



Annual Report 2021-2022

STEM Santa Fe

info@stemsantafe.org

stemsantafe.org

505.570.5402

PO Box 33103

Santa Fe NM 87594

Executive Summary

After a long year of serving most of our students virtually, STEM Santa Fe was thrilled to successfully return to in-person programming in our 2021-2022 fiscal year! While this transition certainly presented challenges, we are proud to say that we kept all our programs going strong and grew our efforts to serve even more students than last year! Throughout our 5 programs, we served **a total of 721 students**, delivering **7262 contact hours** of programming. We increased the number of students we served by 23% with a 62% increase in contact hours since last year.

We saw that many students were struggling with going back to school after the remote learning and other stresses they had experienced last year, and so we **increased our focus on social-emotional learning as well as STEM skills** in our programs. Our programs have always centered the relationships between students,



mentors and role models, but this year, we made a commitment to explore how project-based STEM learning can best support the development of social-emotional competencies like communication and problem-solving. We also held student project showcases where students presented their work to their families, building confidence and family support.

Here's how we continued our work towards diversity, equity and inclusion in STEM this year:

- Engaged **456 girls** across all our programs, meaning that we served **over 60% female students**
- Served **45% students of color** and **72% Hispanic students**, reflecting our commitment to increasing diversity in STEM
- Started a new partnership with GEAR UP New Mexico to deliver a **second STEM conference for girls** in May 2022 after having already held our usual annual conference in October 2021
- Created a **new week-long program on Aviation and Aerospace for girls**, thanks to a new collaboration with Women in Aviation International (WAI) Land of Enchantment Chapter and the Rio Grande Norte Chapter of The Ninety-Nines, Inc.
- Served on two new committees on education in New Mexico, delivered a drop-in STEM program at Santa Fe Public Library, and participated in many public events as part of our Outreach and Advocacy
- Created meaningful volunteer opportunities for **175 adult volunteers**, most of whom are STEM professionals who lend their expertise directly to inspiring our students

Our Priorities

Our Mission and Vision:

STEM Santa Fe advocates for, develops and provides STEM programming, mentoring and resources for all youth, especially underrepresented groups in STEM, to realize their potential and expand their opportunities in a dynamic world. STEM Santa Fe envisions a world filled with analytical citizens exploring complex issues for the betterment of society.

STEM Santa Fe's program design:

People-based: Our work is centered around students and reaching out to those from underrepresented groups in STEM disciplines. We also rely on our community of practice of individuals who we coach to serve as mentors and role models. The educational experience we offer our students is focused not only on STEM skills, but also on their relationships with mentors, peers, and themselves. Engaging students with relatable mentors who lead collaborative projects helps them form positive relationships with mentors and peers, as well as increase their confidence in themselves and growth mindset.

Project-based: Our programs all follow the principles of experiential learning. Students collaborate on hands-on activities that focus on solving real world problems. Projects like these show students that STEM is relevant to their lives, and boosts their interest in STEM education as they see how they can use STEM to help their communities.

Place-based: We carefully select the locations of all our programs to help us reach underserved communities. We offer in-school programs at mainly Title I schools (high poverty schools) in order to reach students who may not have access to out-of-school opportunities, or have not yet developed enough of a pre-existing interest in STEM to seek out an afterschool program. Our weekend and summer programs occur on college campuses that are accessible to underserved communities in Northern New Mexico.

Equity-based Practices

STEM Santa Fe is committed to implementing equity-based practices in order to better serve the diverse and often underserved populations of Northern New Mexico. A mainstay of our practices is that **all our programs are offered at low to no cost** – with nominal fees waived on request – so that no family ever has to think twice about sending their student to try our STEM programs. In addition, we offer all registration materials for our programs in both English and Spanish so that Spanish-speaking households can feel comfortable with the content of our programming and registration process.

Our Community of Practice

Our people-based programming is made possible by the incredible network of people who have committed to advancing STEM education in Northern New Mexico by supporting STEM Santa Fe with their time, expertise and resources. From volunteers who assist for a day or for weeks and months, to organizations who partner with us to bring our programs to students, we truly value every member of our community of practice.

This year, we engaged a total of **175 volunteers, 49 of whom are STEM professionals** who delivered workshops or other STEM curricula to our students. Some individuals volunteered multiple times and in multiple different roles. Thank you to everyone who has volunteered with us this year!



We continued partnerships with schools in **Santa Fe and Española Valley Public School districts**, and started a new partnership with **Santa Fe Indian School** to deliver programming directly to student's classrooms.

