Economic Petrology Lab: Research Student Guidelines

Welcome to our research group! This document outlines general guidelines for conducting research in petrology and economic geology at California State University, Chico. Please read this document carefully, and if you have any questions, please come and see me. Otherwise, sign and date it, keep a copy for your records, and return the original to me.

Why Collaborate? Almost all scientific endeavors these days are collaborative. This means we both have a stake in the work – you get to learn new skills and play with new ideas, and I get the chance to exchange ideas with you and benefit from your perspective. I also find that working together is more fun than researching alone, which is why I try to set my students up to work on different but related projects, so you have multiple people with whom to discuss your findings, both at lab meetings and in more informal settings.

Responsibilities: The main part of my role is to act as a mentor and provide direction and advice on your research project. I will help guide you with project design, literature search for background information, scientific methods, and writing. I will also work with you on both written and verbal presentation of your work. I can also advise you on your curriculum and I am happy to discuss career goals and strategies as well. My primary objective is to teach you how to do good science, in the context of your specific research project. Your main responsibility is to work diligently to complete your research project well, and within the allotted timeframe.

Your Time: Time management can be very hard: I still struggle with it sometimes! It’s important that you learn how to budget your time here, so that you can finish your degree in the shortest amount of time possible, while still completing good, solid science. Time-management is a skill that will last a lifetime.

You have signed up for either one or three independent study units, which translates to three or nine hours per week. I expect you to be keeping track, and making sure you complete those hours. However, as long as you are completing tasks on schedule and meeting deadlines, I will not pay too much attention to how you are spending your time.

You will develop a schedule at the beginning of the semester (in collaboration with me) that will outline the deadlines and overall expectations for your particular research project. We will have weekly meetings (day/time TBD) and weekly emails (Sunday night, please – add it to your calendar!) to assess your progress and to make sure you have the tools you will need to move forward in your work. I expect you to make an agenda for every meeting so we can be sure to stick to schedule, discuss your last week’s progress, set goals for the coming week and address any concerns.

Research meetings: Group meetings are held weekly at a time TBD (typically on Wednesday if possible). You will be expected to attend and be prepared to share an update on your research findings of the week, to get feedback from me and your peers. Also bring any questions or concerns you have about your findings. We also typically all read a paper relevant to the group’s research and discuss it during the meeting.

Individual meetings occur on an ad-hoc basis as personal situations require. These will give you an opportunity to discuss your progress and any general issues that you need addressed. You are encouraged to send a short agenda ahead of and to come fully prepared for individual meetings; in this way, discussions can be focused such that all concerns are addressed. Individual meetings should be supported by weekly email updates to your principal supervisors on Sunday night. These should contain an overview of: (i) what your plans were for the last week; (ii) work undertaken; (iii) issues arising; and (iv) a forward plan for the next week. Such reports are an important way to self-monitor your progress, as well as keeping me informed of both positive and negative developments.

Field safety: Nothing is more important in the field than field safety. You should never take risks in the field, and you should not work alone in the field unless I am convinced that working alone will not pose a danger to you and you have cleared a specific plan with me. Since our field areas are home to bears, mountain lions and rattlesnakes (along with probably many other things), I will likely never let you go in the field alone.

Depending on the field area, fieldwork can also be an unsafe space for BIPOC researchers, or for researchers who bear visible signs of a minority religion, gender identity, visible disability or sexual orientation.. I will always introduce you to the land owners of any private land we work on. When in the field, you should always carry credentials (photo ID), any relevant permits, your student card, and a letter on letterhead from me that
Sexual language and imagery is not appropriate for the community to conform to the following Code of Conduct:

We do not tolerate harassment by and/or on the basis of gender identity and expression, sexual orientation, age, and/or religion. All group members are thus dedicated to a harassment-free experience for everyone, regardless of gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age, and/or religion. We do not tolerate harassment by and/or of members of our group in any form, and we ask all members of the community to conform to the following Code of Conduct:

- All communication, be it online or in person, should be appropriate for a professional audience, and be considerate of people from different cultural backgrounds. Sexual language and imagery is not appropriate at any time.

And now for the more serious stuff…

**Code of Conduct:** We create our lab culture and our lab culture is inclusive.

**Inclusivity and diversity:** Enjoyable, high-quality research can only be conducted when you feel safe, secure, and supported. All group members are thus dedicated to a harassment-free experience for everyone, regardless of gender identity and expression, sexual orientation, disability, physical appearance, body size, race, age, and/or religion. We do not tolerate harassment by and/or of members of our group in any form, and we ask all members of the community to conform to the following Code of Conduct:

- All communication, be it online or in person, should be appropriate for a professional audience, and be considerate of people from different cultural backgrounds. Sexual language and imagery is not appropriate at any time.
● Be kind to others and do not insult or put down other group members.
● Behave professionally. Remember that harassment and sexist, racist, or exclusionary jokes are not appropriate.
● Harassment includes offensive verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, sexual images in public spaces, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of discussions, inappropriate physical contact, and unwelcome sexual attention.
● Participants asked to stop any harassing behavior are expected to comply immediately.
● Contribute to discussions in meetings with a constructive, positive approach.
● Be mindful of talking over others when discussing in groups, and be willing to hear out the ideas of others.

In addition to making group members feel safe and secure, diversity and inclusivity has numerous benefits to us all. Put simply, the greater the mix of people in our group, the greater the mix of skills, experiences, perspectives, and ideas we can collectively draw on. But the benefits of diversity and equality cannot be fully achieved without creating an inclusive environment.

