

Spring 2019

Volume 4, Issue 2

MTEEA Journal



In this Issue:

Messages from the President	1
Fall Conference Update	2
Art Standard	3
ITEEA Conference Information	4
Membership	5
ITEEA Recap	6
ITEEA News	7
Classroom Opportunities	8
MN State Fair	9
Communication	10
Back Page	11-12

From the MTEEA President Shawn Mars



I hope everybody is hitting the gym and dieting after the New Year as much as I thought I would- but haven't. As the new MTEEA President, I would like to briefly introduce myself. About seven years ago, I transitioned from being the owner and operator of a few residential and commercial construction companies, to teaching Technology Education at Roosevelt Middle School in Blaine. I live on a small pig farm in Andover with my wife and two daughters. My experience from the trades and living on a farm has impressed upon me the importance of technology education and engineering for our young learners and has driven my passion for hands-on education.

As the new MTEEA President, I plan to continue working toward the MTEEA mission and help facilitate better relationships between educators, industry, and our governing entities. I encourage all Technology Education and Engineering teachers to join our organization, as your membership and support are imperative to our ability to influence change on the behalf of our profession.

The ITEEA Conference is going to be March 27th through 30th in Kansas City, Missouri. This year's theme is Technology and Engineering Bring Stem to Life. Since the location is "close" we hope to have lots of members from Minnesota attend! Please visit www.iteea.org to look at the agenda and register.

The last item I would like to encourage you to do, is to nominate someone you feel should be recognized at our Fall Conference. There are many categories to choose from so please visit our website and choose the award you feel is relevant under the AWARDS tab. The deadline for nominations is May 15th, 2019.

If anyone has any questions, or would like to contact me, my school email is shawn.mars@ahschools.us.

2018 Fall Conference Information



This past Fall MTEEA Conference was a great success. 100 + attendees were able to attend pre-conference workshops, two tours to Custom Case-works and Dezurik/APCO/Hilton and over 15 different workshops led by various teachers and experts in the related fields. The banquet luncheon included an awards ceremony. Some of the recipients are shown below.

If you were not able to attend this year, give some thought to joining us next year. If you have an idea for topics to include in next years conference, please let us know. We always welcome ideas for future workshop and training opportunities. Furthermore, if you have an expertise in a particular area that you would like to present at next year's conference, we would be happy to hear from you!



Past MTEEA President 1978
Bud Erickson visits



Distinguished Service
John Holmen
Peggy Finnegan
Shawn Mars



25 year service
Paul Wiehe
Brad Jans
Dawn Sorenson
Joel Ellinghuysen



Special recognition
Randy Giles
Ryan Giles

Art Standard Update



The following information was submitted to the Chisago Lake School District.

Districts may use CTE (not Tech Ed without a CTE license) as a credit equivalency as long as four requirements are met:

1. All students must satisfactorily complete all required state standards. ([Minn. Stat. § 120B.02](#))
2. All students must earn one course credit in the arts.
3. The Arts credit may be in theater, music, visual arts, media arts, or dance. (Minn. Stat. § 120B.024)
4. A Career of Technical Education course may be used to meet any of the credit requirements if the district determines that appropriate standards are met with integrity (all the standards are assessed) and the CTE teacher has passed the Subject Assessment and Specialty Area licensure test in the science, mathematics, or arts area in which the credit is given. (Minn. Rule 3505.1150) Computer science and Project Lead the Way courses are included in these requirements.

If Chisago Lakes determines all the arts standards are taught and assessed (including all the strands: Artistic Foundations, Create or Make, Perform or Present, and Respond or Critique) and the teacher has both a CTE certification and has passed the Subject Assessment and Specialty Area test (MTLE) in the arts area (Media Arts does not have an assessment, but the recommendation has been that the teacher has taken the Visual Arts assessment) then the CTE course may be awarded as an Arts credit.

Mr. Holien provided incorrect information regarding Project Lead The Way. If the IED course has been modified to meet all of the Arts standards and the instructor has passed the MTLE test, then it may meet an Arts credit.

