

Ph.D. Student Best Practices

Crowd sourced from doctoral students at Stanford MS&E in 2012-2013

Ph.D. Student as a Doctoral Student

First Steps

- **Create an option for a research setting early on.** You won't be caught scrambling for a study environment when you begin your dissertation (please take into account that this is contingent on the area of your study (obviously less important if you are in mathematics)).
- **Think long term.** Look 2 or 3 years into the future and create actionable activities according to your long-term plan to avoid bottlenecks.
 - For example, if you want to begin a survey-based project next year, starting learning relevant skillsets and look into setting up a field site now.
- **Think of your goals as foundations for your career,** not tasks to be accomplished. Don't learn materials just to pass qualifying exams or accomplish a deliverable – explore class and research material in context and understand that it will all contribute to your field of expertise.
- **Choose your topic early.**
 - Find overlap between what you enjoy and what your advisors know.
 - If you have a choice, pick a method on which your advisor can offer a lot of expertise – and build your committee around members who have expertise in the method you've chosen. They will be able to help you past hiccups and better advise you on your topic because methods often shape the questions you ask.
 - Use course assignments to explore your topic (e.g., by writing final papers that tackle one stream of literature related to the topic, etc.).
 - Doing explorative work that feeds into your dissertation proposal will make the process of coming up with a research agenda less daunting.
 - This method lets you introduce your topic to a range of faculty members, which brings you feedback you might not hear otherwise.
- **Focus.** Balance your dissertation and projects around a single research program. The more you interrelate things, the easier it is to stay on track and accomplish your objectives more easily (by sharing literature reviews across papers, for example).

Get Advice and Work Through Problems

- **Write things down.** If you're grappling with a problem, expressing it in words can often force you to think more carefully and understand the situation better.
- **Discuss your research with others** when appropriate. Discussions with your peers are a great way to share ideas and gain diverse feedback.
 - Get more than one opinion on how to approach a research problem, especially if you're crossing disciplines.

- If you feel uncomfortable sharing your idea, consider discussing broad themes with many people to collect many perspectives, but sharing specifics only with people you trust.
- If a conversation you have with someone is helpful, reward them. Cite the discussion as a footnote in your paper.
- **Meet with your advisor regularly.** The more you interact, the better you will be able to gain insightful feedback and catch problems as you go.
 - Prepare an agenda before each meeting.
 - Always email your advisor a written document of what you've been working on before you meet. This forces you to get ideas on paper in a constructive way, and the advisor will be better prepared to give constructive feedback during the meeting.
 - Be sure to follow up right away on any notes you take (before you forget their context).
- **Identify department experts in each field** so that you can seek help from them when appropriate. Networking with faculty and doctoral students who have specific knowledge is the fastest way to learn a new subject or gain new ideas.

Write the Paper

- **Read slowly.** When it comes to the literature review, you'll be able to connect subtleties from each paper in novel ways.
- **Make a timeline for your dissertation,** including dates you plan to submit to journals, etc. Show it to other people, including your advisor, so that their involvement will make you accountable.
- **Commit to frequent, short, iterative writing sessions,** which are much more effective than 'binge writing.'
- **Embrace uncertainty.** Don't let a lack of knowledge (a foreign language, lack of programming skills, etc.) stop your chase for an interesting idea.

Stay Organized

- **Keep a working notebook (physical or virtual) for all your ideas.** This will keep you from forgetting important information, spark new ideas, and make writing the first draft of a paper a snap when you can copy and paste sections you've already written. Always write down:
 - notes on literature you've read
 - ideas for modeling
 - simulation results
 - ways content in a seminar class might be relevant to your research
- **Develop a system for organizing literature** as early in your career as possible. When literature reviews come around, you'll be glad you did!
 - Mendeley is a great resource to keep track of references and PDFs of source material.
- **Collect all of your dissertation ideas in one place.**

- Make a folder on your desktop called “Dissertation.” Create a text file inside this folder for every chapter you want to write, and when you think of a new research idea, type it in immediately.
- The writing process will go much faster.
- You’ll be able to improve your ideas through successive iterations.

