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Interface is the journal of the Wisconsin Technology Education Association. It is published and mailed from Stoughton, WI three times a year and is distributed to members of the WTEA. Individual subscriptions are available at \$30 per year. For subscription information, back issues, or reprints please send requests by email to joe.ciontea@wtea-wis.org. Articles for publication should be sent to: Doug MacKenzie, 960 Yuma Circle, Stoughton, WI 53589, doug@wtea-wis.org. Copyright (c) 2013. All rights reserved. Limited reproduction rights are granted to current members of the WTEA.



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When you have the very best!

by Greg Groom, WTEA President

When you have the very best, why keep it quiet? For this reason, your WTEA will be hosting the International Technology Engineering Education Association conference in the spring of 2015. Planning has already started. I have attended the ITEEA Conferences for many years

and I have always felt WTEA puts on a better conference. Wisconsin Technology Engineering Education instructors have always been forward thinking; we set the standards for what should be taught in our public high schools. Why not showcase our programs? Wisconsin programs have a hybrid approach. We have some programs doing career-ready vocational-based education, some embracing Technology Education basic training and some doing pre-engineering. But for the most part, Wisconsin programs have elements of all of these programs. So, we will show our

approach to the rest of the world. We will need our top programs and people to present at our 2015 ITEEA International Conference. Start making your plans to present or attend this conference.

On a more sober note, we are facing a teacher shortage. It is not just in Technology and Engineering Education, but it is also in many other Career and Technical Education disciplines. The other areas may not be as large as ours, but it needs to be addressed. I see no new changes in the perception of education and the government view on education. But the pendulum does swing and those students entering college this fall may have a better go of it when they graduate. For this reason we should not lose sight of encouraging our students to pursue a rewarding career in Technology Education. Our discipline is gener-

ally the first to see a shortage of instructors and the last to have a surplus. So help the future of our profession by encouraging your students to look into a great and rewarding career.

This August was the roll out of the new Wisconsin

Technology and Engineering Education standards. If you have not attended a work shop as of yet, you should plan to do so. Brent Kindred, along with WTEA, will be hosting update seminars throughout the state this fall. Our 2014 WTEA Conference will have sessions on different parts of the standards and how your programs need to address these standards. How to crosswalk will be addressed in these seminars and at the WTEA Conference. The very first thing that should be done is crosswalking your curriculum with our TEE standards.

For members that need to put in a request to attend the WTEA Spring Conference, the dates are March 6th and 7th. This is one conference you do not want to miss. With the release of the new standards and the ground work for the ITEEA 2015 conference, this spring conference promises to have a full slate. We will also have our traditional main draws of the Trade Show, Project Showcase and seminars. This year we also welcome any administrator or board member and wave the conference fee with any paying Technology Engineering Educator professional.

In closing, I hope every one of you had a renewing and refreshing summer. May the start of the school year be successful and smooth. Keep up the great things that you do for the young people of Wisconsin and thank you for all the things you do for your profession.





WTEA BOARD NEWS

Spring 2013 Board of Directors Meeting Highlights

by Matt Schultz, WTEA Secretary/Treasurer

The following summary highlights the Spring 2013 WTEA Board of Directors Meeting held March 13th and 14th at the Chula Vista in Wisconsin Dells, Wisconsin.

- New Board Appointments Jesse Domer, appointed President Elect. Pete McConnell, apponted ITEEA Chair.
- If any current tech ed teachers have not been contacted by a member of the WTEA in regards to what district they currently teach in and what subjects, please contact Greg Groom. The WTEA is trying to generate a list of all active Technology Education teachers in the state.
- The WTEA Fall meeting has been moved to a conference call instead of meeting in Madison. This conference call should allow more board members to attend and will cut the cost to the organization.
- The WTEA has announced a new award; the Community Service Award is looking for nominations of schools that are doing outstanding service in their community. Look at the WTEA Awards website for the criteria.

- Fall Skills USA Leadership Conference at Lions Camp in Rosholt, Wisconsin will be October 16-18.
- 41st Annual Skills USA Leadership & Skills Conference April 29th -30th at Alliant Energy Center, Madison, Wisconsin.
- The 2015 WTEA Conference will be held the Wednesday and Thursday prior to the ITEEA Conference, held Friday and Saturday in Milwaukee, Wisconsin.
- Anyone interested in helping or being a part of the 2015 ITEEA conference, please contact Pete McConnell.
- The Board thanks all involved for a successful spring conference.
- There will be a summer workshop to continue planning the 2015 WTEA/ITEEA conference and review the WTEA annual budget.

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.

WTEA Awards Nominations

Each spring the WTEA recognizes Technology Educators, Industry, and Technology Education Programs that have demonstrated outstanding achievement at our annual awards banquet held at the WTEA Spring Conference.

The WTEA needs your help as educators to identify these worthy teachers, programs, and other professionals that deserve recognition. The WTEA is looking for educators that are going above and beyond in their classroom. The WTEA has a variety of award categories that covers teachers, programs, and examples of classroom excellence. Members are encouraged to visit the WTEA's Awards page on the website. There you will find the criteria for each award. As a profession we need to continue to recognize greatness in our profession. The WTEA Awards Banquet gives us that opportunity.

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. To nominate a teacher, program or industry contact Matthew Schultz, Secretary/Treasurer or Joe Cointea, 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 must be sent by U.S. mail or by email. The awards ceremony will be held in March as part of our 45th annual conference. **Notes:**

- Nominations must be received by November 22nd to be considered for recognition the following spring.
- Technology Educators must be a member of the WTEA to be considered for award recognition.
- For a detailed description of the awards, please visit our website or contact any board member.

Lakeview Technology Academy Attn. Matthew J. Schultz 9449 88th Ave, Pleasant Prairie, WI 53158 mjschult@kusd.edu

WTEA Awards Committee Joe Cointea P.O. Box 1312, Fond du Lac, WI 54936

WTEA VICE-PRESIDENT

Hard Work

by Mike Cattelino, WTEA Vice-President

We have recently taken the time to honor our workforce by celebrating Labor Day in the United States. Besides being touted as the end of summer for most public school systems in WI, what does the day really stand for? What does it mean to 'labor' in the 21st century with au-

tomation, auto-steer agricultural equipment, and computerized numerical control (CNC) machining equipment? What does it mean when you hear the phrase 'hard work'? Our ancestors will occasionally remind us that we have it easy compared to the life that they had at our age. I would believe it is fair to consider that they were given the same reminder by their ancestors years ago too.

