



# ESS Undergraduate Opportunity Panel & Community Discussion

Earth and Space Sciences (ESS)

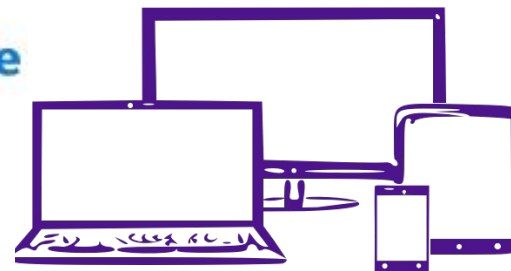
Diversity Equity and Inclusion (DEI) Committee

Use this time to set up  **Poll Everywhere**

Browser: <https://pollev.com/essopportunity>

App: [username essopportunity](#)

Text: [essopportunity to 22333](#)



DEI committee anonymous comment box - <https://tinyurl.com/ESSDEICommentBox>

ESS Advising student advocates - [essadv@uw.edu](mailto:essadv@uw.edu)



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**Students:** You deserve these opportunities, and we encourage you to try out research, lab and/or field experiences!

**Faculty, Grad Students, Postdocs, and Staff with opportunities:** Business as usual presents barriers to many. We must be intentional about how undergrads are recruited and mentored in ESS.

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# Discussion norms help us have authentic conversation while taking care of selves and others & negotiating power relations

- All voices should be heard — listen attentively, participate as you feel able, and share the space
- Acknowledge power dynamics
- Focus on ideas, no directed personal comments
- Engage with curiosity. Seek to understand others' perspectives — yet don't ask individuals to speak for a group
- “Ouch and Educate”: Speak up if you feel uncomfortable or if comments are offensive in some way. Help others to see your perspective.
- Be kind to yourself and others!



# How the chat & discussion will work

If you would like to share a comment or ask a question, please use the group chat

- Type “stack” if you’d like to be called on, or type your question
- Facilitators (Chris Wren) will call on people or read written comments and questions from the chat as time allows
- You can send anonymous comments privately in the Chat to Chris
- We’ll also use PollEverywhere to share anonymous comments

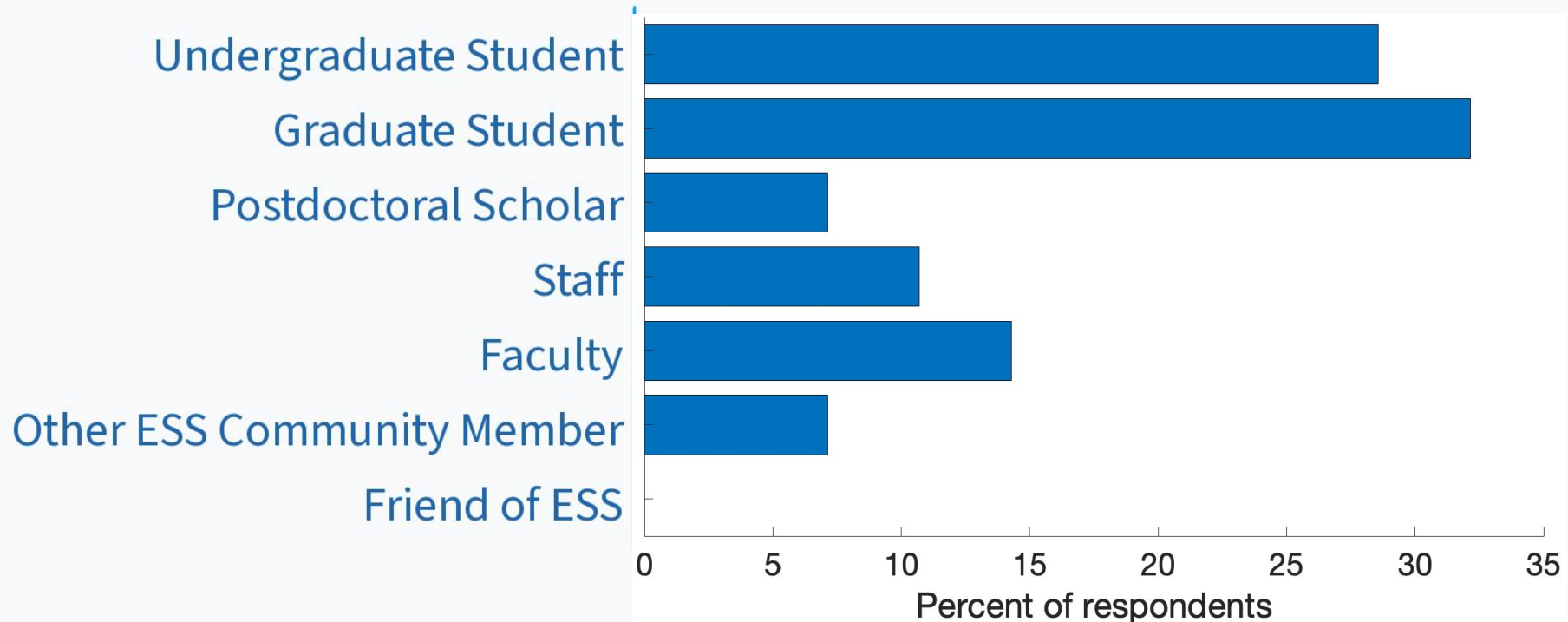
Facilitators today are DEI Committee members Andy Schauer (he/him), Chris Wren (he/him), Kate Huntington (she/her)