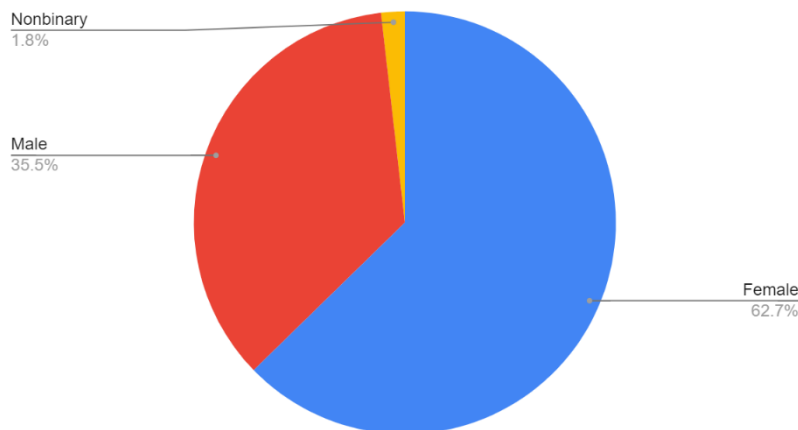
Our other programs were held mostly at **Santa Fe Community College** and **Northern New Mexico College**, both of whom generously donate their space to us at no charge. **New Mexico Tech** sent STEM professors to our summer camps and offered students who attended 1 college credit for each week of camp. **Los Alamos National Laboratory Community Partnerships Office** is vital to helping us recruit volunteers for our programs. **Wildflower International/Dell Technologies** provides the classic STEM Santa Fe t-shirts and baseball shirts that our students and volunteers receive, as well as supporting our programs throughout many years as a Diamond Sponsor. **Meow Wolf** also supports us with in-kind donations in addition to Diamond level funding. Apologies to all our sponsors and community partners from not listing all the contributions you provide to support our mission. We are overwhelmed with the generosity of our community.

Our Students

STEM Santa Fe remained true to our commitment to serve diverse and underserved populations this year. We served **a total of 721 students**, engaging them with **a total of 7262 contact hours** of high-quality STEM education programming. We delivered **in-school programming to 361 of these students**, and the rest were engaged with out-of-school programs such as conferences, summer camps and weekend workshops.

Almost 72% of the students we served are Hispanic and 16% are Native American. In addition, we are excited that 63% of the students we served identify as female. We work hard to engage girls, Hispanics, and Native American students through our programs, so we are thrilled to be able to say they are the majority of students that we served this year!

Genders



... As a parent I am so proud of my son that he was able to understand such a complicated topic and was able to accomplish the project with his groupmates. My son not only learned how to create but he also has developed the value of working in a team. He is so excited about this project and also is very proud of himself for this accomplishment. I hope that the fun and the challenges continue and that they accomplish more tasks in the future. Thank you for the opportunity...

Española Valley HS Parent on Arduino-based One-Lane Bridge project



Our Programs

STEM Pathways for Girls

We hosted our annual STEM Pathways for Girls Conference on October 29-30, 2021 in a hybrid format due to ongoing COVID-19 restrictions, with hands-on workshops led by female STEM professionals occurring at Santa Fe Community College on Saturday and two keynote speeches streamed live on YouTube on Friday and Saturday evenings. **69 girls** attended 2 workshops each, all led by one of **11 prominent women in STEM fields** who volunteered their time and expertise for the conference. In addition, five monthly in-depth workshops were provided (January-May 2022 for more inspirational experience in Santa Fe.



"I liked everything and I like how they showed us everything so we understood"

The conference was the first large-scale event we held in-person after we went virtual in 2020, but despite the logistical challenges posed by COVID restrictions it was a success! The girls who attended were excited about getting to work together and with the female STEM

professional and learn about many different STEM subjects.

For the first time ever this year, we also helped plan and host a second STEM conference for girls in May, collaborating with GEAR UP New Mexico. The conference was held at the Crowne Plaza hotel in Albuquerque, and **88 girls** from schools all over Northern New Mexico were bussed in to spend the night and experience STEM Santa Fe's hands-on workshops, along with a STEAM/College Fair, a semi-formal dinner with a keynote speaker, and a panel of women in college or working in STEM, as well as a variety of other fun activities.

"Motivated me to not give up and keep trying."

