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WTEA Refund Policy

The WTEA Membership fee is not refundable. The WTEA School Subscription fee is not refundable, but is transferrable to other staff in the same school district. The portion of the non-member conference registration fee equal to the amount of the WTEA membership fee is non-refundable. Refunds for Conference Registration and/or Awards Banquet must be received by US Mail or by email at least 15 days prior to the event. Exhibit space cancelled after Jan. \Box

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WTEA PRESIDENT



As you sit down to read this issue of the Interface, the new year should be well upon us! Happy 2019! 2018 will be a very memorable year for me for many, many reasons - some good and some not so good. However, one must keep moving

forward as we cannot change the past, but we all have the power to change and mold the future.

Continuing on the theme of moving forward, the WTEA will be celebrating its past with this year's conference. If you have not heard by now, 2019 marks the WTEA's 50th Annual Conference. This will be a conference to attend. The WTEA Board of Directors has been working very hard to put together one of the best conferences to date. Not only will we be continuing the tradition of great sessions, an awesome trade show, project showcase, and great networking, the WTEA Board will be hosting a 50th Anniversary Celebration event. The cost including dinner is \$12 dollars and tickets must be purchased in advance. The dinner and celebration will include a short program, prizes, a WTEA Trivia contest, silent auction items, introductions and recognition of special guests and much, much more! Additionally, following the celebration event, the WTEA will host its annual President's Reception! This special celebration event is, again, another reason to attend this year's conference!

Since this year is one of reflecting and celebrating past accomplishments of the WTEA and what our organization has done, I thought I would share some of the great things of the past the WTEA has done or is doing. Keep in mind this list is not an exhaustive list, it is what I can recall as a member of the WTEA and I am probably missing a bunch of items . . . which you can tell me about at this year's conference! So here it goes:

From the President's Desk

By Phil Bickelhaupt, WTEA President

- Partnerships with SkillsUSA, WEEVA, Electrathon, the Supermileage Challenge and many other student-based organizations!
- High-Tech Weekends
- Hosting the 2015 ITEEA Annual Conference
- Creating partnerships with Business and Industry
- Continuing to foster relationships with the Wisconsin Technical College System
- Supporting UW-Stout, UW-Platteville and other institutions in new Teacher Training
- Helping teachers with PDP's, CEU's, continued training and mentoring
- Collaboration with DPI and helping with DPI initiatives
- Creation of the WTEA Foundation to aid in scholarships
- Curriculum Exchange now digital, paper back in the day
- Interface Journal (one of the best out there . . . thanks Doug and all those who contribute!)
- Annual Conference that includes the Project Showcase and Trade Show
- Recognition of outstanding educators, programs and advocates of Technology Education
- Creating a great professional network!

I could continue the list, but there is only so much room in the Interface, and I know I have left out a ton of stuff!

In closing, as we reflect on the past 50 years of the WTEA and look to the future, I can certainly say that our organization has come a long way since the first annual conference. This is mostly in part due to the dedicated Technology Education teachers and advocates of Technology Education in the great state of Wisconsin. As your President, I want to thank you for what you do with our students and I will continue my efforts to move the WTEA forward!

Thank you and take care as you navigate through the beginning of 2019!

Phil Bickelhaupt





WTEA BOARD NEWS

Fall 2018 WTEA Board Meeting Highlights

By Matt Schultz, WTEA Secretary/Treasurer Minutes provided by Joe Ciontea, Executive Director

The virtual meeting was held on Saturday, October 13, 2018. President Phil and Executive Director Joe met in Wisconsin Rapids. All others participated electronically using Blackboard Collaborate hosted by FVTC.

- Board changes Mike Paquette has stepped down from his position on the Board. Dave Stroud will take over as the District C Director. Emily Fransway (Baldwin-Woodville HS) has been appointed to serve as a Director at Large.
- Steve Meyer (Past-President) will lead the election committee. Elections for President-Elect and the Secretary/Treasurer will take place in January & February. Candidate information will be in the winter issue of Interface.
- Activites for Manufacturing Month (October) were shared and discussed.
- Matt Schultz will be hosting a ROV Hi-Tech Weekend Workshop sometime late fall in Kenosha.

- We are seeking some additional members for the Business/Industry Advisory Team. Send names to anyone on the Executive Board.
- Phil is reviewing the Board Handbook and will share an updated version in January.
- We discussed ideas and plans for the 50th Commemorative Special Session during the spring conference.
- Doug Dimmer will set up WTEA logo clothing sales for the conference via the Internet.
- The Board brainstormed ideas for the 2020 conference theme. We will hold an electronic vote to determine the final selection in two weeks.
- We discussed the status of conference registrations, sectional applications, exhibit booth sales and project showcase plans.
- Award nominations are due in early November.
- Joe provided the Board with a current financial summary and the membership report.

For additional information about this meeting contact any member of the Board of Directors. Complete minutes are available from Matt Schultz at mjschult@kusd.edu.

- Dates to Remember -

Feb. 15 - 16	SkillsUSA WI State Team Works Competition	Milwaukee, WI
March 6 - 8	Celebrating our 50th Annual WTEA Conference	Wisconsin Dells, WI
March 27 - 30	ITEEA 81st Annual Conference	Kansas City, MO
April 15	WTEA Foundation Scholarship Application Deadlin	ne
Apr. 30 - May 1	SkillsUSA WI 46th Annual State Conference	Madison, WI
June 24 - 28	SkillsUSA 55th Annual National Conference	Louisville, KY
July 8 - 11	Automotive Technology Summer Institute	Madison, WI
October 11-13	Career Pathways Network National Conference	Orlando, FL
Dec 4 - 7	ACTE Career Tech National Conference	Anaheim, CA

WTEA VICE-PRESIDENT

Sloyd (Slöjd)

By Bob Morehead, WTEA Vice-President

No, Sloyd is not a Viking battle cry. It is actually part of the history of Technology Education. The word Sloyd means "craft" or "manual skill." The educational Sloyd system came out of Sweden in the 1800's, and was even-

tually taught all around the world. The program focused on teaching the individual student values through the use of hand crafts. Woodworking was the most popular format, but sewing, knitting, metal, and paper craft were also utilized.

My grandpa, Claude Clausen, was an industrial arts teacher and eventually became a principal. He passed away in 2002. A few years ago I found his 1953 Master's Thesis. I laughed and smiled

many times while reading through it. He wrote about the goals of the Sloyd system and manual training as part of the history of industrial arts.

- To cause the child to acquire a general skill of hand.
- To awaken in him/her the taste and love of labor.
- To call forth spontaneity and initiative. Handcraft is no longer a part of general industry and

the Sloyd system has long ago been replaced. However, I think we can all agree that these goals still have relevance today. Many of our courses focus on skills education. Our country has a massive shortage of skilled labor and

it is expected to get worse. Technology Education plays an important role in helping to teach the necessary skills to fill these positions. With that said, I don't expect every student who takes machining classes to become a machinist. They may become engineers, doctors, or architects. It is my hope that they still learn a general skill, have a taste and love of labor, be spontaneous and take initiative. Skill based courses also teach pride, precision, and of-

fer many problem solving opportunities. All of these attributes build up the value of the individual student and are transferable to many different professions.

No, I am not asking you to become a Minnesota Viking fan. Skol Vikings! (Yes, I am a Minnesota transplant.) But maybe embrace a little of our history and bring a little Sloyd into your curriculum.







ChallengeUSA

ChallengeUSA is Gearing Up for Spring!

By Alan J. Mamerow, ChallengeUSA Electrathon Coordinator

ChallengeUSA is excited to announce its 2019 spring schedule, which marks the 26th year of racing for great mileage! Following two years of progress, name changes and expansion, ChallengeUSA now hosts five spring events that include Supermileage and Electrathon teams from multiple Midwest states. Whether you are a veteran team that will be competing or a new teacher looking to see what energy efficient racing is all about, make sure to put these events on your calendar.

Every year, I look forward to both the WTEA annual conference and ChallengeUSA spring events where I get to see the great things that teachers from around the state are inspiring their students to do. This year at the annual conference, look for a breakout session hosted by the ChallengeUSA team focusing on how to utilize Supermileage and Electrathon to build and grow your Technology and Engineering Education program at your school. I look forward to seeing you soon at both the state conference, and spring events!

