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2020 was a year like no other, and it brought many challenges. I feel a great sense of pride that we were able to meet students and educators where they were, while continuing to lead with a heart to build confidence in students during this time. As you can see from the list of individuals and organizations on the front of this report, none of our efforts would be possible without the support from our staff, donors, Board of Directors, volunteers, mentors, Advisory Council members, Teen Advisory Council members, and community partners.

Through our joint efforts, we were able to create innovative, educational options for students, including STEM in a Bag kits, which provided a non-screen time option. These kits also helped us achieve one of the highest annual student impact on record. We also saw more student participants during our virtual summer camp offerings, which exceeded previous years' numbers. We were even able to bring back the Tulsa Regional Science Fair through our partnership with the University of Tulsa. This event allowed Tulsa County and Creek County students the opportunity to once again participate in a local science fair without having to travel a far distance.

Our efforts would not be possible without the support from our partners. Thanks to corporate funding, we hosted our first teacher extern, Jared Morgan, a science and French teacher from Sand Springs Middle School. Jared joined our staff during the summer, laying the groundwork for the future of our summer teacher externship program.

Even during a pandemic, the youth in our Teen Advisory Council continued to shine and engage deeply with our alliance and partners. This program offers tremendous career development and networking opportunities for students. In addition, we added two of our Teen Advisory Council members to our Board of Directors in 2020.

Our year ended as we watched local students’ science projects launch to the International Space Station through a partnership with DreamUp. This project wouldn't be possible without the continued support from our friends at Flight Night, who truly make dreams come true for local students.

As we embrace 2021, we are excited to continue building broad, deep, and innovative STEM pathways for all students to access high-impact careers.
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Garrison Haning
Magellan
146
Mentors

1,070
Teachers in professional development

70,380
Students indirectly impacted

141,934
Total students directly impacted
STEM in a Bag are small take-home STEM activities that cost around $1.00 to $2.00 per bag. Each bag contains all materials needed to complete a STEM activity: directions, learning connections and extensions, and background information. Each bag is designed by theme including engineering, computer science, math, and natural science while aligning to Oklahoma Academic Standards. In 2020, bags were distributed at grab-and-go-meal distribution sites and by educators. The majority of bags were distributed to Union and Tulsa Public School students.
CLICK BELOW TO VIEW OUR 2020 PROGRAM IMPACT MAP
STEM is critical to growing the regional economy and empowers youth to lead choice-filled lives.

STEM is experiential real-world “charging stations” that power students’ development in curiosity, confidence and competence in problem-solving.

Adults are force-multipliers: teachers, parents and professional mentors should be equipped to lead STEM experiences and make connections to careers.
With the onset of the global pandemic, TRSA quickly turned all its programming virtual, building Google Sites and planning how to make STEM programming accessible for students with and without internet. Through the partnership of school districts, businesses, and informal education partners, TRSA provided programming to more than 100,000 students in 2020. Event kits, complete with all the necessary materials, were bagged for the STEMtember STEM Expo, Engineer Games and You’re Kind of a Big Deal, then delivered to educators and/or families.

"I thought it was a great idea to do this because of Covid and that it was so fun!"
- Back to School STEM Expo Student

"This virtual STEM event had a wide variety of choices to choose scenarios from and it really made me think about how a lot of the outside world affects our abilities to solve problems."
- Engineer Games Student
Registered students received a "camp in a box" that included all materials, resources, and content needed to complete the camp. All students could visit our open-access camp website that included videos, STEM@HOME Challenges, and virtual tours -- all dedicated to providing valuable learning context aimed at creating a positive impact on student academic growth. A majority of students indicated they used both the kit and website to complete activities and experienced an overall positive percent change in areas that were surveyed by the PEAR Institute CIS Survey Instrument. (Graph below shows the areas surveyed.)

Program - Percent Positive Change 72 Responses

![Graph showing areas surveyed with positive percent change]

It made me want to become a Forensics Scientist Engineer!"

- STEM Investigation Camper

"My son is a hands-on learner, so to have the kits on hand for him to do it was ... well, as good as it gets in this pandemic. Thank you."

- To the Moon and Beyond Parent/Guardian
“Whether it’s giving or volunteering, you want to see everyone participating in civil society — you want to see everyone saying, ‘I have a stake in my community and I’m committed to doing what I can to make this a better place,”’ ”

--Dan Cardinali, president and CEO of Independent Sector, a result-centered organization with a focus on racial equity

Once volunteers have a stake in their community by connecting with an organization, it’s up to the organization to find ways to keep them engaged and invested and to recognize their contributions. A solid volunteer training program, a dedicated Volunteer and Mentorship Program Manager, and opportunities for meaningful work have gone a long way toward keeping TRSA volunteers happy and ready to return.
Throughout 2020, 146 mentors engaged with students. One hundred and twenty of those mentors participated in our Me and My Math Mentor program, which provides an opportunity for volunteers to help students with their foundational math facts, helping set the stage for future STEM careers. With an emphasis on making math fun, a student works with their mentor playing math games focused on math concepts that help build confidence and skills.

