

Academic Career Path

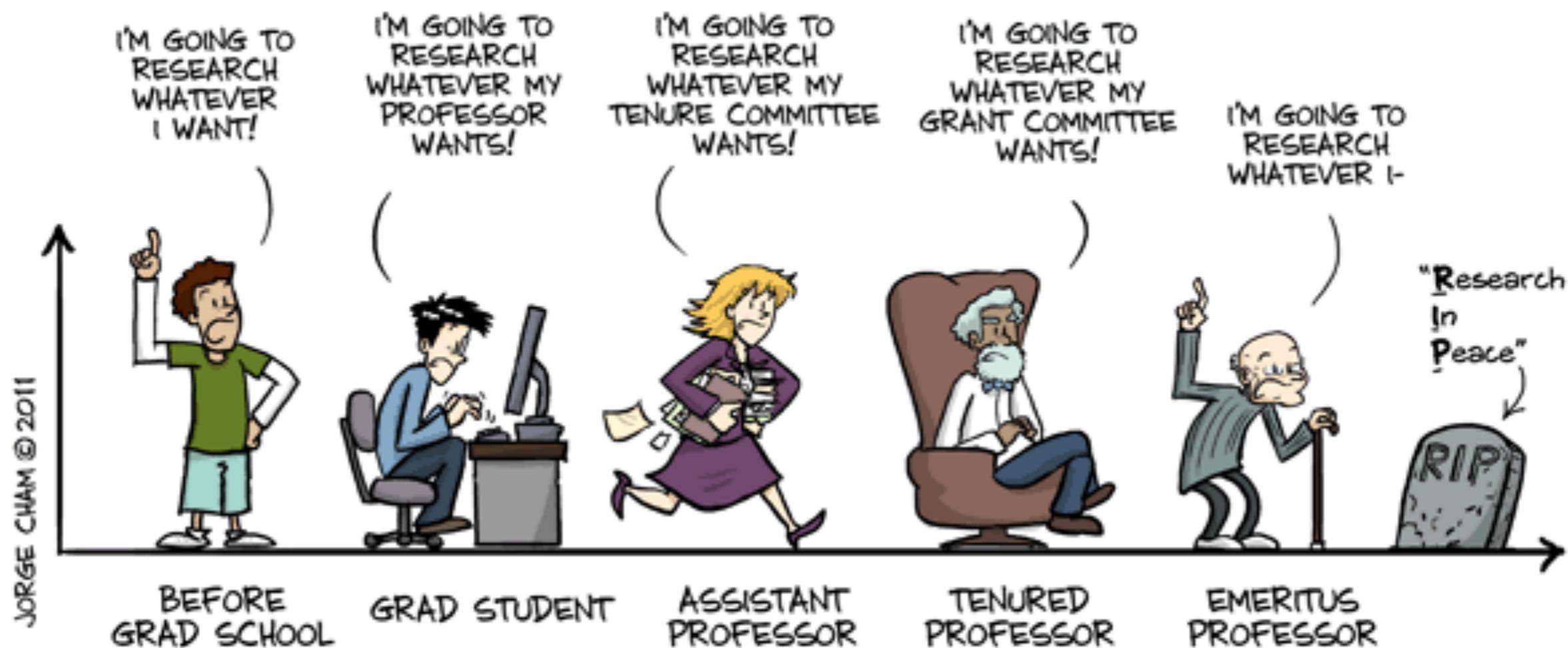
“Climbing a ladder is a very real thing.”

Igor Peterlik

December 2016

Overview

THE EVOLUTION OF INTELLECTUAL FREEDOM



WWW.PHDCOMICS.COM

My Ladder Climbing

- ❖ Czech Republic: Ph.D. at MU & research worker VUT
- ❖ France: post-doc at Inria, funded by a EU project
- ❖ Canada: post-doc at UBC, 1 year appointment
- ❖ France: research engineer at a private institute
- ❖ Czech Republic: non-tenured researcher at MU
- ❖ France: tenured researcher at Inria

Academic Career Basics

- ❖ non-tenured — tenure-track — tenured
- ❖ tenured (*tenere*): appointment until retirement
 - ❖ associated professors and professors (hard money)
 - ❖ motivated by academic/intellectual freedom
- ❖ tenure-track: towards the tenure, usually *soft-money*
 - ❖ assistant professor, time to create publication record
 - ❖ typically 6 — 7 years, not 100% of having the tenure
- ❖ non-tenured: student level (Ph.D.) and fellowship level (post-doctoral fellows)