Ashton Kutcher made some remarks at the Teen Choice Awards that has some people buzzing, but I took his words to heart. He

said "I believe that opportunity looks a lot like hard work. I've never had a job in my life that I was better than. I was always just lucky to have a job. And every job I had was a steppingstone to my next job, and I never quit my job until I had my next job. And so opportunities look a lot like work." The conservatives felt that this was a statement supporting their views on labor and the workforce, while the other side of the political spectrum wondered why the conservatives felt that a known democrat would suddenly support the opposite viewpoint.

I truly wish that people would just listen to what others say and take it as is without trying to politicize every

> word or statement. I give Ashton credit for saying what he truly felt in front of an audience that he felt needed to hear it. The future workforce that we are gearing up for life after high school and post-secondary education is a creative group, yet it needs to keep things in perspective. Life is work, and in some form, work is life. I found another quote that sums up my thoughts and fits the great teachers of this state to the letter. Chris Dixon, cofounder of Hunch, stated "people capable of making enough money to never work again

are the same people who will never quit working." For the hard-working educators of this fine state and country, the hard work will never end no matter how much the compensation is. I commend all of you for your dedication to the field of education and hope that you continue to emphasize the importance of hard work with your students.

- Dates to Remember

October, 2013	National Careers in C	onstruction Month
October 14-15, 2013	Natl. Careers Pathways Network Conference	ce San Antonio, TX
October 16-18, 2013	SkillsUSA Fall Leadership Conference	Risholt, WI
November 1, 2013	STEM Career Day	UW-Stout
December 4-6, 2013	ACTE National Conference	Las Vegas, NV
December 20, 2013	Early Bird Conference Re	gistration Deadline
March 6-7, 2014	45th Annual WTEA Conference	Wisconsin Dells, WI
March 27-29, 2014	ITEEA Conference	Orlando, FL
April 1-2, 2014	SkillsUSA State Championships	Wisconsin Dells, WI
March 26-28, 2015	ITEEA Conference	Milwaukee, WI

Interface



ANNOUNCEMENTS

WTEA Community Service Award

by Frank Steck, UW-Platteville

The WTEA Board has decided to present an annual award to the school(s) that serve their local community in some meaningful manner. The award will be awarded at the annual WTEA Conference for service performed during the previous calendar year.

The primary criteria for selecting winning schools shall be 1) the number of students involved in the project, and 2) the number of people in the local community served by the service activity. Each year the WTEA will recognize one high school and one middle school for their community service. A winning program may not receive the award again for at least three years.

To nominate a high school or a middle school for the award, the school must apply, submitting as much docu-

mentation as possible. Examples of documentation are (but are not limited to): portfolios, student reflections, videotape, newspaper clippings, letters of recommendation/support from local community.

Nominations shall include: Name of School, supervising teacher(s), names of students involved, timeline, photos/video, summary of activity's impact on local community, and budget.

The teacher(s) must be a current member of WTEA. Applications must include letters of recommendation from at least one of each: administrator, parent, and community member impacted by service project.

Look for more information about the award in upcoming issues of the Interface.

SkillsUSA Fall Conference



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

consin. 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 six \$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

Gateway Technical College Manufacturing Programs Earn Recognition From Manufacturing Institute

The Manufacturing Institute, a Washington, DCbased affiliate of the National Association of Manufacturers that is dedicated to improving and expanding US manufacturing, has named Gateway" Technical College "a charter member of the institute's 'M-List,' which recognizes schools that prepare workers to the level of industry standards in advanced manufacturing. Gateway is the only charter member in Wisconsin to receive the honor, the college said. The list recognizes programs that are aligned with industry standards and that award students with credentials in the NAM-Endorsed Manufacturing Skills Certification System.



ANNOUNCEMENTS

National Engineers Week Foundation Honors Steve Meyer

National Engineers Week Foundation announced the winners of the 2013 DiscoverE Educator Awards in June. This national awards program shines a spotlight on educators who are inspiring tomorrow's innovation generation by helping students discover engineering. The program is open to all full-time educators teaching in grades 6-12.

The 2013 honorees include:

Steve Meyer, Brillion High School, Brillion, WI

Nicole Penn, Kiser Middle School, Greensboro, NC Anthony Williams, Omaha North High Magnet School, Omaha, NE.

Eight other top educators from across the country have been honored as runner ups. Teachers can be nominated by either engineers or engineering students. Winners were selected by National Engineers Week Foundation and its non-profit partners.

Each of the three winners receives a \$2,000 cash prize, a 3M digital projector, and a 3M gift pack of class-room supplies. The prize also includes a trip to Washington, DC, where the winners were honored at a ceremony.

SkillsUSA Alumni

Many of you are aware SkillsUSA has a national alumni organization. Wisconsin has recently formed its own Alumni & Friends organization to provide additional opportunities and benefits to those connected with SkillsUSA within the state. The non-profit alumni organization's goal is to provide networking, social and service opportunities for former SkillsUSA members and supporters. The intention of the organization is to benefit both alumni and the current secondary and post-secondary organizations. The initial board of directors includes Executive Director Kerry Blondheim, President Bradley Harrellson, Vice President Kyle Gillingham, Treasurer David Blondheim, George Laubmeier, Stephanie Neumeier and Jesse Domer. For more information about the organization, find it on Facebook as Wisconsin SkillsUSA Alumni and Friends or e-mail bradh@wiskillsusa-alumni. org or kerryb@wiskillsusa-alumni.org.

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

The DiscoverE Educator Awards is a program of National Engineers Week Foundation and its partners. Funding is provided by the American Society of Civil Engineers (ASCE), American Society of Mechanical Engineers (ASME), Bechtel, ExxonMobil and 3M.

"Teachers play such an important role in society. They inform and inspire the next genera-



Steve Meyer, DiscoverE Educator Award Recipient

tion of engineers, which benefits all of us," said Charlene Wheeless, Bechtel's global manager of corporate affairs. "Congratulations to the eleven educators who were selected by engineers and students of engineering. We are grateful for their efforts in developing future engineers."



RETIREE

Tom Baldwin Retires

As I read through the spring issue of Interface and saw the pictures of many friends still working to help kids and each other, I thought I would like to say good luck and good-by as I move into retirement. I started my relationship with WTEA my second year at UW-Stout in 1971 and continued to work with it as Executive Director until I left Wisconsin in 1996. During that 25 years many of you were colleagues and good friends. It is surprising to me to see so many of you still in leadership roles. I left Wisconsin in 1996 to take the role of Dean of the College of Technology and Director of the Kansas Technology Center at Pittsburg State University in Pittsburg, Kansas. I spent 10 years there and left for Northern Minnesota, not far from my home, at the University of Minnesota campus in Crookston where I took the role of Senior Vice Chancellor for Academic and Student Affairs. After 44 years in Higher Education I retired in June. I would hope to keep in touch with my many friends in Wisconsin and will continue to monitor and respond to e-mail to trbaldwin11@yahoo.com.

