





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

If you ask an ecologist about the factors that make an ecosystem strong, you'll receive a variety of responses. The common themes would most likely include a broad range of species, efficient nutrient cycling, sustainable resource management, conservation of efforts, and a balance between various ecological processes.

These factors could translate to the amazing STEM ecosystem that has been evolving over the past ten years in Utah. The partnerships that make our STEM ecosystem so robust represent a broad group of stakeholders that are committed to their role supporting STEM education and workforce development. It's not unusual to see partners reach out to each other for expertise and experience that may not exist in their own organization.

We all work together to leverage resources in order to benefit our children, youth, educators and communities. We benefit from the cooperation among the STEM communities to share and disseminate resources, best practices, and celebrate our successes.

There's a desire to find a balance in STEM, the arts, and foundational skills such as reading. We are all looking to connect and support each other, and we recognize that all of our efforts are necessary and critical to the success of the Utah STEM ecosystem.

There's a resilience in this ecosystem that's a result of these collaborative and committed efforts, and a reflection of the effort of so many heads, hearts, and hands. At the Utah STEM Action Center, we are excited to be a part of this vibrant community and do our part to continue to sustain this ecosystem.

STEM: PRIORITY SUCCESSES

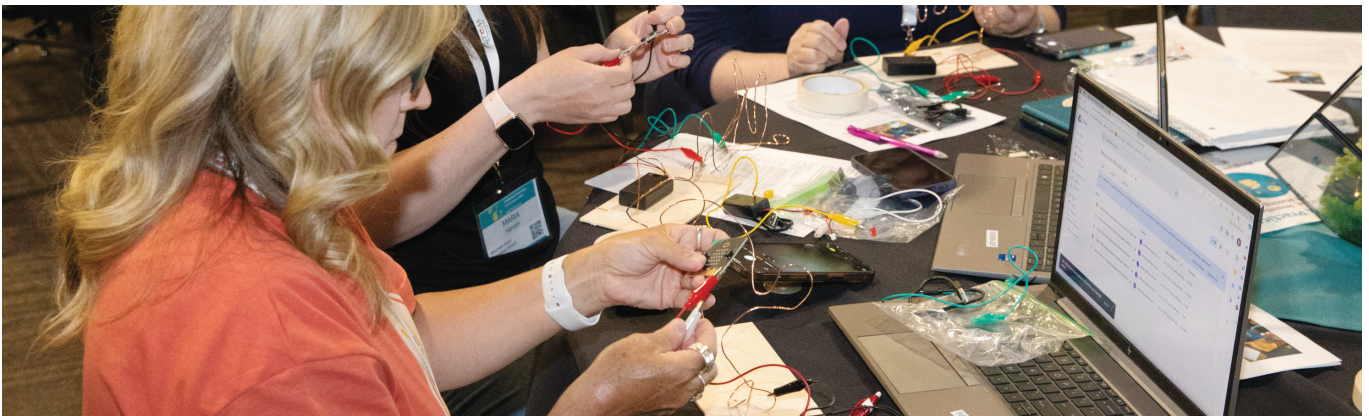


AmeriCorps Math Mentor Program

Research shows human connection has a greater impact on math achievement than any other type of intervention. The AmeriCorps Math Mentor Program matches students with mentors who work with them one-on-one or in small groups, and who empower them through encouragement, connection, and compassion. In FY24, a total of 39 Math Mentors served 1,792 students in grades 4-8 in eight school districts and five charter schools. Under this program, 86 percent of students increased their efforts in math and 76 percent of students maintained or increased their confidence in math.

STEM Best Practices Conference

In June 2024, the STEM Action Center team hosted a Layton conference, attracting 337 attendees, and another in Bryce Canyon, with 77 attendees. In a keynote speech, Captain Barrington Irving told stories about how he was inspired as a high school student, and went on to become the youngest person to fly solo around the world in a plane he built himself. Attendees selected sessions by grade level, all of which aligned to Utah standards and included hands-on activities so teachers could experience being students.



