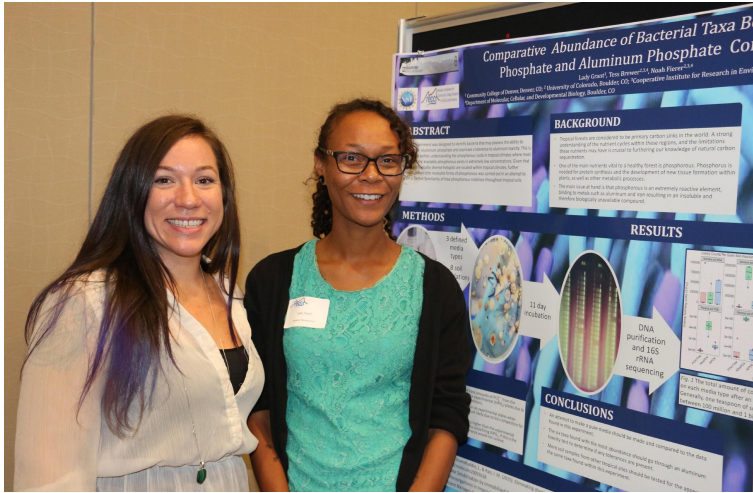


Inclusive Mentoring

Bec Batchelor, Diana Acero-Allard,
Anne Gold



Research shows that students with mentoring relationships are more productive, happier, efficient & successful

We gratefully acknowledge contributions from Dana Stamo (STEM Routes), Val Sloan (NCAR), SOARS and the GEO-REU network to this presentation.



Education
& Outreach

Who are we?

Geolatinas mission is to embrace, empower, and inspire Latinas to pursue and thrive in careers in Earth and Planetary Sciences.

- *Mentoring Initiative*



Diana Acero-Allard
Geologist in Geothermal
GEOLATINAS

<https://geolatinas.weebly.com/>



Who are we?



Rebecca Batchelor
CIRES Education and
Outreach

The banner features a group of students in a field setting, with the text "RUNNING AN REU" in yellow and "GEO REU RESOURCE CENTER" in large white letters. The sidebar on the right contains a navigation menu with a home icon, "Faculty resources", and "GEO REU RESOURCE CENTER" (highlighted). Below the menu is a list of resources: "GEO REU Handbook", "GEO REU Workshop Series", "Moving Online", "Running an REU During COVID-19", "Virtual Professional Development", "Preparing Mentors", "Team-building & Orientation Activities", and "Participant Code of Conduct". The main content area has the heading "RESOURCES FOR RUNNING AN REU" and a paragraph: "Here you'll find resources for principal investigators and site managers on the essentials of running an REU. You'll also find some information for undergraduate students." Below this is a list of topics: "Topics include:" followed by a bulleted list: "Strategies for recruiting students", "Developing inclusive applications", "Training mentors", "Preparing for a conference", and "Writing a résumé or CV". A small image of students working with a weather station is also present.

Who are we?



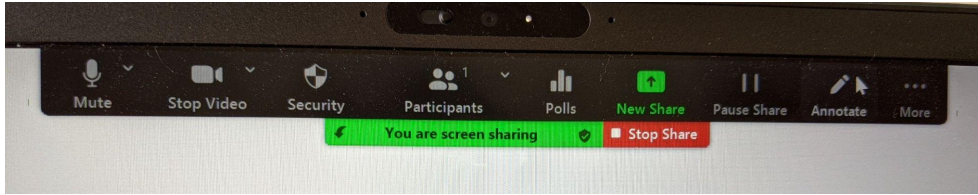
Anne Gold
CIRES Education &
Outreach Program

A screenshot of the RECCS (Research Experience for Community College Students) website. The header features the CIRES Education & Outreach logo and navigation links: About, Programs, Resources for Teachers, Events, and Research & Evaluation. Below the header is a breadcrumb trail: Programs / Reccs. The main banner image shows a group of diverse students smiling. Overlaid on the banner is the title "Research Experience for Community College Students" and a subtitle "A summer research internship program for Colorado community college students". The main content area contains a paragraph about the program: "The Research Experience for Community College Students (RECCS) is a paid summer research internship program open to all Colorado community college students. The goal of RECCS is to give community college students an authentic research experience at CU Boulder, ranked #1 in the world for geosciences. The program allows students to explore environmental or geosciences and gain the confidence to transition to a four-year program in the STEM (Science Technology Engineering Math) disciplines." Below this is another paragraph: "Ten students receive a weekly stipend of \$600 to conduct field- or lab-based independent research over a nine-week period in the summer (usually June 1 - July 31) while working with a team of scientists. Students learn basic research, writing and communication skills, and they present their research at a local student science symposium. 18 students will be joining this summer's hybrid program." On the right side of the page, there is a RECCS logo, a section for "AUDIENCES" with buttons for "Scientists" and "Students", and a "CONTACT" section with a small circular profile picture.

