Volume 62 • No. 2 • Winter 2022-2023 Journal of the WTEA



SPECIAL FEATURES:

- NWTC: Careers in Building Controls
- •UWSP: Forest Industry Career Pathway
- Ariens Co Museum: STEM Tours

Other Highlights: • Spring Conference News

WTEA Leadership Changes

Purpose • Pathways • Professionalism





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DIRECTOR AT-LARGE **Position Vacant**



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Education Association www.wtea-wis.org



PRESIDENT'S MESSAGE

NEW Manufacturing Alliance: WTEA Receives Community Partnership Award

By Doug Dimmer, WTEA President

"If you have any infor-

mation regarding similar

develop a collective for

everyone to be aware of

these great practices."

Happy holidays all! Hope everyone's year is moving right along and you are accomplishing your education goals and practices. In October, I, along with other WTEA Board members, had the privilege to attend the NEW Man-

ufacturing Alliance's 11th annual Excellence in Manufacturing/K-12 Partnerships Awards Gala held at the Resch Expo Center in Green Bay.

and received the award for their Community Partnership Program. This was a great honor and was the first time our organization has received such an acknowledgment.

If you are unaware of this group, they are businesses in the Fox Valley region that promote and aid schools and students through grants, scholarships, equipment, supplies and curriculum ideas. They support all areas of STEM

education and believe in

the value and culture of

teaching students sound

manufacturing skills to create the future of their workforce. The proceeds

from the Gala's sponsorships go directly to

the NEW Manufacturing Alliance's Scholarship Fund, Inc. In total, the Alliance has given over \$400,000 in college scholarships. They have great re-

sources on their organization's website for anyone to use.

Organizations such as this are an inspiration for not only students to improve their skills and knowledge of industry, but to also help schools better themselves by providing real world applications and resources.

Along with the WTEA receiving an award, several

The 54th Annual Spring Conference "Purpose • Pathways Professionalsim" March 8-10, 2023 Make room reservations by Feb. 21 to receive the conference rates! See page 13 to register.

other people and schools from the Fox Valley area received awards of excellence and community partnerships such as Waupaca High School, Manitowoc Lutheran High School, Appleton East- Tesla Charter School, and Fox Valley Tech.

Individual awards went to Jon Larson of Little Chute School District and Jason Johnson of the N.E.W School of Innovaorganizations in your area, tion.

As an organization we were recognized *please email me so we can* This event makes me wonder what the rest of the state area manufacturers are doing to promote educational pathways into manufacturing and industry. I have looked into researching this subject and hopefully

> finding more incentive groups like this around our entire state. Not just individual companies helping out one or two schools, but an entire organization which can promote the value of what we do as educators. If you have any information regarding similar organizations in your area, please email me so we can develop a collective for everyone to be aware of these great practices. Have a great rest of your school year. Cheers!





INTERFACE

WTEA BOARD NEWS & 2023 CALENDARS **2022 Fall Board of Directors Meeting Summary**

By Mac Chopin, WTEA Secretary/Treasurer

Meeting held virtually from Cedarburg HS, October 15, 2022.

- Call to Order Doug Dimmer
- Approval of agenda
- Approval of past meeting minutes
- Board Changes Doug Dimmer
 - D WTC Representative Dr. Roger Stanford
 - □ At-large director resignation Meghan Walters
 - □ At-large director appointed Mason Pautsch
- President's Report Doug Dimmer
 - □ Approved increase for honorariums
 - □ Creation of new Operations Coordinator position
 - □ Looking for president-elect nominees
- Vice President's Report Jesse Domer
 - □ Encourage Hi-Tech Weekends
 - □ WTEA Shared Drive for board documents
- **Program Coordinator Report** Steve Johnston
- Exhibit Coordinator Report Tom Barnhart
- SAP & Awards Coordinator Report Matt Schultz
- **Executive Director's Report** Joe Ciontea \Box Need to select 2024 conference theme
- Foundation Report Joe Ciontea & Jesse Domer
- Webmaster Report Mike Beranek
- WTC System Report Roger Stanford

- Interface Report Duane Apel
- University Reports
 - UW-Stout Barb Bauer
 - □ UW-Platteville Duane Elfering
- ITEEA Report Mason Pautsch
- District Director Reports
 - District A Emily Fransway
 - District D Jon Larson
 - □ District F Eric Sutkay
 - District G Stephen Hadfield
 - □ At-Large Mason Pautsch
 - □ At-Large Matt Schultz
 - □ At-Large Anna Vitale
- New Business
 - □ Strategic Planning Meeting Joe Ciontea
 - □ Membership Management Software Joe Ciontea
 - □ Lifetime Achievement Award Nomination - Joe Ciontea
 - □ Social Media Presence Mac Chopin
- Future Meeting Dates Joe Ciontea
- Adjournment

For additional information about this meeting contact any member of the Board of Directors. Complete minutes are available from Mac Chopin at chopinm@waterloo.k12.wi.us

◄ 2023 DATES TO REMEMBER ►

| Jan. 20 - Feb. 24 | SkillsUSA Regional Competitions | See Below |
|-------------------|--|--------------------|
| March 8 - 10 | Our 54th Annual WTEA Conference | Wis. Dells, WI |
| March 24 | Articles Due for Interface Journal | to Duane Apel |
| April 12 - 15 | ITEEA Annual Conference | Minneapolis, MN |
| May 15 | WTEA Foundation Scholarship Application Deadline | wteafoundation.org |

| CL 11 120 | 2023 Skillsusa Cale | NDAR | |
|---|--|--|-----------|
| Regional Competitions | Mid-State Tech College: Wisc. Rapids UW-Platteville: Platteville NTC: Wausau GTC (IMET Center): Sturtevant FVTC: Appleton UW-Stout: Menomonie | January 20 January 27 February 3 February 10 February 17 February 23-24 | SkillsUSA |
| Skills | USA Week | February 6-10 | |
| Skills | USA Membership Deadline | March 1 | |
| Chapter Excellence Program Deadline March 6 | | | |
| SkillsUSA State Culinary Competition: WCTC | | | |
| 50th Annual State Leadership & Skills Conference: Madison | | | |
| SkillsUSA Nation | Alliant Energy Center & MATC nal Leadership & Skills Conference: Atlan | April 25-26 ta, Georgia June 19-23 | SkillsUSA |





EXECUTIVE DIRECTOR'S MESSAGE Stay Tuned - New Changes Coming to Our Website

By Joe Ciontea, WTEA Executive Director

I assumed the role of your executive director during the summer of 1996 after serving three years as a regional representative and four years as vice president. In 1996 most non-Apple computers were using MS DOS. They sat on a desk and were not portable. The World Wide Web (Internet) was in its infancy and Netscape was the dominant browser. Most of our records were on paper. Our data was stored on floppy disks, and we used spreadsheet software to manage our membership list. Conference name tags were handwritten when you arrived at the conference.

I have seen many changes in our profession and our association since I first joined the WTEA in 1976 for \$5.00. As part of the planning for our 2021 virtual conference our webmaster, Mike Beranek, and I began working on an online membership management system and website login for resources. We are now finalizing the process of fully integrating membership information into our association website. When completed, you will login to our website with your email and a password, just like the process currently available to you. Once logged in, the member portal will display your membership status, contact information and your membership card. If you renew your membership or register for a WTEA event online (with a credit card) you will see the changes right away in the member portal. Of course, we will still accept school purchase orders and checks through the mail. The biggest change will be the elimination of, or a significant reduction in, the amount of data entry required every time there is a member transaction. Our member portal will include access to curriculum files, digital copies of the *Interface Journal* and other WTEA information and resources. We also will be implementing a job board where members can post Technology and Engineering job openings.

Once the new system is completed and our membership data is imported you will receive some emails about the login process directly from the website. Other additions and changes to our website may also take place as the new system evolves.

I hope to see all of you at the conference in March. If you need assistance with registration forms please send me an email, or call.

EVAUTO REPAIR

Though it will be a while before fully-electric vehicles outnumber gaspowered cars on the road, now is the time for automotive programs to start incorporating hybrid & EV technology and curriculum into their courses.

