

Advice and Expectations for Graduate Students

Brett Johnson

What is grad school?

Graduate school is about focus, mentorship and taking a minimum of courses. As an undergraduate you may have learned how to juggle 4-5 courses a semester, write term papers and cram for exams. Grad school is different, way different. As a grad student you may not take any courses in some semesters. The emphasis is on learning to do independent research, and on professional development.

How does one get in?

Your first step to getting into grad school is to take the Graduate Record Exam (GRE). Most schools require at least the general exam, some also require subject exams (e.g., biology). Take the GRE 6-12 months in advance of your desired admission date. Study hard for the exam, you only want to take it once. There are many resources available (print, online, electronic, shortcourses) to help you prepare. Minimum scores required for admission vary; my Department looks for a minimum of 1200 (V+Q) and others require a score of 1000. Excellent grades can compensate for a below-minimum GRE score. For example, I would consider accepting a student with a GRE of 1140 and GPA of 3.6, partly because the GRE reflects a person's performance in a single test taking session, whereas the GPA reflects sustained effort over several years. Nearly all graduate schools have a minimum GPA requirement of 3.0.

You should also begin researching your options well before admission deadlines- ideally 12-18 months before. Learn all you can about the programs and potential advisors in your area of interest. Look at job ads seeking grad students (e.g., AFS's Jobs Page) to see where you might find opportunities of interest. Browse university webpages and read journal articles by professors. Talk to grad students at places you are considering.

When you are ready to apply realize that the key to being accepted to a graduate program is to establish contact with a prospective advisor and convince that advisor that you are the right person for the position. It can be highly competitive with good GRE scores and GPA plus lots of relevant experience being required for attractive grad projects. If your "numbers" aren't what you'd like them to be try to excel in the area of experience to compensate.

The usual process is to submit your resume, transcripts, GRE scores and a letter of interest directly to a professor you want to work with. Then give them a week or two to look at your stuff. Follow up with an email or phone call. You can submit these materials even if the professor isn't advertising, just state that in your cover letter and that you are just really interested in their work and are applying in case something comes up. Finally, it is usually only necessary to pay the fee and officially apply to the professor's Graduate School after you are encouraged to do so by that professor. Otherwise, save your money

What I look for in a graduate student

Desire, maturity, intellectual ability, work ethic, field/lab experience.

What it takes to be successful in grad school

Grad school requires much more self-motivation and initiative than being an undergrad. You will have much greater control over your own education and what you gain from it. I found grad school to be much more challenging but much more enjoyable than being an undergraduate. You'll need to learn how to multi-task, supervise your assistants, plan and coordinate complex work and anticipate problems. You'll be busy and will have to be good at managing your time. You'll need to absorb lots of information, analyze data, and interpret and synthesize findings to provide new and useful knowledge. Then you'll learn how to communicate that knowledge to others in written and oral formats. Throughout all of this, people skills and networking will be required. A host of folks can help you be successful, including undergrads, fellow grad students, professors, agency biologists, and other experts in the field, but only if you let them.

Financial Support

All of my graduate students are funded by some combination of research assistantships, scholarships and teaching assistantships. Stipends paid for research assistantships are competitive with other universities around the nation. I do not allow my students to take on outside employment- graduate school demands your complete dedication and focus.

Students on research or teaching assistantships get the non-resident portion of their tuition waived in the first year. It is essential that as soon as you get to Fort Collins you take steps to establish Colorado residency so that you can qualify for in-state tuition after the first year. You must establish a Colorado domicile/address, obtain a Colorado driver's license, and register your vehicle in Colorado before the first day of classes in order to qualify for resident tuition 12 months later. Only the resident portion of tuition will be paid after your first year, for students whose contracts include tuition.

Reading

Becoming familiar with the body of literature pertaining to your research topic is a daunting task. You must quickly learn literature search skills and how to critically evaluate scientific papers. In addition to keeping abreast of developments in your topic area, I expect you to be aware major issues in applied ecology. You should get in the habit of periodically scanning tables of contents of major journals such as Science, Nature, Frontiers in Ecology and the Environment, and pertinent review journals (e.g. TREE) to find and read important papers.

Academic requirements

The Department of Fish, Wildlife and Conservation Biology requires all students to have a research proposal approved by their graduate committee before data collection begins. Ideally, the proposal will be completed in the first semester and no later than the second semester at CSU. The Graduate School requires that you receive a 3.0 or better in all coursework. In my opinion, your grades in grad school are of less importance than the quality of your research, as long as you always get at least a "B". Other academic requirements, including the makeup of the graduate committee, examinations, etc., are covered in the FWCB Graduate Student Handbook

http://welcome.warnercnr.colostate.edu/images/docs/fwcb/dept_policies_related_to_grad_students_2005.pdf).

Work schedule, vacations

Research and grad school are not 9 –to-5 endeavors and very few students were successful putting in just a 40-hour work week. My philosophy is you do whatever it takes to get the job done. If you are worried about how many hours you're putting in then you may be in the wrong place. If you think additional help would facilitate progress then I want to hear from you and will do what I can to assist.

I do not like to monitor the work habits of my students; as long as they are making sufficient progress toward project goals I prefer to let them choose the hours they work. However, absences should be approved in advance and must not interfere with project operations or other scheduled activities. Grad students do not accrue vacation time but if you are making sufficient progress some time off can be restorative.

Professional Organizations

For many students choosing to go to grad school is a first step toward their professional career. As a budding professional, I expect you to become involved in appropriate professional organizations. For most of my students this will likely include the American Fisheries Society. I strongly encourage you to join the Parent Society as well as the Colorado-Wyoming Chapter and the CSU Subunit of AFS. The cost of student membership is modest and the benefits include networking with thousands of fishery professionals, a variety of educational and professional development opportunities, and the message that you are a dedicated fisheries professional. In addition to joining these organizations I expect you to attend their meetings and contribute your time.

Presentations

Oral presentation skills are important in any job in our field and the more practice you get during grad school, the better. As a young scientist, your reputation in the field may be established first by your presentations at professional conferences. Publications will be relatively few and will come later; presentations you can do as soon and as often as you are able. I enjoy mentoring students to give great talks and I encourage my students to present several during their tenure. If funds allow, my policy is to have each student present at a national or large regional meeting before they graduate.

Publications

I expect all of my graduate students to publish their thesis research in peer-reviewed journals. I believe there is little point in doing research unless that work is published. Publishing your thesis research has several functions: 1) it is an important learning experience for you that is best navigated with the assistance of an experienced coauthor, 2) it serves as an unbiased, third party endorsement of the quality and validity of the work, and 3) it makes the findings of the research project readily available to a global audience. Further, peer-reviewed publications are an important indicator to prospective employers of your scientific capabilities and diligence.

Other expectations

I believe that an important part of your graduate education and your commitment to me is to participate fully as a community member in our Fisheries Ecology Lab group and in the greater community of ecologists in the Department and the Graduate Degree Program in Ecology. There are many opportunities to learn and grow intellectually at CSU, as well as to contribute to the community. I expect my students to genuinely invest in the program, by participating in seminars, social events, the Front Range Ecology Symposium, and our local lab group discussions and practice sessions. It is also my hope that you will choose to mentor undergraduates to participate in your research. Being engaged in the community increases your personal and intellectual growth, as well as generating a collaborative environment for the benefit of all.

I hope the preceding is not too daunting because it is not meant to be. Your graduate school experience can and should be one of the most fulfilling and enjoyable experiences of your life. If you enter into it with a sense for what is expected and an appreciation for the challenges ahead, you work hard and try your best, I am sure you will be successful in grad school and beyond.