our Manufacturing facilities. October will be Manufacturing

Month, and WMC is asking us to promote manufacturing skills in our classrooms. Please start planning now to take your classes to your local manufacturers. This would also be a great opportunity for you to invite leaders from Industry to your classes to showcase your programs and to inspire new workers in today's manufacturing businesses. Our business leaders are the key to our programs and our future.



For the first time, a group of presidents from many high school disciplines met. This is the first step towards creating a dialogue between disciplines and their respective professional organizations. WTEA is on the ground floor. I can foresee only positives and

a real opportunity for Wisconsin educational professionals to have a voice in the future. I will keep everyone posted on this conversation as it develops.

By this time you should have completed a survey by WTEA and DPI about your Technology and Engineering Education program. We need to know how many technology education programs and professionals we still have. DPI does not have that information, unless we tell them. DPI can check on the number of instructors with a 220 license on a yearly basis, but this license check is muddled with people like me that have a lifetime License. This yearly check also includes individuals that have a current license but are not currently teaching. The only accurate way to establish this information is a yearly report to DPI from a professional organization (WTEA) based on the previous year. This is what some of the other disciplines in our state do to keep their count current. We need this data, so it is important that each one of you in your school district take few minutes and do the survey to help our profession.



Plan now to attend

The 44th WTEA Annual Conference

"Connecting the Future"

March 14 & 15, 2013

•

Chula Vista Resort

•

Wisconsin Dells

WTEA BOARD NEWS

2012 WTEA Annual Membership Meeting Highlights

by Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Spring 2012 WTEA General Membership meeting held March 8th and 9th at the Chula Vista in Wisconsin Dells, Wisconsin.

- Greg Groom of Badger High School elected WTEA President.
- Goal for next year, bring one other professional to next year's WTEA Conference.
- Share your curriculum through the WTEA website. A committee has been formed to set up a page to help share what you are doing in your classrooms.
- Keep submitting articles & pictures to the Interface.
- Advocate for your students. Start a SkillsUSA chapter if you don't already have one!
- Bring your students to the Fall Leadership Conference to take a look at what SkillsUSA is all about.
- Exercise your voice. Send a newsletter or post an article in your local paper to tell your community what you are doing in your classroom.
- Be pro-active with your school's Common Core Standards Committee.
- Build a team in your school for Career Day.
- Preference of conference dates: 83% of members want to keep conference Thursday-Friday, 23% want Friday-Saturday,

Complete minutes are available from Matt Schultz at mjschultz@kUSD.edu

- Dates to remember -

October 2012

October is Manufacturing Month

October 3 - 5, 2012 **SkillsUSA Fall Leadership Conference** Rosholt, WI

October 17 - 19, 2012 **National Career Pathways Network Conference** Richmond, VA

October 18 - 19, 2012 **Career & Technology Education Conference** Gateway T. C.

October 24 - 28, 2012 **SkillsUSA Mid-America Leadership Conference** Columbus, NE

November 2, 2012 **SkillsUSA Middle School Fall Conference** Madison College

Nov. 29 - Dec. 1, 2012 **ACTE Conference** Atlanta, GA

December 8, 2012 **FIRST Lego League - State Competition** Mukwonago

March 7 - 9, 2013 **ITEEA Conference** Columbus, OH

March 14 - 15, 2013 **44th WTEA Conference** Wisconsin Dells

What Is Your Area's Identity?

by Mike Cattelino, WTEA Vice-President

At a recent meeting with Jim Morgan from the WMC, and several WTEA board members, the skills shortage was discussed from a high school technology and engineering department perspective. When it came down to making a list of things that make a program or department successful, identity was one of them. Relationships certainly ranked high, but without an identity, it can be hard to start the conversation when looking for business partners to support your program.

How do you identify your program area? Is it a shop, lab, or ...?? There really is no single right answer other than the answer that best suits your school district's needs. 'Shop' can have its connotations, as can a 'manufacturing center'. Do you identify your area by what you teach? Is it project-based problem solving? When it really gets down to it, how do you identify or 'brand' your technology and engineering department space? If you have a successful program and the principal, superintendent, and school board are all working with you, then you certainly identified your area positively. There are success stories all across Wisconsin that could be shared but it all starts with an identity or brand.

Within your school, how many teachers know the capabilities that lie within the TEE program that you teach in? Have you been able to help with the stage props for the class play or make some unique item for the choir or band director? Have any teachers outside your department really experienced high-tech manufacturing?

Think about a new sign on the door to your "shop." It could read "YOUR Idea Solution Center." How would you prove that to your unknowing colleagues? Consider this idea. Work with your administration to buy a desk-type name plaque for each teacher in your school. The plaques would be blank. Put one on each of your col-

league's desks with your business card or contact information attached to it. They would contact you in order to bring their plaque to your shop to get their name engraved

on it. Show them how your system works using a computer to set up and program the laser engraver in order to create their own name plaque. Let them pick the font from a menu of several fonts. If this isn't an example of engaging an otherwise under-informed audience, please consider other possibilities.

If our teaching colleagues cannot identify what it is that TEE does, it is a large hill to climb. Give them something to make and I believe that you will have a new friend. These friends can bring problems to your classroom that you can use as real life teaching tools.

Start with the simple things and the rest should come easier than you had imagined. Set the vision and the brand for the future of the TEE programs in this state.



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

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Why Career and Technical Education?

What is CTE?

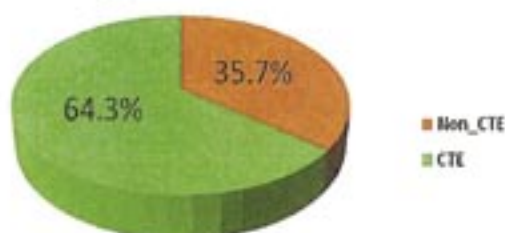
Career and Technical Education, or CTE, prepares individuals for a wide range of careers that reflect the modern workplace. High quality CTE programs incorporate rigorous academic and technical standards, as well as critical workplace skills such as problem solving, communication, and teamwork to ensure career and college success for its students.

CTE is:

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

In Wisconsin, CTE makes an impact...

