



STRATEGIC PLAN

2021-2025

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LETTER FROM BOARD CHAIRS

Dear Utah STEM Community,

The Utah STEM Action Center Executive Advisory Board and the Utah STEM Foundation Advisory Board members are excited to share the strategic plan report from the Utah STEM Action Center. This plan was initiated in March of 2020 and completed in December of 2020, representing a comprehensive analysis of past accomplishments, stakeholder input and attention to measuring success for the Center. The STEM Action Center values its partners in the Utah education, industry and business, state government, and community and cultural organizations that have helped to make the programs and activities of the Center a success for Utah students, educators and communities. The Center, and its board members are appreciative of the ongoing support of the Utah State Legislature and Governor's Office for recognizing the value of STEM engagement and education and the support that has been provided by the state over many years.

This strategic plan, and the recommendations provided by partners and collaborators, reflects the ongoing commitment of the STEM Action Center to ensure that programs and activities supported by the Center are aligned to the needs of students, educators and their communities. The Center strives to work "with" and not "in" schools and communities to leverage the resources from each community in order to achieve optimal sustainability. This plan was created with the ongoing dedication of the Center, and board members, for transparency and accountability to achieve the highest level of quality, efficiency and effectiveness for Center operations and programming.

We are looking forward to many more years of excellence in STEM learning with the resolve to bring STEM to all Utah homes, schools and communities to build a brighter future for Utah.



Vance Checketts
STEM Action Center, Board Chair



Eric Pope
Utah STEM Foundation, Board Chair

VISION

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

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.

CORE VALUES

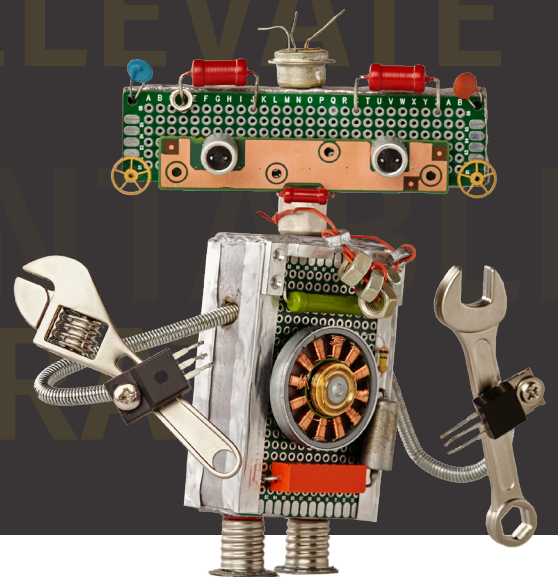
Catalyze growth and opportunity for **INNOVATIVE**, outcome-driven STEM efforts that support engaging student and educator experiences, foster STEM-centric communities, and bolster industry engagement.

ELEVATE all Utahns through access for each Utah student, educator, community, and family to quality STEM resources.

Support educational efforts that **INSPIRE** students to explore STEM education and career opportunities.

Advance Utah's STEM education through **COLLABORATION** with partners in education, business, government, and community organizations to convey best practices and emerging innovations to ensure STEM-excellence in the economy.

Integrate systems of **ACCOUNTABILITY** in all projects that clearly demonstrate measures of success.