I will discuss the Code of Conduct with lab members who violate these rules, no matter how much they contribute to the lab group. If inappropriate behavior persists after this initial discussion, formal processes, in line with CSU Chico’s policies, will commence. To report an issue, please contact me; all communication will be treated as confidential. If you do not feel comfortable contacting me directly, please feel free to contact:

  o For harassment incidents related to ethnicities, origins, sexualities, gender identities, religions, ability, body size and other intersectional identities: Travon Robinson (CSU Chico Diversity Officer)
  o For sex discrimination or harassment incidents: CSU Chico Title IX office

Professionalism: Treat others and their scientific ideas with respect and tolerance. It is ok to have a professional disagreement, but do not let the disagreement get personal and always recognize the other person’s right to have their own opinion. Take responsibilities for your own actions and duties. Be willing to ask questions when you don’t know the answer. Help other students when they ask for it.

Cultural diversity can be a sensitive issue and I will try to provide you constructive criticism and I expect that you will provide your fellow students and me the same.

Ethics: I expect everyone in this group to maintain high ethical standards. You already know this, but NEVER compromise or alter data, fabricate results or plagiarize anyone else’s work. But I also expect good scientific practice and standards. Strive for precision, keep complete, accurate, and organized records, and don’t rely on memory. If you are ever in any doubt about what to do about something that might be unethical or just plain shoddy, don’t be afraid to ask for advice.

You also have an ethical duty to acknowledge that our work here is collaborative, and is rarely yours alone. The data, results, samples, interpretations, and other work generated while you are working with me belong to the lab. You may not send our data to anyone or present our ideas to others without my approval. Copy me in all correspondence related to our project. Also, I am collaborating with others who also have a stake in our work, so while it is possible for you to take a project started here to another institution or invite new collaborators, you should only do so with my prior permission and involvement.

Funding: Our research lab does not currently have a large research grant. Therefore, I will expect you to apply for any relevant funding opportunities whenever possible to attend conferences, run geochemical samples and other analyses depending on your project. Obviously, I will help you with this, but please be constantly on the lookout for potential funding opportunities. You should view this as training in a different format of professional writing.

Presentations and publications: I would not write a paper, give a poster, or deliver a talk without acknowledging your contribution to our joint work and I expect the same of you. I encourage you to give presentations (talks or posters) about our work, but you must consult me before agreeing to do so. Please do not submit final drafts of abstracts or print posters without my express approval. This is standard practice in science:
co-authors must approve the release of joint work and should be listed together at the beginning of the talk/paper/etc.

It is my hope that every student researcher who works in this lab is part of a scientific publication (poster or paper). My policy for co-authorship is that you must contribute significantly to at least 2 (and often 3) of the following 4 stages of a project:

1. Conceived original idea and started project (e.g., wrote proposal, obtained funding)
2. Conducted field work, made laboratory measurements, and processed data
3. Synthesized data and interpreted results to the point where a manuscript could be written
4. Got a manuscript/poster into final, publishable form (e.g., written, edited, made figures)

You are encouraged to attend and participate in conferences related to your research. You are expected to register for the conference as a student and in advance to obtain discounted registration fees. When possible, you will fly economy class and book the cheapest accommodation possible. You are expected to share hotel rooms if travelling with colleagues, even if they are from other lab groups. You must book no later than 1 month in advance of the conference, and preferably earlier to obtain the lowest cost travel costs and accommodations.

Conference abstracts must be shown to all co-authors at least one week before the abstract deadline. Upon acceptance of your abstract, you must inform all coauthors as soon as possible. You must also send a final draft of your presentation or poster to all co-authors at least one week before the date of presentation. Ideally, a near-final draft should be completed two weeks before the date of presentation, so that it can be presented at a weekly lab meeting; in this way, you will be able to receive feedback from your colleagues. Note that after material has been presented at a conference, this must be sent, in raw format (e.g. .ppt, .ai) to all co-authors for their records/use within 14 days; if appropriate, this material can be uploaded to an appropriate online archive (e.g. FigShare, EarthArXiv) where it will be assigned a DOI, and will be useable and citable by the scientific community.

**Mental Health:** There is increasing evidence that certain attributes of academic research may challenge your mental health. Specific factors driving this include:

- Low pay and quality-of-life issues
- Feelings of isolation in your research; e.g. everyone has their own topic and it can often feel as if you are working on your own
- Uncertainty in your research, although it should be noted that, in research of all kinds, it is not just the outcomes that are uncertain, but the questions themselves!
- So-called "negative results"; i.e. at some point in your research it is likely that certain questions will be more challenging to answer than anticipated, or that you will feel you have spent days/weeks toiling with little to show
- Burnout; i.e. feeling the need to work endless hours to make up for the above issues, and the subsequent exhaustion

All graduate and many undergraduate students come across most of these issues at some level. I strongly encourage everyone in the group to take an active and pre-emptive approach towards the maintenance of their mental health. If there is anything that is placing undue stress, or preventing you from performing at your potential, please do not hesitate to let me or any of your faculty know how we can help. You should also be familiar with resources on campus. Every effort will be made to help you access the right support networks.

**Ask questions. Tell me what you need to succeed, and what is not working for you.** If you have any questions about these or other topics, please don’t hesitate to ask. Any constructive relationship requires communication to remain strong. My relationship with you is no different. If you’re having problems, if you need help, TALK TO ME! I won’t know if something’s wrong with the way we’re running things unless you let me know. Let’s make this more enjoyable for all of us by keeping the communication open.
I have read this document, understand my obligations, and agree to abide by the policies and procedures set out therein.

Signed: 

Date: 

[Thanks to Todd Halihan, Barb Tewksbury, Kristie Frantz, Tracy Gregg, Lisa Gilbert, and the Basins Research Group at Imperial College, London, for ideas that came from their lab guidelines.]