



RESEARCH GROUP GUIDELINES

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Welcome to the Magmatic and Planetary Processes Research Group! Glad to have you on board. Most students undertaking research (and starting graduate school) wonder what is expected of them, and what they can expect from their advisor. Experiences can differ for each student because expectations and mentoring styles vary from one advisor to the next. This document outlines what I expect of students in this research group, and what you can expect of me and each other. Please read this document carefully and let me know if you have any questions.

Your reasons for undertaking research with me and within this research group will vary and thus will affect how your research experience is tailored so that it may best meet your overall goals. The main part of my role is to act as a mentor and provide direction and advice on your research project. I can provide assistance with project design, a literature search for background information, lab procedures, data analysis, and writing. I will also work with you on giving various types of informal and formal presentations of your work (both written and oral). One of my goals for your research experience within this group will be to train you on how to conduct and communicate science, along with how to carry out your specific research project. This will also include communicating to you opportunities for professional development (e.g. internships, workshops, conferences, grant writing).

In my role as a mentor, I recognize and acknowledge that I may not be able to mentor you effectively in every and all aspects of your academic program and professional development. We are all individuals with our own experiences and backgrounds. That is what makes us unique! During your time here at Miami I strongly encourage you to seek out mentorship from those who you feel can support and mentor you in ways that you need. For example, as a faculty member here at Miami I have several mentors with whom I reach out to regarding different components of my work (e.g., teaching, advising, research, service). Not all of these mentors are in the Department, and not all of these mentors are at Miami.

See also:

Mentoring365, find a mentor/mentor a mentee in the field of Earth and Space Sciences:

https://mentoring365.chronus.com/p/p1/membership_requests/new

Great Minds in STEM via MentorNet: https://program.mentornet.org/user_account_create

Mentors [make a difference!](#) Consider how YOU can best be a mentor to others 😊

Wellness

As humans, we all experience events which are stressful and variably challenging to navigate. I, your research advisor and mentor, strongly affirm that our physical, mental, and emotional health is an integral component of your program here at Miami. Your success as a researcher will strongly depend on your own personal health and wellbeing. I recognize that stress is often a component of being in college and can often be compounded by unexpected life changes external to our classrooms and laboratories. Throughout the semester, I encourage you to reflect on your role in taking care of yourself during the semester, particularly in the lead up to deadlines. I also encourage you to reach out to me regarding any difficulties you may be experiencing that may directly or indirectly impact your performance in this course as soon as possible and before it becomes overwhelming and unmanageable. This will require timely and effective communication. In addition to myself and your academic advisor, I also strongly encourage you to contact other support services on campus.

Inclusion

It is my intent that students from all backgrounds and perspectives be well-served by our research group, that students' research and learning needs be addressed, and that the diversity that we all bring to this group be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: age, country of origin, culture, disability, ethnicity, gender identity, race, religion, sexual orientation, socioeconomic status, veteran status, perspective, and other backgrounds. Your suggestions about how to improve the value of diversity in this research group are encouraged and very much appreciated.

I am in full support of, and a strong advocate for, an inclusive learning environment where diversity and individual differences are recognized, understood, and respected. We expect that all students, faculty, administrators, and staff at Miami will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, and worldviews may be different from their own.

Resources pertaining to Belonging, Accessibility, Justice, Equity, Diversity, and Inclusion (BeAJEDI) are available through the "Resources" tab on my website (<https://mcleodcl.wixsite.com/mapps/resources>). I welcome and strongly encourage the sharing of materials as they pertain to BeAJEDI and will continue to update the resources available as we continue to promote an inclusive environment for all.

All members of this research group are also strongly encouraged to utilize the resources made available via the 2021 Unlearning Racism in the Geosciences ([URGE](#)) program.

Communication

Regarding communication, I ask that you respect each other's time by staying in communication with me and each other effectively and efficiently. If there are materials/documents associated with upcoming deadlines that require feedback from myself and/or peers, [please communicate these deadlines in a timely manner and provide your materials for review and commentary in a timely manner](#).

Any constructive relationship requires communication to remain strong. If you're having difficulties, if you need assistance, 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 work collectively to make all of our research experiences here at Miami an effective, productive, and impactful one by keeping communication efficient. This particularly extends to multi-user spaces (e.g., the mineral separation lab, microscopes, the [Center for Advanced Microscopy and Imaging](#)).

Within our group I also strive to promote a healthy work-life relationship/balance. I understand and respect that everybody's working hours may differ from my own and therefore you should not feel like you "should" respond immediately to an email. All of our email inboxes are incredibly busy and full these days and so it can be easy to miss one (or more!). If you have not received a response to your email within 48 hours, please feel free to reach out to me again. A polite reminder will be well received! Conversely, if I send an email which requires a response, please do so in a timely manner (within 48 hours), or by the date stated (if stated). I aim not to send emails over the traditional weekend (Saturday, Sunday) unless extenuating circumstances warrant it. I encourage you all to take a break from your email inboxes when it fits with your schedules (avoid [email fatigue](#)). I will also aim to [limit communication after 6PM on weekdays](#) (Monday-Friday) via both email and text.

