

# **PhD - The day after**

## **Some possible career paths after a PhD**



**David Pichardie - September 30th 2022**

# Why bother now?

- To make you want to do a great PhD
- To make you want to do a great Master 2
- To make you want to chose carefully your Master internship
- And because sometimes a little bit of anticipation doesn't hurt...



# THE Roadmap



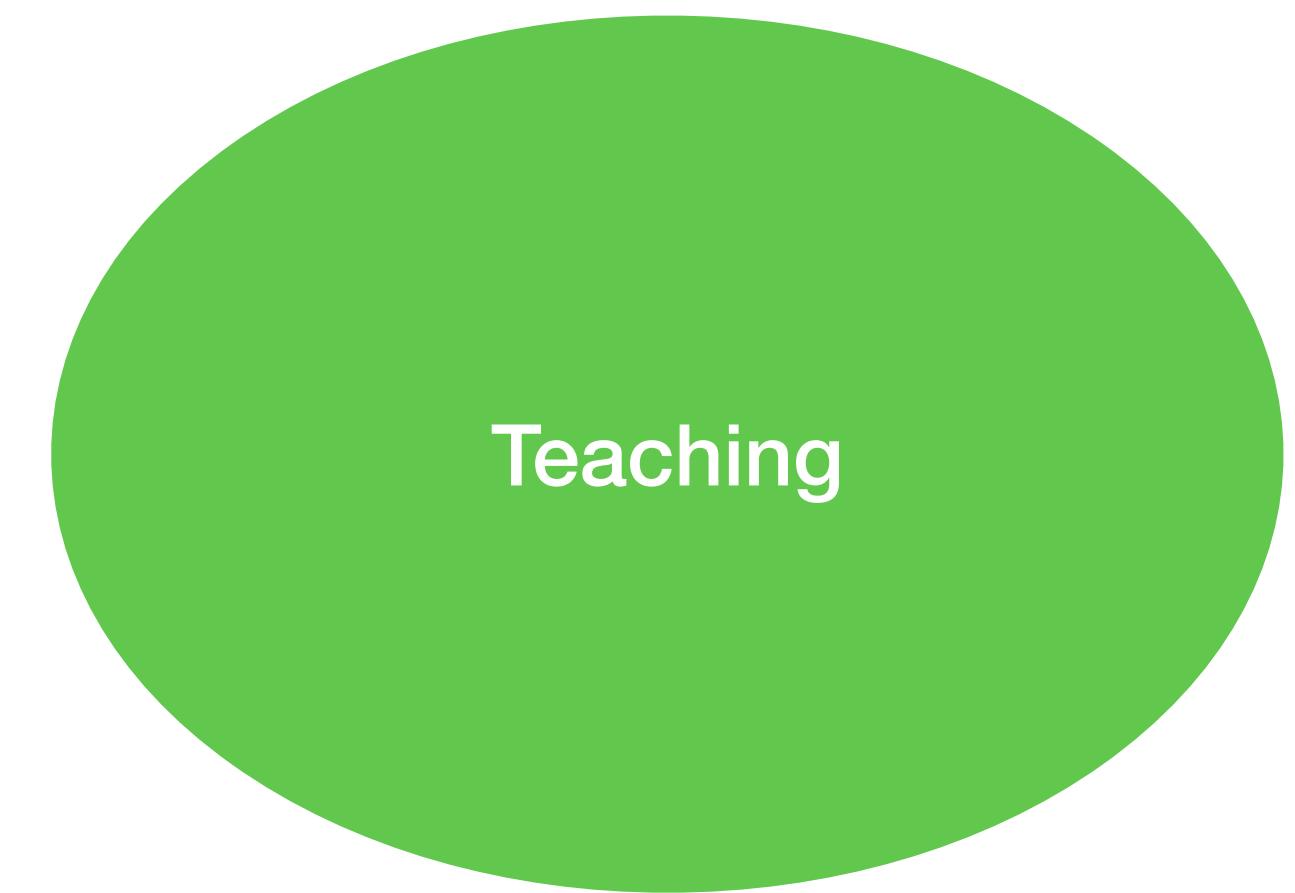
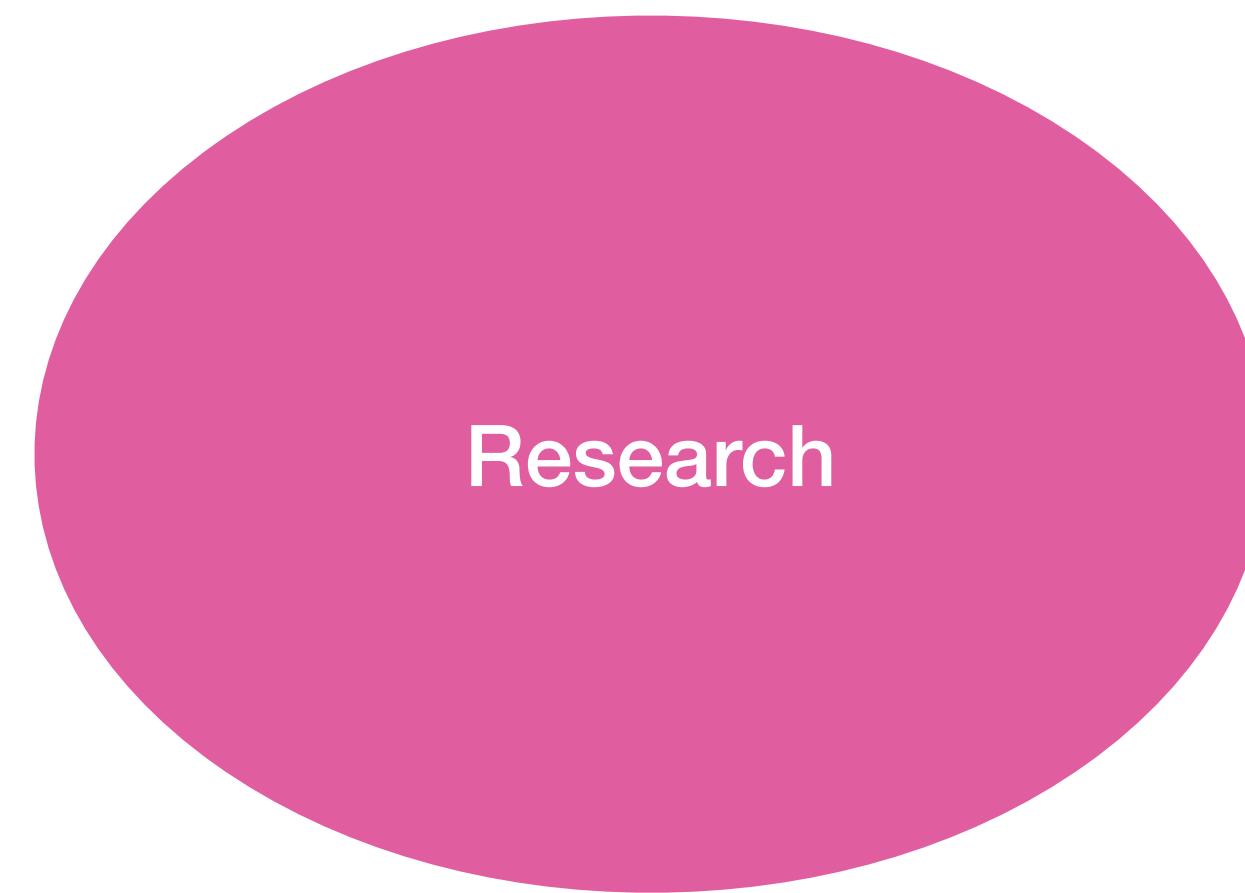
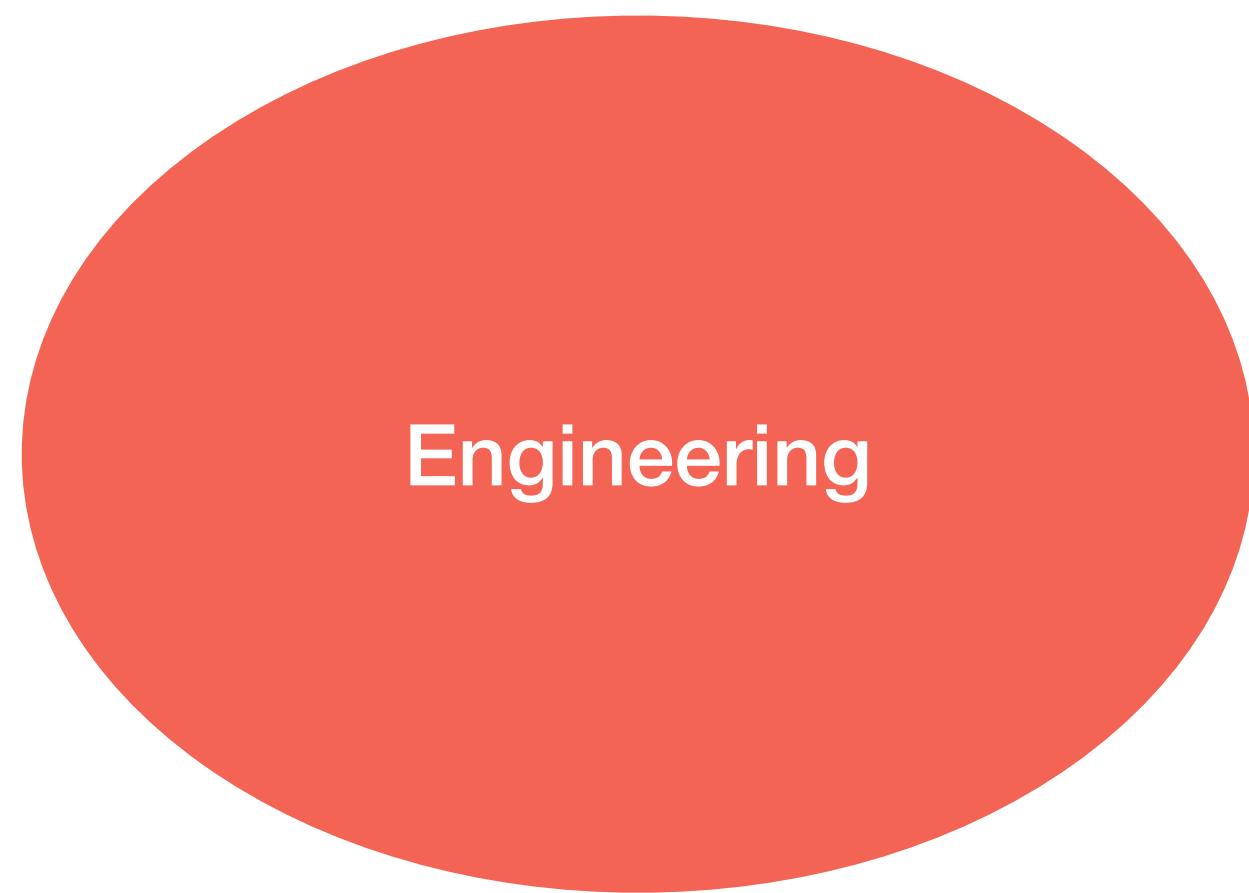


