





MISSION

The STEM Action Center is Utah's partner in promoting Science, Technology, Engineering, and Math education through the identification and support of best practices and leveraging of resources across education, industry, government and community partners to support economic prosperity.

VISION

Bringing STEM to every Utah home, school and community to build a brighter future.



DIRECTOR'S NOTES

TAMARA GOETZ

All of us who work at the STEM Action Center have a reputation for being bonafide data nerds. Why? It helps us to understand how the resources we are able to provide, and the partners we are grateful to work with, are making a difference. We focus on students, as well as their educators and communities.

How do we measure success? We start with our aim to make STEM resources accessible to all students, both in school and out of school.

- This year, nearly 270,000 students and approximately 5,000 educators engaged with STEM Action Center resources, with 42% of these resources available in rural communities.
- The STEM in Motion classroom kit program expanded this year, with 158 schools and nearly 13,000 students using the kits. Plans are underway to provide additional kits to meet the growing demand.
- The Young Makers and Future Innovators Program hosts Pop-Up Maker Faires, designed to engage children ages 3–8 and their families, while being replicable and affordable. This year, ten Pop-Up Maker Faires were held in six targeted Utah communities: West Valley City, Layton/Clearfield, Kearns, Taylorsville/Murray, Midvale, and Rosepark/Fairpark.
- The Computing Partnerships program reached nearly 14,000 students in 137 schools, with 42% of those schools located in rural communities.
- Students participating in the Math Mentors program show statistically significant positive changes in math self-efficacy, effort, growth mindset, interest — and a feeling of “belonging” in math.
- The Utah STEM Foundation received nearly \$740,000 in donations this year; with most of the financial support coming from our Utah STEM Industry Coalition partners, more than 100 companies committed to helping Utah students.
- The mySTEM program provided opportunities for students to innovate in their communities. One student, Levanya, created a course to teach AI to middle school students. Another student, Spencer, combined his passion with a community need, and is using his maker skills to build bicycle repair stations along the Jordan River Parkway.

If only we could measure smiles — that might be another way to gauge success. Our Pop Up maker fairs and Micro STEM Fest kits reached nearly 23,000 children, which adds up to a lot of smiles.

STEM: PRIORITY SUCCESSES

mySTEM program:

The STEM Action Center launched a new youth service-learning program, mySTEM in FY25 with 19 students. The program is focused on citizen science, developing leadership skills, communication skills, and teamwork skills. Each youth participant, ages 11-18, works on their own STEM service project, called their Action Plan. Action Plans are designed and led by the participant with support from their assigned mySTEM Mentor. Each participant creates a logic model for their plan, identifying the community they want to impact, the short and long-term goal for the plan, and the resources needed before they begin. Mentors provide guidance and help to connect them to resources needed to be successful in their projects.

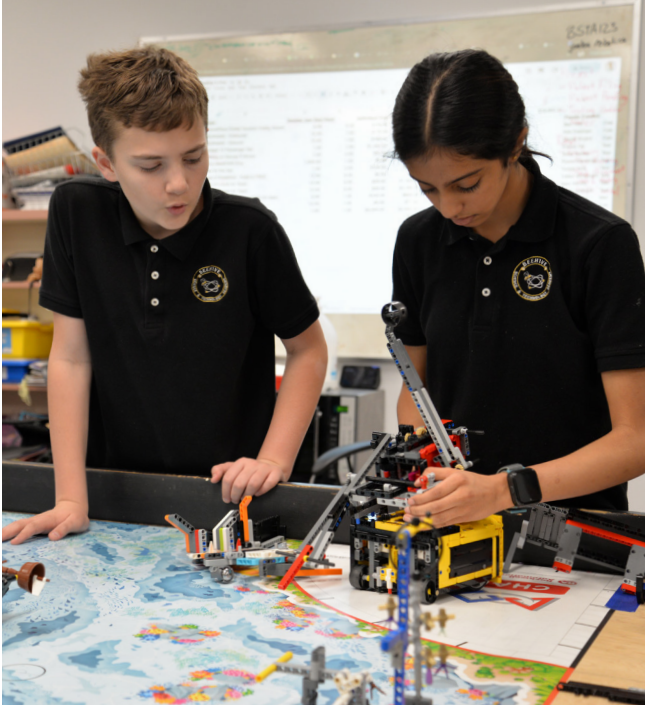
Youth participants met monthly on a Saturday to engage in citizen science, leadership development, and to expand their STEM networks by meeting with STEM professionals to develop specific skills. The Utah STEM Foundation provides opportunities for mySTEM students to apply for funding to support the activities in their plans, giving them the chance to learn the basics of grant writing.

