

Continuing in Astro...

...How to get a postdoc

Nate Bastian (LJMU), Markus Kissler-Patig (Gemini),
Paul Hewitt (Cambridge), Hiranya Peiris (UCL),
and many others...

Best source of info is local. Talk to Richard, Johnny,
Francisco (and others!)

My career so far....

2000

- Diploma in Astronomy/Math (UW Madison)
- PhD in Astrophysics (Utrecht/ESO-Garching - 2005)
- Postdoc 1: UCL

13 years

- Postdoc 2: UCL/Cambridge STFC Post-doctoral Fellowship
- Postdoc 3: Cambridge STFC Advanced Fellowship
- Faculty position 1: U. of Exeter
- Faculty position 2: Senior Scientist at LMU Munich
- Faculty position 3: Professor at LJMU (Royal Society University Research Fellowship)

2013

First: do you want to do it?



- ❁ Disadvantages:

- ❁ Will need to move around, at least 2-3 moves past PhD
- ❁ No guarantee in finding a permanent job (may not find out until you are in your 30s)
- ❁ There are periods with little or no hiring, dependent on public sector
- ❁ Generally lower salaries than in private sector

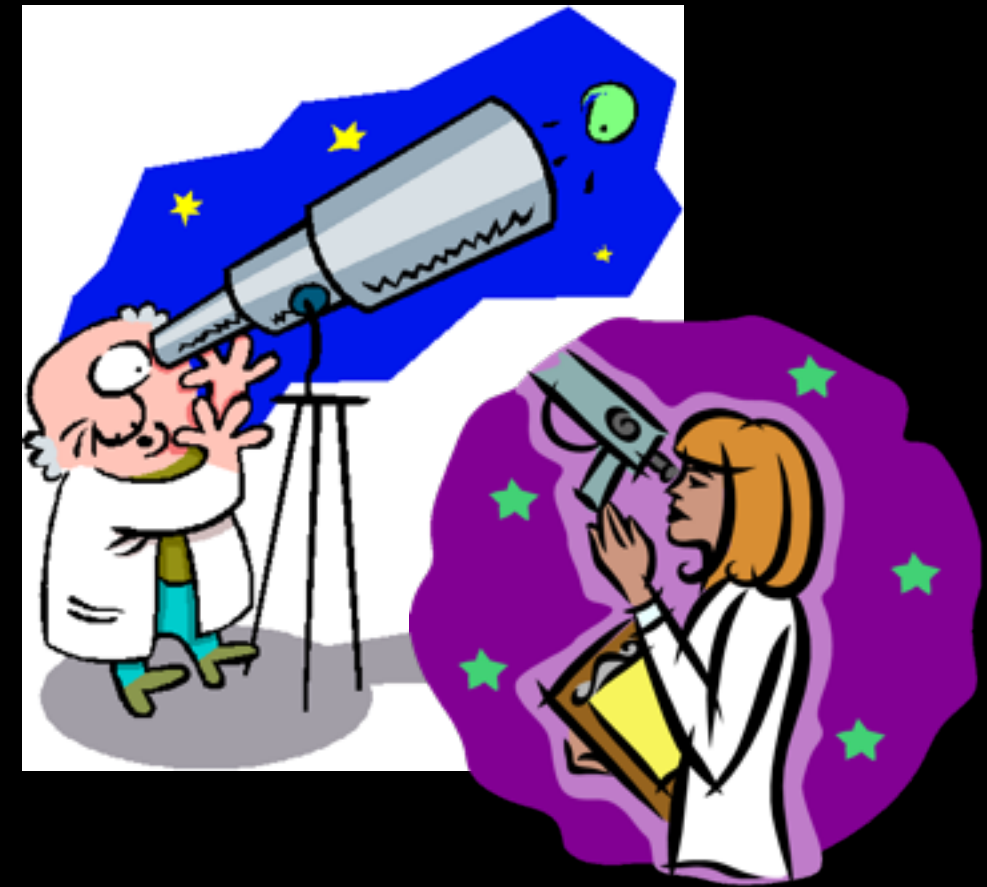


First: do you want to do it?