"I loved coming here! The volunteers were very nice (heart emoji)"

"I would like to tell my friends how fun it is"

Julia Robinson Mathematics Festival

We brought the Julia Robinson Mathematics Festival back to Santa Fe Community College as an in-person event, exclusively for 8th grade students from Carlos F. Vigil middle school in Española. On April 14, 2022, **67 students** attended the festival and improved their attitudes towards math by playing games and solving puzzles with two mathematicians and nineteen volunteers from Los Alamos National Laboratory. Twelve tables were set up with different math activities, and students got to explore them at will, spending as much or as little time as they liked on each activity.

Table activities (instructions available through the JRMF website):

- Cup Stacking
- Magic Squares
- Game of Amazons
- SET
- Skyscrapers
- Squaring Puzzles
- Tower of Hanoi
- Wolves & Sheep
- Chocolate Fix
- Chomp
- Stomping on Dots
- Palindrome Grab

"The festival made me realize that math isn't so bad after all because before this I thought math was dreadful but now I love it."



We also coordinated college tours for all of the students, most of whom had never been to the SFCC campus before. They learned in detail about 4 programs on campus, Controlled Environment Agriculture, Automotive Technologies, Healthcare, and Dental Health.

STEM Scaffold Santa Fe

Since schools returned to in-person learning this year, our STEM Scaffold Santa Fe mentors got to go back to classrooms in-person as well! Our mentors facilitated our Smart One-Lane Bridge project and curriculum to **271 students** at 4 schools in Santa Fe and Espanola, namely Capital High School, Española Valley High School, Desert Sage Academy, and Santa Fe Indian School. We also provided service-learning opportunities to **10 students** from the MASTERS Program charter school through this program. In addition to the schools where our mentors worked, we provided kits and teacher training to El Camino Real Academy so that the teachers themselves could implement the curriculum in all of the 8th grade classrooms, reaching about **80 more students**.

Through this program, we also hired **8 college student mentors** and provided them with training and valuable work experience. Working with these college students achieves the secondary goal for this program of increasing confidence in their STEM identity and reinforcing their resolve to finish their degrees.

"The impact the project had on me was positive because I learned about many new things through the process of it. Yes, I would say that it had an impact on my self development, it gave me a greater understanding of working as a group and communicating. Yes, if the mentors weren't here, my group would have been lost."

We were glad to serve Capital High for the third year in a row as well as continue the partnerships we had started last year with Española Valley High, Desert Sage Academy, and El Camino Real Academy. We were also excited that a grant from the Spencer Foundation allowed us to begin a new partnership with Santa Fe Indian School, serving their students with culturally relevant curricula!



Summer Enrichment Programs

Our 2021 summer camps were the first in-person program we held since the COVID lockdown in 2020, and they went off without a hitch! We offered six separate one-week long sessions at Santa Fe Community College and two at Northern New Mexico College, on six unique STEM topics. **87 students** in 5th-12th grades attended the camps. Every camp session included a presentation session on Friday for families and community members, during which students practiced their public speaking skills and increased their families' engagement with STEM by showcasing their projects. At the App Design for Social Justice Camp, students even got to present their projects to Congresswoman Teresa Leger Fernandez! They later submitted their projects to the Congressional App Challenge, and one student ended up winning 3rd place in our district.



Summer STEM topics included:

- Designing & Building Drones Camp (in conjunction with New Mexico Tech)
- Making a Miniaturized Chemical Sensor Camp (in conjunction with New Mexico Tech)
- Building Motion Sensors with Arduino
- STEAM All Around Us Camp
- App Design for Social Justice
- Building Smart Greenhouses with Arduino

"I love this camp and I would love to come next year. I do not have any suggestions because this program was great. I would love it if the same staff came next year to the program."

"the food was amazing and the teachers are nice and there are fun project to do and you make friends."

Outreach and Advocacy

This was an exciting year of bringing awareness and advocating for STEM education in Northern New Mexico! In addition to all of our regular programs, we regularly engage with the Northern New Mexico STEM education ecosystem by participating in day-long STEM events and by elevating conversations and coalition building. Some highlights include that our founder and CEO, Lina Germann serves on Northern New Mexico Work-Based Learning Coalition to Increase internship opportunities for NM high school and college students, as well as on the Community Advisory for the Public Education Secretary to discuss statewide education policies, programs and initiatives.

We also continued the pilot outreach program we started last year at Santa Fe Public Library-Southside Branch. **STEM Saturdays at Santa Fe Public Library** is a program held on select Saturdays throughout the year where we offer students fun, hands-on STEM activities in an informal, drop-in setting. We held this program on 11 Saturdays this year, 4 in October and 7 over the summer!

During Computer Science Education week in December, we helped plan an **Hour of Code event at Santa Fe Indian School**, coordinating six student and three teachers from Santa Fe Preparatory School to volunteer in classrooms.