ChallengeUSA Spring Schedule

- UW-Platteville/Southwest Technical College April 12-13, 2019
- UW-Stout April 26-27, 2019
- Autobahn Country Club (Joliet, IL) April 28-29, 2019
- Fox Valley Technical College May 3-4, 2019
- Road America May 13-14, 2019

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Interface

DIRECTOR REPORTS

District A

Sylvia Tiala, District A Director



Welcome everyone to a new year and lots of exciting things coming up. I want to take a few moments of your time to update you on the latest news from UW-Stout, so please read on. Stout's Technology Education students are working diligently to support SkillsUSA and to host Stout's Super Mileage

Vehicle competition. Please mark the following dates on your calendar:

SkillsUSA @ UW-Stout February 28 & March 1 Super Mileage Vehicle @ UW-Stout April 26 & 27

We have current enrollment numbers for the Technology Education program and things are heading in the right direction. There are currently 85 students enrolled in the Technology Education program with an additional 6 students enrolled in the dual Science-Technology Education program. There will be 18 total graduates during the 2018-2019 school year. Three of the Tech Ed students graduated in the Fall 2018 semester and 15 students will graduate in the spring semester. We are looking forward to having 6 individuals student teaching in the fall of 2019. Contact Barb Bauer bauerb@uwstout.edu with any questions about the program.

WTEA Conference Session and Middle School Project Showcase

Calling all Technology and Engineering Middle School teachers to be part of the First Ever Middle School Project Showcase session at the WTEA Conference. Come and share your projects and chat with other Middle School teachers about what is going on in your classroom. Please bring at least one project to share with other middle school teachers to the conference. Any questions, please email Angie Arneson at aarneson@seymour.k12.wi.us. I am looking forward to seeing as many Middle School Technology and Engineering teachers at this session as possible!

District F

Eric Sutkay, District F Director



The WTEA and Blackhawk Technical College are excited to announce an event on Tuesday, February 19th at 5:00PM on the Milton Wisconsin campus. The evening's events will include a WTEA update, BTC update and a hands-on informational workshop in the area of HVAC. We will welcome Dave

Chatmon and Charlie Willkomm from Lennox as well as Tony Jordan from BTC who will present on the HVAC industry, how you can implement it into your curriculum, available resources and product exploration. Food and beverages will be provided. To RSVP or for additional information, contact Eric Sutkay at esutkay@kusd.edu.

District H

Art Pronschinske, District H Director



Hello from District H! I am Arthur Pronschinske, your District H Director. This last quarter we held a "Turn a Pen" event for Honor Flight at the University of Wisconsin-Platteville. Mike Roth was down from Sun Prairie to show all who wanted to learn how to turn pens. We had young and old alike

learning to turn. Dr. Frank Steck opened the wood tech lab at the University of Wisconsin-Platteville and invited current UWP students and area Technology Education teachers to come and learn to turn. Watch the listserve for future dates on "Learn to Turn" events with Mike Roth.



CANDIDATE

Candidate for WTEA President-Elect Dave Stroud

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Work Phone:	920-492-2955 ext. 5151
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Education & Certification

B.S. Industrial Technology Management-Safety Management - UW-Platteville 1999
Technology Education License - UW-Stout 2001
M.S. Curriculum & Instruction Educational Leadership coursework - Concordia University Wisconsin 2013
PLTW Certified in Introduction to Engineering Design and Principles of Engineering

Professional Experience

Technology & Engineering Teacher for the Ashwaubenon School District 2001-present

- Technology & Engineering Department Chair/Program Leader
- SkillsUSA Advisor
- Student Council Advisor
- Community Service Club Advisor
- Middle School soccer coach

Technology & Engineering Teacher for the Two Rivers School District 2000-2001

Leadership, Awards and Recognition

- WTEA Director at Large
- WTEA District C Director
- District Program Leader Team
- Gradual Release of Responsibility Leadership Team
- School Culture Leadership Team
- Academic & Career Planning Leadership Team
- Ashwaubenon School District Technology & Engineering Careers Advisory Board
- N.E.W. Manufacturing Alliance Technology & Engineering Teacher Shortage Taskforce
- Ashwaubenon Youth Soccer Board Treasurer
- WTEA High School Program of the Year Award
- WTEA Community Service Award
- Golden Apple Teacher of Distinction
- N.E.W. Manufacturing Alliance Brighter Image Award
- Ashwaubenon School District Most Valuable Partner Award for Technology & Engineering Careers Advisory Board

Position Statement

I would like to help the WTEA continue to be of value to its members by:

- Providing opportunities for Technology & Engineering teachers to learn new skills and develop as leaders.
- Connecting Technology & Engineering teachers to post-secondary, business, and industry.
- Improving the health of our profession by working to bring in and train the next generation of teachers.
- Strengthening relationships between the WTEA and its partners.



CANDIDATE

Candidate for WTEA Secretary/Treasurer Matthew J. Schultz

6707 15th Ave. Kenosha, WI 53143 Home Phone: 262-945-2814 Work Phone: 262-359-8155 E-Mail: mjschult@kusd.edu

Education & Certification

Associate Degree: 2005 UW Waukesha Bachelors Degree: 2009 UW Stout Technology Education 220 license Masters Degree: 2012 National Louis University

Professional Experience

I started at LakeView Technology Academy in the winter of 2009, and since then have been busy working with a great department to tailor LakeView into a school that has strong roots in Engineering. LakeView is a "Choice Engineering School" offered to all of the students of Kenosha Unified. We focus on three main tracks; Mechanical and Biomedical Engineering as well as Information Technology. LakeView has developed a name for themselves for a small school with a lot to offer. Since I started at LakeView I have developed a strong Supermileage Vehicle program. I work hard at partnering with local businesses to align sponsorships and work opportunities for my students.

I am a strong believer in extracurricular clubs. There is never enough time in the school day to cover all of the cool stuff that Technology Education has to offer. Because of that I started an Underwater Robot club, as well as taking on a Sumo Robot Club. These after school clubs offer my students more depth into robotics, a growing curriculum at LakeView.

Lastly, I am a strong believer in SkillsUSA. I help out where I can, chairing Model Rocketry and hosting our first district event at our school. It is quite rewarding to see my students taking a leadership role.

Position Statement

Secretary/Treasurer for six years, WTEA Awards Chair for five years, 22 board member meetings, six WTEA Spring Conferences, one ITEEA Conference host, six WTEA Spring Conference presentations, one High School Program of the Year, and countless relationships and friends and I still want more. My resume with the WTEA has made me love teaching Technology Education more and more each year.

Each year I reflect as an educator on what impact I have had. Was I able to inspire a student to be someone they didn't know they could be? Did I help a fellow educator succeed in their classroom? What did I learn from another teacher? And each year I want more to do more. I want to view more WTEA Award nominations. I want to participate in more conference breakout sessions. I want to share more stories at the President's Receptions. The WTEA allows me to do this. It facilities the venue to collaborate. WTEA Secretary/Treasurer is an avenue to experience Wisconsin Tech Ed. However it isn't the only avenue. We can all make our mark on teaching Tech Ed in Wisconsin. Being a member of the WTEA has been one of my greatest honors as a teacher. Whether it has been as a board member or general member, the WTEA has made me a better teacher. I will continue to run for board positions until my time as a teacher has come to an end, but I gladly welcome newcomers with fresh ideas and new perspectives. Together we all make Wisconsin Tech Ed better.



Interface

WIFEA 50th Annual Spring Conference & Trade Show: "Pride, Progress, Professionalism"

The WTEA invites you to participate at the 50th Annual Spring Conference, March 6-8, 2019 which will be hosted at Chula Vista Resort in Wisconsin Dells. The conference program is packed with excellent presenters offering a variety of topics to help inspire and motivate each of us. We encourage you to bring your school administrator with you to the conference - administrators are admitted free when accompanying a registered Technology & Engineering educator.

We start things off on Wednesday, March 6th, 2019 with the awards banquet. We will recognize and honor our colleagues for their outstanding contributions to Technology and Engineering Education as well as program award winners during the banquet at 6:45 PM. The banquet cost is \$28. This is a great way to show appreciation and support for your peers.

