

Welcome!

I hope this will be a fun and rewarding experience for both of us. Below is a little about what I expect from you and what you can expect from me as we conduct research together. This is an evolving document; if there's anything here that you have questions about or disagree with, please see me anytime.

Why Collaborate?

I believe in the old cliché that two (or more) heads are better than one. Collaborating means we both have a stake in the work – you get the opportunity to learn new skills and grapple with new ideas, and I get the opportunity to exchange ideas with you and benefit from your perspective. Also, I find that working together is more fun than toiling alone.

Helping in Lab

Continuing with the theme of collaboration, if you are not actively working on an independent project and another lab member is busy (whether another student, research assistant, or postdoc), offer to help.

All lab students are expected to share lab maintenance duties, which will be assigned by the lab manager. If you are not going to be in lab unexpectedly, it is your responsibility to find someone else to help with lab maintenance tasks.

Safety and Equipment Operation

It may seem obvious, but no matter what, you are **always** more important than the data or samples. Please do not take unnecessary risks in lab. We work with human pathogens in the lab, so there are real risks, but they can be minimized by proper use of personal protective equipment and standard laboratory safety practices. You must complete all required safety training prior to working in the lab.

I offer voluntary testing for anti-schistosomal titers for new personnel so that if they suspect they have been exposed to cercariae (the infective stage of schistosomes for humans) in the lab, they can confirm it post-exposure. If you would like to be tested, please let me know.

Please see me for instruction before using a new piece of equipment. And, if while working in the lab, you find you are unsure of some procedure, stop and ask me again! You can always call me at work, or at home. If you can't reach me, wait until we talk before continuing.

In addition, most of the equipment in my lab is new and not easily replaced/repaired. So, of course, I expect all users to exercise care in operating the equipment, and to inform me of any potential problems immediately.

Time

During the academic year, student researchers must be able to commit to being in lab:

1. At least 9 hours a week
2. At least 3 days a week
3. Minimum of 3 hour blocks between the hours of 8 AM and 5 PM.

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During the summer, student researchers must be able to commit to being in lab at least 4 continuous hours each weekday (5 days a week) between the hours of 8 AM and 5 PM.

Absences

Students are excused from lab duties during finals and official university holidays. All other absences must be cleared by me on a case-by-case basis.

For students who have signed up for credit: For each unit of research you are signed up for, we will pre-determine a set a minimum hours per week of work. Don't sign up for more units than you will realistically have time for. We will develop a schedule at the beginning of each quarter/semester that will outline the deadlines and overall expectations for your particular research project.

It's very easy to let your research work slide! Successfully completing a research project that you can be proud of while simultaneously retaining your sanity (and getting your other work done!) is not impossible – it just requires planning and regular effort. Please realize that I view senior projects as *independent* projects. While I will meet with you weekly (see below), I will not nag you or ride herd on you. You must set your work schedule and be committed to sticking to it.

Meetings

We will meet formally each week to discuss results, progress, ideas, and relevant literature. Please come to each meeting prepared for substantive discussion – at least 1 thing you're ready to show me (a plot, data table, etc.) and at least 1 question (which could also be a plot, data, etc.). Please also be ready to propose what you want to accomplish in the upcoming week in light of your week's worth of work, and what adjustments need to be made to your schedule. In return, I will be ready for discussion and ideas for new directions. Early on and during 'crunch' periods, we may meet more frequently than once a week.

Open Door Policy

I have an open door policy and you can normally interrupt me with questions at any time. However, I too have deadlines to meet and classes to prepare, so please keep this in mind. If your question isn't urgent, and can wait until our scheduled weekly meeting, you'll have my undivided attention and you'll likely get a more coherent answer.

For students who have registered for graded credit

The grade that you will earn for your research will be based on the way you conduct your research, not on your results. I will factor in not only your progress reports at our weekly meetings but also your lab meeting presentations and progress between weekly meetings. As I said, I won't nag, but I will use your progress to determine your grade.

Lab notebooks

I expect you to keep a well-organized notebook with hard copies of anything that can be printed out. Please see the lab notebook guidelines section of the lab wiki for details (required reading). When you leave the lab, we will meet to go over your lab notebook to ensure that it is interpretable by other lab members if they need to carry on your work. Finally, the lab notebook stays with the lab.

Authorship

It is my hope that every student researcher who works in this lab is part of a scientific publication (poster or paper). My policy for co-authorship is that you must contribute significantly to at least 2 (and often 3) of the following 4 stages of a project:

- (1) Conceived original idea and started project (e.g., wrote proposal, obtained funding)
- (2) Conducted work, made laboratory measurements, and processed data
- (3) Synthesized data and interpreted results to the point where a manuscript could be written
- (4) Got a manuscript/poster into final, publishable form (e.g., written, edited, made figures)

Typically, to be a first author, you must contribute significantly to at least 3 of the above stages, including doing most of (4). If you've done most of the work for a project, I strongly encourage you to discuss with me being first author on a paper. If you leave the lab before finishing a project, we will agree upon a timeline for finishing and submitting a poster/manuscript for publication. If you leave a project unfinished for too long, I reserve the right to have someone else finish it and adjust authorship order accordingly. Finally, contributing to only one of the 4 stages of a project, or small parts of 2 stages, may result in being acknowledged in the Acknowledgements section of resulting publications.

Ethics

I expect everyone in this group to maintain high ethical standards. It should go without saying, but don't compromise data, fabricate results, or plagiarize any piece of writing. Ever. As a very general rule of thumb, copying 100 words of text from another source without acknowledging it is plagiarism. This is the upper end of what most people consider plagiarism. If you have any questions about what I mean, see me anytime.

You also have an ethical duty to acknowledge that our work here is collaborative, and is rarely yours alone. The data, results, samples, interpretations, and other work generated while you are working with me belong to the lab. You may not send our data to anyone or present our ideas to others without my approval. For example, some of our data are collaborations with other labs and institutions and I could get in Big Trouble (yes, capital B, capital T) if those were data were sent to an outside party. Copy me in all correspondence related to our projects. Finally, while it is possible for you to take a project started here to another institution or invite new collaborators, you should only do so with my prior permission and involvement.

I would not write a paper, give a poster, or deliver a talk without acknowledging your contribution to our joint work and I expect the same of you. I encourage you to give presentations (talks or posters) about our work, but ask you to consult me before agreeing to do so. This is standard practice in science: co-authors must approve the release of joint work and should be listed together at the beginning of the talk, poster, paper, etc.

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Questions

If you have any questions about these or other topics, please don't hesitate to ask. There are no dumb questions, and if you need something explained for the millionth time, it's my job to explain it to you, so just ask!

Adapted from Lisa Gilbert, "Undergraduate Researcher Expectations", Barbara Tewksbury "Research Student Guidelines and Expectations", and Sarah Carmichael, "Undergraduate Research Contract".