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Purpose of this document

I'm writing this because while we give explicit guidance to our students in the classroom via our syllabi, we don't do that for our PhD students. There are lots of guides out there offering general PhD guidance. Some of them are great, and there is a curated list of them here at the end of this document. However, as many of them will tell you: your PhD is largely a function of your relationship with your advisor. That relationship is often idiosyncratic, depending on both people, and how they interact.

In other words, you and me. :-) Therefore, this isn't really a guide for *everyone* doing a PhD, but rather primarily a guide for my students working with me.

I'm thinking of this as a living document that I'll add more to as time allows, and as new topics come up. I don't think I could have written it until recently, when I started repeating myself on various topics to different students. That must mean I sort of know what I'm doing?

As with all guidance you get in academia, take caution when applying it to your situations and contexts. You should also view this document as complementary to the UMSI Doctoral Student Resources and the UMSI Doctoral Student Handbook.

Acknowledgements

Thanks to colleagues who gave early feedback on this document—some of which I copied and included as footnotes! Thanks to all my students, who both gave feedback on this document, as well as let me learn to be an advisor. Jane Im, in particular, gave me much needed encouragement and critique to finish. Also, thanks to my own (wonderful) advisor Karrie—who put a lot of these ideas in my head in the first place.

Perspective on the PhD

In my opinion, the goal of any PhD is twofold:

1. To create new knowledge together;
2. To launch a brilliant new scholar into the world.

When in conflict, I prioritize 2 over 1. Advising and working with PhD students is perhaps the best part of this job. PhD students are my most central and essential collaborators. Without them, I couldn't do most of the research I do. I am always trying to keep in mind that *yes:* the goal is to produce great research. But more importantly: to create a great new scholar. And, ultimately, for that new scholar to *not need me at all.*

This is also *your PhD*, by which I mean:

- You should have significant freedom and agency in your PhD.
- You should feel ownership over your research.
- You should be excited about the research you do.

By contrast, I don't believe the PhD is any of the following things:

- A "long class";
- A program where I hand you a list of instructions for you to carry out;
- A way for me to extract labor to grow my CV.

Toward all these ends, I will aim to give you as much independence as I think you can handle (and maybe a little more), as early as possible. I try to assess this on a case-by-case basis; if you feel like I misjudged it any time (e.g., too much or too little), please let me know. The general path is increasing independence over the PhD. You will see this philosophy echoed throughout this document.

How long is it?

I tend to believe that the PhD is over when you:

1. Have satisfied the minimum requirements of the program;
2. Can get the job you want.

Believe it or not, I have seen students finish in 3 years; all of them have been in the military on special leave programs, and go back to the military afterward. In general, however, the PhD tends to take my students between 5 and 6 years—with students headed to the academic job market leaning toward the longer end.

What will I (your advisor) get out of it?

This is an interesting question that I sometimes hear students wondering about. For me:

1. **Advising is really fun.** My PhD students are some of the smartest, most creative people I know. I really enjoy thinking, writing, and creating new things with them. Watching as new PhD students become fully independent scholars over time is a singular joy. Moreover, getting a PhD is often a momentous accomplishment for students; I enjoy helping them succeed.

2. **Research**. Most of my research develops in collaboration with students. I love doing research, and working with PhD students keeps me in touch with exciting, impactful, and hard research problems.

3. **The world gets more academic/research technologists.** I believe the world needs far more thoughtful, critical, evidence-based technologists—and far fewer VC-backed tech founders.

Doing research

The most important thing you do in graduate school is your own research. It may seem obvious, but it's easy to lose track of the importance of your own research amid all the other competing things you'll be asked to do in grad school: review papers, help teach a class, cover a lecture, present to a friendly research group, run a working committee, etc. Some of these will be fun; many of them will feel more important at the time than making (what may seem like limited) progress on your research[1].

