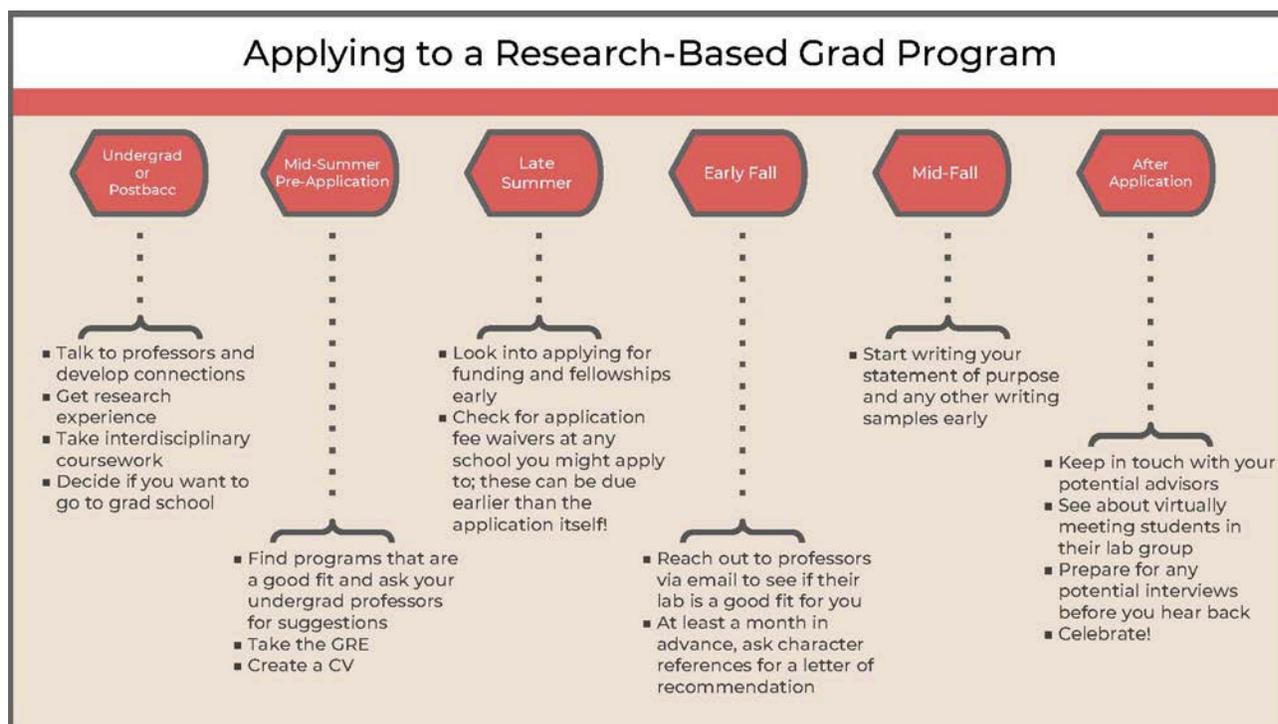# How to Apply to a Research-Based Graduate Program
By Isabella Chiaravolloti

So, you're thinking about applying to grad school. Awesome! In this document, I've outlined a step-by-step timeline with tips for the graduate school application process. These applications generally consist of the following segments: statement of purpose, three letters of recommendation, resume or CV, transcripts, GRE scores, application fee, and sometimes additional writing samples, subject-specific standardized tests, and diversity statements. While you must submit every piece of the application on time, networking and setting yourself up beforehand are vital pieces of the process.

Undergraduate Level or Postbaccalaureate: Getting Research Experience and Networking

It's never a bad time to begin setting yourself up for success, be it during your undergraduate experience or after you've completed your degree.