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Text **ESSOPPORTUNITY** to **22333** once to join

## W Test out Poll Everywhere. Who is here today?



# What opportunities for undergraduates exist?

## Research ▪ Field ▪ Lab ▪ Data

Assist ▪ Job ▪ Internship ▪ Honors ▪ Volunteer ▪ Travel ▪ Teaching Opportunities ▪ Committees ▪ Office



Drew Gorman-Lewis  
(he / him)  
Faculty

[Cooperative Institute for Climate Ocean and Ecosystem Studies \(CICOES\)](#) ▪ [Space Grant](#) ▪ [Conservation Scholars Program](#) ▪ [Rockin' Out](#) ▪ [GeoClub](#) ▪ [IsoLab](#) ▪ [Main Office](#) ▪ [Burke Museum](#) ▪ [Pacific Northwest Seismic Network \(PNSN\)](#) ▪ [Astrobiology](#) ▪ [Program on Climate Change \(PCC\)](#) ▪ [Quaternary Research Center \(QRC\)](#) ▪ [M9](#) ▪ [EarthLab](#) ▪ [Specific Research Group](#)



ESS Undergraduate Opportunity Panel Discussion





# What kinds of Field opportunities exist for undergrads?

01

## ESS Classes

- Day trips (101, 202, 203, 209, 211, 213, 230, 301, 312, 422, 426, 427, 447, 452, 453, 456)
- Multi-week trips (400/401)

02

## ESS Clubs

- [GeoClub](#) weekend and holiday trips
- [Rockin' Out](#) weekend urban park walks

03

## ESS Research

- Independent Research Project as part of [Honors Thesis](#)
- Research Assistant with an [ESS Research Group](#)

04

## Groups and societies

- [Ice Age Floods Institute](#)
- [Cascade Mineralogical Society](#)
- [Washington Rockhounds](#)
- [Geological Society of America Cordilleran Section](#)



Nolan Conway  
Former ESS  
Undergrad

Joel Gombiner  
ESS Grad  
Student

Elizabeth Horton  
Former ESS Undergrad



# Undergraduate opportunities with the Pacific Northwest Seismic Network



Mickey Cassar  
PNSN Field  
Engineer (He/Him)

[www.pnsn.org](http://www.pnsn.org)

## Opportunities

**Field Work** - Electrical Engineering, Information Technology, & Construction

**Comp Sci** - Web Development, Programming, SysAdmin, & Networking

**Research** - Data Science, Signal Processing, Earthquake Analysis, Volcano Monitoring

**External Engagement** - GIS, Graphic Design, Social Media, & Communications

**Administration** - Project Mgmt, Professional Development, & Data Entry

→ = Undergraduate Employee



ESS Undergraduate Opportunity Panel Discussion

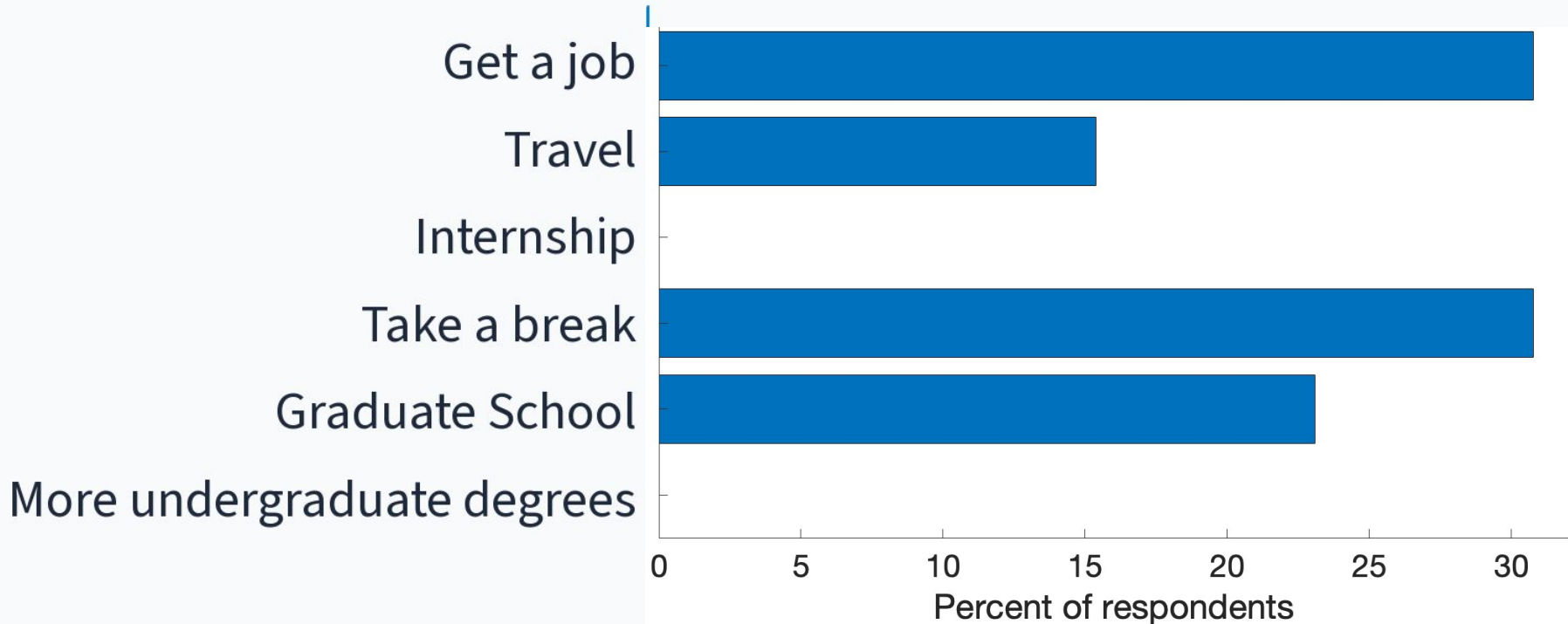




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## W What do you see yourself doing after graduation?



# Why should you consider extracurricular undergraduate activities?



**To get a job to start building your career!!**

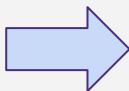


Competitive job market: petroleum, private industry, government (incl. academia, research), resources



Kathy Goetz Troost  
(she, her)  
Faculty - MESSAGE  
Program; Owner,  
Troost Geosciences  
Inc.

Improve  
your  
chances  
of getting  
hired



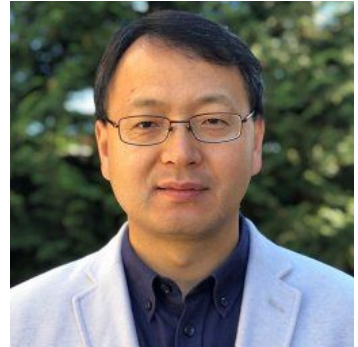
*200 to 1*

- Network, network, network
- Start the steps to get a license (Geologist-in-Training)
- Tailor resume and cover letter to job postings
- Ask for informational interviews
- Top 3 desired traits
  - ◆ Good communicator
  - ◆ Engaging and energetic
  - ◆ Flexible
- Desired skills: tech, math, GIS, unique
- Applied courses and graduate degree
- **Experience**
  - ◆ Field, Lab, Research, Presentations, Volunteer