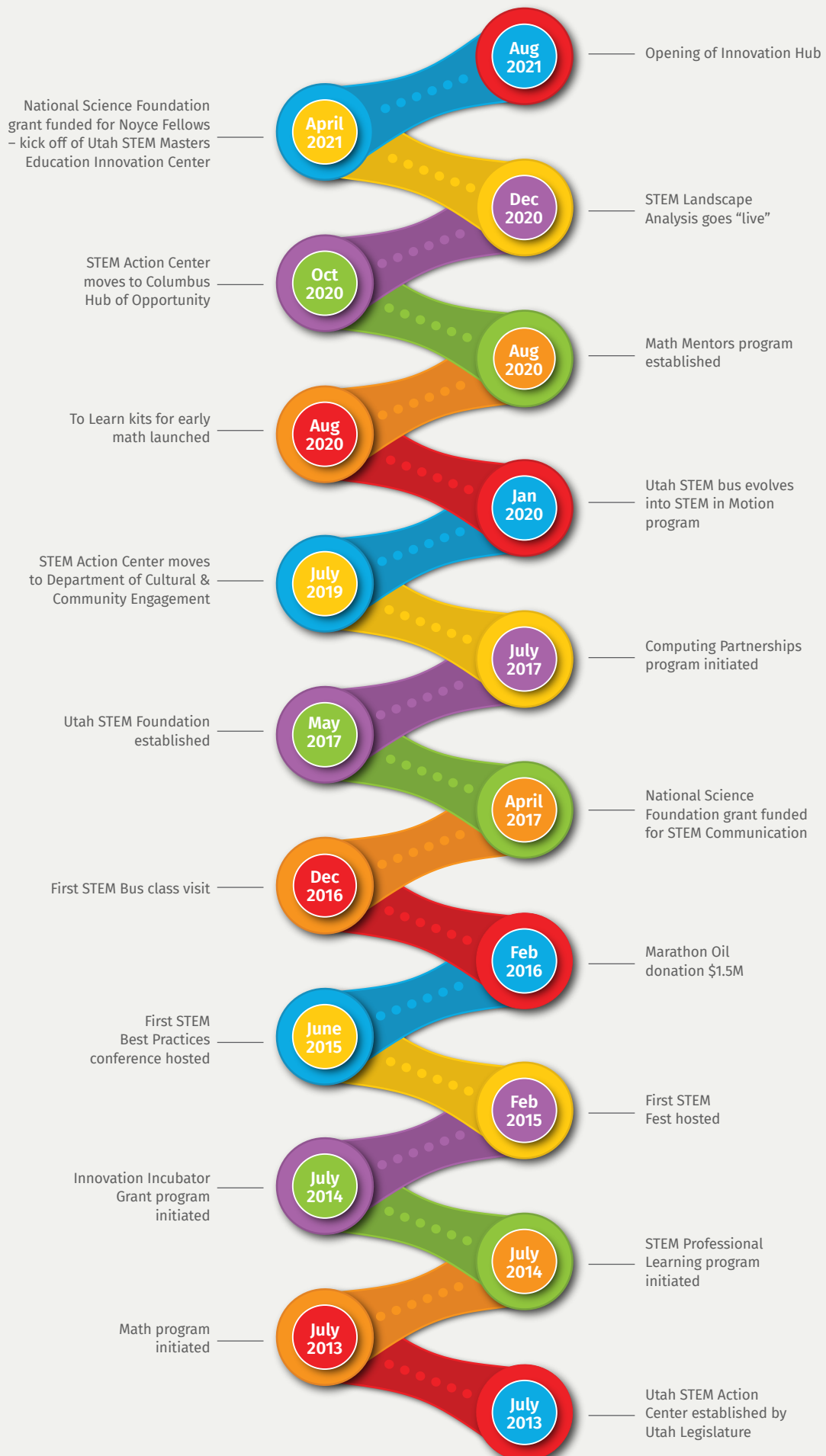


HISTORY OF THE UTAH STEM ACTION CENTER

The STEM Action Center was established in 2013 by the Utah Legislature to foster cohesion and collaboration for STEM education and support greater connection of industry and business partners to educational efforts.