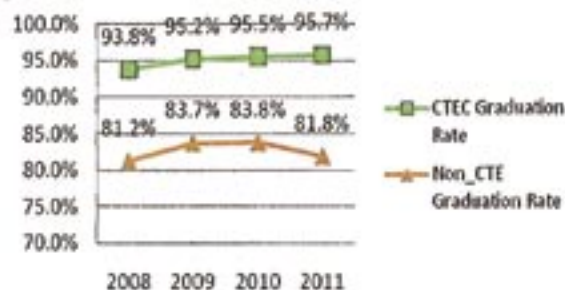
Participation Rate in CTE



Nearly two-thirds of students in grades 6-12 participate in career and technical education courses; in fields like manufacturing, agriculture, business, family and consumer science, health occupations, marketing, technology and engineering.




CTE Graduation Rate



An up-close analysis of CTE data indicates that CTE Concentrators (students who take three or more CTE courses) had a 12.7% higher graduation rate than students who take no CTE course work while in high school. As this graph illustrates, Wisconsin's investment in career and technical education is leading more students to high school graduation.



 **CTE** Learning that works for Wisconsin

Content based upon "Reflect, Transform Lead: A New Vision for Career and Technical Education", published by NASDCTEc, 2010 and CTEERS Data Information, 2011. The CTE brand logo, brand positioning theme and brand extensions are the property of NASDCTEc.

DISTRICT NEWS

District G (South - Madison Area)

Ryan Ubersox



Greetings District G! I hope the school year is off to a smooth start. It was great to see those of you who were able to make it out to Travis Ray's "Fall Brat Fry" social event. If you'd like to host next year's, let me know!

2012-2013 Meetings

Two meetings are planned for this school year. Tuesday, October 9th at Madison West High School – Host James Buchanan, and Wednesday, February 27th at Madison College – Host Ken Starkman.

District G Nominations

We have many talented teachers and quality technology and engineering programs in District G. Consider celebrating some of the great professionals you work with by nominating them for an award. The WTEA recognizes technology and engineering professionals in the following categories:

- Award of Excellence
- Special Recognition Award
- Community Service Award
- 25 Year Award
- Certificate of Merit
- Program of the Year
- Educator of the Year
- Lifetime Achievement Award

High-Tech Opportunities

I'm looking for a return of one or two "high tech" trainings for teachers within our district. If you have seen demonstrations or machines that should be shared with others, please contact me so we can keep everyone on the cutting edge of technology!

As always, contact me if you have comments or questions at rubersox@waunakee.k12.wi.us



Teachers in District G South enjoyed brats & discussion at a meeting in August at the home of Travis Ray.

District H

Tom Martin



With so much effort in trying to solve the state's workforce paradox, now is the time to get involved as a Technology & Engineering Professional. I know, you have kids, you coach, have a part time job, there's hunting, fishing and really don't have time to get involved.

I don't think any of us have time, but we better make time. I have no excuses. As a director, I did not coordinate the meetings last year that I should have. This year that will not happen.

Regardless of your standing in your district, dollars are tighter, standards more rigorous and the world of teacher effectiveness will begin next year.

Our society needs us now more than ever. Members of industry have called on state government to increase career and technical education funding as proof. Industry needs your help as well as you need theirs.

Assuming there were 1200 Technology & Engineering Instructors in the state, if every Technology & Engineering professional gave just two hours of time, it would be the equivalent of 100 days.

Imagine the work we could get done. It could be as simple as asking the neighboring instructor to join WTEA, hosting a District meeting or even reaching out to your local members of industry to determine ways to collaborate.

I vow to coordinate meetings and be a conduit of communication. I volunteer my time for those colleagues I serve, but I ask that you do the same.

Two hours...a movie, for those that have block schedules, one block or 1 basketball game.

Will you join me? Two hours.

If you are not receiving
the Technology Educators listserve postings,
you can sign up by contacting
Brent Kindred at:
brent.kindred@dpi.wi.gov

WTEA EXECUTIVE DIRECTOR

Welcome Back!



Welcome back to school. I hope you had some this summer to rest, relax, and recharge. The WTEA Board was busy during the summer months partnering to promote October as Manufacturing Month in Wisconsin; we also had several meetings with representatives from DPI and other subject area organizations.

The Board had a Summer Summit at Madison College while the Foundation of the WATDA was holding their summer institute for teachers on campus. Be sure to read this issue of the Interface to learn more about those activities and more.



The WTEA has created an electronic newsletter called eInterface. It will feature short articles focused on timely information you need to keep abreast of our profession. The eInterface will be sent by email at no cost to all WTEA members and other technology education stakeholders. Watch your inbox for the first issue.

I hope to see all of you in March at our 44th annual conference.

A handwritten signature in cursive script, likely reading 'Joe Ciontea'.

WTEA Awards Nominations

Each spring the WTEA recognizes technology educators, industry professionals, and technology education programs that have demonstrated outstanding achievement at our annual awards banquet.



We need you to help us identify individual teachers, school (building) programs and other professionals that deserve recognition. The awards committee will contact the nominee and request information regarding the nominee's curriculum, achievements and contributions to Technology Education along with letters of endorsement. All we need you to do is to contact either Matt Schultz, Secretary/Treasurer or Joe Ciontea, Executive Director

and tell us who you wish to nominate, where to contact them, and why you feel they deserve recognition from our association. All nominations are confidential. Nominations may be sent by U.S. mail or by email. The awards ceremony will be held in March as part of our 44th annual conference.

Notes:

- Nominations must be received by November 15th to be considered for recognition the following spring.
- Technology educators must be a member to be considered for award recognition.
- For a detailed description of the awards please visit our website or contact any member of the Board of Directors.

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SUBSCRIPTION



Interface School Subscription

The WTEA school (building or district) subscription provides you and your local colleagues with an opportunity to keep informed about technology education in Wisconsin. The more local technology educators you sign up, the more you save. An individual subscription is \$30, but you can sign up 6 people for only \$125 - that's a savings of \$55 (see fee schedule listed below). Each additional person beyond the initial 6 is only \$10.

How it works:

Complete the form below and list every technology educator in your building. If your department has teachers in more than one building, duplicate the form and provide us with the correct school address for each educator. That way separate buildings in the same school district can be combined to increase your savings. All names listed must be employees of the same school district. Tally the fees on the form and send it along with a check or school purchase order to the address on the bottom of the form. **To be eligible for all benefits of this special pricing, school subscriptions should be sent as soon as possible.**

What you get:

Each person receives: a personal copy of the *Interface*, all association mailings and notices, invitations to attend regional technology education meetings and workshops, unlimited access to the WTEA website, discounted admission to the association's annual technology education conference, and eligibility to receive all association awards (educator of the year, program of the year, award of excellence, 25 year award). All mailings will be sent to the school address on the form. This school year subscription will expire the following fall. This form will be published in the *Interface* each fall; it is also available on the WTEA website.

