URGE Demographic Data for California Institute of Technology
March 5, 2021

This is what was found by the GPS Urge Pod at Caltech on demographic data (public and internal facing) as well as stated goals for representation, and/or proposals to collect and report demographic data.

- **The link(s) to demographic data at our organization are here:**
  - [Undergrad/Grad Enrollment Statistics](#)
  - [Undergrad trends](#)
  - Institutional Research Office
    - Annual ["Common Data Sets"](#)
    - Undergraduate 6-year [Grad Rates](#)
  - Analysis of past invited speakers: In Caltech GPS this information has not historically been collected, but an effort to collect, analyze, and publish invited seminar speaker demographics was started over the summer in 2020, spearheaded by graduate students. The seminar series organizers, from across the 6 options, collaborated with the Caltech Center for Inclusion and Diversity (CCID) to create a survey to collect demographic information from speakers. Each option is using the same demographic questions but is collecting the info in slightly different ways: some have chosen to send the survey before the talk (and collect other info like the speaker's talk title and abstract at the same time), while other options are choosing to send the survey after the seminar (and collect information from the speaker on the quality of their visit). This effort has been underway for less than one year, so no demographic data has been publicized yet due to anonymity concerns with small numbers, but the plan is for these data to be collated and published annually, at the end of each academic year.

- **How does your organization compare to others, or to the field as a whole?**
  - ⊄ Data was available to compare some basic demographic information at Caltech to the general US population, but is currently not publicly available to compare Caltech

GPS to all US geoscientists or to the broader Caltech community:

Percentage of people who identify as a...
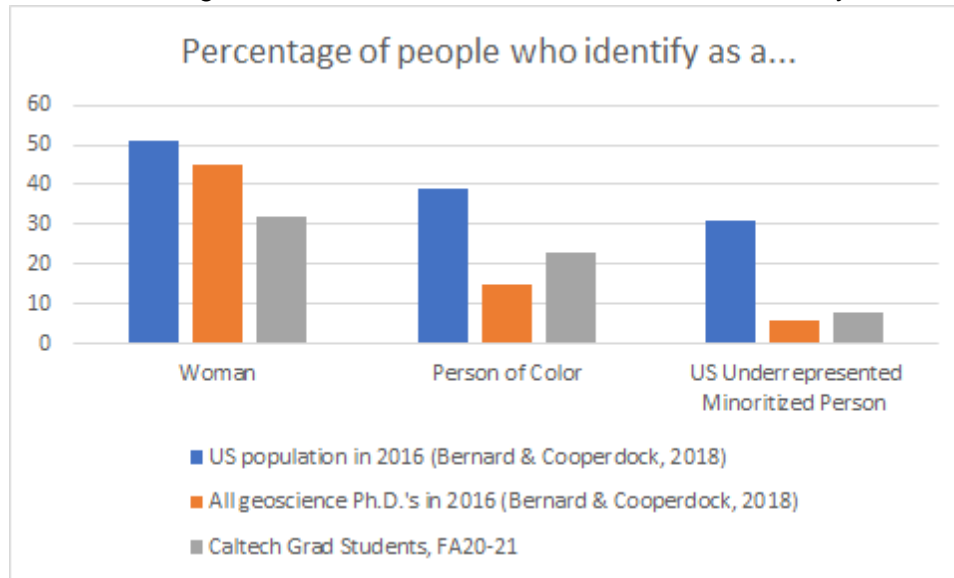
- ⊄ Equity and Diversity in the geosciences:
  - ☐ Geologic professional societies exclude diverse members
    - ● Kernen et al. (2021): gender diversity in AAPG, and inequity by gender between awards/professional achievements, and service roles
    - ● Fernandes et al. (2020): racial and gender equity in SEPM, inequity in publications, awards, and leadership
  - ☐ The geosciences have lacked diversity for decades (Bernard & Cooperdock 2018)
  - ☐ AGU has created a strategic plan that includes 5 goals for working towards a vision that "Diversity and inclusion are recognized and celebrated as being essential for the success of AGU, its members, and the global Earth and space science enterprise" (AGU D&I Task Force, 2018), and its implementation is reviewed in an AGI - "Diversity in the Geosciences – a Look at the Data and the Actions of the Community" Webinar

- **Public goals on demographics or increasing representation:**
  - ○ Are there general goals stated at your organization for achieving representation?
    - ☐ On the ongoing faculty search there is the ubiquitous statement that Caltech is an "equal opportunity employer" and applicants who "display interest in enhancing the diversity of the institute" are solicited.
    - ☐ On the webpage describing the Division Seminar Series there is no mention of diversity/representation goals. This should be added.
    - ☐ The DEI in GPS Website states, *"The GPS Division is committed to cultivating an environment that enables all of its members to thrive and realize their full potential, irrespective of individual backgrounds and circumstances. The Division recognizes that diversity has many*

dimensions, pertaining to such questions as those of race, religion, ethnicity, origins, gender, sexuality, age, socioeconomic status, and disability. We hold that the range of perspectives and values that arise from our diversity is a source of creativity and innovation and is therefore integral to our continued academic excellence. To help address the challenges of increasing diversity and fostering an inclusive climate, the GPS faculty has formed a standing committee dedicated to Diversity, Equity, and Inclusion (DEI), as well as an endowed fund to support its activities. The new standing committee is charged with reviewing institutional processes and making recommendations to the faculty that promote inclusivity and diversity within the Division."

