

On January 10, 2024, the General Atomics Sciences Education Foundation announced awards of \$51,500 in funding to 13 organizations and programs to improve K-12 STEM education.

1. \$10,000 to Greater San Diego Science and Engineering Fair for their 2024 Science and Engineering Fair

The Greater San Diego Science and Engineering Fair (GSDSEF) is a highly respected event that has promoted science to all 6th -12th grade students in San Diego and Imperial counties, going on over 70 years. Over the years the GSDSEF has propelled thousands of students into STEM studies and careers, ranging from Astronomy to Zoology. The GSDSEF provides opportunities for student recognition and invaluable networking for these students who aspire to pursue STEM careers. Annually, over 700 area professionals from the academic and business sector offer scholarships, internships, and careers. In addition, students capable in excelling in the scientific fields are provided scholarship opportunities both directly with our science fair and in connection with other science fair programs. All funding for the GSDSEF goes directly into putting together the Science Fair and Outreach programs for the benefit of the student participants only. The Science Fair is operated fully by volunteers, who annually assist with science fair activities. 500-600 students expected to participate in this in-person fair, from 50-60 schools, grades 6-12. These students will represent the entire spectrum of diversity across all public, private, parochial, and potential home schools.

2. \$8,000 to Elementary Institute of Science for their Girls Take Flight program

The funds will support the participation of 10 female high school students in the practicum phase of the Girls Take Flight program from Oct. 2023 – Sep. 2024. The practicum comprises 180 hours of learning to build, program, and fly drones and preparation for the Part 107 Remote Pilot Certification Test. A grant will be used specifically towards instructional and transportation costs, and miscellaneous supplies. Girls Take Flight introduces the UAS industry to over 100 female high school students. Twenty of these girls are selected to participate in a week-long drone camp where they will build skills in coding, building, and operating small drones. The students also learn about career opportunities in the USA industry, specifically focusing on women in engineering and aeronautics. Of these 20 girls, ten are selected for the final phase of the program, the practicum. Girls Take Flight is the first high school drone program for high school females in the United States. Participants are girls in 10th and 11th grades in southeast San Diego who attend Title I schools and qualify for federal assistance. The program provides girls with regular career exploration opportunities led by diverse female STEM professionals. Every Girls Take Flight participant has enrolled in college after high school graduation. Three graduates are pursuing commercial pilot careers. The 36 girls who have earned their FAA certification through the program make up 10% of all female drone pilots under the age of 18 in the United States.

3. \$10,000 to Chapter One for their Tutoring program

Funding will support the implementation of the Chapter One (formerly TutorMate) program at GA&A. Funding will support up to 3 rooms at 10 GA tutors per room for a maximum of 30 GA tutors and 30 elementary school students. Each GA tutor tutors an at-risk first grade student in the New Haven Unified School District in the San Francisco Bay Area for 30 minutes per week from their work location using their computer and phone. Readings include science stories. Funds are used to support Innovations for Learning/Chapter One staff and to purchase computers and other equipment used by the schools for this program. Only 15% of New Haven first graders are proficient in literacy so there is a strong need. The student body at the schools served by New Haven Unified School District is 5.9% White, 4.6% Black, 45.1% Asian or Asian/Pacific Islander, 37.3% Hispanic/Latino, 0.6% American Indian or Alaska Native, and 1.6% Native Hawaiian or other Pacific Islander. It's the 8th most diverse school district in CA.

4. \$5,000 to STEM-ED for their Aerospace Robotics Competition

The objective of this program is to provide an accessible, affordable, and relevant robotics competition for students interested in learning about quadcopter drones. Funding is requested for materials, software, and competition execution. There are four major benefits to the Aerospace Robotics Competition. First, this is an extremely accessible program to students from all backgrounds. Next, ARC is affordable. The program costs an average of \$1,500 per team to participate, which is far less than other major high

school robotics competitions. Third, ARC is highly relevant as an aerospace-focused program. Finally, the volunteering effort required for ARC is a major benefit to General Atomics employees. During the 2022-2023 season, San Diego held its inaugural Spring Aerospace Robotics Competition with 11 teams, with approximately 75 participants. Two of these teams were unable to pay for their supplies, but thanks to GASEF, ARC was able to provide drones to these teams. ARC also enjoyed the support of 13 GA employee volunteers, five of whom volunteered all school year, with the rest supporting the competition day. \$5,000 of this grant will be used to support low-income teams, with the rest covering competition costs. We have special interest in supporting underrepresented students who do not currently have access to similar programs; this includes schools with low funding, students who are more comfortable in a smaller team dynamic, and those with no prior experience. The local program will be managed by GA-ASI employee Kelsey Hite, who leads this on her own time.

