

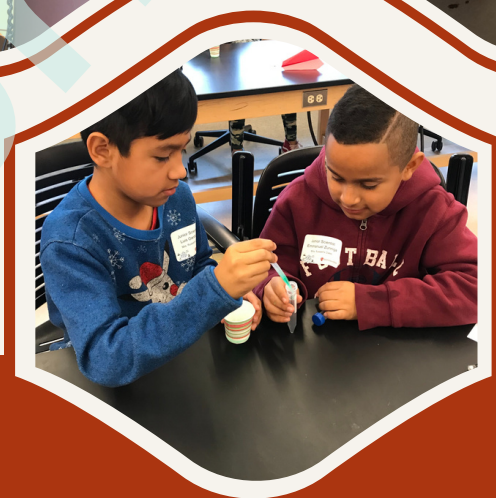


SCIENCE IN OUR COMMUNITY PRESENTS

HISTORICAL REPORT

2016-2023

Thank you to the Science in our Community Steering Committee, Teacher Recruitment Retention Team, and College Corps Team for all their support throughout this past year.



LEADING THE PATH TO STEM CAREERS

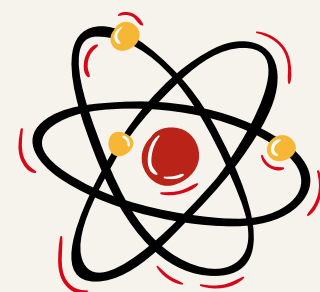


Table of Contents

<u>Cover page</u>	01
<u>Table of Contents</u>	02-03
<u>Mission and Vision Statements</u>	04
<u>Brief Program History/Need of STEM</u>	05
Program activities detail	06
• <u>STEM Ambassador, Science Day, & Summer Camp</u>	07
• <u>Junior Scientist, Science Saturday, & Delhi Medical Academy</u>	08
• <u>Solar Suitcase & Lesson Planning Workshop</u>	08
• <u>STEM Series, After School Programs, School Fairs, Classroom visits, & Bird Walk</u>	09
<u>Program overall reach</u>	10
Volunteers Data 2015-2023:	11
• <u>Number of Volunteers</u>	
• <u>Number of hours that volunteers contributed</u>	
Number and hours of Participants Engaged in STEM Education 2016-2023:	12
• <u>Number of Participants</u>	
• <u>Number of participant Hours</u>	
• <u>Number of K-12 Schools Engaged</u>	
Visual representation of outreach 2017-2023	13-14

Table of Contents



Financial Highlight

15-17

Staff & Team Members

18

Acknowledgements

19

Program Partners 2016-2023

20-21

Long Term Goals

22

Appendix Guide

23

References

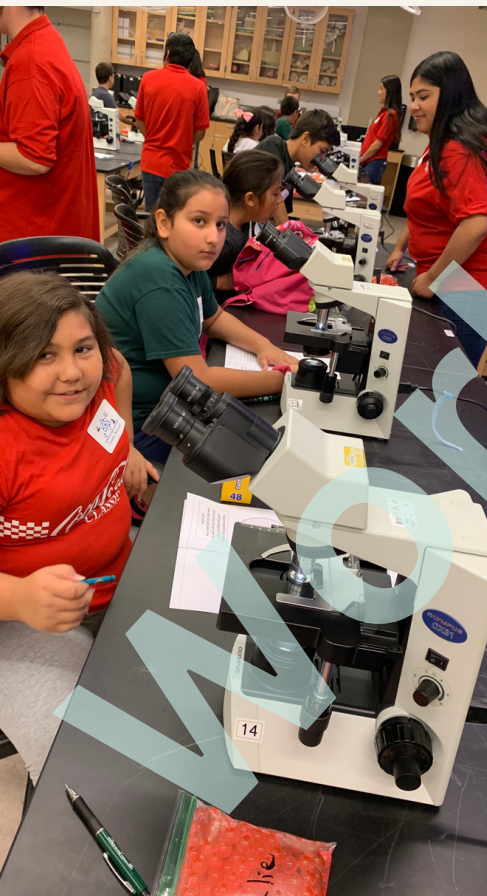
24





MISSION STATEMENT:

The Stan State Science in Our Community Outreach Program is dedicated to science education and public engagement. This program, supported by volunteer efforts of Stan State students, faculty, and staff, provides STEM activities to educationally and economically disadvantaged students in the campus's service area.



VISION STATEMENTS:

The Science in Our Community STEM Outreach Program seeks to:

- **encourage the community to visit the local campus;**
- **encourage students to be engaged in STEM subjects (Science, Technology, Engineering, and Mathematics);**
- **encourage local students to attend Stan State, and consider a STEM major, especially those populations underrepresented in the STEM Community (i.e., Hispanics and women);**
- **allow Stan State students to teach the community about Science and its importance in society today;**
- **promote Science as lifelong learning for all citizens.**

BRIEF PROGRAM HISTORY

Science in Our Community began in Spring 2013 with the first annual event Science Day. This event was led by one faculty member, Dr. Mark Grobner, and two staff members, Ms. Julie Fox and Mr. Brett Forray, with the support of five student volunteers. The program received such a positive response. Since then, it has grown exponentially to what it is today.

Today Science in Our Community does several events throughout the year, such as Science Day, Science Saturday, Junior Scientist, Solar Suitcase, and many more. The program now works with over 50 faculty members, 30 staff members, and over 300 student volunteers annually. The program has now established its steering committee comprised of faculty leaders in the College of Science.

NEED OF STEM

The Central Valley is facing many challenges. One is that the Central Valley has the lowest number of doctors, nurses, and nurse practitioners in any California region (Freeling.) The Central Valley is also facing a shortage of technical workers that, including engineers, computer programmers, drafters, and workers with in-depth technological skills. (Hardy, 2021) The Valley also struggling to keep up with the tech-forward industries that our current economy demands. (Karisch, 2021) STEM education is vital to the Central Valley. There are so many local and national challenges that STEM can help resolve and improve. Having a skilled workforce is the key to the region improving economically and ecologically as we face drought and declining resources that affects all of California.

STEM education helps students attain 21-st century skills vital to tackle climate change, healthcare, food insecurity, clean water, and sustainable cities. It can help students bridge ethnic, racial, and gender gaps that may challenge them. Science in our Community creates events that allow children to explore the world of science. (Stem Education Unlocks Potential for All Students (The Path Foward), 2022)

STEM AMBASSADOR

The STEM Ambassador Program is a successful and growing volunteer program for undergraduate students in STEM and non-STEM disciplines. This program provides Stan State students the opportunity to develop leadership and teamwork skills and the ability to share their knowledge of Science with a K-12 audience. Internships are also available if students desire to earn credit for their participation. In addition, STEM Ambassadors lead classroom activities for the Junior Scientist and Solar Suitcase Program and take the lead in preparing and conducting Science Saturday and Science Day activities.

SCIENCE DAY

In person: The first Science Day occurred in Spring 2012 and continues to this day. The open and welcoming environment encourages questions and curiosity. It features activities from 10 a.m. to 2 p.m. in the Naraghi Hall of Science, the Science 1 Building, the Greenhouse, and the Sustainable Garden. There are also tours of the Trans-California Pathway. The Pathway is an outdoor arboretum featuring plant communities native to a transect of California from the Central Valley to the High Sierra. With more than 40 activities available, students and their families receive a "Passport to Science" booklet to track their activities throughout the day. During the pandemic years of 2021 and 2022, our efforts did not pause. The STEM Coordinator and faculty, and staff worked tirelessly to develop live Zoom activities and recorded experiments that continued Science Day despite the disruption of life as we knew it. Participants logged in regionally, and we had international participation as well.

