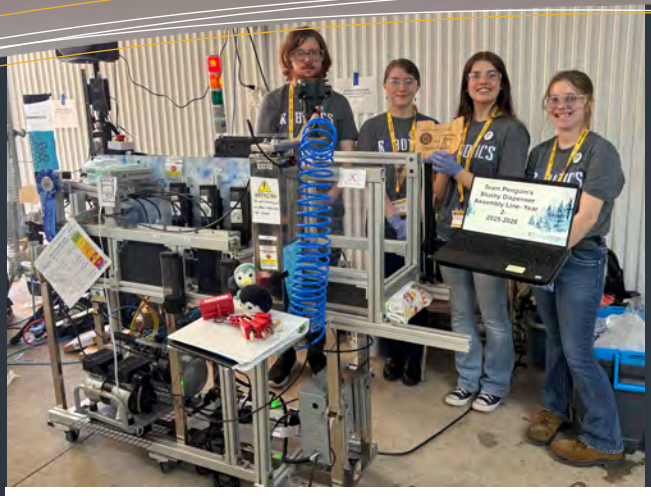
April 29 2026

News, Resources, & Notes



this issue

Upcoming Events:

1. Drones in School Championship Race May 13-14, Detroit, MI
2. 2026 Ohio STEM Innovation Summit, June 9, Columbus

OTEEA webinars online archive

OTEEA News, Resources, and Notes online archive

STEM is Elementary Newsletter Subscription And Archived Issues

STEM competitions and more resources spreadsheet

Link to OTEEA membership form

2026 OTEEA School Exhibits and Restoration Innovation / Reclaimed Lumber Contest

This year's 2026 Spring OTEEA School Exhibit Program was held in conjunction with National Robotic Challenge event Friday April 17th at the Marion County Fairgrounds.

The exhibit results for the School exhibits and Restoration Innovation / Reclaimed Lumber competitions are on the next page and followed by more photographs.

Also held was the new Restoration Innovation Challenge. The idea was to create a unique project of your choice from something that is considered junk/not pretty/useless.

Thanks to Levi Brown - OTEEA School Exhibits Manager for his coordinating the event and Dick Diefenderfer and others for helping out with judging.

2026 OTEEA State Project Show Results

Best Technology Displays High School
1st – Riverdale
2nd – Westlake
3rd – Butler
4th – Arlington
5th – London
6th – Patrick Henry

Best Technology Display Middle School
1st – Allen East

Zupanic Award (Top HS Award)
Tie
Allen East – Engineering (Robotics) – Kelsey – Slushy Maker
Riverdale – Woods – Grant Inbody – Rocking Chair

Brocket Award (Top MS Award)
Mason Johnson – Allen East – Lift Table

Engineering Category - HS
Best of Show
Kelsey – Allen East – Slushy Maker
Runner Up
David – Allen East –

Engineering Category – Middle School
Best of Show
Jenna– Allen East – Pills
Runner Up
Sophia – Allen East – Hay Bales

3D Printing Category
Best of Show
Oakley F. – Allen East - Structure
Runner Up
Lucas – Butler - Capitol

Woods Category
Best of Show
Grant Inbody – Riverdale – Rocking Chair
Runner Up Tie
Evan Williams – Butler – Hidden Cabinet
Payne Steffen – Arlington – Corner Cabinet

CAM Category
Best of Show
Elena George – Butler – Buckeye Inlay
Runner Up
Blake Jensen/Andrew Nash – Westlake – World Map

Construction Category
Best of Show
Mathias C. – London – Wall and Drywall Section
Runner Up
Aurezios Cornwell – Westlake – Model Home

Architecture Category
Best of Show
Gellert, Blake, Santiago – Westlake – Great Big Move Up Home
Runner Up
Sophia, Amanda, Sophia F – Westlake – Great Big Move Up Home

STEM Category
Best of Show
Mason Johnson – Allen East – Tool Assist
Runner Up
Kaiden/Parker – Riverdale – Connect 4

Energy Power Category
Best of Show
JJ Wenner – Arlington – Can Crusher
Runner Up
Grant, Parker, Kaiden – Riverdale - Scooter

Metals Category
Best of Show
Logan Feller – Arlington – Smoker Grill
Runner UP
Nathan Price – Riverdale – Coffee Table

CAD Category
Best of Show
Gellert Leszko – Westlake – Evergreen Cabin
Runner Up
Dylan Hunter – Westlake – Elevation Renovation

Graphic Arts Category
Best of Show
Elena George – Butler – Bluebird House
Runner Up
Nolin Weyrich – Butler – The Guardian

Restoration Innovation Challenge

Best of Show
Czedric Ropp – Riverdale – Camshaft Table
Runner Up
Connor Lowden –Riverdale – Milk Jug Table

2026 OTEEA STATE
Project Show





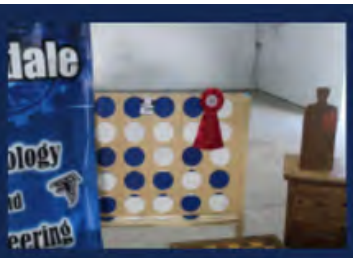
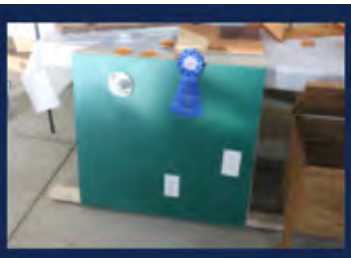
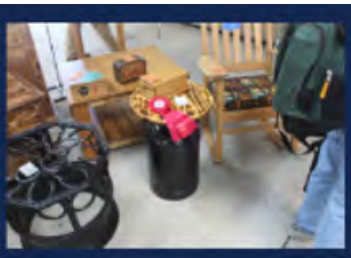