# How can you find an opportunity?

- Students in my classes: Geochem/Igneous Petrology (12 out of 18)
- Emails to ESS majors (2 out of 18)
- Random emails from ESS students (2 out of 18)
- Work study for homepage development (1 out of 18)
- Emails to CS for homepage development (1 out of 18)

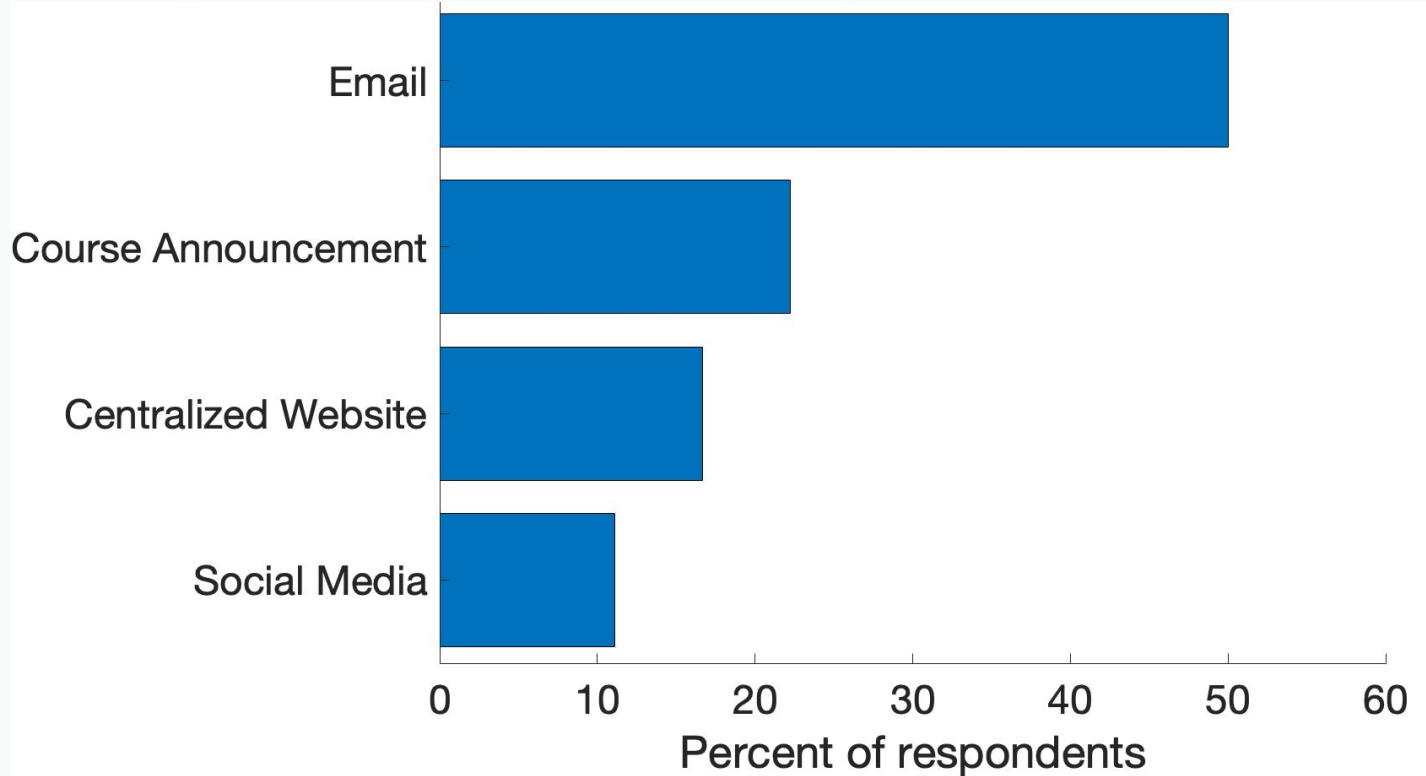


Fang-Zhen Teng  
Faculty





# How can ESS best communicate with you? (e.g. email, facebook, Handshake, LinkedIn, conversation, ...)



Respond at [PollEv.com/essopportunity](https://poll-ev.com/essopportunity) -OR- text essopportunity to 22333 to join session, then text response.

