



Tulsa Regional  
**STEM Alliance**

# IMPACT REPORT

## We believe



STEM is  
**Everywhere.**



STEM is  
**Everyone.**



All are  
**Welcome.**

## Our Strategic Plan

In May, after a months-long process to better understand the needs of our community, we released a new strategic plan that will help us meet our new vision and mission.

***YOU BELONG HERE*** ”

## We cultivate

impactful partnerships and learning pathways that inspire and prepare all youth for a STEM-enabled future.

## We envision

a thriving, collaborative & inclusive community powered by a STEM-capable ecosystem.

**2022**



# Youth

INSPIRING & PREPARING ALL YOUTH IN NORTHEAST OKLAHOMA

## STUDENT ENGAGEMENT

Through the power of collaborations, we were able to offer **12** TRSA-led events within our college and career readiness, family engagement, and competition program areas, in addition to dozens of community events.

TRSA continued to focus on overcoming the exact boundaries that hindered access to STEM before the pandemic. TRSA is committed to designing inclusive strategies that reimagine access, cultivate achievement, and honor the lived experiences of those we serve. By developing new and innovative programs, TRSA provided STEM opportunities for a record-setting number of youth and educators in our community.



### PROGRAM SPOTLIGHT



### SONIA KOVALEVSKY DAY

Named after the pioneer for women in mathematics and held in partnership with Tulsa Community College, this event brought middle and high school girls to campus for a day of math exploration. College professors and industry professionals led interactive and engaging lessons on real-world applications of math!

“ [Sonia K Day] made me feel smarter and it made me feel more confident in STEM as a career choice.

-9th grader

## IDENTITY & BELONGING

Our programs emphasize belonging and identity because they are critical in students' engagement, motivation, and achievement in STEM fields.

In the context of STEM education, belonging refers to the feeling of being accepted and valued within the STEM community. Students who feel like they belong in STEM are more likely to engage in STEM activities and pursue STEM careers. Studies have shown that a sense of belonging in STEM can improve academic performance, increase interest in STEM subjects, and reduce dropout rates.

Identity is how we see ourselves and the characteristics that define us. In the context of STEM education, identity refers to the ways in which students perceive themselves as STEM learners and the degree to which they identify with STEM fields. Developing a STEM identity involves recognizing one's abilities and interests in STEM and the opportunities available in STEM fields. Research has shown that a strong STEM identity is positively correlated with academic achievement and persistence in STEM.

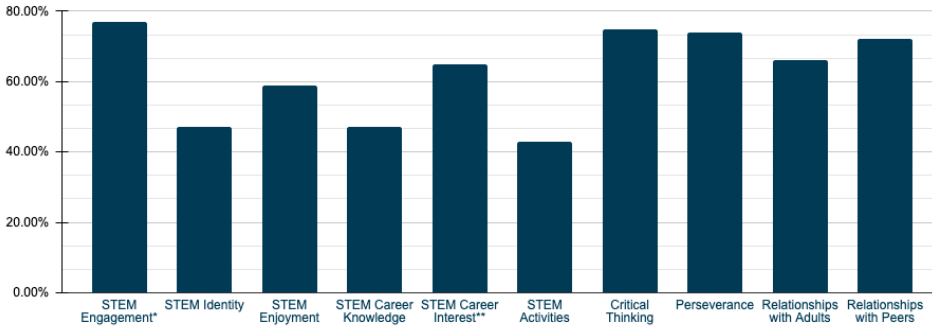
**330** students who attended a STEM program reported a statistically significant positive change in believing they are a person who **can do STEM** and **belong in STEM**.

Total Students Surveyed=704

# STUDENT OUTCOMES

Youth STEM programs measured using the PEAR (Partnerships in Education and Resilience) tools and HOPE scale demonstrated growth in most areas measured. Some of the most noteworthy results include a statistically significant positive change in all 21st Century Skills and in attitudes toward STEM, including how students see themselves as a STEM person.

