Nowhere Lab PhD Survival Guide

Introduction

This guide has been written by Nowhere Lab. Nowhere Lab (http://nowherelab.com/) is an online community for people who would like the lab meeting experience but don't currently have one. We hold weekly meetings and have an active Slack. We have members from across all populated continents and career stages: masters students, PhD students, postdocs, faculty members, and people working outside of academia. We often have conversations where people who have done a PhD share advice with members who are considering one. We decided to share this advice openly, in the hope that it will help people who are considering embarking on a PhD or have just started. The diversity of Nowhere Lab makes our advice broadly applicable to a variety of situations, and so many of the points would also be relevant to those considering/doing a masters too, or other early career researchers. Some points will be useful to anyone who is working or studying! So, in short – if this guide is useful for you, then it's for you.

How to use this resource

This guide is not designed to be used as the ultimate truth, a 'tutorial' for navigating the PhD journey, or the one way of having success (whatever that might mean) as a PhD student. Every department, university, and country is different, and even two individuals in the same department may have completely different experiences due to intersectionality and their own personalities. So, feel free to dip in and out of this guide and consider it more of a 'toolkit', where you can take what you like and leave what you don't.

Contents:

Things to know about doing a PhD

There could be many reasons why someone would decide to do a PhD. It could be their passion for a topic, their interest in working in academia, or an interest to contribute to the discovery of new knowledge in a specific field. Whatever the reason is, it is important to know that a PhD is not just a continuation of an undergraduate or a masters degree.

- Coursework (if it even is offered) and grades likely will have less of an emphasis or take up less of your time (e.g., meet less frequently, have fewer assignments for grades, etc.). So the skills (e.g., being good at taking tests) and performance (i.e, getting good grades) that got you into graduate school are not what will be emphasised or needed to achieve the next level. For example, getting a post-PhD job will not be based on your transcript but instead mostly on the quantity and quality of your publications (for academic jobs) or the skills you've acquired (for non-academic jobs). In some countries/universities they will only award the PhD title to candidates that have a certain number of peer-reviewed publications in recognized journals.

- In undergrad, you were applying to a university, department, or maybe even a location (e.g. you always wanted to live on a coast), but in grad school you are applying to work with a person: your prospective supervisor. Although the prestige of the program can matter down the line (e.g., program reputation can open doors or at least get your work a closer look), it is not a good reason to apply to that program if no one there is doing the research you want to do. Even if someone is doing the research you want to do, they may not be accepting students in a given year (e.g., they are on sabbatical, leave, don't have funding, etc.), or they may not be a good supervisor (e.g., they don't have a good track record of student success, they are not good at mentoring, they mistreat or neglect their students, etc.)

- The graduate school year is a calendar year, not just fall-spring with a long summer break. You are expected to be working (generally writing, analyses, planning new studies) even when classes aren't in session. Of course, you should take vacation and holiday breaks, but the work is not as finite as it was in undergrad (i.e., your work doesn't end with your last final exam or paper).

- Not a single PhD project or journey is the same, even when working with similar topics or in the same university and sometimes even working with the same supervisor. Interpersonal relationships, equipment and laboratory availability, funding, 'timing' and even luck will play a part in each person's path. Comparing one's trajectory, project, and output with another is rarely productive. Nevertheless, this is a mindset that most students will eventually find themselves in and it is something to be aware of and careful about.

- You will learn a lot about a specific topic, but you will also develop many skills that can be applied in academic and non-academic roles. You will also learn transferable skills that will also be useful outside your area of research.

What's great about doing a PhD?

- **The autonomy** - When you're studying, you have lots of specific classes to take which have specific requirements. When you have a job (even if it's in academia) there will be parts of your job that you have to do that can take up a lot of your time (e.g. in academia admin and service work). During your PhD, you will have a lot less of this, and most of your time can be devoted to pursuing your own research on whatever interests you! This autonomy is rare to find elsewhere.

- **Adventure** – Being able to explore a new field can be an adventure! In a PhD, you can explore something interesting in a lot of detail and learn about the mechanisms of something you were always curious about. You also have opportunities to take the research in different directions, depending on the initial findings, and might discover something you never expected at all and push the boundaries of the field.

- **Friendship** – You will be able to meet other people who love discussing similar topics and asking questions, learn from them, get support and guidance, and nerd out over your favourite theories or research methods!

- **Personal growth** - you will find that the years spent in a PhD programme present you with many challenges, but also offer many opportunities, and in the end you learn a lot of new skills and are able to do things that you might have found difficult or scary in the past - whether it's using a new programming language or giving a presentation to a room full of people.

- **Flexibility** - In grad school, your day can be largely unstructured - that is, you have few activities that you have to be doing at a certain place and time. So you may decide when you work (whether you are a night owl or early bird) what you do during that time (e.g., one project continuously or switch around between various projects), and often even where you work (e.g., lab, home, coffee shop).

- **Internationality** - You will have peers from different corners of the world, all united by interest in similar topics. You may also get the chance to travel abroad for conferences, meeting new interesting places and people.