Please type or print all information. Duplicate this form as necessary.

School Dist. _____ School Name _____

School Address _____

School City _____ State _____ Zip _____

Phone (_____) _____ School Fax _____

Local Technical College District (used for regional workshops and meeting invitations) _____

Local Tech. Ed. contact (dept. chair, LVEC, etc.) : _____

E-mail address of local Tech Ed. contact: _____

Name and email	# of years teaching	Fee
1 _____	_____	\$30
2 _____	_____	\$25
3 _____	_____	\$20
4 _____	_____	\$20
5 _____	_____	\$15
6 _____	_____	\$15

Each additional person is \$10 each; names and school address may be attached on a separate sheet.

Please note: The Interface is published 3 times per year: fall, winter and spring

Total _____

Send this form with check or Purchase Order to: WTEA PO Box 1312 Fond du Lac, WI 54936-1312
Fax 920-922-0779

SCHOLARSHIP

Ryan Conto Awarded WTEA Foundation Scholarship

The WTEA Foundation has awarded Ryan Conto a \$1200 scholarship to attend UW Stout, where he will major in Technology Education. Ryan is a 2012 graduate of West Bend West High School where he studied architecture and civil engineering with Mr. R. Johnson, was a member of SkillsUSA and served as captain of the soccer team. Ryan was an Eagle Scout in BSA Troop 765. His scholarship essay follows.

I want to become a technical education teacher for many reasons. First of all, becoming a technical education teacher would allow me to teach topics I love, such as architecture and engineering. I enjoy helping students realize a future in technical fields. Leading them with amazing classes, I would encourage careers within fields such as engineering, architecture, and photography. I have loved all of the computer programs such as Revit Architecture and Inventor. Also I have enjoyed all of the projects done in the classroom, mostly because of the real world application of it, and what it taught me. One of the projects I did was to design a roof to a certain type of building, such

as a residential home.

This project opened my eyes to a hands-on way of learning and teaching. Another project that I did in class was working with the architecture program Revit. Using this program I had to re-design an old warehouse into a new green library. The projects I did in class really opened my eyes as

to how much I loved the way my teacher was instructing through the computer program, and I want to pass that on to future generations of students. Lastly, the reason I want to become a technical education teacher is because I love working with children. I work as a counselor in the summer and love it every year. If awarded a scholarship, I would be nothing less than an excellent college student, and an even better teacher.



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SkillsUSA STATE COMPETITION



SkillsUSA Students Return from National Competition in Kansas

by Lauri Domer, SkillsUSA Secondary State Assistant Director

Wisconsin SkillsUSA attended the Annual National Leadership and Skills Conference in Kansas City. There were 15,000 people in attendance. Nearly 6,000 outstanding career and technical education students – all state contest winners – competed in nearly 94 different trade, technical and leadership fields.

Students worked against the clock and each other, proving their expertise in occupations like electronics, welding, carpentry, culinary arts, and more. Contests were run with the help of industry, trade associations, and labor organizations, and tested competencies set by industry.

Wisconsin SkillsUSA Secondary is proud to announce the three gold and seven silver medals that were achieved. Wisconsin SkillsUSA Secondary took:

- gold in Automated Manufacturing. The team from Watertown High School consisted of Zach Timm, John Brebeck, and Mike Gaugert.
- silver in Chapter Business Procedure. The team from Winter High School consisted of Tom Geiser, Michael Mangiaracina, Zack Schmitz, Devon Searfoss, TJ Steen, and Thomas Sweeney.
- silver in Prepared Speech by Mallory Mews of Bonduel High School.

Congratulations to all the schools that did make it to National competition, they represented Wisconsin's finest students throughout the many different competitions.

If you would like to learn how to invite industry leaders to become more involved with chapters in your area, please contact Lauri Domer at lauri@skillsusa-wi.org. SkillsUSA chapters are always looking for business and industry support with co-ops, guest speakers, tours, and more. We need industry's help to make sure tomorrow's work force is ready to work!



Watertown High School Automated Manufacturing Team (the team at right dressed in short sleeve khakis), 1st Place Winners at SkillsUSA Nationals on stage. L-R: Zach Timm - Junior, Mike Gaugert – Junior and John Brebeck– Junior.

SkillsUSA Fall Conference October 3 - 5, 2012



Attention New and Established Chapters: Again this year we will be having our SkillsUSA High School Fall Conference in Rosholt,

Wisconsin. This high impact 2 1/2 day conference provides your students with the structure they need to successfully run their chapters for the year. Students and advisors create and run the seven areas of the SkillsUSA Program of Work - professional development, community service, employment, fundraising, SkillsUSA Championships, public relations, and social activities.

In collaboration with the WTEA Foundation we are also able to offer scholarships again this year. There are ten \$250 scholarships available for chapters who will be bringing at least four students and one advisor.



For up to date information visit these two websites:
http://www.skillsusa-wi.org/wordpress/?page_id=364
<http://www.wteafoundation.org/Services.html>

Racine Student to Compete in International WorldSkills Competition

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

Kieron Kohlmann, a student who graduated from the Racine Unified School District, will represent the United States in Leipzig, Germany in the Auto Service Technology competition during the biennial WorldSkills Competition. Kohlmann will compete as a member of the United States "WorldTeam." The 42nd international event will be held July 2-7, 2013.

At the 2010 SkillsUSA Wisconsin State Conference, Kohlmann won the gold medal in the high school Automotive Service competition and earned the right to compete at the national competition. In June of 2010, he successfully won the gold medal at national and then successfully completed other qualifying prerequisites prior to being chosen for the team.

Kohlmann took automotive technology classes at Washington Park High School which has an ASE/NATEF certified program. Dave Dixon and Gottfried Georgi were his automotive instructors. Both are excited about Kohlmann's participation with the WorldTeam. "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."

Every two years, hundreds of young people from 53 member countries or regions compete in the prestigious WorldSkills Competition. Member countries include:

Japan, England, Saudi Arabia, Canada, Australia, Thailand, Brazil and many others. Considered "the best of the best," contestants compete for four days in 45 occupational skill areas from economic sectors including manufacturing, information technology, transportation, construction and services. Accompanied by their teachers, trainers and industry technical committee experts, these young people compete before the public in contests that are judged by industry using demanding international standards.