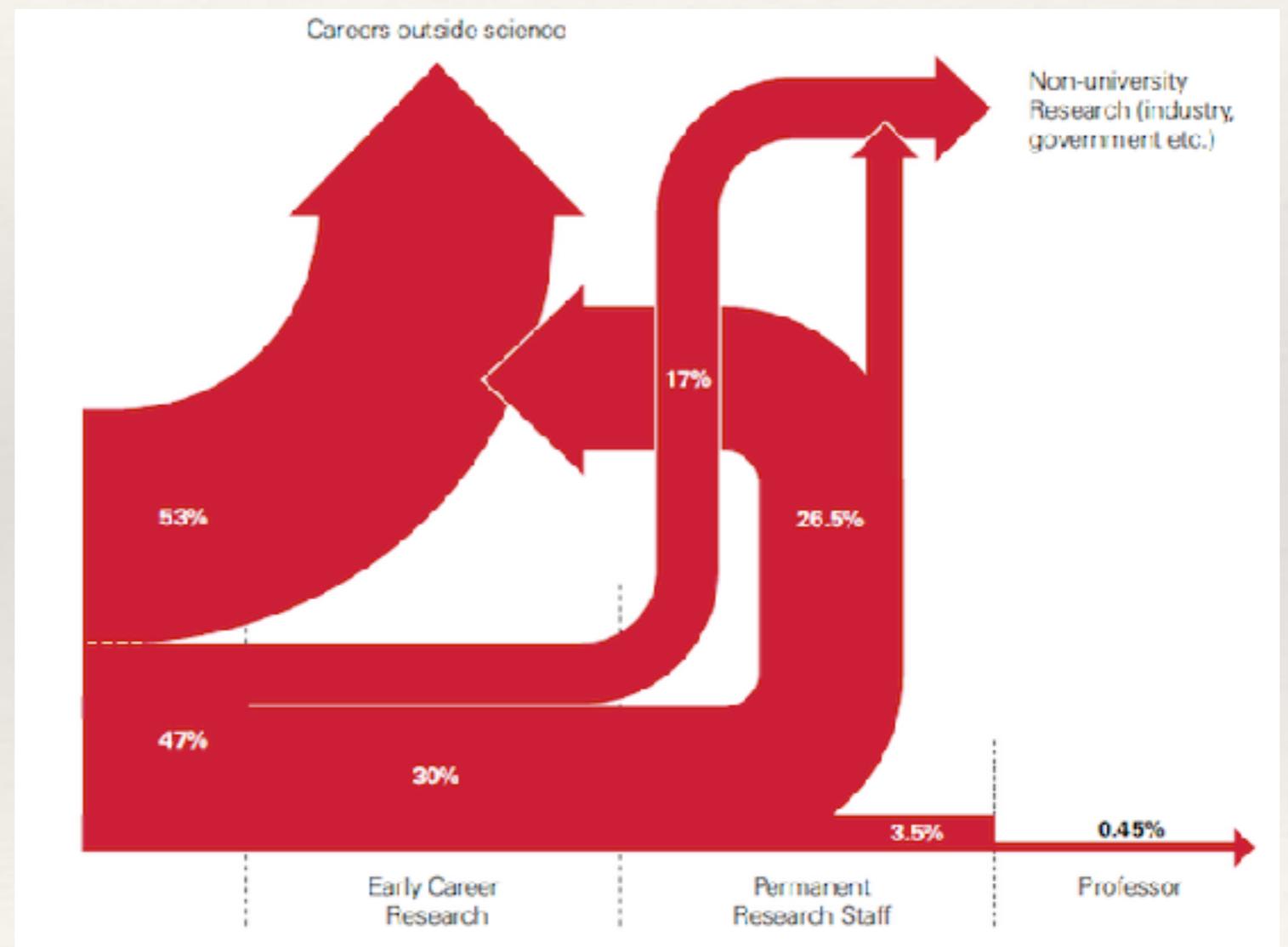


Research Centers

- ❖ universities: the standard place for doing research
 - ❖ public at different levels: city, community, region, state, country, military
 - ❖ private: created by benefactors, companies, industry
- ❖ research institutes:
 - ❖ government: e.g. Academy of Sciences, Inria, military research
 - ❖ independent with public co-funding: Max Planck, Fraunhofer institutes
 - ❖ private institutes: rather in the U.S., appear also in Europe
- ❖ industrial research: big companies typically have department for applied research
- ❖ start-ups: industrial transfer
 - ❖ typically from universities and institutes

Academy vs. Industry

- ❖ border between academy and industry becoming thinner (mainly for the applied research)
- ❖ Ph.D. does not mean academic career!
- ❖ Post-doc does not mean academic career!
- ❖ tenure-track and tenure: still high osmosis between academy and industry