# Sample of ESS Mentors with opportunities

**Cailey Condit** - [ccondit@uw.edu](mailto:ccondit@uw.edu) - Metamorphic petrology, structural geology, geochronology, Tectonics; research projects during the academic year

**Juliet Crider** - [criderj@uw.edu](mailto:criderj@uw.edu) - Structural Geology, Active Tectonics, Geologic records of past earthquakes and crustal deformation, PNW geology, geothermal geology, applied geology research projects during the academic year, short local field projects, interpreting rocks & outcrops, building digital models with structure-from-motion photogrammetry. Specific, near term opportunities co-mentored with graduate student Elizabeth Davis (beginning summer 2021) and post-doc Owen Callahan (beginning autumn 2021).

**Alison Duvall** - [aduvall@uw.edu](mailto:aduvall@uw.edu) - Tectonic Geomorphology (rivers, hillslopes, uplifting and eroding mountains), Active Tectonics and hazards of subduction zones and strike-slip fault systems. Research projects during the academic year, possibly some local field work, GIS and digital topographic analyses.

**T.J. Fudge** - [tjfudge@uw.edu](mailto:tjfudge@uw.edu) - Ice Cores, Glaciers, Past Climate, Scientific Programming Primarily summer internships focused on scientific programming

**Michelle Koutnik** - [mkoutnik@uw.edu](mailto:mkoutnik@uw.edu) - Glacier and ice sheet change, geophysical data, ice-flow modeling, ice on Mars; opportunities for research projects during the summer

**Brad Lipovsky** - [bpl7@uw.edu](mailto:bpl7@uw.edu) - Geophysics and mechanics of glaciers, volcanoes, landslides, and earthquakes. Particular opportunities include: 1. Creative use of optical fibers to study soil moisture, 2. Geophysical studies of recent volcano eruptions in Hawaii and Iceland, 3. Machine learning approaches to interpret remotely sensed observations of glacier sliding and fracturing. Potential to do some fieldwork or not depending on preference.

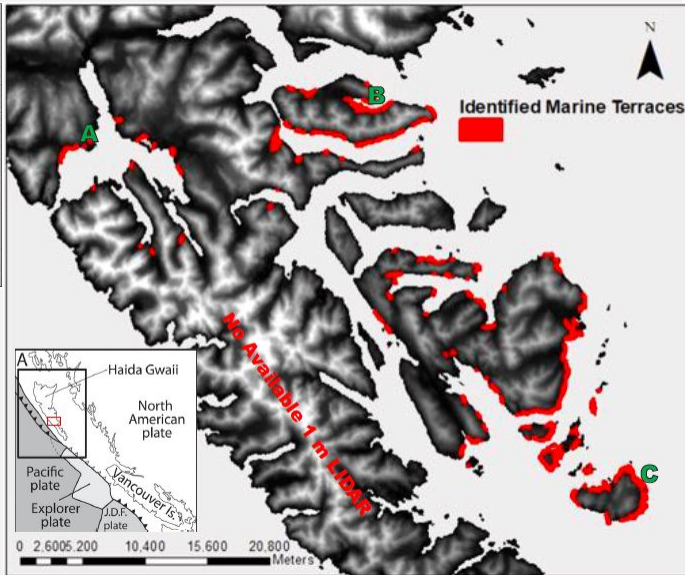
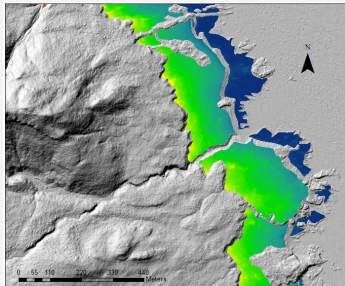
**Fang-Zhen Teng** - [fteng@uw.edu](mailto:fteng@uw.edu) - Isotope geochemistry of Li, B, Mg, K, Fe in planetary, geological and biological processes. Hands on experience in dealing with meteorites, lunar samples, oceanic basalts, cascades arc lavas, granites, loess, shale, carbonates etc. in state of the art clean labs.

**Marine Denolle** - [mdenolle@uw.edu](mailto:mdenolle@uw.edu) - Earthquake seismology. 1) Machine learning in seismology to curate, label, classify PNSN events (surface processes, earthquakes etc). 2) Structure imaging using data collected in Seattle and mapping of the Seattle Fault Zone (ambient noise seismology). 3) Tracking groundwater using ambient seismic vibration in Jakarta. Internships will require proficiency in Python and/or Julia, no field work. Research opportunities are year-round, with a more active mentoring in the summer.