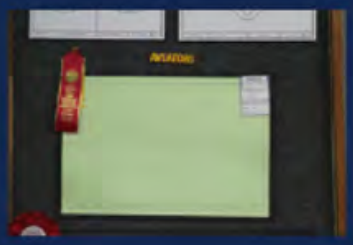









Engineering

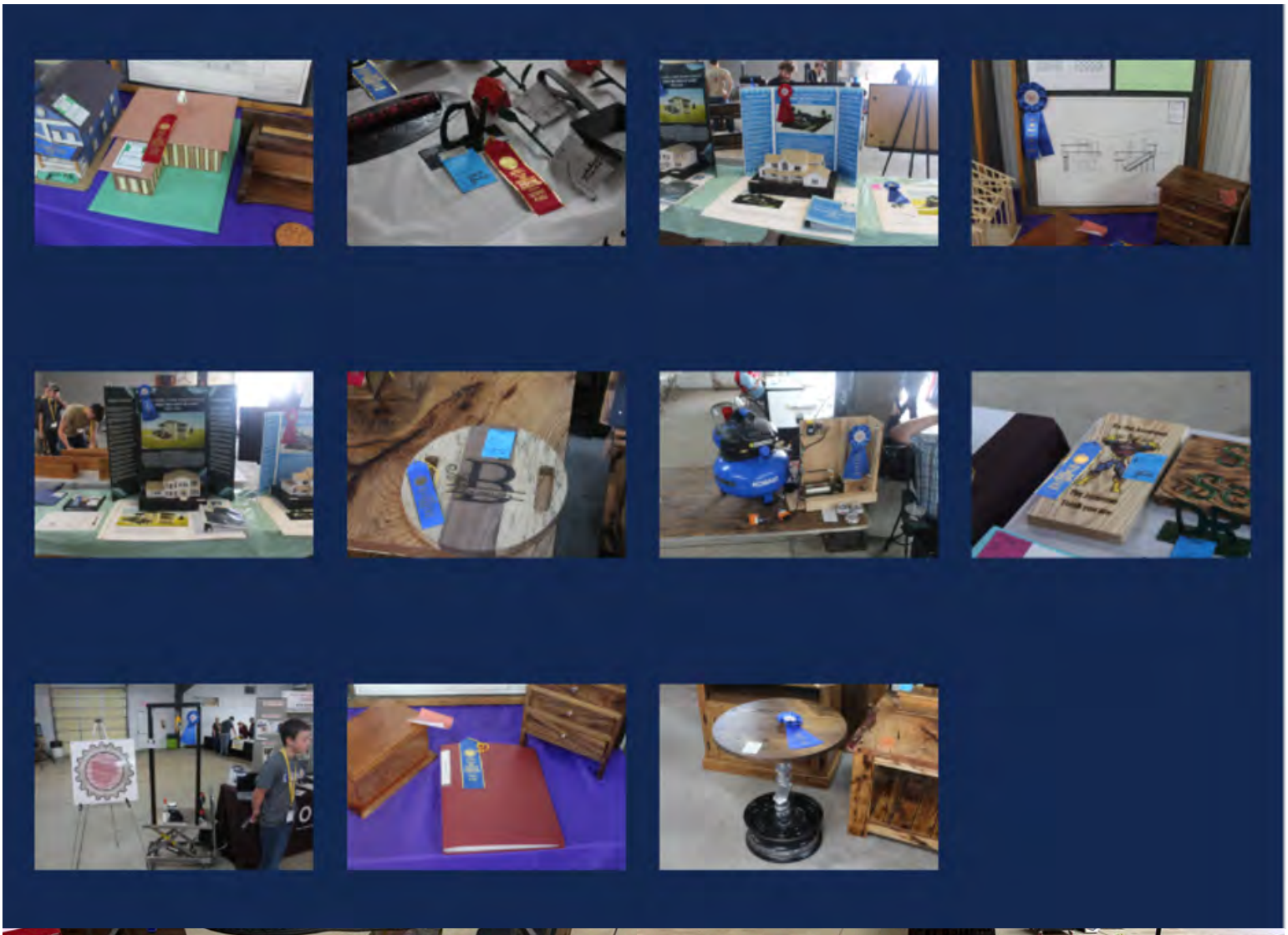




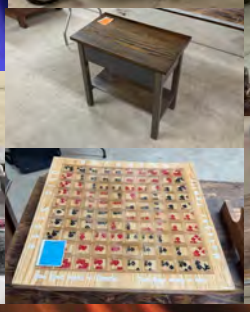









Riverdale Falcons
Technology and Engineering
Building Tomorrow's Future



The National Robotics Challenge Championship

The 2026 National Robotic Challenge (NRC) Championship took place at the Marion County Fairgrounds April 16th-18th. For the NRC this year there were 19 post-secondary, 42 High Schools, 21 Middle Schools and 2 Elementary Schools. For this event 471 robot teams were entered involving 1250 participants. The National Robotics Challenge began in 1986 and is the longest continually operating robotics competition in the world.

