



**COMMUNITY
RESOURCES
FOR
SCIENCE**

2023 Annual Report

1611 San Pablo Avenue, Suite 10 B
Berkeley, CA 94702
crscience.org
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This tree image serves as a visual representation of our strategic priorities.



"CRS has played an integral role in making science significant and accessible to my kindergartners for the past 5 years. Every year I learn new strategies and practices through CRS, all of which contribute to the joys of teaching and learning. Thank you so much CRS for leading the work in equity and success, one science lesson at a time!"

-CRS Teacher, West Contra Costa

Our Mission and Vision

The mission of CRS is to empower teachers and STEM professionals serving schools in historically marginalized communities to activate TK-8 students' curiosity about the world, foster critical thinking, and inspire children to imagine future career pathways.

We envision a community of educators, scientists, families and partners working together to build school cultures that equip all children to explore the world around them and build the skills needed to become innovators, problem solvers, environmental stewards, life-long learners and leaders.

We are guided by our core values of:

Equity & Access

Representation

Inspiration

Curiosity

Collaboration

Partnership

"Many of the kids where I teach don't have many worldly experiences. What CRS has to offer helps with that. I have appreciated having scientists come into our classroom to do lessons with my students. That has always been a powerful experience for my students as well as providing them with hands-on activities that keeps them really engaged."

-2nd grade Teacher, West Contra Costa



Letter from CRS Leadership

"It's the look of joy on my students' faces that does it for me, when that light bulb goes off and they get it!"

—Elementary teacher, Oakland

Eureka!

The cry of joy upon discovery. The exuberant celebration after investing time and effort in search of answers and understanding.

For CRS, 2023 was a year filled with facilitating Eureka moments for children, teachers and scientists alike.

We stretched our wings and added staff in order to serve nearly 2,000 teachers across six school districts. We scaled up promising teacher development and scientist engagement efforts. We augmented our work in the areas of building climate and environmental literacy.

And, most important of all, we continued to center joy and belonging in all of our programs and services, while learning and sharing with educators, STEM professionals, students and partners.

The youngest learners, in TK and Kindergarten, exclaimed with "oohs and aahs" as marking pens revealed their hidden colors during a chromatography investigation led by visiting STEM professionals.

Fifth graders wowed their resident Scientist Ambassadors during 'flip the script' presentations as they shared results of their investigations about animal habitats.

Middle schoolers cheered one another on as they raced to present their data and findings to their scientist mentors.

Quiet moments of inspiration and boisterous lightning bolts of enthusiasm greeted scientist teams who visited classrooms with books, materials, and lessons designed to broaden the representation of "who" is a scientist.

Teachers' eyes widened with delight as they learned from fellow teachers about effective strategies during extended professional development workshops.

Jaws dropped and determined plans were formed as teachers delved into topics such as clean air, clean energy, and extreme weather, and saw hope-filled examples of how students and communities can take actions to address climate change.

CRS enjoyed our own Eureka moments as we built new collaborations, tested and developed new curriculum, and rekindled partnerships that had been dormant due to the pandemic.

This report provides a glimpse into some of the discovery moments.

We look forward to fostering even more joyful Eureka! moments of learning and teaching in 2024.