What's not so great about doing a PhD?

- **The competitiveness** - Doing a PhD can be competitive implicitly and explicitly. It can be easy to compare yourself to others (number of accepted talks, publications, successful grant applications, prizes), especially if you are hoping to continue an academic path and therefore know these metrics will be used to compare yourself to others for jobs.

- **The uncertainty** - Feedback is not as immediate as it may have been in undergrad. For example, you may not know the outcome of your study for several weeks, months, or even years if it involves a longitudinal data collection. You can also end up having only "negative" (null) results which can be harder to publish (even though they can be as scientifically important as "positive" results). Grant/fellowship applications often take months to distribute the outcomes and generally little or no feedback is provided about why you were not funded. The publication process also can take a long time and you may wait several months to get reviews.

- **Effort and success are uncoupled to a greater degree** - In undergrad, if you studied more or spent more time on your paper, you likely saw the benefits in terms of a higher grade, better understanding of the material, etc. However, with research, which will take up a major portion of your time in a PhD, more time in the lab, running a study, working on a project, etc. doesn't necessarily mean that your study is more likely to "work" or that your research is more likely to be published. It certainly helps, but the relationship between effort and success is not as direct as in other areas of life.

- **Flexibility** - For some students, the lack of structure is a challenge especially in the summer months. You have to have a fair amount of self-discipline and self-motivation because you may not have any clear deadlines or direction about what you should be doing. Supervisors will have different styles that may increase or lower this flexibility: some prefer weekly meetings even if no meaningful advancement happens in the project, some prefer infrequent scheduled meetings, others prefer not to have a schedule and expect the student to approach them only when significant progress happens in the projects.

- **Friends and family** - You can make really good friends in graduate school, but you are unlikely to ever live in the same location as each other again. You might be able to see each other 1-2 times a year at conferences - if you both stay in academia. Even if you manage to stay where you do your PhD or where your family is, your colleagues and work friends will likely be temporary and rotating every couple of years.

- **You have to learn to manage your graduate supervisor** - Other graduate students in the lab should be excellent sources, and some supervisors have sufficient insight into themselves to give you direction, e.g. whether they prefer short or detailed emails.

Academic myths

- **What you plan in your research proposal is what you'll do in your PhD**
    - For some PhD positions, there's either a specific research proposal already that you're applying to work on, or you write your own as part of the application. However, no matter how perfectly planned your research proposal is, it is likely that you will make tiny or huge deviations during your PhD, and this is OK! You can't predict whether an idea for a study will work out logistically (e.g., maybe a global pandemic will throw a spanner in the works…) and as you progress in your area you may come up with other exciting questions that take priority. As long as your supervisors OK this, it's completely fine and common to deviate!
    - Sometimes your supervisors might ask (demand?) you to work on side projects tangentially related to your own projects. While it is OK and perhaps even encouraged to do so, you might need to remind them about your obligations (e.g., reports on the advancement of your research to grant agencies).

- **A PhD leads to an academic career, and that's it**
    - Think broadly about your career. Know that a PhD builds transferable skills and expertise in research design and project management, all of which pave the way for your career success. A PhD can open doors in scientific research, private sector, exciting technology startups, government, nonprofits and thinktanks. Don't limit yourself to thinking that you'll have to choose between only academic research and teaching.

- **You have to work evenings and weekends**
    - Many people have finished PhDs working "normal" full time hours – including both those who have stayed in academia and those that have gone on to jobs outside of academia. There will be subject-specific exceptions (e.g. in bio sciences having to do something to cells[1] after a certain number of hours)

[1] Yes, "do something to cells" is the scientific term, we'll have you know.

Top tips

- **Treat the PhD like a job** – Set boundaries and prioritise work-life balance.

- **Self-care** – Have an activity that relieves your stress such as seeing movies, listening to music, exercise etc.

- **Have a support network** – Talk to others about your struggles (e.g., other PhD students, colleagues, supervisors. They will help you.). Do not be afraid to ask for help.

- **Network with other researchers outside your lab** – (e.g., attending conferences, academic Twitter, Slack communities, giving to and attending talks, etc.). In many North American schools, graduate students across programs take the same graduate statistics/methods sequence their first year. The course provides an excellent opportunity for you to meet people outside your program, which can get very insular.

- **Network** – The most important part of conferences sometimes might actually be the networking (within the conference and after hours), not the scientific talks. Poster sessions are very useful for 'breaking the ice' and getting to know people, you will not meet anyone by simply attending the lectures/talks.

- **Upskill** – Expand on other skills that can also help you get a career outside academia (e.g., coding, teaching, etc.). Take as many statistics/methods courses as you can now. It opens doors and can be difficult to find the time later.

- **Rest** – Make sure you take annual leave and regular breaks throughout the week. If possible, try to not do any work *at least* one day a week. You always will have something to do (e.g., another round of revisions on a paper, more articles to read, etc.), so you have to determine a stopping point.