I encourage all of us to learn how to best manage our time so that we may all be successful.

Time: Mine and Yours

The time commitment to research tends to be one of the most important issues for students (and mentors) undertaking research. As long as I see progress towards your goals at a reasonable pace, I will not give much oversight on how you spend your time. Your presence in this research group and/or in your graduate program is dependent upon what I (and your committee) deem to be satisfactory progress through the program, within University and Departmental guidelines. Therefore, it is important that you learn how to budget your time here, so that you can finish your research project in a timely manner (this will be different for everyone!). Time-management is a skill that will last a lifetime.

The ratio of time spent teaching (if you are a graduate student on a GA or an undergraduate in a UA position), taking classes (undergraduate and graduate students), and conducting research (everyone!) will change and will be different for everyone. As long as I see progress of your research, again, I will not check-in on how you are spending your time. I therefore strongly encourage you to [take responsibility for your own progression through your academic program](#). Continual progression towards your final research product will help eliminate last minute panic.

This semester the courses I am teaching are on a M-W-F schedule. I am teaching GLG 111 (The Dynamic Earth) which will meet 08.30AM to 09.50AM in SHD 032, M-F. I am teaching GLG 427/527 (Isotope Geochemistry) which will meet 11.40AM to 1.00PM in SHD 009, M-F. I am teaching Graduate Student Onboarding (GLG 677) which will meet 4.25PM-5.45PM in SHD 009 on W.

I kindly ask that you please try to give me some time so that I may also focus on my research during Tuesday mornings, and on Thursdays. I, like you, also need time to effectively conduct my research. You are of course welcome to email me at any time and you can expect a response within 48 hours (see above).

Research and progress reporting

Be prepared to consider (and revise) several outlines of your research plans with timelines and goals. This is one of the primary ways I can determine whether you are on track or not, and have a clear plan for your research. The length and detail I will ask for will likely vary depending upon your stage in the program. Be prepared to share a brief update on research progress at our weekly meetings.

Undergraduate students – I will work with each of you to discuss your motivation behind conducting research and the extent to which you would like to work towards publishing your work in a peer-reviewed journal.

Masters students – I expect you to create a research product of sufficient content and quality for at least one professional journal publication. I expect a solid draft of the publication to be completed before you graduate. Authorship on these manuscripts will be dependent upon the amount of effort that each author puts into the research and the writing (+ review, revision) of the article.

PhD students - I expect PhD students to work towards the publication (as lead authors) of three original research articles during their graduate careers. I encourage you to have at least two submitted/accepted and one ready for submission at the time of your thesis defense. Authorship on these manuscripts will be dependent upon the amount of effort that each author puts into the research and the writing (+ review, revision) of the article.

All students - It is important that you take detailed research notes, these will be vital for completing your research project and useful to me after you leave. If your work has not been published before you leave here, I may ask that you share any notes (not previously shared) with me until the publication process is complete. The research we conduct in this group is primarily funded by government dollars, university funds allocated to me (and students), funding acquired by students from professional societies, and is therefore ultimately public intellectual property. However, until the work is published, consider the research you generate to be the intellectual property of this research group and Miami University. It is of course perfectly acceptable to engage in intellectual discussions about your research with faculty, other researchers, and students; you will likely find this a very productive activity, particularly at meetings of our professional societies (e.g., AGU, GSA, LPSC).

I believe that all authors of a paper ought to have contributed substantially to it intellectually, and ought to be able to defend it in front of a scientific audience in that field. First authorship requires that you put the majority of the intellectual effort and completed the project, including the writing!

Labs and Resources

Many of you, if not all of you, will utilize at least one of the following lab spaces: SHD 239 (Mineralogy and Petrology Teaching Lab), SHD 146 (Geochemistry Research Lab), SHD 148 (Mineral Separation Laboratory), The Elemental and Isotope Geochemistry Clean Lab, and the Mass Spectrometry Lab, the rock preparation labs, and the Center for Advanced Microscopy and Imaging (CAMI) in Upham Hall. Please pay attention to the points of contact listed outside of these laboratories. We are extremely fortunate here in our department to have 2 full time laboratory managers – Dr. Marion Lytle and Dave Kuentz. As your research progresses, I will work to introduce you to Marion and/or Dave should your research require use of that lab spaces. Both Marion and Dave have many years of experience and I ask that you respect their expertise and laboratory spaces.

Safety always comes first. Always know the safety requirements of the work that you are doing and wear appropriate protective gear for the project that you are undertaking (eye protection, gloves, lab coat and close-toe shoes are generally appropriate for lab work, for example).