ELECTRIC & HYBRID: CURRICULUM & TRAINERS

Our EV Auto Repair program covers complete EV systems, electronics, motors & generators, vehicle charging, batteries and charging, and EV charging stations. Choose from a selection of panel trainers or desktop trainers designed specifically around EV and hybrid systems (10 in all) plus a curriculum package with hundreds of hours of learning.



INTERFACE



LEADERSHIP CHANGES IN WTEA Operations Coordinator & Vice President Spots Filled

The WTEA Executive Committee (EC) met prior to the Fall Board of Directors meeting. During that meeting the EC created a new staff position to assist with the daily operation of Association business. A list of responsibilities was created and distributed to all current WTEA Board members. Following our selection process, on November



7th Jesse Domer was appointed to serve as the WTEA Operations Coordinator. After accepting his new position, Jesse resigned as WTEA Vice President to avoid any conflict-of-interest concerns.

Jesse is a past president of the WTEA and has been a member since 1999. He is also very active in both SkillsUSA and ChallengeUSA. Jesse

Jesse Domer - The WTEA's new Operations Coordinator

has been a Tech Ed instructor since 2003 and has been at Watertown High School since 2006.

The EC canvased the current members of the WTEA Board for an individual to fill the vacant VP position. On December 15th, Anna Vitale was appointed by the EC to serve as WTEA VP until the end of the current term (March, 2024).

As part of the interview and selection process, Anna was asked to provide her goal for our association. Here is her response: "Technology education is front and center at this time and it's important that the WTEA has a presence alongside that focus. It's important because we have the ability to reach both industry partners, education and community stakeholders, and even more importantly, students and families. The WTEA can be a strong presence to help our members reinforce the value and importance of a CTE education with students and families, encourage industry partnerships to our schools (and subsequently, the students) and demonstrate to education and community stakeholders the integral necessity of CTE education. I would like to see us expand our ability to be a resource for CTE educators and bring more industry partners to the table. That will build membership when they see what more we can do for them. We will continue to encourage young people to become CTE teachers and provide CTE educators with a 'game-changer' annual conference experience (i.e. members walking away with a tool belt filled with ideas and knowledge). We have our "Focus on the Future" because we know what we do…I'd like to see "WTEA" synonymous with the growth that is happening in the technology and manufacturing industry."

Anna's experience teaching high school and middle

school technology education for the Dodgeland School District, combined with her involvement as a SkillsUSA advisor and as a WTEA Directorat-Large gives her a solid foundation to help guide the future of the WTEA.

Please welcome Jesse and Anna to their new roles in our organization!





Anna Vitale - The WTEA's new Vice President

NEW ©2023 resources that prepare your students for today's workforce





Please contact Kathy Moehle kmoehle@g-w.com 708.821.6545



WTEA BOARD OFFICER

Mike Paquette Steps Up for President-Elect Position

Personal information:

Mike Paquette W5221 Loucks road Peshtigo, WI 54157 Ph: 715-789-2497 paquettem@peshtigo.k12.wi.us

Education:

- B.S. in Technology Education: UW-Stout
- Masters in Educational leadership: Cardinal Stritch
 24 additional masters credits earned not included in my masters.
- NWTC course work;
 - \circ Machine tool 1
 - PLC programming
 - Welding cutting applications
 - SMAW welding 1
 - Mill CNC operation
 - Lathe CNC operation
 - Gcode and CAM operations

Current DPI Certifications

• DPI Teaching cert 220

Professional experience:

- Technology Education Teacher for 20 years
- 10 years at Marinette High School (2002-2012)
- \circ 10 years at Peshtigo Middle/High School (2012- pres.)
 - Current teaching assignments (Grades 7-12)
 - Welding Classes
 - Automotive classes
 - CNC prototyping and design
 - 7th Grade Technology Education
 - 8th Grade Technology Education

Leadership awards and recognition:

• Board member of WTEA (2016-2018)

• NWTC certified instructor, for Machine shop I, Milling operations, Gcode, and SMAW welding (2008- pres.)

- Vice Pres. of WEEVA/ChallengeUSA (2010-2013)
- President of WEEVA/ChallengeUSA (2013-2020)
- FVTC committee chair for Urban Search and Rescue competition, (2019 pres.)
- BSA scouting Wood Badge trained (2017)
 - Den leader (2017-2020)
 - o Cubmaster (2019-2020)
 - \circ National youth leadership training adult leader (2020)

Position statement:

As WTEA president I would like to continue to work to create meaningful and educational opportunities for Technology Education teachers.

Notice





WTEA BOARD OFFICER

Mac Chopin to Continue as Secretary/Treasurer



Personal Information:

Michael "Mac" Chopin 6701 State Road 89 Waterloo, WI 53594 Work Phone: 920-478-3633 Ext 4158 E-Mail: chopinm@waterloo.k12.wi.us

Education & Certification:

UW-Madison B.S. - Communications UW-Stout M.S. - Technology Education NCEER Instructor, NIMS Instructor, MATC Dual Credit Instructor

Professional Experience:

I am currently the Technology Instructor at Waterloo High School. I am a single person department with classes ranging from traditional woods and welding to upper level engineering and manufacturing classes. We also have several different CNC machines and are currently going through a transition to modern manufacturing including NIMS certification. I teach a wide variety of classes including Architectural Design and Engineering Concepts. I also teach classes including video production and photography. I have been the yearbook advisor for 15 years and produce an award-winning yearbook that each year has won awards from Kettle Moraine Press Association.

Waterloo High School, Technology Education – 19 years Johnson Creek High School, Technology Education – 1 year Football Coach – 8 years Yearbook Advisor – 15 years

Leadership, Awards and Recognition:

WTEA Secretary/Treasurer - 2 years Manufacturing Development Committee Technology Team School Safety Committee KEMPA 1st Place Award for Yearbook ALICE Intruder Training Instructor

Position Statement:

I am in a position that I would like to be able to help and also further the reach of the WTEA. I think it is important to advance the level of training of our resources that are available for all Technology Education instructors. I want to start to be able to work with other members of the WTEA to help create a pool of resources. I want to be an active member and work with other Technology Education instructors to better the profession for all.

Notice: The deadline for submitting nominations for WTEA Secretary/Treasurer has closed. According to our bylaws, if candidates run unopposed, a unanimous ballot is cast by the Board and no paper ballots are mailed.



WTEA Spring Conference is March 8-10

Make your Chula Vista room reservations by Feb. 21 in order to receive the conference rates! See page 13 for details.







CONGRATULATIONS!

Wisconsin Technology Education Association

On receiving the

Northeast Wisconsin Manufacturing Alliance

2022 Excellence in Manufacturing / K12 Partnerships

Community Partnership Award



Make it in NorthEast Wisconsin



WTEA President Doug Dimmer (right) and Operations Coordinator Jesse Domer accept the NWMA Community Partnership Award.

The Excellence in Manufacturing/K-12 Partnerships Awards celebrates regional industry and education partnerships. Over the past 11 years, over 475 schools, manufacturers, and community partnerships have been nominated. The Wisconsin Technology Education Association has partnered with the Northeast Wisconsin Manufacturing Alliance for many years in promoting Technology Education and the world of Manufacturing. Congratulations to the WTEA for receiving this award!

WTEA SPRING CONFERENCE & TRADE SHOW Purpose, Pathways, & Professionalism

By Steve Johnston, Program Coordinator

The WTEA invites you to participate at the 54th Annual Spring Conference, March 8-10, 2023, hosted at Chula Vista Resort in Wisconsin Dells. The program is packed with excellent presenters offering a variety of topics to help inspire each of us. We encourage you to bring your school administrator with you. Administrators are free when accompanying a registered TE educator.

We start Wednesday, March 8th, with the annual awards banquet. We will honor our colleagues for their outstanding contributions to TE Education as well as program award winners during the banquet at 7:00 p.m. The banquet is \$32, advanced purchase required. This is a great way to show appreciation and support for your peers.

On Thursday, the conference begins with a welcome to all members by WTEA President, Doug Dimmer.

Our first general session features Mark Glendenning, CEO, Inland Packaging. Inland is one of the largest privately owned label and packaging printers in North America, employing over 400 people. Mark will give background into Inland products, processes, and technologies with an emphasis on automation. He will discuss how we can work together and involve additional partners to build the workforce of the future – from Inland's perspective.

