

# Anti-Racism: What Can Caltech Do?

June 25, 2020

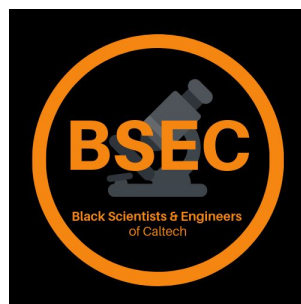
**Dear Members of the Caltech Community,**

By now we are all well-aware of the global protests calling for police reform following the graphic murders of Ahmaud Arbery, Breonna Taylor, George Floyd, and countless others at the hands of the officers whose supposed duty is to protect and serve. Protestors in all 50 U.S. states and at least 12 nations have called for long-overdue corrections to the issue of police brutality, which disproportionately affects Black people. While many members of the Caltech community have been shocked at the police departments' failure to arrest and charge these perpetrators for violent crimes committed on camera, the Black community is all-too familiar with this type of overt and deep-seated racial prejudice. In the wake of this overwhelming support for reformation of racially prejudiced systems, members and allies of the Black Scientists and Engineers of Caltech (BSEC) are calling for the California Institute of Technology (CIT) to use this time to listen to, acknowledge, and **reform** the long-standing causes of racial bias which have disproportionately hurt racially minoritized members of the Caltech community. We urge you to stand with BSEC and help us in our push to make a more diverse Caltech.

- The Black Scientists and Engineers of Caltech (BSEC) and Allied Organizations

**From the Caltech Statement of Community:**

*“Caltech fosters an environment where various perspectives are valued by seeking out exceptional individuals from a broad range of backgrounds and experiences.”*



## Introduction

Of 1299 graduate students at Caltech, **eleven** are Black. These students make up **0.8%** of the graduate student body. This percentage is less than half of that seen in a long list of other universities of similar academic stature<sup>1</sup>. The number may come as a surprise because published demographic data is left opaque: the [Registrar publishes disaggregated percentages](#) of domestic White and Asian students and international students but not of students from [racially minoritized](#) backgrounds. Domestic Black, Latinx, and Indigenous students are jumbled in a reductive “Underrepresented Minority” category. The lack of both racial diversity on campus and availability of data to show the severity of the matter run contrary to the claim in our [Statement of Community](#) that we are dedicated to creating and sustaining an environment in which diversity will flourish. It is now our individual and collective responsibilities to correct the discrepancies between our words and our actions.

**There is no shortage of Black students qualified for CIT programs.** Our lack of racial diversity is a direct consequence of deprioritizing diversity efforts, including those that are demonstrably effective. An obvious example is [WAVE](#), a Student-Faculty Programs (SFP) research fellowship which fosters diversity by increasing participation of underrepresented students in STEM-based Ph.D. programs. Though WAVE is Caltech’s most successful tool for recruiting talented Black students—half (4/8) of Caltech’s domestic Black graduate population are WAVE alumni—the 112 WAVE Fellows have been supported almost entirely by external grants since the program’s 2015 debut. By contrast, over a third of SURF’s \$2M+ annual cost is supported by the program’s endowment.

Our investment in other forms of diversity-related programming lags behind those of our competitors: Caltech does not offer pre-entry programs at the graduate level like those offered by [Stanford](#), [Duke](#), [UChicago](#), or [UC Irvine](#). We do not offer fly-out programs, exemplified by [Stanford](#), [UChicago](#), [Georgia Tech](#), nor do we award fellowships like those awarded by [Stanford](#), [MIT](#), or [UCI](#) to students dedicated to improving representation of racially minoritized students.

This apparent apathy toward inclusion deters qualified Black students from applying and matriculating to CIT graduate programs. Andrew J. Dorfeuille, a 2019 Caltech Amgen Scholar and graduate of Morehouse’s Class of 2020, wrote an open [letter](#) to Caltech administration suggesting some solutions for our apparent diversity issues. He concluded:

*“I feel very strongly about the need for institute-wide efforts to increase racial diversity across graduate options and have put in significant effort this summer towards understanding the current culture, dynamics, and programing because I have a sincere desire to attend Caltech for graduate school, but **the lack of diversity, support, and initiatives to address these problems is dissuading me from continuing my professional development at Caltech.**”*

Andrew declined his offer to study Biochemistry and Molecular Biophysics at Caltech and is now enrolled in MIT’s Chemical Biology doctoral program.

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<sup>1</sup> [MIT](#), [Stanford](#), [Princeton](#), [UPenn](#), [Brown](#), [UC Berkeley](#), [UCLA](#), [USC](#), [UCSB](#), [Carnegie Mellon University](#), [University of Michigan](#), [UCI](#), [Vanderbilt](#), [Purdue](#), [Georgia Tech](#), [UCSD](#), [University of Illinois Urbana Champaign](#), [Rice](#), and [Duke](#)

# Anti-Racism:

## *What Can Caltech Do?*

### 1.1 Disaggregate

"Underrepresented Minority" enrollment statistics.

**1.2 Utilize** demographic data to inform institutional diversity efforts.

**2.1 Guarantee funding** for successful diversity programs.

**2.2 Establish cohort-building** programs for incoming racially minoritized students.

**2.3 Award fellowships** to students committed to increasing diversity.

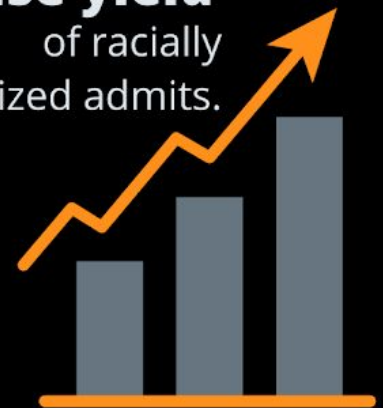
**2.4 Reduce racial bias** in graduate admissions.



**Publish** transparent, public-facing demographic data.

### Increase yield

of racially minoritized admits.



**<1% of Caltech students are Black.**

To address this issue, Caltech must...



**Improve** diversity climate on campus.

**4.1 Advertise** campus-wide CCID events in Caltech Ion.

**4.2 Rename buildings** currently honoring Nazis and eugenicists.

**4.3 Clarify** procedure for reporting racial bias.

**4.4 Provide adequate support** for students applying to diversity-related fellowships.

**Vitalize** diversity recruitment efforts.



**3.1 Pilot a fly-out program** for applicants committed to diversity.

**3.2 Engage in diversity recruitment** through conferences and visits to minority-serving institutions (MSI's).

**3.3 Prioritize** community service.

Issues/Sections	Actionable Solutions	Who We Are Calling On
<p>1) <a href="#">Incomplete, opaque demographic data available to the public.</a></p>	<p>1.1) <b><a href="#">Disaggregate the reductive “Underrepresented Minority” group</a></b> on the Registrar's Enrollment Statistics page.</p> <p>1.2) <b><a href="#">Utilize demographic data</a></b> to inform institutional diversity efforts.</p>	<p>Office of the Registrar Office of Institutional Research</p> <p>Undergraduate/Graduate Studies Offices Admissions Committees, Caltech Center for Diversity and Inclusion (CCID)</p>
<p>2) <a href="#">Low yield of racially minoritized admits who enroll in CIT graduate programs over competitor institutions.</a></p>	<p>2.1) <b><a href="#">Guarantee and expand funding</a></b> for diversity programming: e.g. WAVE, FSRI, AGEP.</p> <p>2.2) <b><a href="#">Establish cohort-building programs</a></b> for incoming graduate students of color.</p> <p>2.3) <b><a href="#">Award diversity fellowships</a></b> to students admitted to graduate programs.</p> <p>2.4) <b><a href="#">Consult experts on reducing bias</a></b> in graduate admissions.</p>	<p>Graduate Studies Office Division Chairs President’s Office Student-Faculty Programs Advancement and Alumni Relations</p> <p>President’s Office CCID</p> <p>Graduate Studies Office Division Chairs</p> <p>Graduate Studies Office Division Chairs &amp; Admissions Committees</p>
<p>3) <a href="#">Minimal, unstructured diversity recruitment efforts.</a></p>	<p>3.1) <b><a href="#">Pilot fly-out program</a></b> to strengthen diversity in grad applicant pool.</p> <p>3.2) <b><a href="#">Commit to diversity recruitment</a></b> through conferences, outreach events, and/or relationships with <a href="#">MSIs (HBCUs/HSIs)</a>.</p> <p>3.3) <b><a href="#">Prioritize community service</a></b> by incorporating outreach participation into tenure review criteria.</p>	<p>Graduate Studies Office</p> <p>All Divisions–Faculty</p> <p>Institute Academic Council (IACC) Tenure Review Committees</p>
<p>4) <a href="#">Poor on-campus diversity climate.</a></p>	<p>4.1) <b><a href="#">Advertise campus-wide CCID events in Caltech Ion</a></b> to improve diversity awareness throughout the Caltech community.</p> <p>4.2) <b><a href="#">Rename the buildings</a></b> which currently honor Nazis, racists and eugenicists: Millikan, Watson, Ruddock, Chandler.</p> <p>4.3) <b><a href="#">Clarify procedure for reporting racial bias.</a></b></p> <p>4.4) <b><a href="#">Provide adequate support</a></b> for students applying to diversity-related fellowships.</p>	<p>Office of Strategic Communications</p> <p>Board of Trustees</p> <p>Title IX and Equity Office A Bias Response Team (to be created)</p> <p>Fellowships Advising &amp; Study Abroad Office</p>