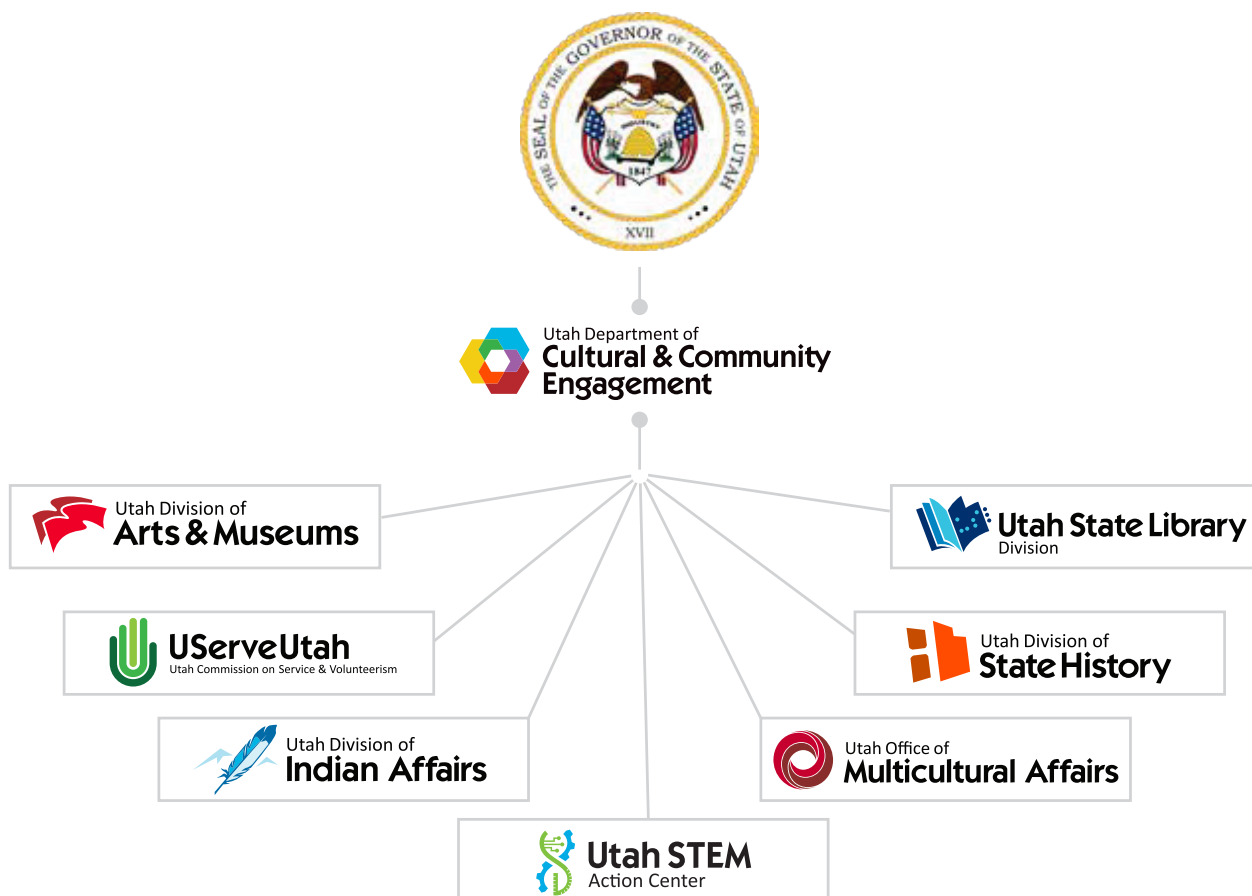
The Center, as an intermediary organization, plays a critical role for disruptive innovation in STEM education while maintaining accountability and agility. This optimizes partnerships and more effectively leverages specialized expertise and different missions of organizations. The STEM Action Center builds capacity, provides resources directly to students, educators and caregivers, and facilitates networks with other like-minded entities and community partners.





STEM ACTION CENTER ORGANIZATIONAL STRUCTURE

The STEM Action Center is one of seven divisions in the Department of Cultural & Community Engagement (CCE) that work together to provide a variety of services to Utah communities. A common theme within many of the CCE divisions is the ability to provide support for education and outreach programs. The STEM Action Center and several of the CCE divisions, such as Arts and Museums and History, collaborate to leverage resources and support programs that integrate STEM and the arts, history and archaeology. There are long-standing collaborations between the STEM Action Center and the Division of State Libraries that promote STEM and reading, find innovative approaches to working with bookmobiles and promote community-based learning opportunities in libraries across the state. The opportunities for collaboration are limitless and it is anticipated that new projects will continue to develop between the STEM Action Center and its partnering divisions in CCE.