Doug Paulson
Director Academic Standards and Instructional Effectiveness
651-582-8471 | doug.paulson@state.mn.us
[@DPaulsonSTEM](#)

[Link to statute 120B.02](#)

[Link to the Minnesota Statutory Considerations for the Arts Draft](#)

[Link to Minnesota Department of Education Active Rulemaking Docket](#)

2019 ITEEA Conference Information

ITEEA 2019 Conference

MAR 27 2019 - MAR 30 2019

TECHNOLOGY AND ENGINEERING BRING STEM TO LIFE

KANSAS CITY, MO



REGISTRATION FOR THE 81st ANNUAL ITEEA CONFERENCE IN KANSAS CITY, MO ON MARCH 27-30, 2019 IS OPEN!

[Registration Link](#)

[Hotels](#)

Theme: TECHNOLOGY AND ENGINEERING BRING STEM TO LIFE

The 2019 conference theme focuses on how technology and engineering bring STEM to life for all children PreK-12 and beyond. Students who study technology and engineering through an integrative STEM education approach learn about the technological world that inventors, engineers, and other innovators have created. This conference promotes sharing best practices demonstrating how TECHNOLOGY AND ENGINEERING BRING STEM TO LIFE.

Strand 1: Demonstrating best practice through classroom instruction PreK-12 and beyond.

Strand 2: Identifying and discussing research that supports best practice in technology and engineering education.

Strand 3: Showcasing partnerships that support and strengthen technology and engineering education through Integrative STEM Education approaches

Strand 4: Preparing preservice and inservice technology and engineering teachers to deliver effective I-STEM Education



Professional Organization Membership

MTEEA Membership

In an information society, accurate information and frequent communication is essential. Your best source for information about Technology Education in Minnesota is the Minnesota Technology and Engineering Educators Association. Membership provides you with conference and in-service opportunities, mailings about special activities, and voting rights at the annual meeting.

You can now complete your renewal and pay online with a credit card or PayPal!

[Link to begin or renew MTEEA membership](#)

ITEEA Membership

Your membership in the International Technology and Engineering Educators Association (ITEEA) gives you a unique advantage - access to the latest in technology education, networking with leaders in the field, opportunities to become a recognized leader in the profession - to name a few. If you are already an ITEEA member, share your ITEEA experiences with your colleagues. Your personal endorsement is the most effective recruiting tool available. Talk to your colleagues, students and friends about the benefits of membership in ITEEA. Show them a copy of *The Technology Teacher* or *Technology and Children* or share other ITEEA curriculum resources. Relate your experiences from a prior ITEEA Annual Conference. When you recruit a new member, you will be helping to expand ITEEA's circle of leadership.

[Log in to the site](#) and then Manage Profile to see your links to become a new member or renew your membership, or [use the print form](#).

**YOUR
MEMBERSHIP
MATTERS**





Joel Ellinghysen
ITEEA MN Affiliate Representative

Joel Ellinghuysen

ITEEA Representative Report

A special thank you to all of you that joined or renewed your ITEEA memberships at the state conference! We had a bit of an issue making sure everyone's membership was recorded correctly at headquarters but the issue was resolved and everyone's membership should be accurate. You should be able to check your membership on the membership list on the MTEEA website under the membership tab and click on ITEEA membership.



The annual ITEEA conference is fast approaching! This year's conference will be held March 27th thru the 30th in Kansas City, Missouri. This year's theme is "Technology and Engineering Bring STEM to Life!"

The four strands that the conference will focus on our:

Strand 1: Demonstrating best practice through classroom instruction PreK-12 and beyond.

Strand 2: Identifying and discussing research that supports best practice in technology and engineering education.

Strand 3: Showcasing partnerships that support and strengthen technology and engineering education through Integrative STEM Education approaches

Strand 4: Preparing preservice and inservice technology and engineering teachers to deliver effective I-STEM Education

One of your ITEEA membership perks is a reduced conference registration so if you are interested in attending it is not too late. The preregistration deadline is February 28th!



ITEEA Representative Report Continued



Mike Sandell, Dr. Kurt Helgeson, and the current ITEEA board of directors.

We would like to say thanks to Dr. Kurt Helgeson as he will be finishing up his term as region 3 director for ITEEA at the end of this year's conference. We would also like to thank Mike Sandell and Mike Sunblad for stepping up and winning the past elections to take over leadership roles on the board of directors.

Mike Sunblad will be taking over the region 3 director post and will do a great job! Mike Sandell will be stepping up from the president elect position to the president role at the end of this year's conference! What a great honor to have one of our own in that role! Please help support our leadership throughout their term.

If you have any questions regarding ITEEA please do not hesitate to contact me! I hope you have a great rest of the winter!

