

INTERFACE

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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



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 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 to a stand so that the tilt angle and orientation can be adjusted as students measure electric potential (V). Smith offered to build the solar PV units (case and stand), utilizing 14 cm × 16 cm solar panels that were donated to the program. He created 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



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

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 Vanderwyst. 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



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



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



Shop machines used by students to design and construct materials.

teachers is, "Always be open to new ideas and just run with the excitement." Next year, the teachers hope to offer more variety in their courses, including a new computer-aided manufacturing course. These courses are an excellent way to test problem-solving and critical-thinking skills that are integral to engineering. As for Jacob Smith, he and 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

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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, 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.



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

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."

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 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."



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

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



Albrecht

Former WTEA Board member, Bryan Albrecht, was presented 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.