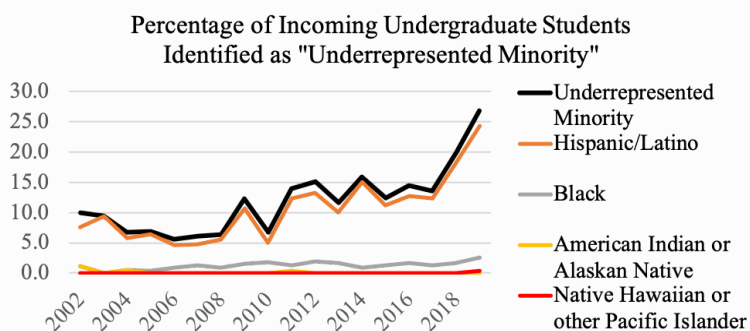
## Publishing transparent, public-facing demographic data

*As scientists, we recognize the importance of data collection and publication. Sustainable efforts to combat diversity issues must include collection and publication of complete demographic information at each stage of the admissions process.*

### 1.1) Disaggregate “Underrepresented Minority” enrollment statistics

*Graduate Studies Office • Undergraduate Studies Office • Office of the Registrar*

The Graduate admissions and [enrollment demographic data](#) collated by the Graduate Studies Office currently lumps domestic students identifying as American Indian, Alaskan Native, Black, African American, Hispanic, Latino, Native Hawaiian, and Pacific Islander (as well as multiracial students identifying with any of these backgrounds) into an ‘underrepresented minority’ category. Disaggregated data are available for undergraduate students, but are not easily accessible as they are buried in [reports](#). This inaccessibility of demographic information is harmful for reasons including, but not limited to: 1) it undermines the identities of racially minoritized but not White or East Asian students, and 2) it obscures trends in representation of minoritized groups. On the basis that the current enrollment statistics are reductive and fail to represent the racial backgrounds of several groups, **we ask that disaggregated demographic data at both undergraduate and graduate levels be made publicly accessible in a diversity dashboard.**



It is worth noting that recent increases in the “Underrepresented Minority” population do not reflect diversity progress in general. Instead, this metric acts as a proxy for trends in Caltech’s Hispanic/Latinx population, which is the largest of any other group in the “Underrepresented Minority” category. It is certainly a step in the right direction that Caltech’s Hispanic/Latinx numbers are becoming more representative of our country’s Hispanic/Latinx population. But with Black and Indigenous groups omitted from the Registrar’s report, two crucial pieces of information are obscured: that there has been only one Native Hawaiian or Pacific Islander undergraduate student since Caltech started keeping count in 2010, and that the population of Black students has stagnated around 2% for the past 20 years. [These trends](#) do not mirror those at other STEM-centered universities, nor do they reflect the numbers of racially minoritized STEM students across the country.

The fact that disaggregated demographic data would reveal the zero and near-zero populations of minoritized students is precisely why it must be published. If we are going to solve our diversity issues then we must first acknowledge our failures. **We ask that Caltech create and publish a diversity dashboard with fully disaggregated racial demographics**, as transparent or more transparent than those published by [MIT](#), [Stanford](#), and [UC Berkeley](#), so that we can fully recognize where our problems lie.

## 1.2) Utilize demographic data to inform institutional diversity efforts

*Undergraduate/Graduate Studies Offices • Admissions Committees • Caltech Center for Diversity and Inclusion (CCID)*

A complete assessment of Caltech's diversity issues requires that **every option report disaggregate demographic information for each academic stage: the applicant pool, the admits, those matriculating, and those graduated** ([exemplified by UW here](#)). These numbers are necessary for tracking precisely where diversity is lost throughout the academic process: low numbers of racially minoritized students in our applicant pool compared to those of other universities suggest the necessity for recruitment, low acceptance rates suggest the need for reforming the application review process to eliminate the effects of racial bias, and low yield of committed students suggests the need for making admissions offers more attractive. While the Undergraduate Studies Office and most graduate options already track this information, it must be reported to and compiled by a central office, namely the Graduate Studies Office. **Representatives from each option should consult with CCID staff** (or other experts with degrees and/or work experience in education diversity) for guidance on improving departmental diversity outcomes. Through these consultations, the CCID may help to facilitate interdepartmental implementation and assessment of diversity programming.

### Increasing yield of racially minoritized students

*Applicant yield is defined as the ratio of matriculants to admissions offerees. The Graduate School's overall yield is consistently around 40% every year. The yield of racially minoritized students is often much lower (data not publicly available for citation). This means we are losing talented students of color to competitor institutions. This section outlines strategies for making a Caltech admissions offer more attractive to students of color.*

## 2.1) Guarantee and expand funding for existing diversity programs at the undergraduate and graduate levels

*President's Office • Division Chairs • Graduate Studies Office • Student-Faculty Programs • Advancement and Alumni Relations*

*Freshman Summer Research Institute (FSRI)*

The [Freshman Summer Research Institute \(FSRI\)](#) is a community-building program designed to introduce incoming underrepresented and/or underserved freshmen students to Caltech's research and math curriculum, culture and college life, and academic and student support services. Since the program established its application process in 2017, no FSRI participant has failed a freshman-level math course. This is not true for non-participants of underserved backgrounds, despite similarities of diagnostic exam scores between these groups. In addition to improved outcomes in math coursework, FSRI participants report community service as a higher priority than do non-participants. The program has demonstrated its contribution to the [creation of an environment in which diversity can flourish](#). It is, however, supported by external funding which subjects the program to variable support and stagnates program expansion.

FSRI is one of the successes of Caltech's Center for Inclusion and Diversity (CCID). The 2019 FSRI cohort continued to be a strong support system for one another throughout the 2019-2020 year, with students meeting up to celebrate birthdays at least once a month, students making multiple FSRI study groups, and with many of the students participating in a schoolwork centered Discord composed of FSRI

members. The CCID also fostered continued communication between the students throughout the year with a few movie events and lunches. In all, as these students had the typical freshman undergraduate experience of joining Houses and clubs and making new friends, they also had their own pre-existing connections with other FSRI students, members of the CCID, the TAs that helped to teach them over the summer, the professors and graduate students they had worked on research with, and the upperclassmen students they had interacted with over the summer.

**Given the program's success in preparing minoritized students for the academic rigors of Caltech, FSRI must be endowed and expanded.**

### *The WAVE Fellows' Program*

The WAVE Fellows' [description](#) begins by stating Caltech's commitment to promoting diversity within its educational programming. **We believe that guaranteed funding for the WAVE program every year is a necessary reflection of this commitment.** The program is subject to funding fluctuations each year as it is largely supported by external grants. In contrast, as previously stated, over \$800K, or nearly 40% of SURF's \$2M+ annual cost is supported by its endowment (with the remainder covered by mentors, donors, and federal grants).

Despite the lack of guaranteed funding, the program is effective in recruiting highly qualified racially minoritized matriculants. About half of the WAVE fellows apply to CIT graduate programs each year and of these students, 50% are accepted. This dramatically exceeds the 10% acceptance rate of the overall applicant pool (note that acceptance rates by race are not published or made available to students). Of the eight domestic Black graduate students currently enrolled, four are former WAVE fellows. Caltech's reliance on external funding to subsidize a third of its recruitment of Black students contradicts the [claim](#) that Caltech strives to ensure diverse cultural, ethnic, and social representation. We propose two solutions to ameliorate this discrepancy in the long and short terms, respectively: (1) establishing an endowment for WAVE and (2) securing pledges from divisions to allocate divisional funding towards the program each year.

## **2.2) Establish cohort-building programs for new graduate students of color**

### *President's Office • Caltech Center for Inclusion and Diversity (CCID)*

In addition to increasing the number of qualified minoritized applicants by expanding WAVE, Caltech must ensure these students feel welcomed on campus to encourage their enrollment. Given Caltech's current demographic breakdown, no two Black graduate students are in the same option and year, so it is particularly important that they be given an opportunity to bond and form a community before and throughout their first year of graduate school. Other universities, including [Stanford](#), [Duke](#), [UChicago](#), and [UC Irvine](#), have implemented predoctoral programs to build a sense of community for incoming racially minoritized graduate students similar to Caltech's own FSRI program. Owing to the success of Caltech's own FSRI program as well as the success of the four listed external programs, **we believe it is essential for Caltech to provide funding for a Caltech Graduate Introduction Program (CGIP).** CGIP will strengthen recruitment and retention of incoming racially minoritized graduate students in STEM, including people of color and first generation students.