Your ITEEA MN affiliate representative,
Joel Ellinghuysen

ITEEA Recommended Resources to Check Out

The Lemelson-MIT Program celebrates outstanding inventors and inspires young people to pursue creative lives and careers through invention. We recognize emerging collegiate inventors whose inventions could impact important sectors of the global economy and honor mid-career inventors with a prestigious cash prize. We also encourage youth to invent and develop their hands-on skills in Science, Technology, Engineering and Math (STEM) through two grants initiatives for grades 6-12.

The Lemelson-MIT Program has helped 243 high school teachers and student teams across the country learn to invent. Case studies and research publications offer evidence that our approach to invention education helps students develop confidence in their ability to engage in STEM and pursue STEM college and career pathways, even if they have had little exposure to STEM. Our evidence-based model also transforms educators' approach to teaching and facilitating student learning, and helps schools and district make connections to STEM professionals in their communities and other community supporters.

Learn more at <http://lemelson.mit.edu/>.

Classroom Opportunities

2019 High School Technical Education Department Visits Presentation Request

My name is Jon Hirsch. I'm the Director of Business Development for Auer Steel and Heating Supply Company in Milwaukee Wisconsin. I'm sending you this note because I'm excited about the opportunity to do outreach to technical education teachers throughout the states of Minnesota and Wisconsin. In my role as the Director of Business Development, I'm charged with working with the education community to help spread the word about the HVAC industry. I've been visiting state technical colleges in Minnesota and Wisconsin for the past 2 years. I currently serve on 10 HVAC advisory boards where I help technical colleges create their HVAC curriculum and offer an industry perspective to teachers and administrators about the tremendous career opportunities that the HVAC industry can offer.

I'm interested in doing high school and middle school visits in collaboration with a local HVAC contractor to spread the word about education programs and career opportunities in the HVAC field. I work with hundreds of HVAC business owners throughout the states of Wisconsin and Minnesota.

I'm eager to schedule onsite visits for the 2018/2019 school year. A typical visit will involve presenting with a local HVAC contractor. We generally start with a personal introduction exercise followed by a video overview of our industry, a power-point presentation and a hands-on demonstration of our whole home automation products and a question and answer session. Our intention is to provide an interactive and casual introduction to the HVAC industry. We also share details about career paths, tuition reimbursement programs, scholarships, compensation and benefits offered by HVAC employers.

My message is always delivered with the students best interest in mind. My message generally is about the benefits of various post high school educations including one year, 2 year and 4 year colleges. I talk about the career opportunities in the skilled trades. I also share specifics about the careers that are offered in the HVAC industry. Often times contractor owners will join me in the classroom. It's exciting to be able to talk with students about career opportunities with companies that will offer scholarships, often pay for their education and starting wages of \$16 to \$18 an hour with only a high school diploma. Most of the companies I work with offer the potential of up to \$45 an hour in earnings in as little as 6 years.

I welcome your phone calls if you'd like to visit more about my message. Thank you for your help.

Jon Hirsch

Director of Business Development / Auer Steel & Heating Supply Co.
Jon Hirsch <jon.hirsch@auersteel.com>

Cell: (414) 349-0019 / Direct: (414) 438-3202

Thank you for your consideration of this request.



[Link to State Fair
k-12 Competition
Web Page](#)

Save the Date

State Fair runs
from August 22nd
to September 2nd
in 2019

If you have
questions or need
more information
contact:

Jay Nix
Assistant
Superintendent
Technology and
Engineering
Education
Minnesota State
Fair