Selecting problems

I advise students to aspire for *impact* in their work. Not by accident, this is also what I hope for in my work (which of course intersects and overlaps with yours). It's important to have impact in mind when you approach problems (that is, before you select and commit your time to them). Questions like the following are often on my mind[2]:

1. What difference will this work make if you succeed?
    a. Whose lives will be made better by this research?
    b. How will this improve upon what's currently being done?
    c. Why is this one of the most important questions in the field?
    d. Will it create a big policy change at some level (company, government)?
    e. Will it inspire a new class of systems?

2. Who will care about it when you're done?
    a. Will government agencies care?
    b. Will platforms and industry care?
    c. Will other academics care enough to cite it?
    d. Will other academics care enough to teach it to their students?
    e. Will anyone care about it 10, 20, 50 years in the future?

3. How will this change what other people (defined broadly) are doing?
    a. Will other researchers change what they're working on after seeing your work?
    b. Will practitioners do something different?
    c. Will users adopt what you've made, found, created?
    d. Will regulators use what you've found to draft new laws?

I also recommend Hamming's lecture on this topic, the NSF's criteria for evaluating research proposals, and the Heilmeier Catechism.

Quality vs. quantity

A fundamental tension—especially in our area of research—is the quantity vs. quality tradeoff. I call it a "tradeoff" because while you will hear people saying that they can maximize both simultaneously ("I do tons of work and all of it is amazing!"), I almost never see that in practice.

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[1] A lot of these same issues continue into later stages of academic life. They just scale up.
[2] This is non-exhaustive.

My personal orientation is strongly toward quality. If I had my way, you could graduate and get a top, top job with two best papers at top venues, and that's it. I would prefer the outcome "2 best papers, nothing else" to "14 first-author papers." I believe that our field is moving in this direction, and I have noticed a shift just in the time I've been a professor. In fact, in some traditions—like let's say ethnography[3] —producing multiple papers a year isn't even possible.

If you must quant …[4]

However, if you feel like you must not completely abandon quantity in your research—as many students have confided over the years—I have an approach that I reluctantly recommend: a "70-30" quality/quantity split. The idea is to get *just enough* quantity without making any significant compromises in quality. I think this should simultaneously guarantee that you get past any quantity filters[5], as well as ensure (more importantly) that you have 3-4 core papers/findings/systems/contributions of which you are very proud. Notably, those will also form the backbone of your eventual job talk[6].

Concretely:

1. Try to produce one very high-quality, high-risk paper per year. This should yield 3-4 actually published versions of these, on average, over the span of your PhD. Some of these papers won't get in somewhere competitive, or may simply not work out well into the research process (e.g., approach didn't work, context of the problem changed, etc.). That's the nature of work like this.

2. Concurrently, consider having a straightforward project underway. This is the lower-risk, lower-reward paper. 1.5 of these every 2 years seems like about the right fit (i.e., slightly less than one of these projects ongoing, per year). More of these should get published, and fewer of them will fall apart along the way. That's the nature of this work. This might be in collaboration with a larger group, but you play a significant role.

3. Concurrently, consider working as a supporting author on at least one project. This isn't your core work: it's being led by someone else. It should take less than ½-⅓ of a day of your time per week. But you have something to offer, and expect to be listed in a supporting author position. Also of the lower-risk, lower-reward variety.

While highly variable, of course, I think a student on this path would expect to graduate with: 3-4 core, high-risk, high-reward publications; 2-4 lower-risk, straightforward papers; and, 3-4 supporting role papers. (All of that assumes some publication risk, like unsympathetic reviewers, as well as inherent research risk—such as not being able to solve a really hard problem.) That hypothetical student would graduate with a 8-12 paper CV, the majority of which they led. Based on my time on the 2018-2019 UMSI search committee, I think this abstract, hypothetical student would have gotten an interview here.

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[3] Not that I have ever advised an ethnographer.

