



COMMUNITY RESOURCES FOR SCIENCE NEWS

Weaving connections among teachers, students & science in the Bay Area

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Why Supporting K-6 Science Teaching & Learning Matters More than Ever

Once upon a time, you were a kindergartener or a 4th grader – and so were your professors, colleagues, even Nobel Laureates! What inspired you, and them, to continue onto the pathway into science, engineering, or to becoming someone who bases decisions on evidence? Chances are, early learning experiences played a key role!

Too often, science is sidelined in elementary schools, pushed aside by the demands of standardized testing in math and language arts, and by the relative lack of training and support elementary teachers receive in science.

You, our partners and donors, share our belief that all children should have access to exciting science learning experiences in school that build on their natural curiosity about their world because science is a gateway to the future.

Thank you for helping CRS ensure that as many kids as possible – especially in the most underserved schools in our regional community – have opportunities for inspiration, and to discover their own talents and interests. Maybe they love making circuits light up or sending marbles down a hand-made cardboard roller coaster chute. Maybe they love animals, or the night sky, or plants, or discovering patterns in math.

Each time a team of BASIS volunteers walks into a local classroom, 25-32 young children get to meet a “real” scientist, and to find out that the things they are learning in class (like how to make a data chart or to sketch in their scientific notebook) are things the “real” scientist do in their work too!

“Whether they are examining variations in seed dispersal or states of matter, kids have amazing questions, observations, and ideas to share with the Cal students and faculty, and local STEM business employees who volunteer with BASIS,” says Tyler Chuck, CRS Senior Manager for Engagement and Outreach. “These visits have immediate resonance, and lasting impact. And they are fun!”

Each Spring, CRS ramps up the scientist to schools connection with special Day of Science events for teachers who encourage fellow teachers at their school to take the Science Super Star Challenge as a way to build community and strengthen learning opportunities for students.

At one school in East Oakland where most students live in low income households, often in immigrant families where English is not spoken at home, a CRS team arrived on a bright Spring morning to set up a series of investigation stations that all 400 students would have the opportunity to explore. A crew of eager student helpers greeted us and guided us along hallways adorned with “Welcome Scientists!” signs.

Throughout the day, students arrived with flowers, treats, and hand-drawn thank you notes to the delight of our nearly two dozen BASIS volunteers, including employees from Bayer, Caribou, and Exponent, and graduate students from UC Berkeley.



Students showed great concentration and skill as they sketched natural specimens of flowers, shells, and feathers.

“This is an amazing day!” said a first time volunteer. “Seeing the kids’ joy and curiosity reminds me of why I got into science in the first place.”



The scientists and engineers were delighted by the students’ thoughtful comments, creative ideas, and clear interest in exploring and experimenting as they rotated through a variety of science and engineering activity stations. Kindergarteners discovered they could successfully poke a pencil into a soap bubble without popping it. Fifth graders were in awe as they discovered they could extract DNA from strawberries. The marble roller coaster designs they built and tested were innovative, and students demonstrated persistence and teamwork as worked together to achieve success.

Seals, Hikes, Views and Discovery fill Fall Field Trip for Teachers

What could be better than a day in the Marin Headlands? A day spent in the Marin Headlands on a field trip just for teachers, with no students to worry about!

This Fall, we teamed up with three stellar science and environmental education partners to create an amazing day of “select your own adventure” opportunities for CRS teacher members to learn about one, two, or all three sites featuring environmental education, exploration, and discovery.

First on the Field Trip for Teachers agenda: a tour and teacher info session at the **Marine Mammal Center** to learn about their educational programs and their work rescuing ill or injured seals and sea lions. A peek into the



Teachers getting inspired by magnets at the BADM in Sausalito

discussion to sustain the group! We learned the “best kept secret in environmental education”: fall outdoor education and overnight trips are easier to book than the crowded spring season, and the benefit is building community, student engagement, and experiences that carry through the entire school year!

necropsy lab, where scientists work learn about the connections between the health of marine mammals and the health of the Pacific Ocean, is not for the faint of heart – but is deeply fascinating!

Next up, **Point Bonita YMCA**, where CRS teachers could opt to join a hike out to the lighthouse, or simply tour the campus.

Thanks to the YMCA for providing a tasty lunch and lively program



Enjoying the beautiful day at Pt. Bonita

Then, it was on to our third venue: the **Bay Area Discovery Museum** in Sausalito, with sweeping views of the Bay at northern foot of the Golden Gate Bridge. Teachers were eager to check out the newly opened Sun Moon & Stars exhibit, a new age-appropriate opportunity that aligns with new 1st grade science standards. In addition to field trip programs, BADM brings engineering exploration out to schools with their Try It Truck.

