Bergmann lab: Expectations for PhD students

As a student at Stanford University, “progress toward degree” in your program will include specific guidelines that will indicate what courses, exams, formal teaching and administrative forms are required. You are responsible for learning about these and ensuring that these are completed on time. Most of your time and effort, however, will be related to original research done in our lab; this document will focus on research-related issues.

My commitments to all lab members

My goal is for every member of the lab to become an accomplished independent researcher during their tenure in the lab. This includes learning about working at the bench, acquiring scientific independence in projects, mastering the literature in your field, and working on the project of your choice. It also includes learning about other aspects of doing science, such as scientific writing, grant writing, giving excellent scientific presentations, networking, and speaking well.

Your physical and mental health are important. Science at its best is exhilarating and provides deep satisfaction and meaning, but interspersed with these “highs” can be experimental failure and periods of frustration, anxiety and burn-out. I find it helpful to remember that every day we are literally trying to do what no one has ever succeeded at before! It’s important to train for the endurance race.

Hours: Science doesn’t have set hours and this is both a blessing and a curse. On the good side, you can adapt your working style to your personal circadian rhythm. On the challenging side, biology research does have its own sets of demands, and organisms may need you at inconvenient times. The question of hours is a difficult one. I do not think it leads to better science to work excessive hours, but we are also at a place where there is a lot of exciting science going on, and having the chance to participate in unique ventures is both something you should take advantage of and something that may tip you into an unsustainable work/life balance. I won’t lie to you and say I only work 40 hours a week, but I also have chosen certain responsibilities (journal editing, advisory boards, traveling) that you do not need to do. It is important to interact with other lab members, so unless otherwise arranged, I expect people to be around between 11am and 3pm M-F.

Timing of emails: I often get to the end of the week with a big pileup of emails to take care of, and so you may receive emails from me on weekends or at odd hours (especially when I am traveling). Or I may just hear something that I think will be interesting to you. In general, you can respond to these emails during normal working hours. In the very rare case that it’s essential to respond to these immediately, I will add URGENT to the subject line.

Your time and effort are valuable to me and I will do my utmost to help you in your work, take your best interests to heart, and direct your efforts in ways that benefit you first and foremost.

I will do everything in my power to enable students to accomplish their experimental agenda by securing funding, acquiring the appropriate equipment, and establishing important collaborations.

I will invest in a friendly and pleasant working environment, and I will consider the input of lab members when making important decisions (including hiring decisions).
My responsibilities as a PhD mentor:

- Provide intellectual guidance and rigor in students’ educational programs and on specific research projects;
- Provide students with knowledge of the current frontiers and opportunities in disciplinary and inter-or cross-disciplinary research
- Provide sound intellectual guidance on disciplinary research methods and the historical knowledge bases of the discipline or the profession
- Provide appropriate guidelines, including expected timetables, for completion of research projects; and to respect students’ research interests/goals and to assist students in pursuing/achieving them.
- Meet –every two weeks individually to discuss progress and pitfalls
- Create the time and space to have meaningful discussions around IDPs each year, and work to create a plan of action for the next year and for the long term
- Encourage and assist students in developing teaching and presentation skills, including course development, lecture preparation, classroom communication, examining, and grading;
- Encourage student participation in scholarly activities, including conference presentations, publications, professional networking, grant writing, and applying for copyrights and patents
- Evaluate student progress and performance in a timely, regular, and constructive fashion; and to serve, when requested, as an informed academic advisor and a nurturing professional mentor to graduate students in training and, where appropriate and desirable, in students’ post-Ph.D. careers.
- Provide feedback on oral presentations, and help organize lab-member audiences for these.
- Enable students to present work in conferences outside of Stanford at least twice during the PhD (ideally more often)
- Discuss future career goals (e.g., do you want to teach, go into academia, continue in research?), and plan ways to facilitate these goals
- Prepare students to enter the job market with requisite professional skills, with an appropriate range of professional contacts, and with a realistic view of the current state of that market, both within and outside academy
- Assist students, where appropriate, in joining collaborative projects in accordance with the accepted norms of the discipline;
- Avoid assignment of any duty or activity that is outside the graduate student’s academic responsibility or harmful to his or her timely completion of the degree.
- Be fair, impartial, and professional in all dealings with graduate students in accordance with university policies governing nondiscrimination, harassment of all sorts, and normative standards of confidentiality;
- Create, in the laboratory, an ethos of collegiality so that learning takes place within a community of scholars;
- Create an environment that openly discusses laboratory or departmental authorship policies and that prizes and acknowledges the individual contributions of all members of a research team in the publication or presentation of its research
- Avoid all situations that could put us in positions of any conflicts of interest.