- Are there measurable goals stated at your organization for achieving representation?
    - Seminar organizers in our department have run into apparently strict legal guidelines for what Caltech allows the division/options to say concerning measurable diversity goals given how close this language is to "quotas" which are currently illegal in California. This was encountered in 2020 during the process of creating the demographic survey for our seminar speakers when a faculty member sent an email to the department asking for diverse nominations of speakers and we were contacted by the legal department to address the concern that we were venturing too near "quota" territory. Of university offices of legal counsel, Caltech seems to be particularly risk-averse.
    - The Faculty have [endowed]() $400,000 that *"guarantees we'll have a resource for generations to come; it also ensures we won't forget the intention of the fund after the current moment, with its passions, have subsided,"* but specific goals are undefined. "Several" Faculty Fellows will receive a $5000 Stipend Supplement from the expected $35,000 annual budget, intended to *"increase the number of historically underrepresented students (African Americans, American Indians, Hispanic/Latin(x) Americans, and others) pursing graduate degrees in Geological and Planetary Sciences and Environmental Science and Engineering, and to promote the benefits of a graduate degree within academia."* To allocate remaining funds, *"through the recommendations of the Committee on Diversity, Equity and Inclusion, the faculty will make decisions on how to best spend available resources for a broad variety of activities involving outreach, inreach, WAVE fellows, recruiting, and more. The entire Division community is encouraged to submit ideas to the DEI Committee for their consideration."*
    - Dr. Lindsey Malcom-Piqueux, Caltech's VP of Diversity, Equity, Inclusion, and Assessment, suggested that **vagaries in demographic targets** (e.g., Berkeley seeks to indentify "exciting, early career, diverse speakers...for this semester's seminar series") may help organizers to stay out of legal or institutional trouble associated with numerical targets, but the use such vagaries to has danger of watering down intended goals.

One alternative to numerical targets in representation is to focus on **reducing gaps and narrowing outcomes**, e.g., historical completion rates of degrees. Such non-quota targets can be more speciifc. For example, a goal may be to reduce the gap between seminar speakers and national pool of geoscientists by half by next year.

☐ Proactive efforts to solicit speakers, community members, and applications for students, staff, and faculty should be encouraged and enabled with resources. Relying on existing, largely white and male professional networks may be insufficient: connect with professional societies such as the [National Association of Black Geoscientists](#), [National Organization of Gay and Lesbian Scientists & Technical Professionals](#), [Society for Advancement of Chicanos/Hispanics and Native Americans in Science](#), or community groups in AAAS—get within networks and identify people active in those networks. Search databases of diverse speakers, such as those compiled by Dr. Jen Glass: [Diverse STEM Speakers](#) and [Geoscientists of Color](#).

☐ In response to a Summer 2020 [petition](#) by Black Scientists and Engineers at Caltech, the Office of the President committed to several measurable changes in a community [letter](#). However, while some goals are concrete, actionable changes, no clear metrics of success, timelines for implementation, or specific targets or benchmarks are defined. Goals related to increasing demographic representation include:

- *"double the number of WAVE undergraduate diversity research fellowships*
- *create initially ten centrally-held Presidential Graduate Fellowships for the purposes of increasing diversity across the Institute*
- *establish a Graduate Summer Research Institute... to help newly admitted graduate students acclimate to Caltech and build community*
- *underwrite the funding for the Freshman Summer Research Institute to avoid year-to-year fluctuations and uncertainty, while seeking to raise long-term endowment funds*
- *provide recruitment funds for participation in minority-serving conferences*
- *build upon the success of the Alliances for Graduate Education and the Professoriate (AGEP) program to ensure additional postdoctoral scholars of color across the division"*

○ Suggested additional goals for your organization:

☐ Goal 1: Hire a DEI-specific faculty in GPS who provide professional guidance for setting priorities and goals, collaborate with other faculty so that outreach, inclusion, and equity/justice work is a central part of Caltech's research program. For example, the Scripps Institute of Oceanography recently posted a [job](#) for a Tenure Track faculty who will *"unite STEM/Public Health/Health Sciences departments and African*

American and the Black Diaspora Studies through innovative research, coordinated teaching and mentoring, and targeted service."

