Welcome to the Kravitz Research Group

Expectations, Goals, and How We Work Together

A guide for incoming MS and PhD students

Hello and welcome to graduate school! This is going to be a big part of your life and will help set you up for your career. I want you to be successful here, whatever that means for you. So it's important that we have a discussion about what we expect from each other.

This document is meant to serve as a starting point for that conversation. It describes what I hope you'll get out of your time here, how I like to work, and what you can count on from me. Please read it and come ready to talk about your own goals and expectations. Nothing in here is set in stone, so if something doesn't work for you or if you think there's something missing, I want to know about it.

Where We'll End Up

The journey of graduate school takes you from being a student to a colleague. The primary way we do that is teach you how to carry out independent research. Research is a skill — you can and will learn how to do it. More specifically, by the time you finish your degree, you will have accomplished the following.

All students (MS and PhD):

- Carried out the process of research in atmospheric and climate science to answer scientific questions about the Earth system.
- Developed foundational knowledge of how the Earth system works and how its components interact, with a focus on atmospheric and climate science.
- Developed advanced skills in generating and/or working with atmospheric and climate data.
- Demonstrated the ability to effectively communicate your research to scientific audiences, both in writing and in person.

PhD students (in addition to the above):

- Have become a world expert in a specific area of atmospheric and/or climate science.
- Demonstrated the ability to conduct independent scientific research, including generating scientific questions and hypotheses, and addressing them with the scientific method.

My job as your advisor is to help you meet these goals. There is no formula for doing so, because everyone is different. But we will figure out a path together.

You probably also have goals of your own. Maybe you want to be a researcher in academia or at a national laboratory. Maybe you want to go into consulting, work for a nonprofit, or do something else entirely. Whatever your answer is, I can't guide you well unless I know where you want to

end up — and I won't know unless you tell me. Your answer can change at any point, and that's completely fine. But we need to know generally what direction to head and revisiting that question regularly is part of how we'll work together.

It's natural to wonder: how will we know when you're ready to graduate? I've seen many people go through this process and have gone through it myself, so I know some things to look for. But two practical signs are worth keeping in mind:

- You are publishing papers.
- You have more ideas than time to carry them out.

Working with Me

What Makes a Good Fit for This Group

There is no single profile of a successful graduate student, and I do not expect perfection. That said, students who thrive here tend to share a few qualities:

- **Curiosity.** A genuine desire to understand how the atmosphere and climate system work — not just to complete assignments, but because the questions themselves are interesting.
- **The ability to make steady progress toward a long goal.** Graduate school involves sustained effort over months and years, often without a clear roadmap. The ability to keep moving forward, even when things are uncertain or slow, is essential.
- **A commitment to communicating your work.** Science that isn't communicated doesn't advance the field. Publishing papers and presenting at conferences are not optional extras — they are central to what it means to be a scientist.

Meetings

We will meet one-on-one once a week. Sometimes you won't have a lot to talk about — maybe you've been sick or studying for a test — that's okay. Just remember that these meetings are yours. You can come with an agenda, questions, results to discuss, or problems you're stuck on. I'll also bring things to discuss when I have them. The goal is to make sure you're making progress, getting feedback, and not spinning your wheels.

Every semester we'll have a longer check-in to discuss your progress, goals, and timeline. Think of these as checkpoints rather than evaluations. I'll prompt you to think about these things with a Google form that I will send out at the beginning of every semester.

Communication

For quick questions or non-urgent matters, email or Slack work well. For things that need more back-and-forth, or if something is time-sensitive, schedule a time with me or bring it up in our

weekly meetings. If you're stuck on something and a five-minute conversation would unblock you, just ask — don't wait a week for our regular meeting.

My goal is to respond to emails within a day. But things happen. If I haven't responded and it's been a while, a nudge is completely appropriate.

Work Hours and Flexibility

I care about your output, not your hours. There is no requirement that you work a fixed schedule or be visible in the office at particular times. What matters is that you are making consistent progress on your research, meeting your commitments, and taking care of yourself.

That said, graduate school is a full-time endeavor. If you're struggling to make progress or feeling overwhelmed, I want to know about it early — not after things have compounded. Flexibility is a two-way street: I'll give you room to manage your own time, and I ask that you keep me informed if something is getting in the way.