Documented discussion with prospective students (e.g. Andrew Dorfeuille's [letter](#)) points to a lack of community and support for racially minoritized students at Caltech, both in terms of density and

campus-wide programming. First-year cohort programs for racially minoritized graduate students have been successfully implemented in the aforementioned peer institutions to enhance the participants' preparedness and connectedness throughout graduate school. These experiences promote academic success, as exemplified by FSRI outcomes mentioned above (see [Summer 2019 Assessment Report](#)). With modest funding, a graduate-level, pre-entry program would bolster the experiences of traditionally underserved students, honoring Caltech's commitment to fostering a healthy, diverse community.

Two dedicated efforts would be employed to welcome, support, and build cohorts of incoming racially minoritized graduate students: 1) a fully-funded, up to 10 week research rotation offered as a recruitment tool, and 2) a year-long social and professional development program offered as a retainment tool.

- 1) ***CGIP Research Jump Start*** would dedicate the month preceding graduate orientation for *CGIP* participants to explore research opportunities on campus under an approved advisor, similar to currently implemented first year rotations in CCE, BBE, etc. On-campus graduate housing, food, and research costs would all be funded by Caltech during this period. This program would be offered exclusively to first year graduate students, who already have guaranteed housing in the Catalina Apartments and a lease which begins a month before classes. Weekly community building activities such as professional development workshops, guest lectures, journal clubs, etc. would take place on and off campus and would be organized with CCID involvement. Assigned peer mentors would help further integrate incoming cohorts into a Caltech support network.
- 2) ***CGIP Cohort Experience*** would complement a student's first year by offering additional pathways to connect with peer racially minoritized graduates, access helpful resources for success in graduate school, discover leadership opportunities on-campus, and, chiefly, build a cohesive support network for the cohort's entire graduate tenure. The *Cohort Experience* would begin with a brief retreat before participants dive into academic workshops, faculty seminars, and social activities with alumni. *CGIP* programming would extend beyond Graduate Orientation to continue providing regular community-building events and social activities. Following the model of the WAVE Council, peer mentors would regularly check-in with *CGIP* mentees. The program would conclude with a small celebration of the cohort's success during the first year. Any and all activities costs would be supported by the *CGIP* budget.

### **2.3) Award fellowships to students committed to increasing diversity**

*Graduate Studies Office • Division Chairs*

Another strategy for making our admissions offers more attractive is to offer **internal fellowships to students dedicated to increasing diversity**, giving preference to students from underrepresented groups. A similar program exists at the undergraduate level as the [Mellon Mays Undergraduate Fellowship](#) (MMUF), and at the postdoctoral level as the [California Alliance for Graduate Education and the Professoriate](#) (AGEP). For graduate students, [there are merit- but not diversity-focused internal fellowships](#). **We recommend that the Graduate Office and/or division chairs establish diversity-focused fellowships** offering full support and partial support in the long and short terms, respectively. These programs should ultimately be endowed by the Institute or divisions and prioritized in [the Caltech Breakthrough Campaign](#). Currently, none of the stated priorities of the Breakthrough Campaign explicitly address diversity at Caltech.



Many of our peer institutions, such as [UCI](#), advertise “top-off” diversity recruitment fellowships, which offer around \$5000 to supplement an admitted student’s graduate stipend if the student will contribute to the diversity of the school. This is a small, but effective way for Caltech’s admissions offer to stand out over comparably prestigious institutions. Other schools, such as [MIT](#), [Princeton](#), and [Harvard](#), have created a Diversity Fellows program, where students who assist in recruitment and community-building efforts for racially minoritized students are given an additional stipend of around \$5000. This also serves as an acknowledgment that many Black and otherwise minoritized students contribute unpaid labor to their institutions, for example by participating on WAVE councils, attending conferences as diversity recruiters, participating on diversity panels, organizing campus-wide Black History Month Events, etc. This work is necessary for making institutions more diverse and inclusive places, but puts an additional burden on racially minoritized students but not students in majority groups, who have the advantage of focusing full-time on research. We recommend that the Graduate Studies Office and individual divisions follow the lead of peer institutions and the [Chen Institute](#) by offering a diversity recruitment “top-off” fellowship as well as a Caltech-wide Diversity Fellows program.

We will continue to lose out on excellent students if we cannot compete with the diversity fellowship offers from competing institutions as listed here:

- 1) [Stanford EDGE](#): Enhancing Diversity in Graduate Education Doctoral Fellowship (about 50 EDGE-STEM fellowships provided per year)
- 2) [UC Berkeley Chancellor’s & Cota Robles Fellowships](#)
- 3) [Columbia Provost Diversity Fellowship](#)
- 4) [Texas A&M \\$100 Million Scholarship Fund](#) (recent news)
- 5) [UC Irvine Diversity Recruitment Fellowship](#)
- 6) [Harvard Diversity & Inclusion Fellows](#) (provides a stipend for working with student groups on diversity-related events)
- 7) [MIT Graduate Diversity Ambassadors](#) (provides a stipend for working with GradDiversity on efforts such as recruitment, application assistance, etc.)
- 8) [Princeton Diversity Fellows Program](#) (similar to the two above)

## 2.4) Reduce racial bias in graduate admissions

*Graduate Studies Office • Division Chairs • Admissions Committees*

Another leak in the admissions pipeline is the application review process, which is subject to [both structural and individual bias](#). While graduate application review is option-specific, the Institute is responsible for providing guidance and assessing efforts to reduce racial bias. This responsibility includes providing expert-led training to admissions committees in racial bias reduction, and holding every department accountable to this goal by **establishing institution-wide criteria for the review process**. An example criterion for minimizing the influence of racial bias on admissions decisions is that every application be reviewed by at least two members of the admissions committee, which would reduce the chance of an applicant’s admissions decision being subject to an individual’s conscious or unconscious prejudice.

Another source of racial bias in the application processes are standardized test scores, which have been shown to be [poor predictors](#) of [academic success](#), but instead are [correlated with race, gender, and socioeconomic background](#) of an applicant. In light of this information, **the most sensible response is to remove standardized testing—general and subject GREs and SATs—from the application entirely.**

[Several departments at Caltech](#) have already made the subject and/or general GRE tests optional, joining a rapidly growing list of [departments nationwide](#) that have made these tests optional or dropped them from consideration entirely.

## Vitalizing diversity recruitment efforts

*Increasing representation of racially minoritized groups in the application pool is yet another approach for improving diversity of the student body. This section describes strategies to enhance diversity in the applicant pool.*

### 3.1) Pilot fly-out program to raise diversity in graduate applicant pool

*Graduate Studies Office*

A fly-out program in which we invite top racially minoritized students to visit Caltech for an all-expenses-paid weekend of community welcoming encourages students to apply while demonstrating their value to our community. The following pre-admit fly-out programs can act as models for ours:

- 1) [UMich Diversity Recruitment Weekend](#)
- 2) [Stanford GRAD Day](#)
- 3) [Discover UChicago](#)
- 4) [Georgia Tech FOCUS](#)
- 5) [Cornell Diversity Preview Weekend](#)

Note that these programs are distinct from option-specific visitation/interview weekends, which do not serve to attract a more diverse applicant pool. The fly-out program described here would attract a diverse group of potential applicants, welcome them to campus, and provide workshops and panels to strengthen their applications.

Such targeted recruitment programs have already proven to be successful at increasing diversity at Caltech. For example, the FUTURE of Physics program is a two-day, all-expenses-paid event for talented junior and senior undergraduate women across the US to visit Caltech. After the inaugural 2018 FUTURE event, the Caltech Physics PhD program received the highest ever number and percentage of applications from women. [Caltech Up Close](#) serves this function for potential undergraduate applicants. **The opportunity of a pre-admission visitation must be extended to racially minoritized graduate students in every department.**

### 3.2) Engage in diversity recruitment through conferences and visits to minority-serving institutions (MSIs)

*All Divisions–Faculty • Graduate Studies Office • Undergraduate Studies Office*

We have seen in the past that recruitment at both the Annual Biomedical Research Conference for Minority Students (ABRCMS) and Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) conference is effective. Three of our current eight domestic black graduate students were recruited at such events. However, conference presence requires that graduate students spend several days outside of the lab to act as unpaid recruiters. This burden is primarily shouldered by a handful of Caltech's minority students. Consequently, this limits the number of current students available to represent Caltech, and deters prospective students because our poor representation

makes Caltech's booth less appealing than those of competing institutions with greater representation. **The Graduate Studies Office should incentivise diversity conference attendance by providing modest compensation for recruitment services.**



*2018 ABRCMS. Left: Caltech Graduate Studies booth; Right: Stanford Biosciences booth. Attracting more prospective applicants at diversity conferences requires graduate students to spend several days away from lab work to act as recruiters for the Institute. Students should be compensated for this work accordingly.*