Thursday is 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 school board member looking for input to update a program.

Don't miss the annual President's Reception from 7:00 to 9:30 p.m. in the Lower Atrium level which includes complimentary refreshments, live entertainment, and a silent auction to benefit the WTEA Foundation.

On Friday we will host the Early Riser Breakfast where we will have our General Membership Meeting presided over by President Doug Dimmer. The day will continue with diverse sectionals and vendor sponsored workshops. Friday's schedule also includes a day of hands-on automotive technology sessions.

The popular "Make and Take" sessions are back. On Friday we will have hands-on sessions in CNC LED Signs with a Tormach XS Tech; Make It: A Simple Flashlight;

Continued on next page...

Jon Larson, WTEA Board Member, Receives NEWMA Teaching Award

Jon Larson, WTEA District D Director, recently received the Career Pathmaker Technology Education Teacher of the Year award from the Northeast Wisconsin Manufacturing Alliance. The award was presented to Jon at the Excellence in Manufacturing/K-12 Partnerships Awards Ceremony. The award reflects Jon's commitment to partnering with business and industry to bring relevance to his Technology and Engineering Education coursework. Jon provides great opportunities for his students to learn about different job opportunities and to participate in youth apprenticeships. Congratulations Jon, the WTEA is proud of you!





Jon Larson, WTEA District D Director, receives the Career Pathmaker Technology Education Teacher of the Year Award from the Northeast Wisconsin Manufacturing Alliance at its annual Excellence in Manufacturing/K-12 Partnerships Awards Gala. The October event was held at the Resch Expo Center in Green Bay.



WTEA TRADE SHOW AND "MAKE & TAKE" At This Year's Annual Spring Conference

...Continued from page 10

Graphic Design; Foundry in a Box; and Electric Candle.

Our mid-day luncheon will be followed by a keynote address from Dr. Marissa Jablonski, Executive Director of the Wisconsin Freshwater Collaborative. Research shows that education practices that help recruit and retain currently under-represented people to STEM fields, also benefit the males who make up the majority of the field. Communication and connection are two aspects that Dr. Jablonski uses in engineering education, water distribution, sanitation design and construction, and interdisciplinary stakeholder engagement all over the globe. The results continue to be striking! Come hear Dr. Jablonski share stories and give tried and true tips and tools she uses to help young people engage with STEM and begin to create the future of their dreams by speaking up and working together.

*Note: Dr. Jablonski is replacing Mary Isbister from Gen-Met Corp who was set to be our keynote speaker but had to cancel due to a scheduling conflict.

The conference will feature some of the top TE Educators throughout Wisconsin and the nation sharing their expertise on topics such as: TE Internationally, Bridging TE Education to Youth Apprenticeship, Epoxy Pours, Hands-On Multimedia Design with the Adobe Suite, Welding Symbols, How to Build a Treehouse, HVAC and Solar Career Exploration, How to run a successful CTE program, Shop Safety, Starting a Mini Foundry, Automotive Curriculum Best Practices, SkillsUSA, Middle School Roundtable, New Teacher Boot Camp, the popular WTEA Project Showcase, and much more!

Put March 8-10, 2023, on your calendars, get your re-

Install the Conference App (Yapp) on Your Mobile Device:

- 1. On your smartphone, visit https://my.yapp.us/WTEA2023 or use the QR code below
- 2. Follow instructions: It's a quick two-step process.



Already have Yapp app installed?

- 1. Tap "Download existing app" or green "+" (top right).
- 2. When asked for Yapp ID, enter WTEA2023
- 3. Press the device's "enter" button, or touch "Add" (top right).

*Note: The app goes live in early February. Go to the App URL to access the conference schedule your on your computer.



Yapp

lease days approved and send in your registration form today. The convention fee is \$165 for members and \$195 for non-members. 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, Wisconsin Dells, WI 53965; 833-621-4953 http://www. chulavistaresort.com/ Use use Booking ID WTEA 2023 or Booking ID i67174.

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

WTEA "Make & Take" by Stephen Hadfield, District G Director

The WTEA will once again provide hands-on opportunities at the Spring Conference in the "Make and Take" session. This project-based opportunity will include five area technology education instructors in collaboration with several of the trade show vendors. This year's "Make and Take" will include: Matt Schultz - LED Light Signs project, which incorporates 3D printing, lasers, CNC's, 3D modeling and electronics; Stephen Hadfield - Graphic Design project, which incorporates vinyl cutting, t-shirt making, and sublimation printing; Taylor Last - Foundry in a Box project, which includes learning foundry basics; Steve Meyer - Cardboard Flashlight project, a simple project that one can incorporate into content areas such as CAD/CAM, electronics, automation, graphics arts, and design; Mac Chopin - LED Candle project, which will include electronic basics. If you are looking to actively participate and leave with something to bring back to the classroom, make sure to check out this event Friday morning of the conference.



54th Annual Technology Education Conference & Trade Show

Conference Overview

Wednesday, March 8, 2023

5:30 p.m. – 8:30 p.m. Conference Pre-registration 6:45 p.m. – 9:00 p.m. Awards Banquet

Thursday, March 9, 2023

7:30 a.m. - 3:00 p.m. Conference Registration
7:00 a.m. - 9:00 a.m. Project Showcase setup
8:00 a.m. - 4:00 p.m. Trade Show
9:00 a.m. - 3:30 p.m. 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 Keynote Speaker:

Mark Glendenning CEO Inland

Thursday, March 9, 2023

7:00 p.m. - 9:00 p.m. President's Reception

Friday, March 10, 2023 7:30 a.m. – 11:30 a.m. Conference Registration 6:45 a.m. – 7:45 a.m. WTEA Breakfast 7:45 a.m. – 8:30 a.m. WTEA Membership Meeting 8:45 a.m. – 12:15 p.m. Concurrent Sessions, Demonstrations & Project Showcase 12:30 p.m. – 2:00 p.m. 2nd General Session & Luncheon 2:15 p.m. – 3:30 p.m. WTEA Board Meeting



Friday Keynote Speaker:

Dr. Marissa Jablonski Executive Director Freshwater Collaborative of Wisconsin

Session Topics Include: Project Based Learning, Future of FAB Labs, Multimedia Design, Digital Job Board, Making Traditional bows, Boats, and Boards, Planning/Upgrading Welding Labs, Wood Manufacturing/Drying Lumber, Project Ideas for Your CNC Router, Automotive Info for New Instructors, Opportunities in the Civil Air Patrol, Safety for New Teachers, Build a Hexagon Tree House, Mini Metal Foundry, Engineering 8 Project Ideas, Building High Mileage Vehicles, Project Showcase, SkillsUSA, Middle School Roundtable, New Teacher Boot Camp, and much more!



Chula Vista Resort

4031 River Road, Wisconsin Dells www.chulavistaresort.com Toll Free Dedicated # for reservations 1-833-621-4953 *Ask for WTEA Conference Rate! See page 13 for details.

| WTEA Membership Application & 2023 Conference Registration Form Membership year runs from September 1st through August 31st | | | | | |
|---|----------------|------------------|--------------------|------------------------|--|
| * NOTE : All purchases and payments made with a credit card will be charged a 3% convenience fee. | | | | | |
| Last Name | | First Na | ame | | |
| Home Phone () | Local | Tech College Di | strict | # years teaching | |
| School Dist | School Name | | | | |
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| Check appropriate boxes below & tota | l amount due. | (To pay fees wit | th a credit card g | o to the WTEA website) | |
| Membership Fees: [] 3 year member | ship - \$75.00 | []1 year mei | mbership - \$30.0 | 0 \$ | |
| Spring Conference Registration: | | | | | |
| [] \$165 members | | []\$195 non- | members | \$ | |
| WTEA Awards Banquet - Wed. Mar. 8th (Tickets must be purchased in advance): [] \$32 \$ | | | | | |
| [] Bill my school district - purchase order is attached [] Payment enclosed Total \$ | | | | | |
| Send completed form with payment or school purchase order to: WTEA, P.O. Box 531, Rhinelander, WI 54501 Phone (920) 904-2747 • E-mail: jc.wtea@gmail.com If your school uses ACH payment please contact the WTEA for new bank routing. There is a 3% fee added for credit cards. | | | | | |
| *Room reservations must be made before 2/21/23 in order to get conference rates! Room Rates: Tower Jr. Suite - \$149 • Two-bedroom Condo - \$229 • Three-bedroom Condo - \$399 Toll Free Dedicated # for reservations 1-833-621-4953 • Booking ID# i67174 WTEA 2023 Chula Vista will also honor the state rate for single rooms upon request with appropriate documentation. | | | | | |

WTΞΛ

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WTEA Foundation Scholarship Applications Due May 15

The WTEA Foundation is offering a renewable \$1,000 scholarship for a high school senior or graduate 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 by May 15

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

WTEA Foundation Raffle at the conference to support the

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WTEA Foundation Tickets

\$5 each or 3/\$10

Tickets available from WTEA Board members or at the conference. Tickets will be sold at conference up until the drawing.