Twelve contest categories were held and were as follows:

1. Additive Manufacturing Challenge
2. Autonomous Vehicle Challenge (AVC)
3. Box Bot
4. Combat Robot
5. Manufacturing Workcell
6. Micromouse Contest
7. Mini-Sumo Robot
8. Rescue Robot
9. Robo Hockey
10. Robot Maze Contest
11. Robot Problem Solving
12. Sumo Robot

Divisions were available for Elementary, Middle School, High School, and Post-Secondary students depending on the contest categories. Playoffs for the Final Eight in Combat Robot, Mini-Sumo Robot, Rescue Robot, Robo Hockey, and Sumo Robot were held on Saturday morning.

Saturday also had the final judging for the Honda Innovation Award. This award is presented to the team with the most creative/innovative design that exemplifies Honda values. The judging teams will nominate one team from each competition for this award. A panel of award judges will analyze each nominated team and then select a winner. Each team that was nominated received a plaque and the winning team received a trophy/plaque and a $500.00 check for their school.

The contest concluded with a grand melee of the still mobile Combat Robots before heading over to the awards presentation at Harding High School.

The contest results will be available on the NRC website when they are entered. The highlights video is available on the National Robotics Challenge channel on YouTube. The Honda Innovation Award Winner this yearwas the Autonomous Vehicle Challenge entry from The Wellington School.

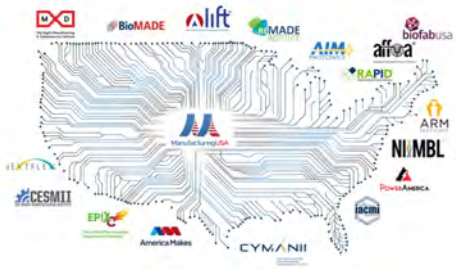
Congratulations to Joe Scott who is this year's recipient of the Dr. James Hannemann Leadership and Service Award!

The NRC is an affordable contest with a variety of contest categories that a likely to be of interest to your students. Most schools have robots entered in a variety of contest categories and multiple robots in a category. Choose what fits your students and your program! Next year's event is April 15, 16 & 17, 2026. See you next year?

STEM Is Elementary

The April issue of STEM is Elementary is available here.

2025 Manufacturing USA Annual Report Published



The Manufacturing USA 2025 Annual Report showcases the network's ongoing success in shaping the future of U.S. advanced manufacturing. In Fiscal Year 2023, the network's 17 institutes worked with over 2,900 member organizations, including more than 1,300 small manufacturers. These ecosystems helped transfer innovative technologies into domestic manufacturing capabilities with over 920 applied research and development projects. The network also helped develop the advanced manufacturing workforce of the future by engaging over 150,700 students, workers, and teachers in training opportunities. Additionally, the 17 institutes leveraged $160.4 million in federal funding to attract more than twice that amount from state, federal, and private sources, demonstrating the network's strong industry support and its contributions to the national economy.

New Action Guide for the Ohio Standards for Professional Learning

The *Action Guide - Ohio Standards for Professional Learning* is a new resource now available on the **Ohio Standards for Professional Learning** webpage. The guide is designed to help educators and leaders develop effective, systemwide professional learning. It supports educators, school and district leaders, preparation providers, and professional learning partners in:

- Reflecting on current professional learning systems
- Identifying priorities for improvement
- Aligning professional learning to evidence-based practices
- Developing actionable next steps through structured planning tools

The guide incorporates a collaborative reflection and action-planning approach, which helps teams move from just understanding the standards to taking strategic, measurable steps. This resource is designed to be adaptable and flexible locally, allowing schools and districts to improve consistency, enhance results, and support ongoing progress.

Build, Launch, Recover: Recover a Spacecraft Activity

NASA

Audience: Educators, Students

Grade Levels: Grades 5-8, Grades 9-12

Subject: Engineering Design, Space Science, Technology, Missions to Planets and Moons

Type: Hands-on Activities, Lesson Plans / Activities

Introduction

When a spacecraft returns from space and splashes down in the ocean, it must be recovered. NASA partners with the U.S. Navy and Department of Defense to practice recovering spacecrafts and crew members after splashdown. It is important that recovery is done as quickly as possible to safely rescue the crew that is on board.

In this activity, participants will act as NASA's recovery team to recover a spacecraft that has splashed down in the ocean. Participants will use algorithms to create search patterns for the rescue vessels to be able to recover the spacecraft.

Read more

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Download the App

Technology and Engineering Education News and Resources

Activities, Contests, Student Opportunities, and New Technologies

In Memorium

Barry E. Haley died April 3, 2026, at Riverside Hospital following heart surgery. Barry was born April 20, 1947, in Hopkinsville, KY, to Luther Elton Haley and Anna Lee Cansler Haley. Barry was a 1965 graduate of Butler High School in Vandalia, OH. He was a member of the Navy Seabees, serving in Vietnam and Guantanamo Bay, Cuba. He earned a business degree from Franklin University while working for Xerox Corp. He continued his education at The Ohio State University, where he earned bachelor's and master's degrees in education.

