

## **Undergraduate Research Expectations**

This document has been modified by Kelly Diamond from an agreement authored by Dr. Mary Salcedo. The goal of this document is to establish goals and expectations and to ensure students know how to ask for help as we start working together.

### **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 requires that you ask questions and ask them often! A quick guide on when to ask questions:

- We are starting a new experiment/ project
- I am explaining code, software, anything mathematical
- I said something that didn't make sense to you
- You've started a task that I've given you, worked on it a bit, but are more confused than ever! I would rather you ask a question than sit staring at a computer for hours. I DO expect questions and I expect you to try a task first. However, if you've been trying for 15-20 min and you haven't figured something out -- let's talk!

### **Communication - Early and Often**

I want to help you achieve your research goals and learn new things on the way. If you are on campus don't hesitate to come find me to ask questions, if I'm busy I'll let you know, and we'll set up a better time to talk. If you and I are not in the same location I prefer to be contacted via email ([diamondk@rhodes.edu](mailto:diamondk@rhodes.edu)) and I will respond within two workdays. If you are ever struggling and we need to readjust expectations, know that you can come and chat. Reasons for adjusting are not limited to what you are working on in the lab, you are a whole person with a life that should not revolve around your research. Sometimes that means you will have more or less time to work on your project. I can't read your mind though, so if you need to adjust anything for any reason reach out so we can make sure you are getting the most out of the time you have for doing research in the lab.

### **Names/ pronouns**

While working together, I prefer to be addressed as Kelly (not Dr. Kelly/Diamond) and my pronouns are she/her. I understand other professors and mentors prefer to be addressed with their title, I personally do not. Likewise, I want to address you in whatever way makes you the most comfortable in our shared research environment. If I make a mistake or mispronounce your name, please call me out until I get it right. Other lab members may use specific pronouns and if they make it clear or correct you, please adjust to their preference.

## **Weekly Check-ins**

At some points during a project, we will be meeting regularly, especially at the start, to work through learning a new software, or reading through the literature. Once you get going, we may not need to meet in person, but regardless of what stage you're in I expect to check-in with you at least once/ week. Regardless of in person or email, what I want to know from you includes:

- What have you worked on/ are working on?
- Do you have any questions/ suggestions about the project/task?
- Do you have enough to work on for the current and the following week?
- Is there anything I can do to help you move your project/ task forward?

If we don't meet in person, I will send you an email to check-in and expect you to respond by the end of the week.

## **Reading Scientific Papers**

An important part of the science process is learning what other people have already done in the field. In the beginning we will go over how to search for and read scientific papers, and I will ask you somewhat frequently to read a paper so we can discuss a method or question relevant to your work.

*How long should 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. I will specify how I want you to read a paper and often I will 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. Can you identify their major questions addressed in the study? (hint: check the last paragraph of the introduction!)
3. If you haven't read any paper like this one before skim the introduction so you understand the relevant background information.
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: How is it applicable to my current research task?
7. Write 3-5 sentences or bullet points with what you learned and why you think it's useful for your research task

*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. I will assign papers that may be tough to get through but have some knowledge nuggets or really awesome figures. Sometimes scientists write terrible papers...and they do get published. I will let you know what parts of a paper to focus on and will try to explain all relevant portions when we meet to discuss the paper.

## **Documentation**

Transfer of knowledge is critical in a workplace where your lab mates will eventually move on to other projects. I use google docs to create "how to" documents and keep track of project progress. At the start of a project, I will create a shared google doc/ google sheet and expect you to update these documents as you work through the project.

### **Student Email Policy**

If I send you an email that requires a response, please respond within 3 work days. Occasionally I may send you an email on the weekends or outside of normal working hours. However, I do not expect you to drop what you're doing and answer. I will do my best to only email you during the day (8am-6pm) and do not expect responses outside of that time. Personally, I will do my best to respond to you within 1-2 days. While I would love to respond to every email in a timely way, 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. Urgent topics could include paper deadlines, letters of recommendation deadlines, personal emergencies, or anything that needs a response within 24 hours.

### **Letters of Recommendation**

In a research relationship, communication is key. To write a strong letter of recommendation for your future endeavors (study abroad, interesting research programs, grad/medical/vet school), first, doing the research is key and is how I can write about you as a researcher. 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. 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, but understand last minute requests will occasionally happen. I will do my best to let you know when I have submitted letters, but reminders are always a good idea at our weekly check-ins. When requesting a letter: make sure to give me as much information about the thing you are applying for, why you want to apply to the specific opportunity, and send me your resume/CV.

### **Schoolwork/ work schedules**

You are here to be a student, first and foremost. If research duties are ever interfering with schoolwork or your work schedule changes, please let me know and we will readjust.

### **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 if they take place during the workday, or interrupt our research schedule, that is perfectly acceptable and we can readjust.

### **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. Even if it's not documented, feel free to talk with me if we need to adjust research expectations.

### **Learning New Skills**

In our research experience together, I hope to teach you things that you do not know, how to problem solve 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. If there is a specific skillset you want to learn, don't hesitate to ask. If I can teach it to you I will and if not I will help you connect with someone who can.

### **Time Expectations**

In the beginning, we will agree on a set number of hours and time windows where you will come in and work. This requirement is to make sure that I am present to answer any questions you may have. I do understand that an undergraduate schedule can be unpredictable; however, we will do our best to plan in time. As our working relationship progresses, you can decide on your own working hours, as long as research goals are being met. If you want to do computer work on the weekend remotely, let's discuss 1) if it's necessary and 2) hours and how long you should be doing that outside of a normal workday.

### **Presentation and Public Speaking**

Scientists can present their work in a myriad of ways. Whether for a class or for your parents, we will also discuss effective ways to share your science. This includes making sure you understand and can communicate the broader goals of your project as well as the methods you are using and the results you help to produce. Once you have some results to share, I will bring up different presentation opportunities, but also feel free to ask about any opportunities you hear about and are interested in potentially pursuing.

### **Inclusive Science**

As a member of the Shape and Scales lab, you will be working with and around a diverse group of people. 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. In no situation should anyone ever be made to feel "less" because they don't know something. This is a learning and training environment.

Privilege in science can mean so many different things: you were exposed to the science process as a child, you had research experiences before college, or perhaps you learned to code in high school. Privilege is afforded through racial, social, and economic means. As an incoming researcher, it's important to reflect on personal privilege. Science is not a place of equality, yet there are those of us that are working towards dismantling former foundations. 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 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 from diverse backgrounds and identities. While I make a point of learning and adjusting my own behavior, if there is anything I can do to make it easier for you to do your science in or out of the lab, please do not hesitate to let me know.

I acknowledge that I have read this document and agree to the expectations established between myself and Kelly Diamond

\_\_\_\_\_ (signature) \_\_\_\_\_ (date)

I, Kelly Diamond acknowledge that I have read this document and agree to the expectations established between myself and \_\_\_\_\_.

\_\_\_\_\_ (signature) \_\_\_\_\_ (date)