

What is the purpose of this document?

I sincerely enjoy working with students! I have been appointed as an affiliate assistant professor in OU's School of Meteorology. Occasionally I have paid research positions, but I also mentor students through programs like the NWC REU, NOAA internship programs, or via research under grants and funded projects. In my work with students or mentees, I aim to be clear about what my expectations are for our time working together. This document acts as an introduction and summary of expectations and a way for us to begin develop our working relationship clearly. This content is adapted from [Dr. Mary K. Salcedo](#).

Research Can Be Confusing: When do I ask questions?

In agreeing to start a research project, my goal is to begin training you as a scientist. We will ask questions that may not have clear answers. We will perform experiments that may not work. In science, things are not always straightforward. However, one of my goals is to equip you with skills to confront confusing aspects of science and find an answer. This research relationship thus requires that you ask questions, and ask them often! A quick guide on when to ask questions:

- 1) We are starting a new portion of a project
- 2) I am explaining code, software, anything mathematical
- 3) You're confused
- 4) I said something that wasn't complete or clear
- 5) You've started a task, worked on it a bit, but are more confused than ever*

*Independence is a *learned* skill. I do not expect you to work independently right away. Even if you completely understand a research task, I would rather you ask a question than sit staring at a computer for hours and hours. I *do expect questions* and I *expect you to try a task first*. However, if you've been trying for 30 min–1hr and you haven't figured something out—let's talk!

Communication - Early and Often

I break often with students and colleagues to chat about school, work, research, life, and more. You are welcome to come by (though my office is behind NOAA locked doors) to chat whenever you need or want. If I am busy, I will reschedule with you. My policy is early and often! I want to help you achieve your research goals and learn new things on the way. If you are ever struggling, and we need to readjust expectations, know that you can come and chat.

How to Address Each Other

In professional settings (e.g., in a conference talk or in front of a class), I prefer to be addressed as Dr. Smith. I do not require you to address me as such on a day-to-day basis. I am comfortable with first names, so Elizabeth or Liz (seriously, either is fine) work. Just please use my earned title when we are in a professional setting worthy of it. One good way to check this is if you find yourself using professional titles for others. For example: Dr. Jones, Dr. Miller, and Liz is *not* cool. John, Mark, and Liz is totally cool. My name is phonetically pronounced uh-LIZ-uh-beth Sm-i-th

How do you prefer to be addressed?

Please spell out your first/last name phonetically

Pronouns and Identity

My pronouns are she/her. If you choose to disclose your pronouns, please list below. If not, I will do my best to just use gender neutral language. Please note that lab members may use specific pronouns and if they make it clear or correct you, to please adjust to their preference.

_____ (Some examples: they/them, she/her, he/him)

My Relationship with Students

As an early career scientist, there is potential that the age gap between me and my students is small. This can be awkward to maneuver for both parties. In general, I am interested in getting to know students as humans and colleagues, not only as subordinates. I am open and willing to follow individual student's preferences on how that looks: some students may be interested in a social relationship outside of work (e.g., social media connections, social outings in the community, etc.) while others may prefer to cultivate a professional relationship only. Within reasonable and appropriate bounds, any combination of these two extremes can be our goal and *will not impact the amount of effort or focus I direct toward you and your work.*

Generally, what are your preferences for the style of our working relationship?

Working Hours

I typically work an 9:00-5:30pm schedule, but it does vary some. I understand different folks find different working hours and patterns that work for them. I am generally flexible with this; however, I strongly prefer you do not adopt a permanently nocturnal schedule. The National Weather Center is a unique facility, and part of that is the collocation of some many units employing so many experts in meteorology. Being present, visible, and part of the community offers additional opportunities for growth and learning. Additionally, I like to be able to see students fairly regularly.

Weekly Updates

In a research relationship with students I prefer a weekly update in some form. This can be a scheduled in person meeting, or in an electronic format such as email or Slack. In these updates, I expect to learn most* of the following:

- 1) What you've done in the last week, what you've noticed, any questions, and how you're feeling about the project so far. This can include updates on what else you do outside of specific research tasks (e.g., course work loads, applications, etc.).
- 2) If you've made new progress in your research, it is helpful to share 1-2 slides (created in Keynote, Powerpoint, or Google slides) that have pictures, clear text and convey what you've been working on*

- 3) Any challenges you've faced in the week, challenges you foresee in the coming week, and what I can do to support you moving forward

*You're welcome to write and create more than specified.

Reading Scientific Papers

An important part of the science process is figuring out if your questions and research interests are unique. We often search this out by using Google Scholar as a search engine with key words like, "turbulence" "convection" "observation." In the beginning, I may ask you to read a particular scientific paper (or a few), and tell me what you learned. This is meant to get you up to speed on our research and make sure you learn how to digest information from scientific writing, which I will expect you to become more independent in with time. (See also Tips and Tricks)

How long does it take to read a paper?

