STANFORD EARTH
SUMMER UNDERGRADUATE RESEARCH PROGRAM
(SESUR)

Jennifer Saltzman
saltzman@stanford.edu, Mitchell bldg, room 132
School of Earth, Energy & Environmental Sciences
Are you eager to investigate a question or solve a problem related to the Earth, energy, or our environment?

Do you want to explore an idea or an issue that interested you in a class?

Would you like to work with a faculty member and graduate student to learn about the world of research in the Earth and environmental sciences?
Why do research as an undergraduate?

- Develop relationships with faculty/graduate students/post docs
- A way to learn and *create* knowledge
- Address your own curiosity about a topic, or help address a societal need
- Learn resilience, creativity, and problem-solving skills
- Explore a potential career direction
- Learn how to effectively communicate about your work
What is research like?

- Collaborative
- Alternately frustrating and exciting
- Often open-ended
- Requires development of technical expertise and immersion in background literature
- May require field work
- Fun, interesting, and rewarding!
## SESUR Timeline for 2019

<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Summer</th>
<th>Fall Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write proposal</td>
<td>Prepare for research</td>
<td>Work on research</td>
<td>Present research</td>
</tr>
<tr>
<td>Enroll in EARTH 100</td>
<td>Participate in summer program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb 22 application deadline</td>
<td>Selection decisions announced</td>
<td>Jun 24 – Aug 31 Up to 10 weeks</td>
<td></td>
</tr>
</tbody>
</table>

Stanford University
How do I find a project and mentor?

• Look on the website for potential projects. Choose 3 that spark you.
• Send an email message to both the professor and grad student/postdoc. Set up an appointment to talk about the project.
• Shadow the grad student/postdoc.

Self-directed projects

• You must find a faculty mentor who has expertise in your area and has the time to guide you.
• Consider applying for a major grant instead
How do I apply?
Your application is a written proposal including the following:

A description of the proposed project
- What question are you asking?
- Why is a significant or important question?
- How will you address it (experimental design, if applicable)?
- What methods will you use?
- What are your research objectives?

A tentative work plan
- What are you going to do and when? (Week by week bullet points are good) 50-75% data collection, time for analysis

A tentative budget
- up to $7,500 for your stipend ($750 per week, up to 10 weeks)

View examples of successful proposals and submit your own application on the program website
Expectations for SESUR fellows

- Commit to 40 hours/week for 10 weeks of project. Think of it as a full-time job.
- Take EARTH 100 in Spring Quarter (1 unit, C/NC).
- Participate in summer seminar, if on campus.
- Proactive communication with your research advisor.
- Poster and/or presentation. At SURPS or Stanford Earth undergraduate research symposium in fall.
A few recent research projects

• Modeling multiphase magma flow through vertical conduits during short volcanic eruptions
• Health effects of low level metals exposure via well water on the Crow Reservation, Montana
• Satellite mapping of agricultural areas
• Topographic effects on drought stress in California redwoods
• The affective benefits of nature experience: Investigating the role of emotion regulation and modeling the benefits

earth.stanford.edu/2018-potential-projects
To recap…

December/January – [Project descriptions posted.][1]

Winter Quarter – Proposal prep w/advisor – should be collaborative.

   This takes some time, don’t wait!

February 22 (Friday) – [Proposal submission][2]; research fellows selected.

Spring Quarter – Research preparation (enroll in EARTH100).

Summer – Work on research; participate in seminar & field trips.

Fall – Presentation at SURPS & Stanford Earth symposium.

Beyond . . . Present at scientific meetings, publish in journals, develop honors theses, achieve fame and glory

Summer research fellows receive a stipend of up to $7,500
https://earth.stanford.edu/stanford-earth-summer-undergraduate-research-program

bit.ly/sesur

Questions??

THANKS FOR COMING!

Jenny Saltzman
Email: saltzman@stanford.edu
Office: Mitchell bldg, room 132