Anne Baranger
2024 President

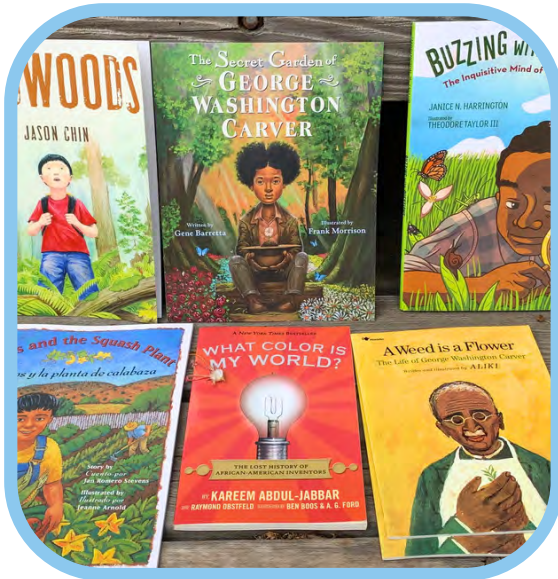


Teresa Barnett
Executive Director

"CRS training helped me bring science to my students. When I first started as a teacher, science was last on my list. Now, thanks to CRS' support, I make it a priority. I try to help the new teachers at school teach science because I know it can be overwhelming. I want all of my students to see themselves as scientists. To put what I've learned into regular practice in the classroom, I have Fridays as Science Day- it holds me accountable to teach science regularly. Attendance is up, and behavior issues are down because the students all look forward to science."

—3rd grade teacher, Oakland

2023 at a Glance



January

In 2023, CRS sets out to foster a sense of belonging in science in all of the year's programming, professional development offerings, and events. Teaching lessons that connect with students' lived experiences, highlighting diverse books and posters for teachers to diversify the faces & stories of science in their classrooms, and deploying diverse STEM role models and mentors directly into classrooms across the East Bay.



February

CRS' STEM industry partners kicked off the year engaging students in exploring the science of everyday objects. From designing foil boats to discovering the chromatography in coloring markers, to constructing rocket cars with balloons and straws, STEM industry partners inspired many joyful science moments!



March

55 inspiring teacher role models from across 34 schools completed the 2022-2023 Champions of Discovery Challenge! These teachers led their nearly 3,000 students in authentic science learning experiences, encouraging students' engagement with science phenomena in their daily lives and imagining the importance of science in their own futures!

2023 at a Glance

April

Scientist presenters from UC Berkeley and Lawrence Berkeley Lab faced the intense scrutiny and genuine curiosity of hundreds of 8th graders who listened in small groups and served as judges during our first-ever Reverse Science Fair. Kids came away from the day with new insights into cutting edge research and pathways into fascinating STEM careers.



June

The summer sun brought with it opportunities to collaborate with STEM professional role models and community partners, providing science explorations to Oakland summer campers with the Clorox Foundation and the Town Camp's STEAM Week with the Lawrence Berkeley National Lab.

May

Presentations in classrooms, schools, and festivals across the East Bay kicks into high gear, with dozens of BASIS individual class visits and all-school Day of Science festivals taking place each week. The calm at the center of the springtime scheduling flurry is Corinn Brown, who celebrates 20 years with CRS.



2023 at a Glance



July

State Superintendent of Public Instruction Tony Thurmond came to our Joyful Math & Science teacher workshop at the UC Berkeley Blake Garden! We were excited to have the opportunity to host the Superintendent. He spoke with the teachers, sat in on some of their discussions, and invited them to give him some “homework” that could help them in science teaching. It was a glorious morning in the Blake Garden, and a great way to kick off science and math integration lesson planning for teachers!

August

Forty elementary educators from across the Bay Area and beyond gather for our two-day Summer Climate Literacy Intensive at Chabot Space and Science Center.

Highlight of the session: A showcase of teacher-designed student climate action projects, ranging from composting and tree planting to alternative energy festivals. Powerful ideas for blending action, art, science and community building



September

UC Berkeley science graduate students of color shared with Berkeley elementary science specialists about their own journeys into STEM, and the impact early educators had in their lives, as part of ongoing professional development to help teachers build greater equity and inclusion in their classrooms.



2023 at a Glance

October

Celebrating the tenth year of the 7th grade Be a Scientist STEM mentoring program. More than 650 students each have support from a Cal science mentor as they design an experiment, use authentic science practices, and search for answers to a scientific question of their own choosing. 'We are powerful in our own learning', say the 7th graders.



December

The library of lessons that BASIS teams bring into classrooms grew significantly in 2023.