UTAH STEM ACTION CENTER BOARD

The STEM Action Center Board plays a critical role in the oversight and function of the Center. The board has helped the Center and its team to navigate successfully many significant changes such as finding a new home agency and a new physical home. It serves as a liaison to STEM-based companies and industries through its industry-focused membership. The Board representation includes leadership from state agencies such as the Utah State Board of Education, the Utah System of Higher Education and the Utah Department of Workforce Services to ensure effective synergies that best serve Utah's STEM community. For more information regarding Utah STEM Action Center Advisory Board membership please visit <https://stem.utah.gov/about/stem-board/>.

UTAH STEM FOUNDATION BOARD

The STEM Foundation Board is comprised entirely of industry professionals and plays a central role in advocating for STEM education and the STEM Action Center's programs and activities. The Foundation board actively solicits support from local and national entities for monetary and in-kind contributions. The board members facilitate industry engagement and participation in a statewide industry coalition. This consistent and ongoing industry support promotes scaling of promising and best practices in STEM as well as long-term sustainability of successful STEM programs and activities. For more information regarding the Utah STEM Foundation please visit <https://stem.utah.gov/foundation/>.

UTAH DEPARTMENT OF CULTURAL & COMMUNITY ENGAGEMENT

The Utah STEM Action Center is a state agency under the Utah Department of Cultural & Community Engagement, part of the Governor's executive branch. Our agency is accountable to the Utah State Legislature and the Governor's Office.

In 2019, as a result of legislative action, the Utah STEM Action Center was moved from the Governor's Office of Economic Development to the Department of Cultural & Community Engagement. This move allowed the STEM Action Center to better serve Utah's community and industry needs through the identification and support of STEM best practices and leveraging of resources across all partners.

CENTER PARTNERSHIPS: KEY TO SUCCESS

STEM ACTION CENTER PARTNERSHIPS

As an intermediary organization, the STEM Action Center values and prioritizes opportunities for creating and maintaining connections with partners interested in mentoring and training children, youth, and adults in engaging and inspiring STEM content. These partnerships result in an increased understanding of and advocacy for STEM. Innovative programming is designed and implemented with funding and resource support to increase parental skills and knowledge, access to early STEM learning, educator development, and industry engagement.



STRATEGIC PLANNING PROCESS

THE STEM ACTION CENTER RELIED ON A PROCESS THAT RESULTED IN:

- A dynamic plan that allows the Center to refocus its resources as priorities shift, programs meet benchmarks and outcomes or new funding opportunities occur.
- A plan that emphasizes a community-based approach, using a community engagement research methodology that incorporates a system-wide gap analysis, individual interviews and focus groups.
- Data gathered from interviews and focus groups that was used to construct logic models for Center programs and identify goals and objectives.



MEET THE STEM ACTION CENTER

The STEM Action Center has a committed and experienced team, which is amplified by their passion to give back to the Utah community by sharing “all things STEM.” The Center and its programs thrive due to their professional backgrounds that represent over 11 years of K-12 classroom education, marketing and economics, fundraising and social work, over 15 years of informal STEM program design and implementation, engineering, woodworking and 3D printing, theatre and the arts, educational research and evaluation, biomedical research, undergraduate program design and instruction and state public policy.

The STEM Action Center team puts its heart into “all things STEM.” The team believes in the power of play and works hard to integrate STEM into what people love, including the arts, the outdoors, tinkering and building, growing, cooking, sports and reading. They believe that learning is for life when we do what we love. The team has a strong professional and personal commitment to optimize access for all Utah students, their parents and community partners. They know that not all students will pursue STEM education or careers, but they are committed to ensuring that the choice is theirs to make.

VISIT THE STEM ACTION CENTER

The STEM Action Center knows that community is important. The STEM Action Center is excited to be located in the South Salt Lake community, and continues to find new and innovative ways to connect in person and virtually with communities around Utah. The Center is located in the Columbus Hub of Opportunity, in partnership with Columbus Serves. The new Center will include a community-based Innovation Hub, which will support new programs and classes that support maker learning and competitive robotics.