STEM: PRIORITY SUCCESSES

Innovation Hub

Fiscal Year 2024 proved to be an incredibly successful year for the Innovation Hub, a community incubator for best practices in STEM and maker education. The Utah Innovation Hub Network AmeriCorps program entered its second year with full enrollment, allowing for more and new programming, including:

Unstructured Tinker Time programming, conducted 12:00 - 8:00 PM on Fridays. The enrollment of AmeriCorps members has increased the capacity of Tinker Time from 20 participants to 80 participants

Daytime school year classes including:

- Makerspace Exploration (fall and spring)
- Maker Burst: Laser Cutting
- Maker Burst: 3D Printing
- Maker Burst: Circuits with Arduino
- Maker Burst: CNC Machines



- CNC Router courses
- Earth Month programming every Friday in April
- Invention programming every Saturday in May
- STEM Dungeon Master Boot Camps in June
- Intensive Arduino Robotics programming in June
- Coding: Interactive Fiction in June

Hydroponics

The Utah STEM Foundation, in partnership with Green Our Planet, raised \$100,000 for the High School Hydrofarms Program to be placed in Tribal areas. A Hydrofarm is an expansion of smaller hydroponics systems, which offers a method of growing fresh vegetables and herbs indoors and without soil so fresh produce can be grown year round. The STEM Foundation funding was matched by The Engelstad Foundation for 40 Hydrofarms systems to be placed over the next two years. The program also received funding from Marathon Oil, Meta, Fidelity, Common Spirits Health, Texas Instruments, and The Justin Spencer Family fund. To date, the



STEM Action Center has partnered with Green Our Planet to place hydroponic units in 47 schools and 11 libraries statewide.

STEM: PRIORITY SUCCESSES

Tinker Totes

This year, the STEM Action Center created and launched the Tinker Totes program. The totes are designed for 9-15 year olds inviting users to tinker, invent, and practice STEM. The aim is that anybody can open a tote, read the instructions, and then guide themselves through a STEM learning opportunity. Educators can use the totes in the classroom, or send them home with students. The totes are funded through donations and assembled by volunteers.

This year, the program received \$28,000 in donations, which paid for 825 Tinker Totes. The totes were distributed to a variety of schools and community groups, ranging from American Indian Services, Utah Foster Care, Mary W. Jackson Elementary, Salt Lake Community College and Verizon's Innovation Learning Summer Camp.



SEI: STEM Education Innovators

The STEM Education Innovators program was launched last August with a group of 43 secondary math, science, and CTE teachers who met virtually each month. The program aimed to help teachers increase subject knowledge and instructional skills while expanding their STEM networks. Over the first year, the teachers developed their reflective practices, collected baseline data regarding local problems, applied real-world skills in their classrooms, and began developing cross disciplinary lesson plans. In the second year, these innovative teachers will expand these programs throughout their schools, with the support of administrators.



AmeriCorps Math Mentor

"I really enjoyed my time as an Americorps math mentor. Our site supervisors are amazing. They were always so insightful and helpful. ... we always tried to make our mentor sessions as fun and engaging as possible. We would make a great effort to incorporate a game, challenge, or hands-on activity to enhance the learning and keep the students engaged."

– Rachel Jensen, math mentor, The Center for Creativity, Innovation & Discovery charter school, Logan

MILO + Friends

"Wow, just wow! Thank you so much for your engaging time with our teachers. They were over the moon receiving all those [MILO + Friends] games. I know they will get them in the hands of their parents at their conferences or parent nights. The STEM Action Center is incredible, but not as incredible as its staff. Thank you again."

— Anne Kilgore, Granite School District

BOARDS AND COMMISSIONS

STEM Action Center Boards

Utah STEM Action Center Executive Advisory Board

The purpose of the board is to facilitate coordination of programming and effective leveraging of STEM Action Center services, aligning the needs and perspectives of education, community, and industry stakeholders.

Vance Checketts, *board chair, autocon US, COO*

Donna Law, *board vice chair, CCE executive director*

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

Rich Nye, *Governor's senior advisor 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*