> Sincerely, Tom Baldwin





Interface

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. <u>To be eligible for all benefits of this special pricing, school subscriptions should be sent as soon as possible</u>.

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.

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DISTRICT NEWS

District A Sylvia Tiala



Hi Everyone! Welcome back to the 2013 -2014 school year. My name is Sylvia Tiala and in addition to being the UW-Stout Representative to WTEA, I have the pleasure of becoming District A Representative. I come to this position after having graduated from St. Cloud State University in Minnesota and

then Iowa State University in Ames, Iowa. I came to UW-Stout in 2006 after teaching Technology Education (welding, blueprint reading, aviation, aerospace, drafting, etc.) for twenty years in South Dakota and Iowa.

As this new academic year begins I look forward to connecting with those of you in the Chippewa Valley Technical College and the Wisconsin Indian Head Technical College areas. I have several goals for the year. One is to have at least one fall and one spring meeting in the District A area. Another goal is to try to update the mailing list for District A. I would also like to help answer questions you might have regarding questions about WTEA.

I am asking for your help to make this possible. Please let me know how I can best be of help for you. Do you have ideas for district meetings? Let me know. Have you changed mailing or email addresses? Let me know. Are there new teachers in your district I should be contacting? Help me touch base with them. Do you have questions about WTEA? Don't hesitate to contact me. I can be reached at: Sylvia Tiala, 225D Communication Technologies, UW-Stout, Menomonie, WI 54751 or 715-232-5619 or tialas@uwstout.edu. I look forward to serving you as your District A representative.

District H

Tom Martin



Another school year is upon us. It just doesn't seem possible, but here we are.

Before I begin, I would like to first salute a dear mentor and friend Pete McConnell. Pete has been and continues to be one of the most enthusiastic people I know. By sheer determination and passion, Pete could get you to believe in what he

taught. But what made Pete a cut above was that he could connect the content's significance of implementation and application in life. From my high school days (I was fortunate that Pete taught in my high school) until now, I have been the indirect and direct beneficiary of his appetite for life. Whether it's in coaching, my business, with CESA #3 or helping at the WTEA or SkillsUSA conferences, I only know one way and that's thanks to Pete.

While Pete may have stepped away from the classroom, I believe he elected a greater stage for which to inspire. People in the Merrill community, WTEA and ITEEA, along with other walks of life will have the distinct fortune to be captivated by Pete McConnell. So here's to Pete McConnell, for everything you brought to countless students as well as to those who will come to know the legend that is "Pistol Pete." God Bless my friend! After a year of learning new responsibilities, I look forward to working with and for colleagues regarding Teacher Effectiveness. Now I know that's a pretty ridiculous statement. It will be more work without any guarantees. This pilot year could be a dress rehearsal or recalled for something new. With that said, I look forward to proving to even the harshest critic wrong about the value of Technology and Engineering. As a profession, we will finally need to use data to document our impact. There are colleagues that do this already, but now, we will have the body of work necessary to show that Wisconsin has a culture of rigorous and relevant learning.

Wisconsin SkillsUSA continues to grow and I challenge those reading this to begin a chapter. No money? Contact your local members of industry to sponsor your chapter. Only interested in robotics, or masonry or other areas? That's okay; we want you to share your students with their peers and your community. Career Readiness is on the minds of many nowadays and what better way to showcase your students than SkillsUSA. The State Team is ready and equipped to have you and your students on the big stage.

As I write this, next Tuesday is Day One. Time to begin the journey. Time to renew old relationships and build new ones. I look forward to serving District H as Pete McConnell once did, with enthusiasm and pride!

Alan Mamerow Awarded WTEA Foundation Scholarship

Alan J. Mamerow has been selected to receive the WTEA Foundation Future Technology Teacher Scholarship. Alan graduated from Sussex Hamilton High School with a 3.0 GPA. Allan will attend U.W.-Stout this fall. His scholarship essay is printed below.

I chose to pursue a career in Technology Education for many reasons. One major factor in my decision was the fact that, with both my parents being teachers, I have always seen the importance of an education. I am most interested in Technology Education for two main reasons. Because my father was a Technology Education teacher, I spent many days assisting him at his



school lab preparing for the school year. I also had the opportunity to take introductory Technology and Engineering classes while a middle school student. These classes introduced me to the curriculum which I found quite interesting so I took numerous Tech Ed classes throughout high school. I felt that these courses taught me a variety of important lessons and gave me experiences that I would like to be able to share. Another reason that I am following a career path in Technology Education relates to the economic situation in the United States. Experts state that the best way for this nation to regain economic stability is to increase this country's manufacturing base. How-

To receive the Technology Educators listserve postings sign up by contacting Brent Kindred at: brent.kindred@dpi.wi.gov



ever, we don't have the skilled human resources needed to achieve the level of manufacturing for such progress. I feel that students need to be exposed to manufacturing and engineering at the high school level, so that they realize that such jobs do exist. By following the career path to become a Technology Education teacher, I can both pursue and share my interests while supporting economic growth.



New Technology and Engineering Standards Released

by Brent Kindred, Wisconsin Department of Public Instruction

Technology and Engineering Education has significant value for all students – from introducing them to the world of work to providing specific technical skills. The aim of our newly released standards guide book is to be used as tool to help build your program for your students and communities. The new guide book and materials can be found at http://cte.dpi.wi.gov/cte_testandards. Our technology and engineering programs will find the guide valuable for making decisions about:

- program structure and integration;
- curriculum redesign;
- staffing and staff development;
- scheduling and student grouping;
- facility organization;
- learning spaces and material development;
- resource allocation and accountability; and
- collaborative work with other units of the school district and community.

The comprehensive technology and engineering standards document includes a vision for student success and guiding principles for teaching and learning. Another feature of the standards documents is a set of common career technical standards that are part of each subject area standards. These standards represent the common skills, knowledge, and dispositions that are necessary for students to succeed in careers. Furthermore, these revised standards and supporting resources will guide schools, districts, and communities in engaging in larger conversations about the important role of CTE in ensuring that students are college and career ready.

To that end, multiple professional development opportunities will take place statewide throughout the upcoming school year about our new technology and engineering standards. These are being designed with the teacher in mind and will focus on implementation of the standards. Please find the technology and engineering professional development opportunities at http://cte.dpi. wi.gov/cte_standards.

A special thanks to the Technology and Engineering Standards Revision Leadership Team for taking on this important project that will shape the classrooms of today and tomorrow. I am proud to have worked alongside this group of educators and I sincerely appreciate their commitment to our profession.