He was employed as an Industrial Arts teacher at Hamilton Local High School in Obetz, and as an Industrial Technology teacher at Licking Valley High School in Hanover. At the time of his retirement in 2006, he was the Technology Coordinator for the Licking Valley School District. His professional associations included: The Central Ohio Industrial Technology Education Association, where he served in the roles of President, Vice President, Treasurer, and Spring Show Chairman, as well as being a recipient of the Teacher of the Year Award for the school year 1990/91; the Ohio Industrial Technology Education Association and the International Technology Education Association. During the 26 years of his career in education, he was involved with other organizations that supported his students. He was Assistant Superintendent of the Ohio State Fair, Junior Fair Division, Industrial Technology Exhibit for many years. He was co-writer, woodworking section, State of Ohio, Vocational Education Safety Manual, revised. He was a judge for the 1990 Design a Toy contest for Wood Magazine. Over a period of several years, his students participated and received awards from Wood Magazine Toy Contest. His students also built and donated over 500 toys to the Marine Toys for Tots Campaign and the Licking County Human Services Christmas Drive. During Desert Storm, his students printed and sold over 600 T-shirts and 1500 stickers to purchase 50 care packages to send to Licking Valley Alumni serving in the Middle East. Barry's involvement in these organizations was an extension of his classroom. He felt that the more exposure he could obtain for his students, the greater the chance they would have for success in their life.

He said it was part of his responsibility as their teacher to help

them reach for that success. Barry had many interests and hobbies, including wood-working, model shipbuilding, RV traveling, especially to the National Parks, and photography. He was a train enthusiast and enjoyed collecting liquor miniatures. He was affiliated as the Vice President and Festival Chairperson for the Clintonville Arts Guild. He was a co-founder and Vice President of the All-Ohio Side-Car Association and a member of Ohio Designer Craftsmen. For many years, he participated in local arts and crafts fairs, exhibiting his wood lamp designs with his handmade macrame lampshades.

Barry is survived by his loving wife of 55 years, Sonia (Wallenstein) Haley, 2 daughters, Robin (Michael) Brandeberry and Renee (Titus) Warren, 5 grandchildren and 2 great grandchildren. At Barry's request, there will be no service or visitation. Memorial contributions can be made to the charity of the donor's choice. Arrangements entrusted to O. R. Woodyard Northwest.

From the *Columbus Dispatch,* April 26, 2026

News Release: ITEEA Board of Directors Adopts Updated Strategic Plan

RESTON, VA, April 28, 2026 - The International Technology and Engineering Educators Association (ITEEA) is pleased to announce that the Board of Directors has formally adopted a new multi-year strategic plan that will guide the organization's priorities and actions moving forward. This plan reflects nearly two years of thoughtful Board work, including extensive review, discussion, and refinement. In late 2025, ITEEA invited all members to comment on the final draft; the Board carefully reviewed that feedback and incorporated revisions prior to approval in March 2026.

The new strategic plan is organized around four overarching goals to advance technology and engineering education (TEE):

Membership and Engagement, centered on expanding member value, strengthening connections, and supporting diverse opportunities for participation.

Partnerships and Collaboration, directed towards building and leveraging relationships with aligned organizations, industry, and post-secondary institutions.

Standards-Based Curriculum and Professional Learning, focused on delivering high-quality curriculum, standards, and professional learning that reflect emerging technologies and inclusive TEE practices.

Recruitment and Retention, aimed at strengthening the TEE educator pipeline through targeted resources, advocacy, and support systems.

Each goal is supported by clearly defined strategies and related activities, providing a structured framework for ITEEA's work across programs, services, and initiatives.

VIEW THE ITEEA STRATEGIC PLAN

In the coming months, the Board will develop measurable benchmarks aligned to each goal so that progress can be monitored and shared with members.

ITEEA's 2025-2026 President, Dr. Molly Miller shared, "Our new strategic plan is more than just a list of goals —it's a catalyst for where our profession is headed next. I'm most excited about how we're focusing on real growth and mentorship, making sure ITEEA stays the fulcrum that supports every teacher in our community. We're not just planning for the future; we're giving our members the tools to lead it."

This strategic plan positions ITEEA to advance its mission and continue leading technology, engineering, and integrative STEM education with clarity, purpose, and impact.

Questions can be addressed to iteea@iteea.org or by calling 703-860-2100.

Level up Your STEM Teaching With ITEEA Professional Learning!

Are you ready to skill up and stand out in the classroom? The International Technology and Engineering Educators Association (ITEEA) is proud to offer two dynamic pathways for continuous learning designed specifically for Technology, Engineering, and STEM professionals.

1. Asynchronous Microbadge Courses

These 10-hour, self-paced courses provide practical, research-based strategies you can apply immediately to improve student outcomes.

Lab Safety byDesign: Master strategies to create and sustain safe learning environments in labs, shops, and makerspaces.

STEM Teaching Methods byDesign: Unlock your classroom's potential with innovative tools to enhance STEM education.

Cultural Competency byDesign: Gain insights for creating inclusive environments that respect and celebrate student differences.

Learning byEvaluating (LbE): Leverage evaluation as a core pedagogical strategy to enhance student design thinking.