As an undergrad, you can start creating a solid network of people from whom you can get advice, letters of recommendation, or experience. I highly recommend attending professors' office hours, even if you don't have any homework related questions. You can chat with professors about course material, their current research, and what you'd like to work on. Often professors will allow you to schedule one-on-one appointments if you want to learn more about how to get involved with their lab and research (or if you need help with the material and your schedule doesn't work with their posted office hours). I've even scheduled some appointments to talk about directions into which I can

take my future. If you want to work in a lab but you're not sure who is doing the research you are interested in, you can ask a professor whose class you've taken if they know of anyone in the department who would be a good fit for you; this is how I found the lab in which I completed my senior thesis! Completing a senior thesis in a lab can show that you have research experience in addition to showing that you can write up a project to completion.

Experiences are not only very valuable in a graduate application, but they are also formative in helping you decide what you like to do. I was a lab assistant in two different labs with vastly different areas of study before I found the one I settled in best. Exploring your options is a great thing to do! By working with multiple people, you can broaden your network, develop more skills, and get a taste of the available options.

Working in your college's lab isn't the only way to gain experience. Suppose your school doesn't have a lot of active research. In that case, you can talk to your professors about directions you can go in, look into applying for research experiences for undergrads (REUs), and see if there are any hometown specific opportunities available over the summer. You can also volunteer or work at local institutions (like a museum or planetarium) or find a summer internship. Another option is to look for remote coding or fieldwork opportunities at other universities you might have a connection to.

Working in the industry after you've graduated can also be helpful, especially if you're not sure if you'd like to go to grad school yet, or if you haven't settled on a specific type of research. Industry experience can develop you further as a scholar by refining and teaching you new skills and making more connections who can act as a character and employee reference. Industry jobs can also allow you to show that you can complete large projects, if you haven't already, and show that you can work independently or in a group setting.

Undergraduate Level or Postbaccalaureate: Coursework

Your major in college can be directly related to what you end up doing, or you could end up working on something that applies the skills you've learned in your major to a different area of study. Don't be concerned if you are almost done with or have completed your undergraduate degree and feel you want to switch topics! You can highlight the transferrable skills and techniques you learned throughout your undergraduate career in your application. You can also show that you are motivated to learn more about a specific area of research by taking either an upper-level elective course within your major or a course outside of your major that would be relevant to your goals. For example, if you want to model climate change and are an earth science major, take a few computer programming classes to have the necessary skills you will need to perform modeling research. Lastly, you can learn on your own by reading articles in the subject you are interested in.

Undergraduate Level or Postbaccalaureate: Deciding if Grad School is What You Want to Do

Decide why you want to go to grad school! Graduate school can be an enjoyable and transformative experience. Still, it is a lot of work and a considerable time commitment, and you must be very passionate about the research you are working on. Having experience in the field you plan to apply to for graduate school is essential so you know you enjoy doing it. There are many good reasons to go to graduate school, including loving lab work, passion for solving a problem, becoming a more marketable candidate for future employment, and too many more to list. It would help if you had a clear reason you want to pursue the degree; this can vary from person to person but having a motive for going to graduate school sets you up for success. The only reason that is usually a wrong reason to go to graduate school is if you are postponing deciding what you want to do.

Consider whether a Ph.D. or master's program is best for you. This will depend on your reason for applying to graduate school. Generally, master's programs are designed to qualify you for specific jobs, while Ph.D. programs prepare you to perform research in the field; however, this varies greatly depending on the field. You can also pursue a Ph.D. after you have received a master's. If you are unsure about which is suitable for you, I would suggest talking with an advisor or professor about what type of grad school is right for you.

Late Spring to Mid-Summer Before the Application is Due: Searching for Programs

Finding programs can be a challenging part of the application process. There are many excellent schools out there, and it can be difficult to weed out the ones that aren't a good fit for you. Look for universities that do research you are interested in. I recommend searching for articles in google scholar that are similar to your specific interests. The scholars and universities affiliated with the article will be listed on it. I also recommend talking to undergraduate professors and advisors as they may have connections or insider knowledge about potential advisors. My senior thesis advisor recommended a list of potential advisors to me based on his understanding of their advising style and his academic knowledge of hard-hitting research in the field (and I ended up going to one of the schools he recommended!).