Lab Culture

This group works best when everyone feels comfortable asking questions, admitting uncertainty, and sharing work-in-progress without fear of judgment. Science involves being wrong a lot before you get things right — that's normal, and it's how you learn. I want this to be a place where you can take intellectual risks.

I also expect everyone to treat each other with respect — your fellow graduate students, undergraduate researchers, visiting scientists, and collaborators. Being collegial, generous with your time when others need help, and contributing to a positive lab environment are not optional. They matter.

If you are ever uncomfortable about something in the lab environment — whether it involves me, another student, or something else — please bring it to my attention. If that doesn't feel possible, the department has resources to support you.

How Do We Get There? Your Thesis

PhD Students

The traditional PhD thesis is a single, entirely independent investigation compiled into one document and submitted to your committee. This is now considered an old-fashioned approach, and I do not recommend it. I did this myself, against my advisor's recommendation. My experience:

- It was a massive undertaking — I did everything from start to finish with little feedback along the way.

- It required about six months of near-exclusive focus, including three solid months of writing.
- Even though I already had several published papers, my thesis was not publishable as-is. I had to substantially rewrite it to turn the work into publications.

The more common — and more effective — approach is to build your thesis around three papers. This lets you break your central question into manageable pieces, get feedback at each stage, and produce tangible, recognized work as you go. By the time you defend, your contributions to the field are already documented.

My expectations for a successful PhD thesis are:

- One published paper, one submitted paper, and one paper that is close to submittable.
- All three papers connected by a common theme, articulated in an introduction and literature review.
- A synthesis (conclusions) section discussing what you have learned as a whole and what future directions your work opens up.

The thesis concludes with a public defense. This is a chance to present your work to a broad scientific audience, field questions, and demonstrate that you have become an independent researcher. It's a milestone worth celebrating.

MS Students

My expectations for a successful MS thesis are one paper that is submitted or close to submittable. The same principle applies: the paper is a tangible product that demonstrates your ability to carry out and communicate scientific research.

There is no expectation of a public defense for MS students, but we can schedule one if you would like.

My Commitments to You

Advising is a relationship, and like any relationship, it works best when both parties are clear about what they're bringing to it. Here is what you can expect from me:

- **Timely feedback.** When you share a draft, a figure, or a piece of analysis with me, I will aim to give you substantive feedback quickly. It will help if you have a caption or short description to go along with figures so that I know what I'm looking at. Remember, you're the expert in what you created, and I'm often looking at it for the first time.
- **Availability.** Our weekly meetings are one of my highest priorities. I might have to move them sometimes because something urgent comes up or I need to be on travel. But if you want the time with me, you're entitled to it. If something urgent comes up between meetings and you need to talk, reach out and we'll find time.

- **Honest assessment of your progress.** I will tell you clearly how you are doing — including when I have concerns. You should never have to wonder whether you are on track. If something isn't working, I will say so early, so we have time to address it.
- **Support for your career goals.** Whether you want to stay in academia, go into industry, work in policy, or do something else entirely, I will do my best to help you get there. That means giving you advice, connecting you with people, and making room in your training for skills that matter for your path.
- **Advocacy.** I will actively look for opportunities to support your development — conference travel, funding, collaborative projects, and introductions to colleagues in your area. I can't always make things happen, but I will work to open doors.

A Note on Your Expectations

This document describes my expectations for you and my commitments to you. But advising works best as a dialogue, not a monologue.

Before or during our first meeting, I'd like you to think about what you need from an advisor in order to do your best work. Some questions to consider:

- How do you prefer to receive feedback — in writing, in conversation, or both?
- How much structure and direction do you need, versus independence and space to explore?
- Are there things that have helped you thrive in past academic or work settings?
- Are there things that have gotten in your way?
- What does success look like to you, personally, at the end of this degree?

You don't need to have polished answers to all of these. The point is to start the conversation. My goal is to advise you in a way that actually works for you, and I can't do that without your input. These expectations can evolve over time — what you need as a first-year student will likely be different from what you need in year three or four, and that's as it should be. Just make sure that when they do evolve that you tell me.

I'm looking forward to working with you.