

march-april 2023

in this issue

- systemic racism in nsf grant awards
- retaining minoritized graduate students
- BASIS outreach program
- in history: Gábor Somorjai
- upcoming events

diversity equity & inclusion
newsletter

grant decisions at the national science foundation reflect systemic racism

by Dr. Sara Kahanamoku
PhD 2022

An offhand comment made in a virtual meeting during the spring of 2020 launched what may be one of the most impactful research endeavors of my career. On a zoom call about the impacts of racism on the careers of minoritized scientists, hosted by the **Asian Americans and Pacific Islanders in Geosciences** (AAPIIG) professional community, a professor mentioned in casual conversation that “everyone knows that Asian scientists have a hard time getting funding from the National Science Foundation.” My colleague Christine Yifeng Chen and I were both surprised—as early-career scientists, we weren’t clued into this open secret. We were further intrigued given that the potential existence of racial disparities within the largest source of basic science funding in the U.S. likely also impacted Black, Indigenous, and Latine scientists, with large implications for STEM as a whole. So we set about investigating this comment in the best way we knew how: by applying the training we received during our PhD

programs to answer scientific questions to instead answer questions about the process of science itself.

To understand whether racial disparities exist in grant funding outcomes at the NSF, Christine and I amassed and standardized data from publicly available **Merit Review Reports** released by



above: Dr. Kahanamoku, specializes in climate impacts on benthic foraminifera. They are also a longtime advocate for equity in science and academia.



photo: shutterstock

the NSF to investigate relative rates of funding across demographic categories. We collated information from 1996–2019 on funding rates for Black, Asian, American Indian/Alaska Native (AIAN), Hispanic or Latino, Native Hawaiian/Pacific Islander (NHPI), and white Principal Investigators (PIs). We also compiled information on funding rates within NSF disciplinary directorates (i.e., major fields of study) as well as across different award types (research awards versus non-research awards, a category which broadly includes funding for service work such as education, training, and facilities costs). Along the way, we coalesced a team of researchers with broad expertise in science equity research to help place our findings into context.

Our results were stunning, if not surprising. We found that at the NSF, white PIs are consistently funded at higher rates than most non-white PIs, with an average relative funding rate of +8.5% (figure 1.) In contrast, Asian, Black, and NHPI researchers' average funding rates are -21.2%, -8.1%, and -11.3%, respectively. In fact, most non-white PIs have predominantly negative funding rates across the 20-year interval we examine. Further, funding rates for white PIs have

been increasing relative to annual overall rates over the past two decades. This finding by itself runs contrary to the narrative that I have heard again and again during my career that white scientists are disadvantaged by the diversity, equity, and inclusion (DEI) efforts inherent to the NSF's Broader Impacts mission. The data we collected show that this is simply not true: rather, white scientists are at a funding advantage, and one that has only compounded with time.