On Thursday, March 7th, the conference will begin with a general welcome to all members given by WTEA President Phil Bickelhaupt.

Our first general session will be given by Mr. Wilson Jones, President and CEO, Oshkosh Corporation. Wilson will discuss Oshkosh Corporation's journey to a People First culture and the role that leadership plays in this journey. He will provide examples of how acts of genuine and caring leadership can make a difference in the lives of those in their span of care and create an environment where teams thrive.

Thursday is also the time to visit the trade show. Our vendors are extremely important to our association and our programs. Our trade show features numerous vendor booths with professionals exhibiting up-to-date products and services for our field. This is the best "one stop" to bring an administrator or board member if your school is looking for input to update a program.

In celebrating the rich tradition and history of Technology & Engineering Education in Wisconsin, the WTEA 50th Commemorative Special Session will take place from 5:00 - 7:00 PM in the Lower Level Atrium. This event will be followed by the annual President's Reception beginning at 7:00 PM and ending at 9:00 PM.

On Friday we will again host the Early Riser Breakfast during which we will also have our General Membership Meeting presided over by President, Phil Bickelhaupt. Following the General Membership Meeting, the day will continue with diverse sectionals and vendor sponsored workshops. Friday's schedule includes a day of hands-on automotive technology sessions which have been moved to Easton Motors in Wisconsin Dells this year.

We will also offer a Baraboo High School Shop Tour from 2:15-4:15 PM on Friday. The Technology and Engineering Department at Baraboo High School has just finished a complete shop makeover. Stop in for a tour of the facility and see the changes. Staff members will be on hand to guide you and answer questions regarding the thought process behind the equipment purchases.

Our mid-day luncheon will be followed by a keynote address from Dr. James Bensen, President Emeritus at Bemidji State University. Dr. Bensen will discuss how we have seen enormous changes in our lives during the last fifty years! What we will see in the next five will be astronomical! We must sharpen our thinking, focus our actions, and plan FROM the future!

This year's conference will again feature some of the top Technology and Engineering Educators throughout Wisconsin and the nation sharing their expertise on topics such as: Dual Credit Opportunities, Drones in the Classroom, Fundamentals of HVAC for High School, Meeting the Needs of Advanced Manufacturing, Finding Funding for Your Classroom, Building Construction & Safety Management, Making STEM Meaningful Anywhere on Any Budget, Building a Desalination Machine, SkillsUSA, Middle School Roundtable, New Teacher Boot Camp, the popular WTEA Project Showcase, and much more!

Put March 6-8, 2019 on your calendars, get your release days approved, and fill out and send in your registration form today if you have not already done so. The convention fee is \$155 for members and \$185 for non-members. As a final reminder, please contact Chula Vista Resort early to reserve your room - often we are not the only event taking place at this busy resort. We hope to see you there!

For room reservations contact Chula Vista Resort, 2501 River Road, Wisconsin Dells, WI 53965, (877) 745-6998 http://www.chulavistaresort.com/.

Use the WTEA eStore to register online with your credit card: http://www.wtea-wis.org.

Conference Automotive Friday Sectionals to Move

By Dan Klecker, State Education Director, WATDA

Congratulations to WTEA for offering an outstanding annual conference to Technology & Engineering instructors in Wisconsin for 50 years. I can honestly say I have been to over half of the conferences throughout my career. This year's 50th celebration will be an extra special event you will not want to miss.

I have been arranging the automotive sectionals for the past few years and we are planning a change in venue for our hands-on sectionals. Thanks to Portage High School for hosting the Friday automotive sectionals for close to twenty years! Portage has been a gracious host through three different automotive instructors but I wanted to give them a break as I came across a facility closer to Chula Vista.

This year the Friday sectionals will be at Easton Motor's "Recon" facility in Wisconsin Dells. Easton Motors uses this facility to recondition over 1200 used vehicles annually. They have generously offered to shut down their recon facility for the day to allow us to use it for the Friday Automotive sectionals at the WTEA Conference. This facility is only six minutes from Chula Vista, so I am hoping even more instructors will be able to stop by to take in a sectional or two.

Easton Motor's Recon Facility is located at 815 Business Park Road, Wisconsin Dells. Easton Motors also has a Goodyear Service Center a few miles south on Hwy 16 and several used car dealerships in the area so be careful that you are using the Business Park address when searching your navigation map.

The schedule will remain similar to past years as we will start immediately after the WTEA Business meeting Friday morning. We will have three different sectionals that will repeat three times. Any time you arrive at Easton Motors you will be able to participate in your choice of the three sectionals. Presently we are planning on Snapon demonstrating "Advanced Drivability Assist System," Easton Motors demonstrating "Pre-Set Up Inspections" and an unnamed "New Vehicle Technology" demonstration. Lunch will also be provided at Easton Motors Recon Facility.

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50th Annual Technology Education Conference & Trade Show

Tentative Conference Overview

Wednesday, March 6, 2019 5:30 - 8:00 p.m. Conference Registration 6:45 - 9:00 p.m. Awards Banquet

Thursday, March 7, 2019

- 7:30 a.m. 3:00 p.m. Conference Registration
- 7:00 a.m. 10:00 a.m. Project Showcase Setup 8:00 a.m. 4:00 p.m. Trade Show and

. Project Showcase

- 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

Thursday Evening

- 5:00 p.m. 7:00 p.m. Special 50th Commemorative General Session (Ticket Required)
- 7:00 p.m. 9:00 p.m. President's Reception & Silent Auction

Session Topics Include: Underwater ROV Fabrication, Building a Desalination Machine, Tiny House Construction, The STEAM Movement, DoD Cyber Training, Plumbing and Electrical Techniques, Aerospace Technologies, K-12 Energy Education Program (KEEP), Robotics, Apprenticeships, Retirement Strategies, Innovation and Design, Automotive Technologies, Welding and Machining, Building High Mileage Vehicles, Project Showcase, SkillsUSA, 3D Printing Techniques, Middle School Roundtable, Manufacturing Project Ideas, New Teacher Boot Camp, and much more!

Friday, March 8, 2019

7:30 a.m. – 11:30 a.m. Conference Registration
6:45 a.m. – 7:45 a.m. Early Riser Breakfast
7:45 a.m. – 8:30 a.m. WTEA Membership Meeting
8:45 a.m. – 12:15 p.m. Concurrent Sessions, Vendor Demonstrations & Project Showcase
8:45 a.m. Automotive Sessions at Easton Motors
12:30 p.m. – 2:00 p.m. General Session/Luncheon
2:15 p.m. – 3:30 p.m. WTEA Board Meeting & Regional Meetings

2:15 p.m. – 4:15 p.m. Facility Tour at Baraboo HS



Thursday Keynote Speaker

Wilson R. Jones President and Chief Executive Officer Oshkosh Corporation

Friday Keynote Speaker

Dr. James Bensen President Emeritus Bemidji State University





March 6, 7 & 8



Awards Banquet - Wednesday Evening

Trade Show - Thursday



Special 50th Commemorative General Session - Thursday

President's Reception & Silent Auction - Thursday

Keynote Speakers - Thursday & Friday

Educational Sessions - Thursday & Friday

Project Showcase - Thursday & Friday

Early-Riser Breakfast - Friday

WTEA Annual Membership Meeting - Friday

Colleague Networking - All 3 Days





To complete an electronic version of the WTEA membership/registration form, go to www.tinyurl.com/WTEA-Conf

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School Dist.	School Name				
School Address					
School City	State	Zip	E-mail:		
Check the appropriate boxes below and	total amount	t due.			
Membership Fees: [] 3 year members	hip - \$75.00	[] 1 year membe	ership - \$30.00	\$	
Spring Conference Registration []\$15	5 members	[] \$185 non-me	mbers	\$	
WTEA Awards Banquet (Wednesday, Mar	ch 6, 2019)	[] \$28		\$	
Special 50th Commemorative General Second	ession (Thurs	day, March 7, 201	9)		
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project Showcase



50 Years of Projects!!! "Oh how far we have come."

Join us for the 10th Annual Project Showcase at the 50th Anniversary WTEA 2019 Annual Conference in Wisconsin Dells.

