Research Group Policies

This is the first draft of an evolving guide on how to participate in Ryan Abernathey's research group. This document borrows heavily from similar efforts by colleagues such as Katy Huff and Baylor Fox Kemper

Core Principles

1. **Respect others**: abide by the code of conduct.
2. **Work hard**: we are all here because we are passionate about science and want to make a big impact on our field. This requires working with a sense of urgency.
3. **Communicate with the group**: participate in group events, be present at the office, and be available via communication channels.

4. **Take care of yourself**: your physical and mental health is paramount.

These principles are explained in more specific detail below.

Respect Others: Code of Conduct

All Columbia university employees and students must understand and comply with the University's policies and procedures regarding harassment and discrimination (for employees; for students). Prof. Abernathey is a **mandatory reporter** and will report any incidents of harassment or misconduct that violate these policies. In addition to these formal procedures, our group adopts additional informal guidelines on conduct adapted from the Left Logic code of conduct which may go beyond the University's policies.

Our group is dedicated to providing a harassment-free conference experience for everyone, regardless of gender, gender identity and expression, age, sexual orientation, disability, physical appearance, body size, race, ethnicity, religion (or lack thereof), or political views. We do not tolerate harassment in any form. Sexual language and imagery is not appropriate in any professional context, including group meetings, individual meetings, conferences, online communications, and work-related social events. Anyone violating these rules may be temporarily suspended or permanently expelled from the group, at the discretion of the group leader Ryan Abernathey.

Work Hard: Roles and Expectations

Working hard means applying consistent, focused effort to your research in a serious, professional way. It means working with a sense of urgency appropriate to the intellectual challenges posed by the Earth system. It **does not** mean putting in unreasonable, unsustainable hours, leading to unhappiness / burn-out. Below we enumerate specific responsibilities and expectations for different roles within the group.

PI Responsibilities

As the group leader, Ryan has a unique and challenging range of responsibilities.

1. **Define the Overall Research Directions for the Group**: Identifying the important problems is one of the hardest and most crucial aspects of scientific research. It requires an awareness of the overall state of knowledge in the field, plus creativity and plenty of luck.
2. **Obtain Funding**: Scientific research is expensive! A single Ph.D. student or postdocs costs more than $100K per year. A central role of the PI is to obtain grant funding to support our work, without which no research could happen.

3. **Provide Scientific Mentoring**: It is the PI's responsibility to help the junior members in the group develop into mature, independent scientists, capable of defining and executing their own research programs.
4. **Set Goals and Timelines**: The PI can help give structure to your project by defining specific milestones and timelines for their completion. Some people prefer to be closely managed in this way, while others may prefer a more hands-off approach.
5. **Provide Feedback**: The PI is expected to provide feedback on all aspects of research, including defining hypotheses and formulating questions; identifying specific methods and technical approaches; identifying relevant datasets; writing and debugging scientific code; producing figures and visualizations; managing data; and writing and editing papers. Feedback is also available on course selection, overall career goals, and long-term strategy.
6. **Oversee the Publication Process**: Published paper are the main output of our team. The PI can help identify when results are ready to publish, select which journals to target, and help manage the ups and downs of the revision process.
7. **Define the Technical Approach**: Software and computing are very important to our group. The PI is working hard to provide a software and hardware environment that enables everyone else to be as productive as possible.
8. **Provide Moral Support**: Graduate school, and research in general, can be an emotional roller coaster. Ryan has been through these challenges personally and is always available to listen and provide advice.
9. **Provide Material Support**: You are never expected to spend any of your personal finances on anything related to research. All conference travel, computer supplies, books, etc. etc. can be paid for with grant support (see item 2 above). These expenses should be coordinated via the PI.
10. **Provide Recommendation Letters**: You need them for almost every career move.
11. **Sign Stuff**: There are lots of signatures needed to navigate the bureaucracy.
12. **Departmental Service**: The PI has lots of responsibilities to the department, including attending department meetings, participating in committees, and serving on student masters meetings / qualifying exams / thesis proposals / thesis defenses.
13. **Community Service**: The PI is expected to participate in professional organizations (e.g. AGU, AMS) and review papers and proposals on an ongoing basis.
14. **Teach Classes**: Oh yeah, as a professor, the PI's main job is to teach at least one course for semester, which occupies a large fraction of available time and effort.
15. **Do Personal Research**: On top of the above, believe it or not, the PI still has his own personal research projects which he occasionally attempts to find time to work on.

One point of enumerating these responsibilities is to emphasize that the PI has a great many demands on his time, which must be managed carefully.

Postdoc Responsibilities

Postdocs are relatively free of responsibilities and have the experience to function independently. (That's why everyone else is jealous of postdocs.) On the other hand, they have to face the uncertainty of the job market...

1. **Produce Research**: As a postdoc, you are a research machine. Your number-one job is to crank out new scientific discoveries!
2. **Write Papers**: You are expected to take the lead on writing the papers that describe your research.
3. **Attend Conferences**: This is a key part of getting the word out about your research. It's your responsibility to identify conferences of interest and submit your work to them.
4. **Produce Reusable Data / Software**: In our group, we believe strongly that research is more than just papers. You are expected to share the outputs of your research (data and software) in a way that makes them reusable by the rest of the group and the rest of the field.
5. **Share your Expertise**: By this stage of your career, you have accrued substantial expertise in several areas. Share your knowledge by letting us know about new papers, giving feedback on others' work at group meetings, etc.