Special Offer: Use promo code "**SkillUp10**" at www.iteea.org/microbadge for $10 off each course (expires June 30, 2026)

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2. Onshape Certification Training

The **Onshape Certification Training** is designed to provide educators with the technical skills and professional credentials needed to effectively teach 3D modeling in the classroom. ITEEA offers two flexible formats to fit your schedule. Bring 3D modeling to life in your classroom with hands-on training and a FREE voucher for the Onshape Certified Associate Exam ($50 value).

Special Offer: Use promo code "**onshapespring**" at www.iteea.org/plbd to save 20% off either training option (expires May 29, 2026)!

Live Online 5-Day Training: Join us June 22–26, 2026, for interactive six-hour daily sessions.

ITEEA Member: $279 | Non-Member: $399

Self-Paced Course: Enroll anytime and complete approximately 40 hours of training at your own speed.

ITEEA Member: $299 | Non-Member: $429

Note: Both Onshape options offer a Certificate of Completion and the option to earn 3 graduate credits through St. Cloud State University (additional cost).

Register now at www.iteea.org/plbd and start your journey toward professional growth today!

Flyers at the end of this newsletter.

Dayton Hydrogen Industry Field Day Save The Date - May 20, 2026

Live and in-person with MRE and Plug Power

Join us in Dayton for a live, in-person hydrogen industry field day featuring MRE and Plug Power. Attendees will gain insight into regional hydrogen deployment efforts, industry applications, and connect directly with leaders advancing hydrogen solutions in Ohio.

May 20, 2026 10 AM - 3 PM

More Info

Register Here

Announcing the 2nd Annual Hydrogen Technology Forum

June 11, 2026, Ohio Energy Advancement and Innovation Center, OSU Campus - Columbus, OH

Techie Camp.

TechCorps

[Read about TechCorps Techie Camp] and how to register.

NEO:STEM Now Newsletters

Building the Future of STEM in Northeast Ohio

Connecting schools, businesses, and communities to inspire curiosity, develop future-ready STEM skills, and open doors to new opportunities.

[Read April 10 Newsletter here]

[Read about Family STEM Exploration here]

[Read April 17 Newsletter here]

[Read April 24 Newsletter here]

Victorian Era Houses: Everything You Need To Know

This Old House

With TOH TV's Season 47 documenting the renovation of an 1896 house in Needham, MA, we take a moment to define the elements that characterize Victorian-era houses.

iStock

The term 'Victorian house' may conjure images of turrets, gables, porches, and gingerbread trim, but in reality 'Victorian' refers to an era, not a

style. The Victorian era owes its name to the reign of Britain's Queen Victoria from 1837 to 1901. There isn't, therefore, one single Victorian architectural style, but many individual styles that all became popular during the Victorian era. Here's an overview of Victorian-era houses, all of which owe their look to the tremendous changes taking place in everything from art, science, technology, and industry to design and architecture.

Read more

ITEEA STEM Sparks

Lessons from Dilbert: Clarifying Design Expectations - *Learning Inspiration and Consensus through Evaluation*

"Lessons from Dilbert: Clarifying Design Expectations" explores a common challenge in technology and engineering education: miscommunication during open-ended design projects. While design-based learning is central to the field and valued for fostering creativity and problem-solving, its open-ended nature often leaves students unsure of what is expected. Teachers may recognize quality design work instinctively, but students frequently struggle to understand what matters most, leading to frustration, low confidence, or misdirected effort. These disconnects are often glossed over due to time constraints, reinforcing the cycle of misunderstanding.

To address this issue, the authors introduce Learning by Evaluating (LbE), a research-informed instructional approach that places evaluation before students begin designing. Drawing on adaptive comparative judgment, LbE asks students to compare pairs of prior design examples and decide which is better based on specific criteria, then explain their reasoning. This comparison process helps students internalize expectations, learn the language of design, and develop a clearer sense of quality and possibility.

Classroom studies show that LbE helps establish shared understanding between teachers and students while also encouraging creativity rather than conformity. Although the approach requires thoughtful preparation and facilitation, it provides a practical way to clarify expectations, build design confidence, and avoid the kind of communication breakdowns humorously depicted in Dilbert—but all too real in classrooms.

READ THE FULL STEM SPARKS ARTICLE TO LEARN MORE

ITEEA STEM Stars: AI and Other STEM Tools in Middle School Curriculum

This video explores the integration of artificial intelligence and other cutting-edge STEM tools into middle school curriculum. Designed for educators and curriculum developers, the video offers practical insights into how emerging technologies can be leveraged to enhance student engagement, foster critical thinking, and prepare the next generation for an increasingly tech-driven world. Viewers will come away with strategies and ideas for bringing innovative STEM tools into their classrooms in meaningful and effective ways.

Watch now to learn more!

Judges Needed: State Science Day

Support the next generation of innovators by volunteering as a judge at State Science Day on May 16, 2026. Hosted by the Ohio Academy of Science, this statewide event brings together student researchers from across Ohio to showcase their work. Volunteers will receive training, connect with fellow STEM leaders, and play a key role in celebrating student achievement. Read more and apply

TEACH ENTREPRENEURSHIP FOR REAL THIS SUMMER

lemonade lab

Lemonade Lab is a creator platform where kids build real businesses, earn real money with parent approval, and learn entrepreneurship by doing it. **Lemonade Lab is currently inviting teachers, summer programs, and youth organizations to join their Free Educators Module Pilot.** It is built for educators who want to go beyond theory and give students a safe, guided way to create real projects, launch real shops, and build real world business skills through hands on experience. To learn more, visit lemonadelab.ai. If you are interested in joining the pilot, reach out at hello@lemonadelab.ai.