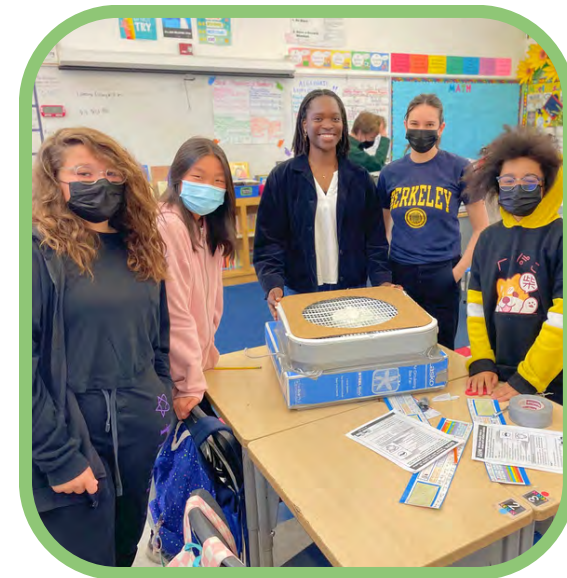
New lessons explored included renewable energy, optoelectronics, carbon sequestration, air filtration, biomining, wastewater and disease, robots, and more!

November

Getting so many thank you notes from teachers and kids for in-class basis lessons. A 3rd grade Richmond teacher and his students loved an engineering design lesson involving catapults.

Thank you so much! The kids absolutely loved it! They didn't even want to stop for recess which almost never happens! So many of them begged to keep working on their projects that we spent most of the day on it. It was a fantastic way to wrap up the week. Thank you so much for providing my class with such a fun and educational lesson that I'm sure they'll remember for a very long time!

– 3rd grade, Richmond teacher



Addressing the National Need for Strengthening K-12 STEM Education

The need for strong science teaching and learning at the elementary and middle school levels is clear and the chorus calling for action grows ever louder at the national level. A 2023 report from the national Science & Technology Action Committee, *The State of Science in America*, found:

- The U.S. is perceived to be losing the race for global leadership in science and technology.
- The top obstacle to future scientific advancement in the United States is the quality of K-12 STEM education.
- The Committee’s “clarion call for action” urged policymakers to bolster STEM education at all levels, starting with K-12, and to ensure a diverse domestic STEM workforce.

The CRS Response and Impact in 2023



Networks of science educators & institutions



Science teaching professional development opportunities

Quality, hands-on, standards-aligned science lessons and experiences for children

Nurturing a dynamic network connecting **2,000** educators with **200+** partner organizations, impacting learning for **45,000** TK-8 students

Engaging **300+** educators in **50+** professional learning workshop & collaboration sessions

Mobilizing and placing **1,000+** STEM professionals to lead lessons and serve as mentors, reaching **15,000+** students

The Need for Equity in Science Pathways

Recent state and national reports on STEM education have urged:

“..(T)he United States is falling behind international competitors, and that our biggest opportunity to maintain leadership may lie in improving science, technology, engineering, and math (STEM) education at the K-12 level.”

We also must increase women and minority group representation in the STEM fields. We must provide support and resources to teachers to unleash creativity and innovation in young learners.

Students in California are Missing Key Learning Opportunities



% of Students By Ethnicity Testing Proficient or Above in CA Science Exam, 2023

Only 25% of 4th graders across CA had teachers who say they teach science inquiry.

Fewer than 30% of schools in CA even included science in their Covid recovery plans.


CRS Helps Close the Science Gap in Schools in 2023

In contrast to the statewide trends, teachers active in our network are working to effectively teach more science. 86% of CRS Member Teachers reported that CRS support helps them continue to increase both the quality and the amount of time they spend teaching science and engineering lessons.