Your contribution of projects will make the showcase the biggest and best yet. This year we will have some additions to the Project Showcase to help us celebrate the 50th. Not only do we want the current projects you do with your students, we would also like to make a section of older "Projects of the Past" that reflect different time periods throughout our history. These can be actual physical projects, pictures, plans, etc. from your school or your early days in education. We will display these in a special section of the Project Showcase.

Along with "Projects of the Past" we want to expand on our current showcase of activities that you do. We want to see projects from all grade levels (elementary, middle, and high school). Many members have expressed interest in seeing more middle school projects. If you are a middle school teacher, please consider bringing a project. We want all projects whether they are large or small, complex or simple. For many larger projects (i.e. construction) and visual projects (drafting, graphic arts) a poster board of digital pictures is a great way to share your ideas.

This year's Project Showcase will be sponsored by Madison College through their Mechanical Design Technology and Automotive Technology Departments. Tables and power will be available. So . . . we are asking that you bring projects that we can display. These can be student made projects or samples made by instructors. You are welcome to include supporting curriculum, but it is not required. If you are planning on bringing a project that won't fit on a table, please contact Dave Stroud prior to the event so space can be made available. Watch for more information on the web and DPI listserve as time gets closer. Please e-mail Dave Stroud at dstroud@ashwaubenonk12. org if you have any questions.



WTEA CONFERENCE



Special 50th Commemorative General Session

Thursday, March 7

5:00 - 7:00 pm



Lower Level Atrium

Come join in the celebration of our 50th Annual Conference and the upcoming 50th Anniversary of our organization. Tickets need to be purchased in advance and includes a meal.



Tickets \$12.00 (includes meal)

FEATURE ARTICLE

Wisconn Valley...the Foxconn Effect



Simulation of Foxconn Science and Technology Park in Mount Pleasant, WI

In a world where technology influences nearly every aspect of our life's work, it is imperative that we educate through the perspective of technology and innovation. Foxconn, a Taiwanese based company employing more than 1.3 million people is an example of just how important this statement is. In 2018, Foxconn announced that they would build their first Liquid Crystal Display (LCD) Fab manufacturing plant in Mount Pleasant, Wisconsin. This new facility represents a \$10 billion investment and will employ 13,000 people. Many of the jobs created will be in the area of advanced manufacturing. The Foxconn Science and Technology Park has been named the Wisconn Valley of the Midwest rivaling Silicon Valley in California and Route 128 Technology Corridor in Boston. Foxconn is best known for making the Apple iPhone, but as a consumer electronics manufacturing company they produce most of the products we are all familiar with such as Sharp televisions and tablet PC monitors. Worldwide, Foxconn sold approximately \$136 billion in goods last year. With a footprint of 20 million square feet, the Foxconn campus will be large enough to hold 11 Lambeau Fields and will become the largest manufacturing campus in the world - eclipsing the New Century Global Center in Chengdu, China, the Tesla Gigafactory in Sparks, Nevada and the Boeing facility in Everett, Washington.

To support the innovation, supply chain and talent needs of a project this size, Foxconn has opened campuses in Eau Claire, Green Bay, Racine, Milwaukee and Madison. Each of these offices will target specific areas of development in the innovation cycle Foxconn is bringing to Wisconsin. A \$100 million venture capital fund has also been established to support business development and research. Students have not been left out of the equation. Foxconn is currently sponsoring a \$1 million Smart Cities Smart Futures competition for college and university students. Students and faculty can win money and prizes by submitting their best ideas on how to address the work and lifestyles of a connected community - which brings me to education.

Foxconn as well as many of our Wisconsin based global companies are rooted in innovation and advanced manufacturing. What Foxconn has enlightened us on is just how fast the work of manufacturing is changing.



New terms are being used to describe the integration of technology like Smart Manufacturing, IIoT and Industry 4.0. This new language describing advanced manufacturing has caused technical colleges, universities and high schools throughout the state to evaluate their programs and up-skill the technical applicability of students and teachers. Industry 4.0 technologies are rapidly transforming how people work in manufacturing, engineering, and other industry sectors, helping them to become more productive by connecting cloud-based and mobile data analytics software to smart devices. Industry 4.0 integrates the cyber world with the physical world.

Gateway Technical College's SC Johnson iMET Center for advanced manufacturing is located less than a mile from the Foxconn Science and Technology Park. Our partnership model with industry is rich with great companies like Amazon, InSinkerator, Niagara Bottling, Ocean Spray, Modine, Trane, Snap-on Tools and SC Johnson. Companies that are focused on automation in the manufacturing climate are driving new skill requirements for our graduates. These skill competencies include PLC Factory Talk and Logix language, motor control centers with networking interfaces, photo-eyes and smart sensing technologies, artificial intelligence, distributed I/O and data analytics integrated with cyber security systems. This is all on top of the core knowledge and skills in electronics and mechanical systems. To support the future of smart manufacturing we have opened new degree programs in advanced manufacturing, supply chain management,



Bryan Albrecht, President of Gateway Technical College with Terry Gau, CEO of Foxconn

cyber security and data analytics and extended a pathway into each of these areas through articulated pathways with high schools. Across the state technical colleges are partnering with employers and high schools to strengthen the awareness of the skills and technologies necessary for employers to stay competitive in the global market.



Foxconn's Zap Technology transforming medical research

Foxconn will continue to inspire us through their technologies, investment and vision for smart lifestyles. As educators our responsibility is to prepare our students for the knowledge and skills required to participate in the economic and social changes that are taking place in our communities whether that be in medicine, manufacturing, communication or transportation. Telemedicine, 4D additive manufacturing, cloud based virtual communications and autonomous transport vehicles are here and will be the future for the students we serve today.

The WTEA is a resource that brings professional development opportunities supporting the next generation manufacturing through industry partnerships and articulated pathways to higher education. Join us at this year's WTEA Annual Convention for more information about the Foxconn Effect.

> Bryan D. Albrecht, Ed.D. President and Chief Executive Officer Gateway Technical College



ANNOUNCEMENTS

WTEA Logo Merchandise



Clothing with the WTEA logo can be purchased at the WTEA eStore. Simply go to the WTEA website at wtea-wis.org and click on WTEA eStore under the main menu. There you will find a link to the Logo Merchandise page.

There are several styles and colors to choose from. Here are a few samples:



The WTEA Foundation is offering a renewable \$1000 scholarship for a high school senior who commits to pursue a career as a K-12 Technology & Engineering educator.



Eligibility

- Wisconsin resident
- Enroll in technology education at a Wisconsin University and start the fall semester
- Submit completed application form and 250 word essay prior to April 15

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

WTEA Conference App

We will have a conference app (powered by Yapp) that you can use on your iOS or Android mobile device. It will have the complete sectional schedule, along with the exhibitor information and much more.

Downloading the app is easy.

- 1. Visit http://my.yapp.us/WTEA50TH on your device and follow the instructions on the page.
- 2. You'll be asked to install Yapp from the app store (if you don't have it already).
- 3. Open Yapp and tap "Download an existing Yapp" and your app will appear.
- 4. If you go to the web address listed above on your computer, you can access all of the conference information in the app,

Help your students find their passion & fulfill their potential



Lennox VisionTECH Conference April 8 - 9

Lennox VisionTECH is a day and a half event that brings the industry together to learn, grow, compete, and strengthen our programs. Attendees include high school administrators, students and parents, college instructors and students, as well as Lennox Heating and Cooling contractors who bring their entire team of installers, service technicians, salespeople, office staff, and owners, including their trucks, tools, and talents which they will use to learn and compete.

Lennox VisionTECH is the industry's first and only true team building event featuring both education and competitions. What kind of competitions? Colleges will compete against other universities, dealers will compete against other dealers, and winners will earn bragging rights as well as the 2018 TechWarZ Champions trophy.

LENNOX

This event is open to high school students and parents interested in learning more about the industry. If you would like to attend, follow the link to the VisionTECH website. Lennox representatives will be in attendance at this year's WTEA conference. Please stop by their booth for additional information.

https://lennoxvision.com/vision-tech/indexs.php



First Technologies is excited to annouce our partnership with:





ConsuLab offers a full line up of automotive and heavy vehicle/diesel trainers - from low voltage electronics to today's hybrid engines.