To further aid in recruitment of students who are both racially minoritized and socio-economically disadvantaged, it is also important to consider the barrier of the cost of applying to Caltech in comparison with other institutions which offer fee waivers to students in these categories. Following active recruitment, another measure we can take to diversify our applicant pool is to offer and advertise more application fee waivers. For the undergraduate application, fee waivers are offered to students who qualify for free school lunch and to those who have participated in Caltech Up Close. Graduate application fee waivers are offered to those who have visited Caltech's conference booths or participated in SFP and other research programs, but this process is neither advertised nor is it made clear on the application portal. **We ask that the eligibility and process for requesting application fee waivers be clearly advertised at the beginning of the application process.**

Establishing relationships with faculty and diversity centers at Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and other Minority Serving Institutions (MSIs) to encourage applications is effective, but in the past has too often fallen on few individuals to sustain. If these connections are to be built and maintained, then they must become part of the daily practice of science. **We ask that all departments establish sustained connections to HBCUs, HSIs, and other MSIs by sending faculty to guest lecture/recruit on their campuses and inviting their faculty to lecture on Caltech's campus.** The CCID and/or the Graduate Studies Office can provide additional slides to append to guest lectures discussing our graduate program, the application process, and resources provided for students of various backgrounds. These connections will diversify Caltech's network in tandem with encouraging students at MSIs to consider attending Caltech as an option.

### 3.3) Prioritize community service by incorporating outreach participation into tenure review criteria

*Institute Academic Council (IACC) • Tenure Review Committees • Center for Teaching, Learning, and Outreach • Caltech Y*

We also know that the number of racially minoritized students applying for STEM graduate education is a small trickle because social scale racial inequalities have already led to the attrition of racially minoritized students in STEM in college<sup>2</sup> and before<sup>3</sup>. It is Caltech's responsibility to fight this attrition where it starts, with K-12 outreach in the local community, in public schools where there are a significant number of students of color. Science outreach is oftentimes considered a distraction from research, but if we are committed to bringing people of all backgrounds into science, let us value the work that researchers do in reaching out to people who have faced historical and ongoing hardships trying to do science. **We ask that Caltech make science outreach to schools with a high fraction of racially minoritized students one aspect of the tenure review process.** Outreach should also be valued and recognized for graduate students. Establishing academic credits for outreach is another way to place formalized value on these important ventures. There are two Offices on campus which currently provide these types of outreach opportunities: The Caltech Center for Teaching, Learning, and Outreach ([CTLO](#)), and the [Caltech Y](#).

## Improving the diversity climate on campus

*As we attract more Black and otherwise minoritized students to Caltech, we must also retain them by making sure they feel welcome here. In this final section, we describe changes that are imperative for providing adequate support to racially minoritized students on campus.*

### 4.1) Advertise all campus-wide CCID events in Caltech Ion

*Office of Strategic Communications*

Across the nation, individuals, corporations, and universities are learning that the first step to addressing racism and discrimination is understanding who it is affecting and why. In this moment, we must recognize that diversity programming is not only applicable to underrepresented groups; it is the responsibility of the **whole** community to commit to learning about and actively engaging in diversity efforts. The responsibility of educating Caltech's community on diversity-related topics and effecting institutional change should not be shouldered by Caltech's Black community as it is in this moment, where we have prioritized educating the Caltech community on racism in America and within Caltech over our own grief and emotional processing. Increased presence on the Ion can also serve as a new form of communication for the racially minoritized community to communicate and engage more with the campus. **We thus recommend Strategic Communications work with the CCID to publish community-wide events in the Ion.**

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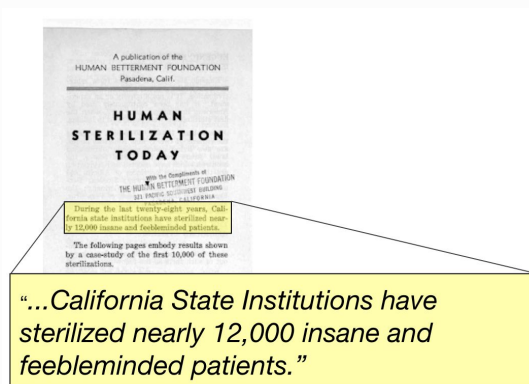
<sup>2</sup><https://www.insidehighered.com/news/2019/02/26/latinx-black-college-students-leave-stem-majors-more-white-students>

<sup>3</sup><https://onlinelibrary.wiley.com/doi/full/10.1002/sce.21146>

## 4.2) Rename the buildings currently honoring racists: Millikan, Watson, Ruddock, and Chandler

### *Board of Trustees*

To commit more wholeheartedly to a mission of diversity, equity, and inclusion, **Caltech must remove homages to violent racists from campus**. There are multiple prominent buildings on our campus, including the Millikan Library, Chandler Dining Hall, Ruddock House and the Watson Laboratories of Applied Science, which are named after eugenicists who were active in the 1920s-40s. Robert Millikan, former chairman of Caltech's executive council<sup>4</sup>, Harry Chandler, a founder and early trustee<sup>5</sup>, and Albert B. Ruddock, former chair of Caltech's Board of Trustees<sup>6</sup>, were all members of a pro-eugenics thinktank known as the [Human Betterment Foundation](#) (HBF). The HBF worked to shape law, institutional policy at prisons and hospitals, and public opinion in order to advance their agenda of compulsory eugenic sterilization of all those they deemed "defective", including disabled and poor Black Pasadenans and Californians. Thomas J. Watson, meanwhile, developed technology for the Nazis to aid in their genocidal and eugenic program<sup>7</sup>. Caltech's continued valorization of eugenicists causes ongoing emotional trauma to members of our community whose very existence was opposed by these men. To keep the names out of nostalgia for a certain period of the Institute's history or for the sake of continued financial investment, at the expense of the comfort of current and future Caltech students and staff, is wrong. We must prioritize creating an environment that is welcoming and supportive for all. We therefore ask that Caltech follow in the footsteps of other educational institutions, such as [USC](#) and [UCL](#), in renaming these buildings; whether this would require a vote from the Board of Trustees or divestment, we must do whatever it takes to ensure our campus embodies our value of equality.



*Left: IBM Dehomag D11 tabulator located in the United States Holocaust Memorial Museum<sup>8</sup>. Thomas J. Watson spearheaded IBM's relationship with Nazi Germany<sup>9</sup>.*

*Right: Pamphlet from the Human Betterment Foundation—a eugenicist organization—boasting success in human sterilization<sup>10</sup>.*

<sup>4</sup> [https://en.wikipedia.org/wiki/Robert\\_Andrews\\_Millikan#Later\\_life](https://en.wikipedia.org/wiki/Robert_Andrews_Millikan#Later_life)

<sup>5</sup> [https://en.wikipedia.org/wiki/Harry\\_Chandler#Career](https://en.wikipedia.org/wiki/Harry_Chandler#Career)

<sup>6</sup> <http://www.uvm.edu/~eugenics/primarydocs/orhbffhs000033.xml>

<sup>7</sup> [https://www.huffpost.com/entry/ibm-holocaust\\_b\\_1301691](https://www.huffpost.com/entry/ibm-holocaust_b_1301691)

<sup>8</sup> <https://collections.ushmm.org/search/catalog/irn521586>

<sup>9</sup> <https://www.latimes.com/opinion/story/2019-09-20/ibm-nazi-germany-tech-racism-father>

<sup>10</sup> <https://www.loc.gov/resource/rbpe.0020380g/?sp=1>

There is a rich history of African and African American excellence in the scientific community, and many whose accomplishments should be highlighted. Alongside notable Latinx and Indigenous alumni, we suggest the following names as replacements for the buildings listed above:

- **Mae Jemison**, the first Black woman to travel to space and Caltech's 2017 commencement speaker<sup>11</sup>
- **Katherine Johnson**, a Black mathematician instrumental in NASA's first orbital mission in 1962<sup>12</sup>
- **Ahmed Zewail**, Egyptian Caltech professor and winner of the 1999 Nobel Prize in Chemistry<sup>13</sup>
- **James LuValle**, the first Black person to earn a PhD from Caltech (Chemistry and Mathematics, 1940), bronze medallist in the 1936 Olympic 400m<sup>14</sup>, and alumnus of UCLA, which has named a dining hall after [LuValle](#)
- **Grant Venerable**, Caltech's first Black undergraduate student (Civil Engineering, 1932)<sup>15</sup>

### 4.3) Clarify procedure for reporting racial bias

*The Equity and Title IX Office • A Bias Response Team*

Caltech currently falls far short of its stated commitment to "provide a work and academic environment free of discrimination as required by federal and state law," [Nondiscrimination & Equal Employment Opportunity](#) and in accordance with its own Honor Code. In recognition of the seriousness of discrimination, we should hope that all offenses are reported, such that we as a campus we can truly "eliminate discrimination, and harassment". To recognize the trauma and pain of an individual experiencing racism or other harassment, the Institute must establish a straightforward process to report such misconduct. Currently, students are advised to report offenses to "whomever you trust, including Caltech's Title IX Coordinator, Deans, RAs, RLCs, faculty, and staff. Caltech's Counseling Center staff, Health Center staff, and the designated staff at the Center for Inclusion & Diversity" ([Report a Violation or Concern | Center for Inclusion](#)). This imprecise reporting method puts the individual experiencing harassment under further stress by placing the burden of determining the appropriate authority on to them. Reporting to peers can make the victim feel more vulnerable and ultimately drive the fear of further complications and retaliations.

