McKinley Group Professional Guidelines (rev 4, 8/2025)

This document outlines the roles, responsibilities, and expectations for the McKinley Ocean Carbon Research Group at Columbia University and the Lamont-Doherty Earth Observatory[i]. If you have any questions or concerns, now or at any time in the future, please reach out to Professor McKinley.

Core Principles

1. **Understand responsibilities**: Know your job, be cognizant of the jobs of others
2. **Professionalism**: Science is our full-time job. Conduct yourself professionally and in a manner that allows you to be focused during work hours.
3. **Communicate and Meet Effectively**: Participate in group events, be present on the Group's in-person days, and be available via communication channels.
4. **Take care of yourself**: Your physical and mental health are essential.
5. **Respect others**: Abide by the code of conduct.

1. Responsibilities

PI Responsibilities

Professor McKinley has a range of responsibilities in Research, Teaching and Service.

1. **Define the Research Directions**: Identifying the important problems is critical for scientific research to be as useful as possible for understanding and application by society.
2. **Obtain Funding**: Scientific research is expensive! A Ph.D. student or postdoc costs more than $120K per year. The PI must obtain grant funding to support our work; without it, no research can occur.
3. **Maintain Research Infrastructure**: The group requires computing resources. It is the PI's responsibility to provide this.
4. **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.
5. **Set Goals and Timelines**: The PI will help to define specific milestones and timelines for their completion. All group members must remain aware of these guidelines and refer to them frequently.
6. **Provide Feedback**: The PI is expected to provide feedback on all aspects of research, as well as educational directions (courses, etc.).
7. **Oversee the Publication Process**: If research never finds its way into a published product, then what you've learned is lost; i.e., publishing is essential. Helping you to navigate the peer-review process is an important role of the PI.
8. **Support Research Costs**: Conference travel, computer supplies, books, etc. should be paid for with grant support, or other appropriate University sources. Expenses must be discussed in advance with the PI.

9. **Service and Management at Columbia**: The PI has lots of responsibilities: participating in Department and University meetings and committees, including graduate student committees.
10. **Professional Community Service**: The PI is expected to participate in professional service, including a variety of committees, panels, and advisory organizations, and to review papers and proposals on an ongoing basis.
11. **Teaching:** The PI is responsible for teaching and managing one course per semester.
12. **Do Her Own Research**

Researcher Responsibilities

Researchers in the McKinley Group support Professor McKinley in research and in seeking funding.

1. **Produce Research**: You will do much of the essential data crunching that leads to the papers that we write.
2. **Write Papers**: You are expected to take the lead on formulating and writing papers.
3. **Attend Conferences**: You should identify conferences of interest and submit your work to them. Discuss funding needs with Professor McKinley in advance.
4. **Make your Research Reusable**: Research is more than papers. Share the outputs of your research (data and software) in a way that makes them reusable by the rest of the current and future group, and the broader community of scientists is also encouraged.
5. **Help with Obtaining Funding**: Help with developing and writing proposals, and with annual reporting on funded projects.
6. **Share your Knowledge with the Group:** In addition to attending Group Meetings, share your skills, papers of interest, etc.
7. **Mentor Others**: The more junior members of the group will benefit immensely from your mentorship, and you will gain valuable experience as a mentor. Take the initiative to develop these relationships.
8. **Support Relationships with Other Groups**: The continued connections of our research group to the modelers, data product providers, SOCAT, Global Carbon Budget leadership, etc. is very important.

Postdoc Responsibilities

Postdocs are free of teaching and administrative responsibilities and also have greater scientific independence. They also have the challenge of a short tenure in their position.

1. **Produce Research**: As a postdoc, you will focus fully on your research. This includes learning new skills and new areas. Your goal is to accomplish as much research as possible.
2. **Write Papers**: You are expected to take the lead in formulating and writing papers.
3. **Attend Conferences**: You should identify conferences of interest and submit your work to them. Discuss funding needs with Professor McKinley in advance.

4. **Make your Research Reusable**: Research is more than papers. Share the outputs of your research (data and software) in a way that makes them reusable by the rest of the current and future group, and the broader community of scientists is also encouraged.
5. **Share your Knowledge with the Group:** In addition to attending Group Meetings, share your skills, papers of interest
6. **Mentor Others**: The more junior members of the group will benefit immensely from your mentorship, and you will gain valuable experience as a mentor. Take the initiative to develop these relationships.
7. **Plan for the Future**: A postdoc is a temporary position. Commit time to thinking about your career goals, make a concrete plan for obtaining your next job, and take advantage of Professor McKinley and other Columbia people and resources.

