

URGEO

Unlearning Racism in Geoscience



Hiring and Admissions Policies for Caltech GPS

This is what was found by the Caltech GPS Pod at Caltech on Faculty Hiring and Graduate Admissions Policies, as well as what the pod would propose to change and improve.

Faculty Hiring:

There is currently an open search in the Geological and Planetary Sciences Division, with the call broadly open to subjects across all GPS options. This will serve as the reference for the latest approaches related to faculty search procedures. These procedures do not necessarily reflect historical precedent in the Division.

- **What EEO (Equal Employment Opportunity) statement¹ is included in a standard job or admissions advertisement? Are there other inclusion statements and resources publicly available²?**

"We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to age, race, color, religion, sex, sexual orientation, gender identity, or national origin, disability status, protected veteran status, or any other characteristic protected by law. Caltech is a VEVRAA Federal Contractor. Click [here](#) to read more about Equal Employment Opportunity (EEO).

Caltech is committed to working with and providing access and reasonable accommodations to applicants with physical or mental disabilities. To request disability accommodations for any part of the interview or hiring process, please contact 626-395-6111 for assistance or contact faculty-search@gps.caltech.edu."

This language is fairly standard across all institutions that have open positions in the geosciences this year. We also considered text that was included in the advertisement itself that addressed contributions to diversity, equity, and inclusion. The GPS advertisement (which

¹ R. Kelley, 10 Samples of an Effective EEO Statement, blog.ongig.com/diversity-and-inclusion/eeo-statement-samples, (2017).

² <https://careers.whoj.edu/opportunities/diversity-inclusion/>

³ K. Cobb, #GRExit Resources, <https://doi.org/10.6084/m9.figshare.13215461.v1>, (2020).

⁴ J. Posselt, Inside Graduate Admissions: Merit, Diversity, and Faculty Gatekeeping, <https://www.jstor.org/stable/j.ctvjghw8s>, (2016).

⁵ <https://www.brandeis.edu/diversity/dei-recruitment-hiring/rubric-for-evaluating-diversity-statements.html>

⁶ K. Griffin, J. Bennett, T. York, Leveraging Promising Practices, Washington DC: Aspire Alliance, (2020).



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is, notably, a much shorter advertisement overall as compared to our peer institution's advertisements) states:

"We seek individuals . . . that display an interest in enhancing the diversity of the institute."

This is a much briefer statement than most of our peer institutions. It also only addresses an "interest" in enhancing diversity rather than specific aspects of the applicants background or experiences that may be desirable. Some examples of peer institution language include:

UC Berkeley: "Diversity, equity and inclusion are core values at UC Berkeley, and in the Department of Earth and Planetary Science. Our excellence can only be fully realized by faculty, students and staff who share our commitment to these values. Successful candidates for our faculty positions will demonstrate evidence of a commitment to advancing equity and inclusion through their research, teaching and/or service."

The Department is committed to addressing the family needs of faculty, including dual career couples and single parents. We are also interested in candidates who have had non-traditional career paths or who have taken time off for family reasons (e.g., caring for children, the disabled or the elderly), or who have achieved excellence in careers outside academia (e.g., in professional or industry service)."

The Stanford University School of Earth, Energy, and Environmental Sciences: "Seeks candidates for a tenure-track faculty position at the rank of Assistant Professor. Consistent with Stanford University's Inclusion, Diversity, Equity, and Access (IDEAL) vision and commitment to diversity (broadly defined) among its faculty, students, and staff, we especially seek to attract applications from promising scholars with historically underrepresented backgrounds in traditional STEM fields, as well as in emerging areas of Earth, Energy, and Environmental sciences, including research areas that intersect with societal issues."

- **Where are advertisements posted or sent? Are there other strategies for reaching applicants for hiring and/or admissions, e.g. job fairs, showcases?**

The open search in GPS differs in some significant ways from previous years, as described below. Most of the changes have been specifically adopted to increase the diversity of the applicant pool and to improve upon the equity of the hiring process.