# There is no ONE roadmap

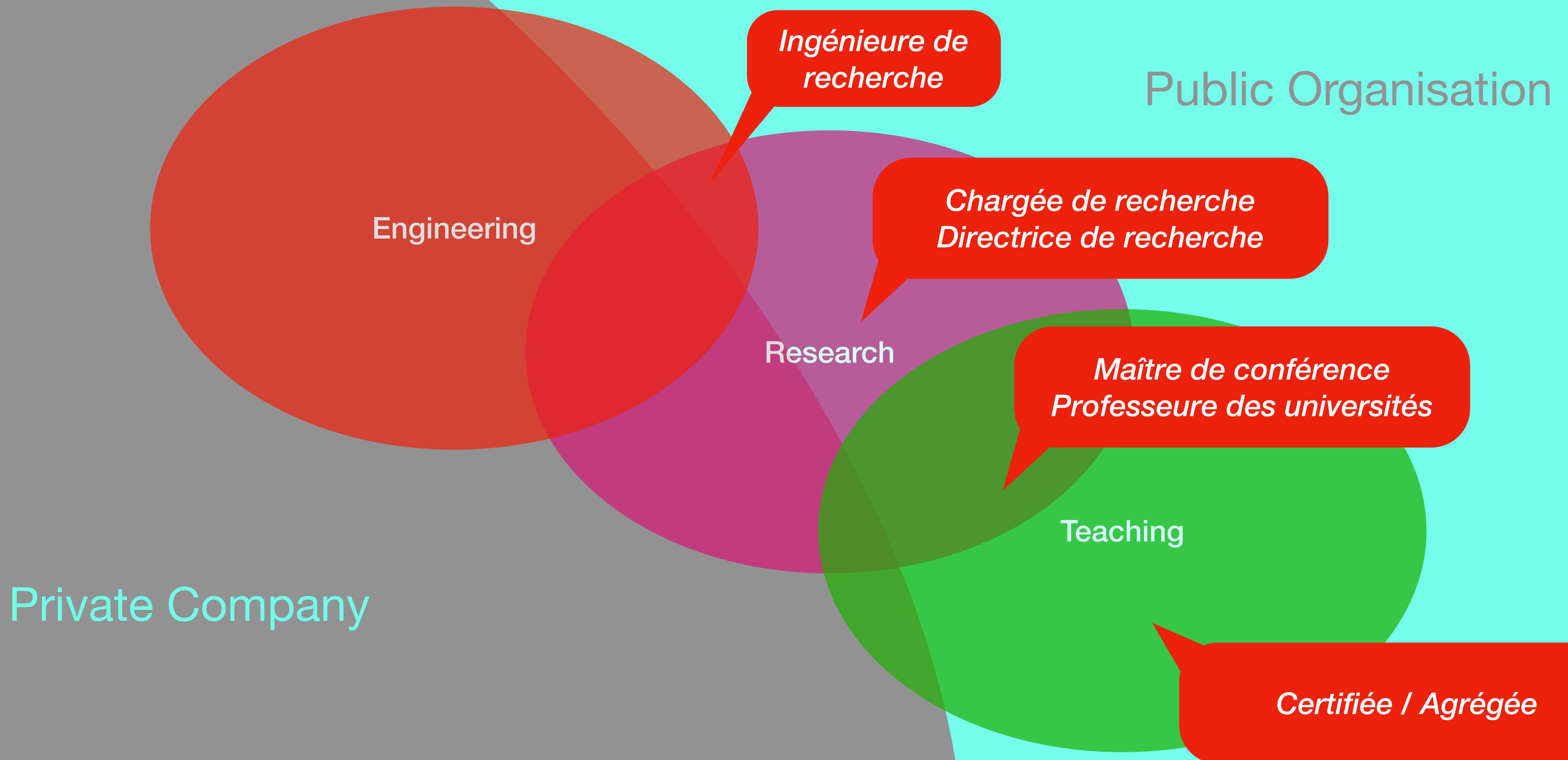
- Many careers are possible
- Each of you has different skills, wishes and family constraints
- Don't make this talk decide for you
- But take the time to learn about
  - the different paths
  - and their specific game rules