Our mentorship programs are designed so volunteers work with the same set of students for multiple sessions, with the goal of forming meaningful relationships and providing positive influence. Additionally, STEM mentoring introduces STEM professionals to students to help encourage students to pursue STEM as well as helping students along an educational path in STEM.

This year, we added Darnaby Elementary School to our Me and My Math Mentor sites, bringing our total number of active schools to 10: Rosa Parks Elementary School, Lindbergh Elementary School, Kendall–Whittier Elementary School, Burroughs Elementary School, Marshall T. Moore Elementary School, Dual Language Academy, Ranch Heights Elementary School, KIPP Tulsa College Preparatory, and Sequoyah Elementary School.
All professional development (PD) opportunities for 2020 transitioned to virtual experiences using Google Sites with both asynchronous and synchronous sessions. As each PD is unique, the best engagement method was chosen to fit the needs of the teacher and PD. For example, Exponential Growth Math PD used synchronous streamed sessions while Drone Institute and SENSEsational Science provided asynchronous websites. Regardless of the method of delivery, each registered participant received a bag of materials similar to what they would receive during a face-to-face session.

CLICK HERE TO LEARN ABOUT ALL OF OUR 2020 PD OFFERINGS
Upon the completion of the formal PD, each site was posted as a free resource for anyone to use. With the unique needs of educators in 2020, a new gamification PD opportunity took educators through the engaging world of how to gamify curriculum for both in-person and virtual learning. More than 100 educators attended this asynchronous, web-based PD.

I feel confident teaching STEM.

This specific professional development experience is a valuable use of my time.
A lack of resources, including materials and qualified teachers, is a major barrier to implementing high-quality computer science education. By investing in our students' education, we will build a population of highly educated, skillful, and resourceful citizens with the ability to access the high-impact careers in our state and beyond.

In 2020, TRSA continued participation in an EcosystemsforCS grant through CSforALL, which culminated in the creation of CSforOK, an ecosystem focused on promoting and developing CS career pathways for Oklahoma students. The CSforOK strategic plan was developed with partners from higher education, K–12 education, government as well as non-profit and philanthropic organizations. CSforAll focuses on three pillars: professional development and educator support, community support and awareness, and school district support.

To further the goals outlined in the CSforOK strategic plan, TRSA focused on the pillar of professional development and educator support by assisting the Oklahoma chapter of the Computer Science Teachers Association, which we helped establish in 2019. We also hired a CS program manager in 2020 to increase our CS programming.

TRSA hosts monthly CS meetings that include teacher professional development and guest speakers while providing teachers with CS resources. In 2020, TRSA and its CSforOK partners provided computer science to 350 teachers. The goal for 2021 is to expand CS PD to an additional 300 teachers.
During Computer Science Education Week, TRSA provided CS kits to all schools in the Tulsa Public Schools district, serving more than 35,000 students. The kits included a book on computational thinking for teachers, books for students highlighting the contributions of traditionally underrepresented groups in CS, posters, hands-on student activity kits, and information on pathways to CS opportunities after high school.

And for the first time, Code.org's Oklahoma State of Computer Science Education conference leaders invited a representative from TRSA to participate in the creation of CSforOK’s strategic plan, elevating Oklahoma's status on Code.org's state rubric.

In 2021, we will continue to frame our work in CS around the CSforOK strategic plan, with plans for more professional development, additional school district support through a strategic planning workshop, and increased resources for families.
At the end of 2020 we launched the TRSA Program Portal, an improved community database that houses information about our programs and records statistical information. Teachers, volunteers, partners, and families can create accounts and sign up for events or even create events for the community.

Once an account is established, portal participants can access their individual records to view their participation history. Partners can specifically see their organization's participation and the number of their volunteers that have participated in TRSA programs and events. The data is held in a secure database that allows TRSA to have a better understanding of the success of its programs.
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Data Analyst and HR Manager
"IF YOU WANT TO GO FAR, GO TOGETHER"

– African Proverb

Thank you to every staff member, board member, donor, community partner, volunteer, mentor, Advisory Council member, Teen Advisory Council member, and every person who contributed to 2020's success, including those not listed.