John Bursa TEE Teacher Oconto Falls HS

Carmen DeBack TEE Teacher Hartford Union HS

Dave Doering TEE Teacher Bayfield HS

Duane Elfering TEE Teacher Barneveld HS

Terry Garringer TEE Teacher Lakeview Academy-Kenosha

Al Gomez, PhD UW-Madison Engineering UW-Madison/STEM Academy

Greg Groom TEE Teacher/WTEA President Lake Geneva-Badger HS

Carl Hader TEE Teacher Grafton HS **Ryan Huseby** TEE Teacher Tomahawk HS

TEE Teacher

Tony Ingram TEE Teacher William Horlick HS

Milwaukee Hamilton HS

Dan Klecker TEE Teacher McFarland HS

Kelly Koller TEE Teacher Pulaski Community MS

> Oscar Miller TEE Teacher Necedah MS/HS

Tommy R. Sanders TEE Teacher Black Hawk MS

Dave Stricker, PhD TEE Program Director UW-Stout

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LEARN ABOUT STEM JUMP START GRANT OPPORTUNITIES FOR SCHOOLS

Career and Technical Education Programs at UW-Stout

by Carol Mooney, UW-Stout

UW-Stout is proud of its rich history in offering undergraduate and graduate degrees in Career and Technical Education.

The undergraduate degree in Career and Technical Education serves technical college instructors by providing degree completion, specifically in the trades and health related occupational areas. The bachelor's degree incorporates Wisconsin Technical College System teaching requirements.

The master's degree in Career and Technical Education provides secondary and postsecondary teachers, staff and leaders an opportunity to develop greater depth and breadth within a discipline, which includes technology, family/consumer, marketing, business or in engineering, technology or other supporting area.

The education specialist in Career and Technical Education allows leaders, administrators and teachers in secondary and postsecondary settings advanced study, including Career and Technical Education Coordinator and Information Technology Coordinator certification. What is very exciting is the pending launch of Stout's newest degree within the CTE program array. We are very proud of the recent approval by the University of Wisconsin Board of Regents allowing UW-Stout to offer its first doctoral degree, in Career and Technical Education. At the time of this writing, the Higher Learning Commission has reviewed the program, conducted a site visit and has recommended approval to the Accrediting Committee. We are optimistic that our first cohort will be admitted yet this fall, 2013.

For more information about UW-Stout's Career and Technical Education programs go to http://www.uwstout. edu/programs/mscte/ or contact Dr. Carol Mooney at 715-232-1444/mooneyc@uwstout.edu.



Digital Designs

by Sylvia Tiala, UW-Stout

A community of students and staff met at UW-Stout's new FAB Lab to explore digital designing during the month of July in the first "How to Make Almost Anything" class. Participants were introduced to laser engraving, 3D printing, CNC milling, scanners and electronic circuit production as they designed and built their own chair, printed flashlight casings, soldered flashlight circuits and milled their own portfolio covers. A final project of personal interest was chosen by each of the participants and presented during the final class session. The ultimate goal of the class was to build a community of learners who have an ongoing interest in digital design and fabrication.

The class was possible because of a UW System Growth Agenda award that provided partial funding for UW-Stout's FAB Lab workspace. The workspace is based on the Digital Fabrication Laboratories originally funded as an educational outreach project from MIT's Center for Bits and Atoms. In addition to providing tools running with open-source software, the space is designed to promote collaborations across disciplines and the sharing of creative ideas to solve digital design problems. Chair design prototypes and final product





3d printed flashlight & milled circuit boards

Scanned objects reprinted on 3D printer



A Technology and Engineering Teacher and The Importance of a Supportive Spouse

by Steve Meyer, Brillion High School

As I begin another year of teaching, I am again reminded on just how lucky I am to be surrounded by great people, with a job that I love. I know that many of you feel the same way about this great profession. Although teaching Technology and Engineering has its challenges, the rewards far outdo the daily grind of broken equipment, late assignments, and lost drill bits. It is so important to keep focusing on the positives to stay sane and make it through the entire school year.

Many of us are so fortunate to have a significant other that is extremely patient with our teaching schedule and lifestyle. For me it is my wife. She is so understanding, or at least always portrays that she is. She is definitely a "Technology and Engineering Spouse" and deserves so much credit for a lot of the success of students in Brillion and happiness in my life. The following experiences are probably very familiar to you. In the words of the great comedian Jeff Foxworthy:

You might be a Technology and Engineering Teacher's spouse if you have:

- ever gone out on a romantic date only to stop "quickly" at Menards on the way home to buy a sheet of polystyrene foam , hot glue, and some L-brackets.
- been told that "I will be home in a half an hour" only to see your spouse a mere 2 hours later.
- washed some dirty clothes only to find out later that there was a sharpie marker in one of the pockets that stained the rest of the laundry . . . along with a drywall screw, and a handful of 1/4-20 washers.
- spent your day off supervising a bunch of middle school kids on a field trip.
- checked for syntax errors in a Picaxe microcontroller program at midnight.
- ever had fiberglass resin spilled on your new carpet.
- checked the personal credit card only to find school supply charges and then found the reimbursement receipts in the garbage.
- baked cookies for an open lab parent's night, dropped off the cookies, and later saw your 9x12 Tupperware container being used as a grow bed for a hydroponics lab.

As you begin your school year, make sure you take some time for that significant other. Try to plan at least one night a week with "no school." It is so hard to do, but will make school go better in the long run. If it were not for them putting up with all of our antics, none of us would be as successful as we are. I know that I would not be. Have a great school year. Happy Trails.

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WIFEA Highlights of the 44th Annual Spring Conference & Trade Show

March 14 & 15, 2013



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45th Annual Technology Education Conference and Trade Show <u>Tentative Conference Overview</u> Thursday, March 6th (avening)

Wednesday, March 5th, 2014 7:30 p.m. Pre-registration

Thursday, March 6th, 2014

7:30 a.m. – 3:30 p.m. Conference Registration 8:00 a.m. – 3:30 p.m. Trade Show 8:55 a.m. – 9:05 a.m. General Welcome 9:05 a.m. – 10:00 a.m. 1st General Session 10:15 a.m. – 3:30 p.m. Concurrent Sessions 3:45 p.m. – 5:00 p.m. WTEA Membership Meeting

Thursday Keynote Speaker:

Bill Preller Senior Director Case IH Specialty Business Thursday, March 6th (evening)

7:00 p.m. – 9:00 p.m. Awards Banquet 9:00 p.m. (following banquet) President's Reception

Friday, March 7th, 2014

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

Friday Keynote Speaker:

Vincent J. Canino VicePresident Renewable Energy & Power Solutions - Trane

Session Topics Include: Middle School Engineering, TE&E Standards, Work Force Requirements in Renewable Energy and Power Generation, Increasing your Budget, Business and Education Partnerships, Robotics, Steamfitters and Apprenticeships, Laser Engraved Project Ideas, Managing your Finances, Innovation and Design, AutomotiveTechnologies, Alternate Energy Sources, Welding and Machining, Building High Mileage Vehicles, Project Lead the Way, Skills USA, Middle School Roundtable, Manufacturing Project Ideas, New Teacher Boot Camp, and much more!

