Demographic Data

Stanford and School of Earth Demographic Reports

Demographic Reports:

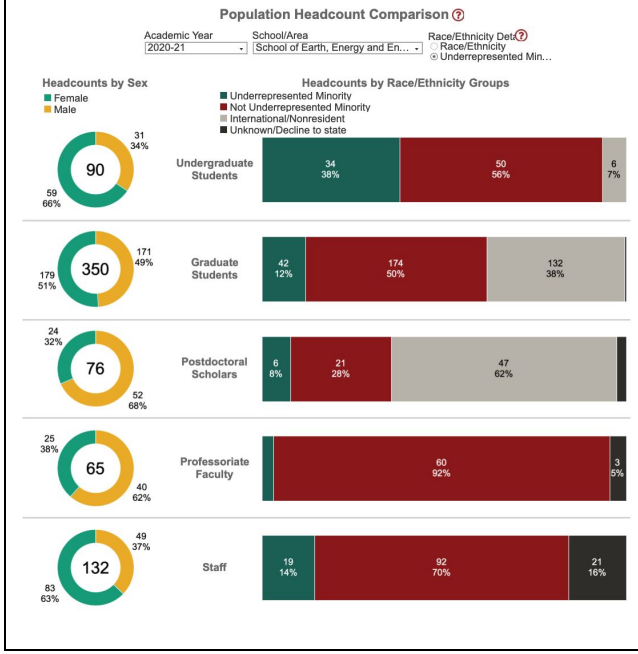
- Stanford demographic dashboards: https://ideal.stanford.edu/resources/ideal-dashboards
- Faculty demographics and reports: https://facultydevelopment.stanford.edu/data-reports
- International student/scholar data: https://bechtel.stanford.edu/about-us/annual-report-and-studentscholar-statistics
    - Stanford Daily article with other visuals: https://www.stanforddaily.com/2021/03/01/trends-in-international-graduate-student-enrollment-at-stanford/

Summary:

Public demographics for Stanford and the School of Earth (SE3) are summarized in the chart on page 2. (Additional information is available internally, but public sharing is limited.) In general, we see that Stanford SE3 has improved its minority student population percentage over the past 10 years and has a higher ratio of minority students at undergraduate level than the entire school. However, at the individual department level, this trend fails. Faculty diversity is very low and there has not been a lot of improvement. SE3 has improved on gender equality at the faculty level. Again, this trend fails when individual departments are considered. Most of the post-doctoral and large portion of the graduate students are international at Stanford.

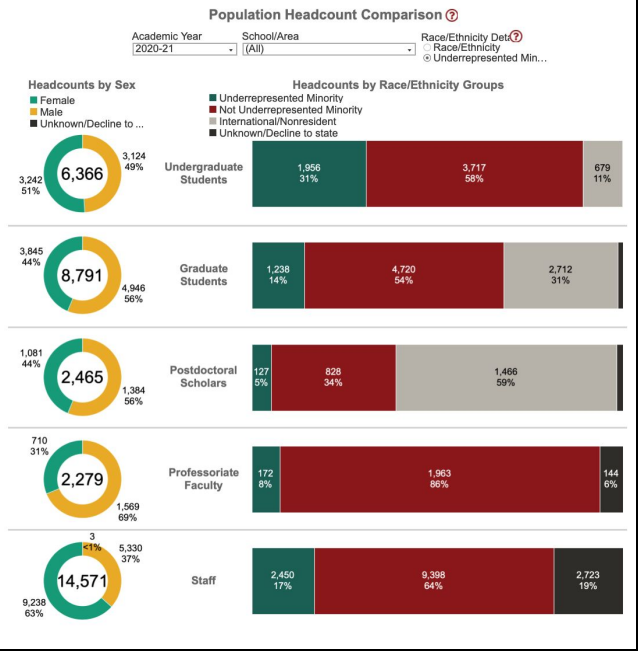
Demographic Trends

2021 SE3



2011 SE3

2021 All Stanford



Diversity and Representation Objectives:

In general, Stanford has established broad goals for advancing diversity, equity, and inclusion, although mostly without specific measurable objectives (https://provost.stanford.edu/statement-on-diversity-and-inclusion/). The new IDEAL (https://ideal.stanford.edu/about) plan has the following objectives:

- Ensure that diversity of thought, experience and approach is represented in all sectors of our education and research enterprise;
- that all members of the campus community feel they belong and are supported regardless of their background, identity, or affiliations; and
- that all members of the campus community have broad access to the opportunities and benefits of Stanford.