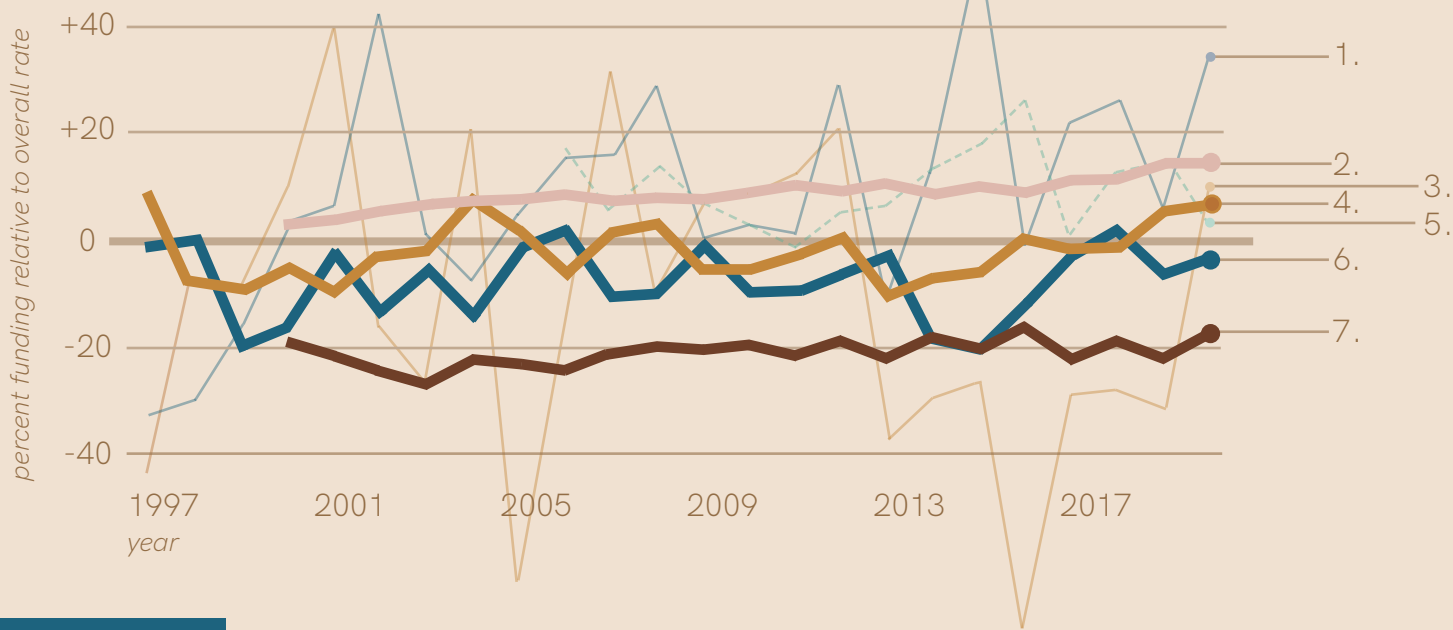
The additional data types we gathered paint an even starker picture. When we examine funding rates across the disciplinary directorates at the NSF, we find disparities that are similar in magnitude to those found across the NSF as a whole. White PIs are the only racial group with above-average funding rates across every directorate, while funding rates for Black, Asian, and Hispanic and Latino PIs are consistently below average. (Information for NHPI and AIAN PIs are limited given non-reporting of these data for multiple years.)

When awards are split by activity type, research awards versus non-research awards, we find that White PIs are the only group for which research

(continues pages 4)

1. difference in funding rates relative to annual overall rates

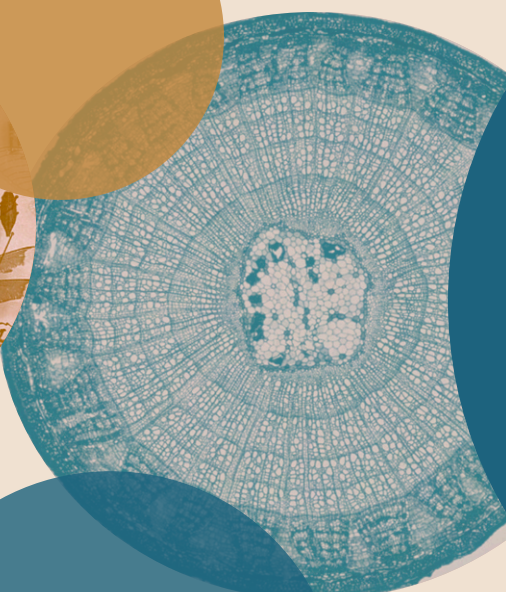
Adapted with generous permission from the author. See the original figure [here](#).



Legend:

- 1. American Indian/Alaskan Native
- 3. Native Hawaiian/Pacific Islander
- 6. black/African American
- 2. white
- 4. Hispanic or Latino
- 7. Asian
- 5. Multiracial

Racial disparities in funding rates have persisted for more than 20 years. Funding rates by PI race and ethnicity are normalized to the overall rate for each year. Groups represented by thinner lines submitted on average fewer than 500 proposals annually. Data for white and Asian PIs are only available starting in 1999, and for multiracial PIs starting in 2005. (Chen et al. 2022)



"Our results were stunning, if not surprising. We found that at NSF, white PIs are consistently funded at higher rates than most non-white PIs with an average relative funding rate of +8.5%. In contrast, Asian, Black, and NHPI researchers' average funding rates are -21.2%, -8.1%, and -11.3%, respectively."

—Dr. Kahanamoku

is funded at higher rates than non-research, as well as the only group with research and non-research proposals funded at above-average rates. In other words, most grants to white PIs are for research-related activities, while most grants to non-white PIs are for service work, including education and training. Perhaps more surprisingly, white PIs also have higher non-research award funding rates than most other racial groups, suggesting that not only are white PIs rewarded more highly for research activities, but they are also rewarded more than their non-white colleagues for service work. This evidence of racial stratification by type of work adds to growing literature demonstrating that minoritized professors are both **disproportionately burdened** by service work and **receive less recognition** for their efforts.