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Closing the Achievement Gap

by Tom Barnhart, Ashwaubenon High School

Last Spring during a staff meeting at our high school we were asked to come up with some non-traditional progressive intervention strategies and share them in order to help close the achievement gap with our students. I wrote this email to our staff based on the information I've gained as a technology education instructor attending the WTEA, SkillsUSA, and several career conferences around the state of Wisconsin over the past 10 years. Our staff might not be using Career Clusters and Pathways to the level that yours is. But if you're in a situation where you can advocate for this approach to education I suggest you do. Here's the email I sent to our staff:

Last night I kind of kicked myself for not mentioning a significant intervention strategy in regards to yesterdays "Bobber Team" staff meeting. So I figured I'd drop a few lines about it in this email.

Our At Risk or unmotivated students in many cases don't care about our current method of assessment. That said, giving a student an A or F in PowerSchool

doesn't really matter or have an impact to these students. In some cases the power of F is more of a deterrent than a motivator to them. This manner of assessment doesn't give all students a vested interest in school. We need to come up with a plan for motivating students prior to implementing strategies, otherwise these strategies will fail. So, how do we create a vested interest in school for these At Risk or unmotivated students?

One way to develop a tangible assessment for these students is to place them on a program of study or career pathway. There are several ways to do this and I'm not an expert on either. However, I do know that several other schools utilize these strategies and there are some excellent resources out there. If we can somehow incorporate programs of study and career pathways as intervention strategies, I believe more students will have a vested interest in, and care more about school. Also, this would hopefully increase their performance on the state report card.

For more information about programs of study and career pathways check out https://www.wicareerpathways.org/

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"Ready, Skilled, Working!"

45th Annual Spring Conference

March 6th & 7th, 2014

Chula Vista Resort, Wisconsin Dells

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Technology Education in the Waukesha County Juvenile Facility

by Doug Kugler, District E Director

Greetings from the Waukesha County Juvenile Center!! This will be my third year at the facility and we have been increasing the number of hands-on components to the student's educational learning. The first year we started with small lathe projects (pens, key chains) students could create. Students had to write a paper on the exotic wood; where it came from, uses, special properties, dust precautions, etc. Passing a safety and operations test was a requirement before they created their project. Other projects from the first year were Notepad Design, Aerospace unit (rockets) and a Photoshop design unit.

In addition to our 3D drawing (ProDesktop) program, I added a 3D house design program that is very popular with last year's group of students. Besides adding the 3D house design program, I also created a construction unit where students construct and identify the parts of a scale model house and an electronics unit (Snap circuits). This past spring, we won a grant for a 3D printer for our center. The goal for students is to develop some basic design skills and produce a product. In the new school year, I am looking into developing a solar/alternate energy unit.

My supervisor has been very supportive of introducing these individuals to Technology Education in the classroom. He has noticed a change in the students' attitudes about coming to school. I was surprised by the number of students who told me this was the first time they had experienced any hands-on type of activities and told me they were going to look into getting a class in Technology Education when and if they get back to school.

We currently have about nine units that we offer students today. If students finish six individual units, they can earn a half credit in Introduction to Technology Education from the Waukesha School District. I am limited to what can safely be done in the center with the type of students I come in contact with, but as long as students show interest and work safely, I will continue to give them the opportunity to gain hands-on skills. It should be noted that our facility is currently the only juvenile center in the state offering any type of hands-on Technology Education opportunities.

I want to wish everyone in District E (and all other

districts too) a great start to the school year. Please send me any questions and/or concerns you may have during the school year. If you are in District E and I have not contacted you by the end of September, please send me your email address and I will add you to the list. I hope to hear from some of you soon.

Industry - Education Partnerships Advancing Plastics Technology At Kennedy Middle School

by Jeff Thielke, Instructor

Plastics Technology at Kennedy Middle School is a new term being used these days, but growing in familiarity, interest and offering exciting opportunities. As plastics continues to replace many materials made of metal and wood, education in this area of Technology takes on an important role in enhancing our students knowledge and experiences. Plastics Education instructor Jeff Thielke credits much of the success of offering NEW experiences in Plastics Technology to Industry-Education Partnerships along with financial support from the Society of Plastics Engineers (Milwaukee Section) Education Foundation and area Plastics Manufacturers. As budget cuts throughout our educational system eliminate activities and materials and move towards computer based classes, the trades and manufacturing areas are many times left behind. The Society of Plastics Engineers (SPE) and area Plastics Manufacturers have for years offered grants, donated materials, sponsored awards for Plastics Education contests, technical support and scholarships to growing programs like the one at Kennedy Middle School in Germantown.

Over the past 15 years, the SPE Education Foundation and area Plastics Manufactures have supported my Plastics Education Program efforts, with over a \$100,000 worth of materials, grants, equipment, field trips, molds and student awards. Without this type of support, there would be no Plastics Education for students. Universities, high schools and middle schools across the state offering Plastics Education have all benefited from this industry's willingness to step forward. This year the SPE Education Foundation sponsored my designing a Plastics Technology Banner, outlining the different processes utilized in Plastics Manufacturing.

In the first two years, the following Plastics Education areas have already been integrated into the Technology Program at Kennedy Middle School:

Plastics Technology Education at Kennedy Middle School

Exploring Plastics - 6th Grade Recycling • Simple Casting

Manufacturing Plastics - 7th & 8th Grade

Plastisol Casting • Vacuum Forming • Injection Molding Thermoforming • Static Casting

Plastics Technology - 7th & 8th Grade Product Design • Mold Making

The Plastics Industry offers many opportunities in Engineering, Management, Research & Development and Production, to just list a few. Introducing Plastics Education to students at a young middle school age offers an opportunity for interest to grow and enhances their ability to become better consumers "down the road." Many students' families may work in the industry or know of friends and relatives who do. This helps students connect their education and working in the Plastics industry as a career and employable option. Today our educational universities graduate many who can not find employment. Alternative "options" should be made available early in a student's education. Offering students knowledge in these

areas and making opportunities available, may be just what that one student is looking for.

Wisconsin's Ford/AAA Auto Skills Competition

On May 8, 2013 at the Milwaukee Area Technical College Mequon Campus, 10 teams competed in the Wisconsin's annual Ford/AAA Auto Skills Competition. The hands-on competition consists of two-student teams in a timed event to diagnose and repair identically "bugged" Ford Focus cars. In order to compete at this event, student teams took a qualifying test in February. The team that wins this event earns the opportunity to advance to 2013 Ford/AAA Auto Skills National Competition in Dearborn, Michigan on June 9-11.