If you are trying to understand EVERYTHING a scientist did, it can be anywhere from 1-3 hrs of detailed reading. However, not every paper requires that -- or is fully worth your time. In the beginning, **I will specify how** I want you read a paper, but later I will expect you to learn to make this choice on your own. For example, I will sometimes ask you to use a "skimming" process where I want you to briefly read a paper (15-25 min) by first:

- 1) Read the abstract -- what's the main takeaway?
- 2) What features or phenomena are the authors focusing on and why?
- 3) Can you identify their major questions in the first few paragraphs of the paper?
- 4) Skip to the end, read the Discussion -- do they give a more detailed takeaway?
- 5) Go back and look at each figure, reading captions
- 6) Ask yourself: Why did Dr. Smith give me this paper/Why did I choose to read this paper? How is it applicable to my current research task?
- 7) Write 3-5 sentences or bullet points with what you learned and why you it's useful for your research task* (these notes are useful in a paper management software such as Zotero)

*By the end of our research relationship, I hope that you will figure out how you best read papers and what "detailed" versus "skimming" means to you as a scientist. It's different for different people!

What if I don't understand a paper?

One, it might be outside your current breadth of knowledge, but also, it could be poorly written. Some papers may be tough to get through, but have some knowledge nuggets or really awesome figures. Don't assume you can't understand. Sometimes scientists write terrible papers...and they do get published. We can talk about it!

Student Email Policy

I expect timely responses to emails. Depending on the relationship, email or slack is the primary way I communicate with my students if not face-to-face. If I send you an email, please respond within 1-3 days, *during your working hours*. If I am trying to coordinate scheduling, please try to respond within a day.

Dr. Smith's Email Style

Occasionally I may send you an email on the weekends or outside of my usual working hours. However, I **do not** expect you to drop what you're doing and answer. Personally, I will do my best to respond to you within 1-2 days. I am often much faster (within the hour), but sometimes work requires some leeway.

What if I've emailed Dr. Smith and she has not responded?

While I would love to respond to every email in a timely way, sometimes work and numerous other emails clog my inbox. I'm only human! If you need a response quickly, please re-send your emails, daily if necessary. **If you're ever worried about bothering me—you're not.** If a topic is urgent, please use URGENT (in all caps) in the email subject line, followed by the topic (example: URGENT: letter of rec due Dec 1st!). Urgent topics could include: Paper deadlines, letters of recommendation deadlines, personal emergencies. By marking "urgent" it means you need a response VERY soon (within a day or less). It also brings it to my attention more. If we're on Slack together, feel welcome to message me there also.

Letters of Recommendation

In a research relationship, communication is key. To write a strong letter of recommendation for your future endeavors, I need to know who you are as a scientist. How have you grown as a scientist in our time together? What's your thinking process? **Note, a strong letter of recommendation does not hinge on whether or not your research "succeeds."** Research projects will often go awry, especially in short time frames, such as a semester or a summer. My letter will take note of how you dealt with those situations, and hopefully you asked questions, sought help or collaboration, or tried to create/design something new.

In requesting a letter of recommendation, please think: "early." The earlier I know, the better. If a deadline is 1 month away, send me a reminder at 2 weeks. I will do my best to immediately input deadlines into my calendar. When requesting a letter: also send me information about the opportunity the letter is for, and send me your resume/CV.

A last minute example: If there is a specific grant, fellowship, or other program that was put on your radar last minute (example: travel fellowship due in a week), that is okay, not ideal, but we should try! So, mark an email with "URGENT" and send me the required documents. Things pop up, but do not make this a habit.

Schoolwork

You are here to be a student, first and foremost. If research duties are ever interfering with schoolwork, please let me know and we will readjust. Occasionally we attend conferences, have

publication deadlines, or collecting data in the field and may need your help. During those situations, it's important to have the agreed-on help and not back out last minute. However, if there is a quick change, for example during a field experiment, always come to me to discuss. Additionally, please come to me early with any concerns or struggles you may be having in the classroom. I can advocate for you and help you connect with resources to improve your academic experience.

Mental Health

To be a productive scientist, it's important to monitor your own mental health and make sure, above all, you are respecting yourself. Therapy appointments are common (and useful!) and if they take place during the work day, or interrupt our research schedule, that is perfectly acceptable and we can readjust. OU resources are available: <http://www.ou.edu/ucc>

Accessibility

Whether or not you choose to disclose any needs you might have, I am committed to creating an accessible research environment. Please make me aware if some activities or tasks are inaccessible or prohibitive and we can adjust accordingly (as an example, lifting heavy boxes on our way to field work). Even if it's not documented, feel free to talk with me if we need to adjust research expectations. OU's accessibility resources: <http://www.ou.edu/drc>

Learning New Skills

In our research experience together, I hope to teach you things that you do not know, how to problem solve (including but not limited to 'try turning it off and turning it on again!'), and to help you explore new skills that you would like to learn. For each project, we will define a set of aims, goals, and ideally what the finished task should look like.

Are there specific **skills** you would like to learn in our time together?