While the publicly-available data we utilized precludes examination of the drivers of the systemic racial disparities we observed, limited data on review scores for research proposals show that proposals for white PIs received higher review scores than proposals by all other groups. Black PIs are most heavily impacted by these review

score disparities. However, a glimmer of hope emerges from these data: when success rates of review scores are examined, we find that funding decisions following the review stage partially countered the lower scores of proposals by Black PIs, with a smaller effect on Asian PIs. This suggests that post-review equity efforts may be helping to moderate funding rate disparities at the NSF; without these, racial disparities may be even more drastic than they are currently.

Since the initial release of this **paper** as a **preprint** and its publication following peer review, these findings have had widespread impact. The NSF director acknowledged that **systemic racism** is a concern that the agency is working to address. In August, co-authors on this study were invited to the White House to participate in the signing of the **CHIPS Science Act**. This legislation increases federal funding for scientific research, with a strong focus on **diversity**. Since the signing of the bill, the White House's Office of Science and Technology Policy has implemented further **multi-sector actions to eliminate systemic barriers in STEM**. One such effort includes the NSF-led **Analytics for Equity Initiative**, which provides support to researchers leveraging federal data to investigate equity-related topics. Conversations are ongoing at the federal level to determine how to best address our findings across multiple agencies. *(continues next page)*



left:
Dr. Kahanamoku
at Pu'u Huluhulu,
Hawai'i.

right:
Mauna Kea



photo: Anish Patel

photo: the author

Yet many questions remain about the nature of systemic racism in U.S. science funding. Given the nature of the data reported by NSF, our analysis was largely descriptive (rather than focused on identifying root causes). We were further unable to document disparities using an intersectional lens; for example, a lack of information on both gender and racial identification meant that we could not assess whether the “**double-bind**” experienced by Black and Asian women PIs at other federal funding agencies is also present at NSF. Data limitations were particularly severe for NHPI and AIAN scientists, the two major categorizations for Indigenous scientists within the U.S., as the small numbers of PIs from these groups mean that they are heavily impacted by non-reporting—a form of Indigenous data **erasure**. In future work we hope to acquire the additional data needed to delve into questions critical for understanding the funding landscape, including how funding disparities to individual PIs translates to funding differences across institutions, how funding success manifests for intersectional PIs, and whether data non-reporting obscures disparities for Indigenous scientists and other severely underrepresented groups.

Despite these limitations, we do know that unequal funding outcomes have had an outsized impact on all fields of science. These data present a story of cumulative advantage for white scientists, with non-white scientists accumulating years of career-impacting disadvantages. One facet of this is the large and compounding differences in the absolute number of proposals received.

For example, if we examine data from the year 2019, white PIs received 798 more awards (an “award surplus”) than would have been granted at an average funding rate. In contrast, Asian PIs received 432 fewer awards (an “award deficit”) than expected at an average funding rate. When award surpluses and deficits are tallied over the past two decades, white PIs accumulated a surplus of more than 12,800 awards, while Asian PIs, the largest non-white group with the lowest funding rate, accumulated a deficit of 9,700 awards. Together, these cumulative disparities likely represent between \$2 to 10 billion in unbalanced funding.

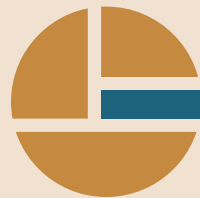
These disparities are even more stark when we consider that science funding success often begets additional **funding success** and can lead to the success—or failure of the recruitment and retention processes critical to increasing representation of historically excluded scientists in the academic and STEM workforce. Our findings add to an ever-growing

corpus of previous work documenting the many **hostile obstacles** Black, Asian, Indigenous, Hispanic and Latino, and other non-white scientists face when pursuing a career in STEM.

Our authorship team is intimately familiar with the many ways in which systemic racism can impact our careers. Christine is a geochronologist and I am a paleoecologist—career paths that may, at first glance, seem far removed from the social sciences. Yet much of our careers have also focused strongly on issues of equity in the sciences, in part because our experiences as minoritized scientists have necessitated that we

“Decades of research show that not only is the quality and novelty of scientific outputs negatively impacted when minoritized researchers are systematically excluded, but so are the lives of these individuals and the research ecosystems and communities they support .”