Check out the entire ConsuLab product line at www.consulab.com.



Planning and Implementing a Fab Lab

By Steven Yahr, Ed. D., Director – Fab Lab Three Lakes

Introduction

Fab Labs, each a member of the world-wide Fab Foundation network, are quickly finding their way into K-12 schools in Wisconsin. Partly this is because they have been supported by funding from the Wisconsin Economic Development Corporation (WEDC). For the past several years, WEDC has been awarding grants of up to \$25,000 to schools to purchase equipment for their Fab Labs. This funding has been a wonderful means for the state to help schools acquire equipment. However, personnel from districts implementing Fab Labs struggle to understand how to incorporate new ways of thinking and doing via this equipment into their existing curriculum.

Since their genesis at MIT's Center for Bits and Atoms, Fab Labs have gone world-wide, and currently number more than 1200. And that number doubles every 18 months. Most Fab Labs are stand-alone facilities, serving individual communities. Fab Labs in schools are a more recent partnership. Over the years the focus of school has changed from mastery of declarative knowledge, at the bottom of Bloom's Cognitive Domain, to learning and practicing evaluation and creative skills, at the top of the Cognitive Domain. Additionally, technology is changing so quickly that the nature of work is also changing. Business partners desire employees who can use process (i.e. Engineering Design Process) to translate customer desires into a product or service, accepting that mistakes will be made and need to be worked through. Technology is changing both what we do and how we do it, it is changing our work. Business partners also desire employees who are not intimidated by technology, and who have 21st Century skills. Our opportunity, as schools, is to shift our focus of success from students having mastered memorizing knowledge for standardized tests, to challenging students to create new products, mastering the top of the cognitive process. Fab Labs are perceived as those places where students, through their making, become expert with both the engineering design process and authentic, inquiry based learning to solve problems. We have seen positive results due to this shift in thinking in Three Lakes.

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The school is the heart of the community. In many ways the school is one of the foundations of community life, along with churches, businesses and so on. While the school may be one of the foundations of the community, we must not be isolated from the other foundation pieces - i.e. local businesses, churches, community colleges, universities, economic development. Each community is also a unique entity, each has its own history and character, its own "context." As the heart of a community, how each school chooses to implement their Fab Lab will be different, unique to that school and that community.

Based on the desire for school to be relevant in our community, to be the heart of the community, and at the same time to embrace the possibilities inquiry based learning and Fab Labs offer, we present here a six step process for going from "We're thinking of doing something different and considering putting in a Fab Lab" to "We have a sustainable Fab Lab" for school districts to consider, a way to get to where they want to be. Each step has questions to consider, decisions to make, and documents to produce. We believe using a structured process will help school districts increase student skill development via the skills they develop in the Fab Lab within their local context.

The Process

The Three Lakes School District implemented it's K-12 Fab Lab in 2014. In the ensuing years we have learned from our successes and our failures. We currently share some of our experience in a two-week long course: "Fab Lab 101 for Teachers" class which is held each summer. These classes are focused on teachers in practice. These classes have been a tremendous asset for teachers implementing Fab Labs. Yet, for all their success, teachers report that they struggle with integrating their Fab Lab into the larger picture at their school, for their Fab Lab to be the means to an end and not just an end. This integration requires the efforts of a wider group of people, including district administrators, school board members, local businesses, economic development professionals among others. This integration is a process, a transition from current practice to a desired new state.

Plan now to attend the 50th WTEA Annual Conference "Pride, Progress, Professionalism" March 6 - 8, 2019 · Chula Vista Resort · Wisconsin Dells



In answer to the question of desire to make their Fab Labs relevant in their local context, the Three Lakes district has developed process for Fab Lab implementation presented in a three-day workshop for district administrators, principals, school boards, industry partners. The process has six steps: Planning, Justifying, Installation, Training, Implementation, and Sustaining.

The process starts with Planning, understanding what a school district is about at this moment in time, it's goals, and what the measures are that prove this is where the district is, whether or not it is meeting its goals. It also asks the district, and its partners to declare where they want to go, and what measures will prove this. Once the decision has been made to focus on building student skills utilizing the resources of a Fab Lab, the Justification phase starts. This involves working with partners to agree on the starting point for the Fab Lab - what groups of students (grade levels), what learning objectives will be covered, what assessment will be used and experiences will the students have. This phase also begins implementing a Business Advisory Council, a formal relationship between the school and local businesses/economic development activities. After everyone agrees on how the Fab Lab will support students developing skills, the next step is Installation. In this step, curriculum is developed, equipment is ordered, and installed. Also during this step, an initial order of consumable materials is completed.

Once the equipment is installed, the next step is Training. Teachers and other staff may be trained on their specific equipment set, or on a similar equipment set. This training may occur to include curriculum concepts, like what occurs in Three Lakes, or it may also be equipment specific training from vendors. After staff have curriculum in place, the next step is Implementation. During this step the lab is opened/dedicated in a formal way with dignitaries and media coverage. Students begin to experience learning and are assessed on new skills in their Fab Lab. People of all ages enjoy discovering new things about themselves. The last step in the process is Sustaining. During this step new grade levels and learning experiences are introduced into the district through all grade levels. Additionally, the school and businesses are working together to help students not only develop skills for the changing world of work, but also to help them understand opportunities in the area.

Summary

Fab Labs are invaluable tools allowing school districts to incorporate authentic, inquiry based learning thereby helping students develop skills for the workplace of the future. Our business partners are very enthusiastic about the skills our students are developing and the problems they are solving. Fab Labs are not the end, they are the means to the goal of student skill development. It is not about the machines, rather it is a creative curriculum that challenges students using the machines as part of their skill development process, equipping them with the skills they will need for work in a rapidly changing world. Implementing and sustaining a Fab Lab involves a series of measured steps a school district, and its business partners, need to take for student success.

We encourage you to check our Three Lakes district website for Fab Lab implementation work shop availability. We also invite you to contact us about presenting a workshop in your district.





Join us for the 50th Anniversary General Session Thursday, March 7, 2019 · Lower Level Atrium · Chula Vista





What Really is a High Tech Weekend?

By Matt Schultz, LakeView Technology Academy

There is nothing better as a teacher than to spend two fun-filled days working with other teachers at a High Tech Weekend. Sharing ideas, curriculum methods, stories and passions are just a few things that get accomplished. It is more than that though, it is sharing a bond with likeminded folks. These are some of my fondest memories as an educator. Whether it has been at Brillion High School for a week building Supermileage Vehicles with Steve Meyer and the ChallengeUSA team, or spending a day at Duane Elfering's school learning how to maximize efficiency with electric motors, these weekends are what defines the WTEA and Wisconsin educators as a whole.

LakeView Technology Academy partnered with the WTEA to host a High Tech Weekend on building underwater robots. Fifteen teachers traveled from across the state to share in the experience of learning about a new curriculum to bring back to their classes. The weekend was packed with lessons on CAD and CNC, but also tied in electronics, 3D printing, and prototyping. Attendees were provided with ROV kits to put together and take home with them. Curriculum, instruction and assessment were joined so that everyone would be able to get the ball rolling in their schools.



However, the weekend was more than just ROV's. It was sharing methods and best practices. Saturday morning I started the day off with a lesson in Inventor covering how to design and make a motor mount. I started teaching the lesson and one at a time teachers started sharing more efficient ways to do the same process. Not long after beginning the lesson, I asked Eric Morrow from Wilmot if he wouldn't mind just taking over. His knowledge of the subject matter is greater than mine and better yet, I was pumped to learn from him. This was probably the coolest part of the weekend - the willingness of everyone to just learn and share. It didn't matter who was hosting, we were all there to learn. Sure, I could have finished the lesson, but Eric was able to pick it up and take it to the next level. In reflection, that is what High Tech Weekends are all about. We all have expertise that we need to share. You cannot teach tech ed on an island, we are a community.