**We request that, like [USC](#), [all 10 UCs](#), [Pomona](#), and many other schools locally and nationally, the Institute designate a *specific* office, phone number, online form, and adequate personnel to provide ease in reporting racially driven offenses.** Following the procedural model of Pomona College ([Discrimination And Harassment Investigation And Response Procedures | Pomona College in Claremont, California](#)) the designated office/person should be responsible for evaluating the severity of the complaint, identifying appropriate personnel on campus, meeting with the complainant, and deciding on appropriate measures. This policy must include ironclad



<sup>11</sup> [https://en.wikipedia.org/wiki/Mae\\_Jemison](https://en.wikipedia.org/wiki/Mae_Jemison)

<sup>12</sup> [https://en.wikipedia.org/wiki/Katherine\\_Johnson](https://en.wikipedia.org/wiki/Katherine_Johnson)

<sup>13</sup> <https://www.caltech.edu/about/news/ahmed-zewail-1946-2016-51594>

<sup>14</sup> [https://www.math.purdue.edu/~egoins/notes/caltechs\\_minorities.pdf](https://www.math.purdue.edu/~egoins/notes/caltechs_minorities.pdf)

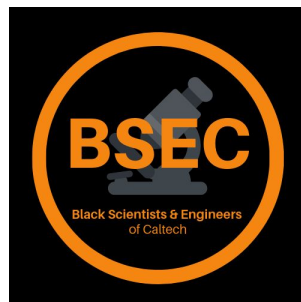
<sup>15</sup> [https://www.math.purdue.edu/~egoins/notes/caltechs\\_minorities.pdf](https://www.math.purdue.edu/~egoins/notes/caltechs_minorities.pdf)

guarantees that complainants will be protected from all forms of harassment and retaliation, no matter how senior the subject of their complaint. This new reporting mechanism should be clearly announced during onboarding of all community members and easily accessible from the Caltech website. This will ensure that everyone in the community is well aware of this resource. We envision this would follow the example of Title IX in terms of effort, recognition, and space on campus.

#### **4.4) Provide adequate support for students applying to diversity-related fellowships**

##### *Fellowships Advising and Study Abroad Office*

The Fellowship Advising and Study Abroad Office does not currently provide adequate support for Black and other racially minoritized students. While the Office publishes a list of fellowships available for graduate and undergraduate students, there are currently only six fellowships listed [on their website](#) that fall under the category of encouraging women and racially minoritized students for consideration. Even major fellowships like the [Facebook Emerging Scholars Award](#), which highly encourages racially minoritized students to apply, are not included. Even when students specifically come to the Office requesting advice on diversity-focused fellowships like the Ford Fellowship and F31-Diversity NRSA, they have not been helped, and examples of successful applications are not included in their library. Despite lack of assistance from the Fellowship Advising Office, a member of Caltech's Black community was awarded the F31-Diversity NRSA. However, the Office has not followed up with this student, suggesting that the Office does not care about extending its support to racially minoritized students. **We call on the Fellowship Advisory and Study Abroad Office to correct these shortcomings** by expanding the list of fellowships to include those specifically for racially minoritized students, advertising diversity fellowship opportunities, completing their fellowship application library by incorporating diversity fellowship applications, and training staff to appropriately guide racially minoritized students.



**To get in touch with members of Black Scientists and Engineers of Caltech please email [caltechBSEC@gmail.com](mailto:caltechBSEC@gmail.com).**

# **This Petition is Supported by the Following Campus Groups**

**Women in PMA (WiPMA)**

**Caltech Latino Association of Students in Science  
and Engineering (CLASSE)**

**Towards a More Inclusive Astronomy (TaMIA)**

**Infrared Processing and Analysis Center (IPAC)**

**Socialists of Caltech (SoC)**

**Women in Neuroscience (CWiN)**

**Caltech for Affordable Healthcare (CAH)**

**PRISM/oSTEM**

**Caltech Women in GPS (WinG)**

**PMA Student Advisory Board**

**Graduate Student Council (GSC)  
Board of Directors**

**Chemistry Graduate Studies Committee (CGSC)  
Student Representatives**

**Dabney House**

**Sexual Assault and Gender Equity (SAGE)  
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**Women in BBE (WiBBE)**

**CMS Graduate Advisory Council**

**Graduate Women in CMS**

**Women in GALCIT (WiGALCIT)**

**Electrical Engineering Local Student Committee**

**The Atwater Group**

**Caltech Feminist Club**

**Diversity in Chemistry Initiative (DICI)**

**APhMS Enrichment Committee**



**Ricketts Hovse**

**Blacker Hovse**

**GALCIT Graduate Student Council**

**Club Latino**

## We the undersigned call on Caltech to act on this petition.

Total Signatures: 1,021

### Graduate Students (399)

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*BSEC President, BLAC*

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*BSEC*

Evan Haze Nuñez, Physics, Mathematics and Astronomy, G1  
*BSEC, Techer of Color*

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*BSEC*

Jean Badroos, Chemistry and Chemical Engineering, G1  
*BSEC*

Kyle Virgil, Chemistry and Chemical Engineering, G3  
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Piero Chiappina, Physics, Mathematics and Astronomy, G1

Zachary Wu, Chemistry and Chemical Engineering, G5

Scott Habermehl, Engineering and Applied Science, G1

Yimeng Li, Humanities and Social Sciences, G5

Alexander Dalzell, Physics, Mathematics and Astronomy, G3

Prachi Thureja, Engineering and Applied Science, G1

Jing Yu, Engineering and Applied Science, G3

Paul Kempler, Chemistry and Chemical Engineering, G5

Ryan Ward, Geological and Planetary Sciences, G1  
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Kadina Johnston, Biology and Biological Engineering, G2

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Fabricio Caneles Escobedo, Engineering and Applied Science, G2

Hamidreza Akbari, Engineering and Applied Science, G3

Seong Shik Kim, Chemistry and Chemical Engineering, G2

Connor McMahan, Engineering and Applied Science, G4



Gautam, Physics, Mathematics and Astronomy , G5

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Kevin Korner, Engineering and Applied Science, G4  
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James Ragan, Engineering and Applied Science, G1

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Cullen Quine, Engineering and Applied Science, G3

Carl Swindle, Geological and Planetary Sciences, G3

Olivia Pardo, Geological and Planetary Sciences, G4

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Nickolas Pilgram, Engineering and Applied Science, G4

Sydney Corona, Engineering and Applied Science, G4

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Elena Perry, Biology and Biological Engineering, G5  
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Joeson Wong, Engineering and Applied Science, G5

Daniel Echeverri, Physics, Mathematics and Astronomy, G3

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Richard Smith, Engineering and Applied Science, G4  
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Ethan Simonoff, Chemistry and Chemical Engineering, G6+

Ryan Cosner, Engineering and Applied Science, G1

Red Lhota, Chemistry and Chemical Engineering, G5

Michael Porter, Chemistry and Chemical Engineering, G3

Shilong Gao, Chemistry and Chemical Engineering, G2

Shannon Esswein, Chemistry and Chemical Engineering, G4  
*Women in Chemistry*

Jaron Tong, Chemistry and Chemical Engineering, G2

Claudia Jette, Chemistry and Chemical Engineering, G4

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William Poole, Biology and Biological Engineering, G5

Rebecca Wipfler, Geological and Planetary Sciences, G1

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Liam Heidt, Engineering and Applied Science, G2

Lucas Andrade Meirelles, Biology and Biological Engineering, G5

Nicholas White, Engineering and Applied Science, G6+

Jining Huang, Biology and Biological Engineering, G5

David A. Cagan, Chemistry and Chemical Engineering, G2

Alexander Choi, Engineering and Applied Science, G4

Camille Bernal, Engineering and Applied Science, G4

Matteo Guareschi, Biology and Biological Engineering, G1

Ojashvi Rautela, Geological and Planetary Sciences, G1

Tamir Hemo, Physics, Mathematics and Astronomy, G3

Mark Fornace, Chemistry and Chemical Engineering, G6+

Surgyendu Battacharjee, Geological and Planetary Sciences, G1

Sammy Shaker, Biology and Biological Engineering, G1

Matthew Libersky, Engineering and Applied Science, G4

Danica Adams, Geological and Planetary Sciences, G2

Berthy Feng, Engineering and Applied Science, G1

Samuel Schulte, Biology and Biological Engineering, G1

Shirin Shivaiei, Biology and Biological Engineering, G2

Benjamin R. Herren, Engineering and Applied Science, G4,  
*Caltech Y Outdoors Committee, APhMS Enrichment Committee, Materials Research Society*