—Dr. Kahanamoku



learn as many tools as we could to counter the racism and inequality we experience. Christine is an Asian early-career researcher whose impactful work includes founding AAPiG, developing the **Growing Healthy Labs** workshop series, and serving on the **AGU Diversity and Inclusion Advisory Committee**. During my own time in graduate school, I submitted testimony to the National Academy of Sciences about the impacts of large-scale scientific endeavors such as the **Thirty Meter Telescope** on my own Native Hawaiian community; collaborated on projects aiming to promote ethical and reciprocal research practices in fieldwork in **geoscience, ocean science, and related fields**; and supported Indigenous-led efforts to revitalize traditional ecosystems in my **homelands of Hawai'i** and beyond. Our co-author team also shares a wealth of experience in fighting for science equity: Rosie Alegado and Aradhna Tripathi serve as founders and directors of the **Hawai'i Sea Grant** Ulana 'Ike (weaving knowledges) Center and the **Center for Diverse Leadership in Science**, respectively; Vernon Morris serves on multiple national equity boards and co-leads **No Time for Silence**; Karen Andrade works in science **philanthropy and policy**; and **Justin Hosbey's** research program focuses on Black resistance to racial capitalism and ecocide.

Our experiences compound with those of countless others who are working to reimagine science. In our paper, we draw on examples such as **Fund Black Scientists** to make recommendations to NSF and other funding agencies. In order for the NSF to meet the grand challenge of racial equity, we suggest that they improve their data transparency to allow for further public study of agency trends, incorporate equity metrics into the funding process as a stopgap measure, and increase funding and accountability for equity efforts within the agency. We urge NSF to reflect critically on past attempts to address racial disparities at institutions such as NIH and take meaningful action to eliminate existing disparities immediately rather than waiting for the completion of additional studies that further describe their nature and extent.



Drs. Vernon Morris and Christine Chen at the White House for the signing of the CHIPS and Science Act. Both are co-authors on Dr. Kahanamoku's recent publication in *eLife*.

On a broader scale, we invite scientists at all career stages to take part in reimagining the process and institutions of science. One way to begin doing so is to recognize that the presence of systemic racism necessitates re-evaluation of traditional ideas of scientific "**merit**" (let alone the idea that science is a **meritocracy**) and that improving equity requires moving beyond **broadening participation** and the **leaky pipeline** myth. Decades of research show that not only is the **quality and novelty of scientific outputs** negatively impacted when minoritized researchers are systematically excluded, but so are the lives of these individuals and the **research ecosystems and communities they support**. To transform the existing scientific paradigm to one grounded in equity, we all must commit to

implementing moonshot-level **changes** that disrupt systemic racism by expanding **beyond** conventional methods of conducting scientific research. To me, the most exciting outcome of this work is the opportunity it provides to imagine what truly equitable science looks like and to work towards a new paradigm of science in which we can all thrive.

reflection questions:

1. Is true meritocracy possible? If so, what would need to happen to rectify the legacy of systemic and implicit biases that continue to impede minoritized academics?
2. The author notes that the findings are descriptive, rather than pointing to root causes. What barriers do you think may be responsible for these funding disparities?

*The findings discussed in this article were recently published in **eLife** and written about in **Science News**, **Physics Magazine**, and the **New York Times**.*

please locate the nearest exit:

why minoritized graduate students choose to stay or leave highlights key needs to boost community and retention

by: Maya Samuels-Fair
Graduate Student

The best advice I received for pursuing an academic career is to have a backup plan. Regardless of who we are or where we come from, as aspiring academics we stare down the barrel of a never ending series of increasingly competitive selection processes. Minoritized academics, however, additionally experience **lower funding rates, hostility from students, peers, and mentors**, and greater service expectations. I thought my backup plan was meant to buoy me through all this potential rejection. Only later did I realize that the exit strategy was also meant to give me the separation necessary to sometimes stand in opposition to my institution. Quitting academia is often an act of resistance rather than concession. Those I know who have chosen to leave stepped out of the line of fire into rewarding jobs with balanced hours, better pay, and scheduled promotions.