The immediate priorities for this initiative are:

- Increasing the diversity of the faculty, especially faculty from underrepresented backgrounds including racial and ethnic minorities and women in STEM;
- Improving the campus climate so that all experience an abiding sense of belonging and broad access to opportunity; and
- Advancing free expression in an inclusive community.

The School of Earth is also in the process of releasing a DEI vision statement and action plan that will include both school level goals and a framework for individual departments to develop their own objectives.

- **SE3 DEI Vision statement and Action Plan**
    - Educate (DIG class, EJ educational offerings/courses, faculty anti-bias and mentorship training)
    - Enhance - build an inclusive environment (expanding resources for URM students, inclusion events)
    - Engage - diversify school by building relationships with minority serving institutions, recruitment/outreach, inviting diverse scholars to seminar series
    - Expect - accountability for our progress, rubrics/criteria in hiring and admissions, have departments articulate goals within the framework, annual reports or townhall discussion on demographics, general retention rates, reporting structures
        - DEI service category in annual faculty reports
    - SE3 DEI action plan progress so far:
        - Reallocated budget/funds to enhance culture and experience of underrepresented students, faculty and staff

            - Eg: SE3 DEI-aligned Stanford Earth postdoc fellowship and Dean's Grad Scholars Awards
        - New SE3 Tenure-track position and University cluster hire
        - In last stages of reviewing DEI action plan; Updating new DEI website
        - DEI vision and action items will make goals explicit and will help us keep track of progress and take accountability.

Given that most of the stated objectives for increasing representation were quite broad, we also chose to look at university and school funded student and postdoctoral fellowships, as well as faculty hiring initiatives, that support these goals. We felt that this gives an more useful picture of the level of resourcing that has actually been allocated towards recruiting and supporting underrepresented members of the Stanford community.

Fellowship: (objective, funding, # of applicants, # of recipients)

- Stanford's Summer Undergraduate Research in Geoscience and Engineering Program [SURGE] link
    - Objective:
        - "**SURGE provides undergraduates from a U.S. institution the opportunity to gain mentored research experience at Stanford University in the geosciences and engineering** during the eight-week period of June 21, 2021 to August 13, 2021. We especially encourage students who are seeking a formal research experience for the first time to participate."
        - The eligibility requirements include "Be an undergraduate at a U.S. university or college who, by reason of their culture, class, race, ethnicity, background, and life experiences, would add diversity to our Stanford Earth, Energy & Environmental Sciences research community. We especially encourage applications from traditionally underrepresented groups, including African Americans, Hispanic/Latino Americans, Native Americans, Pacific Islander Americans, and first-generation college students."
    - Funding:
        - SURGE covers the cost of travel to/from campus and provides a stipend. The stipend for summer 2021 is $4800.
        - SURGE also provides access to Stanford facilities, health insurance, a seven-week GRE test preparation course, the SURGE alumni network, and two paid field trips in the bay area.
    - Number of applicants: 2020: approximately 250 applicants, 2021: 197 applicants
    - Number of recipients: there is no set number, but previous years' cohorts have had 11-16 students.
- Diversifying Academia, Recruiting Excellence (DARE) [link]
    - Objective:
        - The DARE Doctoral Fellowship Program awards **two-year fellowships to advanced Stanford doctoral students** who want to investigate and

prepare for **academic careers and whose presence will help diversify the professoriate.**

- Funding, each DARE fellow receives
  - $12,410 stipend per quarter (2020-21)
  - TGR tuition for two 4-quarter academic year
- Total fellows since 2008: 256
  - 22 DARE fellows in 2020-22; 24 in 2019-21 cycle; 22 in 2018-20
- Program details:
  - Structured workshop/seminar focused on professional development to inform students about what the role of a faculty in academia entails
    - 1st year
      - Autumn: Faculty professional role and expectations
      - Winter: Faculty life in different institution types
      - Spring: Faculty and postdoc job search
  - Mentorship with Stanford faculty alongside dissertation advisor
  - Fellows are encouraged to develop small projects to further the fellowship's mission