- ☐ Goal 2: Determine benchmarks for "successful" demographic equity and achievement and target goals for achievement with expert advice from CCID by the end of this academic year, so that they may be implemented for the next cohorts. Examples:
  - The retention rate of BIPOC students in GPS should equal that of white students
  - The demographic makeup of matriculating GPS students should match that of the entire Caltech student body by 2023; graduating student makeup should match that of California by XXXX.
  - Seminar speakers should reflect the demographic makeup of all US Earth & Planetary Scientists by 2022 by soliciting contributions outside of existing GPS community networks
  - Review GPS student achievement data (e.g., publications, grades, etc.) to identify "persistence thresholds" to set forward-looking goals. For example, no historically minoritized students grades will fall below a C- [or whatever threshold is identified locally] in general chemistry (Harris et al., 2020), and accountability is held with advisors and teachers (e.g., upon promotion review, etc.)
- ☐ Goal 3: Design exit interviews of all leaving community members (graduating students, students leaving without graduating, staff/postdocs leaving, faculty not tenured, etc.) to create accountability towards diversity goals.

- **Policies for collecting demographic data at your organization:**
  - Caltech is developing a diversity dashboard. As part of this effort, Dr. Malcom-Piqueux has compiled 20 years of students, faculty, and postdocs data by division, and as an institution. Public reporting of this data is complicated by the small size of GPS, which makes it easy to identify individuals, so all historically minoritized students are aggregated; Caltech has rules for responsible data stewardship. While data privacy is important, **the difficulty in responsibly reporting on the extremely small number of historically minoritized individuals underscores GPS's lack of diversity.** Visibility and transparency of demographic data must be a priority, and honestly showing the demographic data will hopefully make people want to improve them.
  - Intersectional identities, such as sexuality & gender associated with race or ethnicity, is not tracked. Some data is decentralized by work unit, and undergraduate data from applications is available. Much of the data is reductive (e.g., binary genders, or lack of reporting multiple racial or ethnic identities) and problematic (e.g., use of terms such as "Caucasian"), because it is inconsistent with modern understanding of race and gender identity. Caltech is currently working on when in a community member's career data should be collected: e.g., for students, upon application, matriculation and/or graduation?

- Surveys often collect detailed data, but are often not collected with statistical rigor. This should **not imply that survey data should be dismissed,** as surveys can be used to roughly inform population and **help identify unmet needs**. Surveys often face unwarranted criticism that it may not be representative, and this is used to rationalize inaction or to stop changes. This was observed during collection of survey data from GPS community members on their experience with gender-based harassment in field and laboratory settings; multiple white male respondents, without even seeing survey results or proposed changes, indicated that such concerns were overwrought or that new policies would do more harm than good. Caltech has collected data in Campus Climate Surveys in 2015 and 2019 that could be disaggregated and compared to GPS surveys, and a forthcoming Campus Climate Survey will be broader to explicitly consider racial climate and identity discrimination.
- Tracking community demographics **together with** data from those who leave & why would help provide accountability to diversity goals and identify problems, such as loss of community engagement (e.g., Fernandes et al., 2020). Accountability and data collections must be part of an iterative toolset to "inform and incentivize" progress, and must take an intersectional approach that permits assessment of cumulative forms of bias and discrimination (NASEM 2020).

- **What did you learn about other organizations (or in general) while investigating demographic data?**
    - https://diversity.ldeo.columbia.edu/seminardiversity - Increase diversity in seminars
    - https://www.nature.com/articles/d41586-019-03784-x - No all-male panels
    - http://www.ohrc.on.ca/en/policy-and-guidelines-racism-and-racial-discrimination/part-3-%E2%80%93-guidelines-implementation-monitoring-and-combating-racism-and-racial-discrimination - more information on collection of demographic data in Canada.
    - Diversity Dashboards:
        - Found no public dashboard that assesses intersectional segments, such as viewing racial makeup of different genders
        - Found no public dashboard that tracks retention of faculty and staff; only found one dashboard (MIT) that reports graduation rates for students
        - Found no public dashboard that tracks recruitment or matriculation
        - Institutional demographic goals are not reported on dashboards, so accountability is not easily assessed; only found one dashboard (Berkeley) that reported metrics compared to population benchmarks
        - Example dashboards:
            - RPI: 5-year trends in faculty, student, and staff gender and racial makeup; URM aggregated into a single category, and gender is tabulated as binary
            - MIT: 15-year trends in faculty, student, staff and postdoc gender, racial, and citizenship makeup; URM disaggregated by race with multiple races as its own category; gender tabulated as binary; trends in graduation rate available by race, as well

- [Cornell](): 10-year trends in students, faculty, postdocs, and professional staff gender (binary) and race (aggregated), and recent survey results of "engagement, inclusion, and achievement" metrics.
- [Berkeley](): 25-year trends in aggregated student racial makeup, and current disaggregated makeup compared to California population

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