At the same time, the percentage of American STEM faculty from minoritized backgrounds has not improved meaningfully in the last fifty years (see **this study** from the geosciences—more long-term data in other fields is needed). Based on my observations of the path to the professoriate today, that percentage may not be any better in twenty-five more years. The bright new faces of the first-years and the millions of dollars in diversity initiatives give a false sense of progress, but the gradual withdrawal of graduate students and postdocs tells the truth. I am talking about emotional withdrawal: how I see us pulling our emotions and values out of our work as a means of self-preservation until the job eventually becomes meaningless. I am also talking about physical withdrawal: how we come to avoid certain people, places, or situations until it becomes necessary to leave the job entirely.



sather gate,
uc berkeley



“Don’t take it personally” and “just stay away from them” are how we are led to quit.

Retention of minoritized graduate students has been inadequately addressed because the problem needs reframing. Diverse talent is leaving not because academia is outright rejecting us, but because we are rejecting the role we are expected to play to succeed here, with its many sacrifices and performances. Meanwhile, a lack of diversity has given academia a credibility problem. We are struggling to address Western science’s colonial past and **present** and make our research and teaching relevant, trusted, and useful to more peoples. Ultimately, academic science has power over whose questions get asked and what constitutes the truth, which is a dangerous responsibility to leave in privileged hands. Those interested in our retention, then, should prioritize creating means by which we can modify the terms of the academic career, not assimilating us to the current status quo.

The countless mentors responsible for my own retention thus far are a case study in how to do it right. Beginning as an undergraduate, I had five mentors who checked on me every week and at least ten

“Minoritized academics, however, additionally experience lower funding rates, hostility from students, peers, and mentors, and greater service expectations.”

more whom I relied on at some point over my four years. I wish this were less exceptional. Having this broad support system carried me through hostile work environments, chronic pain from stress, and depressive episodes to a place in the graduate program of my dreams. But all these fabulous mentors warned me that no matter what, the next five years would bring debilitating self-doubt and overwork. I quickly saw the symptoms. At my first academic conference, I learned students use Adderall, caffeine and sugar pills to stay awake through talks, beta-blockers to steady themselves while presenting, beer to socialize, and edibles to sleep. Beta-blockers, a blood pressure medication meant for heart disease, are actually recommended in our student-written guide to qualifying exams. We go to doctors with anxiety, depression, ulcers,



photo: Melinda Young Stuart

is exactly why I needed to persist in academic spaces. Still, my support system feels increasingly tested as my mentorship network shrinks and more of my peers withdraw. I reached out to Lawrence Wang, a role model of mine who chose to leave our program with a Master's, and asked what he wishes had been different.

During his five years in the Integrative Biology program, Lawrence served in twelve department service positions, ten campus service positions, and four outreach positions. He highlights his outsized service burden as part of his decision to leave.

"In IB and in academia more broadly, the service work not only disproportionately falls on diverse students and faculty, we often have to also bear the burden of identifying and standing up to abusive faculty, who actually end up needing to do less labor because they're recognized as 'problem' faculty. So minoritized academics, often those who are early career researchers or younger and less established, end up having to choose between improving the department and field or completing more research. In all of those service positions, I have observed time and time again the same graduate students taking on the burden of running and improving things in the department, from making sure that department faculty committees actually meet (despite them being nominally chaired by faculty), DEI initiatives actually move forward in a timely manner, and that students in IB can begin to approach being paid a living wage. People often say that we select for the best in academia, and we do that, to a degree—but we also select for those who can do the least service while having just enough to keep on their CVs."

Lawrence was only compensated for four of those service positions, although he was severely rent-burdened. Moreover, instead of gratitude, he was often dismissed, asked to do more, or had his research progress challenged.

"I have heard faculty say that students complain too much, that we should be glad to be at such a prestigious institution, and most frequently that they are too busy to contribute meaningfully to the

"...minoritized academics, often those who are early career researchers or younger and less established, end up having to choose between improving the department and field or completing more research. In all of those service positions, I have observed time and time again the same graduate students taking on the burden of running and improving things in the department..."

—Lawrence Wang

migraines, and even weird moles, and they attribute them all to stress. Graduate school is the diagnosis. Eventually, I realized my poor physical and mental health were not a sign I did not belong but motivation to change this environment, which

various efforts I poured my time into. Every year, graduate students ask for the same few things over and over again, and every year the faculty ask us for more evidence of the problems, more ideas and labor to pour into it. We will do those things, because there is no choice for some of us. The choice is one of survival for us, because if we don't improve the field we just will not make it."