The Future City Competition Is Back!

This is an incredible opportunity for your middle and high school students to showcase their creativity, problem-solving skills, and passion for engineering!

Why join?

DISCOVER PRESENTS

FUTURE CITY COMPETITION MIDDLE SCHOOL

Students **think**, **design**, and **innovate** - just like real engineers do!

Over $60,000 in cash prizes awarded annually directly to schools and STEM programs

Join **98,000+ students** in a nationwide competition

Register for Future City Middle School

DISCOVER PRESENTS

FUTURE CITY COMPETITION HIGH SCHOOL

Students will dig into **real-world** careers while building practical, **hands-on** experience

Teams use an industry-standard digital design tool

Over **$100,000** in **scholarships** awarded annually

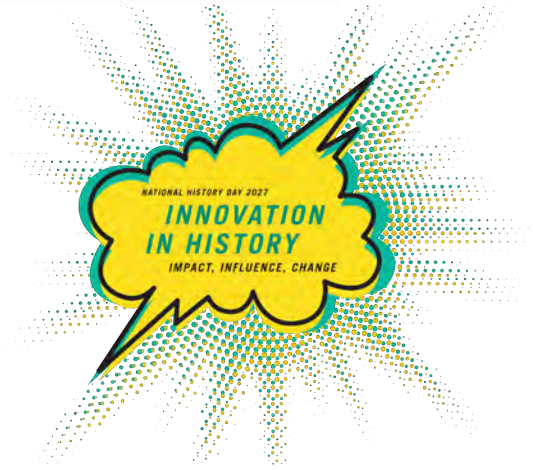
Register for Future City High School

The STEM Pulse

April 17 newsletter

April 24 newsletter

Sneak Peek: Ohio History Day's 2027 Theme!



We're excited to share the 2027 National History Day theme: ***Innovation in History: Impact, Influence, Change.*** This theme invites students to investigate how innovations—big and small—have shaped societies, transformed institutions and altered the course of history. From technological breakthroughs to social and cultural innovations, we're excited to see what topics students explore. Stay tuned for classroom resources, theme breakdowns, and lesson plans coming soon!

Ohio History Day Webpage

The COSI Science Festival Starts TODAY!

The *COSI Science Festival*, the FIRST festival of the Columbus festival season, is back this year and better than ever! There are several ways you can participate – join us as a guest at any of the many *COSI Science Festival* Community Events from **April 29 through May 1**; then join us for the FREE Big Science Celebration on **May 2**, onsite at COSI! The is the perfect event for families, friends, and science enthusiasts - we cannot wait to see you there!

Career-Connected Learning: a Better Way To Design Real-World Learning Experiences

The PAST Foundation

When we talk about workforce development, most people think it happens after students finish school and is a final step before entering the workforce. But what if we started preparing students for real-world work while they are still in the classroom?

What if the classroom and the workplace were connected, not separate?

At the PAST Foundation, we view career-connected learning as a practical way to prepare students, support teachers, and meet today's industry needs. This is more than rebranding—it's a shift in how we design learning experiences. In a recent initiative, high school students partnered with a local tech company to design real-world solutions to community challenges, leveraging AI tools. Over the course of a semester, students worked alongside industry professionals, applied

classroom concepts to projects, and presented their results to teachers and company leaders. These experiences make learning meaningful and build workforce skills. Here's why this matters and how you can apply it in your classroom or community.

Read more

Calling all Educators, Librarians, Museum Pros, and Afterschool Champs!

Want to bring more STEM excitement to your space without spending hours planning? Join us for a **fun, free, online webinar** where we'll show off DiscoverE's free programs, hands-on activities, and ready-to-go resources designed to make your life easier—and your learning environment way more awesome. Whether you're a STEM newbie or a seasoned pro, there's something here for everyone!

🗓️ May 6th | ⏰ 4PM ET | 💻 Online

Register Now!

Read more

Inside: Reshaping Work

The path to a stable career is changing. From skills-based jobs to the growing immigrant workforce, INSIDE: Reshaping Work examines what's shaping and redefining Central Ohio's economy. On WOSU and YouTube.

Read more

Ohio Pitch Contest Winners Announced

YEI's Ohio Pitch Challenge is an exciting pitch contest for Ohio students in grades K-12.

It offers a hands-on experience where students can develop key skills like creativity, problem-solving, critical thinking, and presentation abilities. Through this challenge, students gain essential workforce readiness skills and build a mindset for future careers—whether or not they pursue entrepreneurship.

Students compete in one of three groups by grade level: K-4, 5-8, or 9-12.

See winners list and watch videos here

The May Issue of Technology and Engineering Education Is Now Available!

Stay connected to what's new in technology and engineering education with the May 2026 issue of *Technology and Engineering Education (TEE)* — now available to ITEEA members and subscribers. This issue features thought provoking perspectives on collaboration and the lasting impact of educators, alongside peer reviewed articles on digital engineering notebooks, pollinator conservation through a transdisciplinary lens, quantum engineering for pre-college learners, and the deeper purpose of teaching itself. Readers will also find classroom ready inspiration, educator and program highlights, award winners, and moments from the ITEEA community. Log in to the ITEEA website to explore the full issue and stay informed, inspired, and connected. Not a member? Join today!

