

Finding an Advisor

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Resume of a Genius

“Most Illustrious Lord, ... I shall endeavor to explain myself to your Excellency, showing your Lordship my secrets, and then offering them to your best pleasure and approbation ...

- 1. I have a sort of extremely light and strong bridges, adapted to be most easily carried....*
- 2. I know how, when a place is besieged, to take the water out of the trenches, and make endless variety of bridges, and covered ways and ladders, and other machines pertaining to such expeditions...”*

Leonardo Da Vinci, 1482

A PhD program is an Apprenticeship

Like Da Vinci, you have to convince your potential advisor that you're a good apprentice

More importantly, ensure that your future advisor is

- **a good research advisor**
- **a good mentor**
- **a good fit**

What should a good advisor/mentor do?

- Teach you fundamental research skills. How to
 - Prepare papers, talks, & proposals
 - Critically read the literature
 - Technical foundations
 - Guide you to
 - Find a research topic
 - Develop your identity as a researcher
 - Demonstrate for you
 - Balance, research ethics, an intellectual roadmap
 - Foster your career development
 - Through your PhD to your first job & promotion
 - ...and next job and promotion
- This is a life-long relationship**

How to find a good advisor/mentor

When looking for an advisor in a new university

- **Get to know them and get them to know you**
- **Be persistent (but don't pester)**
- **Know their research, read their papers, and ask informed questions**
- **Meet in person**
- **Talk on the phone**
- **Talk to multiple grad students in the lab!**
- **Understand expectations about workload (courses vs research) and funding**

How to find a good advisor/mentor

Often you need to find an advisor (or change advisors) at your current university). In addition to the above, also

- **Go to office hours**
- **Take a class**
- **Take research hours or an independent study**
- **Attend lab meetings if they allow it**
- **Get to know the other graduate students in the lab:**
 - **they tell you about the advisor**
 - **they are your close colleagues, collaborators, & community for many years**

Assess the fit

- Find names that pop out as you research topics you are passionate about
- Your advisor should be respected in the field
- Deep thinker who encourage students to do seminal work
- Where do you fit in their lab? What is the lab structure?
- Understand what they expect from their grad students
- What is their philosophical bent? Does it align (or not conflict) with yours?
- Is the advisor supportive of women, URM and students with disabilities?

My own journey to find advisors & mentors

- I was changing fields from Computer Science as an undergrad to Biology for PhD
- I knew I wanted to be in an environment that fostered big ideas and valued interdisciplinary approaches
- I didn't know anyone with a PhD
- I knew nothing about the process, and I didn't even know that I was naïve.
- I found multiple potential faculty advisors in different departments, and I was excited about their research. The fit felt right.
- In-person visits and, meetings with other PhD students in their labs convinced me that I had found the right place.
- Advisors as mentors vs advisors + mentors – both can work!

Great qualities in my advisors & mentors

- They care about my success
- They encouraged me to think big and prodded me to produce
- They guided but rarely pushed -- waited for me to discover the next big question, let me determine the direction of my research
- Encouraged me to be first author on my research
- Actively connected me to their networks
- Used their prestige and contacts to help my career

Finding advisors for interdisciplinary research

- One, two or more advisors and mentors?
- Do they appropriately balance breadth vs depth of research?
- Do they have a core identity that supports or overlaps with yours?
- Are they open-minded and enthusiastic about learning from other fields?
- Can they provide financial support for interdisciplinary research?
- Will you find a community of researchers that support your work?

Take home messages

Do your research about your research advisor & find an advisor who is

- **A good research advisor**
 - **Productively engaged in research you are passionate about**
 - **Willing and able to effectively teach and guide you in research**
 - **Able to help fund your research**
- **A good mentor**
 - **Cares about your career & effectively supports your success**
- **A good fit**
 - **Personalities, research style & philosophy, lab structure and people**
- **It takes a village: You may need more than one advisor and mentor**
- **It's a two way street: Communicate to your advisor the support that you need & try to work out problems**