# The main category of careers

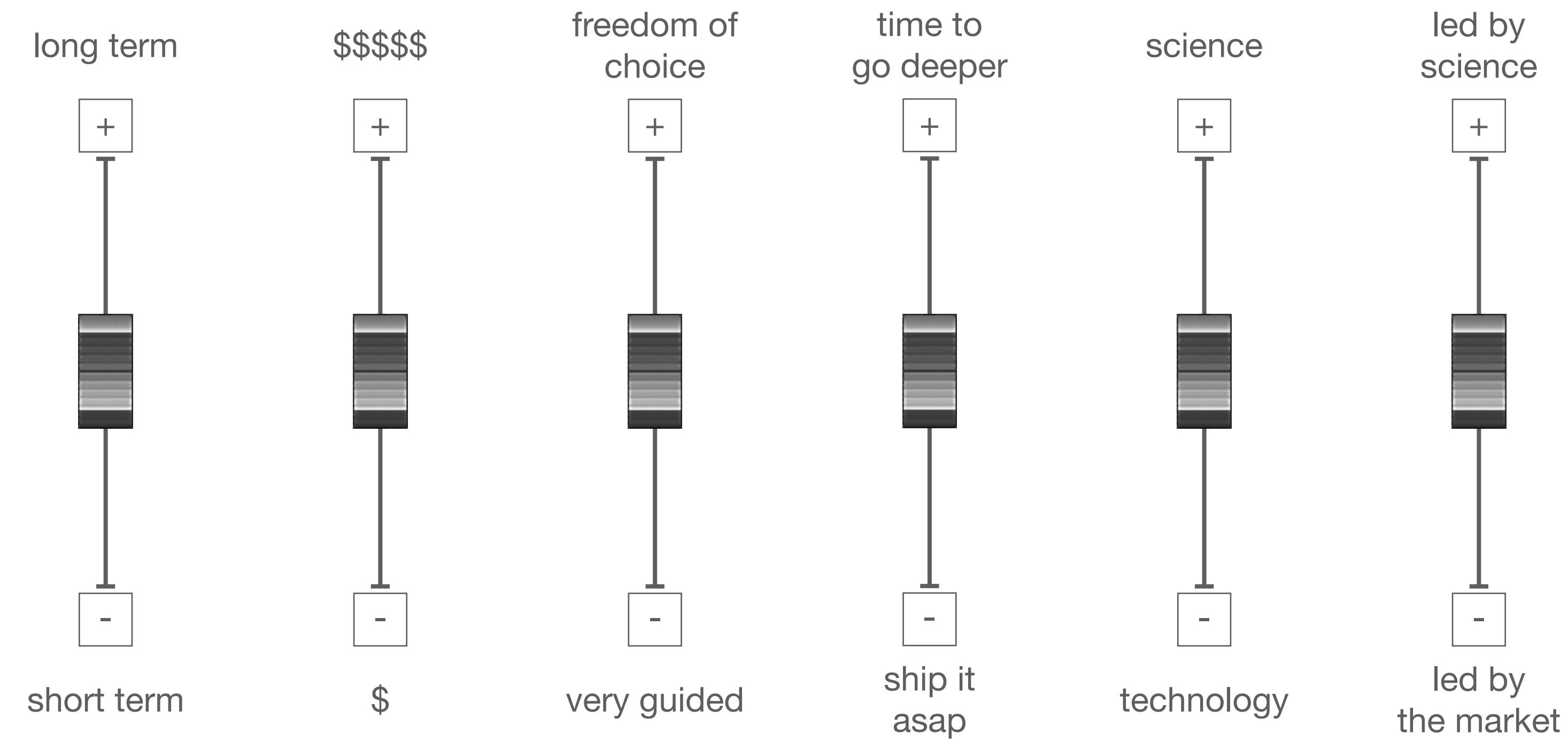


# The main categories of careers



# Choosing your carrier

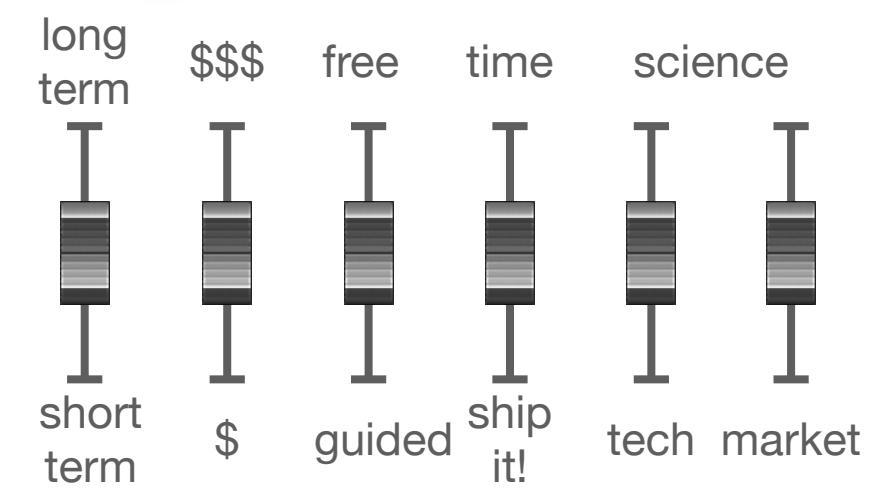
... in a multi-dimensional space



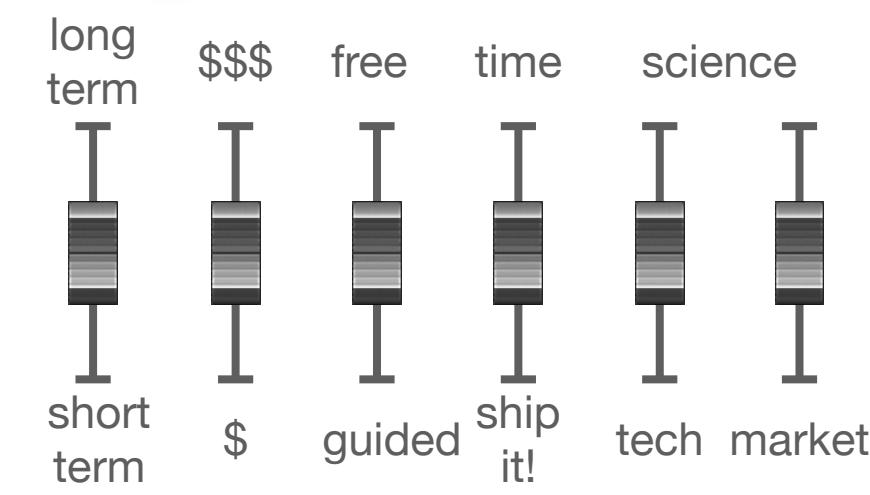
# Practical exercises

Put the cursors at their expected places

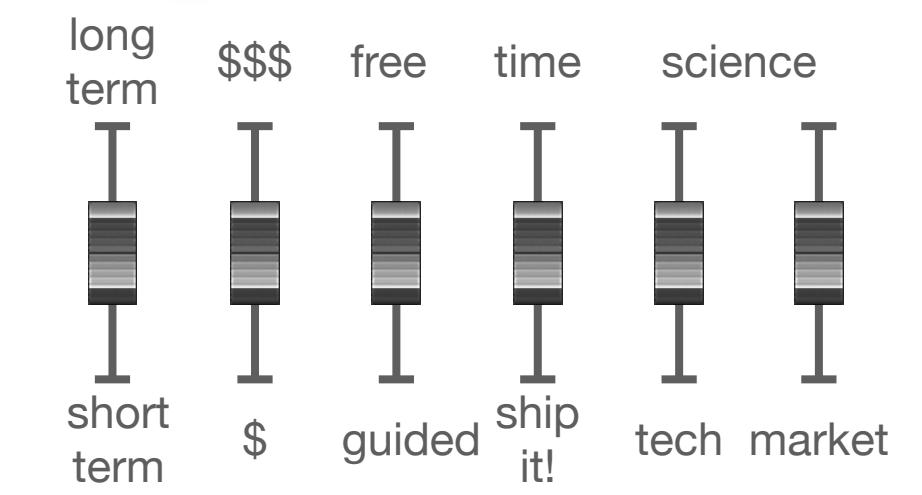
Engineer



Researcher



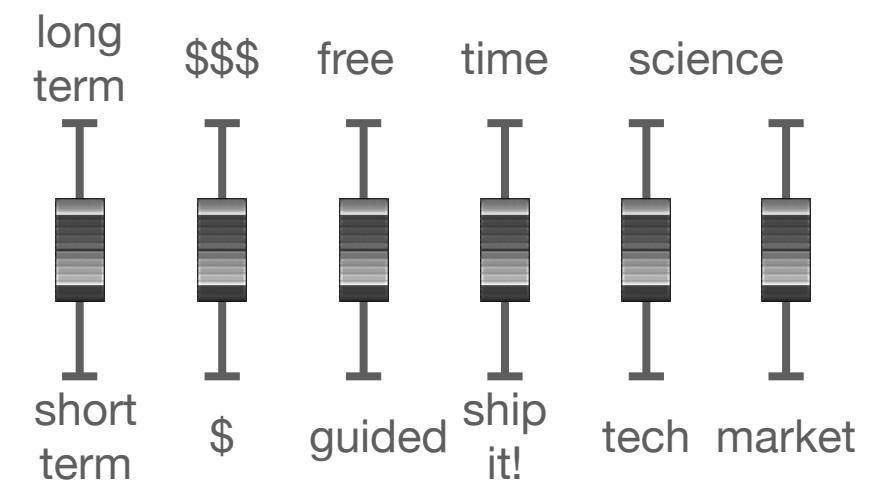
Teacher



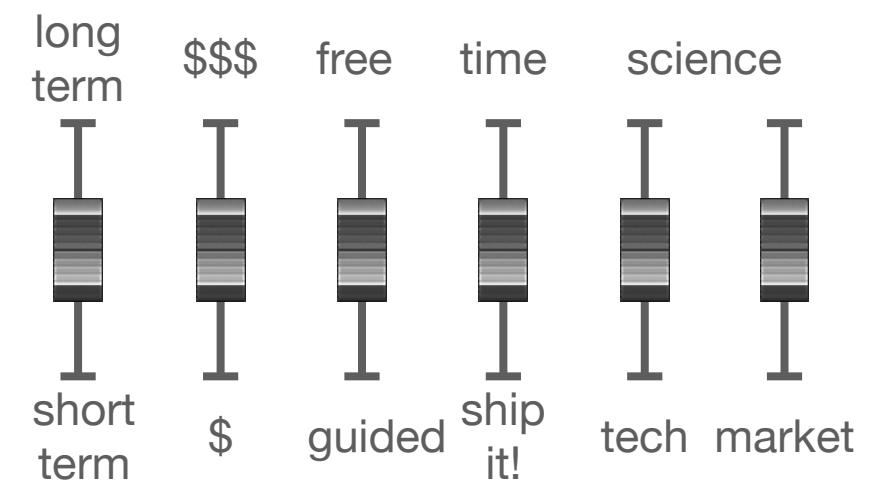
# Practical exercises

## Solution

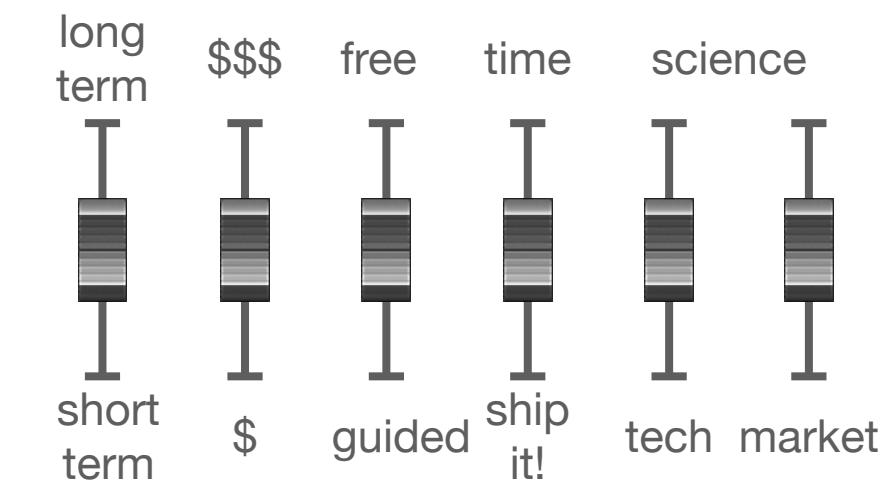
Engineer



Researcher



Teacher



# Academia

## *Chercheurs & enseignants-chercheurs*

- *Chercheurs*: INRIA, CNRS, CEA
