



PROGRAM REPORT

2022-2023



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Executive Director Message

As I reflect on the achievements of Scientific Adventures for Girls (SAfG) this past year, I am filled with immense gratitude for SAfG's dedicated staff, Board of Directors, partners, volunteers and funders who have supported SAfG in changing the face of science. It is with great pleasure that I present SAfG's Annual Program Report for 2022-2023, a testament to the collective efforts that have made a profound impact on the lives of many young children and their families in the San Francisco East Bay Area.



Engaging young girls and their families in STEM education is at the core of our mission. We recognize that the full realization of gender equality in these fields begins by breaking down barriers and fostering a culture of inclusivity. By involving families as partners in our journey, we create a strong support network that nurtures girls' passion for discovery and provides them with the tools they need to excel.

None of our accomplishments would have been possible without the remarkable support of our funders, partners, and supporters. Your belief in our mission and vision has not only fueled our growth but has transformed the lives of the girls we serve.

To the incredible young girls who have embraced STEM with courage and enthusiasm, you are the future innovators, problem solvers, and leaders who will shape our world!

To our dedicated SAfG team and volunteers, I extend my deepest appreciation for your tireless efforts and unwavering belief in the potential of every girl. Your passion and commitment are the driving force behind our success.

As we embark on another year of inspiring and empowering girls, I invite you all to join us in our pursuit of a future where every young girl has equal opportunities in STEM fields. Together, we can break down barriers, ignite curiosity, and empower the next generation of female trailblazers.

With sincere gratitude,

Courtenay Carr Heuer
Executive Director and Co-Founder

About SAfG



Mission

To remove systematic barriers to all girls' participation in STEM starting in kindergarten, engage them through hands on learning, increase their positive attitudes toward STEM, and equip them with 21st-century skills.

2022-2023 SAFG Impact at a Glance



Afterschool STEM Program

- **650** girls participated in a 27-week afterschool, hands-on STEM program during the 2022-2023 school year (**27** hours per girl) Themes: Biology, Product Design & Engineering, and Space Science
- **22** elementary schools served
- **88%** girls of color, **88%** eligible for free and reduced lunch
- **650** girls and their families were offered free Annual Chabot Space and Science Center memberships



Spring & Summer STEM Camps

- **5** Spring Break "Circuitry" Camps served **150+** girls & boys
- **9** Summer "Space Science" Camps serving an estimated **500** girls and boys



Role Models, Volunteers & More

- **28** Female STEM Professionals participated in our Role Model program, including **6** AstraFemina "Space Science" Role Models, volunteering a total of **136** hours
- **11** Teaching Assistants from Cal State East Bay and UC Berkeley assisted in SAFG Afterschool, Spring Break, Summer and Library programs
- **7** STEM Near Peers (high school students and SAFG graduates with a STEM passion) supported SAFG afterschool classes
- **3,302** STEM kits assembled by our partners who volunteered a total of **620** hours
- All **650** girls in our afterschool program received STEM take-home kits/gifts from supporters and volunteers at the end of the Fall, Winter, and Spring sessions

2022-2023 Impact continued...



Family Engagement

- 4 virtual Family STEAM Nights (FSN) and 2 in-person FSNs were held during the 2022-2023 year
 - We served 700+ participants to date.
 - We look forward to our final in-person FSN in August to kick-off the school year (300+ est.)
- 3 Richmond Summer Library Programs held once a week for 5 weeks (total of 23 hours of STEM)
- 10 Monthly Parent STEM Newsletters sent to SAfG families
- 12,000+ calls and texts to parents and caregivers throughout the school year to support families and girls through the program



SAfG as a Thought Leader

- SAfG Head Teachers in partnership with Million Girls Moonshot delivered a three-part, nation-wide "Product Design and Engineering" training session to 29 education professionals
- SAfG presented on two panels: East Bay Economic Development Alliance "Meet the Innovators" and the Girls Build Solutions Conference on "Strategies for Supporting Program Providers with Corporate Volunteers"
- SAfG training Bay Area Community Resources staff to deliver STEM to their girls and boys in afterschool programs



Media

- SAfG featured in 3 minute segment on NBC Bay Area (Filmed at Chavez Elementary)
- The Richmond Pulse highlighted SAfG Alum Elly Thorton for being chosen for the Million Girls Moonshot's National Flight Crew

SAfG Programs 2022-2023

1

27-week Afterschool STEM Programs at 22 elementary schools



- Girls in TK-6th grades
- 27 hours of STEM programming per student
- Themes: Biology, Product Design and Engineering and Space Science
- 3 Role Models visited each school
- 650 Girls served

2

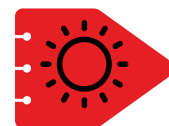
Family STEAM Nights (3 in-person and 4 virtual)



- Girls, Boys & Families (TK-6th grades)
- 1 - 1.5 hours programming per student
- Partnered with Industry and STEM Organizations
- In-person and virtual
- Take Home STEM Kits
- 1000+ children and families served

3

5-week STEM Summer Camps at 9 elementary schools



- Girls & Boys in TK-6th grades
- 9 hours of STEM programming per student
- Theme: Space Science
- Female Role Models visit schools
- 500+ girls and boys served

4

5-week STEM Library Program at 3 Richmond Libraries



- Girls, Boys & Families (TK-6th Grades)
- 15 classes, 1.5 hours STEM programming per student
- Theme: Space Science
- Bayview, Westside, and the Richmond Main Libraries

5

1-week STEM Spring Break Camps at 5 Richmond elementary schools



- Girls & Boys in TK-6th grades
- 4 hours of STEM programming per student
- Themes: Circuitry and Engineering
- 150+ girls and boys served

6 Neer Peer Program



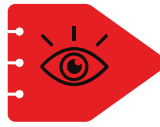
- 7 girls in 7-12th grade (includes SAfG graduates)
- Mentored girls in SAfG STEM classes
- 27 hours per Near Peer
- **Provided with stipend**
- Shared love of STEM with TK-6 girls

7 Role Model Program



- 34 Female STEM professionals visited SAfG afterschool programs this year
- Role Models talk about career, STEM journey and why they love STEM
- Girls see women in professional STEM roles who look like them
- Girls ask questions

8 Women Who Lead Panel Series



- Highlighted Women in STEM
- Virtual panel twice a year: "Diversity in STEM" and "Closing the Gender Gap in Technology"
- Fundraiser, engage with STEM professionals, raise SAfG awareness

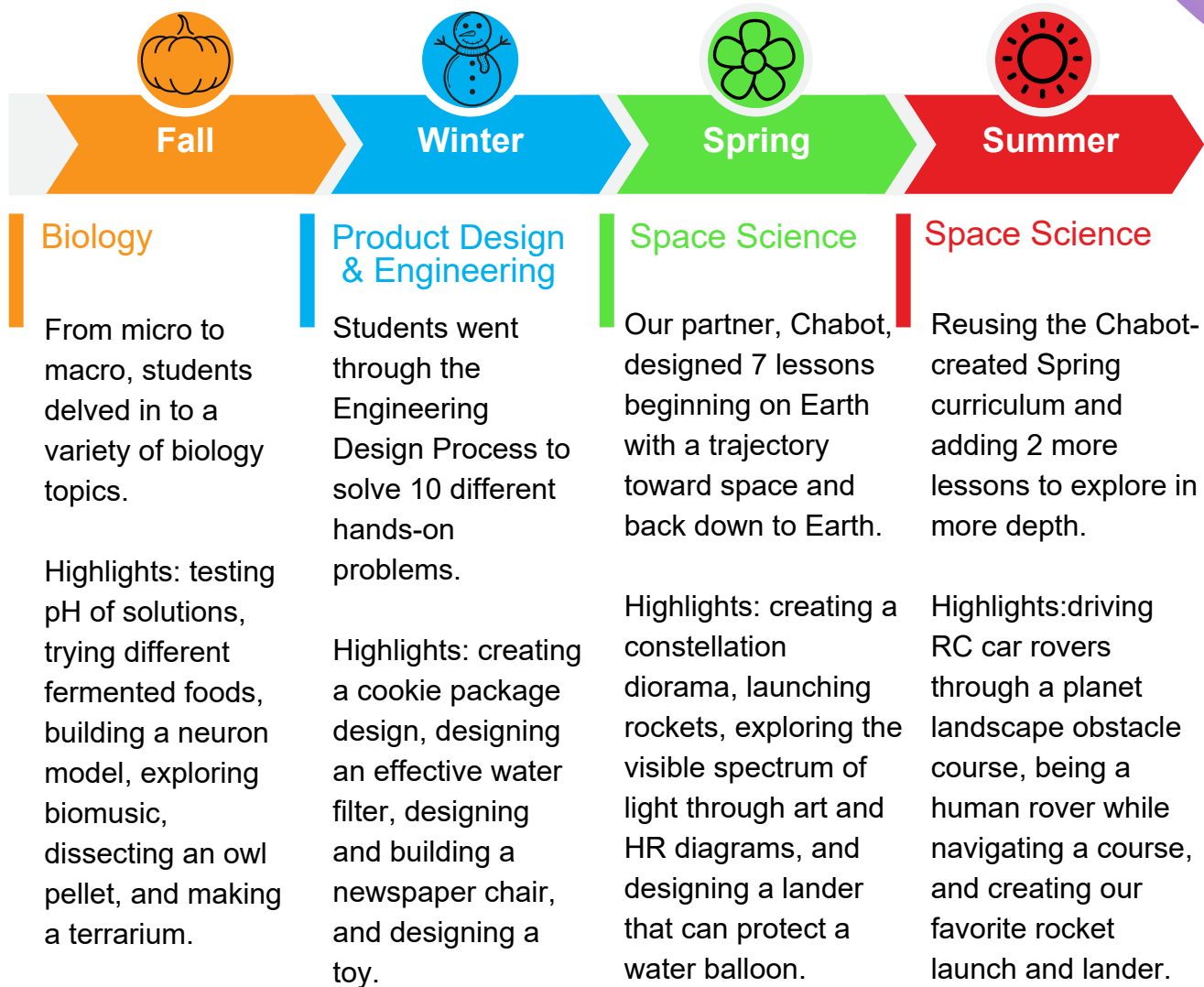
9 Family Engagement



- Weekly communication from SAfG teachers
- Monthly Parent Newsletter
- Family STEAM Night Series
- Warriors STEAM Fest
- Culminating Party/Event at Chabot Space & Science Center and free Annual Family passes for 650 girls and families.
- STEM Take-Home Kits for 650 girls and families over 3 school breaks (fall, winter and spring).



SAfG Curriculum 2022-2023



SAfG Open Source Curriculum

SAfG makes its STEM education and activities available to ALL educators. We publish our curriculum open source for their use. It is free by email request and provides not just a collection of hands-on projects by theme but also facilitator's guides and handouts. [Follow this link](#) to access.

SafG Schools Served

Year-Round Elementary Schools



Richmond

- Chavez
- Coronado
- E.M. Downer
- Grant
- Michelle Obama
- Murphy
- Nystrom
- Peres
- Sheldon
- Tara Hills
- Washington



Oakland

- Emerson
- Esperanza
- Fred T. Korematsu
- Global Family
- Hoover
- Martin Luther King Jr.
- Piedmont Avenue
- Reach Academy
- Sankofa United

Berkeley School

- Washington

Emeryville School

- Anna Yates



Spring Break Camp Schools

Richmond

- Bayview
- Coronado
- King
- Lincoln
- Peres



Summer Camp Schools

Richmond

- Bayview
- Dover
- Downer
- King
- Lincoln
- Michelle Obama
- Peres

El Sobrante

- Murphy

Hercules

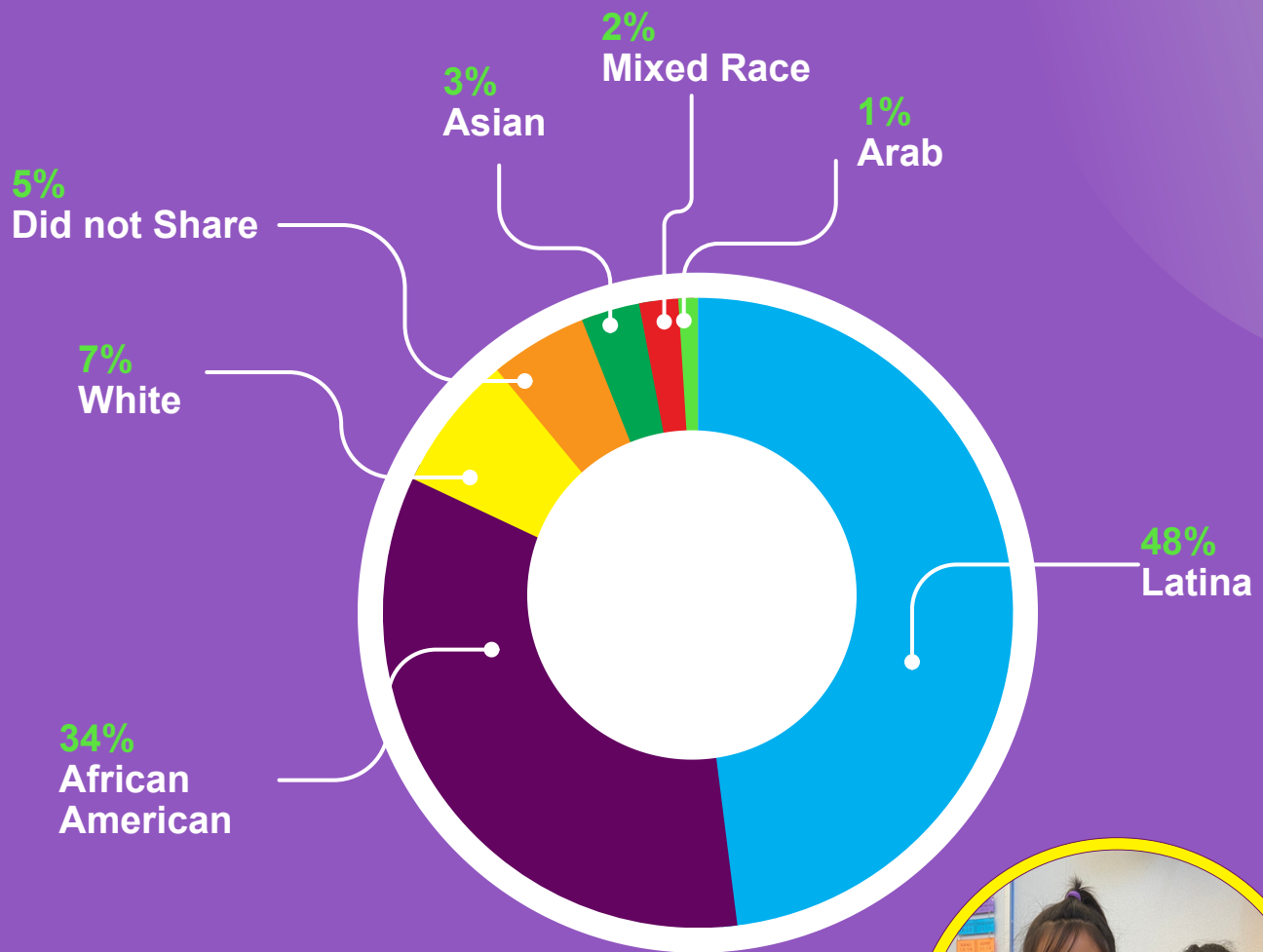
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SafG Afterschool STEM Program Student Demographics

2022-2023 School Year:

- 88% girls of color
- 88% eligible for free or reduced lunch program

Demographic total for all 22 schools based on our registration data:



SAfG Afterschool Program Evaluation Results

At the end of the 27-week afterschool session, SAfG collected evaluation data from all 22 elementary schools. Here are the results collected from 649 participants:

STUDENTS:

- **81%** liked the SAfG program
- **82%** liked the SAfG projects and activities
- **71%** want to return for another SAfG program
- **77%** know they can do science
- **78%** want to do more STEM because of SAfG
- **71%** know that they can be a scientist one day
- **100%** met three female STEM Role Models

01

02

03



PARENTS:

- **100%** said the class was a success
- **100%** would recommend class to others
- **99%** enjoy discussing with their daughter what she learned in class
- **88%** said after taking SAfG class, their daughter's interest in STEM became more positive
- **92%** said their daughter has been exploring STEM in her spare time since starting SAfG
- **97%** said their daughter would like to participate in future SAfG programs
- **99%** believe it is very or extremely important their daughter to stay engaged in STEM
- **94%** would like their child to have the option of getting a job in STEM

AFTERSCHOOL SITE COORDINATORS:

- Parents enjoy hearing about SAfG lessons, what their daughter learns, and how happy she is
- Families ask each year if SAfG classes are returning & really like the classes
- Parents from outside the program have asked about participating in SAfG
- Nystrom families have fallen in love with SAfG & believe it is one of the best programs provided
- Parents loved their daughters were attending SAfG class & hope they continue in the program
- Parents go out of their way to wait for their child to finish SAfG classes (when early for pickup)
- Parents are excited we can provide STEAM in the afterschool program

Case Studies - At the beginning of the 2022-2023 school year, SAfG interviewed 5 SAfG alumni in middle or high school to get feedback on their STEM journey and life after SAfG. [Here is a link to the Report.](#)

SAfG Family Engagement

Family Engagement is an instrumental part of SAfG programs. We want to engage the families in their child's STEM journey. Here are some of the ways we reached the whole family this year:



Monthly Parent STEM Newsletter

Each month SAfG sends out STEM resources, invitations to STEM events and information for alumni (camps, scholarships, etc.)

Family STEAM Nights/Events

SAfG invites families to free, in-person and virtual Family STEAM Nights and events throughout the year.

Weekly Communication between teachers and parents

SAfG teachers email and/or text parents each week during and after the 27-week STEM program with highlights and pictures from the class to encourage family conversations

Warriors Basketball Decoded STEAM Fest

Warriors Community Foundation invited SAfG girls to participate in the Warriors STEAM Fest, where they enjoyed booths & hands on projects and got to see a game. They also invited SAfG alumni to a special arena tour and learn how STEAM is part of basketball!

Oakland Town Camp

SAfG hosted two project tables serving 700+ children at the Oakland Parks & Recreation summer camp at Lake Merritt.

End-of-Year Space Science Celebration

SAfG girls and their families gathered together at [Chabot Space & Science Center](#) to celebrate the end of our Spring Space Science session. Over 400 SAfG participants enjoyed this day full of fun, hands-on STEM activities, a panel discussion with women in science, and a presentation by a NASA Mars Space Rover Engineer. Thank you to Chabot for also giving all families a free, annual pass to Chabot!

Program Highlight - Family STEAM Nights!

SAfG offered 4 virtual and 3 in-person Family STEAM Nights/Events from September 2022 - August 2023. All of our Family STEAM Nights were generously supported by Sandia National Laboratories.

Our 4 virtual FSNs are available for public viewing on our YouTube channel:

- Creepy Crafts: [November FSN with CuriOdyssey](#)
- Learning with Light: [December FSN with Lawrence Berkeley National Labs](#)
- Brainy Games: [January FSN with Lawrence Hall of Science](#)
- REach for the Stars: [March FSN with Pixar](#)

What parents said about SAfG FSNs:

“Thank you so much for those great and interactive science nights. We are learning a lot and have fun doing the experiments.”

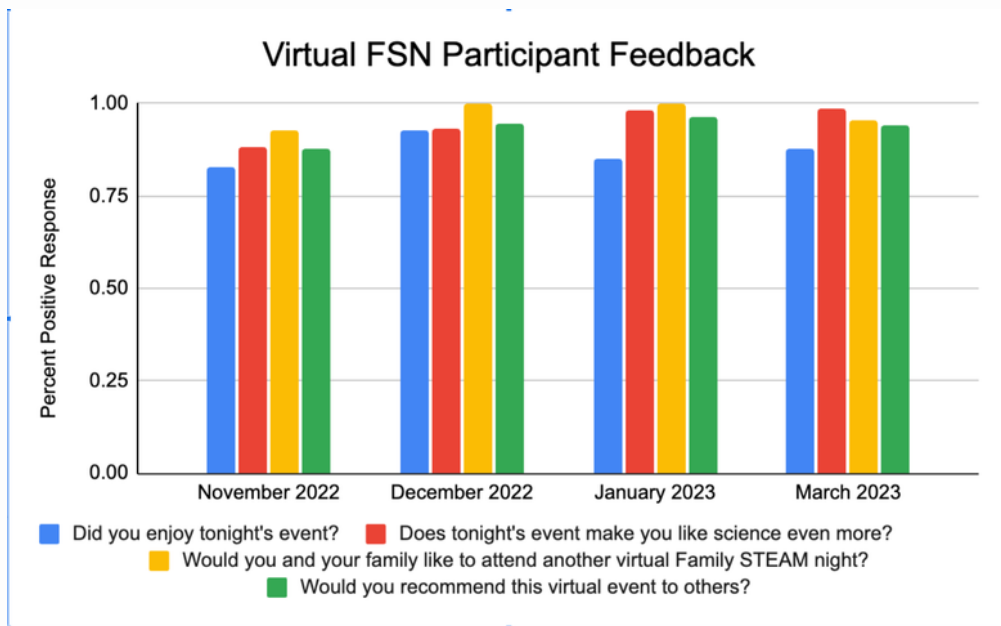
-Robert S.

“We enjoyed the event and we are really grateful for the fun and educational programming you put together. The science night has been the highlight for our family!”

-Michelle P.

“We love doing these! I have 3 kids and we all join in to do the activities together.”

-Amanda N.



Number of Role Models
34

Roles Models

Volunteer Hours
136

Number of Near Peers
7

Near Peers

Hours of Support
288

Number of Teaching Assistants
• Cal Teach Students: 5
• College Fellows: 4
• Professional Volunteers: 2

Teaching Assistants

Hours of Support
• Cal Teach: 115 hrs
• Fellows: 1,500 hrs
• Volunteers: 94 hrs

Family STEAM Night Partners

Totals

Partner volunteer hrs for FSNs: 156

Number of STEM kits mailed to families: 400

Number of prizes donated: 21

- Sandia National Laboratories: Program Support, 400 STEM kits
- CuriOdyssey: 10 volunteer hrs
- Lawrence Hall of Science: 22 volunteer hrs + 3 prizes
- Lawrence Berkeley National Laboratories: 10 volunteer hrs+ 3 prizes

Partners



- Port of Oakland: 6 volunteer hrs
- Community Resources for Science: 24 volunteer hrs
- Pixar: 28 volunteers hrs
- Bay Area Air Quality Management District: 6 hrs
- Alameda County Mosquito Abatement District: 8 hrs
- Things that Creep
- Wareham Development
- Rosie Service Corps

Total number of lessons developed by partners
10

Curriculum Developers

Volunteer Curriculum Development hours:
20 hrs + teacher training

Number of Corporate Volunteers
277

Corporate Volunteers

Volunteer Hours
750+ hrs

Total Number of Individual Volunteers
35

Individual People

Volunteer Hours
130+ hrs

SAfG as an Advisor & Thought Leader

Throughout the last 8+ years, SAfG has learned a great deal about the why and how behind engaging girls in STEM. We are eager to share our insights and experiences, aiming to inspire and empower others to implement similar programs nationwide, fostering a more inclusive and diverse STEM community for all. This past year we had an opportunity to present and share our best practices:

- Through the [Million Girls Moon Shot](#): SAfG led a three-part training series on "Engaging Girls in Hands-on Engineering" for a National cohort of 29 Educators and School Districts.
- [STEM Opportunity Alliance](#) - SAfG attended "Achieving STEMM Equity and Excellence: Communities and Schools" and submitted recommendations on what to include in a National Strategy to increase diversity in STEM in the United States.
- 2023 [Girls Build Solutions Conference](#) - SAfG presented on "Strategies for Supporting Program Providers with Corporate Volunteers" and "Building Engineering Mindset - Open Source Content, Training and Resources to Support Programs" to a national audience.
- [SAfG Women Who Lead Series](#) - SAfG hosted two virtual panels: "Gender Diversity & Equity in STEM" (Panelists: UC Berkeley, Apple, Turner Construction, NBC Bay Area) and "Closing the Gap in Technology" (Panelists: Oracle, SAP, Pixar, Cisco.).
- SAfG launched its "[STEM Catalyst](#)" Newsletter in April 2023 to share knowledge and insights around the importance of STEM education and how to engage more girls in STEM to pursue STEM careers.
- In July 2023, SAfG is offering a STEM training to an estimated 50 afterschool Administrators at [Bay Area Community Resources](#) to enable them to offer our programming to all of the boys and girls in their afterschool programs.
- [Click2Engineering](#) filmed SAfG classes and created national training videos that highlight: 1) Applying math knowledge to problem solving, 2) Working in teams, and 3) Identifying as an Engineer. The videos will be released in August 2023.