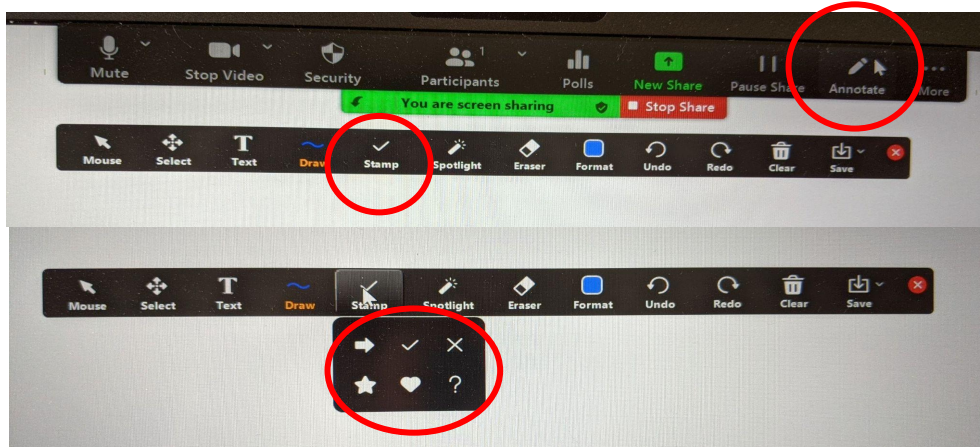
<https://cires.colorado.edu/outreach/reccs>

Where are you at today?

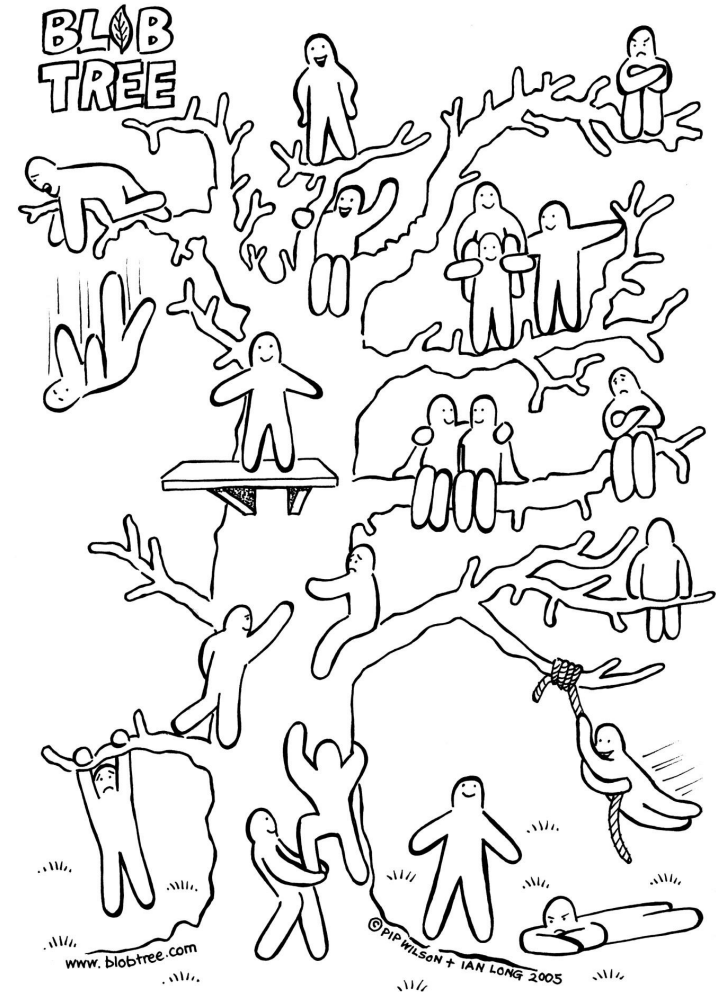
1. Move cursor to top of screen to get toolbar.