The drawing takes place on Friday, March 10, 2023 at the end of the noon general session. Winners need not be present to win.

Prizes Donated by WTEA Business Partners and Sponsors

Watch WTEA website & listserve for details The mission of the WTEA Foundation is to provide scholarships and fund STEM (Science, Technology, Engineering, Math) education opportunities for teachers, individuals interested in

becoming teachers, and students. The WTEA Foundation is a public charity as defined under sec-

tion 501(c)(3) of the Internal Revenue Code.

PROJECT SHOWCASE



IRON DOG DIMMER WANTS YOUR PROJECTS!



Overview

This March 8th, 9th, and 10th is the 54th annual WTEA conference at Chula Vista in the Dells. This will be our 14th annual Project Showcase sponsored by Madison College. For those of you not familiar with Project Showcase, this is an opportunity for you to bring your student or personal made projects to help inspire other teachers. It is one of the simplest ways to add value and contribute to the WTEA conference.

The Process

It would be great if every WTEA member could bring even just one project. Conference Room I will be set up with tables for your project(s). I will have nametags for you so people can

contact you if interested. Tables with electricity are available. Activities that have been big hits in the past include:

• CNC machining items

3D printed parts CAD drawings

• Board games

- Robots
- Graphics samples
- Welding art
- Electronic circuits
- Model homes

MADISON

AREA | TECHNICAL

Proud sponsors of the 2023 Project Showcase

2023

Rally in the Dells!

• LED signs

- Woodworking projectsLaser engraved items
- **Digital Picture Slide Show**

We will again include a digital picture slide show of larger projects and initiatives going on at your school that cannot be transported. Send me your picture(s) of a project with your name and email. I will upload them into a looping slideshow and play them on a large flat screen TV located in room I during Project Showcase. This will provide a very easy way for you to share, such as:

- Pictures of construction projects, tiny homes, etc.
- Larger woodworking projects.
- Technical competitions at your school.
- Unique tools/clamps/fixtures & storage ideas from your lab.
- Energy efficient vehicles, project grills, large robots.
- Mechanical and architectural 3D model renderings and files.

Something **NEW!**

For the first time ever we will have awards for the projects on display. Awards will be voted on by WTEA members and Madison College representatives. Awards may consist of People's Choice Project, Most Economical Project, Best "Monday Morning" Project, etc. Project Showcase

Coming Soon

Watch for more information on the web and DPI listserv as time gets closer. Please email Steve Meyer at meyerst@fvtc.edu if you have any questions.

[1]





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NWTC CONNECTS WITH HIGH SCHOOLS

Expanding A Circle of Influence in Building Energy & Comfort Controls

By Jenny Brinker - CEM, Energy Management Instructor - Northeast Wisconsin Technical College

NWTC's Trades and Engineering Technologies is partnered with the National Science Foundation, under the guidance of PI Instructor Jenny Brinker, to explore, test, and build a platform that connects the College with engaged industry and high school teachers and students. At the core of this initiative is the goal of introducing more

high school students to a career in building controls through entry-level academic credentials.

The Smart Start to Energy Management project took under consideration key drivers in the industry that helped to illustrate the need for this project:

> "In Northeast Wisconsin, the concentration of occupations across the Climate Control Technologies sector is greater than the national average (EMSI Occupation Overview in Seven Wisconsin Counties: Brown, Door, Florence, Kewaunee, Marinette, Oconto, and Shawano, 2018). Climate Control occupations are projected to have significant job growth in Northeast Wisconsin. Furthermore, impending retirements are of additional concern. Four of five Climate Control occupations have near or greater than one-third of the current workforce approaching retirement age. Compensation is excellent for individuals who have training in the building automation field entering the

The Smart Start to Energy Management project opens the door for participating high school students to get a jumpstart on their career in Building Controls.

afforded high school tech teachers, in the greater Northeast Wisconsin area, the opportunity for their students to earn college credits while exploring a Building Controls pathway. Industry representatives took part in helping to develop a program that would provide a more knowledgeable and experienced group of high school graduates to fill their

ongoing demand for entry level building controls technicians. The Smart Start to Energy Management project opens the door for participating high school students to get a jump-start on their career in Building Controls.

A "Classroom in a Box" and lessons were developed through collaboration with Scott Liddicoat, whose

work in K-12 energy education earned him the 2013 Wisconsin Energy Educator of the Year award. Mr. Liddicoat also currently serves as an Energy Education Subject Matter Expert with CREATE Center for Renewable Energy. This collaborative work, with Scott, resulted in a hands-on trainer and lessons that provide experience and develop skills and understanding of controllers and output as it relates to building climate control systems.

NWTC, through the guidance and support of PI Jenny Brinker and instructional developer Scott Liddicoat, hosted a training seminar for the participating high school teachers where they had the opportunity to use the "Classroom in a Box" while going through select lessons. This

job market. Entry-level Building Maintenance - Automation Technician completers can earn between \$17-\$30/ hour."

The project kicked off with a focus group of industry representatives and educators who took the time to explore options, approaches, and required support and engagement. The grant



opportunity to train and test the equipment and material allowed for improvement of processes and applications while familiarizing the participants with how it all worked.

The Smart Start to Energy Management project went from an idea and outline, in early 2021, to an ongoing, expanding and strengthening *Continued on next page...*

NWTC students helping with the assembly of the "Classroom in a Box."

...Continued from page 16

partnership of participants. The project provides an opportunity for participating high school students to earn college credits while still in high school. There are potential employers who have a stake in the project and are looking forward to being a part of the career path of these students coming out of the program.

This NSF grant-funded work has even more to come. AR/VR virtual tours of building systems are under development and the project continues to build strong partnerships with companies and industries in the area, willing to have students come into their facilities and tour their climate controls works.

Here is an outline of the offering: (The first four courses could be taught at the high school, in any order.)

The first four courses are:

- Automation 1*
- Automation 2*
- DC1*
- Smart Start to BAS*

*These courses are offered to high schools as transcripted, college credit.



The remaining two courses would be taken last:

- Building Automation Systems Networking 1
- Energy Control Strategies

These last two courses are taught in a blended live/virtual format by an NWTC faculty member through the Start College Now and Youth Apprenticeship programs.

Partial support for this work was provided by the National Science Foundation's Advanced Technological Education (ATE) program under Award No. 2055555. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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INTERFACE

WISCONSIN FORESTRY CENTER Career Pathway for the Forest Industry Underway

By Jared Schroeder, High School Curriculum Program Manager - Wisconsin Forestry Center, UWSP

In the summer of 2022, the Wisconsin Forestry Center (WFC) received an \$8 million Workforce Innovation grant from the Wisconsin Economic Development Corp.

to develop a career pathway program for the forest industry. The WFC is creating a pathway that involves the formation of high school curriculum, public outreach about the forest industry, immersion training programs, and partnerships with Northcentral Technical College, Nicolet College, and UW-Stevens Point. The WFC recognized the aging workforce in forestry and the outdated image of forestry that many people have. This was the impetus to create a program that could

breathe new life into an industry that forms the backbone of Wisconsin.