[4] Note that what follows is primarily for students who are considering academic jobs at *both* top CS and Information departments. Quant problems are more endemic in CS departments than in Information schools. I have completely different advice for people with other career plans. For example, someone definitely headed to industry or a teaching school has no need for this. Let's talk.

[5] I have unfortunately seen faculty recommend filtering out any job candidate with fewer than *N* papers.

[6] And usually, your most important scholarship, and the reason you did a PhD in the first place.

I hate that I have to write this down. I would like it if you could only focus on super important problems, and obsess about their solutions. I only do it because I see a lot of anxiety among students about whether they will have the CV necessary to get a good job in the end. There is a tension as an advisor between helping to create the students you would *like* to succeed in the market, and the realities of the market as it currently exists. I think a strategy like this balances multiple goals reasonably well: doing hard, high-stakes, high-quality research; ensuring a quantity-oriented place doesn't immediately disqualify you; and, finally, raises the floor on the worst possible outcomes (i.e., more or less guarantees an OK CV at the end).

Staying organized

I don't like to dictate how anyone works. But in general it's very useful for me to keep track of my research work in an intentional way. I make heavy use of cloud services for documents, code, data, etc.; I've seen many others use Git repositories to do similar things (which may work best if you want to track versions of a Jupyter notebook, let's say). I often keep a little text file in any project directory that holds the state of the project, should I need to go away from it and come back to it later. Pick what works best for you, but the advice I would give is to do something intentional from the outset of a project.

Also, **BACKUP, BACKUP, BACKUP.** Your research work should never live solely on any single hard drive. Note, however, that often we may have sensitive PII from human subjects studies, etc., on our machines; take care with replicating those data.

Ideas

Have ideas! :-)

Seriously, I do not like supervising a student without their own ideas—nor do I think it's good for your development as a scholar. As I said above, the major thing that we're doing here is turning you into a world-class scholar. One way you do that is by coming up with new ideas. Moreover, it's important for being competitive in interviews: I can't tell you how many job candidates I've interviewed over the years who have no concrete ideas for future work.

One way that I manage this is that I ask you to come up with at least one idea per week before our weekly meeting. We'll talk about it briefly, I'll give you my thoughts, and we'll move on. I'm trying to create a climate where ideas are everywhere and having some bad ones is fine (which you will have—as do I!). Ideas are everywhere, and if you let yourself, you'll have them all time. It can be easy in graduate school to find yourself submerged in the details of ongoing projects constantly, without popping up to think about and consider new projects, ideas, and directions. Both are important: a good scholar can move between levels of detail (i.e., "What's the right statistical technique for these data in this paper?" to "Which of these 5 new ideas would have the most impact?").

Where to find ideas

Some concrete ways I seem to come across new ideas:

- When I read a good paper, I often find myself wondering about what should come next. What assumptions do they make? What would make this even better? Sometimes that idea really isn't for me, it's for some other scholar's arc (i.e., their next project), but sometimes papers have such an impact on me that I start drifting in that direction over time.

- As technologists, we are very close to people in industry doing similar things. I try to keep up on what's happening in industry. Often, I find myself asking: Why are they doing it this way? What would I do differently, especially since I'm not bound by earnings reports? What are they overlooking? These are often interesting places for an academic technologist to ask questions and think about new projects.

- A lot of the phenomena we see online and around technology are not, strictly speaking, new. Many of them have been thought about and studied in earlier forms. I try to read broadly (e.g., sociology, social psychology, communication, economics, STS, history, etc.), and often when I do, I have new ideas related to the internet and technology.

I've kept a file called "ideas.txt" for over a decade. It still has ideas from grad school in it. I add to it as new ideas come to me, and I go looking in it when I feel like I'd love to think about a new project, but nothing is coming to mind. Looking at it now, I see some ideas that just really aren't that good, some that are super interesting but intractable for a variety of reasons, and some that I wish I had completed 5 years ago. Some people will use a physical notebook for this kind of thing, and I envy them because it looks very cool, but I simply can't keep track of many physical objects in my life besides my phone, my bike, my current coffee, and my kids.

