

Davies Lab Graduate Student Mentoring Compact

First off, welcome to the Davies lab! I'm so happy you're joining our team!

The broad goals of my research program

As part of my job as a professor at Boston University, I am expected to write research proposals and make significant contributions to the field of ecology and evolution, the broad academic community, and to society as a whole. Your role in the lab will be to help our team carry out this research and it is essential that we follow rigorous scientific methods and conduct our science and ourselves in an ethical manner. One goal of our research program is to share our science with the community through publishing in scientific journals. Dissemination of knowledge is critical to the advancement of our field. It is also important that we present our work at scientific meetings, so that other researchers are aware of our progress and can potentially see avenues for collaboration. There are other critically important aspects of science, which include mentorship, DEI work and outreach, however these aspects are unfortunately undervalued and publications remain the central currency in academia. It is important to note that our lab values this work.

A. Student Responsibilities:

One of my primary roles is to advise graduate students, help you progress through your degree, and contribute to your professional development. I will assist you in goal setting to help you achieve these goals in a timely manner. However, I cannot do the work for you. With this in mind, your expectations as a graduate student are:

- Plan, design, and conduct high quality scientific research.
- Show growth in experimental design, lab techniques, data analysis, data visualization, and communication.
- Effectively present and document your scientific findings.
- Be honest, ethical, and enthusiastic.
- Be present (in person or on Slack) on a regular schedule. This likely means very different things to different people, but in the Davies lab we tend to start out with a 9-5 M-F framework. Some students may wish to shift these hours. These arrangements will be coordinated on an individual basis with me and will be dependent on the student's ability to effectively work in the new timeframe and will also be dependent on mentoring duties and meetings/teaching etc. Remote work is permitted and *encouraged*, but it is a privilege and should be part of the discussions you have with me when you are deciding how you work best and most effectively.
- Time off is permitted and *encouraged*, but should be always discussed with me *prior* to booking. For more information on graduate student time off, please refer to the graduate student handbook. The general idea is 2 weeks + BU holidays annually. There can be flexibility as well and often after a large field season or an intensive bout of teaching, people need time to recharge. However, all time off should be coordinated with me well in advance of booking.
- Stay on top of your committee meetings according to program guidelines.
- Attend weekly lab meetings (personal 30 minute meeting, news and works) and have an update of your progress along with a plan of attack for the next week to share with your colleagues. You are expected to engage weekly in all meetings and whenever possible present your findings, however preliminary. The goal is to receive feedback early and often.
- Be engaged within the research group and keep open lines of communication with your peers and myself. Get feedback from your peers on all things, especially your writing!
- Respond promptly to all work emails and Slack messages (e.g. within a few hours during weekdays, not expected on weekends/holidays unless otherwise noted in the email itself). Obviously some situations require immediate attention and in these cases I might text you. Some student prefer to have slack notification off during the day- in this case I request that you check messages at the start, middle and end of you work day. Just because I work off-hours does not mean you are expected to, but you are expected to be an active lab citizen.

- I am happy to go back and forth about ideas/plans on DM, but anything of a serious nature should be communicated via email. If I feel that the content of the conversation is better discussed on a more professional platform, I will suggest switching to email or having an in person/zoom meeting with discuss. These meetings will often be followed up with an email restating what the meeting covered to ensure that there is a paper trail of all serious conversations.
- We should be working towards your career goals, whatever they may be. It's OK if you don't know what those goals are right away but it is important to think about these goals and update me as they evolve so that I can help find you the mentorship you might need and we can discuss plans as they evolve.
- Teaching, collaboration, and research plans and timelines should be discussed early and often and I appreciate being cc'ed on all collaborative emails, however mundane.
- Graduation timelines should be discussed early and often and agreed upon before accepting any opportunities.
- Take advantage of student career development and funding opportunities. Apply for at least one grant and attend one conference a year. These should be discussed with your me prior to application and I am happy to help you craft these materials.
- Treat your lab mates, lab funds, equipment, and invertebrate animals with respect. Under no circumstances should lab equipment or specimens be removed from the lab without prior discussion with me. Especially for live specimens, these organisms are permitted by national and international law and any experiments or location changes should be checked with me first as I am the primary permit holder as the PI of the lab.
- Assist whenever possible with daily lab functioning. Among the team we will rotate responsibilities for general lab organization, hazardous waste duties, among other such tasks so that no one person is overloaded. These duties should be balanced across members and if you feel there is an imbalance, you should contact me immediately so that I can remedy the situation.
- Take responsibility for obtaining your degree.