The GPS Division wrote a job advertisement and it was approved by the Provost and the position officially opened in early December. A search committee was formed by the Division



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Chair consisting of 4 men and 1 woman, 3 tenured faculty and 2 untenured faculty, there are no URM members on the committee. A copy of the ad can be found [here](#). Importantly, unlike in previous years, this ad was broadly circulated to the entire Division. Faculty, postdoctoral researchers and students were encouraged to forward the ad to qualified candidates or to contact the search to identify potential applicants. The goal was to help distribute the ad in a way that presents this opportunity in front of as many different sets of eyes and different Earth and planetary science disciplines as possible. The Division also placed paid advertisements at AGU (American Geophysical Union) and GSA (Geological Society of America), and posted to several subdiscipline listserves, e.g. Unavco, SCEC (Southern California Earthquake Center), Earth Science UCAR (University Corporation for Atmospheric Research), msatalk.minlists.org (Mineralogical Society of America), PaleoSoc, ASM (American Society of Microbiology). The ad was sent to some job sites focused on less represented communities, e.g. ESWN (Earth Science Women's Network), but this could be expanded further (e.g. GeoLatinas, American Association of Blacks in Higher Education).

- **Has your hiring process been evaluated by outside consultants? What is the process for changing it?**

The hiring process is one of the key components that is evaluated by the GPS Division's Visiting Committee, which occurs roughly on a five-year time scale; the last visit occurred in 2017. The Visiting Committee does specifically comment and advise upon the make-up of the faculty, both in terms of academic research, both also with regard to age distribution, racial diversity, etc. We are uncertain about the degree to which the Visiting Committee comments on hiring processes.

This year, the GPS search committee chair, Woody Fischer, reached out to Dr. Lindsey Malcom-Piqueux, Assistant Vice President for Diversity, Equity, Inclusion, and Assessment during the application evaluation stage (March 2021) to discuss best practices for reading applications and hosting interviews. Dr. Malcom-Piqueux is currently organizing a website that will compile resources for search committees that will be available to all Divisions. This will help to improve the uniformity of searches across campus and streamline communication between different searches to share previous experiences and best practices.

- **What are the requirements for an applicant, e.g. letters of recommendations, fees/test scores³/grades? Is providing any of these a potential barrier that could be further lowered or removed? Are there any problematic questions asked?**



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The current search requires applicants to submit an electronic application that includes: a brief cover letter, a curriculum vita (including publications), a short research statement (no more than 3 pages), a teaching statement (1 page), and three letters of recommendation. We also ask that applicants submit a diversity and inclusion statement (1 page) that discusses past and/or anticipated contributions to improving diversity, equity, and inclusion in the areas of research, teaching, and/or outreach. We will evaluate each applicants' research accomplishments and potential, as well as the teaching, mentoring, collaboration, and leadership skills necessary to run a successful academic research group (e.g. initiative, persistence, enthusiasm, communication).

This is the first time that a diversity statement was specifically requested for an open GPS position.

Letter recommendations were required at the time of application. This is different from previous years when letters were only requested after the search committee had read and ranked applications. We discussed as a group whether this provided more or less access. On one hand, potential applicants may be nervous to ask for letters at this stage and decide not to apply. Without a specific request from the search committee (with instructions), letter writers may not take this task as seriously and disadvantage some applicants. On the other hand, letters may be an important component for an applicant who might not otherwise make the first cut. On balance, we felt that asking for letters at the outset was a positive change, but that more advice for students and letter writers could be provided either on the ad website or by the search committee.

Going forward, the search committee will start reviewing applications in March with a goal to arrive at a list of a dozen or so candidates. The committee will conduct short 30 minute interviews of those candidates, and arrive at a shortlist of 5 or so candidates for full interviews. The committee is developing a rubric to assist in the evaluation of the candidates and will share this rubric publicly. The committee will announce all potential candidates prior to their visit and seminar to increase awareness among all members of the Division.