Writing papers

There are many forms of scholarly impact. Writing papers is one of them—and among the most important for graduate students. Though other forms of impact are very important[7], such as making important systems or helping to inform policy, the importance of such forms often relies on a base of academic writing.

Each venue to which you submit has a style or genre. Most academics have a small set of communities and journals to which they repeatedly submit. Early in my career, I had to acclimatize to the conventions of CHI or CSCW; now I can write those from scratch without consciously thinking about the genre. However, when I venture out into new venues, I have to read a few papers to get a sense for how to write there. If this is your first or among your first time writing for a venue, I recommend reading 5-10 papers from that venue closely to develop an internal sense for how research is communicated there.

Process: iterating with a target

Early in my career, I would pick 2-3 best paper winners from conferences I was submitting to, and use them as targets for the paper I was currently writing. I would find myself constantly asking, "Does my paper do [method/results/conclusion] as well as this other paper?" If not, I would try to improve mine. I used best papers because you know the community designated them as exemplary.

Ever the computer scientist, I have an algorithm:

```
let bp = best paper from same conference within last 5 years
while my_paper < bp:
        let why = why is bp better than my_paper?
        my_paper += why
submit my_paper
```

While you can and will work with me directly on papers, I found in graduate school (and later) that there is no substitute for interactively thinking about my writing in comparison with other similar scholarship. I may be available for 10-20 hours of direct consultation before a paper is submitted; a paper you aspire to emulate is available 24/7. Also, the process of discovering what makes a great paper *great* is itself an invaluable learning experience.

Process: writing alone and writing together

Where possible, I typically ask my PhD students to write the first draft of a paper independently. This usually comes after lots of direct consultation with me over the preceding weeks and months. Typically, less of this is necessary as students progress through the program. It may seem like the reason I do this is because it's less work for me; it's not. In fact, early in the PhD program, I think it's more. For example, often with first-year or second-year papers, I'll be frank: I could write a better paper in less time than I spend advising and working with the student on the paper. If I was solely aiming to optimize for publications, it would make sense to cut the student out of it at the point of drafting the first document.

[7] That said, I think often what differentiates academic job candidates are the other forms of impact. Of course, at that point, we're only talking about the people who got through the screening process and received interviews.

However, going back to my perspective on the PhD, teaching students how to be excellent writers is essential to their success as scholars. These experiences struggling (and ultimately succeeding!) with writing are important educational experiences.

When we find ourselves 2-3 months out from a deadline, I will usually develop a plan for how to work together on a paper. For a 1st or 2nd year student, that plan might be delivering individual sections on a schedule for in-depth feedback, followed by rewrites by the students, followed by extensive editing and rewriting by me. For a 5th or 6th year student, I might ask them to go off and write a near-perfect paper on their own, after hearing their thoughts on its direction and narrative, followed by collaborative editing and rewriting.

The "–7 days" internal deadline

I have a "–7 days" internal deadline that I've been using for over 5 years. The paper needs to be in submittable (but not perfect) state 7 days before the deadline. If there isn't an official deadline (i.e., we're submitting to a journal with completely rolling submissions), then this rule would apply to whatever day we agreed upon submitting the work. This is somewhat contrary to the way academics often work in our area, where they're madly writing up to the second before the submission deadline; I don't do that with my students.

The paper doesn't have to be perfect: the bar I use is that I would submit this paper and I wouldn't be embarrassed. :-) That means that everything needs to be essentially done by 7 days before the deadline: the studies have to be completed, the data analyzed, the findings solidified, the message of the paper needs to exist, etc. This allows me to really understand what we have, where we're at, and where we need to go in the next 7 days.

If the paper meets the internal deadline, I will tell you to take a break, both because you probably need it, and because it gives you some much needed space from the paper. Students often see their draft in a different light after a day or two away from it. If the paper isn't ready, we won't submit it to that conference or journal deadline; we'll submit it somewhere later.