- Advantages:

- Job satisfaction
- Chance to live and work abroad - lots of travel (conferences/workshops, etc)
- Flexible schedule
- Generally don't have to deal with a boss (at least not directly)
- Job security (if/when you find a job)
- Responsible employers (maternity/paternity leave), part-time options, understanding of temporary leaves of absence



How to find a postdoc?

- AAS job register - <http://jobregister.aas.org> (updated on the 1st of every month)
- www.jobs.ac.uk - UK focussed
- Contact collaborators (especially at other institutes), let them know that you are finishing/looking for a position
- Go to conferences/workshops and give colloquia/seminars (volunteer!) - introduce yourself to people you would like to work with. Can lead to jobs and collaborations
- Talk to colleagues/friends 1-2 years ahead of you, ask questions

Look for Post-Doc positions early

- usual cycle is “Apply this Fall to start next Fall”
- chose position that allow to gain visibility

Types of postdocs

- Postdoctoral Fellowships (PDFs) - you get money to do your own research, often control your own budget
- Postdoctoral research assistant (PDRA - in the UK) - you are hired by someone to work (usually 50-100% of your time) on a specific project
- Support and facility jobs (usually ~20-33% research allocation)

~70-80% of postdoctoral positions are announced between Sept. and Dec. each year to start the following autumn

First offers out generally in Jan. Driven largely by the mystical Feb 15th deadline

Fellowships

- Purely/mostly research
 - Independence (defining topic, managing budget)
 - Recognition within the community
 - Examples: Hubble, ESO, Bolton, Zwicky, etc
-
- ✧ But....
 - ✧ Very competitive to get
 - ✧ *You* are responsible for own career...need independence, no one looking over your shoulder



Fellowships -

most deadlines Sept-Dec

- ESO fellowships (Garching/Santiago)
- Hubble/Jansky/Einstein/NSF Fellowships (USA)
- University Fellowships (mainly in USA/Australia)
- Royal Astronomical Society Fellowship (RAS), in UK
- Canadian Institute of Theoretical Physics Fellowships
- Max Planck Fellowships (MPA, MPE, MPIA, etc)
- EU Marie-Curie Fellowships (*August*)
- etc...

Senior Fellowships

- Australia - “Super Science Fellows”
- UK - Royal Society URF, STFC Rutherford Fellowship, Royal Society Dorothy Hodgkins

Postdoctoral Research Assistants

- Someone hires you to work on a specific project - if it is an exciting, high-profile project, can be better than a fellowship
- Generally are part of a group/team. Helpful supervision, support, and possibly more papers
- Can allow you to move into a new field



Alternative paths after PhD

- getting a PhD makes you very attractive to industry
- problem solving, creative thinking, self-motivation, analytic/numerical skills
- best opportunities if you are proficient in programming!



What do you need to apply?

- 3-4 letters of recommendation - try to have collaborations outside your supervisor (may come from your supervisor). The more they know you/your work, the better their letters are likely to be.
- 2-3 page description that covers: 1) Introduction to the field/problem that gets the reader excited about your topic (**1-2 paragraphs**). 2) what you've done during your thesis (all the amazing problems that you've solved - **2-3 paragraphs**). 3) Your future plans in the field (all the amazing problems that you are going to solve - **the rest**). 4) Why this person/group/department is a good fit (**1 paragraph**). *Include figures and captions!*
- CV/publication list
- Cover letter
- Each application is a bit different, some want a research summary separate from the proposal, etc. Follow the specific guidelines!