**Drew Gorman-Lewis** - [dgormanl@uw.edu](mailto:dgormanl@uw.edu) - Geomicrobiology and low temperature geochemistry, astrobiology, extremophiles, microbial energetic, microbe-metals interactions, mineral and microbial surface chemistry, mineral dissolution, aqueous complexation chemistry, lab-based research opportunities year-round



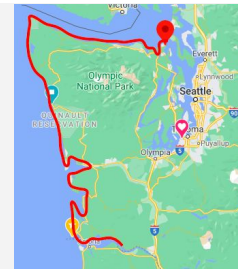
# My experience with Undergraduate Opportunities



Gabby Alampay  
ESS B.S. 2019,  
MESSAGE Student

Stromberg Lab (found using UR Program Database)

- ⇒ Marine terraces research in Alison Duvall's lab
- ⇒ Create and manage subsurface explorations database for Port of Tacoma
- ⇒ Map historical shorelines and find erosion rates along outer coast of Washington (In Progress) w/ WA Dept. of Ecology



# My experience with Undergraduate Opportunities

- Research opp. obtained through Work-Study
  - NRG (MechE Dept.) & PEMP Lab (Psychiatry & Behavioral Dept.)
- Internship opp. obtained through leveraging involvement in extracurriculars such as SHPE (Society of Hispanic Professional Engineers)
  - UPS I.E intern & Belmont Cabinets Mfg.E intern



Edgar Santos Aguilar  
Undergraduate Student  
ESS B.S: Physics



- What I learned:
  - The worst one can say is "no"
  - If an opportunity closes another will open
  - Continuously Network





# My experience with Undergraduate Opportunities

- Joined on a whim because I liked the professor and needed a part time job
- Loved how diverse and welcoming the lab group was
- Enjoyed trying lab work and field work
- It wasn't exactly my passion, but led me to my passion



Gemma O'Connor  
Graduate Student



# My experience with Undergraduate Opportunities

## How I found my research projects

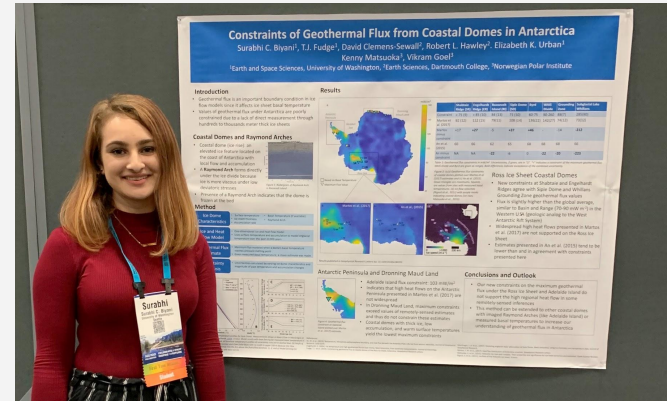
- talking to a professor after class about my interests → working with T.J. Fudge (ESS) on heat flux in Antarctica
- talking to the ATM S advisor about how I wanted to do climate research → working with Dargan Frierson (ATM S) on analyzing climate models
- applying to the NOAA Hollings program → working with Sarah Kapnick (NOAA-GFDL) to project changes in extreme precipitation



Surabhi Biyani  
Undergraduate Student  
ESS/ATM S

## Scholarships/funding opportunities

- Washington NASA Space Grant SURP
- Mary Gates Research Scholarship
- NOAA Hollings Scholarship



# My experience with Undergraduate Opportunities

- GeoClub!
  - Field opportunities
  - Networking
  - Research Ideas
- Don't get stuck looking for the perfect project
- Do whatever looks interesting!
- You can change projects