Everyday tasks

There are a number of rhythms you'll start to observe over the course of your PhD: deadlines we consistently submit to, summer vs. regular terms, conference travel, etc. In addition to the "big picture" things, there are daily and weekly rhythms. Below I've included some core activities that you should be aware of and prepared for.

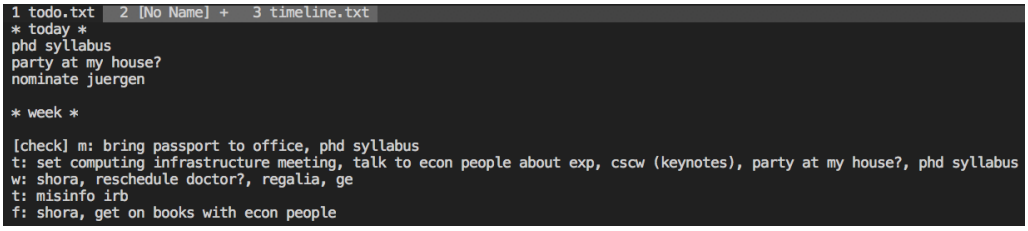
Organizing your time

I highly recommend that you structure your time in some way that works for you. For example, I believe that it will be helpful to you to work on research everyday: structures and routines can help you accomplish that, rather than frenzied effort right before deadlines. The latter *can work* for some people, but I've seen it fail far more times than I've seen it succeed. That is, I've seen far more students *think* that crazy effort right before a deadline will work in grad school than I've seen *succeed* at it.

Just as an example, here's how I now structure my time. I keep a set of lists (in plain text) that operate at different time scales. There's the *big things* list for 10-15 years out, the list that plans out major activities over the next year, and the weekly todo list. Here's what my year-scale list looks like at the moment:

```
mid feb:
  [check] florida seminar
  [check] eshwar's proposal
  [check] cscw prep
late feb:
  [check] ping about icwsm 2020

early march:
  [check] cscw prep
    big goals:
        [check] are systems being judged fairly?
        [check] meta program
        bringing other communities to cscw
        [check] harassment and diversity
  [check] book upcoming travel: all of summer (to hit accounts)
mid march:
  [check] look at jde account for spend down (equipment)
  [check] cscw prep
  [check] tawanna's letter
  [check] spend jde account down
late march:
  [check] cscw prep
  [check] new network project
  [check] reach out to meta chairs

early april:
  [check] cscw paper deadline
  [check] nsf report
mid april:
  [check] ttw in nyc
  [check] plan all hands
  [check] give up control of icwsm
  [check] network hygience project
late april:
  buy regalia
  global entry or pre
  set up computing infrastructure day/time

early may:
  chi
mid may:
  far
  computing infrastructure
  bs/ms guide and expectations doc
  decide on recurring lab processes
late may:
  possible sf trip
  brainstorm nsf proposals
  juries
  mod system
  shora
  brief bs/ms syllabus

early june:
  juries
  mod system
  shora
mid june:
  juries
  mod system
  shora
late june:
  juries
  mod system
  shora
```

Here's my todo list, which basically gives me something to do between any regularly scheduled meetings that are already on my calendar. I create it first thing Monday morning, looking at my calendar to identify what and when I might actually get done. For example, on a day where I teach and meet with all my PhD students, I don't try to get much of anything else done.



Use whatever works for you. :-)

1-on-1s

While you're free to drop by anytime, or ping me[8], I always meet with PhD students at least once a week for a 45 minute 1-on-1 meeting. Recently, I have started a policy of asking PhD students to create and share an agenda before the meeting. You should fill in the agenda template and send it to me via email at least 4 hours before your scheduled meeting time.

The idea behind this agenda is threefold. First, it structures our time a bit so that I don't forget to focus on important long-term things (e.g., you developing new ideas). Second, it communicates the reality that *this is your meeting*, and you should make it work for you. Third, sending it advance gives me some time to digest what you want to talk about: usually your problems are pretty hard, and I need some time to think about them in advance.