On this day, Alexander Conrad and Ian Liebelt of Grafton High School (instructor – Mr. Carl Hader) won the title of Wisconsin's best auto technicians.

Second place went to Oregon High School and their instructor is Mr. Ned Lease.

Third place went to Arrowhead High School and their instructor is Mr. Eric Varrelmann.

Nationally the Ford/AAA competition awards approximately \$11 million in prizes and scholarships and encourages students to explore careers in the automotive repair industry and continue training after high school. Congratulations to the students and schools who competed.

For more information about the competition, please visit: http://www.autoskills.aaa.com/web/sas

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40th Annual SkillsUSA State Leadership and Skills Conference

by Brent Kindred, SkillsUSA Wisconsin State Director

On April 10-11, 2013, Wisconsin's future workforce was on display at the 40th annual SkillsUSA state conference. Over 1600 SkillsUSA members (1258 middle and high school competitors), advisors, and guests attended the conference at the Chula Vista Resort and MATC in Madison, which had over 50 competitions. The annual conference highlights the SkillsUSA yearly program of work and celebrates local chapter and individual success. Students who are awarded gold medals earn the right to compete on the national level in June at the SkillsUSA National Conference.

As a special highlight this year, longtime technology education teacher and SkillsUSA advisor, Mr. Tom Slupe received the SkillsUSA Honorary Life award. Tom was instrumental in developing the UW-Stout Regional event in the early 1980's and contributed to the organization at both the state and local level for decades.

Thank you to everyone who made this year a success and we look forward to another great year in 2013-2014.

Opportunity Knocked and Grafton Students Answered at the 2013 Technicians of Tomorrow Contest by Gary Beier, Vice-President WATDA Foundation reprinted with permission from WATDA – DealerPoint

The 19th edition of ADAMM's Technicians of Tomorrow competition took place on February 13 at Waukesha County Technical College's automotive training center. Five of southeastern Wisconsin hottest high school automotive repair teams went head-to-head in extremely demanding competition to determine which pair would be worthy of the 2013 ADAMM Technicians of Tomorrow title.

The Technicians of Tomorrow contest started with a field of 90 students from throughout the ADAMM service area. All were given an on-line prequalifying test, which narrowed the field down to five finalist teams of two. Those finalist teams were - from Arrowhead: Austin Syburg and Robby Beres, Instructor- Eric Varrelmann, Sponsored by Ewald Chevrolet; Grafton: Alex Conrad and Mitch DelCamp, Instructor- Carl Hader, sponsored by Newman Chevrolet; Menomonee Falls: Andy Black and Sam Schwabenlander, Instructor- Steve Brick, sponsored by Bergstrom Chevrolet- Milwaukee; Mukwonago: Keith Bartholomew and Nick Rogan, Instructor- Pat Grady, sponsored by Lynch-Horter Chevrolet and from West Allis: Aaron Gaglione and Willy Newkirk, Instructor- Matt Kerhin, sponsored by Heiser Chevrolet- West Allis

The theme of the day – opportunity, was echoed by just about everyone attending. Mukwonago's Pat Grady said, "This gives them an opportunity to compete and make repairs under stress in a real-world situation."

Austin Syburg's mother Mary commented, "This is a great career builder. It's a great learning opportunity that

gives them a head start in their career field."

The contest included a written test, individual stations covering all of the major elements in vehicle repair and the actual hands-on diagnosing vehicle malfunctions and repairing them.

This year's competition cars were 2013 Chevy Cruize sedans, courtesy of Ewalds Chevrolet in Oconomowoc - all the same equipment with the same technical bugs to be found by the student teams. The fix had to be accomplished in the real time that is allotted to perform the service at any certified dealership – one of the elements that makes these contests so meaningful for all involved. As Matt Kierhin of West Allis noted, "These contests are opportunities for students to prove their skills in this career pathway."

The Grafton High Team took top honors and will compete in the April New York Auto show national competition, courtesy of ADAMM. Mukwonago was the runner up, followed by Menomonee Falls in third, West Allis in fourth and Arrowhead in fifth.

In his closing comments, Scott Fisler, competition director said, "It is always a great opportunity for our students."

Special thanks to the program sponsors Waukesha County Technical College, Ewald Chevrolet, Snap-on Industrial Tools, Industrial Towel and Uniform, Milwaukee Mack, The Automobile Dealers Association of Mega Milwaukee and the Foundation of the Wisconsin Automobile and Truck Dealers.

2013 Teachers Training Institutes Cover Lot of Ground

... and we mean a lot! This year, the Foundation of WATDA Team Wisconsin presented three Teachers Institutes: the first was a two-day event in conjunction with the Wisconsin Technology Education Association spring conference at Portage High School, then it was the fourday Summer Institute at Moraine Park Technical College. We wrapped up the teacher development program this year with Carl Hader's two-day boot camp for new transportation tech instructors, which was hosted by Grafton High School. Six of the Team Wisconsin teachers were also invited to a one-day Mercedes Benz workshop and received advanced training in the brand's active guidance and driver assist systems.

The *Team Wisconsin Teachers Institutes* reached over 100 participants and provided our educators with a total of 1,900 credit hours toward their state teaching certification. We had an outstanding team of presenters this year including Moraine Park Technical College, Neenah High School, Grafton High School, Wisconsin Department of Public Instruction, Snap-on Tools, Western Technical College, Fox Valley Technical College, ASE-NATEF-AYES, General Motors, Delmar Cengage Learning, GW Publisher, Toyota and Mercury Racing.

This all-star lineup presented a wide array of topics including NATEF standards and updates, Articulated Credit programs, Wisconsin DPI news, advanced Shopkey certification, state-of-the-art electronics, multi-media welding, new advances in vehicle diagnostics, alternative fuels usage and numerous opportunities for professional networking.

Thanks to a major grant this year, the Summer Institute was able to provide the makings for the ever-popular electronic training boards. 40 were constructed and have been delivered to classrooms across the state. A dozen of these went into classroom service just two weeks after they were completed!

None of this could have taken place without the substantial support the Foundation received from The Forest County Potawatomi Foundation, Moraine Park Technical College, Milwaukee Area Workforce Funding Alliance, ASE-NATEF-AYES, ADAMM, WATDA, Madison College, Snap-on, Cengage Learning, UW-LaCrosse, Fox Valley Technical College, Western Technical College, GW Publisher, Toyota/Lexus, Wells Engine Management, General Motors, Grafton School District and Wisconsin Technology Education Association.