2. Select Annotate and then Stamp.



3. Stamp the blob who most connects with you.



Why do you want to mentor?



Mentors don't just advise...



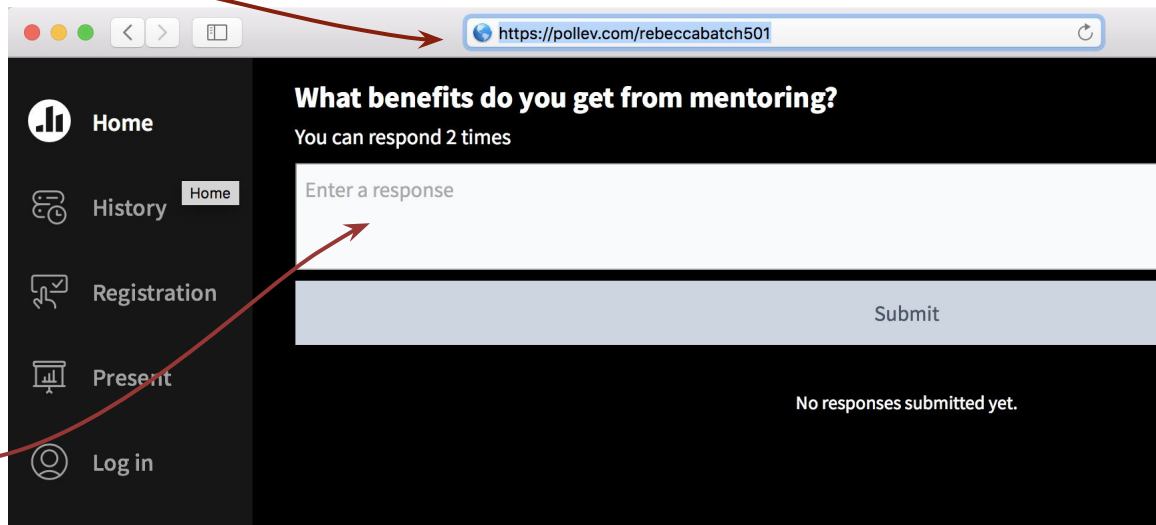
... they open doors

What benefits do you get from mentoring?

1) Enter URL in browser

https://pollev.com/rebeccabatch501

2) Type your response (two submissions)



The screenshot shows a web browser window with the URL <https://pollev.com/rebeccabatch501> in the address bar. The page has a dark theme. On the left is a sidebar with navigation links: Home (with a bar chart icon), History, Registration, Present, and Log in (with a person icon). The 'Home' link is highlighted with a 'Home' label. The main content area displays the poll question 'What benefits do you get from mentoring?' and indicates 'You can respond 2 times'. Below this is a white text input field with the placeholder text 'Enter a response'. A light blue 'Submit' button is positioned to the right of the input field. At the bottom of the main area, it says 'No responses submitted yet.' Two red arrows are overlaid on the image: one points from the instruction '1) Enter URL in browser' to the browser's address bar, and the other points from the instruction '2) Type your response (two submissions)' to the response input field.





Mentoring is a two-way relationship

The key to being a great mentor is to help people become more of who they already are – not to make them more like you”

~ Suze Orman

“Old Style” Hierarchical Mentoring

- Creates the next generation in your likeness
- Advances mentors' research and goals
- Focuses on “handing on” skills, expectations, and ideals



Inclusive Mentoring

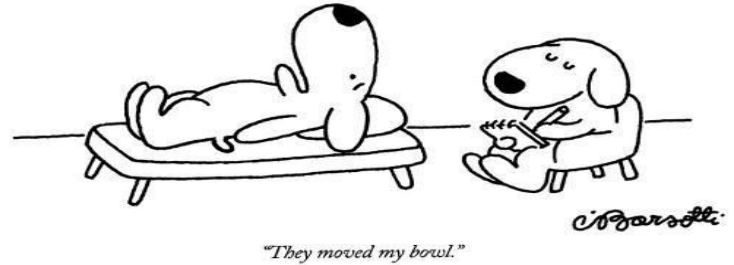
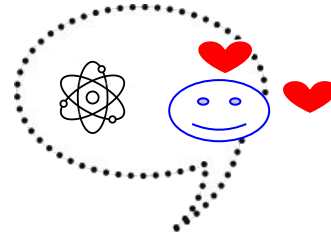
- Is relationship centered
- Values new ideas and creativity
- Holds space for conversation and shared idea generation
- Empowers learning
- Supports bringing one's full self and experiences to their work



Getting to know a science mentee

Mentee to mentor:

- ☐ What got you interested in your research?
- ☐ How do you spend your day?
- ☐ What do you enjoy most about your work?