Almost Weightless, Not Worthless

1440

Helium, 101

Helium is the second-lightest element in the universe and the second most abundant, accounting for about one-quarter of all visible matter by mass. The bulk of helium was formed in the moments after the Big Bang, but it has since been produced in the cores of about 90% of stars by fusing hydrogen (**see visualization**). In fact, helium is named after the Greek god of the sun—Helios—after it was identified in 1868 via a then-unfamiliar **spectral signature** in sunlight.

Like other noble gases, helium has a complete outermost shell of electrons around its nucleus, making it largely chemically unreactive. This property makes it an invaluable shield in chemically sensitive processes, such as **semiconductor fabrication**, fiber optic manufacturing, and arc welding. Because it remains liquid at extremely low temperatures, helium is used as a coolant for superconducting magnets in various scientific equipment, including **MRI scanners** and particle accelerators. Famously, it also provides buoyancy for weather and party balloons alike and changes one's voice if breathed in (**learn why**).

Beneath Earth's surface, underground deposits of helium produced by radioactive elements can be harvested during natural gas extraction (**learn how**). However, because of its lightness, any that escapes to Earth's atmosphere gets lost to space, contributing to its status as a nonrenewable resource.

Learn even more by exploring all our findings on Helium **here**.

Here's a sample of what we found ...
> Trying to freeze helium creates a superfluid that can climb up walls. (**Watch**)
> Heliox—a helium-oxygen mixture—helps prevent deep ocean divers from getting drunk on normal air. (**Read**)
> Helium on the moon might be the key to clean energy from nuclear fusion. (**Watch**)
> Is helium actually running out? (**Listen**)

National Fluid Power Association Workforce Webpages

To make it easier for you to find the information you need on the NFPA website, here are links to pages for educators and students.

Fluid Power Action Challenge - how to get started, plan an event and order kits

Fluid Power Clubs - application form, project ideas and club materials

Fluid Power Scholarships and Grants - apply for a scholarship or a grant to attend an Action Challenge Event

Fluid Power Vehicle Challenge - see how the program works, investigate designs from previous years and watch educational webinars to help you compete

Available Curriculum - high school and university level educational materials, videos and fluid power competencies

Industry Employers - learn more about the different companies in the fluid power industry

Fast Track to Fluid Power - all of our programs serving middle schools, high schools, and technical colleges

Power Partner Universities - see which universities participate in all of NFPA's workforce programs

Career Information - a great place for students to learn about fluid power careers and to submit their resume.

If you're looking for something on the website and can't find it, reach out to workforce@nfpa.com and we can point you in the right direction.

Novel Engineering Quick Start

Earn a Tufts University microcredential in just 7 hours. The Novel Engineering Quick Start is a fully online, self-paced course that certifies you to bring Novel Engineering into your classroom -- integrating engineering design challenges directly into the books your students are already reading. Whether you're a classroom teacher, librarian, or makerspace manager, this is the fastest way to add a research-backed, Tufts-endorsed approach to engineering education to your practice, and walk away with a digital badge to show for it.

LEARN MORE!

How Did Ancient Cultures Build Structures Without Modern Tools?

Featured Image. Credit CC BY-SA 3.0, via Wikimedia Commons

Stand in front of a pyramid, a stone temple, or a Roman aqueduct, and one thought hits you like a wave: how on earth did people do this without machines, steel cranes, or computer models? These structures have survived earthquakes, wars, and thousands of years of weather, while some modern buildings struggle to make it past a single century. There's something both humbling and a bit unsettling about realizing that people with no electricity or engines pulled off engineering feats that still leave us scratching our heads.

But there's no magic here, and no secret lost technologies; there's human creativity, raw patience, and a deep understanding of materials and nature. Ancient cultures built big by thinking cleverly, organizing massive groups of people, and pushing trial-and-error to its limits. When you zoom in on how they worked, it starts to feel less like a mystery and more like a powerful reminder of what's possible with focused effort and very simple tools used very well.

Read more

The Self-Balancing Monorail: a 1910 Train That Could Balance Without Falling

If monorails have a bad name, The Simpsons may be to blame. In an episode acclaimed for its hilariousness since it first aired 33 years ago, a huckster shows up in Springfield and convinces the town to build just such a transit system, which turns out to be not just suspiciously unnecessary (at least in young Lisa's judgment) but also dangerously shoddy. I watched it while growing up in the suburbs of Seattle, a city that endured bitterly protracted contention over whether or not to build out its own rudimentary monorail system — a World's Fair artifact, like the Space Needle — but finally opted not to. Concerns were perpetually raised, rightly or wrongly, about the noise and darkness that could result from extending the wide elevated track on which it ran.

But what if there were another way to build a monorail? Indeed, what if it could run on the ground, like a traditional two-railed train? Such was the idea in the head of the indefatigable Irish-Australian engineer Louis Brennan, who's remembered today for inventing a wire-guided torpedo back in 1877.