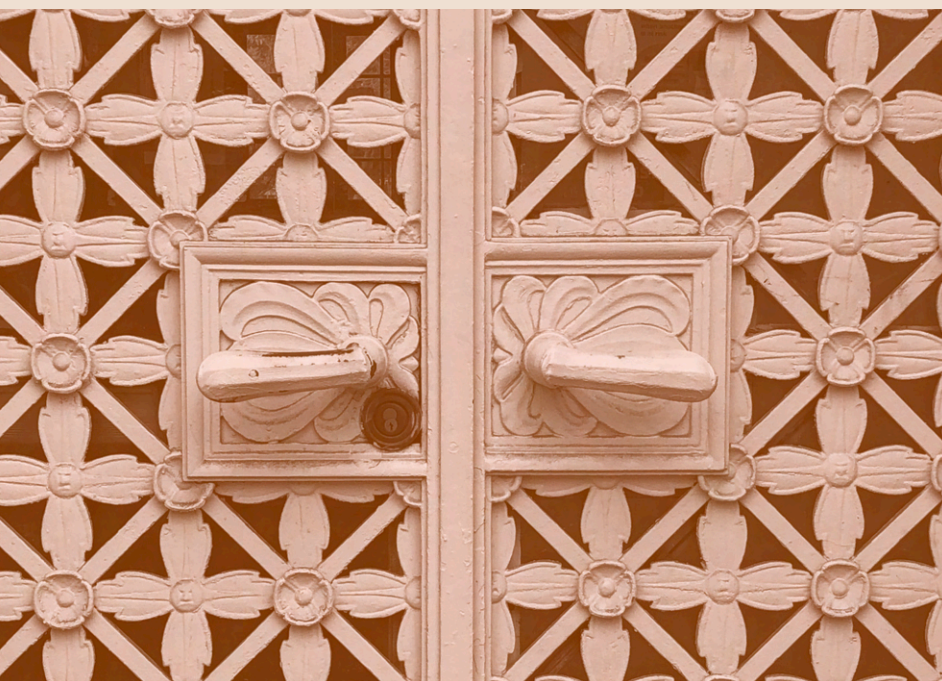
As one current and one former student, we discussed three ways our mentors have been or could be **accomplices** in our retention. First, students should be allowed to decide the quantity and content of our service work, while our accomplices support by finding ways to make that service valued. Not only should service work be financially compensated, but graduate programs should provide avenues for history of science, research pedagogy, and teaching pedagogy research to be a part of students' dissertations. These practices give students agency and reduce harmful tradeoffs between service, work-life balance, and career advancement. Then, when graduate students raise concerns about hostility or harassment, we need not just victim-focused interventions but also real repercussions in admissions and promotions for perpetrators. Graduate students are more willing to report incidents if they perceive that their speaking up is preventing future students from being put in the same situations. Finally, we would benefit from having broader networks of close mentors besides our primary advisors. Often students experiencing hostility or burn-out begin to withdraw and isolate

ourselves, so proactive mentorship is necessary to intervene. All of these are ways academia can support and incentivize its own revision. We talk alot about the diversity of ideas minoritized students bring to academia, but retaining us requires valuing our demands, too.

reflection questions:

1. In what ways has your time in academia or the University of California impacted your emotional well-being. In what way has it impacted your investment in your work and the workplace?
2. How the might unique expectation as well as standards placed on graduate students of color feed into the opportunity disparities identified in Dr. Kahanamoku 's article?
3. What does a failure to heed and consider the needs and opinions of minoritized academics mean for the integrity of academia?

photo: Melinda Young Stuart (l), IITA Image Library (r)



left: main doors to Hilgard Hall.



Resources for Science, a Berkeley non-profit that runs this program, the driving mission of BASIS is "to inspire the next generation of thinkers, makers, problem solvers and leaders." To assist in achieving that goal, over the past 25 years of operation, CRS has worked with more than 600 UC Berkeley scientists who have volunteered their time through this program. Among those volunteers is Tanner Frank, a fourth year PhD Candidate in the Marshall Lab in Integrative Biology. With his graduate work focused on succession in terrestrial ecosystems of the Paleozoic, Frank brings his passion for the outdoors and paleontology to the classrooms he visits. Since September of 2022, Frank has also served as a CRS Campus Coördinator, working to connect UC Berkeley graduate students and educators with CRS outreach programs that can further grow K-8 learning and access to opportunities in STEM.