5. \$1,000 to Los Angeles County Science and Engineering Fair for their 2024 Science and Engineering Fair

Funding will cover operating expenses, award prizes, and offer fee waivers to schools receiving Title 1 funding or having a student population of over 80% underrepresented minorities in science. The primary program is the annual science and engineering fair, scheduled for March 10 - 11, 2024 at the Shrine Auditorium and Expo Hall. At the same time, LACSEF will serve as the host fair for the International Science and Engineering Fair (ISEF) this year. The 73rd Annual Los Angeles County Science and Engineering Fair in 2023 experienced an increase in participation with 660 student registrations, representing 92 schools. In 2023, the ethnic/cultural breakdown of participants was 2.3% African American or Black, 2.3% American Indian or Alaskan Native, 36.4% Asian or Pacific Islander, 17.7% Latino or Hispanic, 24.8% Caucasian or White, and 16.5% preferred not to answer. LACSEF conducts multiple teacher workshops, designed to improve the knowledge and skills of teachers in implementing hands-on inquiry-based science instruction and improving their science inquiry and design-thinking engineering curriculum, something that is at the heart of the Next Generation Science Standards.

6. \$3,000 to The Links Inc. for their San Diego Links to STEM programs

In 2020 Links to STEM became a National Society of Black Engineers (NSBE) Jr. Pre-College Initiative Chapter. With financial assistance from GASEF, our robotics team attended the 48th and 49th NSBE Conventions. Students met with college representatives and STEM related companies during the conventions. In addition, they competed in the First Lego League robotics competition and in the MATHCOUNTS Competition at the conventions. Our students are excited and preparing to compete again against other NSBE Jr. chapters at the 50th NSBE Convention in Atlanta, Georgia in March 2024. We plan to take the 10 students on the robotics team and 3 chaperone/coaches. The anticipated cost for attending the convention is \$25,000 (hotel, registration, air fare, food). Funding will defray the cost of attending and competing at the 50th NSBE Convention. The Links to STEM program is entering its tenth year, serving 35 4th through 8th grade students, 16 girls and 19 boys, who attend 20 schools in San Diego, Oceanside, Escondido, La Mesa, El Cajon and Chula Vista. Students are accepted into the program in the 4th grade and remain in the program until they complete the 8th grade. They are primarily middle to low-income families. Ethnicity is 1 Asian, 1 Latina, 4 Mixed Race and 29 African Americans. All ethnicities are able to join; the application does not include any information about race.

7. \$2,000 to Olivewood Gardens for their Garden Science and Nutrition Education program

Funding will support the Children's Garden Science & Nutrition Education Program which provides STEM garden-based educational experiences at Olivewood and school garden for 4,700 National School District (NSD) students. Funding will be used to support the salaries of program educators and instructional materials and supplies. The program's purpose is to improve access to garden-based nutrition education, improve student garden/nutrition science knowledge and learning outcomes, increase student consumption of fruits/vegetables, and improve student behaviors and attitudes related to the natural environment. Activities include: (1) Garden-Based Learning that engages all 4,700 TK-6th grade NSD students in year-round standards-based lessons at school garden sites at all ten district schools focused on interactive science, gardening, and nutrition lessons. (2) Field Trips where all 650 4th grade NSD students attend a 3-part field trip series to Olivewood focusing on environmental and nutrition science that builds upon learnings at school sites and strengthens STEM knowledge through hands-on learning

experiences. (3) School Garden Maintenance/Support: Olivewood will maintain NSD school gardens at all 10 school sites, and work to integrate garden-based learning into classroom lessons. National City is historically under-invested and low-income. 64% of residents are Latinx/Hispanic, 19% Asian, and more than 70% of students in local elementary NSD qualify for free/reduced lunch. The community lacks green space, and as a result, many children have little opportunity to connect with nature.

8. \$1,000 to New Children's Museum for their Innovators Lab STEAM Makerspace

Funds will be used to support the Museum's Rosso Family Foundation Innovators Lab STEAM Makerspace and its educational programming and will support associated equipment, tools, and materials, as well as wages for the staff members who develop and lead daily programming. Through cutting-edge STEAM educational programming and hands-on artmaking, children explore new ideas, develop new perspectives, and strengthen their innate creativity. With this foundation, children have a greater capacity to find non-traditional and innovative solutions to problems. According to our 2022 visitor survey with 1,488 responses, NCM's visitors reflect the diversity of San Diego County: 41% White, 25% Hispanic/Latino/a/e/x, 19% Asian/Asian American, 6% Black/African American, 4% multiracial, 2% Middle Eastern/North African; 1% Native American/Alaska Native, and 1% Native Hawaiian/Pacific Islander. The Museum's primary age demographic is children ages 1-13 and their caregivers, with 75% of visitors coming from San Diego and adjacent regions. We expect to serve 250,000 visitors in 2023. 70% of our visitors use the Innovators Lab and its companion drop-in space—that's 175,000 of the 250,000 visitors we are on track to serve in 2023. While the Lab is for children ages 6-13, the drop-in space is for all ages.