WHAT WE LEARNED

AREAS OF NEED IDENTIFIED BY STAKEHOLDERS

- More early STEM learning opportunities, with a focus on math
- Increased parental and community engagement
- Continued focus on bringing resources to rural communities
- Increase access to high quality, online and remote resources
- Continue to provide innovative, integrated STEM content and programs
- Increase communication and marketing efforts
- Continue to provide educators support through high quality STEM learning opportunities
- Expand partnerships to support formal and informal STEM education
- Continue to focus on providing direct support to students, educators, and communities

UTAH STEM LANDSCAPE

ONLINE/REMOTE STEM LEARNING

The Center, in response to the challenges to in-person learning, adapted its programs offered by the STEM in Motion staff to kits, supported by virtual training for educators. In addition, the Center created and piloted a new series of at-home activities and associated materials, titled To Learn, that support early math learning. Feedback from educators and parents has been overwhelmingly positive and confirms that this hybrid model of STEM resources is a new and exciting approach for the Center that can increase access, support parents, and reach new levels of impact.

PARENTS AND EARLY STEM LEARNING

Early STEM learning can and should be something that happens every day in a variety of settings. Motivation to learn STEM is at its best with fun, contextual learning opportunities that encourage persistence and growth. An essential component of effective early STEM learning is that caregivers need to see themselves as STEM practitioners. Programs and activities need to be designed and implemented to provide greater access to caregivers, with content that is inclusive and encourages participation.

COMMUNITY DESIGN

Communities are unique in many ways including geographical location, population density, demographics and local culture. The ability to create programs with a community to meet local needs can increase participation in STEM education. Support from community partners results in better leveraging of local resources and increased alignment to the culture and needs of a community. Programs that are designed and implemented with community support have a greater chance of positive outcomes and sustainability.



COMMUNICATION & PERCEPTION OF STEM

STEM is a concept that is generally understood and valued in various communities throughout Utah. The result of this increased awareness for the value of STEM is that there are considerably more STEM education and workforce development efforts that have emerged over the last 7-8 years.

The STEM Action Center will work more closely with the STEM community to leverage communication resources to ensure that promising and best practices are identified, shared, and scaled. It will be critical that the Center emphasize messages that encourage and promote broad participation in STEM education and careers.

UTAH STEM FOUNDATION

The role of the Utah STEM Foundation has always been a unique and vital component to the success of the STEM Action Center. The agility and responsiveness of the Foundation to the changing nature of corporate giving is crucial to the Center's ability to remain successful even during trying times. The Foundation is working with industry partners to find innovative approaches to incorporate volunteers into STEM programs and activities.

CLOSING THE GAP ON ACCESS

The STEM Action Center has always been committed to encouraging broad participation in STEM through greater access to resources. The Center must focus on ensuring that programs minimize barriers for everyone by holding ourselves accountable to providing optimal access and continuously evolving our approach by actively engaging Utah's communities. The Center will accelerate the identification and sharing of strategies that increase positive exposure to STEM concepts and skills, engage parents and caregivers, and elevate STEM education and industry professionals.

STEM ACTION CENTER GOALS

Increase the focus on **increasing access** for STEM

- Develop programs attentive to growth mindset and strategies that cultivate more broad participation

Foster sustainable **partnerships** that support industry and community needs

- Incorporate metrics that measure success for diverse student needs
- Continue to build collaborations with a committed group of partners
- Explore new opportunities for formal and informal learning experiences
- Build relationships with higher education partners through innovative program design and pilot programs
- Expand creative opportunities to engage industry partners

Serve as a **statewide STEM resource hub**

- Ensure the development of foundational STEM content knowledge
- Support opportunities for adults learners to engage effectively with children and youth
- Build foundational STEM skills such as spatial reasoning and inquiry
- Provide tools for students achieving below grade level expectations in math that support age-appropriate acquisition of STEM skills
- Foster content and program design that integrates STEM learning, including computing and computational thinking skills, across all disciplines

Increase community support with a focus on **parents and caregivers**

- Foster relationships with parent and caregiver organizations, increasing communication and resource sharing
- Implement programs that are more inclusive to caregiver participation