So, what does this high school curriculum look like and what will it offer to schools once it is developed? This skills-based curriculum is broken into four modules that teachers can work into their existing curriculum. As a teacher you could stop there, but the intent of the curriculum is to culminate in a one-week skills camp that will provide successful students with professionally recognized certifications, giving them increased opportunities



The LumberKing portable sawmill.

to be hired in the forestry industry. This curriculum development is currently underway and should be available to teachers for the 2025-'26 school year. Now is the time to share your ideas or your visions for this curriculum. Feel free to contact Jared Schroeder with any input or questions you might have at jschroeder@uwsp.edu.

Understanding that school budgets can be limited, this curriculum will allow schools to request one of two

The unique opportunity to show your students the entire process, from forest to board, can build lasting memories for your students and give them relevant skills for forest industry careers.

portable sawmills, portable wood-drying kilns, and timber harvesting simulators to be delivered and used with your class. Imagine being able to cut, mill, dry and then use

the lumber from a local source! The unique opportunity to show your students the entire process, from forest to board, can build lasting memories for your students and give them relevant skills for forest industry careers. The simulators will allow for training students on heavy equipment without the risk of injury or damaging expensive machines or buildings. The Ponsse simulator gives students the feel of sitting in and operating a real harvester or forwarder, and it comes with a built-in

assessment of how well the student-operator did in terms of production efficiency.

Both the portable sawmill and logging simulator

be will at the WTEA conference on March 9, 2023, so swing by the WFC booth and sign up for a time to learn about the portable sawmill and Ponsse simulator. Or just swing by to see what the



The Ponsse Forwarder Simulator.

WFC high school curriculum can do for your students.

Check Your Interface Expiration Date!

Check first line of your address on back cover of this magazine to see when your membership expires. You may not receive the next important issue of the *Interface* unless your dues are paid beyond 2022.

THE ARIENS CO MUSEUM Exciting STEM Tour Opportunity

By Keith Polkinghorne, Museum Curriculum Director, Ariens Company Museum

The Ariens Co Museum, located in downtown Brillion, Wisconsin, has become a destination for lovers of history, engineering & design, and STEM education. STEM has been the core of Ariens Company since 1933. We design, apply, test and re-test; sometimes we succeed and sometimes we fail, but we always learn. Now we've taken those principles and packaged them into offsite learning activities for students. Our museum program combines exhibit exploration of seven interactive stops exploring mechanical and physical concepts of machine design along with a STEM-based workshop in our classroom. Your students will journey through 130 years of innovations in addition to coding and designing their own Ariens Co products for the future.



School Tours Include 7 Interactive STEM Stops:

- 10-ft Gear Wall: Get an introduction to spur gears, compound gears, how gear teeth mesh and how to determine the direction gears will turn.
- Animal-Powered Treadwheel: Learn how the history of machines has been about making hard work easier...even if it meant using an animal engine!
- Tiller Cut-A-Way: See how power from an engine is transferred through a machine through a series of different gear types.



- Sno-Thro Education Station: Get a close-up view of how worm drives, planetary gears and friction discs work together to power an Ariens Sno-Thro.
- Mechanical Advantage Display: Learn the difference between gearing up and gearing down...and use the display to calculate gear ratios two different ways.
- Your Turn Gear Train: Challenge your team to create one long gear train that turns in unison.
- Your Turn Belts & Pulleys: Notice the similarities and differences as to how these drives work when compared to gears.

The Ariens Co Museum celebrates the mechanical and physical concepts behind machine design. We take a closer look at how engineers use various combinations of gears to transfer power within equipment as they design machines to perform different tasks. The 14,000 sq. ft. museum *Continued on page 21...*



SEAPERCH ROV

Underwater Vehicle Competition Teaches Hands-on Marine Engineering

By Erik Wolbach, SeaPerch Underwater Robotics Coach, Union Grove High School

The SeaPerch underwater remotely operated vehicle (ROV) competition is a great engineering project for students in grades 5-12. The project is easily accessible and cost effective with a new team able to compete for around \$250. Students build the ROV from a kit of low-cost parts, following a curriculum using the supporting resources (www.seaperch.org) that teach basic engineering and sci-



Underwater photo courtesy of Ken Welch.

ence concepts with a marine engineering theme. Students will learn how to apply the engineering design process to build a vehicle capable of engaging in underwater tasks. Along the way, students will learn how to solder circuit boards for controllers, waterproof thruster motors, 3D print parts, apply buoyancy concepts, and work as a team to solve a multifaceted engineering problem.

The competition is divided into three events.

- Engineering Presentation
- Obstacle Course
- Mission Course



Obstacle course with rings in different directions.

The Southeast Wisconsin regional tournament requires a tri-fold board and a five-minute presentation demonstrating their application of the engineering design process to STEM judges. The two pool events consist of an obstacle course and a mission course which change each year. The obstacle course requires teams to navigate through five 18" rings and return to the pool deck with the fastest time.

The mission course this season is modeled after the theme of underwater exploration. There are three main tasks. The first task is to navigate the underwater mapping obstacle by moving five floating objects back and forth to the proper position. The second task is to clean the lab station of marine life (made from PVC pipe). The "creatures" must be carried and then deposited on to the other



2023 mission task course.

platform. The final task is to activate the target with a red/ blue color that indicates which water sample you need to move to the other platform from a floating holder.

The ROV can be built from a purchased kit of parts from Robonation (\$179). Robonation also provides a bill of materials with vendors in order to purchase the parts directly. The tournament allows teams to use up to \$25 of additional materials such as other PVC connectors, bottles, and attachments. 3D printed parts are billed at \$0.05 per gram and allow students to customize their designs.

The Great Lakes Navy Talent Acquisition Group (Navy Recruiting Command) has donated free kits to new

Continued on next page...

SeaPerch.....continued from page 20



Example of completed ROV.

teams who commit to compete in the Southeast Wisconsin regional tournament. Free kits for new teams are still available.

The tournament will be held on March 19, 2023, in St. Francis, at Deer Creek Intermediate School. The top



Materials in kit purchased from Robonation

two teams will earn a place to compete at the International Tournament in May at the University of Maryland. They will compete with teams from all around the world such as Qatar, the Cayman Islands, and New Zealand. The sponsors and organizers for the Southeast Wisconsin tournament are the Milwaukee Council of the US Navy League, Navy Recruiting, Leonardo DRS, SFRobotics Club, Union Grove Robotics Club, and the Society of Women Engineers. Students have used this project experience in submitting scholarship applications. Last year, one student earned a \$5000 scholarship from the Society of Women Engineers.

If you are interested in competing, a free kit, or have more questions, please contact Erik Wolbach at wolberi@ug.k12.wi.us



Championship team presenting their engineering design process.

THE ARIENS CO MUSEUM

...Continued from page 19

includes ten galleries that explore the 130-year history Ariens Company, and its role in shaping the American landscape.

TOUR DETAILS:

All school groups are asked to fill out a tour request form and submit it at least three weeks prior to your preferred tour date. Once your tour is confirmed, our staff will contact you by phone or email to discuss your museum visit and what to expect during your tour.

Tour Length: 2 hours (one-hour guided tour, one-hour STEM workshop)

Cost: \$3/student, free for teachers and chaperones.

Contact our team at 920.756.5125 (www.AriensCoMuseum.com)

ARIENS CO

THE PACK CHALLENGE Waterford High School Students Win Several Awards With Their Innovative Packaging Machine Design

By Jack Sadler (11th Grade Student) and Kyle Rader (Engineering Teacher), Waterford Union High School

The packaging industry is one of the best examples of a truly hidden industry; one that everyone has firsthand experience with, but nobody gives a second thought to. Simply put, packaging is at the heart of our consumer society. Nearly everything we buy needs a package to hold it: from cardboard boxes for an Amazon shipment, to pouches that contain cake mix, or bottles that hold multivitamins. Packaging is everywhere around us, as are companies that

specialize in machinery to automate the filling and shaping of these packages. PMMI, the Association for Packaging and Processing, is the trade association for such companies and organizes the PACK Expo. PACK Expo is an international exposition and trade show with nearly 40,000 attendees for companies in the industry to showcase their machines and network with potential customers. Despite being an industry that is often overlooked, the packaging industry has machinery containing some of the most cutting-edge engineering, due to the automated nature of packaging goods.