The efforts lead by the Moraine Park Technical College transportation technology staff and your Foundation provided substantial resources to our classrooms that will start paying dividends in just a few short weeks. Jim Sainsbury, the Automotive Instructor at Madison Memorial High School and one of our institute attendees, said it best, "I just wanted to thank you all again for another great summer automotive workshop! I know it is a lot of work to put this on each year but it is so helpful to all of us. It always seems that the networking and hearing what others do in their programs is almost as helpful as the training items themselves."

Girls STEM Camp – Changing a Common Misperception

by Eric Sutkay, Lakeview Technical Academy

If you are a Technology and Engineering Education instructor, or anyone teaching in a STEM field, you know how difficult it can be to attract female students to your courses. Your area of the school is the "dirty," "smelly," place where "all the boys hang out." Or it may be a math or science area that is just "gross" or "hard." Technology and Engineering Educators face many challenges, stereotypes and misperceptions about some of our STEM classes and it is very tough to combat those. One way of promoting your program to female students, encouraging them to get involved and exposing them to STEM, is to hold a summer STEM camp! This article will walk you through the details of planning, organizing, marketing and successfully hosting a STEM camp at your school. It is a great way to educate young students about STEM fields that they may not have known about, and most importantly, breaking the ice when it comes to females entering a STEM classroom.

The first steps in planning a STEM camp are to make sure you have enough people on board. It can at times be difficult to get teachers to volunteer and commit time during the summer months to come into school and teach a STEM camp. Begin planning early. When we initially began the discussion several years ago, our district started in February or March. The most important people to have on board are others in your department, other STEM educators, counselor, and a school administrator or CTE coordinator. These people will make the camp happen. It only takes one person with a vision to get the ball rolling. Chances are if you have thought about it, others have too and will be on board with a little encouragement.

Sometimes funding for the camp can be difficult to coordinate. Our CTE secretary and coordinator do a won-

derful job of setting aside money for these camps. The CTE department does this in our district because we have several camps at different schools. I discussed this with our CTE secretary and this is how she explained it, "Stem summer camps are supported by the Carl Perkins grant to promote the STEM field. The camps are promoted to target "special populations and underrepresented" students. These are individuals from economically disadvantaged families, individuals preparing for non-traditional fields, single parents, individuals with limited English proficiency, academically disadvantaged, and students of color." At Lakeview, we traditionally target females hosting two camps, one for females entering 7th or 8th grade and one for 9th and 10th graders, to hopefully promote more female students in our fields. It may take extra time and effort to budget for an event like this, but it is well worth it. This money pays for brochures, curriculum writing, instructor camp pay, supplies, lunches and other food, and bussing for field trips. One 4 day camp for us costs between \$3,000 and \$4,000, but could be done for much less on a different scale.

There are many different structures for the camp. Here is the model we use:

Days: Monday- Thursday 9AM - 3PM

Hours: 9AM-12PM Work in STEM Area

12PM-1PM- Lunch

1PM-3pm- Field Trips

Campers arrive at 9am where they are provided with a snack (optional). They are broken into smaller groups where they work in different areas of STEM, focusing on one area each day (Manufacturing, Engineering, Information Technology, Biomedical Engineering) with the instructor until the lunch break. After the lunch, campers and instructors travel to different companies and corporations that support STEM fields. We arrange our camps with four instructors in four different areas of STEM, with a maximum enrollment of 32-40 campers. This provides each instructor with 8-10 students per instructional period. Remember you will have a limited time to introduce and cover different material during your 3 hour time period and a small group offers a safer environment for students that may not have ever stepped foot in a shop or lab. We have also had to modify this schedule. If only 20 students enroll in the camp only two instructors are needed per day. It is nice to fill the camp so instructors can plan accordingly.

Brochures are printed through CTE office and distributed to middle and high school counselors for distribution and marketing to students. They are instructed that any student can attend the camp, however, we are targeting the special populations and underrepresented students and to try and market to those students. A flyer is also sent to our Communication Office and placed on the KUSD Facebook page and the KUSD website. The students need to provide transportation to and from the camp, but all transportation on the field trips is paid for by the district. Lunches are coordinated by the CTE secretary, but could be coordinated by other individuals.

Once you have the leg work done, it is time to plan the camp activities and environment. As previously mentioned, we focus on four main areas: Manufacturing, Engineering, Information Technology and Biomedical Engineering. Feel free to change the subject area accordingly. We have done a variety of different projects including wiring bread boards, building solar powered cars, machining dice, laser engraving, picture manipulation on Photoshop, and DNA testing. It is important to have a variety of different small projects relevant to each grade level. I would recommend projects that will allow the girls to be creative, artistic, hands-on and have some sort of real life practicality. Now is also a great time to show them that the "shop" does not have to be a dirty, stinky place where only the boys hang out. Take this time to remove some of the stereotypes and maybe clean your shop and classroom a little more than usual. You would be surprised how much the girls will enjoy your shop and classroom if it has a little color on the walls and does not smell like WD-40 and cutting fluid.

Now that you have all of the planning done it is time to host the camp! To take a closer look, here is what we did. This year Lakeview hosted 3 camps; 7th & 8th grade girls, 9th & 10th grade girls and 7th & 8th grade boys. The camps were capped at 32 with 20 attending the 7th & 8th grade girls camp, 32 in the 9th & 10th with a waiting list, and 32 in the 7th & 8th grade boys with a waiting list as well. Our field trips included trips to Bradshaw Medical where they make tools for orthopedic surgery, BRP where they manufacture Evinrude outboard motors, IEA where they manufacture radiators and XTen Industries which is a plastic forming company. When planning these tours, it is nice to have some female employees speak to the girls about industry. They can be great role models for a student that is unsure about a nontraditional occupation. All of these industries are within 20 minutes of our school so transportation costs are kept to a minimum.

This year's camps went very well and in general the student population was very in tune with the different projects, STEM fields and Industry partnerships. Instructors of the camp were given a brief questionnaire about the camps and I hope you find their responses to be helpful. The questions and responses are listed on the following pages. If you have any questions about planning, organizing, preparing curriculum or anything related to STEM camps, please feel free to contact any of the instructors below including myself. This was our 4th year of STEM camps at Lakeview and each year it gets better!

Girls STEM Camp Questionnaire and Responses

How has the STEM camp helped to promote your program?

By providing well-rounded activities in Engineering, Manufacturing, Information Technology and Bio-Technology Lakeview's STEM camp immerses younger students into real-world experiences that are aligned with our technical training tracks. STEM Camp energizes student technical thinking and promotes the real need for assisting our younger generation into engineering, manufacturing biotechnology and technical careers in demand today.