Mentor to Mentee:

- ☐ What got you interested in science?
- ☐ What matters to you? What motivates you?
- ☐ What skills are you trying to develop?

Be human

What was challenging along your journey?



What do you wish someone had told you way back when?



What scares/intimidates/worries you?

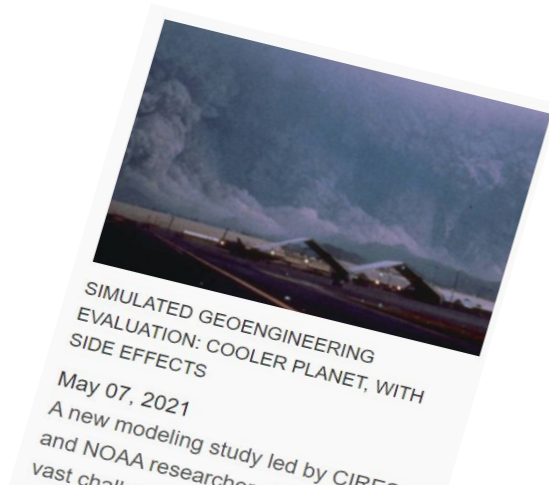
What motivates you?



What do you do in your spare time?

Share your enthusiasm!

- ❑ Share your excitement for the project with photos, videos, news, articles.
- ❑ Ground the work in the big picture - why is this important?
- ❑ Why do you do and love this work?
- ❑ What are some challenges?



Ask curious questions

What has been successful for you so far?

What motivates you?

How do you like to receive praise?



What do you do in your spare time?

What scares/ intimidates/ worries you?

6 KEY ACTIVE LISTENING SKILLS



1. **PAY ATTENTION.**



2. **WITHHOLD
JUDGEMENT.**



3. **REFLECT.**



4. **CLARIFY.**



5. **SUMMARIZE.**



6. **SHARE.**



Center for Creative Leadership®

4 minute break-outs:

Nominate a speaker - that person should spend 1-2 minutes talking about themselves. The other should practice “Active Listening”; you may use body language, but resist the urge to interrupt or respond.

In the next 1-2 minutes the listener may ask curious questions e.g. “Tell me more about ...” “What ...” “How...” “When you said ...”

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Center for Creative Leadership®

How did that feel?

Getting to know each other

4 minute break-outs:

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In the next 1-2 minutes the listener may ask curious questions e.g. “Tell me more about ...” “What ...” “How...” “When you said ...”

Why is active listening important for inclusive mentoring?

5 minute break

Remember back to when you started research...

What worked (or didn't work) for you?

Students as researchers

- ❑ Capable of doing independent (guided) research
- ❑ Infuse energy and new ideas
- ❑ Still figuring out their career paths and whether there is a place for them in STEM
- ❑ Can feel overwhelmed
 - You both benefit from structure!
- ❑ Can really blossom in a supportive environment



How do you eat an elephant?
One bite at a time!

Defining an undergraduate project

A great undergraduate project is one that:

- ❑ feels meaningful
- ❑ is appropriately scoped for the program timeframe (experience suggests a summer project could be done by an experienced researcher in about 1-2 weeks)
- ❑ provides early success (e.g. being able to make measurements or an interesting plot early in the project)
- ❑ offers some alternate end- or extension- options.

Projects should be authentic and offer the student a chance to feel ownership.

Consider the support network

You don't have to do everything! Consider empowering others in your group for:

- ❑ Social support
- ❑ Computing help
- ❑ Writing/poster-making support

Can you connect your student with a cohort?



The first week matters

- ❑ Where will they work?
- ❑ Who will show them around? Have lunch with them?
- ❑ Do they have a computer? Is all the software available?
- ❑ What will they do on their first day?