National STEM Ambassador & Million Girls Moonshot Flight Crew Member

Elly Thornton, an SAfG Alum, became a National STEM Ambassador this year!



Scientific Adventures for Girls is incredibly proud of Ellyana (Elly) Thornton. After a very competitive process, she was chosen as one of 43 girls in the national Flight Crew for Million Girls Moonshot. Elly is an SAfG graduate & Near Peer who has been a part of our program for more than 6 years.

Great job, Elly!

Organizational Chart



*College Corp Fellows: The #CaliforniansForAll College Corps offers paid internships and engages students across the state in solving problems in their communities.

**Pioneers for Change: Is a paid service learning, peer-to-peer leadership program providing college students opportunities for growth and development through tservice projects and community engagement internships that encourage them to be leaders as catalysts for positive change within the community.

***UC Berkeley CalTeach: Provides students with field experiences in K-12 schools while they complete their STEM undergraduate degrees.

Board of Directors



Tiffany Jalalon Sprague



Ana Valencia



Darenae Evans



David Bendet



Umang Shukla



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Thank You to Our Partners

SAfG wants to thank all of the following organizations, schools districts & companies for their partnerships in helping SAfG deliver STEM programs to 1000s of children in the East Bay Area during the 2022-2023 year.

SCHOOL DISTRICTS

- Emery Unified
- Oakland Unified
- West Contra Costa Unified
- Berkeley Public Schools Fund

AFTER SCHOOL ADMINISTRATOR PARTNERS

- Bay Area Community Resources
- YMCA
- Love Learn Success

STEM ORGANIZATION PARTNERS

- Chabot Space and Science Center: SAfG was honored to partner with Chabot this year to offer a Space Science curriculum to more than 1000 children. Chabot also hosted an end-of-year celebration at the Chabot Space and Science Center, and is providing free annual memberships for all 650 SAfG families!
- Million Girls Moonshot: SAfG provides national teacher training, presented at the Girls Build Solutions conference and provides SAfG resources nationally.

STEM KITTING PARTNERS FOR SAFG CLASSES AND TAKE HOME STEM GIFTS

- Sharks Foundation
- Western Digital
- Pliant Therapeutics
- Gilead
- Apple
- Cytokinetics
- Neumora
- Ultragenyx
- 4DMT
- Life Science Cares
- Pixar Animation Studios

UNIVERSITY PARTNERS

- Cal State University East Bay
- University of California, Berkeley

MEMBERSHIP ORGANIZATIONS

- Life Science Cares:
 - Connects companies to SAfG to provide free STEM kits and volunteer support with STEM kitting for programming and volunteers for SAfG events
- AstraFemina: Provided Space Science Role Models who met with the girls!

FAMILY STEAM NIGHT PARTNERS

- Lawrence Hall of Science
- Pixar Animation Studios
- Lawrence Berkeley National Laboratory
- Community Resources for Science
- CuriOdyssey
- Port of Oakland
- Sandia Laboratories
- Wareham Development

ROLE MODEL PARTNERS & CURRICULUM SUPPORT

- Caribou BioSciences
- Denali Therapeutics
- Grifols
- Lawrence Berkeley National Laboratory
- NASA/Jet Propulsion Lab
- Pacific Gas and Electric Company
- Pivot Bio
- Pliant Therapeutics
- Salesforce
- Samuel Merritt University
- Sandia National Labs
- Stanford
- Turner Construction
- AstraFemina
- Clif Bar & Company
- Holo, Inc.

Thank You to Our Funders

Finally, none of our programs would be possible without the financial support and sponsorship from the following companies and organizations. Together we are changing the face of science!