The BASIS program seeks to inspire students to both engage with the world as scientists and to self-identify as scientists. What encouraged you to pursue a career in science?

I was a dinosaur-obsessed kid as far back as I can remember, and I think I was around 4 years old when I decided my goal was to be a paleontologist. My interest was primarily fueled by books and visits to the American Museum of Natural History in New York, as well as a general love of exploring the outdoors. That said, most people don't stick with their career aspirations from pre-K, and it's a good question as to what kept me motivated to continue in science. I didn't know any professional scientists growing up, but I was very fortunate that my parents and whole family were consistently supportive of my goals. My aunt shares my enthusiasm for science, and some of my formative experiences include looking at the planets through her telescope and learning about local flora and fauna when she took me on my first hikes.

How do you find your personal journey with science useful when trying to kindle that same joy in the students you work with?

BASIS, bringing science to bay area classrooms



by John Stonella-Costata
Burns Piñon Ridge Reserve

Bay Area Scientists Inspiring Students, BASIS, offers young minds hands-on learning in science and engineering. Serving public schools at locations across the greater East Bay, BASIS brings scientists and researchers into local classrooms to share their experiences with students, lead educational activities, and participate in school science fairs and festivals. According to Community

For me the most useful thing while working with students is conveying the excitement I feel about science, which is also useful for reconnecting with that joy myself when I'm feeling burnt out or disenchanted with grad school. I find that students—and people in general—respond strongly to the emotional attitude of the presenter. Even if you don't come into a lesson particularly excited about the subject, seeing someone else express enthusiasm for it can be infectious. Paleontology is also an easy topic to work with because so many students are already interested in dinosaurs.

That said, something I try to be mindful of is that not everyone comes to science with these same positive associations that I did as a kid. I'd like our BASIS lessons to kindle excitement in students who may not normally feel that about science, not just the dino-fans. Something I remember my aunt doing for me that I try to channel as a teacher is asking questions non-judgmentally to see where students' prior knowledge is at, then explaining the lesson concepts starting from a ground of common understanding. It can hard to do that when working with many students at once for a limited time, but a nice thing about activity-based lessons is that there's time to walk around and talk with students one-on-one.

What have been your most rewarding experiences working with CRS and BASIS?

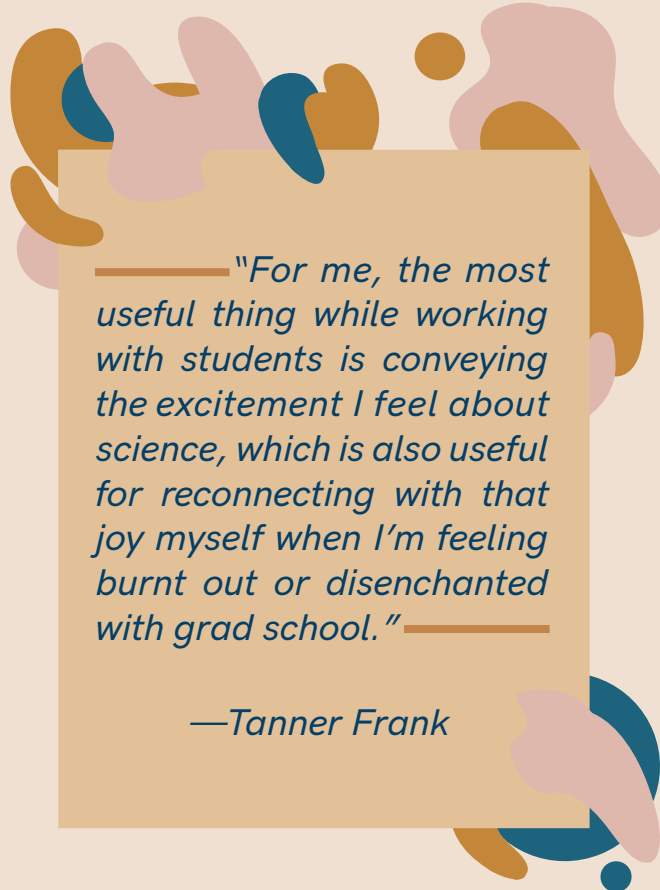
There are so many! Kids are always asking surprising and entertaining questions, and I enjoy holding a space where we can entertain them. A particularly fond memory I have is from our