Most undergraduates are still intimidated and wondering if they deserve to be there

Find ways to show them that they belong

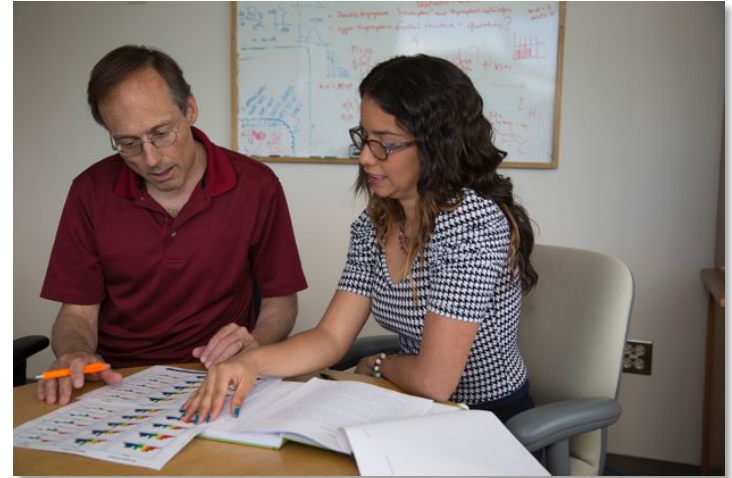


Discuss expectations: yours and theirs

This clears a path for a smoother working relationship.

Work with the intern on making a:

- ❑ Mentoring agreement
- ❑ Communication plan
- ❑ Work plan



Mentoring Agreement

- ❑ Defines expectations
- ❑ Establishes boundaries
- ❑ Provides a fall-back if problems arise

We will share these examples!

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MENTORING AGREEMENT

Research has shown that the most effective mentoring relationships establish clear expectations from the outset. This document is a tool intended to help facilitate a conversation between the mentor(s) and intern to create a communication plan and establish clear expectations of both the intern and the mentor. The form should be completed by the mentor(s) and intern together.

Use these prompts to clarify mentoring expectations with your student:

1. As a mentor, what expectations do you have for your mentee?
(Think about communication, effort, when to reach out for help...)
2. As a mentee, what expectations do you have for your mentor?
3. How often and when will you meet?
4. What platform will you use to meet? Who is responsible for scheduling the meetings?
5. How do you prefer to be contacted outside of these meetings? (Phone, email, chat...)
6. If you are having problems in your research, what should you do?
7. Beyond your research, what topics would you like to discuss (think about careers, academia, work/life balance...)? What are the ground rules for these discussions (e.g. confidentiality, openness, truthfulness etc.)?
8. If problems arise, how will they be resolved?

Communication Plan

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MENTORING COMMUNICATION PLAN

Objective

This document is a tool intended to help facilitate a conversation between the mentor(s) and intern to create a communication plan and establish clear expectations of both the intern and the mentor. The form should be completed by the mentor and intern together.

Professional Conduct

Professional and respectful behavior is expected at all times, including in email and verbal communication between mentors and interns.

Instructions

Fill out this form together, for example, using Google Drive.

☐ Contact information:

Intern name: Email: Telephone:
Mentor name: Email: Telephone:

☐ Methods of communication: The preferred ways to communicate with each other are (email, text, video/zoom, etc.):

☐ Check-in Meetings: How do we want to use our check-ins? (Examples include: prioritize tasks, technical support, updates, challenges, problem-solving, time management, work-life balance, career/graduate school options.)

☐ Frequency: How frequently and when will we check in with each other, to start with? (e.g. daily for 15 minutes, MWF for 30 minutes):

- ❑ Shares contact info
- ❑ Which communication methods are preferred
- ❑ Sets expectations

We will share these examples!

Work Plan

- ❑ Tool for supporting research progress
- ❑ Helps your student learn the process of thinking through research - and reassessing the process as they learn
- ❑ Ensures progress toward deliverables
- ❑ Provides structure for weekly check-ins

NCAR UCAR GEO REU RESOURCE CENTER

WORK PLAN

Objective

This document is a tool intended to help facilitate a conversation between the mentor(s) and intern to create a communication plan and establish clear expectations of both the intern and the mentor. The form should be completed by the mentor(s) and intern together.

Professional Conduct

Professional and respectful behavior is expected at all times, including in email and verbal communication between mentors and interns. Punctuality for meetings and deadlines is also expected. Teamwork and coordination are required.

Instructions

Fill out this form together, for example, using Google Drive.

What's the objective of your research project?

Milestones (project management):

Let's identify milestones to be accomplished as this project evolves:

1: _____

2: _____

3: _____

Think through more intentionally

What task(s) will you need to do in week 1?

We will share these examples!

Guiding the research

- ❑ Think out loud
- ❑ Ask questions that encourage diving deeper
- ❑ Check in frequently
- ❑ Remind them how/when to reach out when they hit a snag
- ❑ Provide frequent feedback (I noticed that...)