- EDGE
  - Website: https://vpge.stanford.edu/fellowships-funding/enhancing-diversity-graduate
  - **Objective:** "fostering intellectual excellence in graduate education by enrolling a diverse student body and creating a vibrant and supportive educational environment"
  - Two-year fellowship awarded to incoming PhD students after nomination by their department, includes faculty and student mentorship, financial support, research/travel funding, and cohort social/networking events
  - Funded 116 students across all departments in 2020, been in place since 2007 with significant growth in cohort size size since 2015 (Stanford awards ~800 PhDs per year for a comparative estimate of total cohort sizes)
  - **Funding:**
    - EDGE Fellow receive up to $12,800 including stipends, research and travel funds as follows:
      - A one-time $2,500 stipend, awarded in the fall to help offset some of the costs associated with relocation to the area
      - A one-time $4,000 stipend to be awarded in the summer following the successful completion of your first year of the doctoral program (contingent on meeting program milestones and continued enrollment in the doctoral program)
      - Up to $6,300 for advisor-supported research or professional conference travel expenses
    - The EDGE Doctoral Fellowship Program also offers mentoring by advanced graduate students and faculty, professional development opportunities, and community-building activities that are designed to expand the fellow's scholarly network.

- Stanford Earth Dean's graduate scholar award
    - Budget for 8-10 Dean's Graduate Scholars
    - First year fully paid for each student (approximately $75k)
    - Five year no restriction stipend of $3k to use for any conferences, research needs, computing needs (on top of departmental stipend)
- Stanford Earth Postdoctoral Fellowship Program
    - Website: https://oma.stanford.edu/postdoc-fellowship-program
    - Objectives: This fellowship will support two outstanding scholars in the fields of Earth, energy, and environmental sciences, as well as other emerging fields in this area, whose research and mentorship of undergraduate and graduate students will contribute to diversity, equity, inclusion and scientific excellence within the school.
    - Diversity objectives: attract scholars from underrepresented backgrounds in STEM as well as those who are in emerging areas of Earth, Energy, and Environmental sciences that intersect with issues of human impact and equity
    - Introduced in 2020, will fund two scholars for two years (new cohort every 2 years) - had 200 applicants in 2020
    - Funding: annual stipend on $83,000 per year plus $10,000 per year in research funds
    - Relationship with postdoc office to build a community and provide additional resources (also across institutions)
- Research University Alliance grant (for post-doc funding)--Collaboration between Stanford and eight other universities to diversify postdoc pipeline. Stanford Report article:https://news.stanford.edu/today/2021/03/03/collaboration-diversify-stem-postdocs/?utm_source=Stanford+Report&utm_campaign=4f40b310aa-EMAIL_CAMPAIGN_2021_03_03_04_19&utm_medium=email&utm_term=0_29ce9f751e-4f40b310aa-53457653
- Student Projects for Intellectual Community Enhancement [SPICE] link
    - Objective: "SPICE funds help graduate students (master's, doctoral, or professional) carry out innovative activities that expand or enhance the intellectual communities of their department or program—and those that span more than one departmentor program. Students are invited to apply for up to one year's worth of activities funding, which is overseen by the VPGE. Awards can be as high as $5,000, though the majority of projects receive less."
    - Funding: Applicants request a particular funding amount. Up to $5000 per year may be awarded, although awards are typically much smaller.
    - SPICE funds a wide variety of projects of differing scales throughout the university. List of 2020-2021 projects.
- Diversity and Inclusion Innovation Funds (DIF) link
- DDRO Fellowship
    - $5000 award for research expenses related to dissertations that focus on some aspect of diversity, broadly defined to include culture, socioeconomic background, race, ethnicity, gender, gender identity, sexual orientation, disabilities, religion, and life experience.
    - Has funded a total of 100 students since inception.