We partnered with The Franklin Institute and New Mexico Museum of Natural History & Science to bring their **GSK Science in the Summer™** programming to students and teachers in Santa Fe as well! The GSK kits follow a curriculum with online training video for two hours plus supplemental materials. It is a 4-hour curriculum on four different careers (Electrical Engineering, Structure Engineering, Biomedical Engineering, Environmental Engineering) and includes materials for 4 different engineering activities. We implemented the kits at 2 of our STEM Saturdays, and coordinated donations of classroom sets for 4 teachers in SFPS.

March 23-26, 2022: **STEM Hall of Central NM STEM Research Challenge** is a three division (elementary, middle and high school students), multiple category regional student competition of science and engineering projects and STEM Santa Fe was pleased to be a virtual exhibitor!

March 8, 2022: STEM Santa Fe was a proud community partner at **SFPS STEAM Virtual Expo** where some of our students showcased their projects that they built with STEM Santa Fe.

February 27, 2022: **Op-ed on Diversity, Equity and Inclusion in STEM education:**
https://www.santafenewmexican.com/news/education/learning-santa-fe/article_04edaf36-9590-11ec-8d3e-a34bac84f343.html

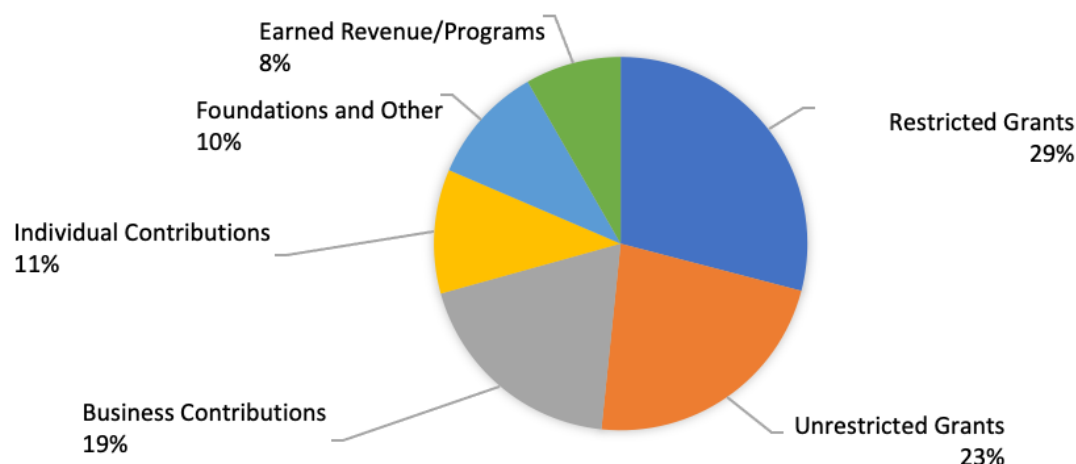
September 22, 2021: **UNM Postdoc Appreciation Week!** at the Duck Pond.

September 1, 2021: **Campus and Community Involvement Fair** at St. John's College.

With Gratitude

Our programs were made possible by the time and resources of our community. We worked with 175 volunteers and 40 collaborators this year. 11% of our funding came from individual contributions. We received \$10,135 worth of donations of in-kind goods. In addition, we are grateful to our community partners for a very impactful collaboration.

SOURCES OF FUNDING



These resources allowed us to deliver **43 unique STEM workshops or projects, all of which were provided to students at low to no cost to their families.** We increased our students' awareness of the variety of STEM disciplines they can pursue by offering curricula that related to **51 of the STEM majors** which are officially recognized by the U.S. Department of Homeland Security.

STEM Topics Covered in 2021-2022



Thank you to our Strategic Partners

\$30,000+

SANTA FE
COMMUNITY
FOUNDATION



\$20,000 - \$30,000

SPENCER
FOUNDATION



ANCHORUM™
ST VINCENT



\$10,000 - \$20,000

WILDFLOWER



TRANE
TECHNOLOGIES™

\$5,000 - \$10,000



theISTA Foundation



< \$3,000

McCune Foundation
Frost Foundation
Del Norte LOV Foundation
Nusenda Credit Union
NM EPSCoR
Souder, Miller & Associates
Flow Science, Inc.

American Association of
University Women, Santa Fe
Deep Future Analytics
Kuderik & Associates
Los Alamos Women in Science
La Puerta
PNM

New Mexico Network for
Women in Science and
Engineering

Thank you to our Community Partners, Donors and Volunteers