For the first time this year, PMMI decided to create an initiative that would introduce this industry to high school students interested in engineertially in hopes that they will then con-

sider a career in packaging. Called the PACK Challenge, this competition would have six high school teams competing against each other to design an automated machine that can fill two different sized bottles with a predetermined number of marbles. Integrating industry-grade equipment, teams were given a conveyor belt, a PLC-based electrical system, two motors, a variety of pneumatic cylinders and sensors, and protective shielding. Beyond this, teams had an \$800 budget to design, purchase, manufacture, and build all components necessary to automate the filling of the marble containers, including a requirement to have a changeover process to switch from one container to another.

Teams attended two kickoff meetings, one at Spee-Dee Packaging Machinery in Sturtevant, Wisconsin, and the other at Morrison Container Handling Solutions in



Kyle Rader - advisor, and Waterford Union HS students, Jack Sadler, Zach Mettille & Michael Struck proudly display their check for winning several packaging awards at ing and other related STEM fields, par- the PACK Expo held in Chicago, in October. using SolidWorks. The final design

Glenwood, Illinois, where they toured the host companies, learned about competition specific rules, received basic training in PLC programming, and began assembly of their protective shielding enclosure. After these meetings, the machines were shipped to the individual schools to begin the engineering design process.

The team from Waterford Union High School (WUHS) consisted of Jack Sadler, Michael Struck, and

> Zach Mettille, who all are currently in 11th grade. Each of the members has been very involved in the engineering classes and programs provided by the school during their high school careers. Kyle Rader, the engineering teacher from WUHS, was the faculty advisor for this project. Finally, Waterford was partnered with Chris Kosmicki, a mentor from KHS USA in Waukesha, WI. He met with the team to review their plans and progress, and also hosted the team for a visit to learn firsthand about the bottle filling machines that KHS specializes in.

> When the team entered into the design stage of the project, they wanted to focus on a more mechanical solution rather than electrical, due to their educational experiences in 3D design that the group formulated was an inter-

changeable system with three filling paths that operate in parallel, with many components being 3D printed.

The process of getting marbles to the bottle begins with the large capacity marble funnel dispensing marbles equally through three chutes, with an attached vibrational motor that agitates the marbles to prevent jamming. The marbles then fall down the three chutes into an interchangeable magazine which can be closed off at the top and bottom by pneumatic doors. When there are enough marbles in the magazine, sensors detect if all three chutes are filled before releasing them. Once released, the marbles are directed through a nozzle into the bottles. To position the bottles in the correct location for filling, the team implemented a bottle stopper system, which consists of two sets of pneumatic-actuated prongs. Once three bottles are

Continued on next page...

...Continued from page 22

stationed under the nozzles, a sensor indicates that the bottles are ready to be filled.

As a design requirement, each team's machine had to fill two different sized containers. Waterford's machine utilized both interchangeable magazines and nozzles that could be quickly switched out depending on the type of container and the quantity that the bottles were to be filled at. One of the design aspects that the team was most proud of was the color-coded interchangeable magazine system, which consisted of a variety of handle-mounted, magnetically secured sections, each with a different tube length. This allowed the machine to be configured for a desired



fill quantity simply based on the length of the tubes, e.g., tubes for 16 marbles, 22 marbles, etc. All machine operations configured were through a student designed, custom-programmed touchscreen display that guided the operator through the machine's control.

When the team completed the design and construc-

tion of the machine,

The completed packaging machine.

it was shipped to Chicago in preparation for exhibition and judging at the PACK Expo. Throughout the team's stay, they had the opportunity to show off their machine to all of the show's attendees. The team also had the chance to see a variety of real-world solutions and compare their machine to industrial ones.

Following the end of a successful set of judging presentations and demonstrations, the awards ceremony was held and announced Waterford as an awardee in every category: first place for Filler Performance Gold Cup, first place in Engineering Method/Most Innovative Filler Design, second place in Marketing/Sales, and first place for Overall Best in Show. These awards brought in over \$10,000 in total prize money for the school's engineering department. The students were proud to then be invited to show off and present their winning machine at a school board meeting. Each member of the team put in over 200 hours apiece, but they all agreed that despite being a much smaller team than the other schools, the hard work paid off as they were able to engineer and construct an industry grade machine that performed great.

Looking back on the entire competition, the PACK Challenge was a one-of-a-kind opportunity for the students involved. Not only were they able to experience success in their design goals and competition events, but they learned a huge amount of real-world engineering skills. The students gained incredible teamwork skills, experienced the full design process, learned how to work with a hard deadline, and constructed a quality machine that would both impress engineers and be easy to use for operators. In addition to providing the students with some prime resume-building material, it fostered an interest in the packaging industry for all three students. The PACK Challenge opened their eyes to the possibilities that the packaging industry can offer as a potential career path, providing challenging, yet rewarding professional opportunities. Lastly, and perhaps most importantly, it provided the students an opportunity to have a ton of fun, creating memories they are sure to never forget!





KEEP: K-12 ENERGY EDUCATION PROGRAM Marathon HS Student Builds A Solar Tilt Kit

By Jacob Tepsa, UW-Stevens Point, College of Natural Resources - Wildlife Ecology and Management Student

Technology Education programs are where many students find their passions whether they want to work in the trades, become an engineer, or just learn important life skills. One of those students is Jacob Smith, a junior at Marathon High School in Wisconsin. Smith found his engineering calling after spending time working on 3D design in middle school and continuing with it throughout

high school in an Introduction to Engineering course.

This past year, Smith has had the opportunity to work on a variety of projects, including building a Solar Tilt Kit for Wisconsin's K-12 Energy Education Program (KEEP). Teachers attending KEEP professional development and training had wondered if there were kits available that they could borrow or purchase to have students



Jacob Smith showcasing the 3D printer used in his high school Tech Ed classes.

explore solar electricity generation in a classroom setting. Recognizing the need in the education community, KEEP set out to create this resource.

The Solar Tilt Kit contains a classroom set of solar photovoltaic panels, each in its own case and mounted



Meters and tools used for the Solar Tilt Kit.

cases for the panels and a stand for the case so it could be tilted 360 on a horizontal axis. His design process began with creating a 2D plane, extruding it upwards and downwards in a set order to create a 3D object using Autodesk Fusion 360. He then took the completed files and exported them to a 3D slicer which cuts the piece into different planes and stacks it to make toolpaths out of those layers. After it was sent through the 3D printer, the parts were assembled with screws and bolts. Now the Solar Tilt Kit, which has 12 solar tilt units and multiple energy measuring devices, is being used in Wisconsin classrooms where students are exploring how solar panels generate electricity and how

multiple variables impact the amount of generated electricity. The Solar Tilt Kit can be reserved and checked out at

no cost from KEEP at: https:// bit.ly/solartiltkit

John Vanderwyst and Justin Paetzel, Tech Ed teachers at Marathon High School, both strive to offer similar experiences within the program. They want to get students in a position to engineer solutions to real-world problems with community involvement. "I am proud of my students that continue on the journey of self-improvement" says Van-



Tech Ed instructors John Vanderwyst and Justin Paetzel in the Tech Ed shop.

derwyst. With community support and projects like the Solar Tilt Kit, students can work on their soft skills and further work on technical skills. Paetzel's advice for other



Computer lab where students design products for their 3D printers.



teachers is, "Always be open to new ideas and just run with the excitement." Next year, the teachers hope to offer more varietv in their coursincluding a es. new computer-aidmanufactured ing course. These courses are an excellent way to test problem-solving and critical-thinking skills that are integral to engineering.

Shop machines used by students to design and construct materials.

classmates Brandon Gitzlaff and Noah Fritz won a regional SkillsUSA Team Engineering Competition in March 2022. Their challenge was to build a hydraulic claw machine. With any project, Smith describes that "the process probably won't go smoothly every time... but if it worked all the time, you aren't going to learn anything new." Each Continued on next page...

for

Smith, he

As

Jacob

and

SKILLSUSA MID-AMERICA CONFERENCE

Watertown's SkillsUSA State Officers Share Their Experience

By Naomi Domer, Wisconsin SkillsUSA State President

SkillsUSA's Mid-America Leadership Conference is a great opportunity for your students. During the three days of training in October, students are split into color chapters that recreate what a chapter will do in a year. This ranges from paying membership dues, electing officers, running committees, attending meetings, going on a business and industry tour,



Dodgeland & Watertown students travel to Nebraska for the SkillsUSA Mid-America Leadership Conference in October.