Here is what some youth participants had to say about their experience with mySTEM:

"The mySTEM program has developed my problem solving skills and I have learned how to come up with new ideas in order to solve real problems. I am proud of having developed an idea for my Action Plan. I enjoy being part of mySTEM because it has taught me how to take action on my ideas and I have had the opportunity to meet many new people. I also learned the value of managing my time and communicating with my mentors."

"My time with mySTEM has taught me how to be creative and think out of the box. Brainstorming for my Action Plan taught me to be creative and think of ways that I can truly make an impact on other people. I for sure enjoy being part of mySTEM. mySTEM has introduced me to so many new people who are stem enthusiasts just like me and it has given me a place where I can always get the help, resources, and encouragement that I need."

STEM: PRIORITY SUCCESSES



STEM Schools:

The Utah STEM School Designation program is a rigorous assessment that defines the criteria for schools to create a comprehensive STEM learning environment. Currently, 29 schools are STEM designated, from Logan to St. George. These schools are great at integrating STEM into their lessons, building in problem-solving skills, having students learn from each other, making real-world connections, and more. Their students use thinking and processing skills, including making predictions, analyzing data, and supporting their conclusions with evidence.

Students in STEM schools also build college and career readiness skills, critical and creative thinking, intentional collaboration, and develop cooperation skills as well. Additionally, school staff, including administrators, spend time learning together about STEM cultural components, such as risk taking, learning from mistakes, and being life-long learners, so they can model those skills for students.

In FY25, The Texas Instruments Foundation awarded the STEM Action Center a three-year grant for \$400,000 to support our STEM School Designation program. Schools who achieve their STEM designation can apply for a \$10,000 grant that will provide professional development opportunities.

In FY26, we're excited to announce a new STEM and Arts School Designation, in partnership with the Utah State Office of Education and the Beverly Taylor Sorenson (BTS) Arts program. These schools will need to meet the STEM School Designation criteria and the criteria for the BTS Arts program.



STEM: PRIORITY SUCCESSES

Pop-Up Maker Faires:

The Young Makers and Future Innovators Program engages children ages 3–8 and their families in hands-on STEM learning through a maker-based approach. A key component of this initiative is the Pop-Up Maker Faires, funded by bioMérieux and developed in partnership with Utah State University Extension/4-H. These events are designed to be replicable, affordable, and sustainable across communities.

In FY25, ten Pop-Up Maker Faires were held in six targeted Utah communities: West Valley City, Layton/Clearfield, Kearns, Taylorsville/Murray, Midvale, and Rosepark/Fairpark. These events took place at five schools, one park, and four community events, reaching a total of 2,114 participants. Each event featured 6–15 Innovation Stations that encouraged design thinking and problem solving through STEM activities.