Career Goals

In order to be a successful mentor/adviser to you, it is helpful for me to have an idea about what your goals might be. This doesn't need to be incredibly specific or certain, but please briefly summarize what your goals are. For example, do you plan to go to graduate school, what is your terminal degree goal, what sort of employment opportunities interest you, what research directions do you think you would like to pursue in the future, and so on.

Presentation and Public Speaking

Scientists can present their work in myriad ways: on Twitter through long threads and tons of gifs, through paintings/drawings/jewelry, 30-sec speed talks, science-by-the-pint (where you present your research at a local bar/brewery), in a department seminar, on a poster (usually a printed poster of 3ft by 4ft), or even just while grocery shopping. Whether for a class or for your parents, we will also discuss effective ways to share your science, how to make slides for presentations, and how to design posters. For any opportunity, we should discuss your presentation plans and review them prior to your presentations.

Travel

If you are traveling for school or study abroad (extended periods, non-holidays, religious holidays), please let me know so that we can discuss a change in work expectations. For myself, if I am traveling during regular work times, I will make you aware of my schedule and let you know how often I expect to be available remotely, and who would be best to ask questions in my absence.

Attending Conferences

As our research relationship progresses, if it becomes productive for both of us, you may want to attend a conference. Conferences are useful for students to: present research, network with faculty, meet other scientists, and to be inspired by research across the world. Attending a national conference requires a significant amount of work and responsibility that could entail: dedicated research for a semester (5-10 hrs per week, ideally longer than a semester) or a full summer research experience (30-40 hour per week). There are also other conferences and depending on research interests and how those change, we can prepare. Generally, graduate student funding will come with some support for conference attendance, and if applicable we will discuss that. Graduate students may find support for travel from the grad college, the School of Meteorology, or CIWRO (if employed by CIWRO). Undergraduates may find travel support from the School of Meteorology or other campus organizations. For all students, many conferences offer travel grants.

Virtual Mentoring

If you are a student that may be travelling for extended times or worked only for a summer, know that a research mentoring relationship can keep going forward if it makes sense for both of us. If our research relationship ends and you would like to continue a mentoring relationship, we can discuss what that would look like long term (examples: monthly check-ins via video calls, continued work toward publication).

Volunteer versus Paid Research

A research relationship requires trust on both sides -- if we do research together, I will be present and engaged and I expect similar behavior from you. If you are paid or unpaid, expectations for working together must be respected. However, if you are a paid researcher, research tasks and number of hours will increase as that should be a primary focus.

Inclusive Science

As a student researcher (and beyond) you will be working with and around a diverse group of students, both undergraduate and graduate, and scientists. In the workplace, and in our science, we strive for respect, courtesy, and understanding of others' backgrounds. Not everyone has the same science background, not everyone knows the same things. You may be completing a task that a graduate student doesn't know how to do yet. You may have knowledge that another student does not yet have. **In no situation should anyone ever be made to feel "less" because they don't know something. This is a learning and training environment.**

Understanding Your Privilege in Science

Privilege in science can mean several things: you were exposed to the science process as a child, your parents are scientists, you had research experiences or learned to code in high school, or perhaps none of those things and your skin color has afforded you privilege.

Science is not a place of equality. Efforts are ongoing to address diversity, equity, inclusion, and accessibility in science and society but progress is slow. There are many examples of inequality, but as an example, we can reflect on the right to vote. While women's (white) suffrage allowed voting in 1920 with the passage of the 19th Amendment, black women were not allowed to vote until the Voting Rights Act of 1965. Imagine how this affected how men and women of color. Imagine how structural racism affected opportunity and access to jobs. In the science community specifically a 2023 NASA inspector general report found that despite decades of various efforts, *"NASA has made little progress in increasing the representation of women and minorities in its civilian workforce or leadership ranks. Specifically, over the past decade NASA's overall workforce demographics have stayed roughly the same, with small increases (1 or 2 percent) for some groups."*

As a scientist, it is my personal responsibility to make sure that I challenge any discrimination or racism that I encounter or see affecting others. As a white female scientist, it is also my duty to recognize the privilege I have had, and to make sure that I uplift, make room, and get out of the way of brilliant scientists of color and from diverse backgrounds. It is also my duty to make sure that I challenge any discrimination towards another person's identity.

These statements and reflections are important in starting our research relationship and if you would like to discuss these points further, we can definitely talk. I would also like to point out that OU offers a variety of training covering a variety of topics/ I have taken several, and would encourage any student regardless of their identity to try some of them. We always have room to learn more. Information: <https://www.ou.edu/diversity>

Indigenous Land Acknowledgement Statement from University of Oklahoma Student Government (adopted Sept. 2020)

Long before the University of Oklahoma was established, the land on which the University and National Weather Center now resides was the traditional home of the "Hasinai" Caddo Nation and "Kirikir?i:s" Wichita & Affiliated Tribes. We acknowledge this territory once also served as a

Acknowledgments

I acknowledge that I have read this document and agree to the expectations established between myself and Dr. Smith.

_____ (signature) _____ (date)

I, Dr. Smith acknowledge that I have read this document and agree to the expectations established between myself and _____.

_____ (signature) _____ (date)