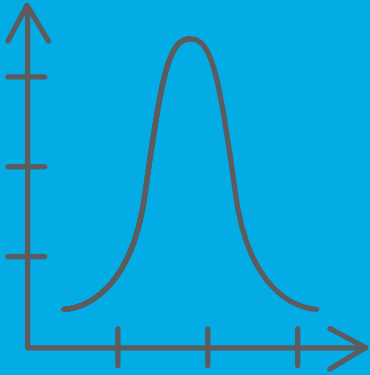
Improve **early STEM learning** opportunities

- Offer more opportunities for early STEM learning, both in the classroom and for informal and home learning environments
- Collaborate with organizations that share a commitment to early learning

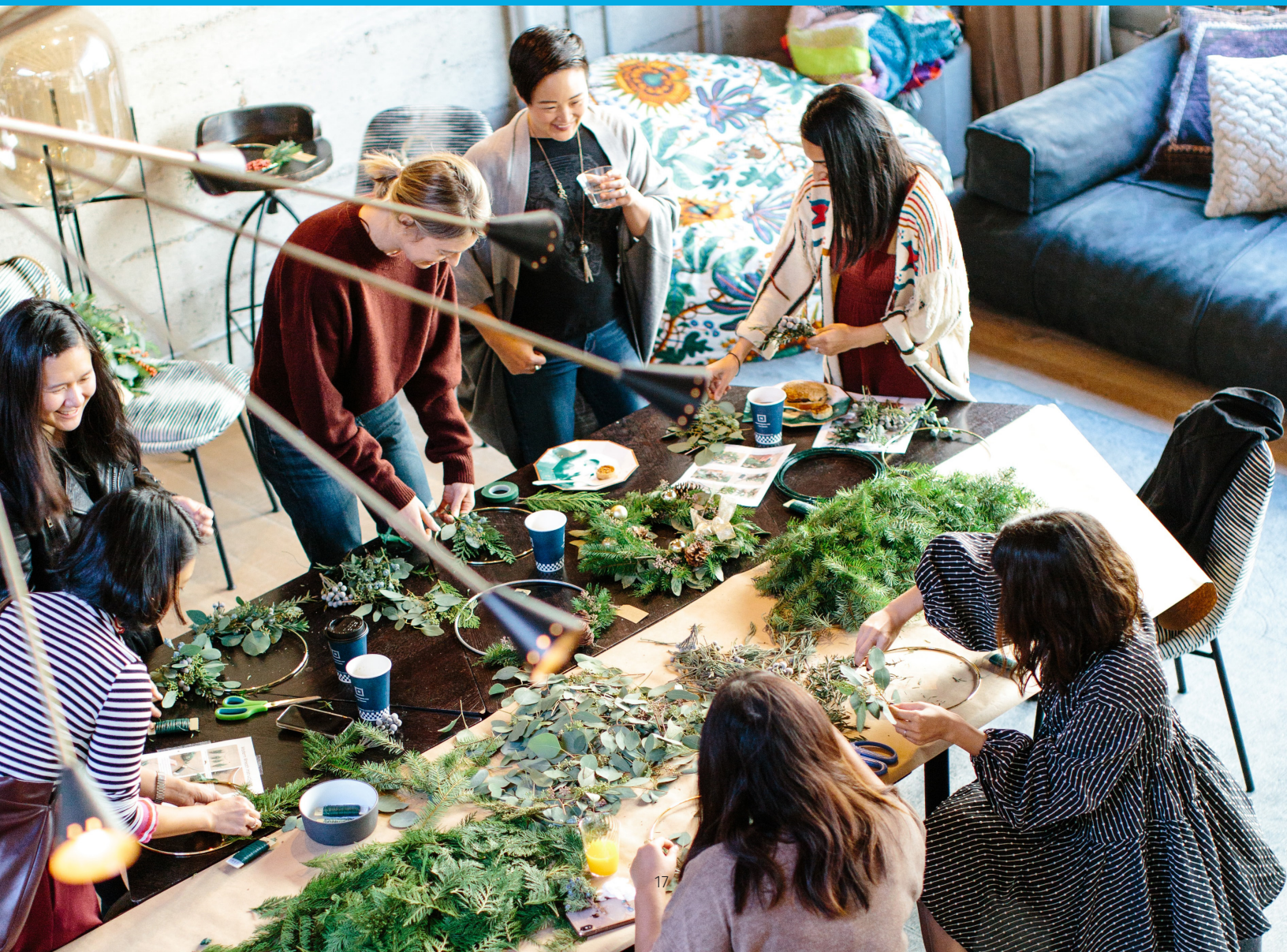
Expand **communication and advocacy** for STEM

- Create an adaptive strategic plan with consistent, outcome-driven goals
- Leverage collaborative communication opportunities

HOW DOES THE CENTER MEASURE SUCCESS?