In Spring 2023, CRS teacher members indicated CRS programs and support had these significant impacts on their students' learning:



95%
Connected science lessons with their lives and the world



95%
Discussed their own observations and ideas



94%
are highly engaged in science and engineering lessons



97%
Grew more interested in science

Empowering Teachers

Our Strategic Approach

Well-supported teachers can pave pathways for equity and opportunity for their young learners. But their needs are not all the same. CRS provides customized support to meet the unique needs of each teacher, school and district we serve. Our innovative and evidence-based approach empowers educators to strengthen science teaching and learning. From timely information bulletins, to in-class scientist visits, to curated professional development, we offer teachers opportunities to collaborate, explore, and rekindle their own excitement about the process of science.

In 2023, CRS' support efforts focused on providing training and lesson resources on climate change and bringing joyful math and science learning experiences to life for students. More than 300 educators across 6 school districts took part in professional learning, ranging from one-time workshops to year-long collaborations. We highlighted stories of scientists of color and women in STEM and encouraged teachers to build strong connections between lesson topics and students' own lived experiences.

"Using the diversity approach I learned from the CRS workshop, I notice my students are beginning to see themselves as budding scientists. Example from today: I shared a book that I received from CRS, featuring a Latina meteorologist and a young Black girl who was interested in weather. One of my students, seeing herself in the story, enthusiastically said, 'I like weather! I want to be a meteorologist too.' Our class had a great conversation about the weather with lots of interesting questions!"

-3rd grade teacher, Richmond



Joyful Math and Science gathering at the UC Berkeley Blake Garden.

Our Action Highlights

- **Joyful Math & Science** - Scaled up our collaboration, training more than a dozen teachers as peer coaches who helped to lead two summer intensives. More than 75 teachers gained new tools for effectively integrating math and science. Scientists consulted on content and shared their own stories, to help teachers discover new ways to foster their own students' sense of connection and belonging in science.
- **Climate Institute** - at Chabot Space & Science, with elementary educators from around California. Teachers explored the power of student climate action projects and new resources to incorporate climate change and environmental justice concepts at each elementary grade level.
- **Champions of Discovery** - Celebrated (45) teachers and their students for excellence in science teaching and learning. Students completed monthly science learning activities and teachers shared their reflections on impact.
- **Piloted New Climate Literacy Lessons** - across 3rd, 4th and 5th grade classrooms. Children explored phenomena of "orange sky days" and clean air, power outages, energy resiliency, and extreme weather.

Engaging STEM Professionals

Our Strategic Approach

Scientists, engineers, and others working in STEM fields are powerful partners for teachers and inspirational role models for children. CRS provides the training and logistical support STEM professionals from university and industry need in order to be effective, and to fit outreach in their demanding professional lives.

Through our various Bay Area Scientists Inspiring Students outreach and mentoring programs, STEM professionals share about their own research and career pathways, dispel stereotypes, and lead students and teachers to experience “ah-ha” moments that have lasting impact.

In 2023, CRS mobilized more than 1,000 scientists, engineers and other STEM professionals to share their stories and expertise with more than 15,000 elementary and middle school students. They led authentic hands-on investigations that connect with students’ interests, and inspire students to imagine their own pathways in STEM.

"This was my first BASIS lesson and it was fantastic! The students were so engaged and kept asking great questions. The teacher was incredibly welcoming and helped when the students got a bit over-excited. Thank you to everyone at CRS who made this possible and looking forward to more lessons!"

-UC Berkeley Scientist



UC Berkeley scientist volunteers demonstrate dry ice with students.