A short list that is publicized to the whole Division is a major change to hiring procedures from previous years. The search committee is also committed to incorporating graduate student feedback in ways that were not used in previous searches.

Recommendations for faculty hiring:



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- In future job advertisements, the GPS Division should include a more robust statement about our interest in soliciting applications from candidates that will increase equity and diversity within the Division.
- The search committee should create a FAQs page, similar to what we have done for Graduate Admissions (<https://www.gps.caltech.edu/academics/graduate-program/gps-graduate-program-faq>), that is linked to the job advertisement.
- The GPS Division should continue to use resources provided by the CCID to help train search committee members on how best to solicit and read job applications. This may involve training sessions on how to read and evaluate diversity statements and help to establish rubrics that clearly identify key job criteria.
- The search committee should provide a statement that can be used by applicants who are soliciting letters of recommendation. This statement should provide a brief description of the call, a summary of qualities that will be assessed by the committee, and the committee's intention of requesting letters at this stage.
- Resources should be available to make hiring procedures more uniform across the institute. One example can be found here: <https://www.brown.edu/about/administration/biomed/faculty-search/>. See also the note above about how Dr. Malcom-Piqueux is addressing this need.

Graduate Admissions:

Overview of Application Requirements:

Caltech has an "Applications Checklist" for graduate students applying to any division within the institution, which includes:

- 1.) Payment of application fee
- 2.) Statement of Purpose
- 3.) Transcripts from college or university
- 4.) Three letters of recommendation
- 5.) CV/Resumé

The divisions are further broken into options that have specific requirements regarding testing. In the Geological and Planetary Sciences division, every option removed the GRE requirement from their applications for the 2020 application cycle. This change will be reevaluated in the



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forthcoming cycles following discussion of the GPS faculty. The TOEFL (or other tests) as proof of English reading, writing, and speaking skills are not required for admission but the graduate office stipulates that “it is important to demonstrate a strong capability in English.” As such, these tests are ostensibly required for applicants whose first language is not English.

Personal and Financial Barriers:

Application fee: The application fee is an obvious financial burden. It is \$100, and while “a limited number” of applicants “who demonstrate financial need” receive application fee waivers, these vague terms on the graduate office website may discourage applicants to apply for waivers. A recent FUTURE Ignited program (see Recruitment section below) allocated fee waivers to all participants.

Testing: Although the GRE has been temporarily removed as a requirement, the language on the application website all but necessitates applicants from non-English-speaking countries to take costly exams, such as the TOEFL. The TOEFL costs as much as \$200 and is only offered in certain countries at specific times of year. This is a financial and physical barrier disproportionately placed in front of students where inflated currencies mean that months of work that would otherwise be spent on life expenses are used to pay for a single test. This burden is similarly felt by applicants from international or rural communities who must travel far distances to take these exams. This is particularly challenging for students from countries where the tests are not offered, necessitating international travel. **One potential mechanism for dismantling this financial barrier is to accept international students on their merits as students and subsidize requisite TOEFL exams before they are allowed to enroll or to accept alternative tests such as the more affordable and location-independent Duolingo English Exam. Alternatively, the division could institute an interview process by which English proficiency is determined.**

The GPS division is considering removing the GRE as a requirement for applications permanently, pending discussion and voting at a faculty meeting as of March 2021. ***The GPS URGE pod strongly urges the faculty to vote to remove the standardized testing requirements due to the discriminatory nature of the examinations and the financial barriers they pose for applicants.***

Letters of Recommendation: Discrimination against ESL applicants permeates into the application itself. Of the five suggested topics for Letters of Recommendation, the fourth asks the author to explain “...how well does the applicant read, write and converse in English”. This language seems problematic in its redundancy with other portions of the application. This



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redundancy negatively impacts the letter of recommendation by forcing the writers to use parts of their letter discuss English proficiency instead of discussing the applicant's merits. In addition, this is something that could be considered by the application readers themselves if informational interviews were instituted in the graduate admissions process.