What do you find works when you're guiding research?

Optimal learning zone



<http://smallworldadventures.blogspot.com/2013/02/the-kayaking-learning-curve-find-your.html>

Coaching Questions

Your aim is not to solve problems for your mentee - it's to empower them to solve them themselves. Try:

❑ Clarifying questions to seek understanding

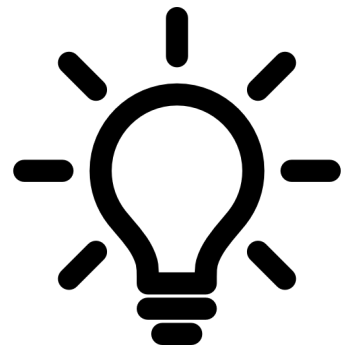
- ❑ *When you say _____, what does that mean?"*
- ❑ *Can you tell me more?"*

❑ Open-ended questions to explore options

- ❑ *What?*
- ❑ *How?*
- ❑ *When?*

❑ Creative questions

- ❑ *Imagine what would happen if ...*
- ❑ *What outcome do you want?*



Provide feedback

Practice kindness!

A feedback method that might be helpful:

- ❑ I noticed that {observe behaviour}
- ❑ When you do this it {explain impact}
- ❑ I would like you to {set expectation}

Try not to impose your own judgement or interpretation on other's actions.

Recognize challenges

- ❑ Racism, microaggressions, bias, harassment
- ❑ Imposter syndrome
- ❑ Money issues
- ❑ Family and health issues
- ❑ Classwork, exams, time
- ❑ Uncertainty about the future

“Your best science happens when you can use your whole brain.”

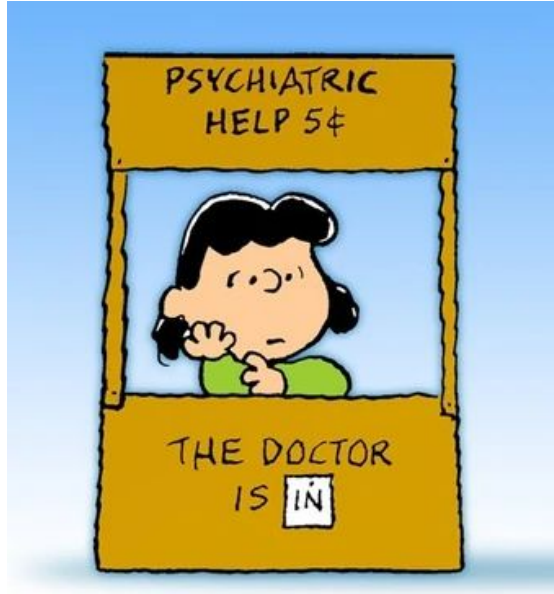


Supporting yourself and your student

More than ever, our personal and professional lives are intertwined.

- ❑ Be open about the challenges of Covid-19 and social justice issues. This is hard for all of us, and it's better to keep that in the open.
- ❑ Be flexible with work hours
- ❑ Check-in often
- ❑ Be prepared for someone getting sick
- ❑ Practice and encourage self-care!