jay.nix006@gmail.
com

State Fair Technology Education Competition

In January of 2016, Wadena-Deer Creek Junior, Sam Kelderman, was fatally injured in a car accident just after school was released for the day. At the time of his passing, Sam was enrolled in Mr. Mike Shrode's fourth CTE class at Wadena-Deer Creek Middle/High School. This 427 cubic inch Chevrolet dump truck engine was brought in by Sam and his best friend Brady Adams two years prior. The bare block and parts were in "buckets and boxes." The engine and parts sat in a storage room until the spring of 2016. Brady and another second year engine student, Chris Hahn, decided it would make a fantastic memorial to Sam to build this engine in his memory. After a conversation with Paul Nelson (formerly the instructor of High Performance Engine Machining at Northwest Technical College in Bemidji, MN) we decided to build an "old-school 489ci (8.0 liter) stroker" engine using some of his parts. Things began to snowball from there as support came in from Northwest Technical College, Auto Value Parts stores in Wadena and Little Falls, Mn. Torvinens' Performance in Menahga, MN, Summit Racing, Goodson Abrasives, Comp Cams, Felpro Gaskets, Easy-Run Engine Stands in CA, FITech Fuel Injection, among many others. Over the course of the next year and a half of painstaking measurement, assembly, and detail, Brady and Chris created what you see here in front of you now. As the instructor, I only double checked final torque to very few critical fasteners (noted by the color coding on various bolts), and the students did EVERYTHING else. When the "blueprinting" and assembly of all components were completed this past March, Russ Sowers, owner of Sowers Performance in Parkers Prairie, MN graciously donated a dyno session of the engine to the tune of 578 Horsepower and 660 FT/Lbs of Torque. The autographs you see on the valve covers are from NASCAR legend Dale Earnhardt Jr. and Dave Kindig of Kin-dig-it Customs of Velocity Networks "Bitchin Rides" Fame. I cannot be more proud of the passion that both of these young men have displayed and the countless hours spent over the summer and school year, inside and outside of school hours to build this. It is a direct reflection on the dedication to preserve the memory of their friend Sam.

Thank you for looking!

Mr. Mike Shrode, Brady Adams, Chris Hahn



Rockler and
MTEEA Award Winners



Mark Gable, Jay Nix and
Gary Gronquist

Membership Communication - Mark Gable

Recognizing outstanding Teachers

ST. PAUL — Beth Sletta, a STEM (Science, Technology, Engineering and Math) teacher at Jefferson Elementary School in New Ulm, has been awarded the Minnesota Agriculture in the Classroom (MAITC) 2019 Outstanding Teacher Award.

The award is given annually to a Minnesota K-12 teacher who exemplifies excellence in the classroom and a passion for teaching agriculture. Sletta will receive a \$500 stipend and up to \$1,500 in expenses to attend the 2019 National Agriculture in the Classroom Conference in Little Rock, Arkansas in June. Sletta was selected for her efforts in immersing her 650 elementary students in agriculture through their STEM lab and schoolyard garden. This annual award is sponsored by the MAITC Foundation.

As the school garden coordinator, Sletta incorporates food and agriculture concepts into core subjects. She has ten fabric beds with vegetables and herbs, nine 4' x 8' raised beds with flowers, herbs, and berries and four apple trees near the garden that provide her students with firsthand experience in growing food. One of her projects is an outdoor classroom that is being built adjacent to the garden. This structure will allow all teachers in her building to use the garden as they teach.

"I believe that using more ag-related lessons has revitalized me as a teacher. I am so excited to share things I have learned, and I am eager to try new ideas with my students. Ag related lessons encompass all parts of STEM and are a perfect match" said Sletta.

Sletta says she feels that educators have a responsibility to teach students about the importance of agriculture. STEM lessons infused with agriculture have become a large part of her curricula throughout the school year. She says this process of integrating agriculture into her STEM classroom has had quite an impact on her students. Many students have encouraged their families to start learning more about agriculture at home. Sletta has received e-mails from parents and grandparents asking questions about how to start growing food or how to prepare a vegetable that their child talked about after trying it at school. Students and parents have shared photos of their own gardens and produce. The children are proud of what they have learned and passed on to their own families.

The MAITC vision is for agriculture to be valued by all. The program is a 30 year established public/private partnership based at the Minnesota Department of Agriculture. Visit Minnesota Ag in the Classroom for more information and free educational resources.



Staff photo by Fritz Busch Beth Sletta, a STEM teacher at Jefferson Elementary School in New Ulm, has been named the 2019 Outstanding Teacher by Minnesota Agriculture in the Classroom.



Beth Sletta, a STEM (Science, Technology, Engineering and Math) teacher at Jefferson Elementary School in New Ulm, has been awarded the Minnesota Agriculture in the Classroom (MAITC) 2019 Outstanding Teacher Award. The award is given annually to a Minnesota K-12 teacher who exemplifies excellence in the classroom and a passion for teaching agriculture.