I reached out to some vendors I work with and asked if they would to like to be a part of this event. They jumped at the opportunity! Pamela Lucas from Midland Plastics donated all of the HDPE plastic used to make the ROV side walls. Pam showed up Friday and shared tons of information about plastic, and shared what products are new to use in our lasers and CNC machines. Larry Granec from Haldeman-Homme along with Stratasys donated all of the 3D filament to make the motor mounts. Larry came down and bought us lunch and shared some of the new up and coming technologies we could incorporate in our classrooms. These two people and their companies value education so much, they just wanted to be a part of this weekend in any way they could.

The weekend came and went very quickly. Everyone built and left with an ROV. We worked hard, but more importantly, we enjoyed each other and what we all do. The take home: Tech Ed is better as a community. We call each other up and ask for motivation when times are tough in the classroom. We visit each other's school when a new facility addition has finished. We share knowledge about what equipment to buy, or what not to buy, for that matter. We help each other out at student competitions. But most importantly we don't hold back. We love and enjoy what we do, and that is what it is all about.

I encourage anyone and everyone to at some point host a High Tech Weekend. It is more than just sharing a project or best practice. It is sharing passions.



Fall Events in Northeast Wisconsin

By Dave Stroud, District C Director

Many exciting events for Technology & Engineering students and teachers happened this fall in Northeast Wisconsin. A few of the larger events include:

- 4th Annual Construction Trades Career Day presented by the Northeast Wisconsin Building and Construction Trades Council in Oshkosh
- Get Real Math! Video Premier at the Meyer Theatre in Green Bay
- Excellence in Manufacturing/K-12 Partnerships Awards and Manufacturing First Expo at the KI Convention Center in Green Bay presented by the N.E.W. Manufacturing Alliance
- SkillsUSA District 3 Competition hosted by Ashwaubenon High School.

While final numbers haven't been published yet for this year's event, the Construction Trades Career Day presented by the Northeast Wisconsin Building and Construction Trades Council saw over 750 students representing over 30 school districts last year. The event gave students a chance to talk to professionals in all areas of the construction trades and participate in some handson activities to get insight into what these professionals do. Teachers and guidance counselors were also encouraged to come to learn about career opportunities in the construction trades. For more information, visit: https:// newbt.org/4th-annual-construction-trades-career-day/.



Students participating in construction related activities at the 4th Annual Construction Trades Career Day.

The Northeast Wisconsin Manufacturing Alliance was busy promoting Manufacturing Month again this past October with a handful of events aimed at helping bridge the gap between schools and industry, and celebrating the work being done in schools in the area of manufacturing education. The Get Real Math! Premiere took place again this year at the Meyer Theatre in Green Bay. Technology & Engineering and Math teachers along with district administrators were invited to a first time screening of the Manufacturing Alliance's new Get Real Math! videos that demonstrate how math is used in real world manufacturing applications. Curriculum is also developed so that teachers can use these resources for classroom instruction. For more information, please visit: http://newmfgalliance.org/educators-students/get-real-math-videos/.

Another event hosted by the N.E.W. Manufacturing Alliance is the Excellence in Manufacturing/K-12 Awards, which recognizes All Stars in Manufacturing as well as teachers and schools that develop outstanding manufacturing programs for students. Jon Larson, a teacher at Little Chute High School and Kory Fredrikson, a teacher at Denmark High School both received awards this year recognizing the work they do involving manufacturing education.

The day after the Excellence in Manufacturing/K-12 Partnerships Awards, the N.E.W. Manufacturing Alliance invited local schools to tour and talk to vendors at their Manufacturing First Expo. Students are given the chance to network with local companies to learn about the skills needed and opportunities that exist in Manufacturing. Information about N.E.W. Manufacturing Alliance events can be found at: http://newmfgalliance.org/.

Ashwaubenon High School hosted the SkillsUSA District 3 Competition which saw over 120 students from 15 middle and high schools compete in 11 different competitions. Students were able to compete in Welding, Cabinetmaking, Job Interview, Related Technical Math, Urban Search & Rescue, Photography, Advertising Design, Engineering Design Challenge, Technical Drafting, Architectural Drafting, and CNC Milling. A big thank you goes out to all of the teachers, business partners, and staff from Northeast Wisconsin Technical College for making this event a success.



Examples of pictures taken at SkillsUSA District 3 Competition by participants in Photography competition.

Wisconsin Comes Alive With Statewide Industry 4.0 Career Pathways & Certifications

By Melissa Musser, LAB Midwest

Move over Silicon Valley - Wisconsin has become the epicenter of Industry 4.0 technology in the US, and education is following suit. Recent efforts to bolster Industry 4.0 education in Wisconsin have culminated in plans for statewide certifications and career pathways, from K-12 through university level education.

The movement began this fall when over 30 high school programs adopted Industry 4.0 curriculum to introduce students to advanced manufacturing technology and processes.

Kenosha Unified, Gateway Technical College's high school consortium, and the Trempealeau Valley Co-op are among the school districts implementing this curriculum. The latter made headlines this fall for their state-of-the-art mobile skills lab, the result of an investment by Ashley Furniture's Education Foundation.

Jim Dotta, Vice President of Casegoods/Engineering with Ashley Furniture Industries, recognizes that these efforts help "all our local high schools to foster technical and engineering careers and career pathways in many fields of study - from agriculture to advanced manufacturing to information technology to engineering and computer-aided design."



The Ashley Mobile Skills Lab features state-of-the-art training equipment and eLearning for PLCs, mechatronics, robotics and more, building hands-on skills for careers in advanced manufacturing.

The high school program consists of four courses: Introduction to Mechatronics, Introduction to Industrial Controls, Introduction to Industrial Robotics and Introduction to the Industrial Internet of Things (IIoT).

The program has seen such success in its flagship year that the Wisconsin Department of Public Instruction is working to standardize Industry 4.0 curriculum pathways statewide. This will include outlining K-8, high school, technical college and university level courses as well as related certifications, apprenticeships and careers.

Dr. Bryan Albrecht, President and CEO of Gateway Technical College, is a strong proponent of these efforts. "We are proud to partner with the Wisconsin Department of Public Instruction to develop a statewide pathway defining the knowledge, skills and career opportunities in the Industry 4.0 manufacturing sector. It builds off the rich history of manufacturing in Wisconsin."

Wisconsin's manufacturing tradition is evolving with changing technology. With high-tech facilities like Foxconn moving to the state, keen educators are embracing curriculum that prepares today's students for tomorrow's workforce.

One such school is Random Lake, whose vision statement "to give tomorrow's leaders a distinct advantage" is being carried out at the middle school level as they implement Industry 4.0 curriculum that will be part of the DPI pathway.

Mike Trimberger, Superintendent for Random Lake School District, said the decision was made after months of consulting with employers in the community about what students need to know when they enter the workforce.

"As we see the increase of devices that are connecting to the Internet every day, our students will have an advantage over others if they understand the IIoT and Industry 4.0 as it relates to careers they are interested in for the future," Trimberger remarked.

The middle school curriculum used by Random Lake School District builds a foundation in mechatronics, robotics, drones and autonomous vehicles, alternative energy and data analytics to grades 5-8 with student-led projects that require problem solving, creative thinking and hands-on learning. These concepts will translate to the four-course high school curriculum, where credits articulate to several technical colleges across the state. The pathway will then extend to four-year university degree programs.

Additionally, the pathway includes certifications to individuals who are proficient in Industry 4.0 technologies, broken down into Associate, Specialist and Professional levels.

Certifications will be awarded by the Smart Automation Certification Alliance (SACA), whose standards are determined and validated by technical experts in industries across the country.

Jim Wall, Executive Director of SACA, recognized the need to consult industry experts on the skills required for Industry 4.0 careers. "With the rapid deployment of Industry 4.0 technologies, companies are increasingly finding they have a critical shortage of skilled workers," he noted. These certifications solve that problem by connecting skilled individuals with employers.

And education recognizes the validity of these certification standards. "SACA represents industry's voice on the knowledge and skills needed to perform in an Industry 4.0 work environment," Bryan Albrecht commented. With the culmination of defined pathways for education, certification and careers, Wisconsin is blazing a trail in Advanced Manufacturing for the rest of the country to follow. And our students will be tomorrow's leaders.



High school students learn valuable Industry 4.0 skills on tabletop mechatronics systems at Gateway Technical College.