Getting your science done

I expect you to make steady progress towards your research goals with the understanding that all science ebbs and flows. Part of your success in the scientific process will include being active in setting short and medium term goals including milestone dates and deliverables. During the academic semesters (fall/spring), performing well in your courses and teaching and completing qualifying exam are important, but should not lead to a complete lack of productivity. Your research and development as a scientist is your primary responsibility as a graduate student and your courses should help give you breadth in a topic or directly apply to your dissertation research.

An important part of conducting scientific research is keeping pace with the work of other scientists. Gaining a command of the current literature is a valuable research skill and can also guide your dissertation research to ensure it will be an original contribution. Reading other people's published work will also lead to improved writing skills. A goal of reading one publication per week is a good minimum standard and as a lab we will help you meet this goal by running a weekly 'News' meeting where you will be expected to briefly present the article you read. Each member of the lab will do the same and this allows us, as a lab, to remain on top of research advances in our field. It is very important that you actually carefully read the publication so that you are confident presenting the article in a meaningful way. This will also help facilitate better science communication skills. If you miss a week, that is understandable, however if you continue to not present at News meeting, there will be a discussion between you and me.

Communicating your work to others

Journal publications are the most important way to share your research with the rest of the scientific community. It is generally expected that students pursuing a doctoral degree will author three first-author

journal papers (i.e. three dissertation chapters), although this number is dependent on the student, the publications, and overall dissertation and career goals of the student.

Conferences are another important venue for sharing your findings and networking with your peers. Although the availability of travel funding varies over time, I will encourage you to present your research (poster or podium) at one conference per year once you have made significant progress on a chapter that deems it worthy of presenting. Travel fellowships are available through the Biology Graduate program, Boston University and through many societies (i.e. SICB, ICRS) if grant money is not available. I will help you identify and apply for these opportunities and we will try to attend conferences as a lab team to facilitate networking. Please just remember to discuss these opportunities with me in advance and also be sure that all coauthors always have a chance to read the abstract you submit. Lastly, keeping track of and submitting receipts in a timely manner post-conference is critical. You will need to provide your receipts to me for approval within 7 days of your return.

Respect the lab environment

I ask that you respect all lab equipment and space. Everything you are using costs precious grant money. If something breaks, tell me right away so that we can arrange to fix or replace it. Don't panic over broken equipment. Mistakes happen. But it is not acceptable to return something broken or damaged without taking the steps necessary to fix it. If you borrow/use another lab's equipment you must treat it even more carefully than our own equipment. Always return it as soon as possible in the same condition you found it and communicate clearly when you borrow and return equipment. This includes BUMP equipment. I also expect you to respect your fellow students, staff, and administration in the department. Part of your professional development is to learn how to work with others and resolve conflicts. I'm happy to help you with this and if you feel that you have been treated unfairly by another student or a BU staff/faculty member, please come to me to help resolve the conflict. We can either resolve it together or use one of the many resources available on campus to do so. The worst thing you can do is say nothing.

Obtaining your degree

It is your responsibility to determine the requirements for your individual graduate program. This information is available in student handbooks, on the BU website, and through departmental student services staff. I can help you find these resources but you must take the initiative to make sure all requirements are met on time in order to advance in your degree (e.g., for qualifying exams, defense).