Our Action Highlights

- **BASIS Elementary Lessons** – Bringing the message: “You Belong!” Teams from UC Berkeley labs & local industry partners presented lessons in more than 500 TK-6th grade classrooms, exploring circuits, renewable energy, and climate change.
- **Be a Scientist** – Brought 150 UC Berkeley STEM mentors into every 7th grade science class for a 6-week program in Berkeley, reaching 700 students as they each designed and conducted their own self-selected scientific investigation. Fall 2023 marked the 10th year of the program, with more than 6,000 middle schoolers having the individual support from their own UC Berkeley mentor.
- **Reverse Science Fair** – UC Berkeley, CRS, and LBNL scientists engaged 240 8th graders, presenting their research to small groups of students who put their skills of close listening, careful questioning, and evaluation of claims and evidence to good use as they judged the entries.
- **The UC Berkeley Clean Air Team** – Led nearly 200 6th graders in Richmond and Berkeley in a series of investigations that culminated in constructing a clean air filtration device to use at home or school.
- **Festivals and Day of Science Events** – Thousands of children and families participated in CRS activities at school and community festival events.

Connecting Partners, Advocacy, & Building Community

Our Strategic Approach

CRS is a leading voice in local, regional, state, and national advocacy for greater investment in equitable science teaching and learning opportunities. These experiences build the scientific and environmental literacy essential to prepare today's students for thriving, just and fulfilled futures.

CRS convenes partners from science education organizations, museums, outdoor education programs, STEM industry, public agencies, parks, universities, and regional and national networks. Together we build capacity to meet the needs of educators, document impact on students, and offer discovery and inspiration opportunities. CRS works at the classroom and community level to ensure teachers know about the wide and ever-changing range of offerings from science centers, environmental education partners, grant funders, and more.



Student connects a simple circuit at the Kits Cubed STEM Fair.

"In 19 years of education I have never worked with a group so supportive of teachers. CRS is the absolute best. I am constantly dumbfounded by how much support you offer."

-Elementary Science Specialist

Our Action Highlights

- **CRS Advisory Council** - Gathered at the beautiful UC Berkeley Botanical Garden for our first in-person convening since Fall 2019, with a focus on sharing all of the representative organizations' "new normal", and delving into climate and environmental justice.
- **Curated Resources & Weekly Email Newsblasts** – Kept teachers up to date regarding field trip opportunities, lessons and resources they can use in their classrooms, and funding and professional development opportunities.
- **Climate Change and Environmental Justice** - Collaborating with writing teams, educators, and organizations across California in the statewide CCEJP project. We completed anchor lesson pilots in more than a dozen 3rd, 4th and 5th grade classrooms, and developed a new 4th grade unit on power outages and electric energy resilience, which will be field tested in early 2024.
- **Festivals and fairs, at school sites and in the communities** – We teamed up to present activity tables for kids and families for Cal Day, Town Camp, Kits Cubed, Scientific Adventures for Girls, Port of Oakland, and more public events reaching thousands of children and families. We sent scientist judges and activity presenters to school-based fairs and festivals throughout the year, providing opportunities for caregivers to see how excited their children are about science.
- **Commitment to Belonging and STEM Equity** – Support new initiatives with national Beyond 100K 'moonshot' and the Department of Education's You Belong in STEM Initiative. Sharing our model and learnings from the Joyful Math and Science project, including lessons, stories and teacher resources to integrate math and science while fostering students' sense of belonging.

Looking Ahead

The Power of Story in Science

While our work is informed by research, driven by data, and aligned with standards, sometimes it takes the power of individual stories to truly show what impact looks like for the people we serve.

In May, a 7th grade teacher shared with us the story of a former student who had come back to pay a visit as she was preparing to graduate high school.

"The young woman was excited to be heading off to a highly competitive science program at a well respected college. She attributed her middle school experience with the 'Be a Scientist' mentoring program as the catalyst that inspired her to take more science courses in high school, determined to pursue a career in STEM. Learning about the mentor's research and academic pathway as a 7th grader, sparked this student's passion that remained a touchstone throughout challenging high school years."

We often hear from elementary teachers whose students visit throughout their secondary school years, sharing how early science learning, and opportunities to meet and learn from scientists have continued to influence them, helping them succeed in classes, and motivate them to continue on in science.