Over its 60-year history, WorldSkills International (formerly known as the "Skill Olympics") has come to symbolize the pinnacle of excellence in vocational training. In 2013, in Leipzig, Germany, more than 1,000 competitors will test their skills. Five thousand international experts, delegates and judges will gather from around the world, and 3,000 volunteers will be recruited to assist in the event. A total of 150,000 student and public spectators will attend the competition at the Leipzig Trade Fair and Exhibition Center. For more information about the competition, go to: <http://www.worldskills.org> or <http://www.worldskillsleipzig2013.com>.

"To me, being selected for the WorldTeam is like going to the Olympics," said Kohlmann. "In preparing for this contest, I will be training with industry professionals and meeting so many new people. It is such an honor and privilege, not only to be selected, but also to be a part of an organization that truly cares about skilled trades."



2012 WTEA/DPI Fall In-services

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

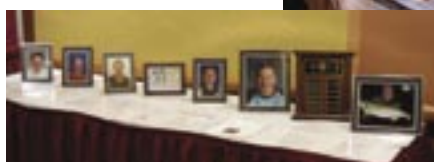
Welcome back to another exciting school year where I am confident we will continue to make a difference in our students lives. Again this fall, we are proud to offer our WTEA/DPI Technology and Engineering In-services. At the time of article submission, we are finalizing our locations and dates. Our tentative plan is to have a to-

tal of four in-services, with some agenda items being; the new technology and engineering standards, disciplinary literacy, work-based learning programs, SkillsUSA, gender equity, and much more.

For more information, watch the listserve or refer to the DPI website at <http://dpi.wi.gov/te/index.html>



Highlights of the 43rd Annual Conference & Trade Show March 8 & 9, 2012



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Menomonie High Hosts Digital Fabrication Workshop

by Sylvia Tiala, UW-Stout

Eight teachers from local high schools and UW-Stout attended a two-day workshop hosted by Menomonie High School in early August. In the workshop teachers explored digital prototyping for their classroom. Larry Simmons demonstrated 3D printing and laser engraving during the first day. Participants imported and printed 3D models and practiced engraving on fabric, wood, glass and ceramics.



Larry Simmons of First Technologies demonstrates the 3D printer to Technology Education teachers and Industrial Design professors. Left to Right: Larry Simmons, Dana McKinnon, Barb Bauer, Jean Haefner, Tim Shock, Jennifer Astwood, Laurence Charlier, and Ryan Sterry.

The second day started with a tour of Prototype Solutions Group in Menomonie, Wisconsin. During the tour, participants were able to look at industrial equipment, designs, and prototypes built for customers. The workshop ended with Sylvia Tiala of UW-Stout facilitating a discussion of curriculum models and lessons suitable for digital fabrication.



Workshop participants on tour at Prototype Solutions Group. Left to Right: Ryan Sterry, Tim Shock, Jennifer Astwood, Sylvia Tiala, Barb Bauer, Laurence Charlier.

Career and Technology Education Conference Hosted by UW-Stout and Gateway Technical College

Save the Date: October 18 - 19, 2012

Conference Site: Gateway Technical College, Kenosha

It has been a tough couple of years for travel and conference budgets for teachers. That is why we are bringing the annual Stout Technology Education conference to you in 2012 - in Kenosha, Wisconsin on the campuses of Gateway Technical College. All sessions will feature hands-on experiences with Gateway Technical College instructors in their labs and classrooms. Some of the session titles include:



- Automotive Minds-On: Electronic Diagnostics
- Why Do ALL students need to know about Diesel Technologies?

- How Industry Moves: Fluid Power
- Where did all the tools go? Tool Control & Inventory
- Solar Energy: An Industry Approach that Works in YOUR Classroom
- Project Lead The Way Applied: Industry Examples, Applications, and Instructional Enrichments & Alternatives
- HVAC systems? Why are we studying this?

Please see the conference website for details as registration is limited:

<http://www.uwstout.edu/profed/teched/index.cfm>

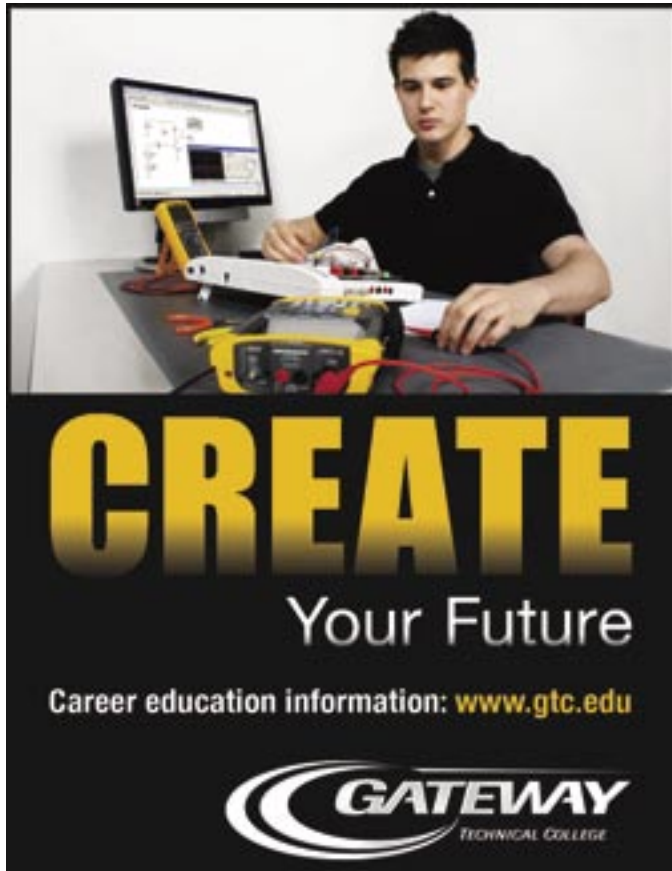


Maley/FTEE Scholarship

Technology and Engineering Teacher Professional Development



The Foundation for Technology and Engineering Educators proudly announces the \$1,000 Maley/FTEE Technology and Engineering Teacher Scholarship in honor of Dr. Donald Maley. Its purpose is to support teachers in their preparation to increase the positive outcomes of technology and engineering education. Criteria include: (1) evidence of teaching success, (2) plans for action research, (3) recommendations, (4) plans for professional development, and (5) the applicant's need.



Eligibility:

- Applicant must be a member of the International Technology and Engineering Educators Association. (Membership may be enclosed with scholarship application).
- Applicant must be a technology and engineering teacher at any grade level who is beginning or continuing graduate study.

