Earth 194 DE: Readings in Geoscience DEI

Week Three: Majoring in Geoscience

What I need to bring:

- Ipad with papers annotated
- These notes printed
- Copies of the supporting information (on laptop)

Agenda:

- Go through and remind everyone of each other's names
- Attendance during introductions
- Annette suggested bringing up the concept of move up/move up/one mic to encourage more equal discussions in class! Similar to the syllabus with step up and step back but more concrete, she will go over it briefly!
    - ☐ **Move up** if you are someone who may not normally talk a lot or feel comfortable sharing your voice. We want to make space for you and hear from you!
    - ☐ **Move up in your listening** if you are someone who may normally contribute a lot to the conversation. Be mindful of how much time you are talking and how many times you have spoken. Practice moving up in your listening rather than speaking.
    - ☐ **One mic;** please remember that one person should be speaking at a time.

Serial Testimony:

One round, answer one of the three questions

1. In Stokes et al. 2015, they presented a combination of both qualitative and quantitative data. Was there any piece of data, either qualitative like a pull quote, or quantitative like an incident percentage, that stood out to you in particular? Why was that?
    a. *The most surprising one to me was the negative impact of experiences in non geoscience courses like physics chemistry and calculus.I think it was surprising because even though I had in the back of my head that this felt real, I hadn't seen it in research yet. When I was in high school, I failed most of my math course and had to retake a lot of classes. When I went to college and majored in biology I was terrified to take math again, but in CCS we didn't really have required major courses and had a lot of flexibility in what we wanted to take. Unlike so many people around me, I wasn't taking calculus at the same time as like intro chem and bio and instead I waited until my second year to try math again. I gained confidence from chem and bio classes and bolstered my STEM identity and I was able to take calculus for the first time in a better mindset I think. I think that this lesson might be something that could be leveraged for other programs - having flexibility in required courses. —> also the rock collection stuff!*
2. The theme of belonging in geoscience resonated in both Stokes et al 2015 and Sheffield et al 2021 - Have you ever felt like part of an "in" or "out" group in

STEM? How did that bolster or diminish your own sense of belonging in science and/or geoscience? Did that influence your choice of major?

3. At the end of Sheffield et al. 2021, the authors discuss the limitations of the study and ideas for future iterations. Using the context from other readings like Stokes et al. 2015 and last week's readings - how would you design a follow up study here at UCSB that improves upon this paper?

Potential Discussion Questions:

- Sheffield et al. 2021
- What stereotypes come to mind when you think of a scientist? What about an Earth Scientist?
- The intro talks about classrooms often showing the “greats” of science education, with many images of white European men, how has this been implemented in your classroom or are there any instances where this has been pushed back on?
- How could changing the mental image of a scientist like was discussed in Sheffield influence if undergraduates major in geoscience? Was that a major theme in the Stokes paper?
- What did they do in this study? What did they mean by coding for major themes and constant comparative analysis?
    - What were the codes they used? What themes did they look for in their interviews? 1= science identity, 2 = stereotypes of nature of science 3=new conceptions of the nature of science
    - Helpful to pull up the SI materials here
- What are the differences between white students and marginalized students in response to the scientist of the week spotlights?
- What lessons do you take away from these papers that are related to majoring in the geosciences?
- We have seen in social science papers a few times now this limitations section - something different than other geoscience papers for sure! - what did you think of this limitations section - how can the race of the people doing the study bias the results?
- Stokes et al. 2015
- The authors list 1) positive experiences in intro courses 2) supportive family members 3) personal characteristics that meshed with geoscience and 4) outstanding field experiences as the most common factors for choosing geoscience as a major. Reflect on your own choice of major - geoscience or otherwise - do these factors resonate with your own experiences?