Newton Nguyen, Geological and Planetary Sciences, G3  
*GSC Board of Directors*

Cai Tong Ng, Chemistry and Chemical Engineering, G3

Bryce Edwards, Engineering and Applied Science, G5

Daniel Ebanks, Humanities and Social Sciences, G3

## Postdocs (124)

Román Corfas, Biology and Biological Engineering

Kriti Sharma, Geological and Planetary Sciences  
*CPA Board, Socialists of Caltech*

Russell Doughty, Geological and Planetary Sciences

Andrew Martinolich, Chemistry and Chemical Engineering

Chelsey VanDrise, Biology and Biological Engineering

Zachery Lonergan, Biology and Biological Engineering

Carlos Portela Galindo, Engineering and Applied Science,

Mauro Rodriguez Jr, Engineering and Applied Science

Zoya Vallari, Physics, Mathematics and Astronomy

Adela Nano, Chemistry and Chemical Engineering

Jeong Hoon Ko, Chemistry and Chemical Engineering,

Barbara Ratschbacher, Geological and Planetary Sciences

Sarah M. Tashjian, Humanities and Social Sciences

Ranjani Murali, Biology and Biological Engineering

Elise Wilkes, Geology and Planetary Sciences

Elizabeth O'Reilly, Engineering and Applied Science

Hannah Penn Earnshaw, Physics, Mathematics and Astronomy

Vincent Humphrey, Geological and Planetary Sciences

Theodore Present, Geological and Planetary Sciences

Sarthak Parikh, Physics, Mathematics and Astronomy

Christopher Barnes, Biology and Biological Engineering

Earle Wilson, Geological and Planetary Sciences

Christina Knapp, Physics, Mathematics and Astronomy

Joshua Laughner, Geological and Planetary Sciences

David Miller, Biology and Biological Engineering

Adrian Brueckner, Biology and Biological Engineering  
*CPA Board Member*

Gabriella Weiss, Geological and Planetary Sciences

Fabien Defrance, Physics, Mathematics, and Astronomy

Amir Behbahani, Biology and Biological Engineering  
*CPA Co-Chair*

Elizabeth Niespolo, Geological and Planetary Sciences

Kevin Hardegree-Ullman, Physics, Mathematics, and Astronomy

Caroline Charpentier, Humanities and Social Sciences  
*CPA Board Member (HSS Division Representative), Women in Neuroscience*

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Toby Wise, Humanities and Social Sciences

Kimberly Moore, Geological and Planetary Sciences

Livia Hecke Morais, Biology and Biological Engineering  
*CPA Diversity Chair*

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Ery Hughes, Geological and Planetary Sciences

Jason Wang, Physics, Mathematics and Astronomy

Renee Ludlam, Physics, Mathematics and Astronomy

Marin Anderson, Physics, Mathematics and Astronomy

Javier Fajardo Jr., Chemistry and Chemical Engineering

Camilla Penney, Geological and Planetary Sciences

Johannes Buchen, Geological and Planetary Sciences

John Bostick, Biology and Biological Engineering  
*CPA Outreach Co-Chair*

Christine Y. Chen, Geological and Planetary Sciences

Melanie Spero, Biology and Biological Engineering

Nicholas J. Porter, Chemistry and Chemical Engineering

Soumitra Athavale, Chemistry and Chemical Engineering

Scott H. Saunders, Biology and Biological Engineering (Caltech Ph.D. 2020)

Kamyar Azizzadenesheli, Engineering and Applied Science

Jessleen Kanwal, Biology and Biological Engineering  
*CPA Executive Board*

Stuart Bartlett, Geological and Planetary Sciences

Erika Figueroa Schibber, Engineering and Applied Science  
*WiGALCIT*

Haley Sapers, Geological and Planetary Sciences

Samaporn Tinyanont, Physics, Mathematics and Astronomy

Chandru Dhandapani, Engineering and Applied Science

Ivanna Escala, Physics, Mathematics and Astronomy  
*Women in PMA Co-Founder*

Alejandro Granados, Biology and Biological Engineering

Saman Jahani, Engineering and Applied Science

Behnam Darvish, Physics, Mathematics and Astronomy

Zibo Chen, Biology and Biological Engineering

Nadia Riera Faraone, Chemistry and Chemical Engineering

Christopher Berger, Biology and Biological Engineering

Guglielmo Mastroserio, Physics, Mathematics and Astronomy

Thomas Connor, Physics Mathematics and Astronomy  
*NASA Postdoctoral Fellow, JPL*

Jaimie Marie Stewart, Engineering and Applied Science

Yamini Jangir, Geological and Planetary Sciences

Sunyoung Park, Geological and Planetary Sciences

Michael Piacentino, Biology and Biological Engineering

Kyobi Skutt-Kakaria, Biology and Biological Engineering

Ugo Rosolia, Engineering and Applied Science

Angelo Lucia, Physics, Mathematics and Astronomy

Trixia Buscagan, Chemistry and Chemical Engineering  
*Diversity in Chemistry Initiative Co-Founder*

Brady Weissbourd, Biology and Biological Engineering

JC Wang, Chemistry and Chemical Engineering

Qi Song, Humanities and Social Sciences

Stewart A. Mallory, Chemistry and Chemical Engineering  
*CPA Communications Chair*

Tom Sidwell, Biology and Biological Engineering

Fernando E. Garcia, Engineering and Applied Science

Christina Psaroudaki, Physics, Mathematics and Astronomy

Maria Ninova, Biology and Biological Engineering

Yang Zheng, Biology and Biological Engineering

Carla De Agostini Verna, Biology and Biological Engineering

Andrey Andreev, Biology and Biological Engineering

Alina Aleksandrova, Physics, Mathematics and Astronomy

Simon Lock, Geological and Planetary Sciences

Colm Talbot, Physics, Mathematics and Astronomy

Aaron Mazel-Gee, Physics, Mathematics and Astronomy

Lucy Li, Engineering and Applied Science

David Bjanes, Biology and Biological Engineering

Kate Leitch, Biology and Biological Engineering  
*Socialists of Caltech*

Shibo Shu, Physics, Mathematics and Astronomy

Michaëlle Mayalu, Engineering and Applied Science

Grayson Chadwick, Geological and Planetary Sciences

Tamara Pico, Geological and Planetary Sciences

Christopher Mankovich, Geological and Planetary Sciences

Jorge Gamez, Biology and Biological Engineering

Gwendolyn Bailey, Chemistry and Chemical Engineering

Nicolas Palaez Restrepo, Biology and Biological Engineering

Kirsten Larson, Physics, Mathematics and Astronomy

Anqi Liu, Engineering and Applied Science  
*CPA Diversity Committee*

David A Kahn, Humanities and Social Sciences

Gina Panopoulou, Physics, Mathematics and Astronomy

Michelle Feng, Physics, Mathematics and Astronomy

Varun Rishi, Chemistry and Chemical Engineering

Alex Siegel, Chemistry and Chemical Engineering

Dr. Henry L. Schreiber II, Biology and Biological Engineering  
*Caltech Postdoc Association - BBE Representative*

Amelie Joffrin, Chemistry and Chemical Engineering  
Renata Balgley, Chemistry and Chemical Engineering  
Oliver Dunbar, Geological and Planetary Sciences  
Jan Stundl, Biology and Biological Engineering  
Ke Lyu, Biology and Biological Engineering  
Pilar Espinet Gonzalez, Engineering and Applied Science  
Ashley Baker, Physics, Mathematics and Astronomy  
Georg Oberhofer, Biology and Biological Engineering  
Irene Caprara, Biology and Biological Engineering  
Matthew Giesler, Physics, Mathematics and Astronomy  
Nathaniel Stein, Geological and Planetary Sciences  
Jonathan Richardson, Physics, Mathematics and Astronomy  
Eryn Eitel, Geological and Planetary Sciences  
Ashley Milsted, Physics, Mathematics and Astronomy  
Anne Sullivan, Humanities and Social Sciences  
*Postdoctoral Instructor*  
Francois Hebert, Physics, Mathematics and Astronomy

## **Faculty and Staff (247)**

Luisa Rebull, Associate Research Astronomer  
Bil Clemons, Professor  
Jennifer Palmer, Administrative Lead  
Lilien Voong, STEM Writing Specialist and Lecturer in Engineering and Applied Science  
Erica Whiting, Research Assistant  
Lior Pachter, Professor of Computational Biology  
Erin-Kate Escobar, Assistant Director of Caltech Center for Inclusion and Diversity