Application and Deadline:

Applicant must send an application package, postmarked by December 1, that consists of four sets of the following required items:

- Letter of application with clear explanation of: (a) plans for graduate study, (b) plans for action research, (c) the applicant's need, and (d) identification details - school name, grade level, address, telephone, and home address.
- Applicant's resume not exceeding four pages that describes current position, professional activities, and achievements.
- Applicant's official college transcript(s).
- Documentation of acceptance into graduate school.
- Three recommendation letters from among the following: undergraduate faculty, graduate faculty, and school administration.

Mail to:

Maley/FTEE SCHOLARSHIP
Foundation for Technology and Engineering Educators
1914 Association Drive, Suite 201
Reston, VA 20191-1539

703/860-2100 FAX 703/860-0353
www.iteea.org/Awards/scholarshipmaley.htm

Scholarship Presentation: The scholarship is provided directly to the teacher and will be presented during the ITEEA Annual Conference.



Attend the 44th WTEA Annual Conference

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Pitsco/Hearlihy/FTEE Grant

Excellence in Teaching Technology and Engineering

The Foundation for Technology and Engineering Educators in cooperation with Pitsco/Hearlihy & Company proudly announces the \$2,000 Pitsco/Hearlihy/FTEE Grant in honor of Tom and Mary Hearlihy. The grant is for a technology and engineering teacher at any grade level (K-12). Its purpose is to recognize and encourage the integration of a quality technology and engineering education program within the school curriculum. Criteria include: (1) evidence of an effective quality technology and engineering education program, (2) documented success in the integration of technology and engineering education with other academic subjects, and (3) plans for professional development via the anticipated grant.

Eligibility Requirements:

- Applicant must be an ITEEA member and register for the ITEEA Annual Conference. (Membership may be enclosed with scholarship application).
- Applicant must be a teacher (elementary or secondary) who is successfully integrating technology and engineering education within the school curriculum. (Applicant above the elementary school level must be a technology/engineering teacher.)
- Applicant must attend the conference awards ceremony where award is presented.

Application and Deadline: Applicants must submit an application package, postmarked by December 1, that consists of four sets of the following required items:

- Letter of application with a clear explanation of: (a) the technology and engineering education program, (b) how technology and engineering education is integrated with other academic subjects, (c) plans for using the grant, and (d) identification details - school name, grade level, address, telephone, and home address.
- School-based curriculum materials and/or a 10-min. maximum video (mpeg, wmv, or avi) illustrating how technology and engineering education is integrated with other academic subjects in the school.
- Three recommendation letters that confirm the success of integrating technology and engineering education with other subjects. One letter must be from the principal and at least two must be from other academic teachers.

Mail to:

Hearlihy/FTEE Grant
Foundation for Technology and Engineering Educators
1914 Association Drive, Suite 201
Reston, VA 20191-1539

703/860-2100, FAX 703/860-0353
www.iteea.org/Awards/granthearlihy.htm

Grant Presentation: The grant is provided directly to the teacher and will be presented during the ITEEA Annual Conference.



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Wisconsin Teachers Take Engineering Design Class Developed by the Wisconsin Energy Efficient Vehicle Association

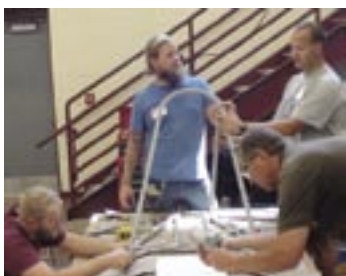
*by Matt Schultz, LakeView Technical Academy
and Steve Meyer, Brillion High School*

A group of 13 Technology and Engineering teachers from around the state took a class at Brillion High School this summer. The graduate level class was set up through the University of Wisconsin La Crosse by the Wisconsin Energy Efficient Vehicle Association (WEEVA). WEEVA is the umbrella association that promotes and organizes the high mileage vehicle competitions across the state. The class introduced teachers to the entire process of building a high mileage vehicle with their students.

The camp was set up to design and build two fully operational fuel efficient vehicles that, at the end of the camp, two lucky advisors would be able to take back to their schools and model to their students. With such an enormous task and so little time, long hours were sure to be expected.



The camp started Monday morning in Brillion's lecture classroom with the division of teams and a lecture on vehicle design and frame construction. Jesse Domer and Ken Bessac led the discussion on new innovative ways to lay out your vehicle and an awesome way to build a full size prototype. Our goal, at the end of day one, was to have a fully fabricated prototype that a team could use as a model to cut and assemble the actual frame, without using a lot of material on incorrect measurements and in-



accurate bends and cuts. Jesse modeled a method that he uses at Watertown High School with his club. We used PVC electrical conduit to mimic the one inch round tube that we would be using to fabri-

cate our finished frame. This PVC prototype was a huge success with both new and seasoned advisors. The PVC conduit material properties allowed us to heat and bend the material giving us an accurate replica of our frame. We used hot glue and cardboard gussets to assemble our PVC frame into position. It is strongly recommended to any advisor and club to use this method of prototyping. It is easy on the pocket book, and gives students a full size mock-up of their potential frame. During prototyping, changes can be made to measurements, design, and function before any metal is cut or any welds are made. This PVC prototype also can serve as ongoing tool to size up steering components; drive train assemblies and body coverings. What a great, innovative, and inexpensive tool to use with your students!



By the end of day one, both the electric car and the gas car had fully assembled PVC prototypes.

Day two was metal fabrication of the frame and a field trip to Ariens Manufacturing Facility. Ariens is a major supporter of Steve Meyer's Technology & Engineering Education program and an even bigger supporter of his club's involvement in WEEVA. During the three hour tour we were shown their manufacturing facility, spoke with their designers and were given a glimpse of how a true partnership between industry and schools can benefit both. It was truly inspiring to see the relationship that was built between Ariens and Brillion High School. As we toured the facility, we saw countless former Brillion students working at Ariens.

Once we returned back to the shop, Steve demonstrated different methods of notching round tube for inter-

secting joints. A one inch hole saw on a drill or mill can create a nearly perfect notch that needs little cleaning and grinding for a perfect union. It is recommended that you get a hole saw of good quality, otherwise the teeth will just shred away as you continue to make multiple notches. A one inch mill bit can also be used too. For clubs that are limited to the tools in their shop, you can also use a metal miter or band saw, cutting the pipe at 45 degree angles to create a "V" on one side. When you rotate the tube, you will then have created a notch that needs little cleaning up with an angle grinder. The last method that works really well is simply using an angle grinder to grind a "C" shaped notch. All methods work well depending on the tools you have.