Graduate Student Responsibilities

Grad students have a range of responsibilities to manage as they navigate their transition from student to professional scientist over the course of their PhD program.

1. **Be Organized**: Develop a system that works for you to manage your coursework, TA responsibilities, and research. Schedule meetings in advance and always be on time.
2. **Stay in Good Academic Standing**: it is the student's responsibility to understand all formal requirements of the Graduate School and the Department and to meet deadlines regarding registration, paperwork, qualifying exams, committee meetings, TA positions, etc. The DEES Guide to the PhD Program is an essential reference in this regard.
3. **Stay on Top of your Coursework**: The beginning of graduate 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 Scientific Independence**: Your goal is to become an independent scientist. This means you should pursue your own ideas as they arise. Explore what interests you, and what seems to address important science questions. Go to talks that seem "unrelated", learn a new skill. Read (and re-read) papers in your field and outside it. Download a new dataset and analyze it. Take initiative.
5. **Focus on your Research**: Your ***research is the most important*** part of your grad school experience. It should be your main priority.
6. **Develop and Continually Track your 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. Of course, delays are normal, so do not despair! Instead, focus on understanding what the barriers are and working with your advisor and other Group colleagues to brainstorm solutions.
7. **Make your Research Reusable**: Research is more than papers. Share the outputs of your research (data and software) in a way that makes them reusable by the rest of the current and future group, and also the broader community of scientists is also encouraged.
8. **Ask Questions!** If something is unclear to you–either a science question or a procedural / administrative issue–it is your responsibility to speak up.
9. **Service - don't overcommit:** You will find opportunities for service within the LDEO-Columbia community (organizing seminars, serving on committees, etc.). People do have

to step up or these important activities won't occur, and the experiences can build valuable connections. But remember that these activities are not in your job description, and they should take only a small percentage of your time. Please discuss such opportunities with Professor McKinley before your commit.

10. **Understand that graduate school is very different from undergrad.** Graduate school is a ***job*** that mixes traditional classes with an apprenticeship in professional science. This mix shifts over time from more of the former to exclusively the latter. A notional plan for a 5-year program in Professor McKinley's group.
    - Year 1: Lay the foundations (i.e. classes) and get introduced to the research process
    - Year 2: Continue building foundations, and produce initial novel research results
    - Year 3: Bring your initial research to a publishable level; submit a first paper
    - Year 4-5: Begin to ask your own research questions, formulate the science plan, conduct the research, complete two papers

2. Professional Expectations

Professionals work hard on their professional tasks. Working hard means applying consistent, focused effort in a serious way. For the work we do, it also means applying ourselves with the sense of urgency appropriate to the intellectual and societal challenges posed by the ocean and the climate. However, it **does not** mean putting in unreasonable, unsustainable hours, leading to unhappiness or burnout. Below, we enumerate specific responsibilities and expectations for different roles within the group.

Working Hours

One of the great advantages of working in academia is the flexible schedule! But this flexibility can also be a curse. Critical hours can easily be wasted due to late mornings, early departures, and the ubiquitous distractions of the internet, an exciting University environment and all the NYC has to offer. Our situation is additionally complicated by the fact that we split time between LDEO, Morningside and since 2022, the Innovation Hub. Furthermore, the continued adjustment of the LDEO-Columbia community to a hybrid work approach introduces additional complexity.

Here are some general guidelines to help define what it means to be "at work":

- You should work 40 hours per week *on average*.
- These 40 hours are those hours in which you are doing your work, in a class, in a seminar, or in a research meeting. Some people do manage to focus on the subway or LDEO shuttle, but please be honest with yourself about working effectively during your commute.
- During the academic semesters, plan to be at LDEO every Friday. Other good days to be there are Monday or Wednesday. Professor McKinley plans to be at LDEO on most Wednesdays and Fridays in Fall 2025 and looks forward to seeing you there. These are also when seminars and group meetings tend to be held. Although Zoom is now ubiquitous, there is really no replacement for being present in the office to build relationships with your colleagues and spark new scientific ideas.
- Please be at the Innovation Hub on Thursdays to connect with the LEAP community and attend the seminars at noon.