Melanie Swain, Applications Developer, Senior

Scott Cushing, Assistant Professor

Alan Weinstein, Professor of Physics

Brian Stoltz, Professor of Chemistry

Evan Kirby, Assistant Professor

Elisha Mackey, Lab Manager

Maura Dykstra, Assistant Professor

Isaac Hilburn, Application Developer Associate, and Undergrad Alum (B.S. Geophys, 2004)

Harry Atwater, Professor of Applied Physics and Materials Science

Erica Crawford, Senior Life Coordinator

Pamela Bjorkman, Professor of Biology and Biology Engineering

Mona Eadington, Administrative Assistant

Mark Simons, Professors

Angie Riley, EE/MedE Department Administrator

Liz Jackman, Associate Director

Philippe Grassia, sysadmin / Application Developer

Stephen Appert, Mechanical Engineer, LIGO Lab

David Anderson, Seymour Benzer Professor of Biology, Director of Tian Qiao and Chrissy Chen Institute of Neuroscience at Caltech

Jameson Rollins, Scientist

Philip Hopkins, Professor of Theoretical Astrophysics, Executive Officer (Astronomy)

Meca Lyn, Application Developer

Katherine Deck

Jason Alicea, Physics Professor

Julianne Just, Administrative Assistant

Janice Lee, Associate Astronomer, Caltech/IPAC Deputy Lead of Community and Education

Eleftherios Gdoutos, Research Scientist

Charity Peterson Johnston

Grant Roy, Software Engineer

Joseph Betzwieser, Research Physicist

Kenya Zeigler, BE Option Manager

Cassidy Eassa, Science Educator

Jens Kaiser, Director of Molecular Observatory

Jamie Goad, LIGO Laboratory Financial Analyst

Michael Vicic, Lecturer, Chemistry & Chemical Engineering

Hanna Song, Senior Director for Diversity

Claire Ralph, Career Development Center Director and Lecturer in CMS

Roc Cutri, Member of the Professional Staff

Elizabeth Schroder

Matt Thomson, Assistant Professor

Maria Manzanares, Assistant Director At Student-Faculty Programs

Niles Pierce, Professor of Applied & Computational Mathematics and Bioengineering

Candace Rypisi, Director of Student-Faculty Programs

Donna Wrubleski, Librarian

Mar Flexas, Senior Research Scientist

Tom Mannion, Senior Director of Student Activities & Programs and Instructor

Tiffany Kimoto, Associate Director of Business Operations, Kavli Nanoscience Institute

David Politzer, Professor

Sisi Chen, Senior Research Scientist

Susanne Hall, Teaching Professor of Writing and Director of the Hixon Writing Center

Charles Osthelder, Research Engineering Technician

Nathan Dalleska, Director of Environment Analysis Center / Water Environment Laboratory

Alvin Torres, Senior Grant Manager

Peter Couvares, Staff Research Scientist

Nick Hutzler, Assistant Professor

Miranda Huseh, Administrative Associate & Special Operations

Fred Raab, Associate Director for Observatory Operations, LIGO Laboratory

William Parker, Operator Specialist

Jost Vielmetter, Director of Protein Expression Center

Elijah Marchese, Programmer

Christine Ortega, Laboratory Research Assistant

Stephanie Cha-Ramos, Administrative Assistant

Mika Walton, PMA Graduate Affairs Coordinator

Marta Murphy, Admin Assistant

Ellen Rothenberg, Albert Billings Ruddock Professor of Biology

Casey Law, Scientist

Kristen Girard, Administrative Assistant, Student Activities and Programs

Sergio Pellegrino, Professor

Natasha Shelby, Scientific Research Manager

Tyler Nicholson, Grants Manager

Charles Sommer, Research Engineer

Alex Wertheim, Materials and Process Engineer

Dawn Gelino, Deputy Director, NASA Exoplanet Science Institute/IPAC

Ariel Shores, Manager of Employer Engagement

Joseph Parker, Assistant Professor of Biology and Biological Engineering

Megan MacDonald, Development Officer

Jasper Miura, Research Technician Assistant

Tim Colonius, Professor

Tiffanie Love, Receptionist

Joan Ochoa Sullivan, Business Operations Manager

Mary Yui, Research Professor

Zhanna Druzhinina, Assistant Research Scientist

Beverley McKeon, Professor of Aeronautics

Kristin Briney, Biology and Biological Engineering Librarian

Saeko Hayashi, Visiting researcher

Jessie Christiansen, Research Scientist

Jocelyn Yamasaki, Administrative Coordinator

Marcy Harbut, Technical Writer

Melissa Ray, Senior Library Support for Digital Repository and Publishing Services

Leslie Rico, Office Administrator

Julia Zuckerman, Senior Division Assistant for the Division of Geological and Planetary Sciences

Peter Schroeder, Professor

Dr. David A. Imel, IPAC Manager

Jennifer Jahner, Professor of English

Geroge Helou, Research Professor of Physics, Director of IPAC

Elizabeth Hong, Assistant Professor of Neuroscience

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Stephen A Gonzalez, Research Assistant

Andreas Faisst, Assistant Scientist

BJ Fulton, Research Scientist

David Ciardi, Senior Research Scientist

Narot Piric, Supervisor of Administrative Staff and Operations

Yun Wang, Senior Research Scientist

Naylynn Tañón Reyes, Research Support Associate

Carl Grillmair, Research Scientist

R. Chary, Senior Research Scientist

John Palmieri, Senior Data Systems DevOps, Engineer, Caltech IPAC/ISRA

Peter Sachs Collopy, University Archivist

Andrew Thompson, Professor of Environmental Science and Engineering

Roberta Paladini, Associate Staff Scientist

Justin Bois, Teaching Faculty

Xiuqin Wu, NED task lead

Azita Emami, Cherng Professor of EE and MedE

Christopher Marotta, Research Scientist Assistant

Paula Gaetos, Information Services Assistant

Johnnie Gray, Research Scientist

Daniel Wagenaar, Research Professor and Director of the Neurotechnology Laboratory

Sherry Wheelock, Software Developer

Nivedita Thiagarajan, Staff Scientist  
*Ph.D. Geochemistry 2012*

Tom Morrell, Research Data Specialist

Isabelle Peter, Research Professor of Biology and Biological Engineering

Jim Fuller, Assistant Professor of Astronomy

Xiang Liu, Application developer

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Reed Riddle, Member of the Professional Staff

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Sarah Reisman, Professor of Chemistry

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Michael Elowitz, Professor, Biology and Biological Engineering

Michael H. Dickinson, Zarem Professor of Biology and Biological Engineering

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Cassandra Horii, Director, Center for Teaching, Learning and Outreach

Tiffany Meshkat, Assistant Research Scientist

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Marie Kasprzack, Engineer

Wei Gao, Assistant Professor

Kevin Yang, Staff Scientist

Cren Frayer, Senior Scientific Analyst

Manuel Endres, Assistant Professor

Teresa Mejia, Campus Sexual Violence Advocate

Isabel Peng, Graduate Residential Life Coordinator

Tyler Gibson, Research Specialist I

Patricia DeWitt, Financial Analyst

Kai Zinn, Howard and Gwen Lauri Smits Professor of Biology and Biological Engineering

Christopher Wipf, Research Scientist

Janny Manasse, Senior Director of Development

Carol Casey, Associate Director, Student-Faculty Programs

Brent Fultz, Professor

Calen Henderson, Research Scientist

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Nemanja Jovanovic, Senior Instrument Scientist

Joseph A. Giaime, Head of LIGO Livingston Observatory

John Eiler, Professor, GPS Division

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Ilana Smith, Director, International Offices

Hillary Mushkin, Research Professor of Art and Design in Engineering and Applied Science and Humanities and Social Sciences