Generally, coming out of PhD, expect to apply for
between 10-20 postdocoral positions

Cover letter

- *Meet the application deadline!*
- If CL is required (i.e. for non-online applications), keep it brief:
 - State position that you are applying for
 - Give date when PhD will be completed, also estimated date of viva.
 - Say what you are enclosing (application materials)
 - List referee names and addresses (if not in CV)

CV

- Ask to see those of successful applicants...
- Also, include public outreach

CV - what not to include

- High school grades or even specific University grades
- Life saving and music certificates
- Employment history of summer jobs - unless relevant to research
- Long essays on anything, they will not be read

Letters of recommendation

- Who to choose? some possibilities: 1) your supervisor, 2) someone who knows your work well (collaborator), 3) Head of department or VIP.
Hopefully discuss this with your supervisor during your first couple years.
- Ask in good time (1-2 weeks before at minimum, unless in exceptional circumstances)
- Give letter writers full details (link to AAS job register, deadlines, etc)
- Provide a copy of your application
- Follow up with your referees, i.e. make sure they sent them before the deadline

Publication list

- Follow a conventional style (applies to all aspects of your application)
- Refereed papers are most important, list most recent first
- Include “in press” (i.e. accepted) and “submitted” papers, but make status clear
- Maybe include 1 or 2 “in preparation” papers, but only if they are going to be submitted within a few weeks of the job deadline
- Keep refereed and conference papers separated
- Do not send copies of your publications unless explicitly asked to do so

What should you apply for?

- Compare yourself to your contemporaries in your field (i.e. other finishing PhD students). Don't take this too far (there are many variables involved), but it's a good place to start to get an impression of what may be expected.

- Astro job rumour mill:

<http://www.astrobetter.com/wiki/tiki-index.php?page=Rumor+Mill>

- Even though many students from the US will have 6 year PhDs (4 years in Holland), employers also look at 'potential', not just number of papers or citations. *(It's a global competition)*

- 10-20 positions generally in total. A few "dream jobs" (possibly big fellowships), and the rest where you think you have a chance and would fit in.

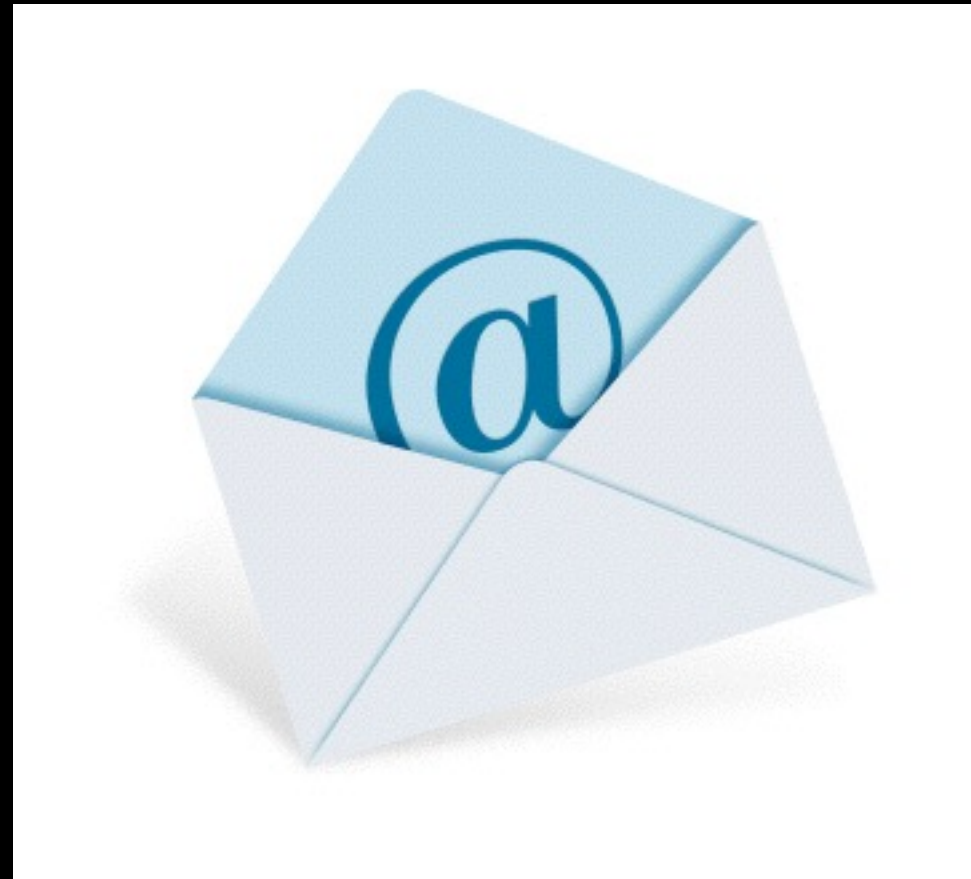
- If you are very successful, you may get 2 offers. Lots of rejection in astro...no matter how good you are.