“This is such an enriching, delightful, and informative day -- I’m so grateful you do this for educators,” one principal told us on the uphill hike back from the Pt. Bonita Lighthouse, to the YMCA building where a lovely hot lunch, coffee, and brownies awaited.

“Our Field Trips for Teachers are an important way for us to get to know our teacher members even better, and to hear about what excites and challenges them,” explains Corinn Brown, who has been CRS Teacher Services Manager for 15 years. “Teachers have a chance to build relationships with colleagues by stepping away from the school and sharing an adult learning experience, enjoying a special tour and behind the scenes information from our amazing partner organizations.”

Connecting Scientists & Schools: Celebrating 15 Years of Partnership with UC Berkeley

A chance encounter at a holiday party 15 years ago sparked the collaboration between CRS and UC Berkeley campus that has grown from a handful of grad students in one College of Chemistry lab, to now including 600 Cal grad students, post docs, and even a few undergrads and faculty.

To celebrate the milestone, and launch a new year of outreach into East Bay schools, nearly 200 current (and prospective!) scientist and engineer volunteers turned out on Sept 26 for the annual Fall Kick Off at UC Berkeley. Between the Bay Area Scientists in Schools (BASIS) program bringing lessons into pre-K to 6th grade classrooms, and the Be a Scientist program

bringing mentors into 7th grade science classes, CRS volunteers reached more than more than 16,000 children last school year.



UC Chemistry Professor Robert Bergman addresses a new batch of prospective Science and Engineering volunteers.

UC Chemistry Professor Robert Bergman shared the origin story of the CRS-UC partnership, describing how CRS staffer Corinn Brown told him that local elementary teachers wanted “real scientists” to come into their classrooms and do science activities with their students.

“What you are doing is very important!” Professor Bergman said to the volunteers. “You are helping the students and the community, and you are helping your research labs demonstrate their broader impact.”

Even the Newsletter has a Pledge Break!

We have ambitious goals for the coming school year – to bring more joy, discovery, inspiration and learning to more kids in East Bay schools. Your gift directly strengthens opportunities for young learners in our community, particularly in classrooms where enrichment and support are needed most.



Richmond students fascinated by human brains during a “Feel Dead Brains” BASIS lesson

Members of the CRS Board of Directors have collectively pledged to match all Fall Giving contributions up to \$16,500! Give today and double the impact.

Want to save on your taxes, and do good in the community too?

Contact CRS if you would like to learn about how to donate directly from your retirement accounts, in order to save on taxes when taking required minimum distributions from retirement accounts.

You can also donate stocks to CRS! If you are interested in donating stocks, please contact us at giving@crscience.org

To make a donation, visit our giving page

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These foundations and businesses are supporting our work in 2018, making it possible for CRS to provide teachers, schools and districts with free support and in-class scientist presentations. Thank you to these partners!

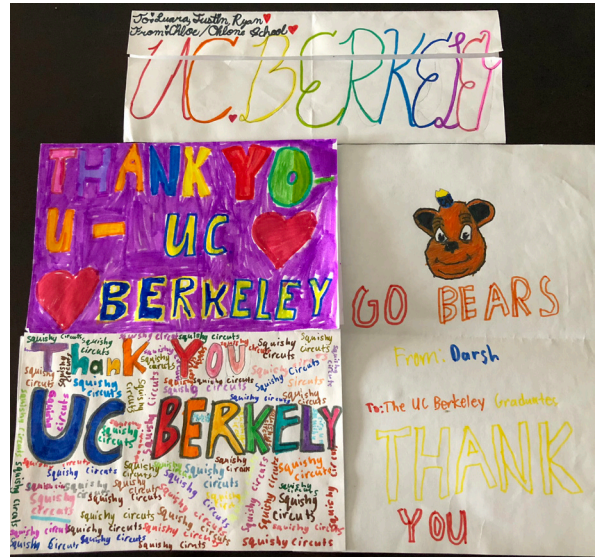
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Students show their appreciation for BASIS lessons by writing thank you notes to scientists at UC Berkeley

STRENGTH IN NUMBERS

DID YOU KNOW THAT THE MAJORITY OF VOLUNTEERS IN OUR BE A SCIENTIST MIDDLE SCHOOL PROGRAM IDENTIFY AS FEMALE (54%)? AND, THAT 63% IDENTIFY AS A PERSON OF COLOR?

