

## **Mentoring goals and opportunities**

I have three main goals when mentoring PhD students:

1. I work with students to help them design their own project. Learning how to develop research questions is probably the most important professional training during a PhD, particularly but not only for academic careers. This includes not only identifying questions that are both exciting and feasible, but also learning how to frame the research questions to reach different audiences, in particular a broad audience.
2. I work with students to help them gain a broad “toolkit” of research techniques. This can include field skills, coding and data analysis, and/or laboratory geochemical methods, among other things. Graduate school requires specialization, but proficiency with multiple approaches will make you more desirable to academic and non-academic jobs.
3. Finally, I work with students to help them develop not only in research, but also in teaching and service. Academic careers require all three components, and many of these skills will also be valuable for non-academic careers. In addition to TAing, you will have opportunities, if desired, to learn more about teaching and pedagogy, gain skills in mentoring high-school or undergraduate students, participate in activities to support diversity and inclusion in the Earth Sciences, or work on science communication or public outreach, to give a few examples. As students refine their desired career path, I aim to provide opportunities to make that career path a reality.

## **What do I look for in the Statement of Purpose and Personal History statements?**

Many universities require two statements in the application, and so do we, but it often isn't clear what should be described in each. Different faculty also have different expectations for these statements, so I want to provide some clarity on what I look for in the Statement of Purpose (more research-focused) and Personal History statements. These statements aren't the most important part of the application (I rely a lot on letters of recommendation), but they help me evaluate potential for research success that goes beyond grades.

### Statement of Purpose (the research-focused statement)

I am interested in hearing about your research vision: what questions do you want to answer, what general approaches are you most interested in pursuing to answer those questions, and how do the questions fit into the bigger picture of issues relevant to the broad scientific community? The vision can be for your PhD, or can be bigger. This is not a research proposal, so you don't need specific details on the methods (the questions don't even need to be feasible) – I am mostly interested in seeing if you can think broadly and have creative ideas.

If you have some research experience already, I am also interested in hearing about your past or ongoing work. What techniques have you learned during the work? What have been the most exciting findings? What are the broader implications and why is the study important?

I would also like to learn about your interest in academic activities beyond research. Do you have interest in pursuing teaching, mentoring, diversity, or outreach activities, or ideas for things you would like to do? If you have some prior experience with any of these areas, I would love to hear about what you have done.

## Personal History Statement

Students often discuss their personal background and how it drew them to their chosen field of study, but in my view the primary use for this part of the application is to provide context for evaluation of your academic record and research statement. The amount of time spent on work, family commitments, or other things can vary considerably among students, as can the amount of familial support in navigating the university system. Any of these hardships can negatively impact GPA or could reduce opportunities to participate in research. As such, it helps me to know this context when I am looking at your application. UCSC also has a fellowship for students who overcame some kind of hardship, so if that applies to you it will help us make the case if you are detailed in your application. The application form also has a “Diversity Fellowship” section that provides helpful context about your background even if you don’t think you might qualify for the fellowship itself.

The personal statement can also be useful if your record contains anomalies – terms where grades were lower than typical, or something like that. One anomalous term isn’t a big deal, but it could be helpful to know if it occurred because of some kind of personal, family, or financial crisis (details are not required if you would rather not share).