Winter 2018- 2019

Pen Turning Project Update

By Pete McConnell, Prairie River Middle School

The Badger Honor Flight and the Never Forgotten Honor Flights continue to receive pens for the Honor Flight Veterans from Cardinal Heights Upper Middle School in Sun Prairie and Prairie River Middle School in Merrill. Both programs are strong and continuing to turn pens with 8th and 9th grade students. The WTEA sponsored a Pen Turning workshop at the Spring Conference and four individual instructors (Mike Roth, Frank Steck, Pete McConnell, and Michael Chopin) took time to teach close to 100 participants the instructions of how to turn pens. I have reached out through the Interface with articles to invite interested teachers around the state to get instructed in how to provide this Pen Turning Project for the Honor Flight in their region. I have also contacted all of the Honor Flights to let them know of this effort.

There has been some movement and expansion of the program. I have heard back from the Northwest Flight and two teachers from the Wausau and Weston area. They have been trained and are trying to get a relationship set up to exchange pens. Prairie River Middle School has turned close to 1000 pens and have supplied 7 different Neverforgotten Honor Flights as well as supplementing some pens to help out with the Badger Honor Flight. Sun Prairie continues to supply as many pens as they can and are reevaluating how to get more pens produced. Michael Chopin provides pens for other volunteer efforts and continues to turn pens with students. Frank Steck has recently been involved with turning pens for the Wounded Warrior Project in Southwest Wisconsin. There is interest and energy being generated through turning pens.

The WTEA is sponsoring an activity based workshop with 15-20 lathes, lots of instructors and pens to be turned on Friday at the 50th Anniversary Conference in Wisconsin Dells. We want you to come and get trained. Come and have the discussion. Find out how you can create local interest in your district to support these programs. Maybe this is a project that could be initiated through a Fab Lab or SkillsUSA chapter. The WTEA wants to help. Can we use our District Directors to communicate with you? Do we need to come to your school? We are reaching out. Please accept the challenge and the invitation. I am looking for-







For more information please contact Pete McConnell at Prairie River Middle School, 106 N. Polk Street, Merrill, WI. 54452 or 715-536-9593, ext 17021. You can also contact your WTEA District Representative.

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A Purposeful Day at IMTS

By Jamie Averbeck, Instructional Technology Coordinator, Ashwaubenon School District



Having been an educator my entire employed life, attending North America's largest manufacturing trade show was a bit of a "fish out of water" experience for me. The International Manufacturing Technology Show (IMTS) is enormous, encompassing all of McCormick Place in

Chicago with 115,000+ in attendance over the length of the five day show. The reason for the bus full of teachers and students was clear, we were setting an educational purpose.

IMTS Trip Goal: Identifying the purpose for the work/skills taught in the classroom.

We've all experienced or witnessed the "why do I need to know this" student question. I guarantee this question was answered on our trip. The day started with the Smartforce Student Summit, where our students were able to participate in hands on experiences learning the workflow through the entire manufacturing process - design, 3D printing/rapid prototyping/additive manufacturing, machine and tool monitoring, automation, robotics, measurement, data acquisition and analytics, and the Cloud.



We then progressed to the actual IMTS trade show to see the "Real World" version of the student summit, and did I mention that this thing is huge? . . . 2,400 company exhibits, 115,600 attendees, 1,370,256 square feet of exhibit space.



Moving past the size of this show, let's focus on the student experience. It was just awesome for our kids to see the connections (the purpose) behind their coursework and how it directly related to the manufacturing industry, and ultimately a career path. Again, as a lifelong educator, I couldn't tell you what most of the machines I was looking at did, but I could tell you the excitement and engagement our students had at IMTS. They immediately made connections between their classroom and the exhibit floor. If any of our students attending were looking to pursue a career path in manufacturing, they clearly could see why the work they are doing in the classroom is relevant and purposeful. This visual "aha" moment was easy to see and very powerful.



I'm so grateful for being able to attend and witness this truly rewarding experience for our students. It makes me reflect on how we need to show our students the why and the purpose, in everything we do.

"We need to show our students the why, the purpose, in everything we do."



Winter 2018- 2019

What was your favorite project you completed as a Tech Ed student and/or your favorite project you have assigned as a Tech Ed teacher?

In high school, I made a walnut table. It was 30" x 30" on the top. That was as big as we were allowed to make it, as the storage cabinets maxed out at 30 inches.

As a teacher, one of my favorite projects was a ice fishing Tip Up that a student made in my CNC machining class. *Bob Morehead*

My favorite project that my 7 and 8 graders worked on was an Independent Project in the workshop. The students could make whatever they wanted in the shop setting. I had students making anywhere from bookshelves to outdoor tables, bean bag toss games, animal cages, benches and so much more. The students really took ownership in their projects and designed some amazing things.

Angie Arneson

My favorite project was a wood cutting board. We had several choices on the shape and to this day I am not sure why I chose a pig (grew up on a dairy farm!). It turned out to be my favorite because I learned how meticulous a crafts-person needs to be in order for the product to meet expectations. My parents were proud of my creation and it is still in use. *Mike Cattelino*

My favorite unit to do with students was the unit where students ultimately engineered, designed, and fabricated a boat that a team of three could fit in, constructed out of corrugate, two rolls of duck tape, and all the hot glue in northeast Wisconsin. There was so much learning going on and the students had a blast testing the boats in Round Lake. This single unit really helped get exposure and attract students to the STEM areas. *Steve Meyer*

Probably one of my favorite beginning of the year projects for 7th or 8th graders was to make push/pull sticks for use on an oven rack. It taught kids how to use the scroll saw, sanding tools and easy finishing materials. Many kids made neat designs - my favorite was the Musky design! I still use my demo one everyday!

As a student my favorite project had to be the home design I created in my Arch Drawing class my senior year based on specs delivered by the Milwaukee Metropolitan Home Builders Association and then finishing in the top three designs submitted! *Phil Bickelhaupt*

All of the projects I completed as a student were my favorite, therefore that's one of the reasons I am currently a Technology Education teacher. If I were to pick out one project that sticks with me till this day, it would absolutely be one of my projects as a middle school student. It was in Mr. Bruce Bradley's Power and Transportation class in Tomahawk. Our project was to construct a boat hull that could haul the biggest payload while maintaining a faster speed than the rest of the class. I can still visualize the setup of a piece of PVC pipe with the top half cut off. Water would fill this piece of plastic and serve as the "river" for our boat to navigate. A pulley was attached at the end of this homemade trough for a piece of string to run through - one end to attach to the boat, the other a loop for weights to hang from. A table full of nails and a few bolts served as our payload. The only thing left to do was observe what the imagination of 25 middle schoolers could come up with. I am sure many of you can imagine what type of results we realized as a class. Some boats instantly rolled over, some boats never made it to the river, others worked better as submarines, and yet, there were some boats that worked. Some worked better than others. but they did work. This activity to me at the time, was more like playing a game with the idea of having fun in the forefront of my mind. Little did I know back then, but do now as a teacher, I can see this as one of the greatest problem solving activities I was hoodwinked into doing. It was a strategic ploy to teach me multiple terms, lessons, and skills all at the same time, including the "7 Ps" to project planning. I want to thank Mr. Bradley and all my past Technology Education teachers, as well as you, my colleagues, for your inventiveness and creativity in making learning fun, practical, and applicable for your students. Brian Schiltz

Favorite Project Completed: Cedar bench made 100% with hand tools. Favorite Project Assigned: Design, bid, and manufacture a main city entrance sign.

Stephen Hadfield

As a student - Drawing floor plans by hand and making a wall clock in the 9th grade. As a Teacher - Building a house with students and turning pens for the Neverforgotten Honors Flight veterans. *Pete McConnell* My favorite project that I assigned as a Tech Ed teacher was last spring when a class of engineering students planned, designed, and built Little Free Pantries to be placed at each of our district schools. We also collaborated with our Art department for the themes that are being painted on each pantry. Our welding students are making the brackets to mount them to posts, and we hope to place them this spring when the ground thaws.