- **Write a lot** – The more you write and the more regularly you write, the easier it is and the better you get. Write everything down; don't expect that you will remember everything you did, read, etc. It will help when writing up your thesis.

- **Pick the right topic** – You don't need to be passionate about your PhD subject, but you need to be intrinsically interested in it. It can be a lot of work on your own with you setting your own schedule and tasks, so you need self-motivation, which is easier to achieve if you are engaged by the topic.

- **Present whenever you can** (e.g., give talks, guest lectures, teach, etc.) – Like writing, the more you do it, the easier it is and the better you get. Public speaking is a skill valued inside and outside of academia. If your department or group do not have (bi-)weekly meetings to present ongoing projects and discuss topics/methods, talk to your peers and organise such a meeting (or join Nowhere Lab!). There will definitely be a few people interested and you will practice your management skill and presentation skills. Suddenly, presenting at a conference will not be nerve wrecking!

- **Be confident and believe in yourself** – You can do this. You are enough.

How do you choose between two PhD programmes?

- **Supervisor** - Speak to the current grad students; they are the best source of information about what it is like to work with the supervisor. Don't try to explain away any red flags.

- **Training** - How many statistics/methods courses are offered (or would you have funding to attend some courses externally)? Are they highly regarded? Are these courses relevant to the path you have in mind? Training can open doors even beyond academia.

- **Funding** - Is it enough for the location's cost of living (e.g., you might get more $ from one school, but the cost of living in that location might make the funding packages more comparable)? Are there summer funding opportunities? Some places (e.g. The Netherlands) have a 'Salary Scale', meaning that your salary will be fixed and matched with other students and calculated to provide a reasonable living condition regardless. This, however, does not guarantee funding for experiments, publications and travelling.

- **Resources** - Does the lab/department/etc. have sufficient resources for you to get your research done? Is there a participant pool or links to schools/hospitals/companies already established? Has your supervisor agreed and is there already funding secured to cover your research expenses including participants, materials, software, publishing, etc.?

What do you do when you think you've made the wrong choice?

- Don't prolong the agony or let inertia keep you from moving on. Graduate school isn't for everyone and not every supervisor is going to be a good match for everyone. If you know graduate school isn't for you, then there's no shame in pursuing something else[2]. If you have decided you still want to be in grad school, then talk to your supervisor to see if improvements can be made. Too often students wait too long to do this or let a misunderstanding fester until the relationship cannot be repaired. If that approach doesn't work or the supervisor isn't receptive to changes, see if another faculty member is willing to supervise you.

[2] Note, there may be constraints based on your geographical situation where it isn't financially viable to quit, e.g. if you will have to pay certain money back to the government that was awarded to you. In these cases it is even more important to think carefully before enrolling in graduate school. There may be other adjustments you can make, e.g. changing supervisors.

Signs of a toxic work environment

- When supervisors/other people in power push their ideas on those they are in charge of regardless of relevance and merit; when the supervisor yells at their students and expects results without offering guidance or listening to what issues arise, and when your ideas, comments, and concerns are ignored

- Faculty aren't around/available. Faculty aren't invested in graduate training (don't come to brown bags or student presentations, aren't willing to meet/provide feedback, aren't willing to listen to feedback or introspect when students leave early).

- Supervisors not being available to help their students, or no regular meetings with the lab even if it is just to "catch up".

- When people describe someone as the best or more committed because they stay super late and never take holidays/time off.

- A lack of (geographical, racial, gender, etc.) diversity within the lab group or department. Research is intrinsically international, ao it is possible there is a preference and discrimination in the selection process if this is the case. Use norms within the country to determine whether this homogeneity is "normal" for this country or seems unusual. Check the post-doc researchers and early-tenure professors. It can give you an idea of prejudice and the possibility of career advancement in that department.

- If you feel like it's toxic, it's probably toxic. Even if others don't seem to understand when you try to explain it to them, trust your instincts. Trust your gut, and if other people in the lab seem edgy about your questions, that's a sign that they're not a supportive group.

- A toxic environment diminishes who you are and stifles your voice. It's also possible that a toxic environment is falsely giving "positive vibes only". Sometimes people might not be directly toxic but create toxic situations, so evaluating each individual might make you think things are not toxic even though they feel (are) toxic.

How NOT to Handle Stress

- Trying to just plough on instead of taking a break

- Internalizing things that happen instead of expressing them

- Missing sleep

- Bottling it up

- Not taking at least 1 day off per week

- Working long hours day after day to 'compensate' for unproductive days

- Trying to do things for as long as possible

- Self-blame and self-rejection

Further reading

- A Field Guide to Grad School, by Jessica McCrory Calarco
- The Compleat Academic, by Darley et al.
- The Professor Is In website
- How to Write A Lot by Paul Silvia
- Five Truths About Graduate School That Nobody Tells You by Nathaniel Lambert
- How Not to Suck at Graduate School by Steven Shaw
- Hidden Careers in Psychology by Austin Kane