9. \$3,000 to MiraCosta College Foundation for their STREAM Experiential Learning and Outreach programs

The funds will support MiraCosta's STREAM Experiential Learning and Outreach Program. This program aims to increase comprehension of STREAM concepts and build awareness of higher education opportunities among local TK-8 students while also enriching the MiraCosta College student experience. MiraCosta College students put into practice the STREAM concepts they are learning in class by designing fun and exciting hands-on activities that are culturally relevant to TK-8th-grade students. This program is unique because it incorporates a holistic method of learning which includes reading comprehension and the arts. Funds would support supplies for demonstrations, uniforms for MiraCosta students, background checks for advocates, event rentals, marketing materials, personnel costs, and more. Mini STREAM events are held at local community parks and nonprofit organizations through the fall. During the months of February through April, student advocates visit school classrooms within the Oceanside and Vista school districts each week to carry out STREAM activities. The target audience is local North County San Diego youth in TK-8 schools. While the whole community is invited to participate, special efforts are given to low income and disadvantaged areas, particularly Title I Schools and/or schools typically serving low-income and first-generation college families. Last year, this program reached ~2,000 children & families and over 150 MiraCosta students.

10. \$3,000 to Generation STEAM for their Biology Based Outreach programs

The funds will support their multifaceted biology-based program that delivers hands on science labs and lessons to underserved schools across San Diego county, impacting ~10,000 students and provides connections to local life science professionals in the form of company tours, career panels, internships, and teacher professional development. Funding would support facilitation and management of the program (delivering career panels, teacher training, virtual tours, in-person teacher tours at companies, and more), as well as assist in the purchase of the materials used by the students to build the kits. Students take part in three key lessons: Bacterial Transformation, Protein Purification, and Ocean Acidification. Also, 250 students from local high schools (Castle Park High School, Mira Mesa High School, Sweetwater High School, and Helix Charter High School) serve as biomanufacturing interns. The programming employs specific strategies to address issues of inclusion: it increases the opportunities to interact with professionals, changes the image of STEM, provides youth with positive, diverse STEM role models, and provides experiences to encourage students to stay involved in STEM/life sciences and to pursue careers in these fields.

11. \$1,000 to Library Foundation SD for their Game Jam program

Funding will support the summer 2024 San Diego Public Library Game Jam program, which is designed for youth in middle school and high school who have little to no experience creating video games. During the three-week-long interactive program, teams of students learn to create a video game from scratch and compete for prizes. Programs are focused on reaching youth in under-resourced communities. We anticipate that 30 students will participate in each Game Jam program. Funds will be utilized to support program delivery and instruction, program supplies, equipment, marketing, and outreach. The total cost of the program is \$15,000 (to implement three Game Jam programs). 79 percent of Library patrons come from low-to-moderate-income households; 49 percent are in the low-income category. The 36-branch library system serves a population of approximately 1.4 million residents across the city of San Diego, with branches located in all nine city council districts. As the region's top provider of free educational and cultural programs, the library creates pathways, particularly for underserved people, to succeed academically and in the workforce.

12. \$3,000 to Expanding Your Horizons – San Diego for their 2024 EYH Conference

Funding will support the 2024 Expanding Your Horizons (EYH) Conference on 3/9/24. Funding will support conference fee waivers to all that request them. EYH Conference is a unique event in San Diego as it provides girls with a day of science discovery in laboratories on a college campus through workshops conducted by professionals from industry, government organizations and academia. The conference format is designed to provide social, fun, and engaging experiences with a variety of STEM topics. Since 2002, the annual conference has connected 350-450 girls from varied socioeconomic backgrounds with local STEM professionals. Each group of 15-20 participants is mentored by 2-3 female STEM undergraduate students, providing role models that research indicates is vital to inspiring to 6-10th grade females. These elements are designed to increase the girls' interest in STEM careers by providing exciting STEM experiences and interactions. In 2023, 60% of the 226 attendees from 83 schools received a full waiver for the \$30 attendance fee and there were 53 college-aged female mentors, providing 21 interactive STEM workshops.

13. \$1,500 to Association for Women in Science – San Diego for their K-12 Outreach programs

Funding will support activities scheduled for the 2023-2024 school year and will be used to purchase supplies that will be used for demonstrations and promotional materials to attract attendees. This year AWIS-SD Outreach Committee volunteers will present hands-on demonstrations at the Spring Expanding Your Horizons (all ages), Greater San Diego Science and Engineering Fair (Grades 7-12). We are currently planning fall activities for Fall Girl's Day Out (SDSU Society of Women's Engineering) and ChemExpo (Grades 7-12). All our events are attended by a diverse group of San Diego County students. AWIS-SD strongly believes in contributing to the community with the development of activities that will reach the diverse student population in San Diego County (41.5% Hispanic, 37.1% White, 4.8% African American, 10.8% Asian, 0.4% Pacific Islander, 0.5% American Indian, 5.0% Multiracial).