

# GEODES: Geologists Encouraging Openness and Diversity in Earth Science

Sarah Begankas\*, Claire Masteller\*, Danica Roth, Stephanie Taylor, Grace Barcheck, Allison Pfeiffer  
 \*presenting authors Earth and Planetary Sciences Dept., University of California Santa Cruz

## What is GEODES?

- We are a student-led organization aiming to:
- Provide a **safe space** that fosters community and mutual support at all career stages
  - Provide **professional development** opportunities
  - **Raise awareness** of issues known to limit participation and success of women and minorities in Earth science

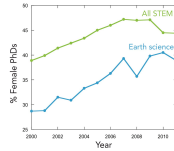
## Why Earth science-specific programming?

### • Women and underrepresented groups in Earth science face unique challenges.

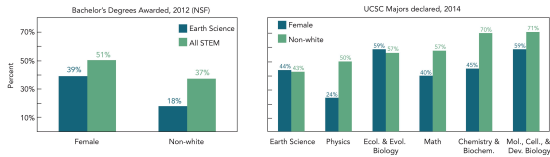
- Students from different socioeconomic backgrounds have varying experience with outdoor activities, so that often, white middle-class students have a leg up relative to students from other backgrounds.
- Harassment during field work is a common issue, and traditional reporting structures are often lacking or unknown (Clancy et al. 2014).

### • A lower percentage of Earth Science PhDs are conferred to women than of STEM PhDs overall.

- The percentage of Earth Science master's degrees and PhDs earned by women has plateaued in recent years.



### • Only 18% of students earning bachelor's degrees in Earth science are non-white, compared to 37.3% in STEM fields overall.

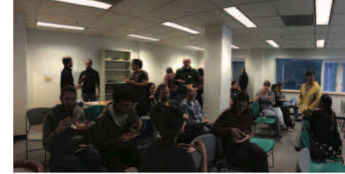


In our department at UCSC, there are few opportunities for female and minority students, postdocs, and faculty to connect with one another, nor is there an active dialogue concerning gender and minority issues.

## GEODES in action!

### Events hosted:

- **Career panel:** Ten geoscience professionals from a variety of career paths answered graduates' and undergraduates' questions in small discussion groups.
- **Impostor syndrome workshop:** Dr. Audrey Kim (UCSC Counseling and Psychological Services) led an interactive workshop for undergraduates, graduates, and faculty addressing impostor syndrome in Earth science and combating negative thinking.
- **Department needs discussion:** Our inaugural event brought together undergraduates, graduates, post-docs, faculty, and staff for small group discussions about our department's needs and how GEODES can address them.
- **Communication workshop:** Dr. Adina Paytan (UCSC Earth and Planetary Science) led a session on communicating science using the message box, and GEODES leadership provided tips for formal scientific presentations.
- **Camping 101 workshop:** Dustin Smucker (UCSC Office of Physical Education, Recreation, and Sports) presented basic outdoor/camping skills, clarified the gear for our department's field classes, and provided information on how to rent gear from OPERS.
- **Department-wide dinner:** Undergraduates, graduates, post-docs, faculty, and staff came together for ice-breakers and informal community building.
- **Lunch discussion about recent harassment:** Inspired by recent news of harassment by prominent astronomy faculty, we led a grad student discussion about identifying harassment and how to help define a culture where it will not be tolerated.
- **Practice poster session:** Students practiced poster presentations for an upcoming Earth science conference.



### We have tapped many on-campus resources:

- Funding from Earth and Planetary Science department
- UCSC Counseling and Psychological Services
- UCSC Campus Conflict Resolution Services
- UCSC Office of Physical Education, Recreation, and Sports
- Bay Area/Central Coast geoscience community
- Faculty experience and expertise in our department
- Title IX Office

### Our event attendance is consistently 40-60 people.



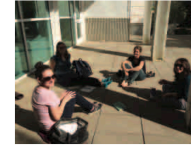
### Our website (www.ucscgeodes.wix.com/home) includes:

- A collection of academic papers related to diversity in STEM
- Resources from past events and calendar of future events
- Earth science-specific funding opportunities and internships
- How to get involved in research for undergraduates
- Poster and presentation tips

GEODES has an instagram (@ucscgeodes), and we inspired our department to create a communal instagram account.

## Lessons learned

- **Advertise, advertise, advertise!**
  - We send multiple e-mail reminders and pepper the department with posters in advance of each event. Word-of-mouth is also very important!
- **Divide and conquer**
  - Our leadership group consists of six graduate students (we are all busy!).
  - Two of us take the lead in planning each event and designating tasks to the others.
  - We have an event checklist to ensure consistency between events and stay organized.
- **Consider how to tailor each event to a variety of groups (undergrads, graduates, faculty)**
  - When advertising to a group, consider what aspect(s) of the event would be most helpful or appealing to them.
- **Get feedback**
  - We solicit feedback from everyone (via e-mail surveys, an anonymous box, etc.) to help improve future events.



### FEEDBACK

"I loved that faculty, grad students, and undergrads were all gathered together." "This offered a unique experience for me." "The [science communication workshop] was incredibly well done. The message box activity and Danica & Alex's presentation really helped me think about my AGU presentation."

"This event was an awesome idea... I learned a lot."

"I liked the informality." "Great space for networking."

## The future of GEODES

- **Upcoming events**
  - Standing up to bias workshop
  - Growth mindset workshop
  - Career panel 2.0
  - Earth science research symposium
- **Expanding leadership**
  - Provide leadership opportunities to new members at any career level
- **Explore additional funding options**
- **Blog!**
  - Our blog will highlight our events and raise awareness of issues/news that we cannot fully address at our events



Contact us!  
 Sarah Begankas: sbegansk@ucsc.edu  
 www.ucscgeodes.wix.com/home

Claire Masteller: cmastell@ucsc.edu  
 www.instagram.com/ucscgeodes