- *Enseignants-chercheurs*: universities, grandes écoles
- *You will spend the next 4 years with them!*
  - take the time to observe them
  - reality: the number of permanent positions has decreased
  - beware: (french) people always complain about their work!



but not as much in Computer Science than in other domains

Don't listen too much the grumpy!



# Industry

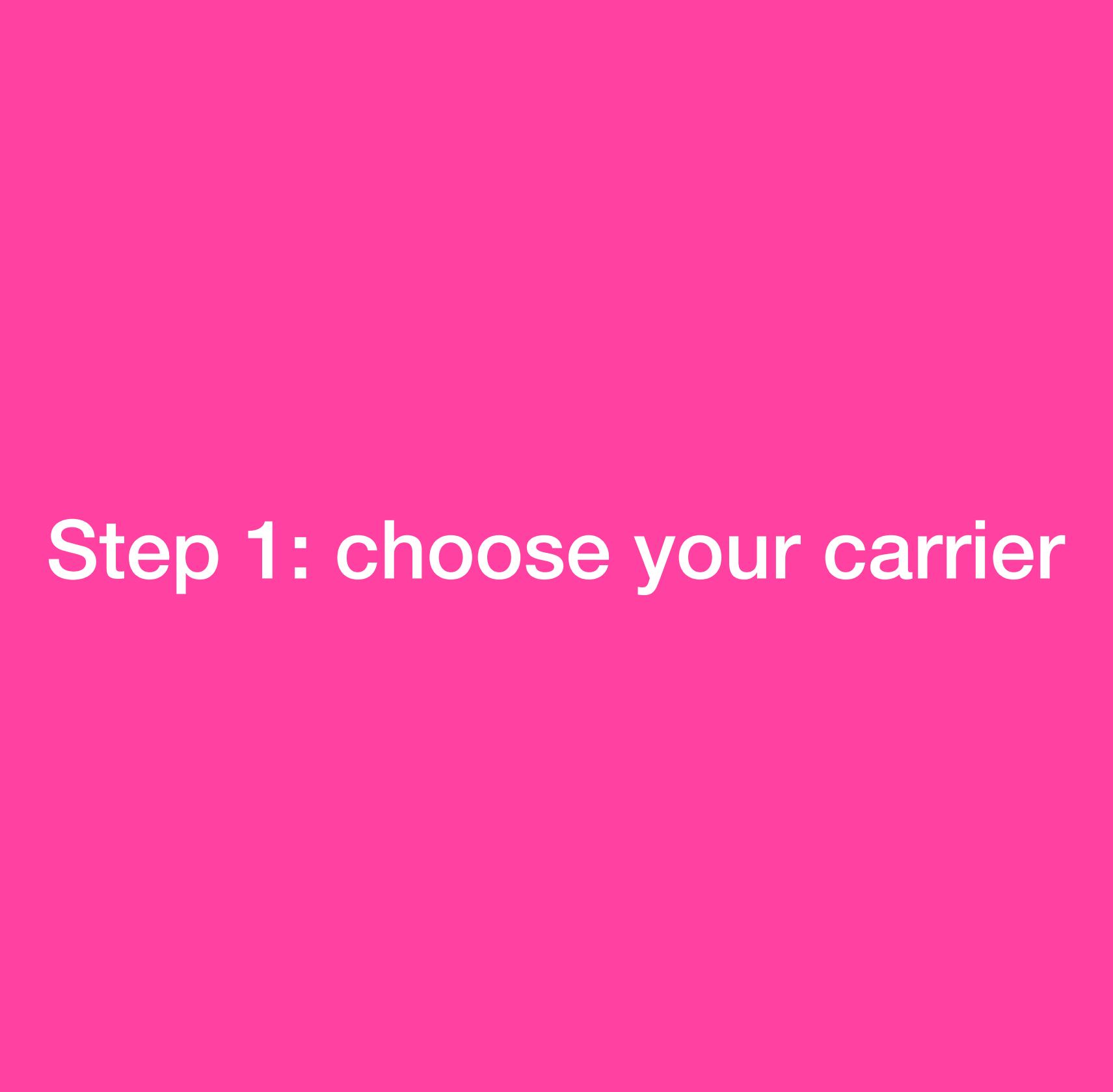
- Big companies / medium-size / startup
- Each company has its own *culture d'entreprise*
- The level of science may depend a lot of the company/team
- But *Time is money*
- French industry does not valuate as much PhD diploma but at the same time they need deep expertise on some selected topics