The "Back Page"



If you have any news or ideas that you would like included in the MTEEA journal, please send your information to: themteeajournal@gmail.com

Industry Tour: Custom Caseworks

by Dawn Sorenson



Custom Caseworks located in Sauk Rapids is a division of the Universal Forest Products Company out of Grand Rapids, Michigan. They design and manufacture office furniture for retail and commercial businesses. Some of their retail store fixtures can be seen at T Mobile, Best Buy and Indian stores. Other non-retail customers include: Land O' Lakes, Ho Chunk Casino, and Gander Mountain. They create the full product of cabinetry including electronics in house for the customer.

They employ approximately 45-50 people but that fluctuates with the projects they are working on during the year. They hire experienced workers but also have an apprenticeship program to train less skilled workers. They have a unique morning routine for their workers in which everyone stretches before work.

They are self-proclaimed "saw challenged" meaning that they find it easier to reprogram their CNC to fix any errors instead of going to a saw to recut it. One piece of the equipment they have in house includes an Orma laminating machine. It takes 8 minutes to do one board from pick to glue to press. They have 4 CNCs with vacuum lifts to make it manageable for one person to do the job and several banders to finish the edges of the products.



In their finishing area, they have the typical spray booth and a powder coating area. They have the technology to powder coat wood. They need to monitor the water content of the wood and calibrate the machine to work around humidity in the facility. Photo to the left shows powder coated wood.

In the spray booth, they have three employees working to keep the materials moving. One employee is spraying the product, the other two employees are moving the finished product out and moving the new product in. It took the sprayer less than one minute to finish one table of product.



The “Back Page” continued



A note from Mike Lindstrom: I know we are all about Tech Ed, but we also all use Ed Tech to teach our students. Attached is an infographic from Project Tomorrow that has a series of surveys called Speak Up that they use nationally with teachers, parents, admin and students to glean information on the use of technology in classrooms. These surveys, by the way, are available for schools to use free of charge to get the information specifically from your populations.

Project Tomorrow’s research and infographics can be found at: https://tomorrow.org/speakup/speakup_data_findings.html#infographics

Ten Things Everyone Should Know about K-12 Students’ Digital Learning, 2018

Students Speak Up on Technology & Learning

- #1 It’s not just about engagement**

Sure, digital learning may be engaging but middle school students say the real benefits are getting better grades (54%), learning at their own pace (53%) and developing creativity skills (50%).
- #2 Personalizing learning their way – with a personal smartphone**

No surprise: 91% of high school students have a smartphone.
News flash: #1 mobile device that high school students use in class for schoolwork – their own smartphone (58%).
New trend: Chromebook use in high school increased 3 times from 2014 to 2017.
- #3 Print vs. Pixel Preferences**

77% of high school students say they prefer to read a printed book or article. But 66% of students in K-2 classes say reading is best for them on a screen – even more fun with audio and lots of interactivity!
- #4 Make me a Math Whiz!**

Elementary students say doing math problems with a friend and playing online math games are the best ways for them to develop into stronger math skills. **Goodbye worksheets, hello games!**
- #5 Put on that VR headset!**

Get ready for virtual reality in school – 41% of middle school students say VR is a must in their ultimate school of the future!
- #6 My school is called “YouTube”**

Three-quarters (77%) of grade 6-8 students and 90% of grade 9-12 students say that they regularly find and watch online videos to learn how to do something when they are at home.
Over 1/3 also say that they learn more from watching a video than reading a book.
- #7 Media literacy skills for all!**

Echoing librarians’ call for media literacy skill development, only 42% of students say they know how to detect bias or opinion in what they read online, and only 38% say they know how to evaluate its accuracy.
- #8 Creating good digital citizens**

Good news: students report they are getting instruction in how to be safe online. But who has the greatest influence on developing good online behaviors?
High school students say mom and dad are #1 – followed by students teaching themselves.
- #9 Using technology to develop workplace skills**

Students get it: learning how to use technology effectively is an important workplace skill (42% of grade 6-12 students). But students say too many rules prevent tech use at school.
Maybe that is why 51% of students say they use technology more for learning outside of school than in school.
- #10 Time for students to Speak Up!**

Only 1/3 of high school students in urban, rural and suburban communities say their principal or teachers are interested in their ideas about how to improve school – **isn’t it time for students to speak up and adults to listen?**

Source: Speak Up Research Project for Digital Learning, 2017 Findings - the results of the authentic, unfiltered views of 340,927 K-12 students from around the world. Speak Up is an annual research initiative of Project Tomorrow, a global nonprofit organization. Learn more about Speak Up and other research findings from Project Tomorrow at tomorrow.org.