Terry Garringer- Technology & Engineering Education Instructor By having the students in the biotechnology course, I have been able to introduce them to the Biomedical Sciences program. I introduce similar topics and labs as we do in the BMS program; this has generated interest in the course. CarrieAnn Glembocki-Biomedical Sciences Instructor

How has the camp helped to encourage girls into a field in STEM? or made them feel more comfortable?

Our STEM camp provides focused input from women in the Engineering and Manufacturing arena that serve to not only encourage and promote interest in these career fields, but to have confidence in knowing that these fields need their input. Several of our Business and Industry field trips addressed these concerns to all our girls during Lakeview's STEM camp. Terry Garringer

The camp has encouraged girls to look at STEM because it highlights their natural interest or curiosity. The fact that the girls are with other girls (not mixed with boys) allows them to focus on being smart and sharing their thoughts and experiences without concern. CarrieAnn Glembocki

What projects/activities do the girls do during the time period in which you have them?

Engineering: (2-STEM Camp Sessions) Explanation and discussion of AC/DC fundamentals. Electronic and soldering safety, soldering techniques and soldering iron maintenance, Presentation of various electronic components, Introduction to the resistor color code, and integrated circuits. All girls were given instruction and demonstration for soldering electrical components to complete an Electronic Dice game. Although this was new it provided new insight into nontraditional career opportunities in electronic training. Terry Garringer

The students do gel electrophoresis, blood typing, DNA Microarray, Polymerase Chain Reaction (amplifies DNA). CarrieAnn Glembocki

The girls have done several different projects during the manufacturing portion of the camp. This year we talked about the design process and the different steps within. We also discussed modeling. The girls designed key chains, mirror compacts and bracelets to be engraved on the laser engraver.

Eric Sutkay- Technology & Engineering Education Instructor

How does the activity help to promote STEM as well as encourage/excite girls about STEM areas of study?

Being a qualified PLTW instructor it has always encouraged me to see younger students learn new skills and gain valuable experience in introductory technical courses. In providing insight and direction in new skills you may often hear from girls, as I did this past summer, statements like, "this is fun" or "why haven't I ever tried this before." I admit, after I heard several of those statements, I was asking myself: "Why haven't I tried harder to encourage girls into our technical programs." Sometimes, an old dog can learn new tricks. Terry Garringer

What have you done differently or noticed after teaching the STEM camp for several years?

That the interest of girls in learning new and challenging skills is actually on the rise. I have noticed over the last 3-years that our girls have a greater capacity in trying to integrate new technology learned skills by taking our PLTW engineering and technical classes. Terry Garringer

I have noticed a strong interest from the students as they have had some prior exposure through media. Although having seen it on TV, they don't know how it works. The students are generally excited to learn the science and technology to what is happening on the shows. CarrieAnn Glembocki

Has the camp helped to increase your enrollment and/or has the female enrollment increased in your classes?

Definitely, STEM camps do have the positive benefit of helping to increase our numbers in our technology elective programs. Look at it this way, if we primarily focused our efforts to encourage only boys, technical educators would be narrowly limiting their overall numbers from which to draw. *Terry Garringer* Our school enrollment has increased, and the female population has slowly increased over the past 3 years. I have noticed that a lot of the females that take the camp enroll in my classes and typically take a leadership role on group projects as well as express a different comfort and confidence level from those females who have not. *Eric Sutkay*

What would you recommend to others who may be trying to setup a similar camp?

STEM camp training will open your eyes to a better understanding of what we may have overlooked for years. By not encouraging and promoting our technical programs to reach out to our girls has in many ways limited our understanding the energy and creative skills different thinking brings to the technical table. Today and for the future, our thoughts should also not only include girls, but we all should desire a more direct and concerted effort to encourage girls into our technical programs. *Terry Garringer*

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Interface

ARCHIVES

Editor's Note: The following article is reprinted from the Spring 1983 issue of the WIEA Newsletter, the forerunner of the Interface. The message is just as important today as it was thirty years ago.

Classroom Management

by Charles Whitney

The nature of good management in teaching can be illustrated by a description of two contrasting classes. On entering the first shop/laboratory we find groups of students pushing their way around a few congested areas, including that in front of a tool room window. There is the sound of voices above the noise of someone beating on something with a hammer and the starting and stopping of machines.

The instructor, in a dirty apron, moves from one student to another, from one machine to the next, takes the tools out of the student's hands, makes a few adjustments and gives hurried instructions or warnings. Wherever he stops, a group of students crowd around to ask him what to do next. In his pockets he seems to carry several pounds of special tools which he reserves for students he can trust.

No one seems to have the materials he needs for good work or to know what exactly is expected of him. There is little evidence that the students have seen a demonstration recently. There are no instruction sheets, only a few old, greasy blueprints. In the corner is a cluttered desk piled with more dirty blueprints, broken tools, and a dogeared classbook. As the bell rings, the instructor shouts a few orders about cleaning up the shop as the students push out through the doorway past another group filing in for more of the same kind of instruction.

Our instructor stops to comment to us about people these days not wanting to learn anything. As we leave, he is hunting for the six inch scale and a micrometer that disappeared during the period.

We decided to go to a different school. Here are brightly lighted, well adjusted machines, racks of tools arranged in an orderly fashion, benches with clean smooth tops, and an area set aside for organized demonstrations and planning.

A group of students enter and go to individual lockers where they rapidly get into clean work aprons and roll up their sleeves. By the time all have taken their positions on chairs provided for them, the instructor, a clean quiet man, is standing before the group and ready for a few minutes of discussion and a short, well planned demonstration. It is evident by the student's habits on entering the room that these short group meetings are an important part of the day and that the instructor has something of value for them.

Following the meeting, during which the instructor asks several questions to test the students understanding of the demonstration, each student goes to a designated work station and proceeds with his project. Written instruction sheets and blueprints are plentiful, and provision has been made for their proper care.

There is no waiting in line at a tool room window because commonly needed tools have been mounted on panels near the work stations. Good instruction, plus a glance at the panels at the beginning and end of each period eliminates the need for tool checks and tool room. The habit of replacing tools on the racks was easily developed because proper instructions were given and enforced from the start.

As the students work, the instructor moves from one station to the next giving words of encouragement or caution, or asking questions. At one point he calls three students together for a short demonstration on a procedure on which they need help. Shortly before the end of the period the order to clean up is given and each student puts his station or machine in order, returns his tools to the racks, washes his hands, and takes his seat. A few words of instruction or information about the day's lesson are given and the group is dismissed.

What makes the difference? At first thought it may seem that I merely compared a scatter brained individual with a born teacher. That may be true, however, the first disorganized teacher could benefit from simple management techniques that are working for the second teacher. A visit to a well organized shop can provide a wealth of ideas and information for any instructor interested in improving his program. A visit to an exemplary program can help a new instructor get off on the right foot, and it can also help a veteran instructor who needs some new ideas.

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