- ❖ Keep a detailed notebook/electronic copy of ALL of your research activities. It is vital that you keep detailed lab and field notes. Although it may seem redundant or unimportant at times, it will help you during project, it will help me help you interpret your results, and it will help me use your work to help the next student after you leave. (At least once a month I will refer to notes I made in my lab or field notebooks from years ago).
- ❖ I am confident that you will use our equipment with care and address any troublesome or broken equipment. I understand that equipment breaks, even when used gently and correctly. This is part of research. Always address equipment that is broken or that you suspect isn't working properly. By

'address', I mean organize getting the equipment repaired with advice from me and/or Marion and/or Dave. We may guide you to repair it yourself or to arrange for a professional repair.

- ❖ If other students or faculty want to borrow things from the lab: (1) if it is a common item, leave a note with the person's name and the date it was borrowed in the place of the item or (2) if it is an expensive or difficult-to-replace item, consult with me and/or Marion and/or Dave before lending it out.
- ❖ Safeguard the equipment in our lab spaces by locking all the doors every night and during other extended periods (hours) when the lab will be empty.

Group Meetings (10.30-11.30AM, Wednesdays, SHD 200)

Once a week, for one hour, we will have a group meeting, during which you will give a brief summary of the research you've accomplished during the previous week. During this time I will work to ensure deadlines are clearly communicated (conference abstract deadlines for example). This is an effective way for all of us to keep informed of the work everyone is doing. During these meetings I ask that you respect each other's time and allow each other the time to disseminate what they are doing, you will get your turn! We may also use this time for research group members to practice presentations for upcoming events (e.g., conference presentations, thesis proposals/defenses). I will work to provide an agenda for our meetings in advance. You are welcome to add any agenda items you wish to prior to our meetings.

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 responsibility 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.
- ❖ Criticism can be a sensitive issue. I will always strive to provide you with constructive criticism and I expect you to do the same for others.

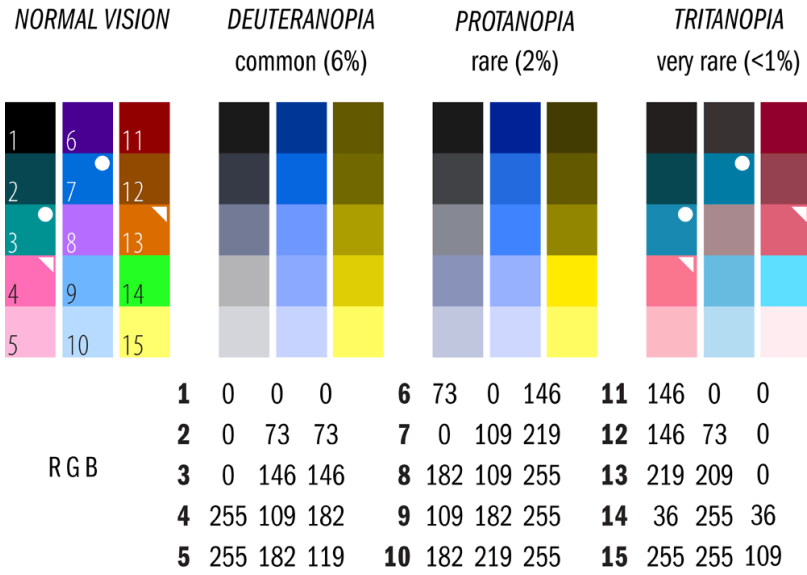
PET PEEVES THAT YOU SHOULD KNOW ABOUT

- ❖ Poor/lack of/absence of communication.
- ❖ Poor/lack of/absence of respect for your collaborators time, guidance, and feedback.
- ❖ Wasting resources (including your time and my time!) Particularly, spending time, intellectual energy, and physical resources on work that you do not complete.
- ❖ When I (or Marion, or Dave, or another researcher) can't find the supplies that we need in the lab to do something because someone used them up and didn't replace them (or tell somebody that something needed replaced).
- ❖ When I find broken equipment that has been put back on the shelf (no note left, no communication).
- ❖ If you lack initiative and/or a willingness to learn to solve problems to the extent you can on your own.
- ❖ I don't read the 'zero' draft – you do. If you haven't read through it, please don't expect me to.
- ❖ Please don't make the same mistake twice/three times/four times – show me that you are learning from your mistakes.
- ❖ [Apply the feedback that you receive](#), particularly with writing. If you take a course with me, you will have plenty of opportunities to practice your scientific writing and receive feedback on it. I fully expect you to transfer that feedback to your manuscript and thesis writing.

Ask questions! Tell me what you need to succeed, and what is not working for you. Also, keep in mind that your fellow students are a valuable resource for getting oriented to the graduate program, and our research group, when you are new. Remember, you are ultimately responsible for the timely and successful completion of your research project, but trying to help you achieve this goal is one of my highest priorities. I expect that you will do an excellent job and I hope that this process is fun and intellectually challenging! Everyone here wants to see you succeed.

When preparing items for presentation, please consider the graphic on the following page. There are an estimated 300 million color blind people worldwide:

15-COLOR PALETTE FOR COLOR BLINDNESS



<http://mkweb.bcgsc.ca/biovis2012>

See also: Katsnelson, A., (2021). [Color me better: fixing figures for color blindness](#). Nature, 598; 224-225