6. **Mentor Others**: The more junior members of the group will benefit immensely from your mentorship, and you will gain valuable experience along the way. Take the initiative to develop these relationships.
7. **Plan for the Future**: A postdoc is a temporary position; yours well end before you know it. Think about your career goals and make a concrete plan for obtaining your next job; we will do everything we can to support you.
8. **Communicate with the Group** and attend group meetings. (See Communication section below.)

Grad Student Responsibilities

Grad students have a complex range of responsibilities to manage. Learning to deal with it all is part of the journey of graduate school.

1. **Stay in Good Standing**: it is YOUR responsibility to understand all of the formal requirements of the graduate school and the department, and to stay ahead of all deadlines regarding registration, paperwork, qualifying exams, committee meetings, etc. The DEES Guide to the PhD Program is an essential reference in this regard.
2. **Be Professional and Organized**: Develop a system that works for your for managing your responsibilities, coursework, and research. This is one of the biggest challenges of graduate school. Unfortunately there is no formula that works for everyone.
3. **Stay on Top of your Coursework**: The beginning of grad school is dominated by classes. You should strive to get as much as possible out of your coursework and connect it to your research wherever possible.
4. **Develop Independence**: Your goal is to become an independent scientist. This means you should not hesitate to pursue your own ideas as they arise. Go to as many talks as you can to learn new things! Read (and re-read) papers in your field and outside it. Download that dataset and analyze it! Run that new model! Don't wait to be told to do things. Take the initiative.
5. **Focus on your Research**: Your research is *the most important* part of your grad school experience. It should be your main priority, and you should approach it with the seriousness and professionalism you would a full-time job.
6. **Develop a Research Plan**: In consultation with your advisor, you should come up with a long-term plan for your research, with clearly defined milestones and goals. Each week, you should have a short term plan for exactly what to work on to move towards those goals.
7. **Produce Reusable Data / Software**: In our group, we believe strongly that research is more than just papers. You are expected to share the outputs of your research (data and software) in a way that makes them reusable by the rest of the group and the rest of the field.
8. **Ask Questions!** If something is unclear to you–either a science question or a procedural / administrative issue–it is *your responsability* to speak up.
9. **Communicate with the Group** and attend group meetings. (See Communication section below.)

Vacation and Expectations for "Being Present"

One of the great advantages of working in academia is the flexible schedule. But this flexibility can also be a curse. There is a reason why business require their employees to show up every day at nine: this is how work gets done. Our situation is additionally complicated by the fact that we split time between the Lamont Campus and the Morningside Campus. Here are some general guidelines to help define what it means to be "at work":

- Aim for a 40 hour work-week *on average*. Academic work often occurs in bursts. Sometimes you are happy and excited to work an 80 hour week as you are on the cusp of a major breakthrough. You can balance these periods of intensity with slower-paced weeks at another time.
- Generally plan to be at Lamont for most of the day on Monday, Wednesday and Friday. These are when seminars and group meetings tend to be held. Being present in the office is important for building relationships with you colleagues and for the spontaneous generation of new ideas.

- Be available on communication channels all business days (Monday - Friday) during business hours (9am - 5pm).
- Feel free to work remotely occasionally as it suits your personal and professional life. For example, if your family lives abroad, you may wish to spend a week or two working from their country. *This should be the exception, not the rule.*
- Be clear about when you are really on vacation, as opposed to working remotely. (See section on self-care.)
- Students and postdocs should take **4 weeks of vacation per year**. The official university GSAS policy stipulates 10 days for grad students, but this is likely not enough.
- Travel dates for vacation and non-vacation remote work must be approved by Prof. Abernathey. These requests should be made via email at least one month before any planned travel.

Communication

Channels

Our group uses several channels of communication. You are expected to participate in all of them.

1. **Email** is an unavoidable part of the modern world. All important official correspondence will happen through email. Check it regularly.
2. **Slack** is our preferred mode of communication within the group. It's a way to discuss things more interactively and informally than email.
3. **Github** is where we store and discuss all things software-related. Everyone should have a github account.

Group Meeting

Group meetings are currently held every other Monday at 11:30 AM at Lamont. This time may change from semester to semester to accommodate the changing schedules of group memebers. Everyone should attend group meeting as much as possible. If you have a conflict which prevents you from attending, let Prof. Abernathey know ahead of time.

Self Care

Your physical and mental health are crucial to your well being as a person. These should always take priority over your studies and work. Conversely, a satisfying and respectful work environment is an important factor in your mental health. Science can be an emotional roller coaster. Exams, paper reviews, fellowship applications, and job searches all involve being judged, which often causes anxiety. There is growing awareness in academia that graduate students are at high risk for depression and anxiety. If you feel you are facing mental health challenges, don't be ashamed–you're not alone!

With this in mind, our group strives to do everything possible to support students and ensure a healthy work-life balance. The vacation and workload expectations defined above are a big part of this. Don't overwork! Some other tips, based on experience, are the following:

- Maintain a healthy sleep schedule.
- Pursue interests and hobbies outside of your work. These help releive stress. They also benefit your research! Stepping away from your problem and letting your mind wander elsewhere is, counterintuitively, a great way to stimulate creative thought.
- Develop a support network among your peers. They understand the struggle!

If you feel like you need help, don't hesitate to contact Columbia Counseling and Psychological Services