Another great tip shared was using a 4' x 8' sheet of laminated plywood for the layout of your frame. Simply draw a center line running vertical with your sheet of plywood, this allows for you to create the base of your frame on one side and then mirror it perfectly on the other side, creating a perfectly symmetrical frame. The laminated aspect allows you to weld your frame right on the sheet of plywood to ensure a straight flat base.

If your shop is lucky enough to have a CNC plasma cutter, your team will be astounded at the possibilities of parts you can fabricate for your vehicle. We made adjustable rear tire brackets in no time using SolidWorks, a cardboard prototype from a laser engraver, and then cut it out on the plasma cutter. The possibility of parts you can fabricate in little time will truly advance your club's vehicles.



At the end of day two, we had a fully assembled metal frame. After another long day, we retreated to some male

bonding time at Steve Meyer's house for a delicious barbeque. The essence of this camp wasn't only the information and techniques we learned for aid in designing and building these vehicles, but it was also the bonding and camaraderie that was built between the thirteen advisors in attendance. Stories were shared about trials and tribulations in the clubs, some horror stories and some humorous, but all great to share and hear. Spending five days away from families, summer jobs, and all distractions was liberating for the soul. The closest comparison of the camp I can think of is "The Great Biker Build Off," a short, intense building project, minus the drama that reality television brings. The attitude was quite the opposite of a show like that. Everyone was so excited to be a part of this camp to learn and share ideas that it was just radiating with positive energy and good spirit.

Day three and four were spent on steering, braking and drive train. Jesse led an awesome lecture on Ackermann Angles and how to design your steering assembly around it. Ackermann Angles uses multiple geometric principles to design a steering system that turns your vehicle with as little resistance and friction between your wheels and the pavement as possible when turning. For a great resource on designing and building Ackermann Angles, check out www.electrathonamerica.org/ under their rule book. There is great information as well as visuals that demonstrate how to create the angles. Another great material for steering systems are Heim Joints. If you use a regular threaded and reverse threaded Heim Joint, you can align your steering by simply turning your steering rod and not have to disassemble your entire steering system.

By the end of Thursday we had rolling chassis, steering, brakes, and an appetite. WEEVA really knows how to host a camp by cooking the biggest steaks I have ever seen. A big thank you to WEEVA for that amazing meal!



Friday was our last day together and we still had some important things to get done on the vehicles. Ken modeled how to use airplane fabric to cover your vehicles. It is a cheap and lightweight method to give your vehicles a more durable body than boat shrink wrap and easier to

(continued on next page)

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mold than fiberglass. You simply stretch the material over your vehicle, cut it to rough size, apply the epoxy to your frame members, wait ten minutes and then stretch the fabric over the frame and apply more epoxy. Let it set up for twenty minutes and then iron it smooth. The fabric hardens with the application of heat and can form over any complex shape. I strongly encourage looking into this material for a cheap durable method of body covering. Plus you can paint it too!

If your team is tired of running a mechanical throttle to your gas engine, get innovative. The gas engine team scrapped the gas pedal and replaced it with a servo, small breadboard, two AA batteries and a potentiometer. Ken



and Steve modeled their design with an electronic throttle system that is used like a joy stick. After removing a few unneeded throttle components from the engine and mounting

the joystick style potentiometer to the steering wheel, we now had a state of the art electronic throttle that saves on weight and space. I encourage you to try it yourself.

The camp ended with thirteen grown men taking turns driving the two vehicles in the back of Brillion High School. For some of us, it was our first time getting into one of these vehicles. We were like our students - giddy, high fiving, and driving them faster than they were probably made to go. What an experience! Once we tested them and cleaned up the lab, we met in the classroom for one last time to draw names to see who the lucky winners

were to take the cars home. The camp gave away two vehicles, two prototypes and an assortment of tools to all of the attendees.



After five days, 70 hours of building, hundreds of stories, thousands of laughs and tons of information learned the first WEEVA Advisor Camp had come to an end. As I drove home I thought about the possibilities of other camps like this: Camps for building cars, or developing projects and curriculum, camps run by teachers, not professors, and the possibilities of the cool things we can do and take back to our classroom. The thoughts are endless. If you are interested or have ideas as well, let's share and make these camps an annual event.

A special thanks to WEEVA, Jesse Domer, Ken Bessac, Steve Meyer and Brillion High School for hosting this awesome camp as well as the WTEA and FIRST Technologies and the countless other companies who donated supplies and materials to the camp.

For more information about this and future classes, please contact WEEVA Executive Director, Jesse Domer at domerj@watertown.k12.wi.us.

Gateway Technical College to Host NCATC Fall Conference

Gateway Technical College is a long-standing member of the National Coalition of Advanced Technology Centers (NCATC), a network of higher education resources that advocates and promotes the use of technology applications that enhance economic and workforce development programs and services. NCATC members include over 150 two-year colleges in the US and more than 15 strategic partners. Gateway will host NCATC's Fall Conference in Racine October 3-5, 2012. The colleges in attendance employ leading edge technology in the area of manufacturing, rapid-prototyping, informa-

tion technology, sustainable energy, health care and more. Many have the same technology needs as Gateway. For more information on keynote speakers, industry tours and conference breakout sessions or to register for the NCATC Fall 2012 Conference please visit www.ncatc.org



Equity in Technology Education = TEquity

by Eric Sutkay, LakeView Technical Academy

It may not be easy to talk about - in fact you may have an extremely difficult time figuring out what you can actually do in your classroom to promote it. You may not even be aware that it exists, but it is important, one of the most important things facing our careers - gender equity in the classroom. Soon it will be a whole lot easier for you to acquire resources, ask questions and build a classroom, shop or lab that is gender equitable!

Gender equity in Technology Education is not new, but quite frankly it should be on everyone's mind. If girls, in particular, are not taking your classes or building and making projects that are fun, exciting, and relevant, then they are filling the seats of other elective classrooms. In reality, if the enrollment isn't high enough in your classes, they may not run. Getting girls excited about Technology Education could start a whirlwind of good things for your program and what was once a "boys only" area where the boys got "dirty," will soon become a place where both genders can work together and create things that you as an educator never thought you would see.

If you were at the WTEA annual spring conference, you might have noticed the Gender Equity concept. People in the technology education field are already asking questions about engaging female students in our classes.

They see the importance of having girls in their classrooms, and most would agree that some of the female students are the best students in their classes! I tend to agree. With this in mind, the WTEA and Department of Public Instruction are working on gender equity and are creating the "TEquity" initiative.