Naomi Domer, this year's SkillsUSA State President, who was attending for her third year: "This conference is amazing. I have learned so much. One of my favorite things about the conference is when the color chapters prepare for their fundraiser. This is held in the main hall of the conference center and each color chapter creates an activity that they run during the dance held on Friday

a community service project, and planning a fundraiser, to socializing, competing and much more. Students are mixed in their color chapters with schools from multiple states. This conference not only prepares your students for a SkillsUSA year but also allows them to learn ways of advocating SkillsUSA to people that are hearing it for the first time.

Dani Casperson, this year's Wisconsin SkillsUSA State reporter, attended for the first time. "My experience at Mid -America was incredible. I learned so much about SkillsUSA at the professional level that when I returned to Wisconsin I felt so ready and prepared to lead, not only my local chapter, but also to help lead the state over this 2022-'23 school year. Mid-America helped establish so many pivotal skills for running any form of operation, they managed to train almost 200 teenagers on how to run a SkillsUSA chapter over the course of only three days and I am so glad Dodgeland High School advocated for our officers to attend along with the Watertown chapter."



SkillsUSA members listen to a National officer speak in the conference center at the Mid-America Leadership Conference.

night. This fundraiser allows the chapter to collect money from the attendees and allow them to later spend it on a social or donate it to a charity of their choice. I enjoy walking around and seeing what each color chapter has come up with and then hearing about their socials. This event has also shown me how to lead a group and be an ambassador of SkillsUSA to people who have not heard about it."

You should consider this event for your students as it is giving them a hands-on experience with SkillsUSA and their future.

KEEP Solar Project ... Continued from page 24

project he works on helps build his engineering skills as he discovers components that will be easier to make first and which to make later to make for a more accurate and efficient process. Smith feels rewarded just seeing his ideas get out into the world to make it a better place.

If you are interested in learning more about the Solar Tilt Kit contact KEEP@uwsp.edu. The Solar Tilt Kit will also be featured in the WTEA Conference Project Showcase.

> Scan code for more info & for a request form for the Solar Tilt Kit



Bryan Albrecht Receives Prestigious Honor from UW-Stout



sented with the UW-Stout Distinguished Alumni Award on October 7th. Bryan retired in 2022 after 16 years as president of Gateway Technical College. He received UW-Stout's highest honor given to a former graduate. Bryan graduated

from UW-Stout with a bachelor's in 1984, master's in 1988 and Education Specialist in 2008. He later earned his doctorate from the University of Minnesota. Bryan started his career teaching career and technical education in the Cornell and Kewaunee districts and later worked at the Department of Public Instruction for several years. Congratulations Bryan!



Albrecht receiving his award at UW-Stout in October.



Albrecht

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WTEA DIRECTORS' REPORTS & EVENTS

Teachers Attend ACTE Vision Conference

By Steven Hadfield, District G Director

The Association for Career & Technical Education (ACTE) Vision Conference is a national CTE conference held every year. ACTE provides educational leadership in developing a competitive workforce. The association strives to empower educators to deliver high quality CTE programs that ensure all students are positioned for career success. Several Wisconsin technology education instructors attended this year's conference in Las Vegas. Thank you, Larry Granec and H2i Group, for helping promote this event.



From left: Larry Granec - H2i Group; Stephen Hadfield - TE teacher, Pittsville School District & WTEA District G Director; Chris Neff - Title 3 Manager, Gateway Technical College; Ryan Ubersox - Program Director/ Instructor of Mechanical Design, Madison College; Tom Barnhart - TE teacher, Ashwaubenon High School & WTEA Exhibit Coordinator.



Robotic arm (left); Showroom floor (above).

Solar Careers at Spring Conference

By Eric Sutkay, Director F Director

If you are interested in learning about installation, training and careers in solar power the presentation from Arch Solar at this year's WTEA Spring Conference will be one you don't want to miss! Arch Solar will go over the basics of securing a solar panel to a shingled roof. You will see the methodology of securing a solar panel to the roof, starting with the footings and railing which anchor the panel to the roof trusses. You will then see a microinverter and solar panel mounted to the rail, as well as two different methods of running electrical conduit from the solar system to the home's electric system. The presenters from Arch Solar have diverse backgrounds with experience in installation, engineering, sales, and manage-



ment. This will be a great opportunity to ask them lots of questions! Arch Solar will also provide information for educators to take back to their students regarding careers in Solar.

SOLAR

Attend the ITEAA Conference in April

By Mason Pautsch, Director at-Large

The International Technology and Engineering Educators Association (ITEEA) will be hosting their 85th annual conference in Minneapolis, April 12-15, 2023.



The theme of the conference is "Learn it, Try it, Teach it!: STEL Experiences to Advance our Profession." This conference is a great opportunity to make connections with other instructors from other states and countries, learn about new projects and curriculum and most importantly, have fun! Several members of the WTEA board will be attending the ITEEA conference. We encourage all WTEA members to consider also attending the ITEEA conference in Minneapolis with us! The ITEEA conference offers various breakout sessions, trade shows and other programing similar to our annual WTEA conference. ITEEA is also offering excursions to Stratasys, Ltd., an additive manufacturing company that has been manufacturing 3D printing related machinery since 1989, as well as Target Field, home to the Minnesota Twins. We encourage all potential attendees to take advantage of the discounted pre-registration rates. The pre-registration and hotel deadline to register for the conference is March 15, 2023. To learn more about the ITEEA conference and the benefits of ITEEA membership go to iteea.org for more information.

Madison College to Host Tech Ed Teacher Event February 8th

By Ryan Ubersox, Mechanical Design Technology Instructor, Program Director



Madison College (MATC) is hosting a meeting **Wednesday, Feb. 8, 2023 at 5pm.** for all WTEA District G TE teachers. Expect pizza, vendor(s) presentations on new products, lots of "smart talk", and updates from the area and state. The goal is to provide a place where industry, high school & tech college instructors can network on a regular basis - every spring and fall (and perphaps have various schools host networking sessions, high-tech weekends, begborrow-steal sessions, etc). ALL are welcome!

Contact me with any questions or if you'd like to have me visit your school! We want to help you network and find the solutions you need to be successful!

RUbersox@madisoncollege.edu



A VISION, A REFERENDUM AND A BUILDING

The True Story of New Construction and Reconstruction of a TE Wing

By Anna Vitale, WTEA Vice President (Part one of two)

Uncharted Territory

Many of us have lived through referendums and school construction projects. It's not a new or unique story in many school districts. But, it sure felt like new and uncharted territory going through the experience for the first time. There were times it was bewildering, stressful, confusing, and frustrating, and then there were times it was

exciting and the anticipation made one impatient with eagerness.

The attention toeducation classrooms of Wisconsin (and on the rise. FabLab grants, referendums

"My goal with this article is to hopefully start an open discussion on conward the technology struction, renovations and referendums. To perhaps give teachers a starting nationwide) has been point and share our experiences to help others."

and construction projects of technology education departments have increased. As Tech Ed teachers, our major focus is toward the future (yes, this is an overt Easter egg for our upcoming WTEA theme) and that includes creating spaces and curriculum which will help our students in their futures. So, what does that mean for the new teachers who are just starting to experience construction (with or without a referendum)? They don't know what they don't know and may be a bit unsure of what questions to ask or what to push for. How does one know what equipment would be best? It's a daunting responsibility to be the one to make decisions on \$20,000-\$35,000 machines. Then, with updated equipment comes an updated curriculum.

One would think, "Of course they (administration, architects, builders) are fully cognizant of what is needed, this is their business." And we trust they will make the appropriate decisions for their school. They will understand and choose equipment, supplies, room arrangements, etc.,



that meets the needs of facilitating a great learning experience for the students. Yet, we find from talking to teachers who have lived through a construction project of TE classrooms and labs, that is not always the case.