As she completed her final year of teaching and prepared for retirement, an elementary science specialist sent of this appreciation and reflection:

"Educational workshops, bringing scientists to our classrooms, supporting our prep and planning meetings! Helping us with grants, information of opportunities to further deepen our practice, guiding us through scientific drawing, (those slideshows were a godsend!), new science and engineering standards, science superstar recognition, books, prizes, materials, specimen sets of insects, shells, bones. And yet, NONE of that would have meant anything without the people behind CRS. Your warmth, gentleness, intelligence and ever open hand is what kept me buoyed over the years. Thank you for making my journey exciting and joyful."

As we head into 2024, we look forward to sharing more science stories, and helping more teachers, scientists and students to discover and share their own science stories too.



"Seeing a scientist in a hijab was so powerful and meaningful to my student, as a student who has faced discrimination and teasing for being Muslim. She has been on cloud 9 since your team's visit a few weeks ago and chose to write about it today in her journal for Free Write Friday. Thank you all from the bottom of my heart for the work you are doing! It means more than you could ever know."

-1st grade teacher, San Leandro

Advisory Council

Betsy Mitchell, Chair

Berkeley Natural History Museums

Sal Alper

Exploratorium

Leena Bakshi

STEM4REAL

Robert Bergman

UC Berkeley, Chemistry, *Retired*

Sagit Betser

Science Educator

Nancy Blachman

MathDelights

Ana Carneiro

PhD Candidate, UC Berkeley

Maryam Cermal

SMART Center, OUSD

Elysa Corin

Institute for Learning Innovation

Tracy Dordell

Highland Community School, OUSD

Cherene Fillingim-Selk

Berkeley Arts Magnet, BUSD

Helen Fitzmaurice

Postdoc, UC Berkeley; OTACA

Tanner Frank

PhD Candidate, UC Berkeley

Roma Groves-Waters

Martin Luther King Jr. Elementary, OUSD

Emily Harris

BSCS Science Learning

Thank you to these individuals who served on our Advisory Council at some point in 2023.

"As a teacher, it's difficult to find the right local resources to connect with. CRS has been crucial in finding local programs that can help increase my students' interest in science. They have saved me hours of online searching and I can't thank them enough for existing."

-4th/5th grade Teacher, Milpitas

John Iwawaki

West Contra Costa Unified School District

Channon Jackson

Alameda County Office of Education

Sabine Jeske

UCSF Science Health Education Partnership

Annie Kohut Frankel

California Coastal Commission

Ben Lavender

Central Contra Costa Sanitary District

Debbie Lenz

Willard Middle School, BUSD

Kelsey Lipsitz

Exploratorium

Anna Luberoff

UC Botanical Garden at Berkeley

Clea Matson

California Academy of Sciences



Advisory Council members at UC Berkeley Botanical Garden, September 2023.

Chris Parry

California Coastal Commission

Jan Robertson

Robertson Consulting

Duffy Ross

Berkeley Public Schools Fund

Megan Schufreider

California Academy of Sciences

Bruce Simon

CSUEB Institute for STEM Education

Joanna Totino

Bay Area Science Project

Diana Velez

The Lawrence

Lisa White

UC Museum of Paleontology

Nancy Wright

Hayward Unified School District

CRS Team & Leadership

Staff

Teresa Barnett, CRS Executive Director
Corinn Brown, Director, Data & Teacher Services
Tyler Chuck, Associate Director,
Education Outreach & Operations
Adriana Threlkeld, Communications Manager
Kobe Nguyen, Program Manager, Outreach
Darlene Yan, Program Manager, Be A Scientist
Betsy Mitchell, Project Coordinator, Be A Scientist
Georgia Tan, Data and Digital Project Assistant
Anna McGaraghan, Project Coordinator,
STEM Industry Outreach
Eric Havel, Professional Development
Tanner Frank, UCB Campus Coordinator
Ana Carneiro, UCB Campus Coordinator