Lab meetings

You should attend the Social Media Research Lab (SMRL) meetings every week. There is a student coordinator that sets up the schedule. If you're unsure of where/when or what you should be doing around SMRL, let me know.

I will also set a weekly comp.social lab meeting every semester[9]. The basic outline of this meeting will be quick status checks around the table (from all students at all levels and from me). Then a designated person will take over the meeting and the rest of the people will provide feedback on whatever they (guidance on talk, thoughts on a new research project, advice on an analysis direction). I will poll about possible meeting times the week before classes start.

Infrastructure

We are still setting up the computing infrastructure at Michigan, and it will get clearer over time. However, some key resources that you should be taking advantage of currently:

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[8] Really … if I'm busy and I can't talk at the moment, I'll tell you.
[9] May be suspended during the pandemic.

- UMSI hosted gitlab for source control: https://gitlab.si.umich.edu
- Google Collab for compute + jupyter: https://colab.research.google.com
- We have a lab AWS account; write me for credentials.

How to get ahold of me

This is also a bit in flux. We used to use IRC and various chat technologies (ICQ, etc) to talk, but that has fallen by the wayside in the era of Slack. I will often message students via Facebook Messenger, but that is less than ideal for a variety of reasons. We have a Slack channel, but I can't decide how committed I am to it. Suggestions here are very welcome.

I am also of course available by email. However, email is not a synchronous medium, and I often turn it off in order to get stuff done. Always expect that I may not respond for 24-48 hours to any email you send during normal times; it will take longer when I'm traveling. Stop by my office if you need something urgently, instead.

If you need me to meet with you at a certain time, contact me about it first, then when I've agreed to the time, send me a calendar invitation.

How I usually work

I turned into a morning person when I had kids. :-) Typically, I am in the office most weekdays during standard school hours (while my kids are also in school). My door is usually open, and you can drop in if you want to talk about something. Recently, Sarita asked me to prepare something about my day, and I journaled the following:

> 11:30p: sleep
> 7a: wake up
> 7-8:40: get kids, myself ready for day, respond to crucial email on phone (my partner is gone, already teaching by this point)
> 8:45-9: drop kids at school
> 9:05-9:20: ride bike to comet coffee (mostly downhill, so faster)
> 9:20-9:30: get coffee (often spacing out, thinking about ideas during this time)
> 9:30-9:45: walk to office, lock bike (still spacing out)
> 9:45a-5:15p: in office for meetings, writing, coding, etc. (many strategies for organizing this time)
> 5:15-5:35: bike ride home (mostly uphill, so slower)
> 5:45-6:45: start second job as uber driver for my children, taking them to activities
> 6:45-7:15: dinner with whole family
> 7:15-9: kid bedtime and household chores (also some messaging people + critical email)
> 9-11: netflix, non-academic reading, basketball game, some articulation work at the margins

That's a pretty normal day for me, though of course it breaks down a bit before deadlines, and during work travel. But probably 150 days a year look like this. You are free to work in whatever way works best for you, but note that I'm most available during standard work hours.

Classes

I have a somewhat contrarian viewpoint on classes: they are very secondary to your research. If you hadn't been really, really good at classes before you came here, you wouldn't be here. Many students, having excelled in classes their entire academic lives, have trouble letting go of this, and need to excel in every class they take while in the PhD program.

In my opinion, this is a common reason for burnout in grad school. When you go on the job market, almost no one will care what classes you took during grad school and how well you performed in them. Everyone will care about your research and what contributions you made.

Don't get me wrong: I love classes. I love the experience of exploring a new area with a guide (the professor) and a path to follow (the syllabus). Our job here, as researchers and growing researchers, is *to create new knowledge.* It's important not to lose sight of this during the program, especially as the (relatively) easily-satisfiable interim deliverables of classes stack up next to the (relatively) harder-to-satisfy expectations of research.