first semester of teaching hybrid BASIS lessons, where we're on Zoom projected to an in-person classroom. Hybrid lessons can feel very disconnected, and it's usually tough to tell whether students are engaged. The lesson I was teaching involves class deciding whether fossil leaf specimens have smooth or serrated edges in order to reconstruct paleo-climates. It's a great lesson, created by Jaemin Lee in IB. Students normally

show us thumbs up/thumbs down based on their interpretation of the leaves, but this time students spontaneously came up with different dance moves representing each morphology. The students were visibly having a lot of fun dancing around, and also inspiring each other to get involved in the lesson activity. It was great lesson for me in how to incorporate a classroom's energy and ideas into improving the overall learning experience.

For anyone interested in participating in BASIS, what does volunteering typically entail?

Really any level of time commitment can be accommodated—from volunteering for a single hour-long Zoom lesson a semester, to starting a team and designing your own lessons. Our paleontology-themed team is always looking for new volunteers, so feel free to email me (tanner_frank@berkeley.edu) if you're interested in that! If you want to join another pre-existing team or are interested in starting your own team, you can reach out to Tyler Chuck (tyler@crscience.org). CRS has a huge library of premade lessons you can draw from, ranging from kindergarten through 7th grade. When me and my fellow UCMP grad students started our team, Tyler





Jaemin Lee (left) & Tanner Frank (right) teaching grammar school students about fossils.

photo: CRS

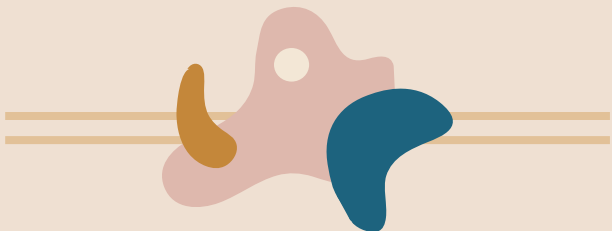
was amazingly supportive of our plan to make a new paleontology themed lesson. He met with us a couple of times, arranged and purchased lesson supplies for us, and even joined us to teach our first lesson.

What other volunteer opportunities exist with CRS?

In addition to **BASIS**, **CRS** runs the **Be a Scientist** program. Be a Scientist volunteers work consistently with a small group of 7th graders over the course of a semester to develop a science project. I haven't personally participated, but it sounds like a great way to mentor students and see their progress over time! You can sign up, find more info on the CRS website, or email Darlene (basprogram@crscience.org) for further info.



photo: CRS



in history: Dr. Gábor Somorjai

by Emily Bögner
Graduate Student

Low-energy electron diffraction, developed in the 1950's and 1960's by Dr. Gábor Somorjai, determines the structure and quality of crystalline surfaces. Born in Budapest in the 1930s, Somorjai is a Holocaust survivor who went on to study chemical engineering at Budapest University of Technology and Economics. Dr. Somorjai left Budapest for the United States in 1956 during the Hungarian Revolution to escape the Soviets. It was here he enrolled at the University of California Berkeley for his doctoral research focusing on low-energy electron diffraction of platinum surfaces.

Dr. Somorjai discovered surface defects are where catalytic reactions take place. When these defects break, complex organic compounds are created and materials like gasoline and lubrication can be created. His work in low-energy electron diffraction was recognized widely and Dr. Somorjai was **awarded** with the Wolf Prize in Chemistry; an award established to honor those



photo: UCB

Dr. Gábor Somorjai,
professor emeritus at
UC Berkeley Chemistry

who were thought to receive a Nobel Prize without receiving one. Dr. Somorjai was consulted for the 2002 winter Olympics to help make ice skating surface as fast as possible. Dr. Somorjai is currently a chemistry professor at the University of California Berkeley and boasts an impressive lifelong career in chemistry, having published over 1,000 papers and three textbooks. He is the most cited person in chemistry.

upcoming events + campus resources

- 13 Jan.—12 Mar. —“**The Compass Rose**” Fort Mason Center, San Francisco (free)
- 8 Mar.—**Ferguson Rises:** Black Grief, Insurgent Memory, Politics of Transformation, with Rashad Arman Timmons, BAMPPFA, (free)

Have a story or event you would like to see featured in upcoming newsletters? Email us at DeiNewsletters@gmail.com