This may be the first time that you have heard of the term "TEquity," and it may raise some questions, but the perfect person to direct those questions to will soon be your district director. The TEquity project is aimed at educating educators on how to successfully create and implement a gender equitable classroom and curriculum. This is a curriculum that you will design using available resources from the many educators that are already doing great things with gender equity! TEquity will provide you with resources necessary for you to encourage female students to take your class, help them be successful in your subject area, as well as in their technology based career and life, and most importantly to have fun doing it. Let's start talking about Gender Equity; ask your district director about TEquity today! Look for the two-hour session at the upcoming 2013 WTEA Conference (March 14-15th, 2013 @ Chula Vista in the Wisconsin Dells). Can't wait to see you there!

CALL FOR PRESENTERS

2013 Conference Theme:

"Connecting the Future"

44th Annual Spring Conference

March 14th & 15th, 2013

Chula Vista Resort, Wisconsin Dells

Presenter form must be submitted by November 30, 2012 by mail, fax, website submission or e-mail.

Directly submit via online form at: <http://www.wtea-wis.org/bapresenter.html>

E-mail: johnston@mwt.net • Phone: 608-689-3033

Partnership Teams – Level 2: “The Plan”

by Jesse Domer, Watertown High School

Every TEE program has an Industry Partnership Team by now, Right? You are sharing your department's curriculum with B&I (Business and Industry) leaders in your community. Industry is sharing their skilled employment needs with you and your administration team. Your school board members are engaged with ongoing activities with your students and organizations. This is the easy stuff every TEE teacher should be expected to do as part of their day.

Assuming you are at that point – you may be pondering, “how do I move forward from here?” So often we are told how to start a partnership team, the need for B&I involvement, and the benefits of such support. But for those of us who get there, what is next? An inspirational quote from college (almost a decade ago) that drove me towards step 2 was “If a business wants to hand you \$10,000 today, are you ready for it?” I am sure we can all say we have 100 places to spend that kind of money in our programs, but can we convince them of that need? A tour is nice and gets people excited, but generally there needs to be a plan in place for people to commit.

The Plan

What is it? We have all had the 30 second talk to someone about what we teach, and so often it ends with “I am the shop teacher” before they understand. Sadly this conversation happens often with industry leaders, school administrators, and school board members. After the 30 second talk comes a 10 minute discussion, at times, about the wonderful things you are doing. Often these conversations are canned, repetitive, and identical each time. This is a starting point for your plan. What does your program look like today, tomorrow, or 10 years from now? What are the goals of your curriculum, facilities, co-curricular offerings, and community relationships? How do you compare to other schools in your area or the state? Are you fulfilling the needs of your community? The plan is the BIG PICTURE for your program or department.

Who is your audience? Everyone! Your first audience may be new members to your partnership team. So often, new people join the team and need to be filled in on what their role is, what has been done, and what is expected of them. This plan should answer those questions for anyone joining your support team. Another common audience is administrators and school board members. How

better to let them know each year that you are moving forward than to give them a vision for the future of your TEE department. Another audience may be incoming supporters for your programs. This may include speakers, tours, sponsors, donors, and more.

Is your plan justified? This should be a forward thinking document, but it **MUST** be supported by your partnership team! Often times the plan comes out of years of discussions, meetings, tours and ideas generated from your B&I groups. Truly your plan is what you have already been doing and talking about in the community forever and now you have it in hardcopy form. If you have your B&I partners on board with this vision, they will be better advocates for those needs in your community than you can be. For example, you by yourself spreading the word versus ten industry leaders helping you! Ten industry leaders speaking to your administrators, school board members, city council members, spreading the word at football games, rotary gatherings, and so much more.

Market the Plan. This is the consuming part of the process. It is easy to type paragraphs of what we want and what we are passionate about. It is another thing to clean it up so other people **WANT** to read it. Make a cover with pictures, borders, a title and print it all in color. Break it up into sections with divider pages to include more pictures. Give your plan a title!!! “Vision 2020,” “Not your average shop class anymore,” “Moving TEE Forward.” Something that you can say in passing and others will eventually understand what you are referring to other than “The Plan.” Compile the document in a nice professional clear-view folder or binder for presentation. Have copies always available at your desk for visitors that stop by.

Supporting Documents to include: Every plan should include a list of items you want in your department some day! The addition of CNC equipment, facilities expansion for lab space, new software, printing presses, etc. Listing this is nice and shows a “Big Picture” goal of what is needed for your department, although this list does not justify to a donor why you want to spend their \$10k tomorrow. Include an appendix to list out each item with descriptions, uses in curriculum, benefits, brands, cost, etc. Show your superintendent you have done your research and don't just have your hand out like everyone else. Another section/addendum to include might be data

for your career areas. So often administrators do not understand the need for skilled labor in your community or state. Show them the need. This information can be found online with the Department of Workforce Development, Wisconsin Technical College System and in general Google searches. Print these pages and highlight the statistics that show how Technology Education is important to your community. Talk with your Chamber of Commerce to find statistics that may support your needs. Data and statistics go a long way with decision makers when looking over your plan.

Make the Time

In closing, I understand time is our enemy in education. From the local and state initiatives each year, new ideas we want to implement into our classrooms, connecting standards and professional development to our day, co-curricular student activities and somewhere finding time for our families. If you do not already have a Partnership Team for your programs, you need one. Sure you can teach 30+ years without that connection, but are you doing your community justice? Once you do have that partnership, creating a plan will inspire your supporters to

drive the train instead of being passengers. My philosophy in education is to be the matchstick for my students, starting their fires and letting them keep it burning. Creating this plan will take you from pushing to grabbing on and taking a ride. My "Vision 2020" document is always available for anyone that asks for it. If you are looking for a starting point, I will be more than willing to share with any TEE instructor.

Plan now to attend

The 44th WTEA Annual Conference

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March 14 & 15, 2013

Chula Vista Resort • Wisconsin Dells

**Save \$20.00 - Early Bird Registration
ends December 23, 2012.**

See page 15 for details.

Summer Institute Successful – First National Training Recognizing New NATEF Standards

The Automotive Summer Institute was held July 9-12, 2012 at Madison Area Technical College. The Wisconsin Automobile and Truck Dealers Association Foundation provides the leadership for this annual event. The meeting room was full of instructors and sponsors.