In my view, classes are useful to expose you to broad areas of scholarship or method that you might not have been aware of before. They are useful ways to meet new faculty in the department, and consequently to build bridges to the (myriad) committees you will need to form in your time as a PhD student. However, they should come second to your research, your data, your questions.

Sometimes, students hear this as "learning isn't important." Quite the opposite. The PhD program is all about learning new things, but as your research problems lead you there. You will spend *lots* of time learning new skills, techniques, and theories—most likely on your own. You might seek out a class to help you master something you know you need in research. But let the research drive that exploration and those decisions.

Getting recognition

You do great work, and you'd like people to know! There are two traditional ways to be recognized as a PhD student: fellowships and awards. However, the basic recipe for those is:

1. Do great work
2. Notice things you can apply to (i.e., you can't apply for paper awards)
3. Apply for those things
4. Go back to doing great work

I do have a couple of tricks off the beaten path, however:

1. You can send your work to people who have inspired you and your work. One of my committee members told me this when I was a student. Skeptical, I finally decided to send a paper I had written to a famous sociologist; my work was based on his. Amazingly, he wrote back! And we kept up a conversation for over a year.

   I wouldn't send your papers to everyone, all the time. But when you have a genuine reason to do so (e.g., you really built on someone else's work), it's great to let them know.

2. You can also write (or be interviewed for) media that is intended for the public. Some of my students have done this in the past to great effect! I'll usually be on the lookout for whether the press would cover your research, as well. If that happens, I will always push you to the front with the reporter. I would much prefer your name as the central source in any press.

Of course, it goes without saying: in our area it really helps to be active (and active around your research interests) on social media.[10]

[10] A helpful additional comment from Jeremy Birnholtz: "But also remember: your audience includes people who will be reviewing your work and hopefully hiring you someday. Some opinions may be better expressed at grad student happy hours than for the whole field to see."

Internships

I strongly encourage my students to take internships. Primarily for two reasons. First, they pay well; grad school does not. Second, I think you need to know what industry looks like. At some point you will find yourself choosing between academia and industry[11]; without having had a few internships, it's hard to really know what industry is like. That said, just as grad school is different from faculty life, (I assume) working in industry long-term is different from an internship. However, internships are among the best ways to explore how industry works for you. Plus, the money. :-)

Internships can and do work most summers, and I am flexible with students about when and where they take them. I had a student who once needed to move her scheduled internship from the summer to the fall because of visa issues; she did, and it worked out great. The summer before you propose is in my opinion the hardest summer to take an internship, and I nudge students toward staying around that summer, though I don't consider it a strict rule. The summer after the first year can be a tricky summer to actually *get* an internship—simply because you're quite junior, and the pool is competitive (you'll be competing against some 6th year PhD students). On the whole, it will be easier to get internships—and certainly to get internships with more of a research focus—as you progress through the program.

Students in our area often look for internships at: MSR, Microsoft, Google, Facebook, Twitter, Airbnb, Reddit, Twitch, Instagram, etc. Emerging startups can also be exciting opportunities; they generally require more work to seek out, and you will probably have a more varied role when you get there. A former student worked with a big name emerging startup, and really enjoyed the experience, deciding to sign on as their first researcher after she graduated. Within these companies, there are a wide spectrum of intern roles—from pure research to pure development. You will likely prefer the former over the latter (the former can lead to papers; though that is often not incentivized within companies[12]). While it varies by place, students tend to line up internships as early as October before the summer they intern, though that process can and does go into March. Again, it varies by company and stage in the program. If there is a certain place you'd like to intern, ask me: I may know someone there and can make an introduction.

During your internship, I will mostly leave you alone. I want you to experience industry, and it's hard to do with me hanging around. Also, don't feel like you need to bring me on to a project with you. I will sometimes, in rare cases, join an intern project in an advisory capacity, but I tend to think it's less than ideal for everyone involved. Most of the time, companies don't like it anyway.