Stay Sane

- **Minimize time spent online.** You’ll improve your quality of life, and having real-world experiences instead of working all the time may actually lead to better research ideas.
 - Try leaving your computer at the office when you go home at night – just for a week – and see the change it makes.
- **Focus your energy.**
 - There are dozens of seminars and talks every week, and they are a great way to explore ideas and meet new people. You may be tempted to attend as many as possible, but your brain energy and time are limited. Think about what you really gain before going to every event on the calendar.
 - Limit your courses to a number that you can comfortably handle. This lets you really focus on the course you’re taking while still having time for research and teaching.
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- **Maintain your outside connections.** It’s easy to forget life outside of campus, but actively staying in touch with old friends, mentors, and coworkers broadens your horizons and often leads to interesting research opportunities.
- **Focus on your health.** If you neglect your health (physically, socially, or mentally), your work will suffer.
 - Exercise regularly, even if you have a busy schedule.
 - Make time for friendships, sleep, and a healthy diet.
- **Prepare for rejection.** Before you submit a paper, think seriously about all the flaws in your argument and write them down. You will be better prepared – academically and emotionally – to deal with negative feedback.
- **Remember: you can’t be “productive” all the time!** Take time for yourself – hike, visit San Francisco, go to social events, or take a one-credit class. If you don’t enjoy your life as a grad student, you probably won’t stick with it.

Ph.D. Student as a Teaching Assistant

Understand Your Role

- **TAs have three stakeholders to satisfy:** the teacher, the students, and themselves.

- The teacher: wants you to respond quickly to his/her needs.
- The students: want you to grade their assignments quickly and insightfully.
- You: need to accomplish your TA tasks quickly and effectively so that you can focus on your research.
- **Teach a class** if you get the chance. It's the best way to identify your teaching style, and watching the faculty will help you learn how to engage a class.
 - Teach classes that are related to your research interests. You will be well prepared to help your students, and you will expand your own knowledge.

Help Your Students and Your Professor

- **Always review class topics before office hours**, even if you think you know the subject well. It is easy to be caught by surprise.
 - Attend class and take notes. Knowing the structure of the class will help you with students during office hours.
- **Respond to emails as quickly as possible.** Students will truly appreciate your effort.
 - Consider sending weekly announcements with all of that week's necessary administrative and homework help items to minimize questions and avoid last-minute panic.
- **Anticipate needs ahead of time.**
 - Students appreciate a single visual or guide that brings class material together. This could be a chart or a diagram that summarizes a lecture.
 - Think about ways to help your professor.
 - For example, large lecture classes are easier when students have name cards. Bring some with markets on the first day of class even if your professor doesn't ask.
 - Forward potentially sensitive/inflammatory emails to faculty before replying to the student. Your professor has probably seen it before and knows the best way to handle it.
- **Facilitate understanding.**
 - Make your expectations and grading criteria very clear to students.
 - Discuss administrative matters with the professor before the course starts so that decisions can be made in tandem with your schedule and with your abilities to best help the students.

Manage Your Time

- **Always tackle your TA chores first.** Get them off your plate (and mind) the same day they arise to minimize stress.
 - Try blocking off two hours after every class period to dedicate exclusively to grading that day's assignments. You'll feel great when you're done with TA responsibilities for the day and can focus on other activities.
- **Avoid multiplying your workload.**

- Try posting answers to common questions on the class website instead of emailing individual students.
- **Set up an infrastructure.**
 - Create standard documents for rubric emails, class admissions, etc. These can be quickly copied into relevant situations and even passed down to future TAs.
 - Use Qualtrix to set up surveys (e.g., for class admission). It's a great time-saving tool.

Ph.D. Student as an Event Organizer

Manage Logistics

- **Communicate.**
 - Always maintain multiple channels of communication with a speaker to handle any last-minute "I'm lost!" crises.
 - Send multiple reminder emails and use advance bookings to prevent issues

Stay Organized

- **Manage your communications.**
 - Use a folder system in your email client to sort email chains.
 - Jot reminders in your calendar.
 - Use lists and schedules. Enumerating tasks helps everyone get on the same page.
- **Use your resources.**
 - Admins can be very helpful in finding caterers and suppliers. Ask your faculty member for names of admins to talk to.

Stay Sane

- **Prepare for the worst.** No matter whose fault it is, as the organizer, you will be blamed for any issues, so always have a contingency plan.
 - Be sure that all involved faculty agree about an event *before* you start organizing it. Let them settle any differences on their own.
- **Manage your mindset.** Even though sometimes you may feel like a tour guide or personal assistant, remember that you are the face of the department and it's important that you make visitors feel welcome.
- **Learn to say 'no'.** If you can't devote the necessary time and energy to a service role, it's much better to pass it off to someone else than to do a middling job.

Most important, across all these categories: **Prioritize:** Identify all of your roles in life – Ph.D., instructor, organizer, husband, mother, friend, – and keep a to-do list for each one. Every week, identify the three most important tasks for each role, and

focus on these before anything else. This keeps important tasks from becoming urgent tasks, and it will keep you from getting stressed.