The fifth prompt in the Letter of Recommendations description is "how does the applicant compare to any previous students who have come to Caltech for their graduate work?". This seems problematic as it cultivates the "golden pipeline" of academia. Caltech "feeder schools," which are typically elite private universities, will have the opportunity to provide direct evidence of an applicant's potential by comparing students to a pool that the Caltech faculty know well. Letters of recommendation can be one of the most important attributes of an applicant's profile, particularly at elite graduate programs which receive more qualified applications than available positions. **Adjusting the prompts for recommendation letters is a simple but effective opportunity to decrease inequity in the application process.**

Recent attempts to reduce barriers to admissions: GPS and the ESE options have recently published FAQs for the admissions process, found at <https://www.gps.caltech.edu/academics/graduate-program/gps-graduate-program-faq> and https://ese.caltech.edu/academics/application_faq. These FAQs were written primarily by current graduate students, with input from the Academic Committee, and should be revised annually. ***Upon publication of the admissions rubric (see below), the FAQs should be updated to provide further information about how to achieve the attributes on which applicants are being evaluated.***

Admissions Process:

Selection committees: Graduate admissions to Caltech GPS are done by option and each option has a slightly different process. Because funding for first years in Caltech GPS is provided by the Division rather than by an individual faculty member, students are not admitted into a specific laboratory or to work on a specific project. For Geology, Geobiology, Geochemistry, Geophysics, and Planetary Science, all faculty have access to the applications and the faculty collectively make the list of admitted students. Planetary Science implements an interview process for its short list of acceptances. Environmental Science and Engineering, because it receives approximately 120 applications each year, institutes a committee that makes a "first cut" of students, cutting the applicant pool roughly in half. Three faculty members make up this committee with least two of the members reading each application. The remaining applications are then read and final admissions decisions made by the full ESE faculty.



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Application packages: Applications are submitted online and collated into application packages of a specific order. Caltech outsources this process to a company called CollegeNet that uses a software to make the packages. They have the following order from front to back:

- 1.) Personal Information (name, address, birth place, citizenship, race, ethnicity, tribal affiliation, etc.)
- 2.) Contact Information
- 3.) Educational Summary (including GPA)
- 4.) Test Scores (GREs + TOEFL)
- 5.) Fellowship information
- 6.) List of letter writers
- 7.) CV
- 8.) Personal statement
- 9.) Transcripts
- 10.) 3x Letters (including a brief questionnaire and the letter)

We strongly request that the portfolio be rearranged so that baccalaureate institution and GRE scores are not the first information seen by reviewers and that the personal statement is prioritized.

Evaluation procedures: A rubric was developed for the AY2021-2022 admissions process but has not been released outside of the GPS faculty. The rubric was developed primarily internally, with some assistance from the GPS Diversity, Equity, and Inclusion Committee. The rubric asks evaluators to rank students from “high” to “low” on characteristics of their application package, including (but not limited to) the evidence of previous research experience, alignment with research in Caltech GPS, and other non-academic qualities. There were concerns from the faculty that using the rubric for each applicant took too much time; however, preliminary evaluation of the rubric suggests faculty would be easily able to fill it out while evaluating a candidate. ***We suggest the faculty work with the Caltech Center for Teaching, Learning, and Outreach and the Caltech Center for Diversity and Inclusion for assistance in further developing and streamlining of the rubric. In addition, posting the admissions rubric on the GPS website will give prospective students the ability to make an informed decision about what to include in their application as well as who to reach out to for letters of recommendation.***

Changing the admissions process is at the discretion of the faculty. When suggesting the removal of the GRE, student groups approached the faculty through letters to and discussions with their representatives on the Academic Committee, which is made of the Option



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Representatives of each option as well as the Academic Chair. The members of the Academic Committee then brought the request to the full faculty during a faculty meeting; however, no students attend faculty meetings and so what is presented and ultimately decided is at the discretion of the faculty.

