Starting your Research Journey

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Disclaimer

- I am expressing my opinions about subjects that I am not knowledgeable about
- Some opinions mights be a bit controversial
- Take everything with a grain of salt and use your own judgement at the end

PhD: the optimistic viewpoint

- You acquire knowledge and skills in areas that you are excited about
- Through working with the best researchers, you learn general research skills:
  - How to have critical thinking and ask good questions?
  - How to come up with a plan to answer those questions?
  - How to execute that plan effectively?
  - How to revise the question or plan according to the observations along the way?
- Best case scenario:
  - You come across a very intriguing question, dive very deep into it, deeper than anyone has ever been
  - By the end of your PhD you become “the” expert, in that tiny area, your work make more people excited about it and that area expands something much bigger.

PhD: the reality for most people

- Very high rate of depression and anxiety*:
  - ~40% have moderate or severe depression (6% in the general population)
  - ~40% have moderate or severe anxiety (6% in the general population)

- Main factors?
  - Work-life balance
  - Relationship with mentor
    - Provides mentorship
    - Provides ample support
    - Positive emotional impact
    - Asset to career
    - Feel valued by mentor

Evans, Teresa M., et al. "Evidence for a mental health crisis in graduate education." *Nature biotechnology* 36.3 (2018): 282-284.

PhD: the role of luck

Luck is more important than you think:

- Finding a good advisor/mentor
- Being surrounded by the right people at the right time
- Finding the right research topic at the right time

How to be more lucky? *Hint: Courage is your friend!*

- Actively try to improve the chances of successful encounters
- Continuously evaluate your current situation and try to improve it
- If you are stuck and you don’t like what you see, roll the dice again!

Finding a good advisor/mentor

- Why is this important?
- Characteristics of a good advisor/mentor
- Convincing someone to accept you as student/mentee/collaborator
- Managing your relationship with your advisor
- What if it is not working?

Characteristics of a good advisor/mentor

- Genuinely care about her/his students well-beings
- Mentors their students regularly to learn all required skills
- Has at least 1h long 1:1 meetings with students (more is preferred)
- Helps with writing papers
- Helps their students with finding internships and job opportunities
- Provides financial support for their students to attend conferences/workshops sometimes even when they don't have a paper
- Their students have a good work-life balance and are not typically stressed
- They are relatively flexible in terms of what problems their students can work on or who they can collaborate with
- Their former and current students have made progress in their career
- Tenured vs tenure track

Convincing someone to accept you as student/mentee/collaborator

- There is no harm in reaching out to people
- Try different strategies and figure out what works best for you
- My strategy
- A personal story

Managing your relationship with your advisor

- Student-advisor relationship has unhealthy power dynamics
  - Your advisor has a lot of control over you both career wise and financially
  - What's best for you is not necessarily the same as what's best for your advisor
- Setting boundaries with your advisor.
  - Setting boundaries indirectly
  - If a behavior bothers you and is being repeated, communicate it early on directly to your advisor
- Help your advisor do better with their responsibilities by giving them feedback
- If something doesn't feel right about your relationship with your advisor, get advice from experienced people about how to handle your situation
- If things are not working and you are stuck, change your advisor

Being surrounded by the right people at the right time

- Attend as many related workshops/conferences as you can
- Do internships
- Don’t be shy about reaching out to people whose work you like or those you like to collaborate with
- Talk to people who are working on other research areas regularly

Finding the right research topic at the right time

Questions to ask:

- How excited am are you about the subject?
- How crowded is this research area?
- Do you have any advantage over other researchers?
- How easy is it to get into this research area? What are the potential barriers?

Transitions:

- Evaluate your research area every 6-12 months
- Try to summarize your findings in a technical report/paper before moving to something new
- Plan smooth transitions:
  - By transitioning to a similar research area, or
  - By gradually spending more time on a completely new research area

My own experience…

My favorite advice: Don’t read many papers!

Thanks!