The summer institute at Madison College provided high school and technical college instructors with current information on the new standards as well as direct hands-on training. Technical College instructors from Madison, Western Wisconsin, Moraine Park, and Milwaukee provided the direct instruction. A field trip was hosted by the University of Wisconsin – Madison Engine Research Lab. Participants were able to talk directly with graduate researchers and see the future of engine technology. The Engine Research Lab is the largest lab of this kind in the country.



Ray Pedersen (retired) was recognized for his dedication to Wisconsin technology educators and the automotive programs.



Presentations and training focused on the new NATEF standards for high school programs. As automotive systems become more integrated and complex, technicians need to be able to perform a broader set of competencies. For example, servicing a problem in an engine cooling system might require basic level understanding of the air conditioning system and electrical system. NATEF created a new skill level structure that is based on breadth and depth of knowledge and skill.



You can learn more about the Summer Institute at <http://www.watda.org/> and the research lab here at <http://www.erc.wisc.edu/>. The 2013 Automotive Instructor Institute will be hosted by Moraine Park Technical College in Fond du Lac.

Solving the Workforce Paradox

by James R. Morgan, Wisconsin Manufacturers and Commerce Foundation President



Manufacturing, and manufacturing careers have been getting quite a bit of coverage lately.

Employers have made desperate pleas for skilled workers. There is a heightened awareness of the value manufacturing brings to a community. And, there is a growing, albeit slowly,

recognition of the innovation and intelligence that goes into today's manufacturing jobs. Governor Walker has launched his College and Career Readiness Council and the President and his Education Secretary have also been extolling the virtues of college and career readiness.

That is all good. Manufacturing is critical to the future success of Wisconsin. Not only for the 425,000 employed in the sector, but for the hundreds of thousands that exist because of manufacturing. No other sector has the job multiplier effect that manufacturing does.

But let's not let old paradigms drive our future needs for a qualified workforce.

We know that about 30 percent of the jobs in Wisconsin will require a bachelor's degree or more. That means 70 percent do not, with the vast majority of those requiring technical education beyond high school. What seems to be missing in the current system is a broad understanding by today's students of the jobs available. They simply cannot select an occupation that they don't know exists. They do not know what a welder does; they do not know what a CNC operator is; they have never seen the inside of a modern day, advanced manufacturing facility; and they do not have accurate job data and salary information. The same applies to their parents. And all of us (business, educators, parents, media) should share that blame.

The WMC Foundation recently conducted more than 50 listening sessions with over 300 manufacturers from around Wisconsin. Since completing that road trip, we have been sharing what we heard. One thing that became clear is that we need to change the definition of "success." As a parent, you want your children to be healthy and happy, doing something they love, and able to live comfortably. Isn't that most people's definition of success? This is America, and everyone should be encouraged to

pursue their passion. However, we owe students a reality check and perhaps even a "Job Probability Index" – what are the odds they will find a job in their chosen field. We should discuss the passion they wish to pursue, provide information on what it will take to reach it, explore the costs involved, evaluate the job prospects upon completion, study the level of demand for their degree/career, look at salary expectations and consider the return on investment.

If every 16-year-old, and their parents, have all this information and a full understanding of (and open mind to) all the occupations available, we will work through this shortage. Currently though, our definition of success seems driven by a mentality that master's degree is better than bachelor's degree, bachelor's degree is better than technical degree, and technical degree is better than work experience. The workplace is not that linear and easily defined. Right now, there are shortages of engineers, welders, CNC operators, machinists, masons. Some of those require work experience, some apprenticeships, some technical degrees, some 4-year degrees or more. Let's make sure everyone knows the market, because the market will drive us to success.

As we focus on "college and career readiness," we might want to put "career" first.

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Pass It On!

by Mike Jensen, WTEA President 1987

Editor's Note: The following article is reprinted from the Fall 1987 issue of Interface.

Our objective in this issue of the *Interface* is to provide an insight to how women are interacting with technology. Influence from individuals around the country are impacting and shaping the programs in our local schools. Yes, State Superintendent Bert Grover and his staff support the efforts of technology education to provide a broadbased educational experience for young children in today's school; but trying to break the tradition of industrial education and its typical male population is not easy! I do believe that if the change to technology education increases the female population by 1%, we should follow through with change and insure the proper education of technology and society to individuals impacted and continue to raise the percentages.

As I have traveled around the state and seen technology education programs in action, I've seen girls typically in Communication Technology areas learn beyond teacher expectations. The only problem I acknowledge with this statement is that of the teacher and their expectations. When we change a program from industrial education to technology education, we ourselves change our methodologies and expectations more positively toward change and accepting new ideas. Fortunately, girls are entering into more unconventional areas of technology education and are preparing for further education, leadership, careers, and society to be the best quality person for the world of work in a company or starting a company.

As I read the magazine *IMC* for entrepreneurs, the number of women starting their own companies steadily increases. As curriculum changes in Technology Education occur towards developing manufacturing systems and enterprise courses, opportunities arise to break the mold of being only a class for the guys. Again, I realize that it is not easy to break the mold, but we do need to try harder at the politics involved. Guidance departments, administration, and other academic areas need to be approached on a continuous basis as to the appropriateness of women in Technology classes.

Some of our more progressive schools have been able

to draw girls into non-traditional courses of programs with amazing results. Example: I evaluated Edgerton's Technology Education program and had the opportunity to speak with a girl named Stephanie (fictitious). Stephanie

had just completed her senior year and had just completed four years of Transportation Technology courses. When I asked Stephanie what her goals were beyond graduation she replied, "automotive engineering." Her reason for staying involved in the Technology Education program provided the chance to explore all facets of transportation and to do so creatively. Stephanie's pride and joy is the wind tunnel she built her senior year to study the varying effects of aerodynamics upon car shapes. She claims that the research and development aspects of transportation were

more challenging than other courses. Stephanie says that the Technology Education courses at Edgerton allowed her to apply the knowledge and investigative experiences from her academic courses into a true laboratory application and intellectual learning situation.

There have been many women in Technology Education programs with successes and experiences that need to be mentioned. But the "many" I refer to need to be increased. Not for the sake of increasing enrollments in our programs, but to meet the needs of students in our schools! Technology Education changed from Industrial Education to meet the needs of all students at all levels in our public schools. There are future leaders in our hallways, let's get them in the classroom. The Ginnys, Annas, and Brendas from programs around the state of Wisconsin have started the path toward proving the importance of women in technology education. We need to extend our path to everyone.

Our intent with this issue is to provide articles and information on women in our Technology Education programs. This issue is not only for you the instructor or administrator, but is intended to be shared with other faculty, students, parents or ?.

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