- Working from home, on a Columbia campus, or elsewhere in NYC where you can be productive is what is expected.
- Be available on communication channels on all business days (Monday - Friday) during business hours (9:30 am to 5:30 pm [+-30min]).
- If you have a personal or professional reason to work remotely for a few days (or weeks in the summer) from elsewhere, this is another flexibility that can often be accommodated. This should be discussed in advance with the PI.
- Paid Leave
    - Graduate students and postdoc appointments differ in this respect, based on their union contracts (Postdocs, Graduate Students *in re-negotiation in Fall 2025*)
        - Postdoc paid leave
            - 23 days of vacation per year
            - 11 University Holidays + 3 personal days per year
            - No separate sick leave allotment
        - Graduate Student paid leave
            - 10 days of vacation per year + 11 University Holidays
            - 7 days (56 hrs) paid sick leave per year
        - There may be other types of leaves to which you are entitled (maternity, bereavement, …). Please refer to your union contract or contact the DEES office (for students) or the Human Resources Department as needed.
    - Professor McKinley does not need to approve you to take a sick day or to take the afternoon for a personal matter. As long as absences are on the order of 1 day, please just use your good judgment.
    - If you need to be out for several days due to illness or personal matters, please do check in.
- Vacation and working remotely are not the same thing – you don't need to work if you are on vacation, but if you are working remotely, you do need to work. Be sure you clearly distinguish these in your own mind and stick to your plan.
- Travel dates for vacation and non-vacation remote work should be approved by Professor McKinley. These requests should be made via email before you make travel reservations.

3. Communication and Meetings

Channels

1. **Email** can certainly be a burden, but it is essential for both official and research group communication. Check it several times per day.
2. **Slack** is increasingly a key communication tool. Please check it regularly.
3. **Github** is useful for software sharing, and is increasingly how this Group passes down valuable research scripts and knowledge.

Group Meetings

In Fall 2025, meetings are Mondays at 10-11am at LEAP. This time will change from semester to semester to accommodate changing schedules. Everyone should attend group meetings in-person every week. If a conflict arises, please notify Professor McKinley in advance.

Group meetings provide an important opportunity to learn from and support one another. An active and interactive discussion is the best way to learn! Be on time and come prepared to actively contribute in these meetings. Group meetings provide a safe environment for asking questions, presenting new ideas, and actively participating in the joy of scientific learning and discovery.

Individual Meetings

Professor McKinley will, at minimum, meet with each group member every other week for 30 minutes, in-person. If additional meetings are required, please reach out and we will find a time.

Please be on time. If you are just 3 minutes late, this is a 10% time loss.

To make sure you get the most out of each meeting with Professor McKinley, you should create ***an agenda*** that outlines the topics you want to discuss. Generally, your agenda should start with a review of the agenda itself. If there are urgent administrative issues, they should be addressed next. Then quickly review your long and short-term goals. Then let's discuss research - ideally, we can spend most of the time on discussion of scientific findings. Conclude by planning for the next steps and addressing any outstanding issues. You are responsible for managing the meeting time against the agenda.

To make our research discussion effective, it is essential to plan it in advance. Research discussions often arise from examining plots of data or model output. With modern software, it is easy to create many plots, but plots alone are not science. Plots must be carefully selected and integrated into a logical narrative that advances your research. In advance of any meeting, take the time to carefully consider what you want to communicate, and then select a few key points. Creating some slides can be a good way to ensure you are carefully selecting.

4. Mentorship

Mentors are crucial for everyone at every professional stage. Professor McKinley intends to be a mentor to everyone in the group, but she is not the only mentor. Many group members provide research mentoring to others. This deserves explicit recognition.

When you work with an undergraduate, MS, or new graduate student on research, then you are acting as their “Research Mentor”. Include this as a professional activity on your CV.

If you have questions about what is appropriate, please bring them to Professor McKinley.

5. Self Care

Your physical and mental health are essential to your overall well-being. These should always take priority over your studies and work. Conversely, a satisfying and respectful work environment is a crucial factor in maintaining 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 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.

- Be efficient during the hours you are working, but then close your laptop and relax.
- Maintain a healthy sleep schedule.
- Pursue interests and hobbies outside of your work. These help relieve 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.

6. Code of Conduct

All Columbia University employees and students must understand and comply with the University's policies and procedures regarding harassment and discrimination (See Columbia University Policies https://universitypolicies.columbia.edu). Prof. McKinley is a **mandatory reporter** and will report any incidents of harassment or misconduct that violate these policies.

Our group is committed to creating 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 political views. We do not tolerate harassment in any form. Sexual language and imagery are never appropriate in any professional context or related social event. Please bring any concerns to Professor McKinley.

Respect is, of course, far more than "don't harass." Respect requires creating an environment where people of all backgrounds and personalities feel comfortable and welcome in scientific discussions. This means being conscious of how we talk to each other and leaving space in conversations for everyone's voice. Please monitor yourself to ensure you are not interrupting, talking over others, or otherwise dominating conversations. If you have any concerns or questions, please discuss them with Professor McKinley right away.

[i] Credit – Thanks to Professor Ryan Abernathey for his guidelines that served as a great starting point.