- Third party evaluation for valid, data-driven program outcomes
- Audits (internal and external, state and federal); demonstrates high level of accountability
- Program logic models that guide measurement of outputs and outcomes
- Infographics that support clear communication of key outcomes
- Annual reports that support transparent and accountable information and data sharing

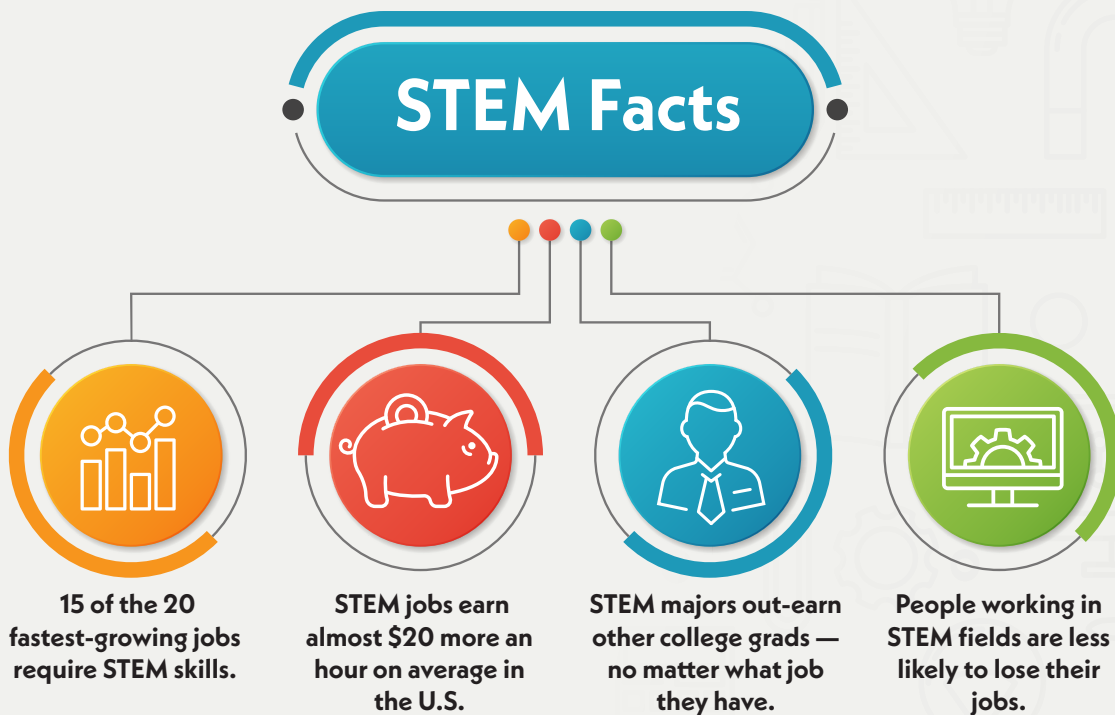


WHAT IS STEM?

In an ever-changing increasingly complex world, it's more important than ever that youth have the knowledge and skills to solve problems, make sense of information, and gather and evaluate evidence to make decisions. These are the kinds of skills that students develop in science, technology, engineering and math—disciplines collectively known as **STEM**.

STEM develops logic and critical thinking skills.

- Observe your world and ask questions
- Think about why and how things happen
- Imagine ways to solve problems
- Learn from the process of trying and failing
- Improve your problem-solving skills
- Produce solutions that make a positive, useful difference



PROGRAM SYNOPSIS

The **STEM in Motion program (SIM)**, formerly known as the Utah STEM Bus, brings exciting STEM activities and resources to schools and communities across Utah. The outcomes from a SIM experience include increased student engagement and enthusiasm for STEM activities, increased teacher awareness of STEM education, and increased industry investment in STEM.