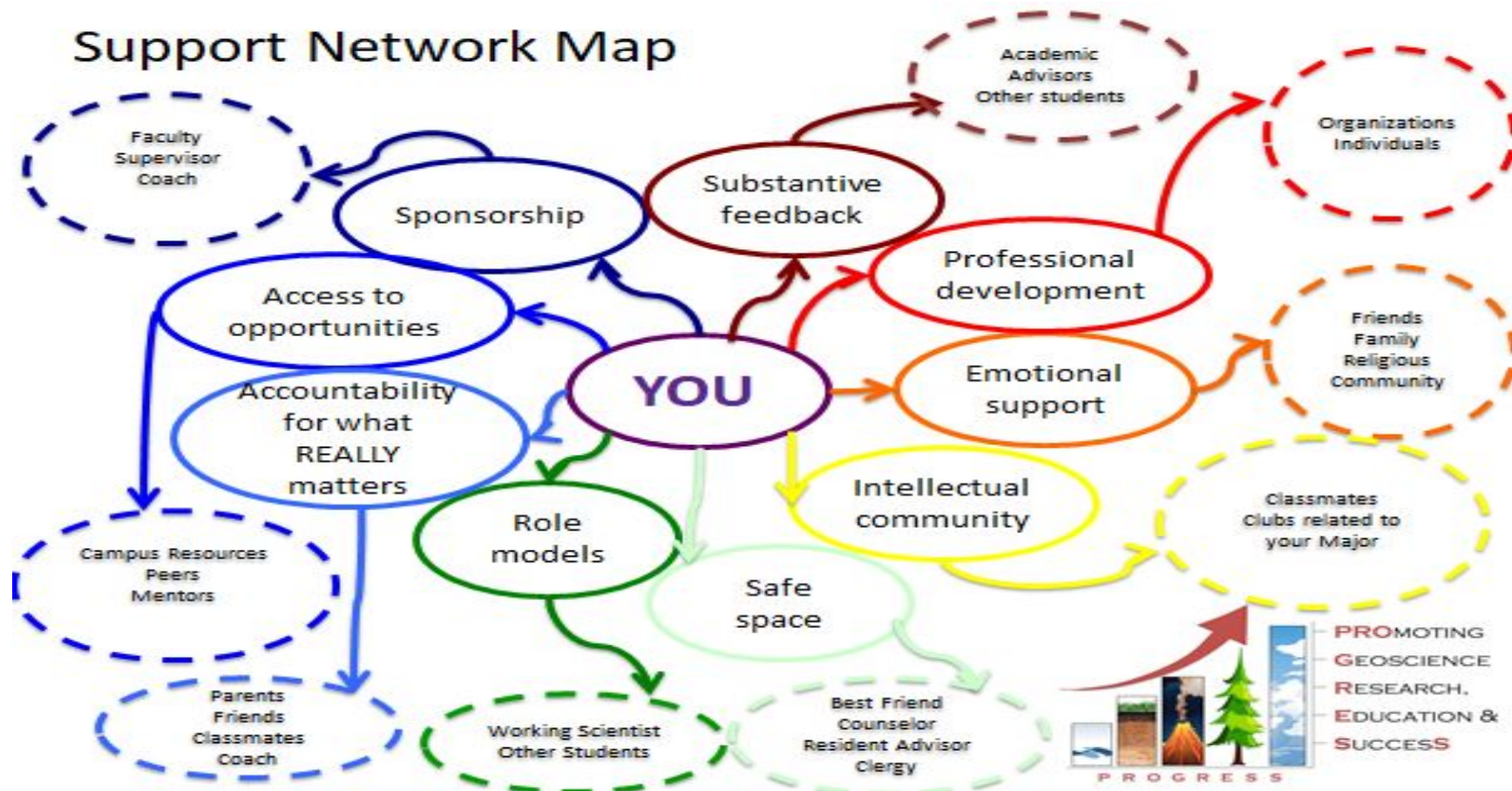
Mentors don't have to be Yoda or Lucy!