Sean Carey, Manager, Spitzer Science Center

Freddy Mora, Undergraduate Affairs and Course Coordinator for PMA

John Seinfeld, Professor

Michael Kelzenberg, Staff Scientist

Jean Ensminger, Professor

Soon-Jo Chung, Bren Professor of Aerospace

Emma Burris-Janssen, Writing Specialist

George Pigman, Professor of English

Cecilia Lu, Programs Coordinator and Admin Assistant

Bruce Brunschwig, Member of the Beckman Institute

Patrick Lowrance, Staff Scientist

Corey Gray, Senior Operations Specialist

Catherine Jurca, Professor of English

Nadia Lapusta, Professor

James Ingalls, Associate Staff Scientist

Cygnus Dekany, Office Support Associate

Mary Sikora, Executive Director

Melany Hunt, Professor

Victoria Orphan, Professor

Katherine de Kleer, Assistant Professor of Planetary Science

Austin Minnich, Professor

Kimberly See, Assistant Professor of Chemistry

Paul Oyala, EPR Facility Manager

Bob Grubbs, Atkins Professor of Chemistry

Michelle Effros, Professor

Linda Hsieh-Wilson, Professor of Chemistry

Paula Antoshechkina, Associate Research Scientist, GPS Division

Alison Ross, Graduate Studies Manager

Dina Malounda, Research Technician

Daniel Semlow, Assistant Professor of Biochemistry

Athena R. Castro, Executive Director of the Caltech Y

Jennifer Andrews, Staff Seismologist



Andrey Malyutin, Managing Director

Annette Luymes, Administrative Assistant

Elyse Garlock, Administrative Assistant

Jay Winkler, Member of the Beckman Institute, Faculty Associate in Chemistry

Taso Dimitriadis, Associate Director Caltech Center for Inclusion and Diversity

Heather Knutson, Professor

Michelle Lavner, Business Systems Consulting Assistant

Omer Tamuz, Professor of Economics and Mathematics

Thomas Spatzal, Associate Guest Researcher and Director R&D Biotest

Dianne K. Newman, Binder/Amgen Professor of Biology and Geobiology

Clarisse Alvarez, Programs Assistant

Amber Strunk, Education and Outreach Lead, LIGO Hanford

Charlyne Sarmiento, Writing Specialist and part-time Lecturer in Writing

Michael Landry, Head, LIGO Hanford Observatory

Jim Barry, Drawing, Painting, Silkscreen Art Director

Cindy De Mesa, Operations Manager

Aaron Ames, Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems

Grecia Ames, Research Technician

Jenn Weaver, Associate Director for University Teaching

Jack Sayers, Research Professor

Ali Khoshnan, Senior Research Scientist

Maayan Schwarzkopf, Research Scientist, Director Molecular Technologies

Tomas J. Martin-Mur, Inner Planet Navigation Group Supervisor, JPL

Gary Schindelman, Biological Curator, WormBase

Douglas L. McElroy, Senior Application Developer

Nancy Paradise, IPAC Finance Manager

Judith Silverman, Software Engineer

Thomas Neenan, Lecturer in Music

Steven Quartz, Professor of Philosophy

## Undergraduates (161)

Theodore Yang

Lily DeBell

Aaron Dubin

Evan Dicker

Isabelle Musie

Amy Wang

Jennifer Wu

Arielle Tycko

Elijah Paul

Moya Ly

Claire Hu  
*Student-Athlete Advisory Committee (SAAC) Co-Chair*

Sophie Li  
*SAGE co-President*

Aru Mukherjea

Anna Lapteva  
*Caltech Feminist Club Publicist*

Arushi Agarwal

Sarah Barrett  
*President of CLASES (Caltech Latino Association of Students in Science and Engineering)*

Tea Freedman-Susskind

Maxximo Ibarra

Victoria Chen

Lorenzo Van Munoz  
*Mellon Mays Undergraduate Fellow*

Daniel Neamati

Abigail Jiang  
*Ruddock House Diversity Rep, PRISM Leadership, Engineers Without Borders ExComm*

Marcos Perez  
*Ruddock House Historian, Undergraduate Academics and Research Committee Representative*

Joshua Rosenberg

Yuying Lin  
*ASCIT Treasurer*

Ayooluwa Odemuyiwa

Alejandro Lopez  
*Former Ricketts House & IHC Secretary*

Tomas Grossmark

Audrey DeVault

Jolly Patro

Diana Frias Franco

Marcus Gee

Gabrielle Dituri

Tyrone McNichols  
*Ruddock House Athletic Manager*

Irene Crowell  
*Blacker House President*

Allison Glynn

Justin Toyota

Robin McDonald

Catherine Kauber

Tyler Colenbrander

Amanda Piyapanee

Chase Blanchette

Jannah Colborn

Katherine Chang

Sulan Wu

Anthony Pineci

Aditi Seetharaman  
*Ruddock House Excomm*

Hannah Fan  
*EWB Website Director*

Caltech Engineers Without Borders  
*Caltech Engineers Without Borders President*

Nivedita Kanrar

Brit Wylie

Serena Delgadillo  
*Caltech Feminist Club Events Coordinator, Former ASCIT President*

Eric Moreno

Julia Sloan

Emily Du  
*Lloyd House Secretary*

Sarah Zou

Jasmine Terrones

Michael Brown

Michael Gutierrez

Isabella Camplisson  
*Feminist Club President, 'Techers for a Sustainable Future President, SAGE Council Co-President*

Leo Afriyie Buabeng

Jackie Wang

Victoria Liu  
Olivia Ernst  
Eitan Rapaport  
Emily Zheng  
Logan Hayes  
James Bowden  
Malik Paulino  
Tara Porter  
Hazel Pearson  
Nathan McAlister  
Maximilian Adang  
Andrew Rothstein  
Noah Barnes  
Ananth Malladi  
Michael Gonzalez  
Kaden Taylor  
Christian Zapata-Sanin  
Kevin Marx  
Liana Merk  
Kaila Coimbra  
Sara Kangaslahti  
Marguerite Hewitt  
Eman Elsheikh  
Vanessa Woo  
Galilea von Ruden

Matthew Alexander

M Gardner

Ali Cataltepe

Aanica Gonzales-Roger

Olivine Silier

Kevin Gottlieb  
*Comptroller, Dabney House*

Leah Griffith

Beryl Hovis-Afflerbach  
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Allyson Trussell

Andrea Hands Arocha

Alexandra Bardon

Erik Imathiu-Jones

Ethan Eason

Isabel Swafford  
*SAGE Student Council Co-President*

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Charlotte Park  
*Ruddock House Social Manager*

Erick Jimenez Berumen

Nicholas Currault  
*Board of Control Chair*

Calle Junker

Grace Suenram

Anna Li

Alexandra Stutt

Jason Shi

Katherine Hughes

Sharne Sun

Anjali Patel

Ethan Ordentlich

Louise Schul

Toussaint Pegues

Madeleine Swint

Rachel Ding

Zoe Beatty

Natali Lelieur

Joshua Ronis

Alexandra Lai

Emile Timothy  
*Title IX Advocate*

Angel Rodrigo Avelar Menendez

George Wythes

Kaulana Chun

Chrintine Yu

Daniel Quintana

Thomas Gallup

Aaron Tran

Alexander Pan

Elaine Lin

Brian Nguyen  
*Questbridge Club President*

James Park

Patryk Kozlowski

Stephen Hei

Kyle McGraw

Mahi Gokuli

Benjamin Juarez

Gianmarco Teronnes

Amanda Li

James Vinson

Miles Cua

Sarah Kreider

Hannah X. Chen

Swetha Kunnam

Stella Wang

Amanda Li

James Vinson

Miles Cua

Sarah Kreider

Hannah X. Chen

Shwetha Kunnam

Stella Wang

Paromita Mitchell

Jonathon Corrales de Oliveira

Joseph Donermeyer

Liam Silvera

Whitney Sloneker

John Wang



Kiran Hamkins

Logan Apple  
*President of Dabney House*

## Alumni (90)

Matthew Gethers, Ph.D. Bioengineering, 2018  
*Former Vice President of BSEC*

Brigitte Rooney, Ph.D. Environmental Science and Engineering, 2020  
*Socialists of Caltech*

Sophie Walton, B.S. Biomedical Engineering, 2020

Milan Roberson, B.S. Physics with Minor in Computer Science, 2020

Philip M. Neches, B.S. 1973 Engineering Science; MS 1977 Computer Science; Ph.D. 1983  
Computer Science  
*Member, Board of Trustees*

Austin Chadwick, Ph.D. Geology, 2020

Jason Sekanina, B.S. Applied Math and Engineering and Applied Science, 1998

Harel Dor, B.S. Applied Physics, Computer Science 2020

Yinzi Xin, B.S. Physics, 2018

Carla Watson, B. Sc. Applied Physics, 2015

John McDunn, B.S., 1996  
*Former ASCIT President*

Darius Simmons, 2017

Mojolaoluwa Sonola, 2017

Monica Enlow, 2015

Dr. Sarah Milkovich, B.S. Planetary Science, 2000  
*Science System Engineer - JPL, Former Dabney House President*

Mark Jackson, B.S. Physics, 1969

Daryl Yee, Ph.D. Materials Science, 2020

Nicholas Zolman, B.S. Mathematics, 2016

Mark Gillespie, 2018

Connor Lee, B.S. Computer Science, 2017

Seo-young Silvia Kim, Ph.D. Social Sciences, 2020

Micah Sittig, B.S. Applied Physics, 2001

Alex Krotz, B.S. Chemistry, 2020

Zainab Al-Saihati, Ph.D. Chemistry, 2020

Dessie DiMino, B.S. Computer Science, 2020

Sarah Crucilla, B.S. Geology, 2020

David Huynh, Ph.D. Aeronautics, 2019

Ankita Mishra, B.S. Chemical Engineering, 2010

Tiffany Zhou, B.S. Bioengineering, 2016

Serina Diniega, B.S. Math, 2003  
*JPL Employee*

Brian Ventura, B.S. Mechanical Engineering, 2011

Lisa Falk, B.S. Geology, 2007

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