Life as a Researcher
Life as a Grad Student
Undergrad to Grad

× “Why are grad students busy? All they do is research. I take way more courses than they do, work on side projects, and joined multiple student clubs.”

× Learning what other people have discovered
  ➔ Making your own discoveries

× Learning to solve problems accurately & fast
  ➔ Learning to find a problem to solve

http://jcs.biologists.org/content/121/11/1771
Graduate students are the worst.
I get an infinite amount of freedom to work on what I want to work on and even get paid!
I get an (almost) infinite amount of freedom to work on what I want to work on and even get paid (a bit)!
Sources of Stress

- Research progress (by definition it doesn’t just work)
- Formulating a valuable research question (my research sounds so dull)
- Advisor! (esp. due to apprenticeship model)
- Competition (peer pressure and jealousy)
- Financial (my medical doctor friend…)
- Self-doubt (am I qualified to do research?)
- Rejections
- Critiques
Impostor Syndrome

A psychological pattern in which an individual doubts their accomplishments and has a persistent internalized fear of being exposed as a "fraud".

“i’m not good/smart enough.”, “I just got lucky.”, “I must not fail.”

Very very common among high achieving students / researchers

Associated with overwork, with an overly keen focus on pleasing others, and with an almost desperate drive to constantly achieve more.

Strong correlation with anxiety, stress, depression, and burnout

http://interactions.acm.org/archive/view/may-june-2018/is-there-a-fix-for-impostor-syndrome
Critiques Everywhere

- Paper reviews
- Meeting with advisor
- Discussion with collaborators & colleagues
- Fellowship / Internship applications
- Thesis proposal & defense
- Classes
- ...

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My Ph.D. journey visualized by Krzysztof Gajos
You are the owner of your research, not your advisor

× You should be the one formulating and solving the problem.

× Your advisor is there to help you by giving you feedback and guidance, but ultimately you should own your research.

× In earlier stages of research, more guidance helps.

× You need to independently explore, learn, and make decisions.
Failure ➔ Setback ➔ Growth

✘ “Fail early, frequently, and softly.”
✘ If you succeed in solving your research problem at your first attempt, it’s a bad sign: maybe the problem is too easy or too trivial.
✘ Good research involves multiple iterations of building–feedback–rebuilding cycles.
✘ Learn something each time you fail and try something differently the next time.
First paper rejection

This is the worst day of my life.

The worst day of your life so far.

https://mobile.twitter.com/paulrconnor/status/1132037974743404544/photo/1
Degree programs I did not get into

2008  PhD Program in Economics, Stockholm School of Economics
2003  Graduate Course in Medicine, Cambridge University
      Graduate Course in Medicine, UCL
      PhD Program in Psychology, Harvard University
      PhD Program in Neuroscience and Psychology, Stanford University
1999  BA in International Relations, London School of Economics

Academic positions and fellowships I did not get

2014  Harvard Kennedy School Assistant Professorship
      UC Berkeley Agricultural and Resource Economics Assistant Professorship
      MIT Brain & Cognitive Sciences Assistant Professorship
This list is restricted to institutions where I had first-round interviews but wasn’t invited for a campus visit, and where I wasn’t invited to interview in the first place, is much longer and I will write it up when I get a chance. The list also shrouds the fact that I didn’t apply to most of the top economics departments (Harvard, MIT, Yale, Stanford, Princeton, Chicago, Berkeley, LSE) because one of my advisors felt they could not write a strong letter for them.

Awards and scholarships I did not get

2011  Swiss Network for International Studies PhD Award
2010  Society of Fellows, Harvard University
      Society in Science Scholarship
      University of Zurich Research Scholarship
What Helps?

✘ Seek help!
✘ Psychological safety & social belonging
✘ Peer support (especially “academic friends” who are just like you)
✘ Good advisor (talk to them often; you often need to reach out)
✘ Life outside work
✘ Research worth ≠ self-worth ("my paper got rejected" ≠ "I got rejected")
✘ Having thick skin
✘ Criticism ➔ Constructive feedback ➔ Your own growth
ACADEMIA

**PRO**

YOU CAN WORK WHENEVER YOU WANT! EVERY DAY IS A SATURDAY!

**CON**

YOU WORK ON SATURDAYS.
What is Ph.D.?
What Ph.D. Entails

X Ph.D. is validation that you can identify, formulate, solve, evaluate, and communicate a problem.
  ○ Hence, new knowledge is created and communicated.
What’s a Ph.D.?

You’ve done the whole process yourself!

Identify    Formulate    Solve    Evaluate    Communicate

MOST IMPORTANT
How’s it different from working at a company?

✘ You work with teams of experts in different areas
✘ Goal: change the market and make profits.
  ○ Academia: create knowledge and change minds. (credit: Andy Ko)

Identify   Formulate   Solve   Evaluate   Communicate

Marketing
User research
Strategy
Product cycle

Design

Engineering

Testing

Marketing
PR
CEO on stage
How’s it different from doing a startup?

✗ Goal: change the market and make profits.
  ○ Academia: create knowledge and change minds. (credit: Andy Ko)

Identify    Formulate    Solve    Evaluate    Communicate

You and a small team
IT’s all about motivation

✘ You should work on something you’re really really excited about.
  ○ If not, reassess.
  ○ No reason to suffer.

✘ It’s not a good financial decision.

✘ It’s not a time-saving decision.

✘ It’s not an efficient process.
Intelligence
Thinking fast
Spark of ideas
Problem solving

Steadiness
Embracing uncertainty
Perseverance
Problem identification
Life as Professor
Ph.D. to Professor

“'It’s like you get your driver’s license, and they hand you the keys to a Boeing 777. Like, sure they both technically have wheels...”
Life as Professor: Like running a small company

- Secure (enough) funding
- Hire & mentor (good) students
- Manage projects
- Manage lab
- Teach classes
- Do academic service: community, school, department
- And... do (hopefully good) research (that gets published)
Fragmented Schedule & Lots of Context Switches
Overworked & Multiple Job Functions

Hours Worked by Academic Rank

Job Function by Day of Week

https://thebluereview.org/faculty-time-allocation/
Real science. Now in real time.

tenure clock: 31 weeks 4 days 20 hours 59 minutes 25 seconds

11 viewers

https://cseweb.ucsd.edu/~jmcauley/
Peer Reviews Everywhere

- Paper reviews
- Grant proposal reviews
- Tenure cases
- New positions
- Teaching evaluation
- Award recommendation
- ...

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Academic Culture

× Publish or perish
  ○ How do we evaluate “impact” of research?

× Paper inflation
  ○ Even many grad school applicants have papers these days.

× Number game
  ○ “This guy has X top-tier papers this year.”
Life as Faculty: What’s amazing

✘ Working on whatever I’m most excited about with nobody telling me what to do or not do.
✘ Joy of research
✘ Joy of mentoring
✘ Joy of collaborating
✘ Joy of teaching
✘ Joy of endless learning
Next Class: Resume Workshop

✗ Please volunteer to use yours as an example in class.
✗ Add a reply to a CampusWire post (to be posted right after class today).