Kalpana Prasad  
ESS B.S. 2019,  
Graduate Student

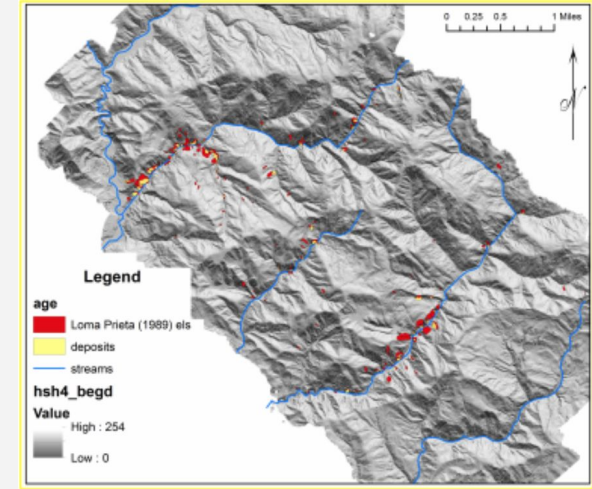




# My experience with Undergraduate Opportunities

## Research and Jobs

- I hunted for my research opportunity around campus and found Alison Duvall. My project: Studying the relationship between earthquakes and coseismic landslides.
- It gave me valuable GIS analysis experience.
- It made me a strong applicant to get my job as a GIS Technician at Apple (via Mindlance)



Natalie Wisdom  
ESS B.S. 2019

## Personal Experience and Diversity

- The geology field lacks diversity.
- I fought my imposter syndrome with a determined “pioneer” mentality.
- Exploring geology through research fueled my curiosity and passion.
- I highly encourage BIPOC, specifically, to undertake research!





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**Faculty, staff, and other mentors: Research shows what works, so take these actions NOW to make a difference!**

# AGU Advances

## COMMENTARY

10.1029/2020AV000353

### Special Section:

Race issues in the Earth and  
Space Sciences

## Counteracting Systemic Bias in the Lab, Field, and Classroom

Emily H. G. Cooperdock<sup>1</sup> , Christine Y. Chen<sup>2,5</sup> , Victor E. Guevara<sup>3</sup> , and  
James R. Metcalf<sup>4</sup> 

<sup>1</sup>Department of Earth Sciences, University of Southern California, Los Angeles, CA, USA; <sup>2</sup>Division of Geological and

“Scientists in leadership roles can immediately address systemic bias in their spheres of influence”





# What questions / comments / thoughts do you have?

- Do any professors have helpful tips for asking for recommendation letters or the timeframe they are willing to write them in (ie a year or two after graduation)?
- What options are recommended to students that graduate this year but don't get into grad school this Fall?
- I have tried to find positions in the past but need to have a paid position. Why are some positions unpaid when others aren't?
- Why are the TA<sup>2</sup> positions not paid? Even with credit compensation, that credit does not do anything to benefit the student
- A professor mentioned how most students from his lab took his class, do other professors advertise open opportunities that they have in their class? Can that become a more normal practice?
- In the sake of transparency, is there a timeline that faculty should consider about posting and hiring? i.e. students are probably coordinating financial aid or jobs prior to starting the quarter, and will lose flexibility at some point
- I feel like it's difficult to apply to REUs and external research opportunities as a sophomore (when most people start applying) because many students are not fully in the ESS core courses and it's difficult to get rec letters because you don't know professors yet. Is there a way to work on professor/student interactions earlier?
- just a comment---i felt I was at a disadvantage coming in as a transfer student with little connection to faculty/the department and only a few quarters to get involved in a lab. It'd be great if there was some sort of ESS transfer student/faculty networking panel.
- Will the ESS lab tour seminar begin again? If so, that should be strongly advertised to freshman, sophomore's, and new ESS students.
- Are there resources for getting research support from the department, college, and university for undergraduates?



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# Resources shared by panelists & others

- For info on geologist licensing in WA: [WA State Licensing](#)
- For info on geologist licensing: [National Association of State Boards of Geology](#)
- For info on Best Practices for Scientific Partnership: [NIH Center for Cooperative Resolution](#)
- For info on Scientific Collaboration Templates: [NIH Questions for Scientific Collaborators](#)
- For info on Student Mentoring Agreements: [Michigan State Implementation Toolkit](#)
- [Undergraduate Research Program Database](#)







# ESS Undergraduate Opportunity Panel Discussion



Earth and Space Sciences (ESS)

Diversity Equity and Inclusion (DEI) Committee

You may share more thoughts with us using this google form:

Post discussion thoughts: <https://forms.gle/yLRAMuCauy3sj1Ss5>

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