My goal with this article is to hopefully start an open discussion on construction, renovations and referendums. To perhaps give teachers a starting point and share our experiences to help others. (Don't worry, I'm not asking anyone to write a full fledged article. More on that later).

Our Referendum, Construction and Renovation Story

It started with surveys. A lot of surveys. To a lot of people. Surveys to the families and community to determine what they valued in their children's education. The surveys to the staff of our small school included questions about what would help facilitate our daily tasks. What would help us be better teachers? Questions about space, environment, students, schedules, supplies, the community...and staff...and professional development...and...

We weren't sure what the overall intention of the surveys was all about. A school district is always trying to get in touch with their 'inner person' - the people who dwell within their brick walls. There was no talk at that time of a lofty goal of new construction and renovations (of which none of us would ever dream possible). After all, the building was only 20 years old and we are a rural school.

What are Our Biggest Needs?

When the surveys first came out, I had been teaching both middle school and high school classes in cramped classrooms, one with pods of desk cubicle sections (those were happily dismantled within my first two years). I had an outdated graphics lab with a dark room and printing presses that had been "primo" equipment in their heyday. Before I was there, students gleefully tormented the short-term teacher by playing around with the delightfully distracting darkroom door tubes and sneaking in the darkroom. They tried the same antics my first few months, but after I drilled holes into the tubes and ran a gun lock through the holes to prevent the turn of the door tubes, they lost interest.

My co-teacher had a woods and a metals shop with machinery that had been brought over from the old building. Heavy, durable and admirable, this post-WWII machinery required a lot of maintenance. They were ready for a happy retirement to a place that would appreciate their Continued on next page...

...Continued from page 28

historic relevance and stamina. He didn't have enough welding stations that supported the growing student interest in sizzling, white hot metal and our students were limited to learning a few metal processes, with the lack of updated equipment. Our storage area on a second floor in the shop was a shared area of his metal stock supply and my Residential Construction class building a small scale model building.

My co-teacher, Jeff Schultz, and I, would talk regularly: "What are our biggest issues?" We were crammed. No storage. No room for adding new, updated equipment, even if we would purge old stuff. Kids on top of each in both the metal and woods shop. These were just the major hurdles. We filled out the surveys. We knew a change was needed, but we didn't really believe anything would come of the surveys.

We educators in the Tech Ed world know that 20 years (especially the last 20) can bring many changes with equipment, technology and materials. But we also know that the general public, many school administrators and school boards may not be as cognizant of the importance of those changes.

A Referendum - Really!

I am proud to announce: our administration and our school board DID recognize the value of those changes. After the results of the initial surveys were shared, we learned that the goal was a referendum. A \$17 million referendum for district-wide school facilities improvements, an unprecedented proposal for our area. Our school communities and families also had the same vision based on the survey results.

There was a build-up of excitement (along with very clear expectations of staff on refraining from public discussion and commentary on the proposed referendum), media coverage, flyers and community informational meetings on what the referendum entailed and what it would do for our school. I increased our Tech Ed social media push. A lot. Both on our SkillsUSA/Tech Ed and the school website and social media. I pushed photos of student work and students working in their Tech Ed classes in the school newsletter and on the school website to show how invested the students were in Tech Ed.

Then - COVID Happened. Just Weeks Before the Referendum Vote

Thank goodness for technology. Going virtual was not an issue for our district. We may be a small district, but we have had state-of-the-art, current technology for many years. Dodgeland was one of the few first districts in the state that implemented 1:1 iPad, district-wide. On that fateful Friday, our IT department immediately moved forward with planning and was able to access various technologies that were needed to help our students and teachers continue, almost seamlessly, with virtual learning.

Voting day came and the referendum passed with strong approval from constituents. Within a few days, the action started with planning, committees and meetings.

Administration, architects and construction company staff leveled their eyes and questions to our two-person technology education department. This was the beginning of lengthy meetings with in-depth conversations and a clear message of, "If you could have anything, what would it be?" and, "What do you need to make our students ready for their future?"

Disney?!

Of course, we didn't really believe any of that would come true. This is small, rural Dodgeland, not a Disney movie with Aladdin's lamp. But, hey! They asked, so why not? We talked to colleagues at other schools, sent emails to the Tech Ed listserv asking for input on certain machines, did a lot of research on what would be appropriate for our student population and submitted lists of our fantasy league of equipment.

It was approved. All of it. And, that's when the real work began.

*To be continued in the Spring Interface

A message from Anna:

If you have a story you would like to share, anecdotes, brief stories of your construction experience, feel free to send them to me at vitale@dodgeland. k12.wi.us.

Don't want to write? Give me a call, I'll take notes. Or, record your commentary, send it to me and I'll write it up for you. I want to make this as easy as possible for anyone to share their successes...or struggles. Let's help one another with helpful information to avoid issues or learn what worked best!



PARTNERSHIP PRODUCES AMAZING RESULTS Slinger High School TE Partners with Industry, Rotary and the Village to Improve the Ice Age Trail

By Brent Hug, Slinger High School TE Instructor

The Ice Age Trail travels through 30 counties on state, federal, county and private lands, connecting dozens of communities. There are hundreds of trailheads and access points located along the trail route with more than 600 miles of trail open to outdoor enthusiasts. In 2019 the Village of Slinger turned to the Slinger High School Technology and Engineering Department to partner on a joint project to reroute and enhance the section of Ice Age trail that runs through the heart of Slinger. The Village of Slinger,





Kiosk design created in Sketchup with detail drawings created in Solidworks.

Finished trailhead kiosk with bike rack built by Slinger HS and repair station donated by village. Kiosks fabricated at a local industry, Weld-Fab.

along with SHS, worked closely with the design firm of Ruekert and Mielke to create a plan for more community involvement, specifically with the Slinger School District. This was done to accrue funds through the WDNR Knowles-Nelson Stewardship Grant, which were later and bike racks along multiple points on the trail. The students began design work in the spring of 2020 and were supported through local industry leaders. The Slinger-Allenton Rotary donated the necessary funds to purchase materials needed for the projects and



Weld-Fab Manu- SHS students load steel into an IPG Laserfacturing helped to Cube to cut the panels for trash receptacles. fabricate the kiosks which were too large to manufacture in

Slinger High School. Students were able to apply their skills in Solidworks

Students were able to apply their skills in Solidworks to create digital prototypes of the projects and complete accurate take-offs of the proposed projects. Aaron Pokrzywa (SHS Metals and Fabrication instructor) utilized his upper-level Metal Fabrication class to bring these designs to life. Students were able to laser cut, bend, and weld all steel components in the metal fabrication shop at Slinger High School. The finishing stage of the project was completed with the help of Maysteel Industries LLC, a local

sheet metal fabricator, who offered their powder coating solutions to the students.

Reflecting on the massive project, Pokrzywa added, "This experience gave our students the opportunity to work with several stakeholders outside of the educational walls. It allowed our students to experience real world consequences related to planning, quality of

Continued on next page...

awarded to the project. Т h e Slinger Technology and Engineering Department proposed student designed and produced accessories for the trail. These accessories included trail kiosks. trash receptadedicacles. tion benches.



Ice Age Trail reroute map provided by civil engineering firm, Ruekert and Mielke.

...Continued from page 30

work, hitting deadlines, and communication, among other things. We are constantly looking for opportunities like this to give our students unique experiences that drive home these aspects and take what we teach in the classroom to the next level."

The project spanned three years, coming to completion in the spring of 2022. Students were able to get a firsthand look at a municipal project and interact with local businesses. The "real world" experience provided an opportunity for them to put their touch on the Slinger Ice Age Trail segment which has now become a focal point in the community and something the Slinger TE students can be proud of for many years to come.



Metal Fabrication students assembling the trash receptacles.



Trail accessories ready for installation after being powder coated by Maysteel Industries, LLC in Allenton.



Trailhead collaboration featuring a kiosk, bench, bench shelter, and trash receptacle. Fabrication done by SHS and Weld Fab of Slinger. In all, SHS created 6 trash cans, 6 benches and 3 trail signs (not pictured).

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