# Teaching Computer Science in a High School

- Many opportunities during the next decades
  - CAPES created in 2020
  - Agrégation created in 2022
- School curricula will contain more and more computer science
- PhD is not required, but you will never forget this unique opportunity to focus on deep science





**Step 1: choose your carrier**



**Step 2: get the job!**

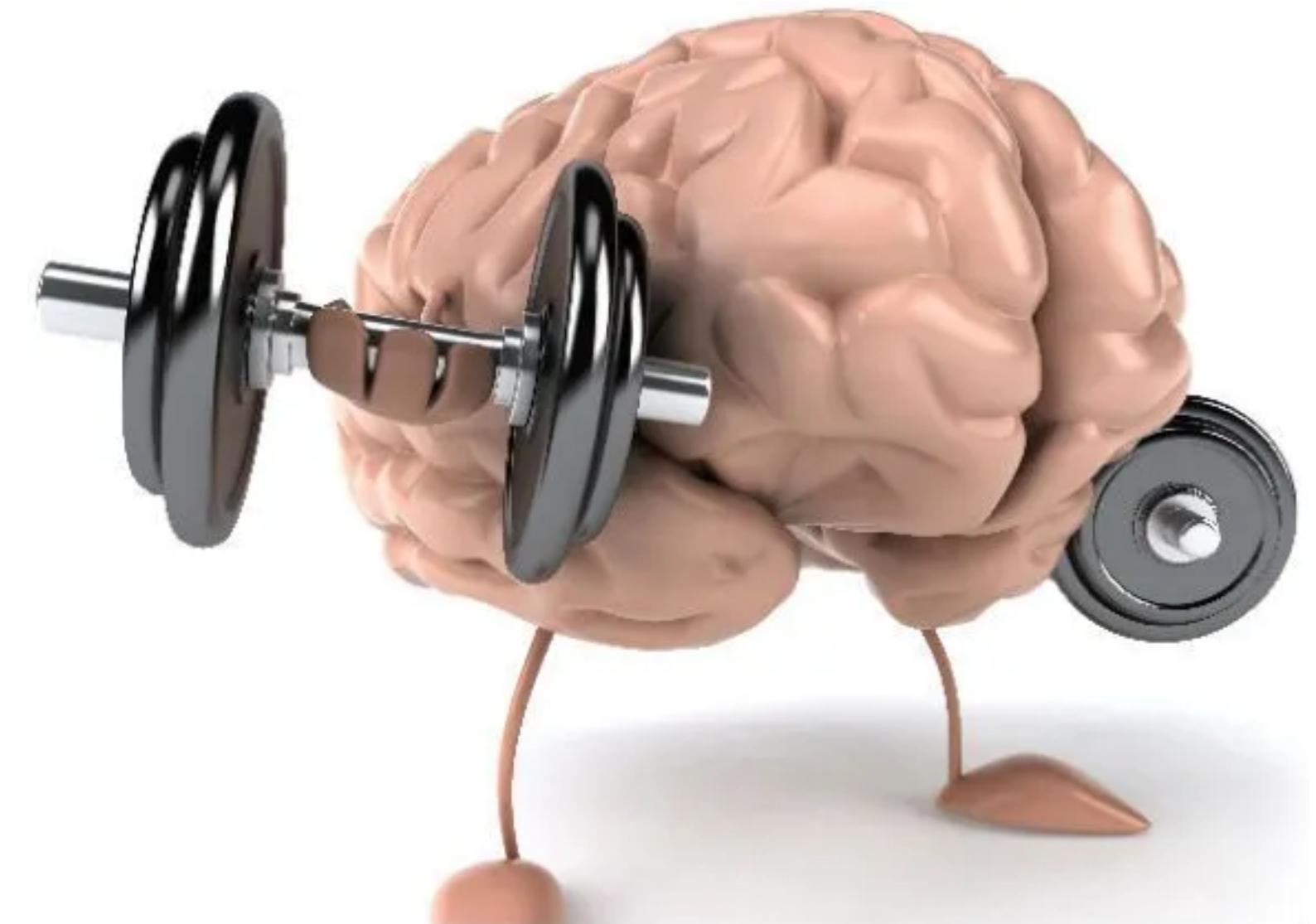
# My advices

- I will give you some advices
- Several are inherited from a previous version of this talk (by Luc Bougé)
- Take them with a *pinch of salt* and discuss with other colleagues when the time comes



# Be competent

- We expect your PhD to make you an expert in your (narrow) domain
  - don't forget that
  - and enjoy this *bubble of science*
  - go deep
  - read
  - experiment
  - meet the gods of your domain



# Improve your communications skills

- After (and a bit during) your PhD, you will have to explain your expertise area to non-experts
- You can practice during your PhD
- Communication can be oral or written
  - written: you will have to write research proposals
  - oral: you will have to make presentations