Recruitment and Retention:

Admissions must not be thought solely as a one-point process; recruitment and retention of students are major parts of the admissions process.

Recruitment Activities

One of the most successful recruitment activities at Caltech GPS in Fall 2020 was the FUTURE Ignited program, which invites prospective students of color to Caltech to learn about graduate life at Caltech, strategies for building a successful graduate application, and the research activities at Caltech. Applicants are nominated by faculty or postdocs at their host institutions. The program's stated goal is to "diversify STEM with students of color who will go on to become incredible graduate students and scientific leaders in their respective fields". During a visit to Caltech, students participate in laboratory tours, research talks, and meetings with graduate students. After students leave the Caltech visit, they are optionally paired with graduate students who mentor them through graduate applications both at Caltech and at other institutions.

FUTURE Ignited is an institute-wide initiative. The following statistics are specific to the GPS division. In 2020, 25 were accepted to the FUTURE Ignited program and 17 attended the GPS sessions (68% identified as female, 32% identified as male). Of these students, 14 were undergraduate seniors and 7 ultimately applied to Caltech GPS. In AY2020-2021, the GPS division admitted 4 of these students. Given that 6 underrepresented minority (URM) graduate students were admitted to Caltech GPS, the FUTURE Ignited program succeeded in recruiting qualified, diverse applicants.

Retention Activities

The "leaky pipeline" paradigm in academia presents a significant challenge for increasing diversity in the geosciences. Striving for equity and inclusion in admissions and amplifying diverse voices through recruitment are moot points if the academic environment at Caltech is toxic to marginalized graduate students and faculty.



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One way to increase the retention of graduate students of color is to provide affinity groups where students who face similar adversities can find solidarity and support. These groups are mainly hosted through the Caltech Center for Inclusion and Diversity (CCID). Examples of these groups at Caltech are the Black Scientists & Engineers of Caltech (BSEC), PRISM (a group for LGBTQ+ students), and Club Latino (for Latinx and Hispanic identifying students). There are also affinity groups in each division for women, including Women in GPS (WinG). There are, however, no GPS-specific groups for students from racially minoritized backgrounds to seek support. ***Opening spaces for students to meet and support one another is a costless, easy, and effective way to improve the experience of students from underrepresented demographics.***

As mentioned in the deliverable from Session 2, hierarchical structures for reporting sexual harassment are essential in any workplace. This idea can be extrapolated to racist incidents or microaggressions that are demonstrably pervasive and yet remain unregulated. To our knowledge, no such structures for anonymously reporting racist incidents exist in the GPS division at Caltech. ***We suggest that the division advertise the existing network of people for students, faculty and staff to anonymously (or otherwise) report racism at work and work to develop a division-specific avenue to reporting. This network is coupled to that which is used for reporting sexual harassment.***

One program that Caltech has implemented to assist with retention is the Graduate Summer Research Institute (<https://diversity.caltech.edu/gsri>) which “provides a comprehensive program of orientation, academic support, and professional development designed to ease the transition into Caltech’s graduate programs.” This program occurs over the summer before an admitted student begins graduate school and is advertised to underrepresented and/or underserved graduate students. Several current GPS students have participated in this program and ***we recommend the GPS division advertise this program to eligible incoming students in order to help minoritized students thrive at Caltech.***

The GPS division has also recently instituted a “first-year buddy” program in which first-year students are partnered with upper-level graduate student volunteers. This program is still in its infancy so it is difficult to draw conclusions, but it is useful for students to have a point-of-contact outside of their research advisor upon arriving at Caltech. We hypothesize such a program may have positive results for retention of students, especially if students are paired with people with whom they identify.