“In our increasingly tech-connected world, children still need and benefit from time spent with caring adults, willing to share information, laugh together at a surprising discovery, and talk about ideas”

-OUSD Teacher

“I am always amazed how the BASIS visits energizes my class. My students are made to feel safe to explore and learn because the scientists make them feel so comfortable and confident”

-OUSD Teacher



BASIS volunteers excited to point out UC Berkeley on a campus mural after teaching a lesson on stormwater in Oakland

Bring a Friend & Discover Science in Everyday Experiences

How do you give teachers who love science opportunities to encourage fellow teachers to discover their own scientific curiosity and interest? Take 'em for a boat ride!

Earlier this year, CRS Advisory Council members identified promising strategies to foster science identities among more elementary teachers. One suggestion was to provide opportunities for enthusiastic, confident teachers – such as our Science Super Star honorees -- to bring a fellow teacher on an adventure to discover the amazing science connections to daily life in unexpected places.

To put this idea into action, CRS partnered with the Port of Oakland to arrange a special harbor tour of the Port of Oakland. On a lovely Friday evening, more than a dozen Oakland elementary educators met up for an up close tour to see some of the bay wildlife, as well as the engineering and logistics that make the busy port function.

Creeks and Leaves and Bugs! Oh My! Teachers Venture Outdoors with Scientists to Explore

Freed from the confines of the classroom walls, about 30 Richmond teachers spent a week this summer exploring an elementary schoolyard, garden, and even the trails and creek-beds of a regional park wilderness area. They eagerly collected data about the insects, plants, or aquatic creatures, dissected owl pellets to discover what the owls had eaten, and examined the ways that seeds disperse in nature. Instead of supervising dozens of students, the teachers WERE the students, learning alongside graduate student science researchers from UC Berkeley.

The field day was part of our third annual summer week-long teacher training. This time, attendees were Richmond elementary teachers, part of our Building Elementary Science Teaching in Richmond collaboration in partnership with UC Berkeley Natural History Museums and the Bay Area Science Project.

At the end of the week, more than one teacher enthusiastically shared: "This was most useful professional development I've ever had! I can't wait to get back to the classroom and share what I've learned with my students."



"I always assumed I couldn't do outdoor learning with my students because we do not have a verdant campus. I'm excited to learn about the many ways I can take my students outside to explore phenomena and learn about the natural world, even on our urban, asphalt schoolyard. This was so eye-opening and inspiring!"

WCCUSD teachers from San Pablo, Pinole, Hercules, and Richmond.

"My goal is to walk away from this summer institute with the tools, understanding, confidence, and resources to take science teaching to new heights in my classroom next year," said one teacher at the outset.

We've been delighted to see how much difference some time for teacher learning, collaborative planning, and access to materials can make. At the outset of our work with WCCUSD teachers, most say they previously taught little to no science content, and when they did it was mainly reading books or watching videos. After training and access to CRS year-round support services, most participating teachers have significantly increased science learning opportunities for their students.

Teachers discover the power of using meaningful science investigations and engineering design challenges in their classrooms, letting elementary children put their emerging reading, writing, and math skills to use.

CRS taps into kids' curiosity as a motivator to get them excited about learning, by sending BASIS teams into Richmond and other WCC classrooms throughout the year. These visits help teachers see how science engages all types of learners and develops critical thinking, collaboration and communication skills of young learners.



A group of teachers excited to reach the top of the mountain

CRS is honored to receive recognition – along with our collaboration partners – from West Contra Costa Unified School District for our work strengthening science teaching and learning opportunities for thousands of West Contra Costa students.

Previous summer intensive sessions, along with school year professional development, have involved hundreds of



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Emeryville students delight in discovering the hidden colors inside their markers, with a Bayer employee volunteering to lead a Day of Science activity for an entire elementary school.



Students discover that close observation of shells, feathers, minerals -- even your friend -- lead to amazing discoveries, during a lesson on observational sketching at an Oakland school.

CRS Team

Staff & Program Support

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Corinn Brown, *Teacher Services Manager*
Michelle Fabros, *Education Outreach & Evaluation*
Greg D'Arezzo, *Strategic Growth Planning*
Darlene Yan, *Project Coordinator*
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"CRS is an amazing organization, and the BASIS program volunteers are phenomenal. Having volunteers who are actually in the field of science helps my students see that is something they can do when they grow up too."

-OUSD Teacher



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