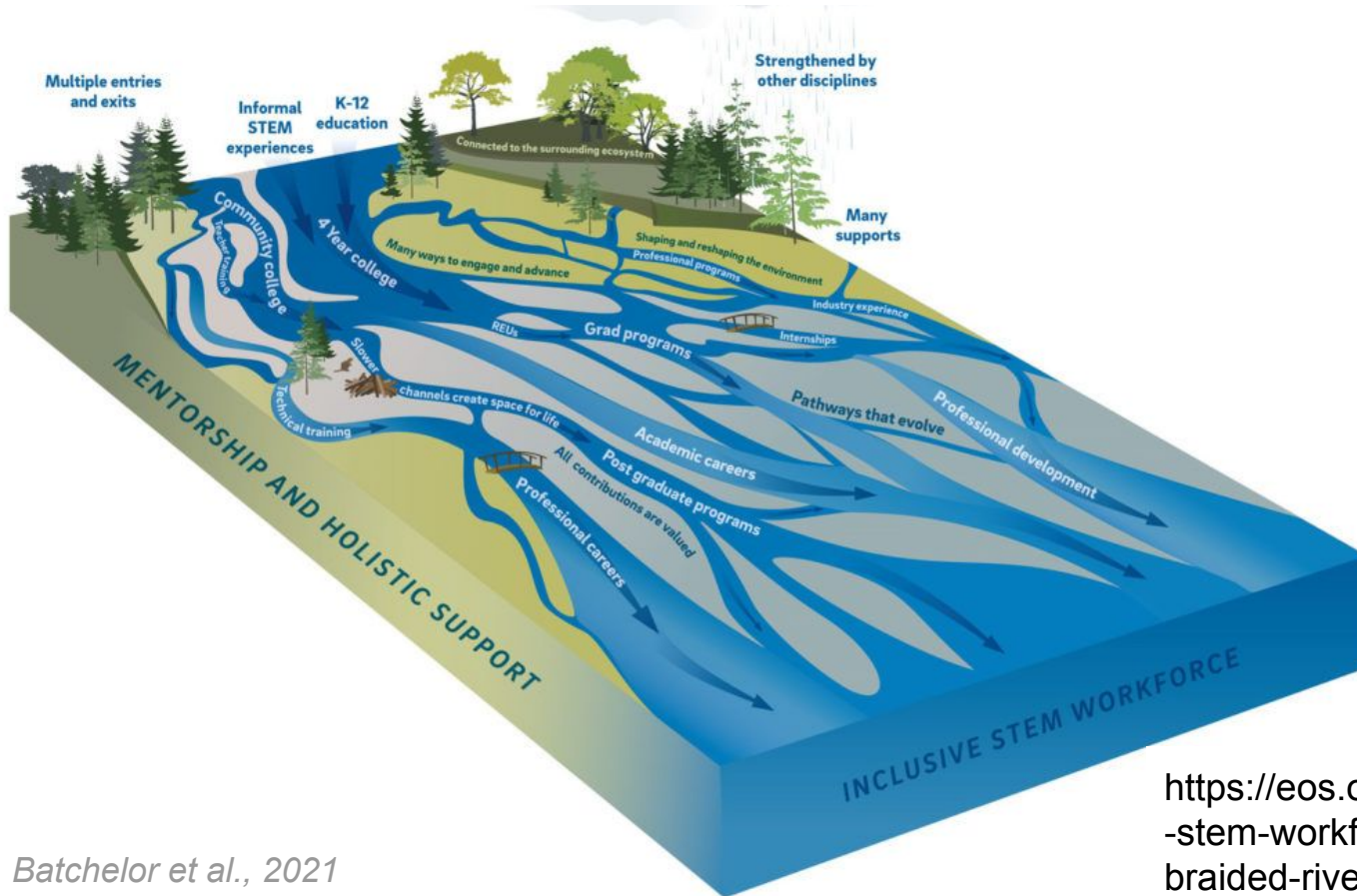
Encourage students to:

- ❑ Get support from friends, family, community
- ❑ Broaden their circle of mentors
- ❑ Provide resources for counseling

Support Network Map



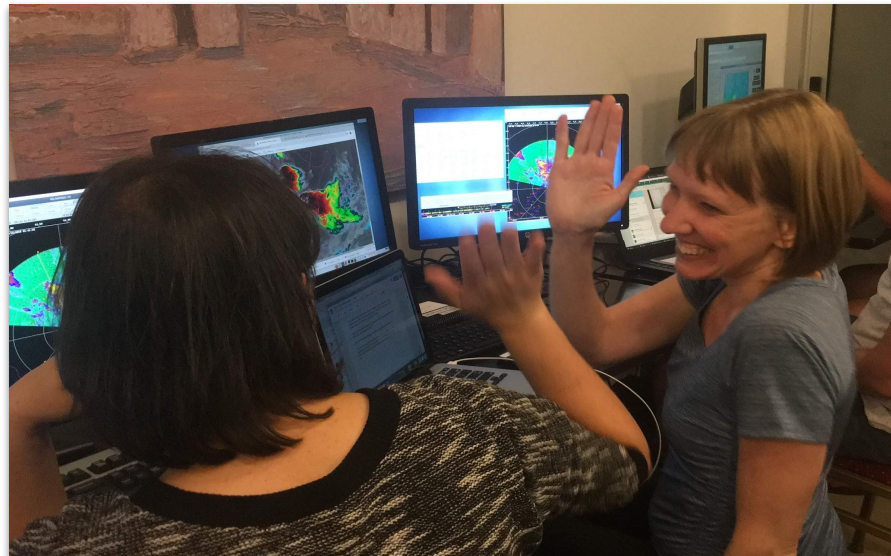
Mentoring is a key part of the braided river



Batchelor et al., 2021

<https://eos.org/opinions/reimagining-stem-workforce-development-as-a-braided-river>

Have Fun!



For more information

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Diana Acero-Allard dianaceroa@gmail.com

Anne Gold anne.u.gold@colorado.edu

GEO-REU Network Resources:

<https://ncar.ucar.edu/what-we-offer/education-outreach/faculty-resources/geo-reu-resource-center>