- Hard to see what exactly makes a good proposal, but you "know it when you see it". So ask to read colleagues/friends/other students successful applications.

- Writing a good proposal takes a lot of time! Show it to (trusted) colleagues, staff, supervisors, etc to get detailed criticisms. Then re-write. Repeat, repeat, repeat!

Contacts

Be friendly Be clear Attach an interesting CV



Master in Physics/Astrophysics

PhD in Astrophysics

(it locks you into a topic for the next 10 years)

Postdoc 1

(to work in a group on your PhD topic)

Postdoc 2

(to work independently
maybe leading your own group)

Faculty 1

(Solid research, students.
Stepping stone?)

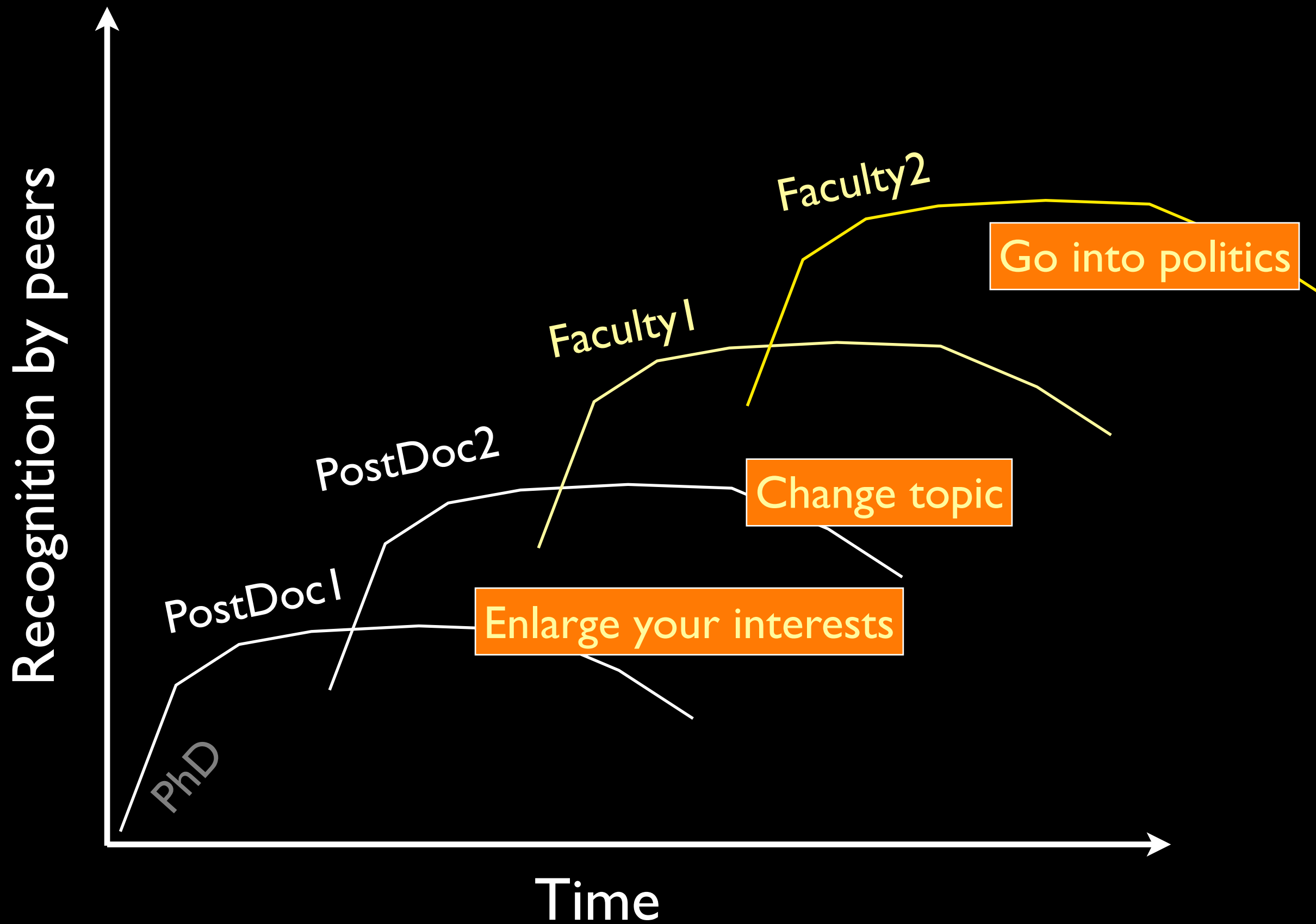
Faculty 2

(Where you wanted to end up)

Strategies to demonstrate independence (post-PhD)

- Don't keep working *only* with your PhD advisor, expand your collaboration base
- Initiate projects with students. Learn how to supervise the research of students and junior colleagues
- Don't rely on your publications to get noticed by themselves. Travel, give talks, go to conferences, “sell your work”







It is **NOT** a failure to chose a different
career path at any given point!