Professional development

Boston University has outstanding resources in place to support professional development for graduate students. I expect you to take full advantage of these resources, since part of becoming a successful scientist involves much more than just your academic research. You are expected to make continued progress in your development as a teacher (usually as a Teaching Fellow (TF)), as an ambassador to the general public representing Boston University and your discipline (outreach/broader impacts), with respect to your networking skills, and as a mentor to undergraduate and high school students. Our Biology Department has a weekly seminar series and an EBE Chalk Talk series and I will *expect* you to participate in these seminars. There are also related seminars in Earth and Environment and Bioinformatics and I encourage you to get on these listservs so that you can be aware of upcoming seminars that might be of interest to you. I also encourage you to participate in science outreach and informal education activities that are offered through various organizations on campus and in the Boston area. Attendance at conferences and workshops will also provide professional development opportunities. When you attend a conference, I expect you to seek out these opportunities to make the most of your attendance. We will discuss ways to do this ahead of the conference. For more information about professional development opportunities, check our lab website, ask current graduate students in the lab and department, and ask me for guidance.

Vacation

Your graduate student appointment includes two weeks of vacation per year and this does not include BU holidays. All vacation time should be discussed with me prior to booking your trip and if there is something important that you would like to attend, I will almost never say no assuming no major scheduling conflicts. Spending time with family and friends is critical to mental health, so we need to allow ourselves the time and energy to stay connected. However, at the end of the day, it will be your responsibility to balance time off with dissertation goals.

Sickness

We work in close quarters and often have mentoring/experimental/teaching/coursework duties that make it seem imperative that we come to work. We should all be mindful of infecting others and our sick policy is that if you are sick, stay home until you are symptom-free without the aid of medication for 24hrs. If you are still not feeling great, working from home, whenever possible, will be encouraged.

B. PI responsibilities

You should expect me to:

- be available and on time for regular meetings. We will meet as a lab group twice a week but we will also meet for a personal meeting weekly (if desired) and monthly at a minimum. If you require additional mentoring, you just need to communicate your needs. At meetings we will discuss what you have accomplished, or what you have planned for the near future. I will do my best to answer questions that you have, and help you solve problems that you experience in your research. Research is not easy. You will fail sometimes and that is normal. It is my responsibility to be your cheer-leader, help keep you excited about your research and offer you a timeline. However, only your perseverance will generate high quality results.
- help you learn to effectively present your work. You will be asked to prepare a poster or an oral presentation for at least one scientific meeting annually once you have made sufficient progress and it will be my responsibility to give you guidance putting it together and practice presenting it.
- be your advocate. If you have a problem, come and see me. I will do the best I can to help you solve it. If you do not communicate your problem, I will not know you're struggling.
- will support you in your professional development activities.
- be committed to the life-long mentoring of you as my graduate student. I am committed to your education and training as a member of the scientific community.
- be knowledgeable of the requirements and deadlines of your graduate program so that you can graduate in a timely manner and help you select your dissertation committee.
- facilitate your training in complementary skills needed to be a successful scientist, such as oral and written communication skills, grant writing, lab management, animal research policies, the ethical conduct of research, and scientific professionalism.
- discuss authorship policies regarding papers and acknowledge your scientific contributions to the work in my laboratory.
- work with you to publish your work in a timely manner (preferably) prior to your graduation. During non-peak times you can expect manuscript drafts returned to you within two weeks and I will never take longer than one month to get revisions back to you. You should always feel free to poke and ask me for an ETA.
- encourage you to attend scientific/professional meetings and make efforts to secure and facilitate funding for such activities. I also strive to reimburse you for any agreed upon out of pocket expenses in a timely manner.
- provide career advice and assist in finding a position following graduation. I will provide honest letters of recommendation for your next phase of professional development. I will also be accessible to give advice and feedback on career goals.
- provide an environment that is intellectually stimulating, emotionally supportive, safe, and free of harassment.

Annual evaluation

At end of the spring semester, we will meet to discuss your progress and goals. At that time, it will be important for you to discuss ways that I can improve as a mentor to ensure your success. If you feel that you need more guidance, you need to let me know. If you feel that I am interfering too much with your work, tell me. At the same time, I will tell you if I am satisfied with your progress, and if I think you are on track to graduate by your previously discussed target date. It will be my responsibility to explain to you any deficiencies, so that you can take steps to fix them. This will be a good time for us to take care of any issues before they become major problems.

I look forward to working with you!

Read and acknowledged by:

Student name, signature and date:

Year admitted to the Graduate program:

Mentor name, signature and date: