

Guideline to Graduate Applications in Biology

Most of the material in this guide was originally compiled by graduate students Eduardo Tassoni, Aurora Alvarez-Buylla, and faculty members Molly Schumer and Lauren O'Connell as part of the [BioPreview](#) Program. We have adapted it here as a concise guide touching on key points of the application process from the perspective of students applying to the Biology Department. It is important to note that following this advice will not guarantee admission to Stanford Biology, just as not following it will not preclude admissions. As a general introduction to thinking about graduate school in the School of Humanities and Sciences at Stanford, there is a good introduction about the process of applying to Stanford [here](#). There are also general guidelines for applying to the Stanford Biosciences program [here](#), and you can find more details about the PhD program in Biology in the [Biology PhD Handbook](#). Please note that if you are interested in applying to the Stanford BioScience Program and need assistance with the application fee, you can apply for a [fee waiver](#).

This version has been compiled by the Graduate Studies subcommittee of the Biology Department's DEIB committee, including Melanie Barnett, Rodolfo Dirzo, Christopher Lowe, Ashby Morrison, Kabir Peay, and Anaïs Tsai.

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Reaching out to faculty before applying to Biology

It is always a good idea to make early contact with faculty members whose research most interests and excites you. This conversation is best started *several weeks to months* ahead of the application deadline. The best way to initiate contact is by writing a brief email message that outlines your intention to apply for graduate school, and that you are interested in the research being carried out in their lab. You can also ask whether they are recruiting students for the upcoming academic year, and that you would be interested in hearing more about the work in the lab.



In the email, it is important to give a brief summary of:

- your academic background,
- your research experience,
- and your motivation explaining why you are interested in their lab's research.

A thoughtful, well written, but brief, description of motivation tailored to the specific faculty member will communicate that you have done your homework. Do not simply copy and paste from the description of their research interests provided on their website - i.e., "I am interested in your research on X". Faculty know their own research programs but are looking to learn more about your interests and experience when evaluating prospective graduate students.

It is a good idea to send your CV ([see here for some advice on crafting a CV](#)) but it is not necessary to provide any other written materials. Drafting a CV early on in the process also permits you to refine what you show on it, which is particularly helpful as you will be required to submit your CV in the application process. Here are a few things to consider while putting together your CV:

- Research experience (hours even)
- Science outreach experience
- Any publications you've published
- Posters presented (and where!)
- Any awards
- Teaching experience
- Faculty who can provide references
- Previous work experience (non research work experience included!)

The faculty member may respond with a request for more details or suggest setting up a phone call or video chat to discuss your interests further. Because each faculty member has a different approach to recruiting students, do not be discouraged if some professors don't seek more information and simply encourage you to apply to the program. Finally, most faculty receive dozens of inquiries from prospective graduate students, so if you do not receive a response within 1-2 weeks it is recommended that you email again. Don't worry about this being perceived as annoying - a second (or third) email is viewed by most as a helpful reminder.

Contacting faculty members in advance is especially important for programs with direct admissions (i.e. Eco-Evo and Hopkins in the Stanford Biology program) as faculty want to know the student they are thinking about admitting. For CMOB, or rotation based programs, try not to apply to the program just based on interest in a single professor/research group – you never know what can happen in the future (no space, not a good match, switching labs) – and the ability to rotate in different labs offers the opportunity to experience the lab cultures with several faculty members.



Whether or not you ultimately get an offer to interview, these conversations can still be incredibly useful in building your future professional network. These connections may turn into future collaborations, outside participants on your thesis committee, or future postdoctoral opportunities, especially if you end up working in the same research field.

It is also important to remember that as much as faculty are evaluating you, this process will also help you to evaluate if they (and the program) are a good fit for you. When you are trying to find faculty who you might like to work with, a good first step is to ask your current network (lab mates, research advisors, instructors) who they know that might be a good match. For example, as discussions progress, you should ask prospective faculty advisors about:

- their currently funded grants to get a sense for the future direction of their research program (this can change),
- what their mentoring philosophy is,
- how their lab interacts (lab meetings, lab outings, collaborations),
- and how much independence they expect from graduate students.

Another way that you can try to understand whether a lab is a good fit for you is by contacting other lab members (graduate students, postdocs) and asking them the same questions over email or phone. Emails of lab members are typically listed on the lab website.

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Personal Statement/ Statement of Purpose

Throughout the admissions process, committees and prospective advisors try to gauge your future potential as a scientist. Of course, you are going to graduate school because there are things you need to learn in order to grow as a scientist, but your *Statement of Purpose* (SOP) should clearly express your:

- **Previous** research experience,
- **Current** understanding of the graduate program or lab you are applying to, and
- **Future** career goals, including how graduate school will help you attain them.

Before writing your SOP, do your homework on the program and faculty you are interested in working with. For example, in the Biology Department there are three main tracks:

- I. *Ecology & Evolution (Eco-Evo)*;
- II. *Cell, Molecular, and Organismal Biology (CMOB)*; and
- III. *Hopkins Marine Station* (Hopkins)

Hopkins and Eco-Evo are direct admit (i.e. students generally join one lab from the beginning) while CMOB students are admitted to the program rather than a specific lab, then do rotations their first year before deciding which lab to join. For this reason, it is particularly important to reach out to faculty in *Eco-Evo* and *Hopkins* early to find an advisor with whom there is a strong fit. In addition, while there are many adjunct or courtesy faculty in Biology, they also take students through other programs so they are generally not as involved with the Biology admissions process.

Be careful, though, when selecting faculty you are interested in working with and writing about. Selecting faculty outside the program's department often results in applications being considered "not a good fit" and often results in the application being forwarded elsewhere. So make sure to double check that the program you are applying for is the program in which the faculty of interest are associated with!



While you should always reach out to prospective faculty advisors to see what experiences and traits they find important in graduate students in their labs, in general the admissions committee and prospective faculty advisors seek to determine:

- I. whether you are a good fit for the program (i.e. are your research interests aligned with the program / lab);
- II. how you got to this point in your research career (i.e. how did you develop an interest in science research);
- III. how passionate you are about science and research;
- IV. how have you persevered through scientific failures;
- V. what unique perspectives or experiences you will contribute to the diverse community at Stanford.

There is also a section of the general application dedicated to this final point, but it is advisable to integrate this perspective as part of your personal narrative in the SOP.

It is also a good idea to get started on writing your statement of purpose early. This permits time for reaching out to grad students and postdocs who you may have talked to throughout the process for feedback.

While there is no single successful approach to writing a personal statement, [here](#) is one example of a Personal Statements from a current graduate students and some of their suggestions.

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Preparing for Interviews

Each graduate program (Eco-Evo, CMOB, Hopkins) will independently evaluate applications and come up with a list of interviewees who will be invited to a 3-4 day visit, which includes in-person interviews. For Stanford Biology, there is only one date for attending interviews (usually in late February or early March).



“It’s important to craft your message to a broad audience, rather than just specialists in your field”

Once you receive an offer to attend the interview you will be asked to suggest names of faculty you would like to interview with. While you may not get to meet with each of these faculty due to scheduling constraints, try to pick people who you might be interested in working with but also who you think can give you different perspectives on how the program works. In Biology, this usually means about 8 interviews with faculty over two days. You will also have the opportunity to meet with graduate students, postdocs, and student services officers. For direct admit programs (Hopkins, Eco-Evo) students and postdocs will mostly be from your prospective PI’s lab. Talking with these students

more casually can also be a good way to gauge if the program is a good fit.

Generally, interviews are 30 minutes long. Every professor has a slightly different approach to interviews, but usually you will spend most of the interview describing your previous research experiences and your motivation for going to graduate school, and what sorts of questions are you interested in addressing for a PhD.

In preparation for these interviews it is a good idea to try to and have an elevator pitch ready (a 1-3 minute synopsis that is accessible to anyone), as most interviewers will start by asking you for a brief summary of your experiences and interests. This often helps guide the rest of the interview, so practice what you’re going to say and how you describe your previous research experiences. It’s important to craft your message to a broad audience, rather than just specialists in your field, as faculty (or other interviewers) may have reviewed your application/CV several months ago. Similarly, to prepare for the interview, do your homework and learn about what the professor you’re interviewing with studies: you will receive a list a couple days prior to your interview. Look at their website for publications and projects. Websites aren’t always up to date so you can also check [PubMed](#) or [Google Scholar](#)¹.

¹ Tip: look for new papers where the faculty is first or last author (this often indicates that their group led the project) to get a sense for their current research focus, but also check to see what their most cited publications are to get a sense for what they are best known for.

Think and write down questions you want to ask them so you don't forget – you can bring your notebook to interviews. Questions can be research-related, but also program-related. Be ready to get out of your comfort zone and think out of the box. Some questions faculty might ask you:

- How would you test this scientific question?
- What challenges have you had to overcome to get here and how does that make you more prepared for graduate school?
- What experiments would you do if you had unlimited funding?
- What questions do you have for me?



Practice, but it is not necessary to prepare a full speech/lecture – remember it's a conversation between you and a professor. Other aspects to consider include:

- Providing some conversational spaces while speaking so they can ask questions about your research,
- Adjusting your talking points for your speech depending on the audience (someone that works in the same research topic vs. someone that works with something totally different).

Remember, you are being interviewed by them, but you are also interviewing them/the program to see if it's a good fit for you. Don't feel like it's all on you!

For the last 10-15 minutes of the interview, usually the professors talk about their research and ongoing projects in their lab (or ask you if you have any questions to ask them). Engage in the conversation about their research (it's okay not to know specifics in their field, but show your interest and willingness to learn by asking questions). For example:

- suggest your interpretation,
- rephrase what they're saying to make sure you understand,
- and ask about the next steps of the projects.

Show your enthusiasm about science generally and about graduate school specifically. Ask lots of questions! Faculty want to see that you can think as a scientist and love to think about science (even scientific topics outside your or their research field). Perspective, feedback and comments from diverse backgrounds are important in science. If a faculty person talks at length about their research, try to politely ask questions to make sure you're on the same track but avoid excessively interrupting them.



At the end of the interview thank them for their time and feel free to talk to them again during social events during the interview weekend. While not necessary, it is good practice to send follow-up emails to thank anyone you spoke with. Even if you don't join their lab, these are professional relationships that can prove to be important down the road.