If you are concerned about paying for a research based graduate program, many people don't know that most Ph.D. programs are funded either by professors' grants or by the school. This means that you will likely be paid a stipend for the research you are working on, or for working as a teaching assistant 10-20 hours per week. This is an important piece of information to check on when you are applying to schools!

I've heard from many people that it isn't worth applying to safety schools, as you want to avoid getting stuck for 4-6 years in a program that isn't exciting or supportive enough for you. They suggested that you should only apply to programs you would be excited about going to, and if you don't get in, to make your application stronger for the next round of applying. This is a personal choice, however, and doesn't apply to people who

just need to check off getting the graduate degree that they need for the career path they want to pursue. Remember that you don't have to apply to all the schools that are suggested to you, once you've got a list of ideas going, move on to the reaching out section of the application process. You don't want to waste time and money applying to schools that you wouldn't say yes to going to anyway!

Late Spring to Mid-Summer Before the Application is Due: Take the GRE

The graduate record examination (GRE) is a daunting standardized test that used to be required for almost all graduate programs. More recently, it is becoming optional or even obsolete in graduate applications, as schools see it as a barrier to admission or not representative of the applicant. They are beginning to focus on more holistic application pieces like letters of recommendation and research direction. However, you may want to take it before you know which programs you'd like to apply to, just in case you need it later or would like to retake it before applications are due. If you are able to, another reason I recommend taking the GRE is that it can make you eligible to apply for specific scholarships and fellowships that you may want to apply for in the future.

Many great GRE study tips are online, and tons of test prep booklets are available in bookstores and libraries. I won't go into the details of how to study for this exam, but at the bare minimum, if you're planning on taking it, I recommend prepping by taking a practice test (available online). This way, you know what style of questions to expect, you can identify which parts of the test are difficult for you, and you aren't caught off guard during the real thing.

Late Spring to Mid-Summer Before the Application is Due: Write Up a CV or Resume

On many graduate applications, you need to include a curriculum vitae (CV) or resume so that the admissions committee can easily review your accomplishments, skills, and academic history. Suppose you don't have a lot (or any) publications from prior master's or undergraduate work. In that case, you can detail your past research experience and list skills you've acquired from lab work or courses! If you don't have a ton of prior research experience, adding your relevant industry work experience, skills, and techniques is also perfectly fine on a graduate application CV. Getting a refined CV early can also be super helpful because you can attach it to your initial email to potential advisors.

Late Summer: Looking for Funding and Application Fee Waivers

Applications for funding opportunities and application fee waivers can be due deceptively early. Many application fee waivers are due long before the application for the school itself, even as early as October. Staying on top of deadlines like these can help ameliorate financial hardship, and applying for outside fellowships can also bolster your application. External funding opportunities, like the National Science Foundation Graduate Research Fellowships Program (NSF GRFP), NASA graduate fellowships,

and more, can also be due much earlier than graduate applications. Applying for scholarships and fellowships can be good for your application, as they show your drive to succeed, your motivation to bring in outside funding, and they can be appealing to programs that don't have a lot of funding. Some advisors have room in their lab for new students but need more funding to accept them. If you have the potential to bring in your funding, you can be a stronger candidate. But don't worry, if you miss the deadline on some of these scholarships, you may still be eligible to apply for them in your first or second year of grad school!

Also, your employer may be willing to (or even have a program to) fund your master's degree. Many companies offer this option because they want to support their employees' growth and hope they will come back with a more extensive skillset. It is something worth looking into!

Early Fall: Reaching Out

Reaching out to professors is a huge part of the application process! You should email potential advisors to introduce yourself and state your interests so that they know who you are and they can put a face to the name. By emailing professors, you can find out whether they are accepting students for this round of the application so that you don't waste time applying to a program that doesn't have any spots.