Student Percent Positive Change After Program



## PROGRAM SPOTLIGHT

### ME & MY MATH MENTOR

This program creates pathways to opportunity for upper elementary students by helping them get to know STEM professionals and experience mathematics in a social and team-oriented context through the number-sense-reinforcing platform of gameplay. Surveys indicated that students who participated reported positive change from the start to end of the program in all four areas of 21st Century Skills.



- Perseverance
- Critical Thinking Skills
- Relationships with Adults
- Relationships with Peers

# STUDENT EXPERIENCES

THROUGH OUR PROGRAMS

## Events

**13,221**

youth engaged through family nights, competitions, and college and career readiness programs

## STEM Hubs

**907**

youth experiences offered through our North and Central Tulsa STEM Hubs

## Mentorship

**219**

youth experiences with caring adults working on STEM skills and social-emotional development

## STEM in a Bag

**15,333**

student experiences through hands-on learning kits

resulting in

**29,680**

student experiences



# Educators

EMPOWERING & EQUIPPING PK-12 TEACHERS AND INFORMAL EDUCATORS



## PROFESSIONAL DEVELOPMENT

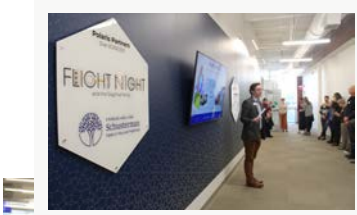
We offered **35** unique professional development experiences that provided strategies and solutions to empower teachers and support their success.

**599** educators from **89** different school districts and education partners participated in more than **4,259** hours of hands-on learning.

## SIEGFRIED STEM LEARNING LAB

In July, TRSA completed renovations on our new office space at the Tandy Family YMCA and opened the Siegfried STEM Learning Lab.

This nearly 1,500-square-foot space is equipped with state-of-the-art technology and serves as a model STEM lab and site for professional development and STEM learning. Designated as a convening space for ecosystem partners, the Siegfried STEM Learning Lab also operates as TRSA's Central STEM Hub.



## PROGRAM SPOTLIGHT



## EXPONENTIAL GROWTH MATH PROFESSIONAL DEVELOPMENT

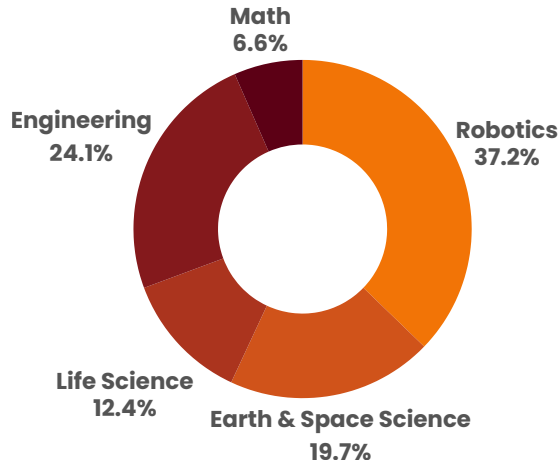
In partnership with Dr. Martha Parrot, Professor of Mathematics and Assistant Dean at Northeastern State University, K-8th grade educators participate in year-long cohorts focused on creating a community of thinkers, pedagogy, and resources for a growth mindset approach to mathematics.

“Today's session was fabulous!... Being in-person was very powerful, and I'm excited to continue growing.”

-Molly, K-2 teacher

## STEM SHOPPE

The STEM Shoppe is a collection of resources, instructional equipment, and supplies available for loan to classrooms, community organizations, and family engagement events. There are dozens of items ranging from math manipulatives, to scientific models, and robotics.



STEM Shoppe kit utilization by educators

**33** schools and education organizations utilized **137** kits resulting in **\$200,645** in ecosystem-wide savings.



## STEM INNOVATOR AWARDS

**4** Oklahoma educators were recognized at our annual Flight Night gala for their outstanding contributions in support of STEM education and outreach:

- Elementary & Overall Winner** Barbie Jackson, Sand Springs Public Schools
- Middle School** Michelle Rahn, Claremore Public Schools
- High School** Amy Moore, Tulsa Public Schools
- Administrator** Andrea Sagely, Muskogee Public Schools

Winners each received a \$2,500 individual prize to use for professional development, classroom materials, or other STEM initiatives. Jackson received an additional \$2,500 as the overall STEM Innovator award winner.

## GRANTS AWARDED

TO SCHOOLS & PARTNER ORGANIZATIONS

### Supplies & Materials

**\$119,573** awarded

**63** recipients

Providing materials and equipment for high-quality STEM experiences

### Professional Development

**\$133,949** awarded

**25** recipients

Empowering educators and partners to provide or participate in PD

### Out of School Time

**\$120,311** awarded

**49** recipients

Supporting afterschool programs, summer camps, and family nights

resulting in **34,322** student experiences



# Ecosystem

SUPPORTING & STRENGTHENING COMMUNITY PARTNERS & FAMILIES



## LISTENING SESSIONS

As part of a national effort in partnership with Beyond 100K, TRSA conducted interviews with STEM educators, students, and STEM professionals to better understand their opinions, ideas, struggles, and successes to help identify underlying challenges they experience while cultivating belonging in their students – all with a focus on Black, Latinx, and Native American teachers and students.



## MOMENTUM

In December, we launched our new digital badging and collective impact initiative called MOMENTUM.

In collaboration with The Opportunity Project, this network of STEM partners will allow us to leverage the collective will and wisdom of the community to ensure every child is exposed to meaningful out-of-school time experiences and has credentials to showcase the value of those experiences to the world.

**35** organizations & individuals  
have committed to supporting this work



## STEM HUBS

Launched in 2022, our STEM Hubs serve as communities of practice for learning, research, and innovation in STEM engagement. We strategically bring together students, educators, workforce partners, and other stakeholders to design and carry out initiatives that serve our most vulnerable populations of students.

296

UNIQUE  
STUDENTS

7

COMMUNITY  
PARTNERS

10

OUT-OF-SCHOOL  
TIME EVENTS

13

DAYS OF STEM  
PROGRAMMING



## COMMUNITY ENGAGEMENT

367

VOLUNTEERS

1,086

HOURS

## PROGRAM SPOTLIGHT

**STEM:MIND** is an afterschool program at Tulsa's Memorial Middle School that focuses on creating safe spaces for diverse learners in a state-of-the-art STEM demonstration lab. Student-inspired and student-designed, the lab allows for hands-on learning using various technologies. It is also home to a highly successful robotics program where students build drones, underwater robots, and quadcopters. STEM:MIND students pursue their own ideas, solve problems, and collaborate with their peers to design, develop, and play.

In 2021-2022, TRSA partnered with PEAR (Partnerships in Education and Resilience) to implement a study to determine how programs offered by TRSA partners affected participants' STEM outcomes, including categories like STEM career knowledge, STEM career interest, STEM identity, and more. Of the seven partner programs included in the study, research indicated that STEM:MIND consistently showed a large, if not the largest, magnitude of positive change across all STEM outcomes. *Why might this be?*

STEM:MIND intentionally creates an inclusive space and nurtures a sense of belonging for all students, with a particular focus on engaging LGBTQ+ students. With an emphasis on making learning fun, the program creates a space for youth to find their niche in STEM, embodying the idea that "STEM is everyone." Lead STEM:MIND educator, Abraham Kamara, says student participants "become very proud of what they do... [they believe], 'I can contribute, I can help other kids ... I matter in society.'"

“ [Students] become very proud of what they do... [they believe], 'I can contribute, I can help other kids ... I matter in society.' ”

This program illustrates that inclusivity and youth voice in STEM programs create a sense of belonging in STEM, increasing STEM engagement and confidence to combat real-world problems with STEM (Mitra, 2004; Mulvey et al., 2022).





# Financials

ACCOUNTABLE, TRANSPARENT COMMUNITY INVESTMENT IN STEM

## STATEMENT OF ACTIVITIES

### REVENUE

	2020	2021	2022*
CORP/BUSINESS CONTRIBUTIONS	245,600	154,913	1,350,125
INDIVIDUAL CONTRIBUTIONS	18,129	10,869	317,200
GRANTS	905,303	1,061,774	544,013
OTHER REVENUE	89,220	524	12,594
<b>TOTAL REVENUE</b>	<b>1,259,233</b>	<b>1,228,080</b>	<b>2,223,932</b>

### PROGRAM EXPENSES

COLLEGE AND CAREER READINESS	163,178	150,722	110,874
COMPETITIONS	55,670	68,193	48,653
OUT OF SCHOOL TIME	166,221	150,123	97,416
CURRICULUM & RESOURCES	87,103	99,102	69,691
PROFESSIONAL DEVELOPMENT	262,107	209,113	415,889
FAMILY & COMMUNITY	45,854	33,809	37,475
STEM ECOSYSTEM	42,697	148,081	178,890
GENERAL PROGRAM	-	-	39,196
<b>TOTAL PROGRAM EXPENSES</b>	<b>823,430</b>	<b>859,022</b>	<b>1,105,022</b>

### SUPPORTING SERVICES

MANAGEMENT & GENERAL	235,156	256,195	537,797
FUND DEVELOPMENT	66,681	75,999	400,698
<b>TOTAL SUPPORTING SERVICES</b>	<b>301,837</b>	<b>332,194</b>	<b>938,495</b>

## FINANCIAL POSITION

### ASSETS

	2020	2021	2022*
CHECKING & SAVINGS	607,186	728,020	940,617
ACCOUNTS RECEIVABLES / PREPAID	185,717	95,749	62,583
OTHER CURRENT ASSETS	18,659	30,091	-
FIXED ASSETS	8,555	21,890	307,313
<b>TOTAL ASSETS</b>	<b>820,117</b>	<b>875,750</b>	<b>1,310,514</b>

### LIABILITIES & EQUITY

CREDIT CARDS	557	11,531	19,847
OTHER LIABILITIES	36,144	44,060	300,977
EQUITY - RESTRICTED	478,707	549,829	475,312
EQUITY - UNRESTRICTED	304,709	270,329	346,776
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>820,117</b>	<b>875,750</b>	<b>1,142,912</b>

\*Not yet audited



# Funders

CULTIVATING & CELEBRATING OUR VIBRANT FUNDING COMMUNITY

## Platinum Level

FLIGHT NIGHT



CHARLES AND LYNN  
**Schusterman**  
FAMILY PHILANTHROPIES



TULSA  
COMMUNITY  
COLLEGE

LIVE UNITED



Tulsa Area United Way

GEORGE KAISER  
FAMILY FOUNDATION

## Gold Level

Williams

The Opportunity Project

YMCA

## Silver Level

AAON

H.A. & Mary K. Chapman

Charitable Trust

Kinder Morgan Foundation

City of Tulsa

## Bronze Level

Mark & Lisa Dalton

T.D. Williamson

ONE Gas



Tulsa Regional  
**STEM Alliance**



While 2022 wasn't without its challenges, we made real progress preparing and inspiring Oklahoma youth for a STEM-enabled future. These accomplishments would not have been possible without the dedicated support of our staff, educators, volunteers, and partners.

Moving forward, we recognize there is still much work to be done if we are going to build a more diverse and inclusive STEM workforce. We remain committed to our mission and will continue to explore new opportunities to make an even greater impact in the future. We are grateful for the trust and generosity of our community, and we look forward to working together to create a brighter future for all.

To find out more about our impact and initiatives, visit

**TulsaSTEM.org**

**thank you** ”

**121,644**

**STUDENT  
EXPERIENCES**

**78**

**SCHOOL DISTRICTS**

**114**

**COLLABORATORS**

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