Read more and watch video

Ohio Creativity Trail: Packer Creek Pottery and Glass Heritage Gallery

This month, we continue our exploration of the Ohio Creativity Trail by featuring two places in northwest Ohio: a small pottery and a glass museum. The two locations are about a 40-minute drive from each other and were visited after first touring the Blair Museum of Lithophanes in Elmore, Ohio, in October 2025. Fortunately, the pottery was only 10 minutes away from the lithophane museum, so that was the second stop.

Read more

How a Chess Game Over the Telegraph in 1844 Accidentally Created the First E-Sport

Before the internet, Victorian innovators used the electric telegraph to play chess across the world.

Read more

Upcoming 250th Events

Check our **Events Calendar** for the full schedule of America 250-Ohio upcoming events. Many April activities around the state. We are constantly adding more so keep checking back often!

Drones in School News

Other Videos of Note

- The Engineering of Duct Tape

The Kid Should See This

The Kid Should See This

Smart videos for curious minds of all ages

Here are some selected videos.

- The bronze casting process, a modern take on Rodin's work
- Space Architecture: MIT students design innovations in lunar living
- How is duct tape made?
- How does a Jack In The Box work? Maddie Moate opens one to find out also see Maddie's Do You Know YouTube Channel
- Carbon Catchers: How animals and plants work together to stabilize Earth's climate
- Stuart Buildings: How UK architecture changed after the Great Fire of London

From Interesting Engineering

- New solar-powered airship stays airborne for 12 days at 52,000-ft altitude in test – According to a press statement, Sceye's airships are designed to stay aloft for months or even years at a time. The 270-ft-long SE2 has solar cells on its upper side that generate power to charge lithium-sulfur batteries. These 425-Wh/kg batteries provide power for an electrically driven tail-mounted propeller.
- World's first battery-methanol harbor tug with 6 MWh battery finishes sea trials – According to Andorra-based AYK Energy, which supplied the battery system for the Svitzer Balder, the tugboat can operate in both harbor environments as well as near-open sea conditions. To deliver this, the vessel pairs a large battery with a hybrid backup.
- Smart pillow sleeve uses vibrations to alert deaf users to emergencies at night – People who are deaf often miss critical alarms during sleep, creating serious safety risks.

ITEEA Connections

This newsletter strives to present content and opportunities that reflect ITEEA's Standards for Technological and Engineering Literacy (STEL). Many resources including crosswalks, compendiums, articles, and presentations can be found at the STEL site.

This Week's Technology Tips

Ripping Small Parts on the Table Saw

Woodworkers Guild of America

Ripping narrow pieces on a table saw can be dicey, but Jimmy Diresta has a great trick. Instead of doing a single cut, Jimmy makes this happen with a double cut. This is a great approach for making those skinny parts you need.

More about thin pieces

If the approach Jimmy teaches here doesn't fit your needs, don't worry about it. We've got a variety of other ways you can crack this nut. Be sure to check out all of videos about ripping thin strips.

Watch video

Tech Tool of the Month

Miro is a powerful digital whiteboard platform that gives engineering students a massive, interactive space to design, brainstorm, and collaborate in real time. Think of it as an **infinite engineering workspace** where students can build system diagrams, map out the engineering design process, create circuit flowcharts, or plan full-scale projects using sticky notes, drawings, and embedded media —all on one board. It's especially exciting for engineering classrooms because it mirrors how real engineering teams collaborate, allowing students to work together visually whether they're in the same room or not. Even better, Miro offers a **free version (and a completely free education plan)** that includes core collaboration features and templates, making it an easy, zero-cost way to bring interactive, project-based learning into your classroom.

Click here to learn more.

"First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII — and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we've realized it's a brochure." — Douglas Adams

Get Onshape Certified — Live or Self-Paced Training

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*additional cost associated with graduate credit

ASYNCHONOUS MICROBADGE COURSES

To support educators in elevating their teaching practice, the International Technology and Engineering Educators Association (ITEEA) offers two dynamic microbadge courses designed specifically for Technology, Engineering, and STEM professionals. These self-paced, 10-hour asynchronous courses provide practical, research-based strategies that educators can immediately apply in their classrooms.

Ready to skill up and stand out? Register now to begin your journey toward becoming a more effective and inclusive Technology, Engineering, and STEM educator. Be sure to use promo code "SkillUp10" at checkout to receive $10 off each course (expires June 30, 2026). Your path to professional growth has never been more accessible!

Equip educators with the knowledge and strategies needed to create and sustain safe learning environments in technology, engineering, and STEM labs, shops, and makerspaces. This course addresses legal responsibilities, best practices, and the development of a research-based safety plan.

Lab Safety byDesign

STEM Teaching Methods byDesign

Unlock the potential of your STEM classroom with our STEM Teaching Methods byDesign microbadge course! This course is designed to equip educators with innovative strategies and practical tools to enhance STEM education.

This course provides educators with practical strategies for creating inclusive learning environments that value and respect student differences. It supports the growth and enhancement of Technology, Engineering, and STEM classrooms.

Cultural Competency byDesign

Learning byEvaluating (LbE)

This course provides educators with the insights and strategies needed to leverage evaluation as a core pedagogical strategy to enhance student design thinking. It is designed to help Technology, Engineering, and STEM educators transform how students navigate uncertainty and improve their problem-solving outcomes.

Learn more | register now

www.iteea.org/microbadge

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