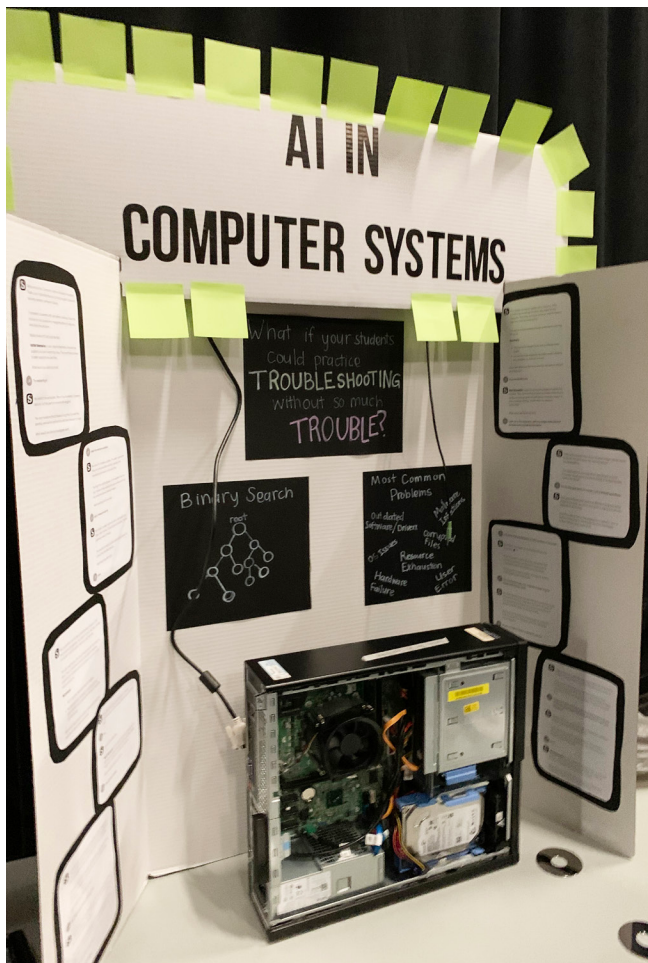


Popular stations included Constellations, Light-up Science Bugs, Binary Bracelets, Sound Waves, Math Magic, and Code Your Walk. In FY25, new activities such as Popsicle Stick Harmonicas, Catapults, and Paper Gliders were added by the STEM Action Center. Industry and community volunteers were vital in assisting participants at each station, ensuring a rich and engaging educational experience.



Feedback from both parents and volunteers has been overwhelmingly positive. Parents appreciated the fun, hands-on learning and expressed a strong interest in further STEM education offered at their children's schools. Volunteers praised the events for being well-organized and meaningful. One volunteer noted, "Overall, I felt that the experience was very organized, which I loved. The staff made it super easy to set up our tables and know which activity we would be leading." Another volunteer stated, "We all had fun while volunteering and all of us left with a happy heart knowing that we were able to help this cause."

STEM: PRIORITY SUCCESSES



AI Workshops:

In December 2024, the STEM Action Center, in partnership with the Utah State Board of Education, opened an application for “AI Introductions and Implementation,” a program which was designed to help classroom teachers see how they could use AI appropriately with students to assist in their teaching goals. There was a huge demand for this AI training: over 230 applications were received for 120 seats. Teachers were selected based on grade level, content area, and geographic location to ensure all grade levels and content areas were represented, and to provide access to participants across the state. Selected teachers were looking for opportunities to develop expertise for AI integration.

Three cohorts were formed along the northern Wasatch Front, southern Wasatch Front, and southern Utah. Starting in January, 2025, each cohort received two in-person days of instruction that covered getting started with AI, walled gardens, and legal considerations. We also discussed areas where challenges existed such as image generation, creating chatbots for student use, and ethical implications of AI in arenas such as art and music.

There were also conversations around AI and cheating, and when teachers thought it was and was not appropriate to use AI with students. Teachers were tasked with creating and implementing an AI-augmented lesson with students. If they needed support, virtual coaching was made available. The participants were asked to submit their lesson plan, with a reflection, to be posted to the STEM AC Resource Library and UEN eMedia Hub. Additionally, they were asked to present their lesson and learnings at a state-level conference (Utah Rural Schools Association conference) in a poster session in July 2025.

STEM: PRIORITY SUCCESSES



STEM Education Innovators (SEI) program:

The STEM Education Innovators (SEI) program was created to help teachers develop their leader skills and boost instructional strategies with an emphasis on STEM. Expanding influence outside of individual classrooms and into schools was the focus of year two in the program. This was facilitated by expanding the impact of each cohort member's Problem of Practice (PoP), and having members take on additional teacher leader roles and leadership tasks within their schools. That could include becoming department heads, leading out on advisory boards, or joining leadership teams. Some cohort members wrote and were awarded significant grants for their schools and districts, and others were awarded spots in nationwide science teacher programs. The confidence in cohort members has significantly increased over year two, and has led to changes in their participation in outside programs that have led to additional empowerment for these participants.

Problems of Practice (PoPs) of note this year include participants working with the welding teacher at their school to make models of right triangles to help students visualize the ratios associated with SOA CAH TOA. This brought together teachers from a variety of content areas that often do not work together, such



as math and welding, for the purpose of increasing student understanding. It also helped the teachers better understand what the other teaches.

Another cohort member has been explicitly teaching content literacy skills, including close reading and data literacy, to 8th grade science students to help them better understand science content. This teacher is using data both from throughout the school year but also end of level test data to assess the impact of her PoP. Students' test scores showed improvement from the end of year one to year two.

Yet another participant had their teaching assignment change in the summer between year one and year two, but was able to find meaningful overlap for their students by focusing on real world connections. This teacher is using and creating virtual field trips for her online-only students to connect with the math they are learning and give it context in their everyday lives.

The secondary cohort of the SEI program will continue for a third year, and in FY26, the STEM Action Center will add a new cohort of elementary school educators. This program has proved successful and has been a great way to build STEM identities for Utah educators.

STEM: PRIORITY SUCCESSES

Hydroponics:

In FY25, the STEM Action Center's Hydroponics program experienced significant growth, building on its pilot in libraries and schools that previously received 2-layer commercial and classroom units. The program has expanded to include larger, modular 3-layer HydroFarm units. These units can operate independently or be connected into scalable "farms" of 5 to 10 units, enabling greater impact and food production in areas that experience food deserts.

In partnership with Green Our Planet, the first major delivery of these advanced units supported tribal communities, including ten units to Monument Valley, five to Navajo Mountain, and five to White Mesa (Ute Mountain Ute Tribe). Monument Valley High School students have successfully harvested multiple crops and have been selling their produce, gaining hands-on experience in both plant science and entrepreneurship.

A second round of 20 units was distributed to education and community partners: Bastian Agricultural Center/USU Extension (2 units), Southern Utah University (5), San Juan High School (2), Athenian eAcademy's Ballard and Vernal campuses (4), Granite School District's YESS School (3), Housing Connect (1), and the International Rescue Committee (3). With support and training from Green Our Planet, the Bastian Agricultural Center is set to become a hub of expertise, supporting a growing statewide network of HydroFarm educators and producers.

Looking forward, a third hydroponic phase is in development for FY26 in partnership with Utah State University and local high school capstone programs.. This pilot program will introduce a new, cost-effective model with enhanced student engagement. The new units are designed for scalability and hands-on learning, enabling students to assemble, maintain, and monitor the systems themselves. Launching in fall/winter 2025–26, this pilot aims to expand access to hydroponic education across schools and community sites statewide.



"I want to tell you how much my son has enjoyed the Unplugged Makers class. It has been his favorite class by far that he has ever taken. He has felt so inspired and truly at home in your space. Having ADHD, PANDAS, and mostly a severe form of MCAS, he hasn't always been able to access a lot of public spaces safely, and to find something he enjoys this much and feels so at home with has really truly been amazing."

—Jeannette Pontiero,
parent of Innovation Hub student

BOARDS AND COMMISSIONS

Utah STEM Action Center Executive Advisory Board

The purpose of the board is: to facilitate coordination of programming and effective leveraging of services, with representatives from Utah State Board of Education, Utah Department of Workforce Services and Utah System of Higher Education; to ensure different perspectives for strategic planning and a conduit for STEM education in business and industry; to ensure industry members help to bring an industry view to how companies can and are able to engage in STEM education.

Vance Checketts, *board chair; COO, Auticon US*

Donna Law, *board vice-chair; executive director, Utah Department of Cultural & Community Engagement*

Sydnee Dickson, *former superintendent, Utah State Board of Education*

Rebecca Banner, *Department of Workforce Service, deputy director*

Kennedy T. Mpungu, *Cytiva, lead scientist, chemistry and raw materials*

Aniza Brown, *Rosie Project, CEO*

Sarah Reale, *Utah State Board of Education*

Mark Sunday, *Oracle, retired CIO and senior VP*

Jamie Morningstar, *Qualtrics, director of engineering, methods and practice*

Andrea Ibanez, *Streemly, CEO and founder*

Chiao-ih Hui, *Arcserve, director of global operations*

Vic Hockett, *USHE, associate commissioner of Talent Ready Utah*

Utah STEM Foundation Board

The STEM board has established a foundation to assist in fundraising and in the development and implementation of STEM Action Center programs and objectives.

Eric Pope, *chair, VP of operations, US Synthetic*

Brian Parker, *VP and K-12 leader, MHTN Architects*

Brad Shafer, *senior manager, government and public relations, Marathon Petroleum*

Vanessa Perez, *senior manager, external relations, Micron Technology Utah*

Angela Mastaloudis, *Brassica Protection Products, LLC*

Josh Brown, *Utah Manufacturers Association, senior director of government affairs*

