

Applying to Graduate School in the Sciences

Note: This information provides an overview of the general process of applying to graduate schools. The specific details of the process and graduate programs themselves can, however, vary quite a bit among fields. For example, in some disciplines you would not apply to a graduate program until you have secured the support of an adviser, while in other fields you apply directly to a program and then select an adviser upon admittance. Given these important differences, make sure to speak with a faculty member in your field of interest as soon as possible.

Master's or PhD?

Master's programs, in certain fields, provide a solid education in a specialized area, often in addition to research experience. Some apply a Master's degree directly to a career while others go on to earn a PhD.

Timeline:
1-3 years

PhD programs are designed to give you extensive expertise in a specialized field and to train you for a career as a professor or a researcher in academia, industry, or other organizations.

Timeline:
4-7 years

Once you're in:

A PhD and sometimes a Master's require an independent research project. The level of independence and extent of the project are expected to be much greater for a PhD than a Master's. Your years as a PhD student will also include an extensive qualifying exam and a dissertation defense. Both degrees may include coursework, although certainly less for a PhD.



Choosing Graduate Programs

How many?

Applying to graduate schools can be time-consuming and expensive (application fees, transcript fees, campus visits). Create a list of schools that includes at least two “reach,” two “core,” and two “safety” schools.

Which ones?

Pick schools based on the type of programs they offer (Master's and/or PhD), the field of study, the facilities, the faculty, and to some extent the location. Find out what schools offer graduate degrees in your field (talk to current or former professors; look at gradschools.com). If your research might require special habitat or equipment, determine

if your research needs will be met. Most importantly, are there faculty members whose research interests you? For many types of science degrees you will need to directly contact a faculty member to see if he/she will be taking students in the upcoming year and would be interested in being your adviser. In some fields you instead apply to a program and then rotate through several professor's labs before choosing an adviser. The school website will give you information on how to go about applying. Finally, consider the school's location; is it somewhere you would be happy living while getting your degree? At the same time, do not limit your search too much based on geography.



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The Application Process

Your application

As with college applications, your graduate school application will include:

- Application form and fees
- Letters of recommendation
- Statement of purpose and CV
- Test scores (the GRE)
- Official transcripts



Tip: Don't underestimate the time it could take you to get your graduate school applications together. The more time you give yourself, the less anxious and more thoughtful you will be during the process.

The GRE — Graduate Record Examination

The GRE is a standardized test that most graduate schools use in evaluating applicants. You should plan to take the GRE general test (quantitative, verbal and analytical) and possibly a subject GRE, if your schools require it. You can take the general test throughout the year at computer-based testing centers.

The subject tests are offered in paper form, only three times a year

(Oct, Nov and April). Finally, you may be able to take the GRE abroad if needed. See the GRE website for more information on testing centers and dates.

Preparation options—take a practice test at your college (Contact your Career Services Center), get a GRE preparation book, and potentially enroll in a GRE prep course.

Timeline— Junior Year/early Senior year (if taking a Gap year)

- Research careers, areas of interest, and graduate programs
- Register and prepare for the GRE. Take a practice test and potentially a GRE test prep class.
- Determine who will write your letters of recommendation and give them plenty of advanced notice.
- Talk to faculty members, family, friends, or career services staff. Verbalizing your ideas will help you evaluate and solidify your career plans
- Develop a calendar that includes GRE dates, a GRE study plan, when to ask for letters, and the application deadlines for potential programs.

Tip: Junior year is a good time to start taking concrete steps toward graduate school.

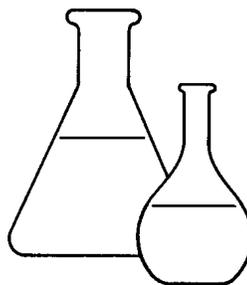
The Application Process

Timeline— Fall of Senior Year/Gap year

- Finalize the list of programs to which you will apply.
- If appropriate, identify faculty members that are accepting new students and would consider being your adviser. Visit the campus, either by arrangement or invitation. Some schools also have graduate student recruiting weekends in the fall or spring.
- Obtain letters of recommendation from faculty and/or professionals in your field.
- Take the GRE general test if you did not take it in the summer, and the GRE subject test if required.
- Request official transcripts, complete your essays and application forms, and submit your applications!
- Apply for graduate fellowships.

Timeline— Spring of Senior Year/Gap year

- Register for Graduate & Professional Schools Financial Aid Service (GAPSFAS) or other needs analysis service, if required.
- Visit schools if you have not already, making time to meet with both faculty and graduate students.
- You will hear back from schools in February and March, depending on the application deadline. By April 15 will need to either accept or deny any offers.
- Send thank you notes to your recommenders.



Tip You will need to accept or decline any offers you are made by April 15, the national acceptance deadline for Graduate Schools.

Funding Graduate School

Most graduate programs in the sciences support students as either a teaching assistant (TA) or a research assistant (RA). This provides you with a stipend, and the school covers your tuition. There are also graduate school fellowships for which you should apply both before and while you are a graduate student (i.e. National Science Foundation). Due to recent budget cuts in many states being an in-state student, or having your own funding might

improve your admission chances. See the Keck Science website for examples of national graduate fellowships and talk to faculty members in your field for specific fellowship recommendations.

Do I need to know exactly what I want to study?

While you do not need to know the exact topic of your PhD dissertation or Master's thesis before you apply, your statement of intent should demonstrate that you have a well-informed interest in a particular area. Completing your degree will require a great deal of enthusiasm for your research topic, and what you specialize in will shape you for a career. Give some quality thought to the direction you are planning to take (that said, some do completely switch careers after getting an advanced degree). Getting research experience as an undergraduate is invaluable for exploring your interests, becoming skilled enough to be successful in graduate school, and makes you an attractive candidate.

Questions to ask potential advisers

In some fields (i.e. Env. Sci., Ecol. and Evol. Biology), you are required to identify an adviser prior to applying to the graduate program. Look at the websites of faculty members at particular schools and then create a list of professors whose research most aligns with your interests. Contact those professors in the fall prior to the year in which you want to begin graduate school. In your email identify specific aspects of each professor's work that appeal to you, highlight some of your qualifications and ask if the professor will be taking students in the fall. You are likely to pursue several dead-ends, since faculty may get many requests from prospective students but only take on 1-2 new students, if any, each year.

Whom should I ask for letters of recommendation?

The people you ask to write your letters of recommendation should be those that know you best in a setting relevant to graduate school. For example, your senior thesis adviser, summer research mentors, or professors who had you in multiple courses, especially lab courses, are all excellent choices. Getting to know faculty members well enough so that they can write you a great letter is one of the many reasons to get involved in research as an undergraduate. Finally, when you approach potential recommenders, make sure to provide them with details about each program to which you are applying, including the letters' due dates, as well as your CV and statement of intent.

Questions to ask current graduate students

When you visit a graduate program or the lab of a potential adviser, make time to talk to current graduate students. Ask them about their interactions with specific faculty members, how they are funded, how they divide their time between research and other duties (as a teaching assistant for example), and how many years most students take to finish their degrees. Students are the ones to also ask about the cost and quality of living. While you should feel free to ask graduate students most questions, also be aware that they will most likely provide feedback about you to your potential adviser or to the graduate admissions committee.

For more information

All Keck Science Department faculty and many staff members have advanced degrees, so plan to speak to someone in your field before you begin your graduate school journey.

Also see the Keck Science page on Graduate School Advising for more information:
<http://www.jsd.claremont.edu/students/gradschools.asp>



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