Virtually: As education continues to evolve, so requires online options. Our STEM Coordinator saw the need to offer online options to students interested in Science. Some activities are in demonstration format, where the students learn the topic and see an experiment performed by the activity leader. Another format includes learning concepts and then applying those concepts in a hands-on activity that the students can follow with the presenter, as Science in Our Community provides the material in advance. The faculty, staff, and STEM Ambassadors are the ones who led these activities. As we return to in-person Science Day, we will continue providing new virtual activities on our YouTube channel that premiere on Science Day. new virtual activities on our YouTube channel that premiere on Science Day.

SUMMER CAMP

These STEM-cased camps involve multiple many exploring a science discipline with lots of activities. The faculty, staff, and STEM Ambassadors host these. Some have included coding, biology, chemistry, and geography. They were scheduled from 9 am to 12 pm with a short break to keep the students engaged and inspired.

JUNIOR SCIENTIST

In person: The Junior Scientist program provides 4th-grade students with STEM curriculum enrichment for the local schools from the Turlock Unified School district. Students accompanied by teachers and parents visit Stanislaus State to participate in three-hour-long science lessons free of cost. These science activities reinforce the in-class curriculum and provide a hands-on approach to localized issues and problems. The program aligns with the Next Generation Science Standards (NGSS). This past year, students from Cunningham Elementary, Wakefield Elementary, and Osborn Elementary schools came to the Stan State campus for Saturday activities of STEM enrichment.

Virtual Option: The program works virtually with Cunningham Elementary, Wakefield Elementary, and Osborn Elementary. In which STEM Ambassador takes the lead on one-hour science lessons free of cost. We also provide the schools with material allowing students hands-on experience. While doing this, we continue to align the in-class curriculum.

SCIENCE SATURDAY

In person: Science Saturday involves three hours of exploring one science discipline with two to three activities focused on that discipline. The faculty, staff, and STEM Ambassadors lead these activities.

Virtual Option: It involves one to three hours of exploring one science discipline virtually through Zoom. This activity also allows participants to follow the activities along with the presenters.

DELHI MEDICAL ACADEMY

This program serves students within the Delhi Unified School District who are interested in using their high school experience as a pathway to careers in healthcare. The program targets qualified and motivated high school students. The program's goals are to provide high school students with hands-on experience and practical knowledge. This allows them to explore different career opportunities in the health industry. Its' focus is to assist and support educationally and economically disadvantaged students to successfully prepare for entry-level or post-secondary study positions in health care after graduation. Additionally, it exposes students to colleges and universities at the undergraduate and graduate levels.

SOLAR SUITCASE

In person: Undertaken in partnership with the We Share Solar program. The Solar Suitcase program helps middle school students develop a working solar project. This program teaches the students about green energy sources. These projects, in which students develop a portable lighting system, are then mailed to areas lacking electrical utilities, generally schools and refugee camps in third-world countries. By participating in this project, middle school students learn the global aspect of energy access and the social issues accompanying this subject. A group of STEM Ambassadors led this activity by going onto the school site to work with the middle school students. We have previously worked with Dutcher Middle School and Turlock Junior High School.

Virtual Option: Solar Suitcase programs continue with the partnership of the We Share Solar program. In the virtual format, one STEM Ambassador leads multiple sessions with the middle school students. These lessons go from concept to building the Solar Suitcase and their Solar Suitcase system. Science in Our Community provides the school with materials for each session, so the students can follow along and do hands-on activities. We worked with Dutcher Middle School for our first virtual Solar Suitcase past year.

LESSON PLANNING WORKSHOP

In person: Lesson Planning Workshops are three-hour-long workshops that focus on STEM education. The workshop gives Stan State students interested in pursuing a career in teaching science subjects the opportunity to familiarize themselves with current state teaching standards and how to engage K-12 students effectively and efficiently at different grade levels. In addition, participating students receive helpful tools such as lesson planning templates and learn to navigate the NCSS (Next Generation Science Standards) website, which they can optimize when working with students in the classroom.

Virtual Option: The Lesson Planning workshop focuses on STEM education and provides templates and navigation tools for Next Generation Science Standards. In this format, the workshops are an hour long, and the presenter connects with the participants through Zoom.

STEM SERIES

In person: This program started in Spring 2023 and was led by a STEM Ambassador who worked with fellow students, staff, and faculty members to create multiple STEM activities. These activities were led over a Month, once every week. The program allows the K-12 students to work on multiple topics and build on what they learn over the multiple sessions while learning the techniques they would use as College students (e.g., keeping lab journals, lab safety, and more). The event was held on Stan State campus, allowing students to work in various labs and classrooms.

AFTER SCHOOL PROGRAM

The program involve multiple days of exploring a science discipline after school with lots of activities. This program takes place on Stan State campus. These are hosted by the faculty, staff, and STEM Ambassadors.

SCHOOL FAIRS

STEM Ambassadors and other student volunteers take two or more STEM interactive activities to the school site. They work with the K-12 students and the community members on these activities while answering their questions about Science concepts.

CLASSROOM VISITS

The classroom visits involve the faculty, staff, or STEM Ambassadors taking the lead on creating and presenting an activity by going into the classroom in person or virtually.

BIRD WALK

In person: Faculty member takes the lead on doing a small Walk around near Naraghi Hall of Science while talking about the Bird species on campus. Along with providing binoculars for the participants for the session to observe the Bird species on campus. These sessions are offered to all ages every semester each month.

PROGRAM OVERALL REACH 2015-2023



2,284

TOTAL VOLUNTEER NUMBER

From the year 2015 to 2023, the number of students, faculty, and staff volunteers who have worked with the program both in-person and in virtual activities has increased on average by 46%.

27,215.19

TOTAL VOLUNTEER HOURS

From 2015 to 2023, the number of hours the students, faculty, and staff volunteers have worked with the program in person and virtual activities has increased on average 144%. Over all these years, the volunteers contributed \$903,243.14 worth of volunteer time.

\$903,243.14

TOTAL VOLUNTEER FINANCIAL IMPACT

From 2015 to 2023, the volunteers contributed \$903,243.14 worth of volunteer time.

24,986

TOTAL PARTICIPANTS NUMBER

From 2016 to 2023, the number of K-12 and other community members who participated through in-person and virtual activities has increased on average by 78%.

85,616

TOTAL PARTICIPANTS HOURS

From 2016 to 2023, the number of hours K-12 and other community members received through in-person and virtual activities has increased on average 116%.

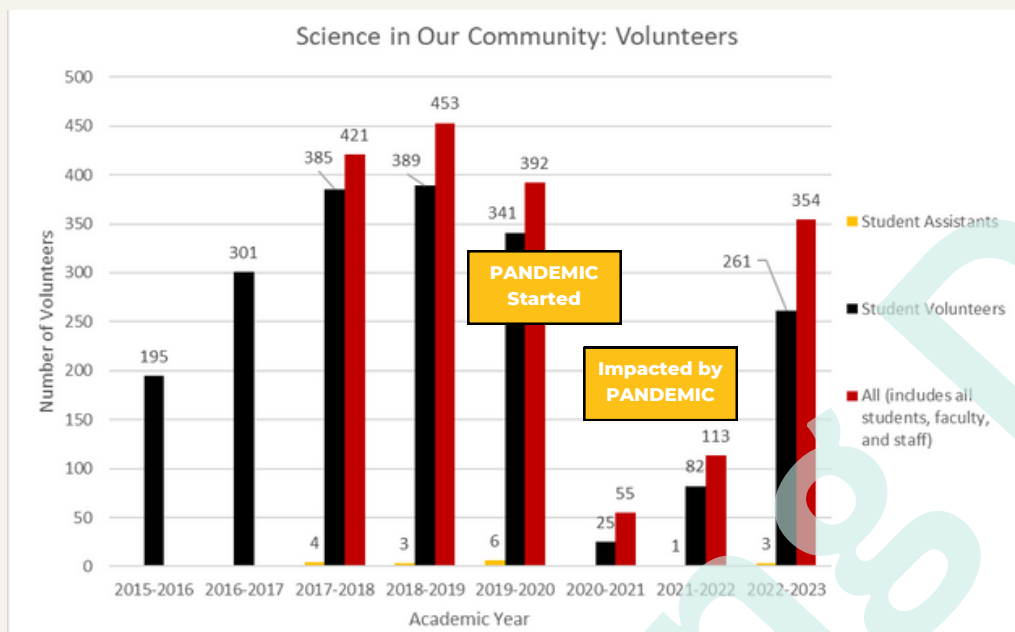
297

TOTAL K-12 SCHOOLS

From 2017 to 2023, the number of hours K-12 school participants attended was 297 throughout all the years, with 148 being unique schools.

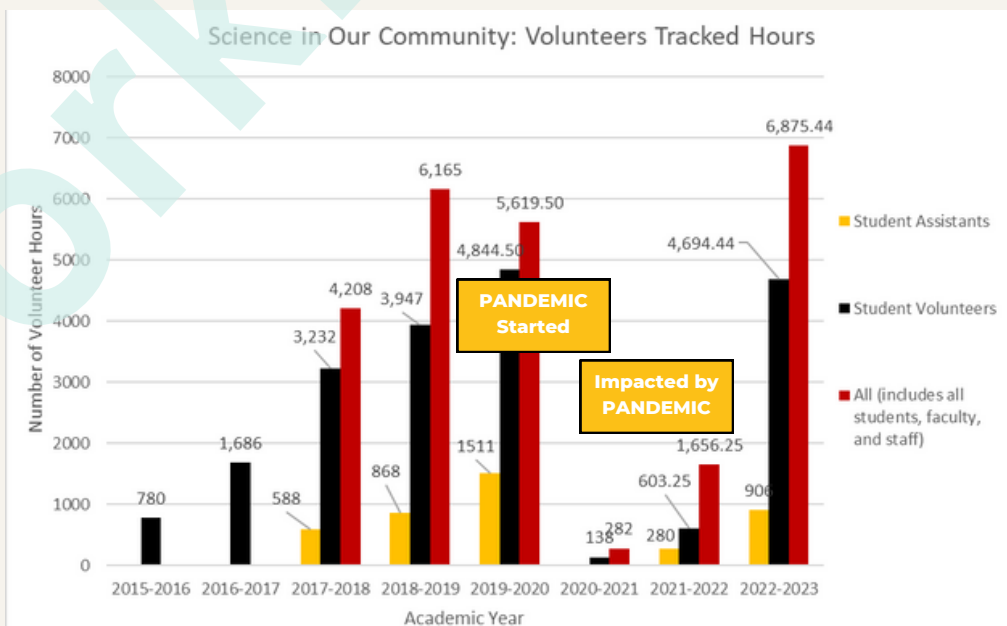
Volunteers Data 2015-2023

DUE TO THE ONGOING PANDEMIC, STARTING THE ACADEMIC YEAR OF 2020-2021, ALL THE SCIENCE IN OUR COMMUNITY ACTIVITIES WERE PRESENTED VIRTUALLY, SUCH AS ZOOM, THE SCIENCE IN OUR COMMUNITY WEBPAGE, AND OUR SIOC YOUTUBE CHANNEL. THIS ENSURED THAT WE WERE FOLLOWING THE GUIDELINES OF THE CENTER FOR DISEASE CONTROL AND PREVENTION (CDC) AND ENSURING THE SAFETY OF THE STUDENTS, FACULTY, STAFF VOLUNTEERS, AND COMMUNITY MEMBERS. THUS, THE SCIENCE IN OUR COMMUNITY PROGRAM HAS BEEN CONDUCTED VIRTUALLY FOR 2020-2022.



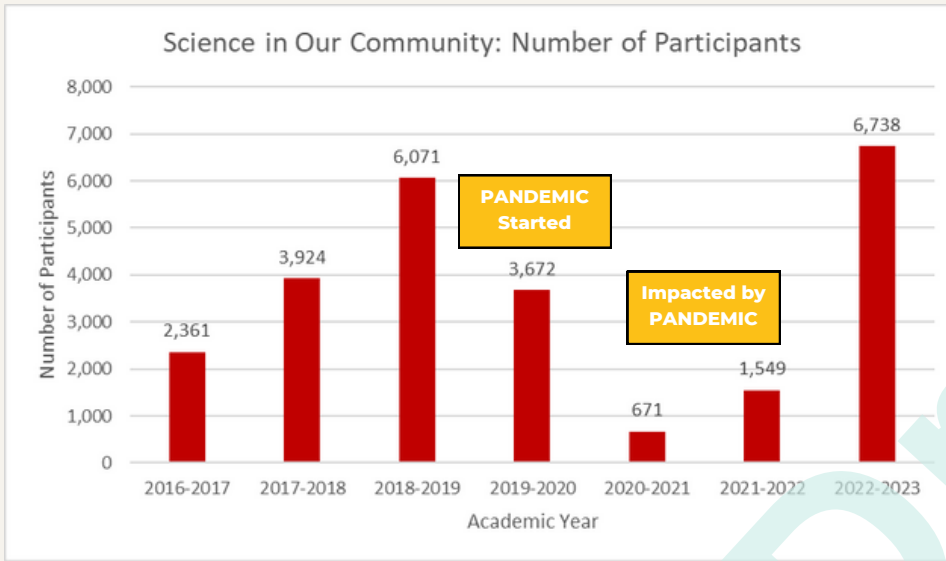
FROM THE ACADEMIC YEAR 2021-2022 TO 2022-2023, SCIENCE IN OUR COMMUNITY INCREASED BY MORE THAN 213% STAN STATE STUDENT VOLUNTEERS AND 90 COLLEGE OF SCIENCE PROFESSORS AND STAFF MEMBERS.

ALL VOLUNTEERS CONTRIBUTED MORE THAN 1,656 HOURS OF VOLUNTEER TIME, AN INCREASE OF OVER 312% FROM THE PREVIOUS YEAR. THESE VOLUNTEERS CONTRIBUTED ABOUT \$254,447.76 WORTH OF VOLUNTEER TIME.**



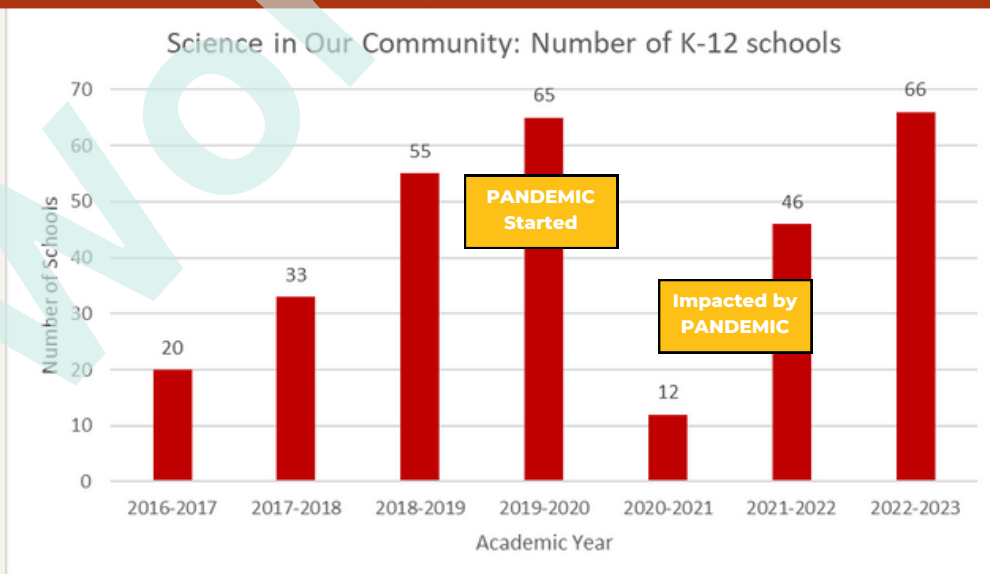
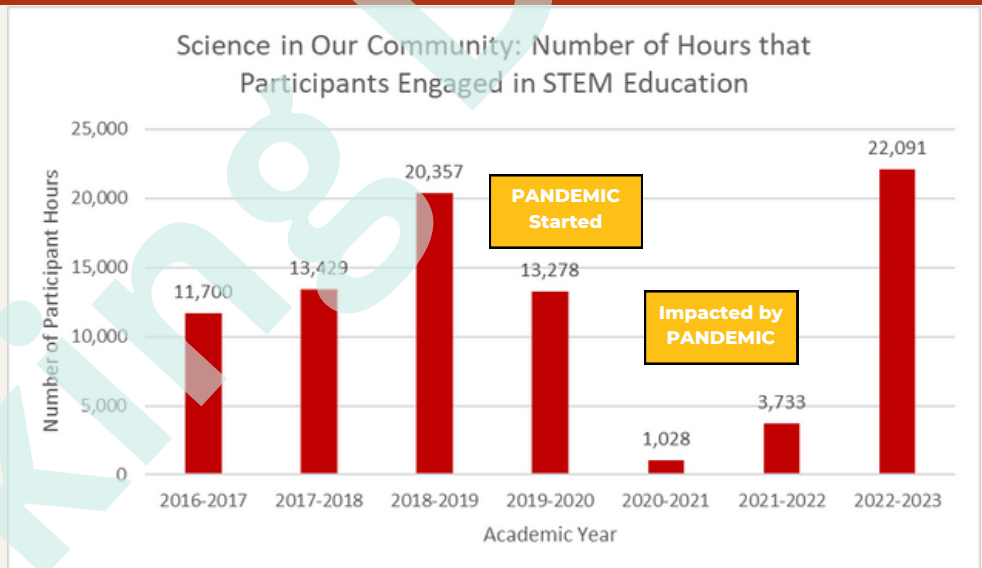
**Value of Volunteer Time Report | Independent Sector Resources

Number and hours of Participants Engaged in STEM Education 2016-2023



SCIENCE IN OUR COMMUNITY SERVED MORE THAN 6,738 PARTICIPANTS, AN INCREASE OF MORE THAN 335% FROM THE PREVIOUS YEAR. THE NUMBER OF PARTICIPANTS REPRESENT MORE THAN 9% OF **POPULATION IN TURLOCK IN 2023.

THE PARTICIPANTS RECEIVED MORE THAN 22,091 HOURS OF FREE HANDS-ON STEM INSTRUCTION. THIS IS MORE THAN A 492% INCREASE IN FREE HANDS-ON STEM INSTRUCTION HOURS.



THE PROGRAM SERVED OVER 66 SCHOOLS IN OUR REGION. (SEE APPENDIX II FOR DETAIL ON THE SCHOOLS SERVED)

**TURLOCK, CALIFORNIA POPULATION 2023 (DEMOGRAPHICS, MAPS, GRAPHS) (WORLDPOPULATIONREVIEW.COM)

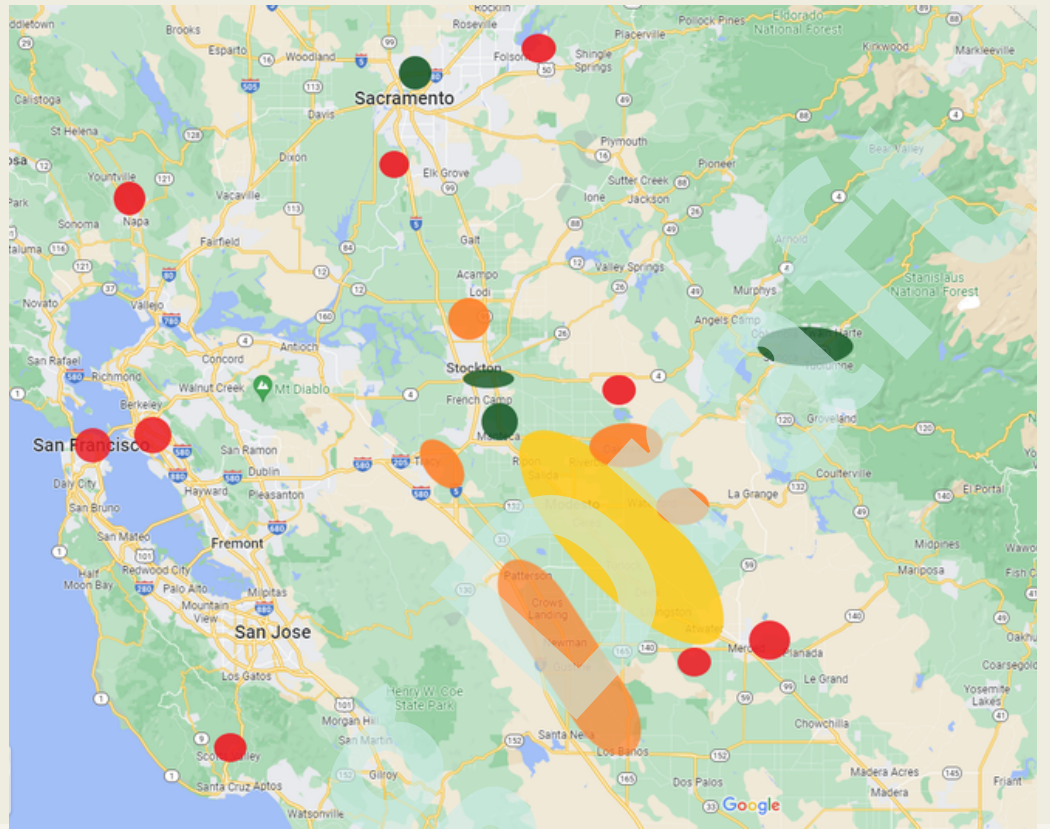
***SEE APPENDIX IV FOR DETAILS ON TITLES OF LECTURES AND ACTIVITIES PRESENTED EACH ACADEMIC YEAR.

VISUAL REPRESENTATION OF OUTREACH 2017-2023

Northern California

KEY

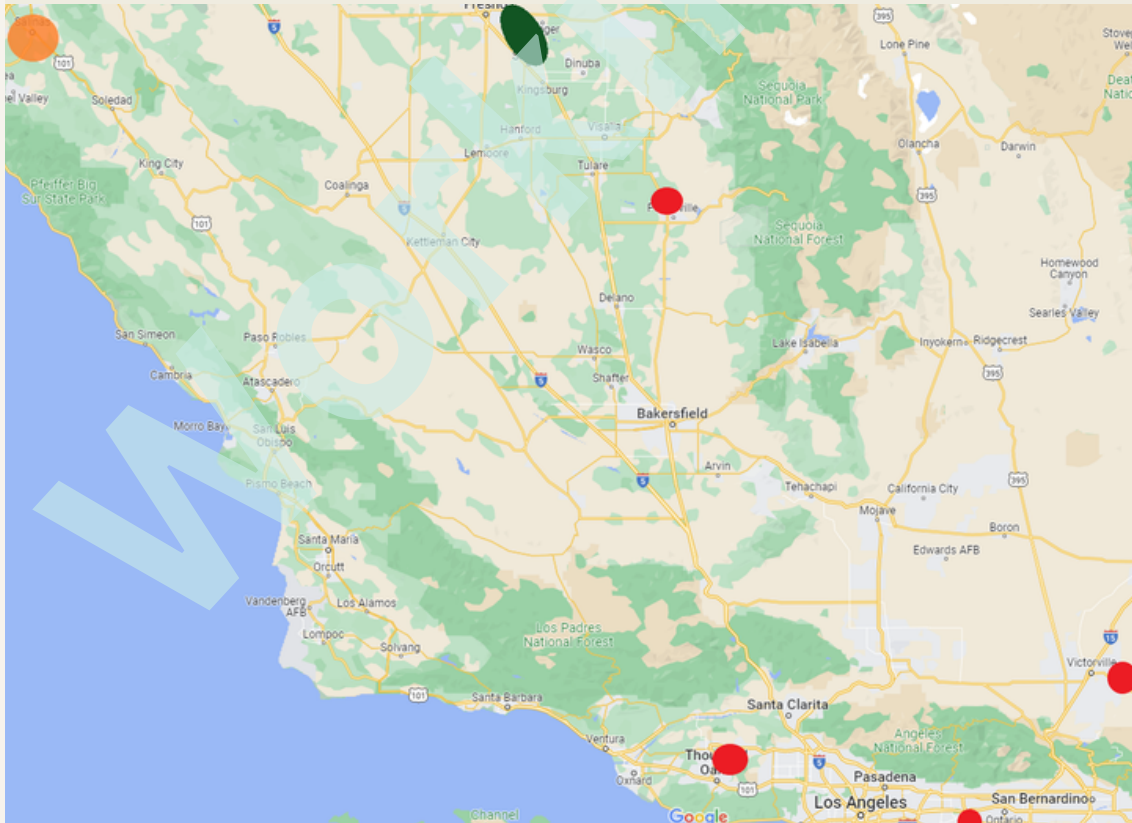
- 1 school reached
- 2 schools reached
- 3-5 schools reached
- >100 schools reached



Southern California

KEY

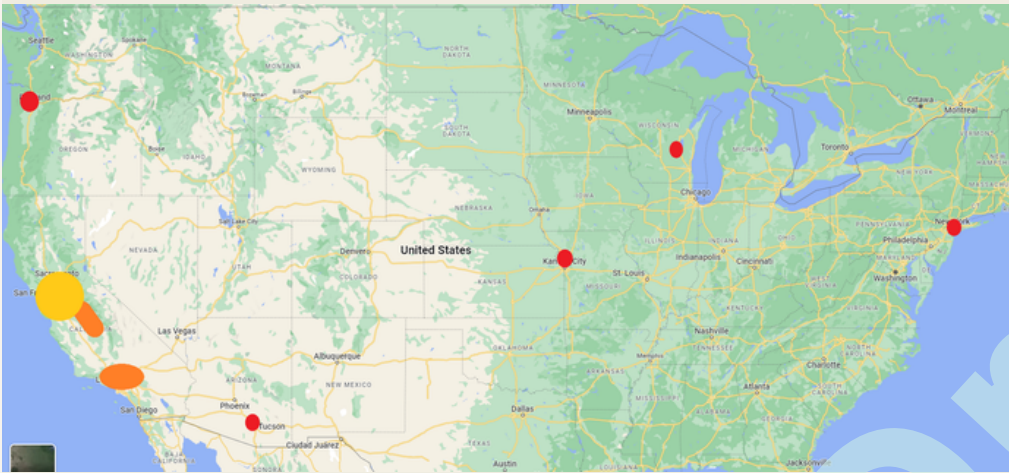
- 1 school reached
- 2 schools reached
- 3-5 schools reached



VISUAL REPRESENTATION OF OUTREACH (CONT.)

North America

India



KEY



1 school reached



3-5 schools reached



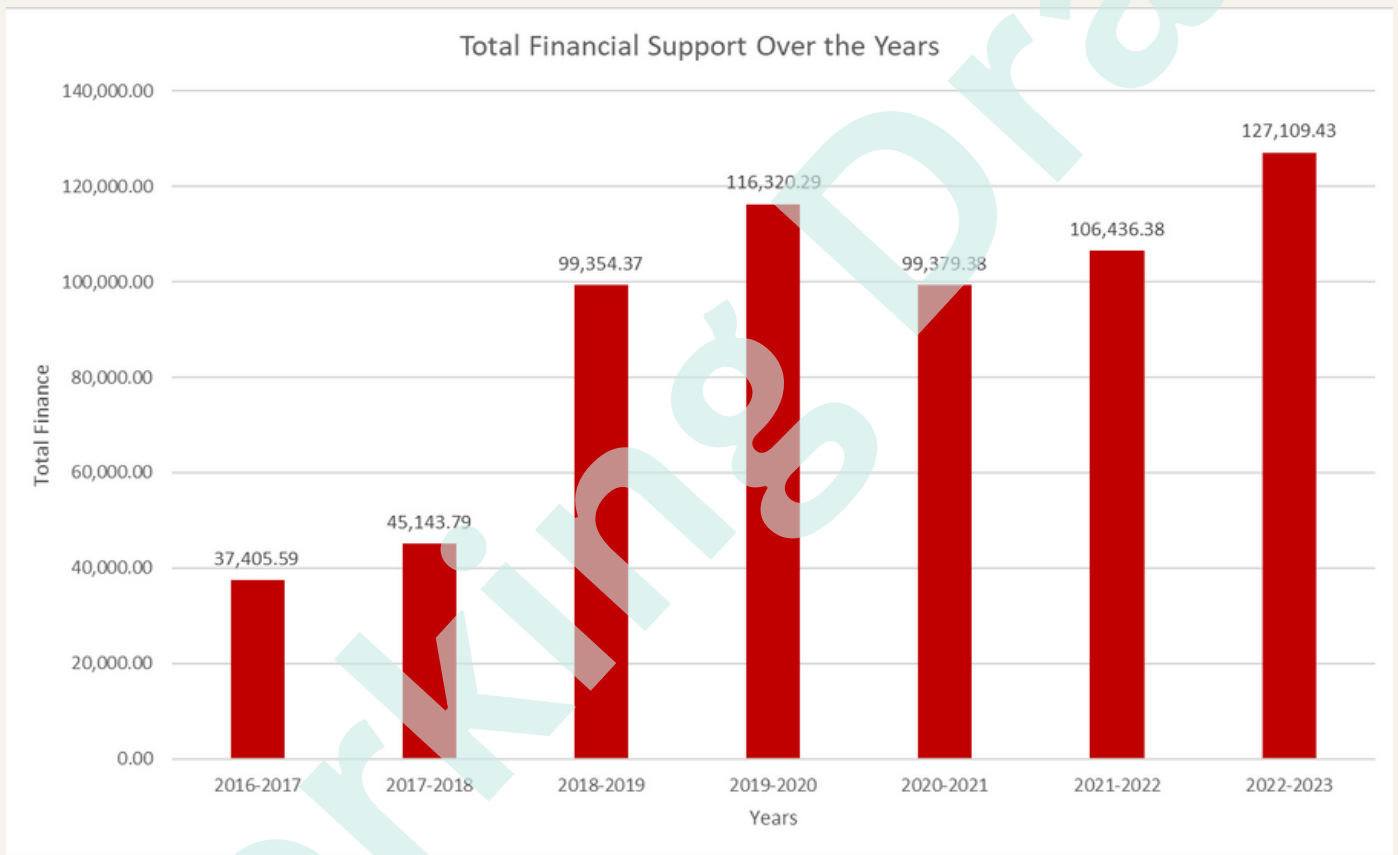
>100 schools reached



***FOR VISUAL REPRESENTATION OF EACH ACADEMIC YEAR SEE APPENDIX III.

Financial Support Overview 2016-2023

Grant and other Financial Support Totals

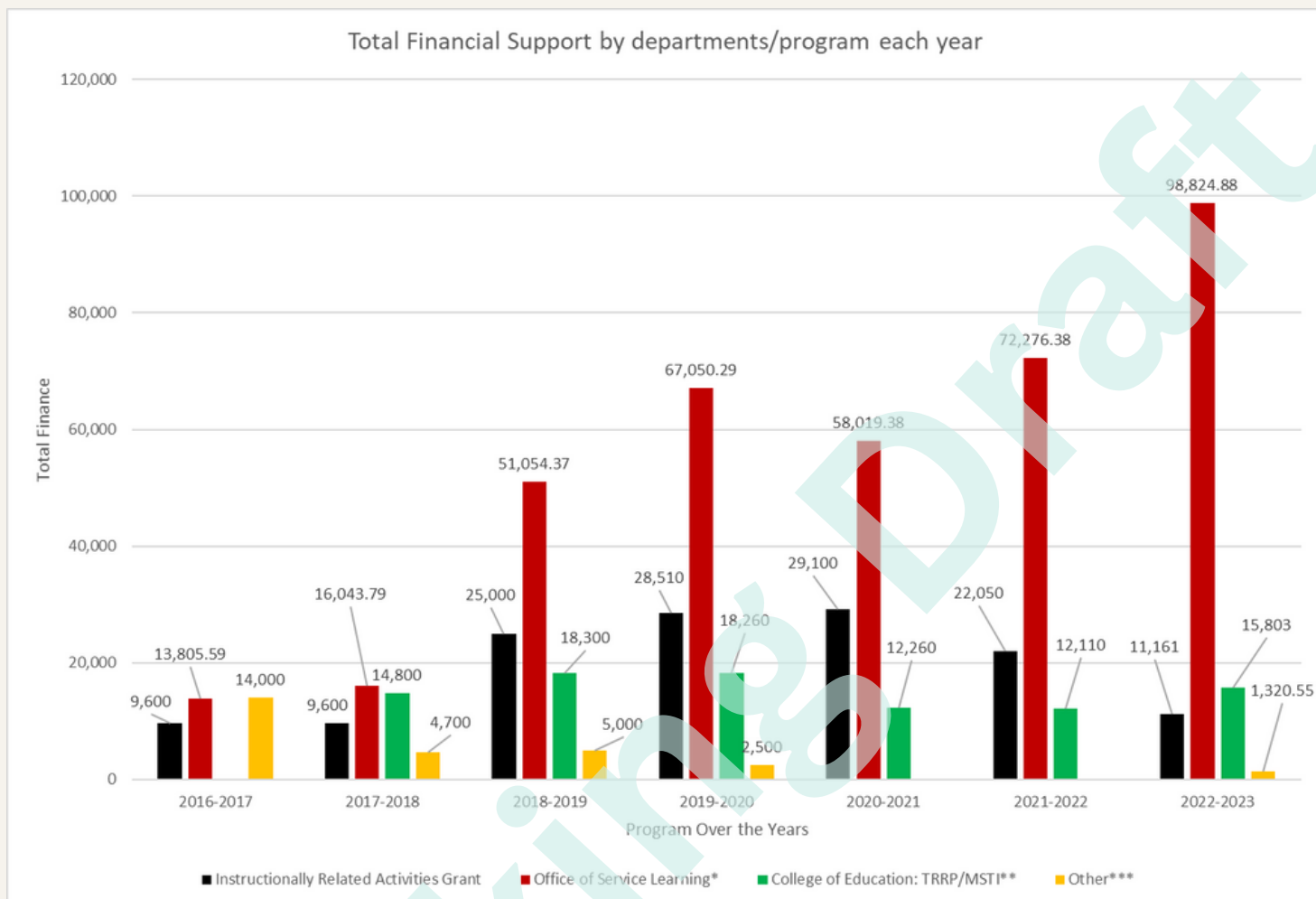


SCIENCE IN OUR COMMUNITY'S TOTAL FINANCIAL SUPPORT OVER EACH YEAR IS OBSERVED. THE CONTINUED SUPPORT CAN BE SEEN WITH SOME DECREASE PAST TWO YEARS.

Financial Support Overview 2016-2023

Grant and Financial Support Detail

Contributions by Funder

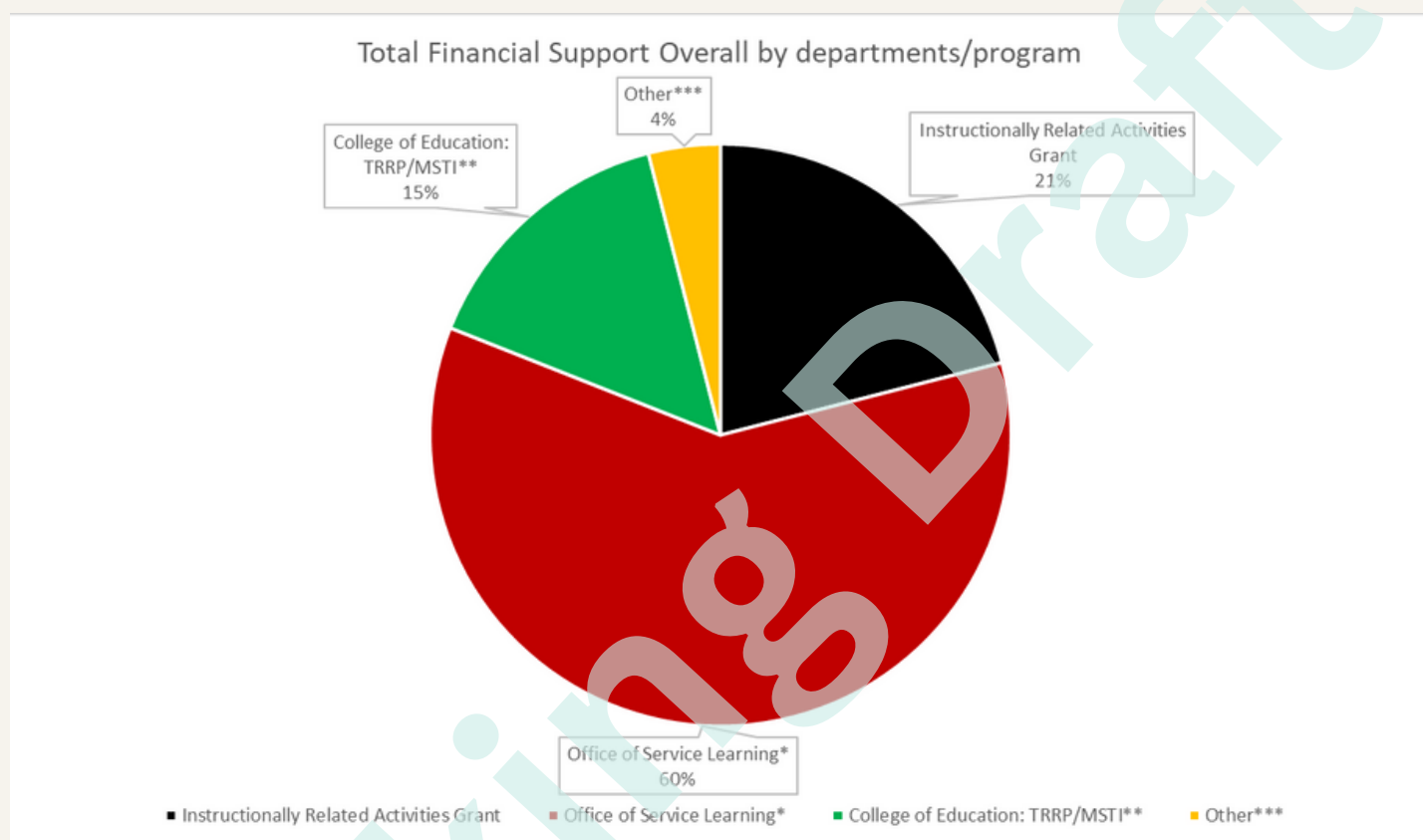


SCIENCE IN OUR COMMUNITY FINANCIAL SUPPORT, WHEN OVERSERVED BY EACH YEAR AND SEPARATED BY DEPARTMENTS AND PROGRAMS, CONTINUED SUPPORT CAN BE SEEN THROUGH INSTRUCTIONALLY RELATED ACTIVITIES GRANT AND OFFICE OF SERVICE LEARNING. THE OFFICE OF SERVICE LEARNING SUPPORT HAS INCREASED OVER THE YEARS WHILE ALL OTHER AREAS OF SUPPORT HAVE SEEN A DECLINE WITH SOME INCREASE THIS PAST YEAR IN SUPPORT FROM THE COLLEGE OF EDUCATION: TRRP/MSTI AND OTHER.

***OFFICE OF SERVICE LEARNING FINANCIAL SUPPORT ONLY INCLUDES THE PERSONNAL SUPPORT. IT DOES NOT INCLUDE THE SUPPLIES, PRINTING, AND OTHER SCIENCE IN OUR COMMUNITY PROGRAM RELATED EXPENSES FOR YEARS 2016-2022.**

*****TO SEE MORE DETAILS ON WHO THE OTHER FINANCIAL SUPPORT ARE LOOK AT APPENDIX I.**

Financial Highlight Overview (cont.)



SCIENCE IN OUR COMMUNITY FINANCIAL SUPPORT WHEN OBSERVED FOR ALL THE YEARS TOGETHER, THE MOST SUPPORT CAME FROM THE OFFICE OF SERVICE LEARNING (60%). WHILE THE NEXT MOST CONSIDERABLE SUPPORT CAME FROM THE INSTRUCTIONALLY RELATED ACTIVITIES GRANT (21%), THE COLLEGE OF EDUCATION: TRRP/MSTI (15%), AND LASTLY, OTHER PROGRAMS SUPPORT (4%).

***OFFICE OF SERVICE LEARNING FINANCIAL SUPPORT ONLY INCLUDES THE PERSONAL SUPPORT. IT DOES NOT INCLUDE THE SUPPLIES, PRINTING, AND OTHER SCIENCE IN OUR COMMUNITY PROGRAM RELATED EXPENSES FOR YEARS 2016-2022.**

*****TO SEE MORE DETAILS ON WHO THE OTHER FINANCIAL SUPPORT ARE LOOK AT APPENDIX I.**

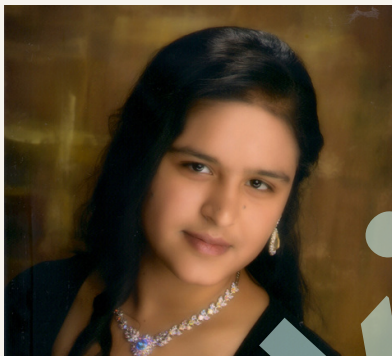
STAFF & TEAM MEMBERS



DR. MARK GROBNER
Science in Our Community,
Faculty Director



JULIE FOX
Office of Service Learning,
Director



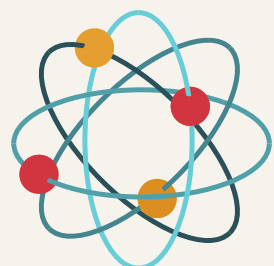
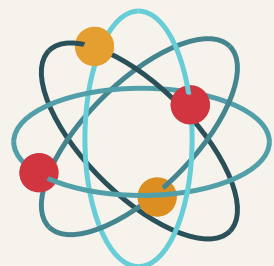
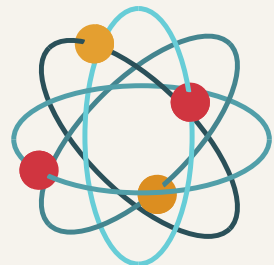
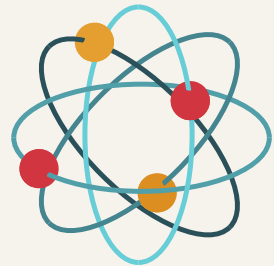
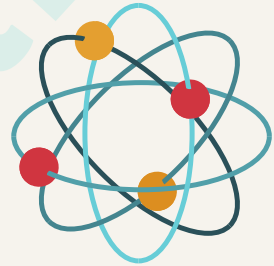
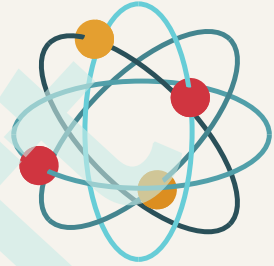
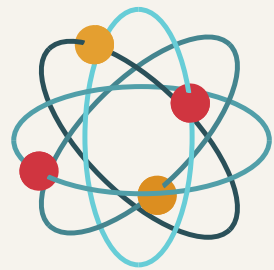
SUNPREET KAUR
Science in Our Community
Lead & Civic Engagement
Community Liaison



BREANNA MCINTYRE
Administrative Analyst



MELANIE MYERS
Administrative Support
Assistant



Acknowledgements

Listed below are names of those who supported the Science in Our Community throughout this past year in making these events possible:

- **Science in Our Community Steering Committee Members:**
 - Dr. Elvin Aleman
 - Dr. Andrew Gardner
 - Ms. Shannon Hernandez
 - Dr. Brian Jue
 - Dr. Dae Hee Kim
 - Dr. Wendy Matthew
 - Dr. Brian Morsony
 - Mr. Alfredo Vargas
- **Teacher Recruitment and Retention Program**
- **Dr. Mark Grobner**
- **Dr. Oddmund Myhre**
- **Student Volunteers:**
 - Spooimai Ahmad
 - Margaret Creighton
 - Mahnoor Raza
- **STEM Ambassadors and Stan State Student Volunteers**
- **Stan State Science Faculty Volunteers**
- **Other Stan State Staff members**
- **Stan State Student STEM Clubs**

**We thank everyone
for their continued
support to the
Science in Our
Community Program.**



PROGRAM PARTNERS 2016-2023

College of Science

College of Education,
Kinesiology & Social Work



University Institutional
Review Board (UIRB)



Teacher Recruitment
and Retention Program



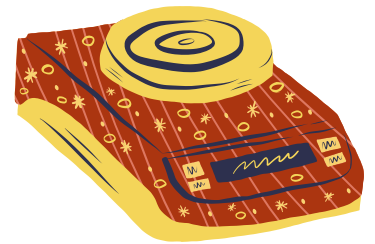
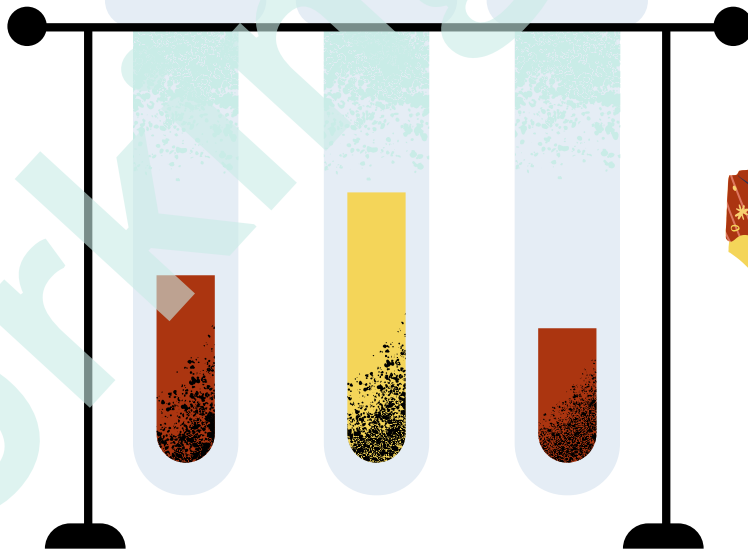
*In no particular order

PROGRAM PARTNERS 2016-2023

CONT.



***In no particular order**



LONG TERM GOALS:

In the long term, the Science in Our Community program will continue to offer programs such as Junior Scientist, Science Saturday, Science Day, and more. The program will take feedback from the community for a continued development. Lastly, there will be continued focus on grants to support the program, leading to more personal support and expansion in space for the program. The program will continue to provide the students and community with these interactive opportunities in the long term.

Junior Scientist & Science Saturday

The program will take feedback from Junior Scientist school sites and make changes, if necessary or add sites for Junior scientist. Science Saturdays will continue to be offered in person.



Science Day

Take the feedback received for Science Day and modify the event to enhance the event.

Grants

Please continue to work on finding and applying for grants that align with Science in Our Community program sustainability.



Appendix Guide



Each of the appendix give more information and details on different areas listed below.

[Appendix I](#) Financial Highlights by Year

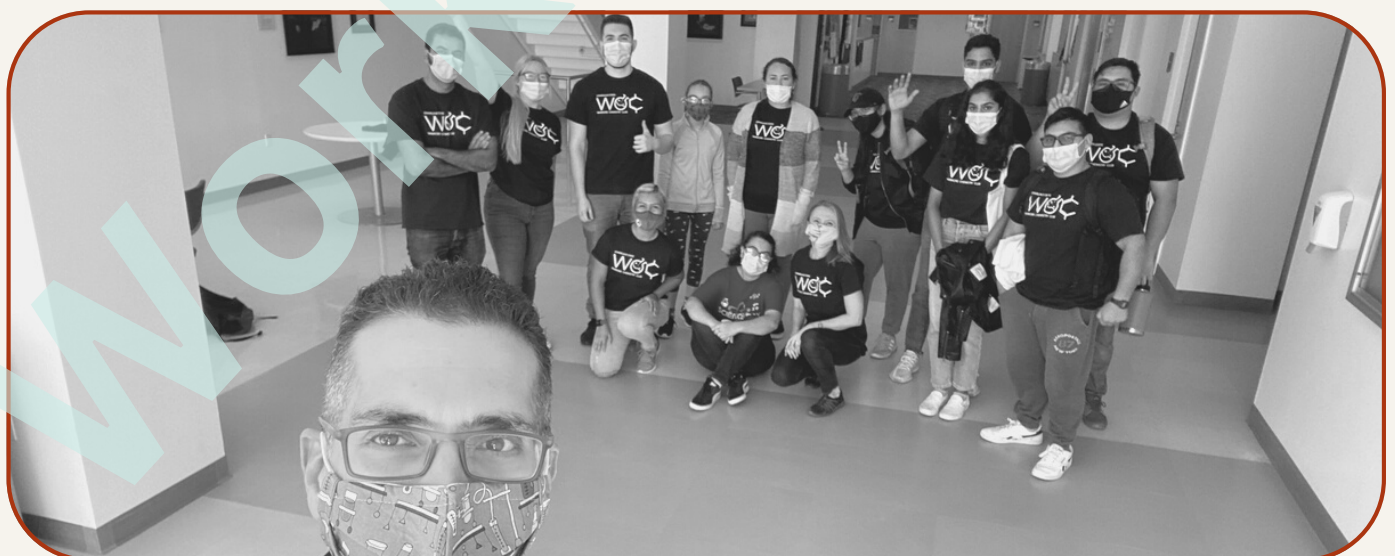
[Appendix II](#) K-12 Schools that Participants Came From

[Appendix III](#) Visual Representation of Outreach

[Appendix IV](#) Titles of Lectures and Activities

[Appendix V](#) Qualitive Data Collection from over the years

[Appendix VI](#) Staff & Team Members by Year



References

Hardy, B. (2021, June 30). Construction work is booming, but where are the engineers? The Business Journal. Retrieved December 21, 2022, from <https://thebusinessjournal.com/construction-work-is-booming-but-where-are-the-engineers/>

Karish, Kristina. (2021, March 11). How California's Central Valley plans to become new tech hotspot. USA Today. Retrieved December 21, 2022, from <https://www.usatoday.com/story/opinion/2021/03/11/how-californias-central-valley-working-become-tech-hot-spot-column/6936506002/>

Stem Education Unlocks Potential for All Students (The Path Forward).(2022, January 5). National Math + Science Initiative. Retrieved December 21, 2022, from https://www.nms.org/Resources/Newsroom/Blog/2022/January/STEM-Education-Unlocks-Potential-for-All-Students.aspx?gclid=Cj0KCQiA-oqdBhDfARIsAO0TrGFJhwMiTMtMYJNf9zm47_WnLEAnz95FXrr8IV5v5R0HHK7NcFqfiNEEaAkGaEALw_wcB

Turlock, California Population 2022. (n.d.). Retrieved December 21, 2022, from <https://worldpopulationreview.com/us-cities/turlock-ca-population>

Value of Volunteer Time Report | Independent Sector Resources. (2022, October 7). Independent Sector. Retrieved December 21, 2022, from <https://independentsector.org/resource/value-of-volunteer-time/>