Dave Stroud

My favorite project as a Tech Ed student was the tie clip I made for my dad. My metals teacher allowed me, as the only female in the welding and machining class, to experiment with lost wax casting and making jewelry. By the time I was done with the project I had ruined a vacuum pump, had 3 failed attempts at casting the tie clip, and resorted to learning to use the milling machine to salvage the project. I use it as an example to this day in my classes. In making this simple tie clip I learned about metallurgy, properties of ceramics and machining. Explaining to the class of my male peers the processes I used launched me on the path to becoming a teacher. Most importantly, I learned a valuable lesson about grades and risk taking. I was graded on effort and what I had learned (the process) and not the end product although it turned out fine.

The favorite project I assigned as a Tech Ed teacher was to have multiple classes over multiple semesters recreate Miss Frizzle's Magic School Bus. With a small grant we built a 16-foot-long reprogrammable space capsule simulator. Inside we had a flight simulator, sensors to measure bio feedback, cameras mounted to remote controlled cars and more so that we could run missions to space, inside the human body, and more - just like Miss Frizzle. This was in the mid 1990s and we were working with the first generation of Windows computers.

Sylvia Tiala

A multilevel tool box involving metal fabrication and blue print reading. It was a basic toolbox made during metals class using manual brake, shear operations and spot welding along with manual rivets. I still use the tool box today. Arthur Pronschinske



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LIFE AFTER THE CLASSROOM

Life in Retirement

By Dennis Nelson

Greetings to you from the wonderful land of retirement. I was asked to write this article for the Interface about what I am doing in retirement and am happy to share some of my experiences with you. I was blessed to have served a number of years on the WTEA board and remember fondly the many friends and colleagues who are a part of this great organization.

I will start by sharing a lesson taught to me by a four year old boy about twenty-five years ago. The young man's father and I were both Tech Ed instructors in Wisconsin Rapids and in the summer we would occasionally take our children to a local ice cream shop. On one of those visits my friend said to his son, "What do you think Adam?" The young man stood up proudly with a big grin, holding his ice cream cone and said, "I'm a lucky boy, I'm a Lucky, Lucky Boy." The young man had been taught to have an attitude of gratitude. Three years ago on a motorcycle ride to Nova Scotia that memory came back to me, and I have reminded myself every day since. I'm a Lucky, Lucky Boy, all be it I'm sixty-five years old.

I am very fortunate that thirty-six years ago I married the right lady who understands how much I enjoy riding my motorcycle. I had one thing on my bucket list for retirement and that was a trip around the United States on my bike and in the first year I checked that off my list. I spent two months and fourteen thousand miles exploring the lower forty-eight states. Each year since, I have taken a one to two month trip on my bike in the fall. I have put one hundred and seven thousand miles on the bike in retirement. I travel alone and camp most of the time. I enjoy finding campsites (not campgrounds) along oceans, rivers or remote wooded areas and sometimes a nice picnic table at a park or wayside.

This past summer I was able to take a two month, fifteen thousand six hundred mile trip to Alaska and it was a wonderful ride. I spent over three weeks traveling throughout Alaska. I traveled all the roads my Goldwing would allow me to traverse - it wasn't built for deep mud or bad dirt roads. I did find many sections of road that really challenged both the Goldwing and myself, sometimes making me far more nervous than I usually get on the bike. Even though it rained half the time I road in Alaska, the scenery was so amazing it more than made up for the weather. I found it almost comical how many times I came to the end of a road, ending at the ocean or a mountain. The best sign I saw was the one at the end of the Spit in Homer - the sign read "Land Ends."



Denali National Park was very special in so many ways; wildlife, scenery and people. I was able to see moose, caribou, buffalo, lynx, grizzly and wolf. I took a twelve hour, ninety two and a half mile bus ride into the park - that's as far as vehicles are allowed into the huge park. I spent most of the day in awe of my surroundings.

As amazing as the trip was, the highlight was the people I met. In Denali I camped next to a couple from Spain. They were in their late twenties, had quit their jobs, sold their home and headed off on a motorcycle journey. They traveled through Argentina, South America, then shipped their bike to Miami and drove to Alaska. They had been on the road for eight months and weren't planning to end the trip any time soon. I met another couple from Kodiak Island while traveling on Kenai Peninsula and they said I should make sure to go to the island. They said the ferry landing is in a small village and if I forgot their names or address, I should just tell someone I was looking for the couple that ride a bike with a sidecar and anyone could direct me to their home. Then they told me they wouldn't be home so they gave me directions to find their spare house key and told me to make myself at home. People are truly amazing!

When I'm not on the motorcycle I still sub for the Tech Ed department at LHS which keeps me in touch with students and a great group of guys. I had four of the current teachers as students; they were good students and have become great teachers. The young man I mentioned earlier in this article filled my position when I retired and I have the great opportunity to sub for him on occasion. Isn't life grand?

Did I mention that I'm fortunate to have married the right lady? I'm a lucky boy, I'm a Lucky, Lucky Boy!

Looking forward to seeing you at the Annual Spring Conference.

Your WRS Retirement Benefit: When It's Time To Retire

By Doug MacKenzie, Retired Tech Ed Teacher

Note: The author is not an authority nor does he represent the ETF. This information is based upon his understanding from his own experiences and research.

When you have made the decision to retire, you need to notify the Department of Employee Trust Funds (ETF) six months in advance of your retirement date. The ETF needs three months notice - they request six but not more than twelve months.

Once you've let them know of your date of retirement, they will gather some information on your account and send you a packet containing several items. Within that packet there is a document you need to read, answer a few questions, sign your name, and then return that document to the ETF. Failure to return this document results in the agency disregarding your retirement date.

Your Base

The first bit of important information on the above mentioned document is a number that the ETF calls your base monthly benefit. This is the amount you are entitled to receive on a monthly basis for the rest of your life. Once established, the base remains the same but there can be additional money added to the base each year reflecting interest earned and therefore the balance of your account. This yearly increase appears in your May payment and is based upon activity in your account during the previous calendar year. You will receive a notification in April indicating the change in your monthly benefit.

If all of the money in your account is in the Core Fund, you are guaranteed that no matter what happens to the economy and/or the ETF accounts, your monthly benefit will never drop below the established base. They refer to this as the "Floor." Your monthly benefit could rise or fall from the previous year, but it will never go lower than the "Floor."

However, if some of your money is in the Variable Fund, there is no "Floor" for that part of your base. The part of your base that is in the Core Fund has a "Floor" but the part that is in the Variable Fund does not. Therefore, in times of recession, the part of your base that is in the Variable could drop below the base level. For this reason, many people move their Variable Fund money into the Core Fund before retiring.

Options

The next important bit of information on this retirement document is a section on options. Keep in mind that any options you choose will have a cost and will lower your base. However, there are some options you may want to consider.

Before you retire, your account provides a death benefit. Once you start receiving your monthly retirement benefit, there no longer is an automatic death benefit. Among the list of options are a few different plans for providing for a surviving spouse or dependent child. You may want to chose one of these options.

Another popular option is the advanced payment option. This option is only offered to people retiring before age 62. With this plan the ETF will give you a monthly amount considerably higher than your base up until age 62. Then at 62 the monthly benefit drops to a number considerably lower than the base - the difference between the high and low is your estimated Social Security benefit. This assumes you will be starting to draw Social Security at age 62.

As an example, let's say John Doe and Jane Doe are both retiring at age 57. They each are eligible to receive a monthly benefit from the WRS of \$2300. At age 62 they each could begin drawing \$1300 as a Social Security benefit. John decides to not take the advanced payment option. He receives \$2300 per month and then at age 62 he also receives \$1300 from Social Security giving him a total retirement income of \$3600 at age 62. Jane decides to take the advanced payment option. She receives \$3200 per month from her WRS account up until age 62. At that point her WRS benefit drops to \$1900 because with her \$1300 from Social Security she's still getting \$3200. You'll see that at age 62 John is getting \$400 a month more than Jane - there is a cost to taking this plan. But Jane has had 5 years of receiving an extra \$900 a month which is a total of \$54,000 that John has not received. At the rate of \$400 a month, John will be well into his eighties before he makes up the difference.

Whether or not to take this option is a decision only you can make. If you plan on holding off on drawing Social Security beyond age 62, you certainly would not choose the advanced payment option.

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