Your responsibilities as a graduate student:

As a PhD student, you are expected to define a particular biological question or set of questions, become aware of previous work in that field of study and expand the knowledge of that disciplinary field by discovering and pursuing a unique topic of scholarly research. You will need to demonstrate the ability to explain the content and significance of your scholarly research through oral presentations and through formal written work suitable for publication. The Stanford biology program expects that most students
complete their degrees in less than six years, and you are responsible for working toward completion of your formal requirements in a timely fashion, with the understanding that research can be somewhat less predictable.

- Actively participate in weekly lab meetings, both as a presenter and when others present
- Prepare for our independent meetings and a follow up email of progress and goals
- Maintain a set of lab notes, including directories of data, annotated codes & versions, detailed methods. These need to be sufficient to reproduce results without additional instructions.
- Proof-read manuscripts from other lab members
- Regularly attend departmental seminars (Biology, Carnegie or other series)
- Present a poster or talk of research progress at conferences at least once, and ideally once a year.
- Participate in general lab responsibilities (servers, maintain common areas, taking turns hosting visitors)
- Be available in the lab/office for a minimum pre-arranged set of hours to facilitate interactions
- Treat other lab members with respect and dignity
- Participate in general lab responsibilities
- seek out a range of faculty and peer mentors that can help you prepare for a variety of professional and career roles and responsibilities
- Optional, mentor an undergraduate student or junior technician in the lab.
- Work responsibly toward completion of the degree in a timely fashion;
  - Learn the research methods and historical knowledge bases of the discipline;
  - Discover and pursue a unique topic of research in order to participate in the construction of new knowledge in the chosen field and application of that knowledge to new problems/issues; and
  - Exercise the highest integrity in all aspects of their work, especially in the tasks of collecting, analyzing, and presenting research data.
  - Communicate regularly with faculty mentors and the doctoral committees, especially in matters relating to research and progress within the degree program.
  - Prepare for yearly committee meeting by creating a summary of past work, plans for next year and topics of discussion—this should be sent to PI a week before the meetings for comments, and then available for committee members a few days before the meeting.

**FAQs for PhD students**

**How will I know if I’m on track?**

After the structure of the first two years, after you’ve passed quals, and TA’d and taken your courses, you enter a zone that, in theory is one of the freest, but in reality can be anxiety producing, since the expectations are not clear. If all your experiments and ideas go smoothly, this is easy, but what if you are working hard, but your experiments are failing? Or your experiments are successful technically, but the answers aren’t very interesting or interpretable? How do you judge progress?

**What I realize that bench science isn’t what I want to do?**

This comes in two flavors (1) I want to exit the PhD program and (2) I want to complete the PhD, but then head off in a new direction. One thing that frustrates me about the US graduate program is that we don’t have a real master’s program, but rather roll together everything after undergrad straight into a PhD program. In a master’s program, after two years, you’d emerge with a degree and a chance to decide again what you want to do. In the PhD version, if after two years you decide this track isn’t for you, it makes it seem as if stopping is a failure. Deciding that you want to do something other than completing a
PhD is not a failure. It is a major decision, however, and one that should be made after both independent thought and discussion with peers, with me, with colleagues and after considering University resources.

Managing conflicts

No matter how much we try to avoid it, in close quarters, problems and tensions can sometimes arise. It is important to be clear about expectations, intentions, and feelings ahead of time (whether this includes informal agreements, collaboration, use of equipment, authorship on manuscripts, etc.). A few basic guidelines ahead of time can prevent trouble later on.

When problems do arise, all parties must be committed to resolving them in a professional manner. Don't hesitate to come talk to me early and to be clear about your position. If you feel that I am not treating you fairly or that I may be biased or conflicted about a certain issue, we will work to appoint a third party who can help mediate the discussion.