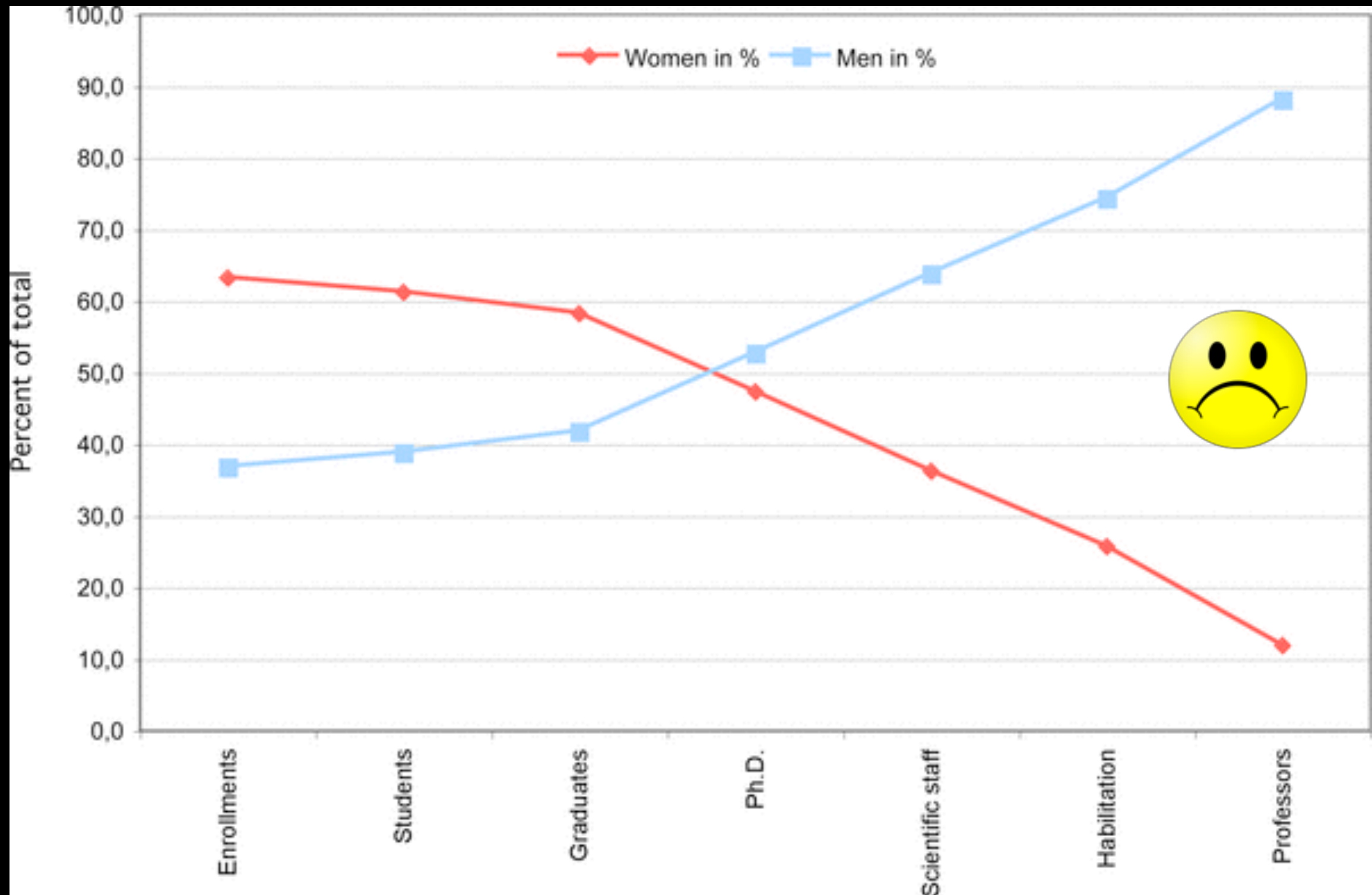
Get a Mentor



If you are a girl: it will be harder

(Yes, it is unfair)

But there is plenty of help!

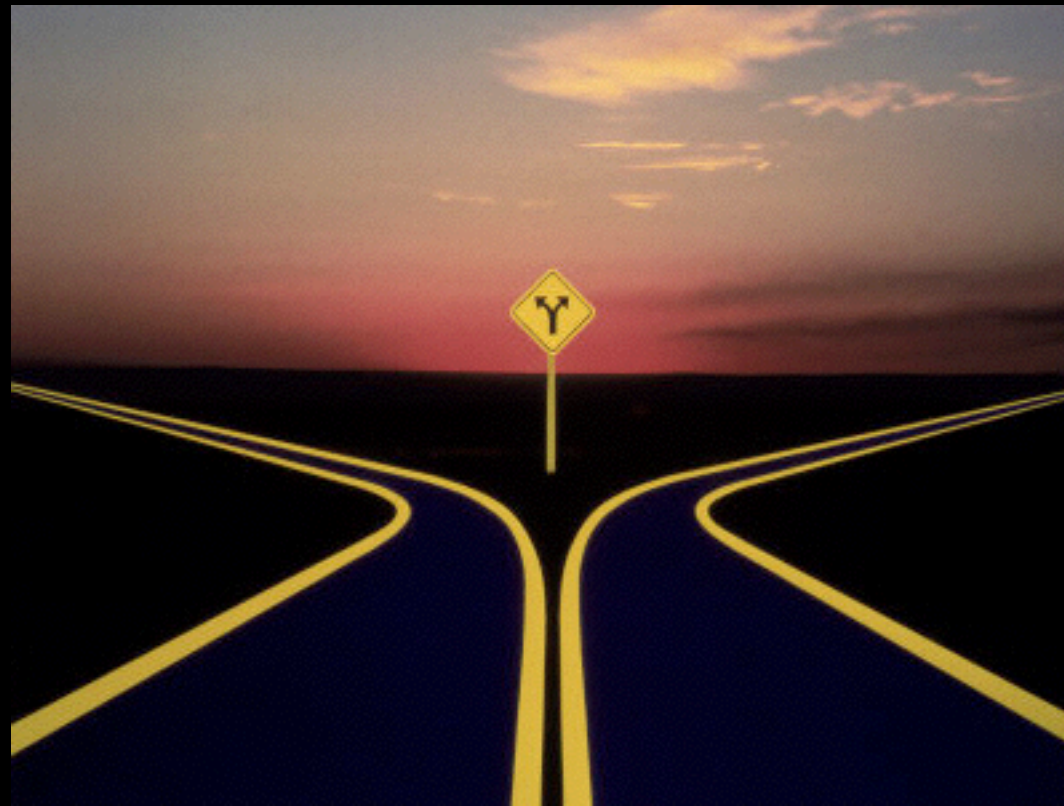




“When you are going through hell: keep going.”
(Winston Churchill)

No career path is smooth...

- lots of opportunities
- high mobility required
- two-body problem
- set-backs



But don't forget:
it is your job not your life