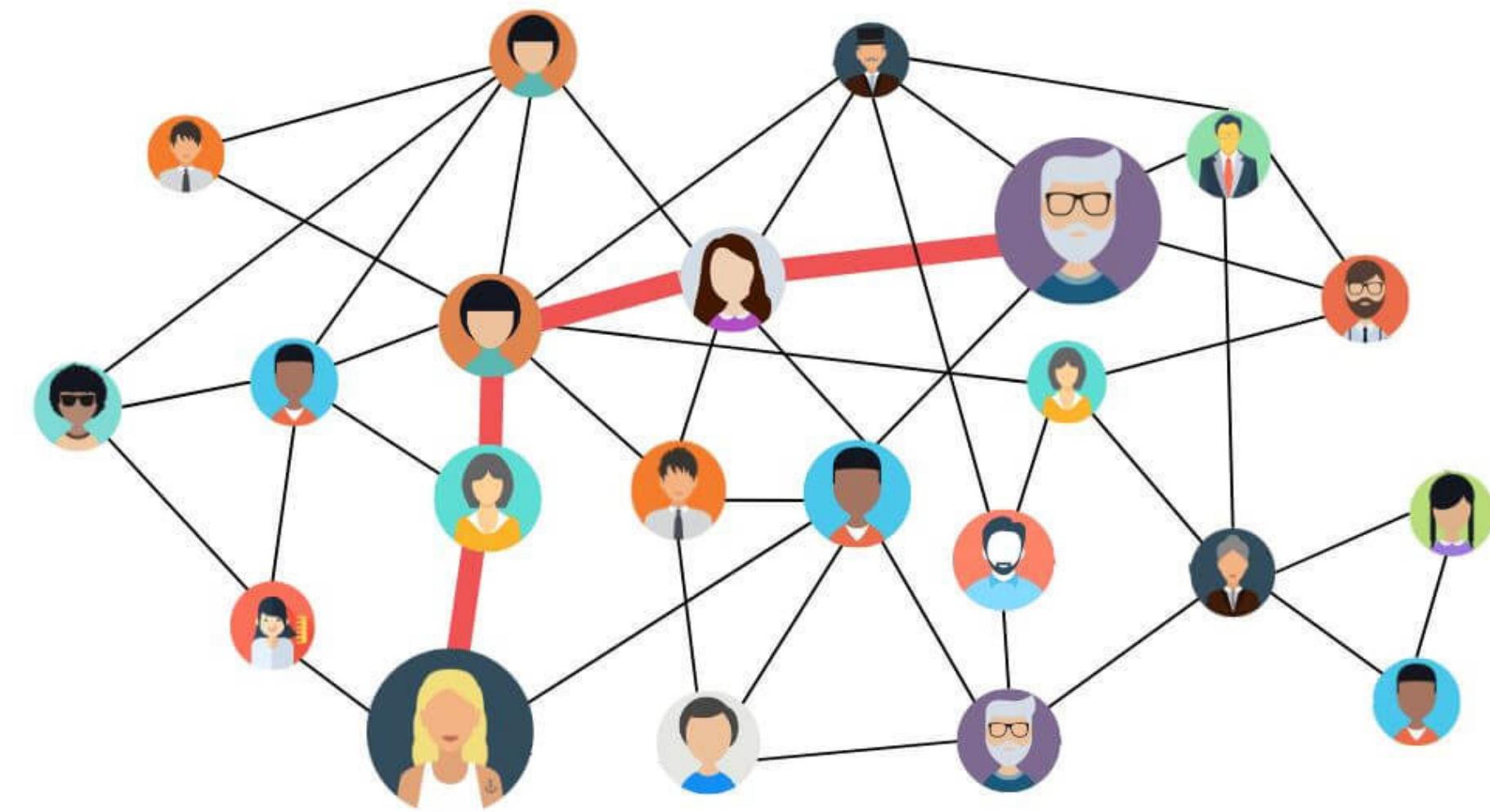


and of course research papers

and of course research talks

# Build a network

- Don't hide in your PhD office during 3 years!
- Meet as many people as you can
- Listen about their own experience
- Do not speak only to PhDs and PostDocs
- Give also a try with senior people and try to put yourself in the shoes of those who will hire you later