CRS Team, December 2023

Board of Directors 2023-2024

Anne Baranger, Board President, Associate Dean of Diversity, Equity, and Inclusion,
UC Berkeley College of Chemistry
Vince Stewart, Vice President, Vice President of Policy and Programs, Children Now
Russell Wong, Treasurer, Engineer, Bayer, Senior Manager (Retired)

Directors

Alan Poon,
Program Head & Senior Scientist,
Neutrinos
Armbien Sabillo, J.D., Ph.D.
Associate Counsel,
Intellectual Property,
Gilead Sciences

*Also Served in 2023

Marguerite Hutchinson, J.D.,
CEO, Tatar Therapeutics
Jun Axup
COO, E11 Bio
Trina Ostrander
Executive Director,
Institute for STEM Education,
CSU East Bay, (Retired)
Justin Curley
Partner, Seyfarth Shaw LLP

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Gerald E.K. Branch
Distinguished Professor of Chemistry,
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Asha Harikrishnan
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Co-founder,
Community Resources for Science,
Exploratorium, (Retired)
Susan Kattchee
Assistant Director of Facilities & Environment,
City of Oakland, (Retired)
Nicki Norman
Co-founder, Community Resources for Science
Diana Vélez
Professional Development Specialist,
The Lawrence, FOSS



Student launches a water balloon from a catapult with
Be A Scientist Program Manager, Darlene Yan.

2023 Financials

Statement of Financial Position Dec 31st, 2023

Assets

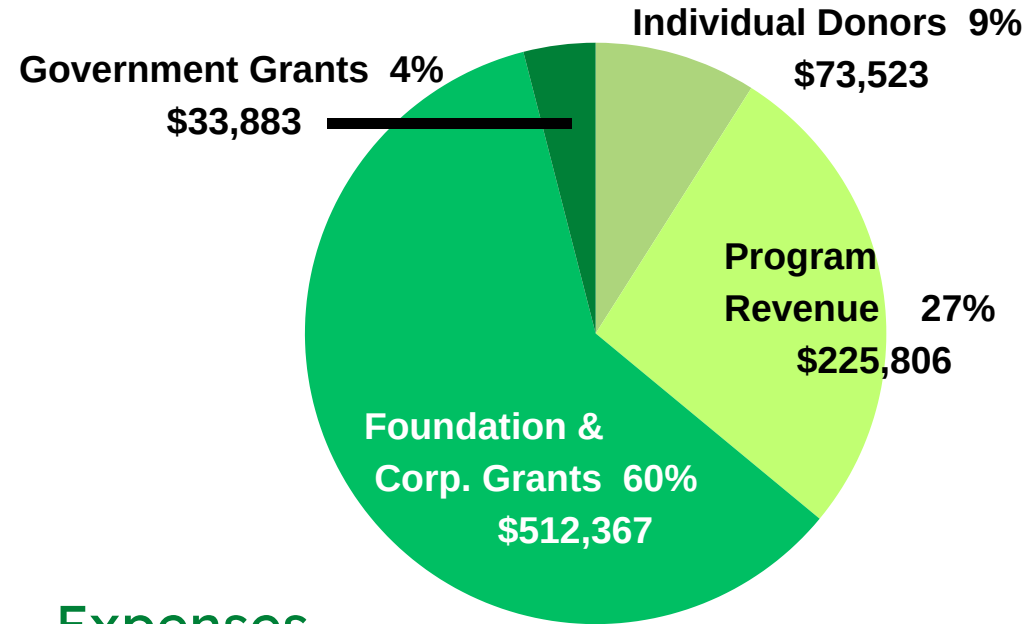
Cash & Cash Equivalents	\$483,697
Prepaid expenses and Deposits	\$7,057
TOTAL ASSETS	\$490,754

Liabilities and Net Assets

Accounts Payable and Accrued Expenses	\$10,244
Accrued Vacation	\$15,700
Total Liabilities	\$25,944
Net Assets	\$464,810
Total Net Assets	\$464,810
TOTAL LIABILITIES & ASSETS	\$490,754