Have fun!

[11] Or in some cases … government.

[12] There is variation among companies in tolerance to publishing. However, in my experience, it is overall declining.

Giving talks

I've never liked giving talks. I now think academics overfit to the performative aspects of them. Despite that, talks are important. Many (most?) academics disagree with me: they like giving talks, and highly value talks given by other academics. For example, it's common wisdom that many professors on the faculty you join will only know about your work through your job talk.

The guidance I usually give around talks is somewhat traditional: 1) plan and 2) practice. First, I write down what I want the audience to learn from the talk. Then, I look at the time I have available to speak and subtract 5 minutes. From that number, I break down how much time I want to spend on the different parts of the talk. After those two things, I start building slides (and maybe demos).

After you have a deck, I recommend practicing the talk a few times by yourself. Especially early in your PhD, you should then plan on giving at least two practice talks to an audience (one of them with me). Later, you won't need as much practice for a conference talk, let's say; but a job talk may require even more practice and iteration. After you synthesize and iterate on all the feedback, you're ready to go. This process often takes many days, even for a short talk.

Q&A

After you give a talk, there will usually be Q&A. I like to think of it as having a discussion with a colleague—in front of a large audience. :-) That's the tone I'm aiming for in my answers to questions. Three concrete tips:

1. Remember that you almost certainly know more about the details of your work more than anyone else in the room[13].

2. If I'm in any way unsure what the questioner is asking, I make sure I understand it before I start answering. Typically, I will restate the question in my own words and ask if that's what they meant. This gives them an opportunity to correct and reword. An interesting side effect is that it also gives me a few more seconds to think about a possible answer. This is an even better trick if English is not your first language.

3. It's ok to take a second or two to think before you start talking. After all, the asker has been sitting there for 15 minutes considering the question; you only just heard it! And after all that, it's completely ok to say you're not sure, and that you need to think about it harder, and get back to them later. I have done this many times during Q&A.

[13] Thanks to Jeremy Birnholtz for this suggestion.

Time off and vacations

You do not need to work all the time to be a successful researcher. In fact, I think the current evidence suggests that working all the time is counterproductive. Nevertheless, you will encounter a culture in academia of *always-available, always-working*; I recommend that you resist this.

Please take care of yourself, in whatever way you need to that is meaningful to you, on a daily basis. For example, I need to sleep, exercise, and spend time with my family. I prioritize those things every day. Setting everyday boundaries can be very difficult in academia, but I think it has really helped me over the long term.

Vacations

Ph.D. students in my group should also feel free to take up to *6 weeks of vacation every year*, of which I strongly encourage that you take at least 4 weeks. (If I could *insist* that you take at least 4 weeks, I would.) This means no work email, no working on papers, no analyzing data. Note that conference travel does not count as vacation.

When you want to take a longer break like a vacation, it can be helpful to give me a few weeks notice but I'm usually flexible.

Mental health resources

The PhD experience can be very challenging—and in unexpected ways. It is common to experience mental health challenges during grad school. While I'm not personally trained to help directly, I hope to be supportive in whatever ways my advisees feel will be helpful.

If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, you can contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu, during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (734) 764-8320 and https://www.uhs.umich.edu/mentalhealthsvcs. For a listing of other mental health resources available on and off campus, visit: http://umich.edu/~mhealth.

Other, external resources

Below is a curated list of external guides that I've found useful. I may not agree with every single aspect of them, but they are very useful.

Tressie McMillan Cottom's excellent advice on graduate school
Matt Might's tips for work-life balance
Philip Guo's advice for early-stage Ph.D. students
Hanna Wallach's guide for how to be a successful PhD student
Faculty diversity counseling services

Although I'm sure you're already aware of them, the UMSI Doctoral Student Resources Canvas instance has a lot of wonderful resources. Most (all?) of them are really high-quality and thoughtful. Definitely recommend that you read and take the advice there.