The connection to STEM careers is what makes the SIM program unique from many other informal STEM programs in Utah.

The **STEM Professional Learning program** provides educators with opportunities to address local professional learning needs associated with STEM content and pedagogy. Participants partner with subject matter experts, from higher education and industry, to develop a plan to address and implement the learning needs of their local community. Additionally, participants engage in leadership development opportunities with reflection and application expectations in place between consistent learning sessions to assist in creating teacher leaders across the state.

The **Math Innovation programs** build off of a successful supplemental software project for personalized math instruction that was initiated in 2013. The Math Innovation programs focus on strategies that support success in math for children and youth, with a community-based approach that is inclusive to parents and caregivers. The programs integrate technology with innovative design and leverage partnerships and resources to improve math proficiency and growth, in addition to increased comfort with math concepts and applications.

The **Computing Partnerships program** works with education partners to identify gaps in and provide solutions for computing opportunities for students and educators in Utah. This grant is intended to target the development of new, innovative computing activities or support an increase in the capacity of existing, proven programs. Applicants are encouraged to emphasize activities that support the integration of coding into problem solving and that are cross-disciplinary and integrate computational thinking. The STEM Action Center is also interested in activities that provide access to underserved populations and have a focus on activities outside of the classroom.

The **Innovation Incubator program** provides direct support to Utah educators to innovate new classroom STEM activities and projects. This program highlights the creativity and talent of educators with good ideas.

The STEM Action Center **Innovation Hub** is a community-based makerspace that will support local and remote access for children, youth and adults to engaging programs that include robotics teams, STEM Artist in Residence, and making and tinkering. The Hub will provide opportunities for industry partners to mentor robotics teams and it will serve as a “demo” site that will be the model for makerspace Hubs in communities across the state.

The **STEM on Stage program** is designed to bring the “magic” of STEM to the stage for larger groups such as school assemblies and public events. The stage show changes themes each year to engage both young and old.

The **STEM School Designation program** provides statewide recognition to schools making conscious efforts to engage their students with STEM content that includes community connections and real-world applications. The designation process is a research-based framework and applicant schools complete a self-evaluation and share evidence of their work in STEM.

UTAH STEM FOUNDATION

The Utah STEM Foundation was created in May 2016 under the direction of the Utah State Legislature. The STEM Foundation's priority is enhancing the efforts of the STEM Action Center. Industry support is crucial to the mission of the STEM Action Center in order to connect companies into the classroom, increase STEM workforce opportunities in Utah, and enhance STEM funding and resource opportunities. The Foundation has helped to build relationships with industry and the resulting support has been provided in a variety of ways including cash donations, grants and sponsorships, program collaborations, and in-kind support through volunteer efforts. 100% of funding received by the Foundation is invested back into the community to support STEM in Utah.

VISION:

Collaborating with community partners to create engagement and industry alignment and deliberately allocating valuable STEM directed funds statewide.

MISSION:

To promote Utah's economic prosperity by assisting the STEM Action Center to build industry connections and provide STEM resources to the state of Utah.

Foundation Funding Priorities:



Innovation

We will use creativity and innovation to solve challenging problems



Workforce

Students will thrive in STEM and contribute to Utah's workforce



Collaboration

We will promote collaboration to optimize leveraging of resources.



Access

We will provide Utah communities with access to STEM opportunities

Company Support During COVID-19

The Utah STEM Foundation has worked with several industry partners to donate over \$70,000 in personal protective equipment (PPE), 3D Printers, and operational assistance to Arts and Humanities non-profit organizations during the pandemic.



In-Kind Highlight: New STEM Hub

MHTN Architects contributed several hundred hours and other in-kind contributions designing the new STEM AC offices, including the Innovation Hub.

R&O Construction contributed nearly \$40,000 in in-kind work for the Innovation Hub.

THANK YOU





Utah STEM
Action Center

STEM ACTION CENTER

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