Seminar

Conferences

Summer schools

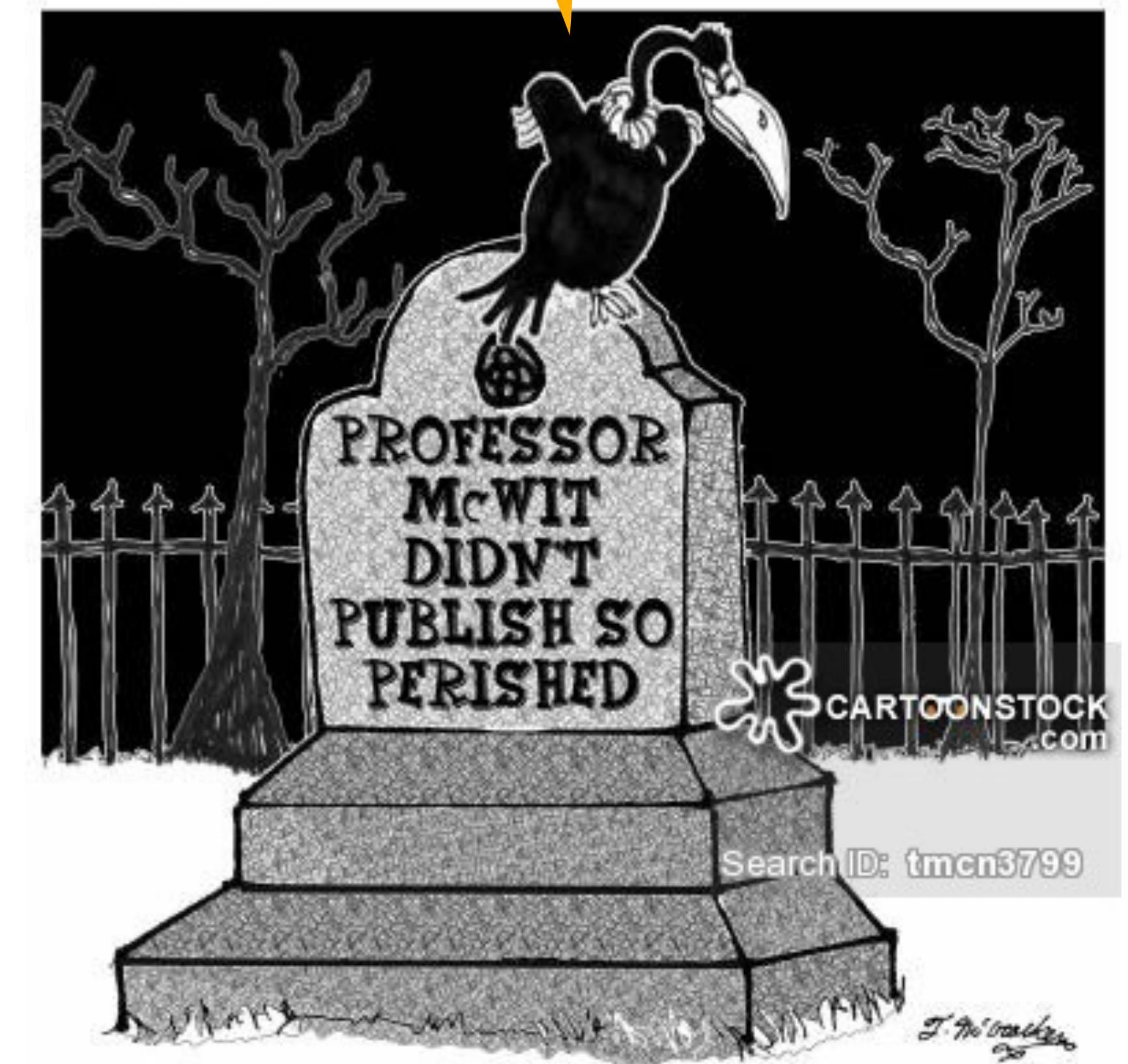
Cafeteria

*Fête de la science*

# Publish

Keep in mind that USA ≠ France

- Full research positions required a first-class publication track (PhD+PostDoc)
- Teaching positions at university are less demanding
  - but still, you will be mainly evaluated on your research, not your teaching skills
- Your supervisor will give you the keys
  - find one who fit best with your career plans
- You can also get a PhD with just *honest* publications, if you plan to join Industry or High School teaching after



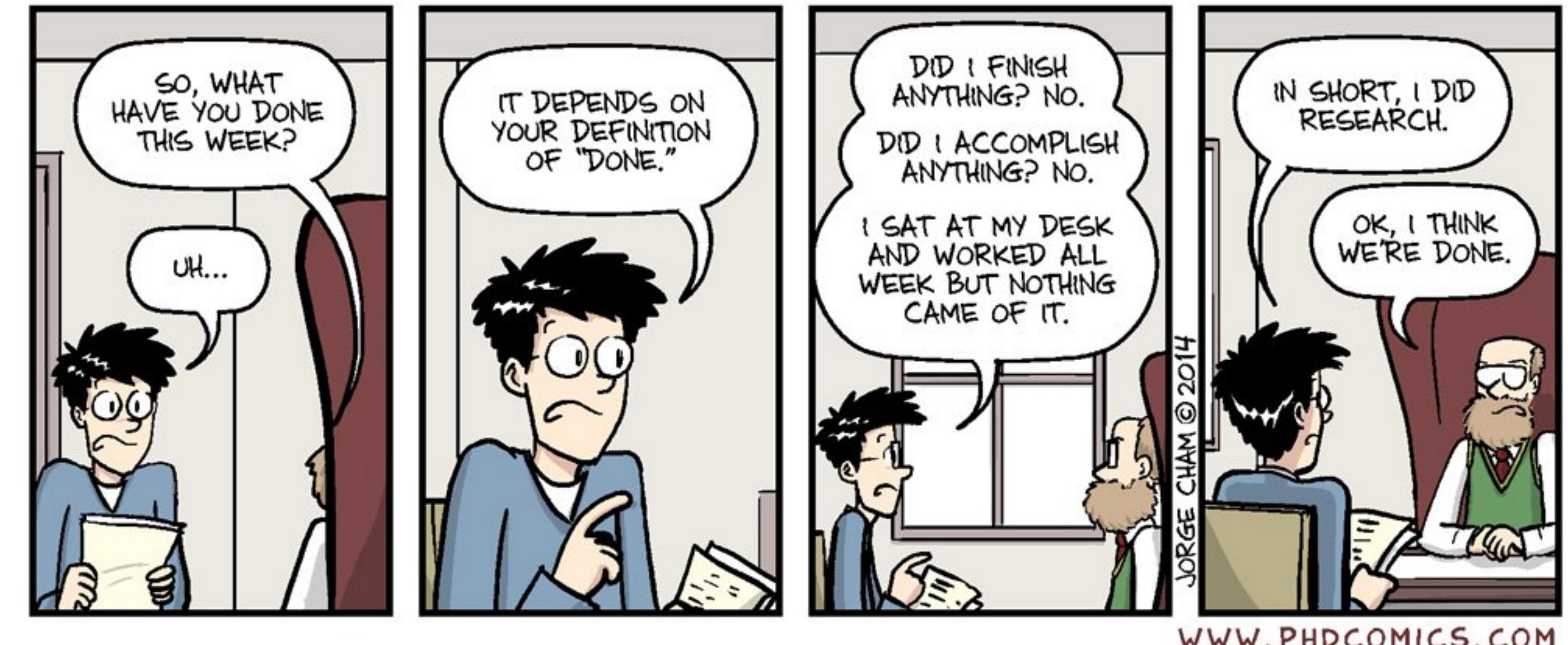
# Anticipation

- Applying to a position is a one-year task
  - searching for proposals
  - meeting the right people, understanding their needs
  - building up your application
    - extended CV
    - research proposal
      - short-term / mid-term / blue sky
    - teaching experiences
    - reference letters



# Get the most of your advisor

- You are responsible to solicit him/her
  - plan regular meeting
  - prepare well to have an effective meeting
  - take notes, manage archives
- Keep in mind
  - you are (mostly) mono-threaded
  - He/she is multi threaded



# You shall

- Learn
- Communicate
- Meet people
- Publish
- Anticipate
- Listen to your supervisor



# Don't be afraid by planning

- It's not easy for anyone
- The future
  - may be frightening
  - but you have plenty of opportunities in front of you
  - just find them!