Faculty Recruiting:

- University cluster hire - looking for scholars whose work intersects issues of race and ethnicity (https://president.stanford.edu/2020/06/30/advancing-racial-justice-at-stanford/)
- Stanford Earth faculty search - aligning with IDEAL initiative, applicants need to demonstrate commitment to diversity and inclusion, asked applicants to provide diversity statement in addition to research statement.

How do we compare to geosciences as a whole?

Comparison between IDEAL Initiative data and the American Geosciences website for 2018-2019 (last data year for American Geosciences) was made. As we can't publish the IDEAL data itself, below is a summary broken out by race.

Stanford Earth is at or slightly behind the broader geosciences in participation of Black/African American students. Some programs did not have any black students in the year we looked at.

Stanford Earth programs varied widely in their Hispanic/Latino populations, with some programs (mostly undergraduate-focused) having at or above national demographic levels while others lagged seriously behind or had no representation of Hispanic/Latino populations.

American Geosciences did not provide data on participation of Asian students

Stanford Earth does not have significant numbers of American Indian/Alaskan Native students, which is necessarily less than the 1-2% they represent in the geosciences nationally.

According to the 2020 AGI Report listed below, the number of Underrepresented minorities (Black, Latinx, Indigenous/Native, Pacific Islander/Hawaiian) earning a Geosciences doctoral degree in 2019 is 6.7%. When analyzing data for Stanford's School of Earth, Energy and Environmental Sciences, we found that 12% of our graduate students enrolled at the School are underrepresented minorities (URM).

Example of Geosciences national data:

- Stats on AGU Fall Meeting demographics and speakers: https://www.nature.com/articles/d41586-019-03688-w
- https://www.americangeosciences.org/geoscience-currents/diversity-geosciences
- https://www.americangeosciences.org/geoscience-currents/race-and-ethnicity-us-citizen-geoscience-graduate-students-and-postdoctoral

How do we compare to the US population and other university systems?

Examples:

- US census for comparison: https://www.census.gov/quickfacts/fact/table/US/PST045219
- Santa Clara county demographic data: https://www.census.gov/quickfacts/santaclaracountycalifornia
- Bay Area demographics: http://www.bayareacensus.ca.gov/bayarea.htm
- University of California System: https://www.universityofcalifornia.edu/sites/default/files/thefacts_diversity_0313.pdf
- University of Texas: https://www.jsg.utexas.edu/diversity-inclusion/resources-data/geoscience-diversity-data/
- University of Arizona: https://www.geo.arizona.edu/sites/default/files/data/summer_newsletter_2020_1.pdf

The ratio of women:men in faculty roles is slightly higher than UT/UAZ (UC doesn't list that data in the linked report), but the proportion of underrepresented groups at the faculty level lags behind other institutions linked above. Stanford also lags comparative institutions for proportion of underrepresented groups at the graduate level as well.

*Note: this compares a private institution (Stanford) to public institutions (UC, UT, UAZ). Comparisons were made to these institutions at the faculty and graduate student level on the basis of trying to compare large, highly-ranked, research-focused institutions.

We note that there is a substantial difference (and divergence from national data) in demographics between the graduate student and postdoctoral/faculty levels in terms of gender representation which is consistent with trends seen nationally. The percentage of domestic students and postdocs from underrepresented groups is ~20% for both groups. This suggests that SE3 should look at intersectionality in demographics as well - for example, women of color may be particularly underrepresented, but this is not something we can tell from the available data.

What kind of demographics data do we feel is missing?

- Department/university leadership roles
- Invited speakers/seminar series
- Department/school/university level awards
- The DEI office and HR has internal access to admissions data (including applicants pools, admitted students, and matriculated students) and faculty hiring data to monitor trends. The data is not public. Postdoc hiring is an area where we need more systematic ways of inviting and evaluating applicants and tracking the demographics.

- Statistics on where individuals transition to if not in geoscience or academia.
- Response tied with demographic information on what led to a student to transition out of geoscience or academia.
    - Who gets an ‘exit’ interview? If it’s only students that graduate, might be misrepresenting the student experience (‘survivor bias’)
- Statistics on service positions occupied by graduate students (ie, who is running seminar/putting on social events/TAing)
- Intersectional data (but might be available internally)