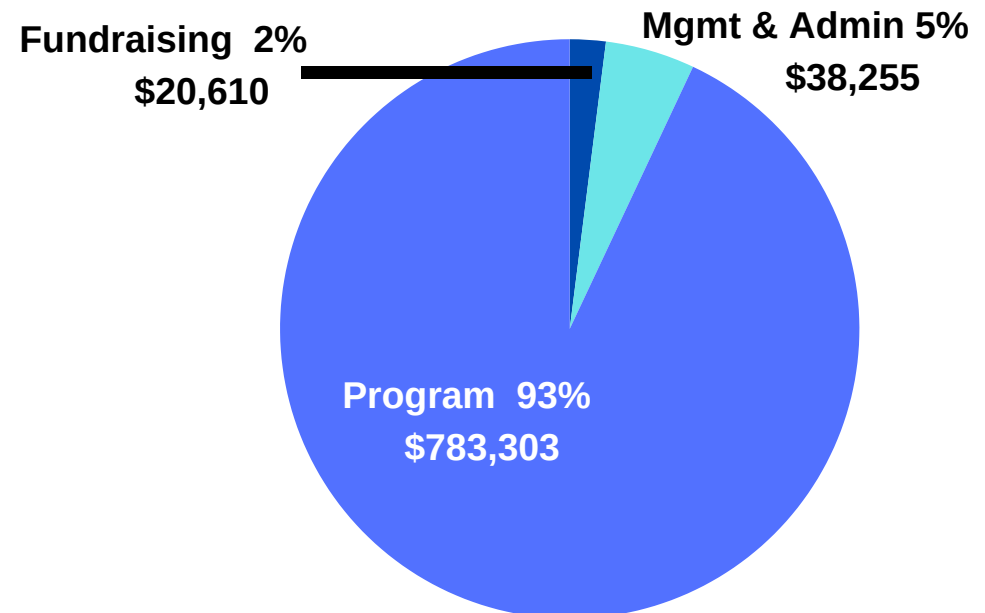
Support and Revenue

TOTAL \$845,579



Expenses

TOTAL \$842,168



Our Generous Sponsors

Thank you to these Foundation, Corporate and Public Agency partners for your sponsorship of our efforts to foster belonging in 2023

Associated Students University of California
The Barrios Trust
Bayer Health Care
The Berkeley Public Schools Fund
Bernard E. & Alba Witkin
Charitable Foundation
BRIDGE Association of Realtors
Callison Foundation
Clif Bar Family Foundation
Crescent Porter Hale Foundation
Dean and Margaret Leshar Foundation
Grifols
Impact100 East Bay



Thank you for the Grifols team for your 2023 sponsorship, and employee volunteers too

In Dulci Jubilo, Inc.
Kinder Morgan Foundation
Lawrence Berkeley National Lab
Lowell Berry Foundation
NBCUniversal Foundation
Nicholson Family Foundation
Nancy P. and Richard K. Robbins Foundation
The Arthur Rock Fund
Port of Oakland
Seyfarth Shaw Charitable Foundation
UC Berkeley Chancellor's
Community Partnership Fund
Wareham Development

Thank you to these generous sponsors of building belonging in science!



College of Chemistry
UC BERKELEY

Our Generous Community

2023 Employee Engagement

Thank you to these STEM industry partners and associations whose employees engaged in outreach with CRS and/or participated in community service projects in support of CRS science education programs this year.



Thank you to employee groups at the following companies who directed contributions to CRS:

- Synopsys Employees
- Tesla Employees
- X, the moonshot factory Employees

Thank you to these partners for matching employee contributions in 2023:

- Clorox Company
- Genentech
- Gilead
- Lawrence Livermore National Lab
- Paypal

Thank you to these partners for in-kind contributions in 2023:

- Astra Publishing
- Bellwether Media
- Charlesbridge Publishing
- Chronicle Books
- Hands On Bay Area
- Nomad Press