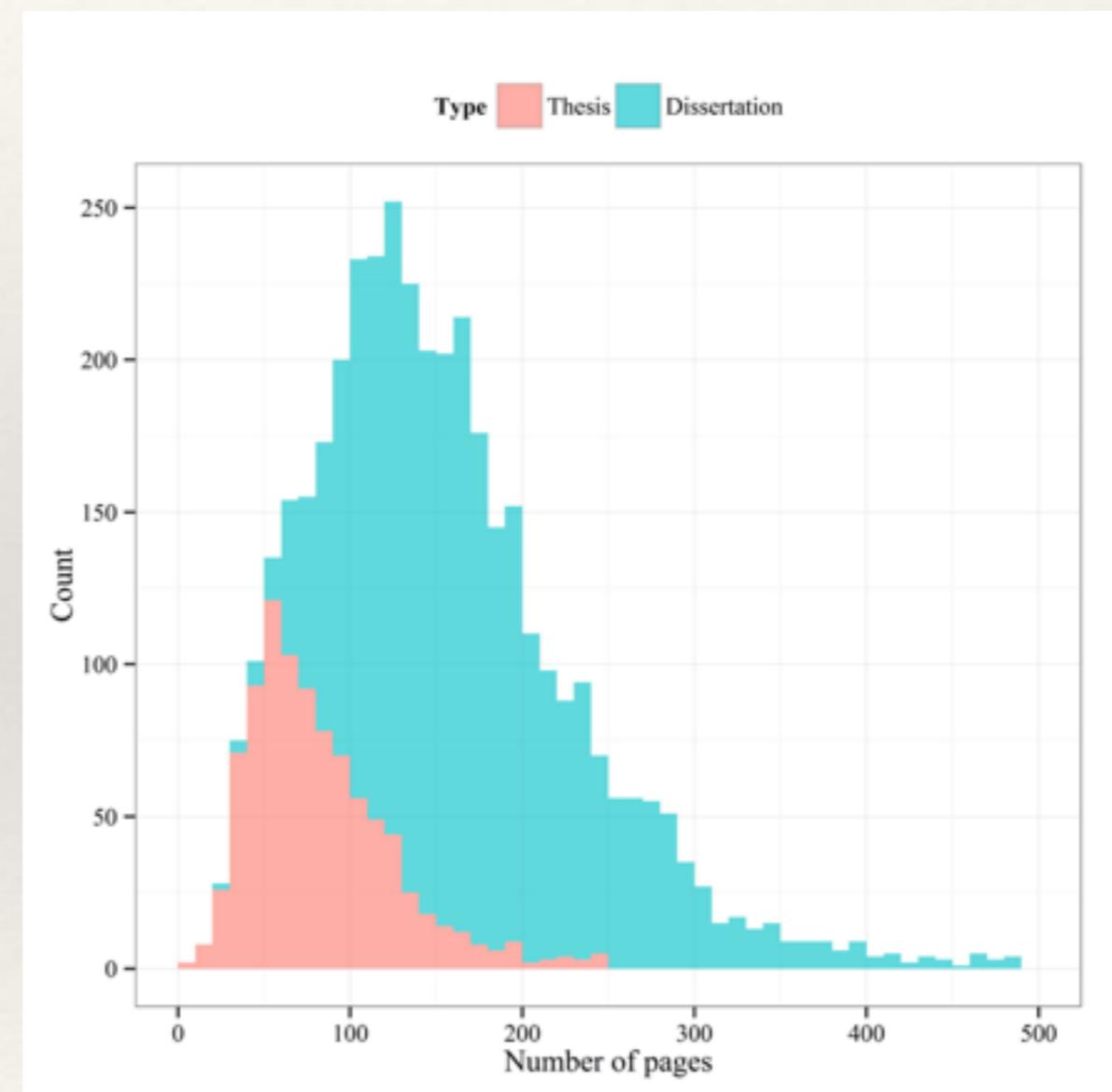


Specificities

- ❖ every country has its specificities
 - ❖ public vs. private sector
 - ❖ length of the ladder
 - ❖ typical age for the “hard-money” position
- ❖ every disciplines has its specificities
 - ❖ relation with industry strong in engineering, life sciences
 - ❖ quite difficult system (and problems) in social sciences and humanities

Ph.D. @ America

- ❖ average length: 8.2 year
- ❖ average age when completing: 33
- ❖ from 8,611 in 1957 to 48,133 in 2007
- ❖ 57%: finish within 10 years
- ❖ 30%: dropped / dismissed
- ❖ 13%: over 10 years
- ❖ 85% of engineering Ph.D. goes to business / industry



Ph.D. @ Germany

- ❖ average length: three to five years
- ❖ 4,000 graduating per year
- ❖ two types of Ph.D.
 - ❖ individual: under supervision of 1 professor (90%)
 - ❖ structured: team of supervisors (*thesis committee*)
- ❖ dissertation vs. *cumulative doctorate* (composed of papers)
 - ❖ dissertation is usually published in form of a book
- ❖ *specialities* after defending the dissertation



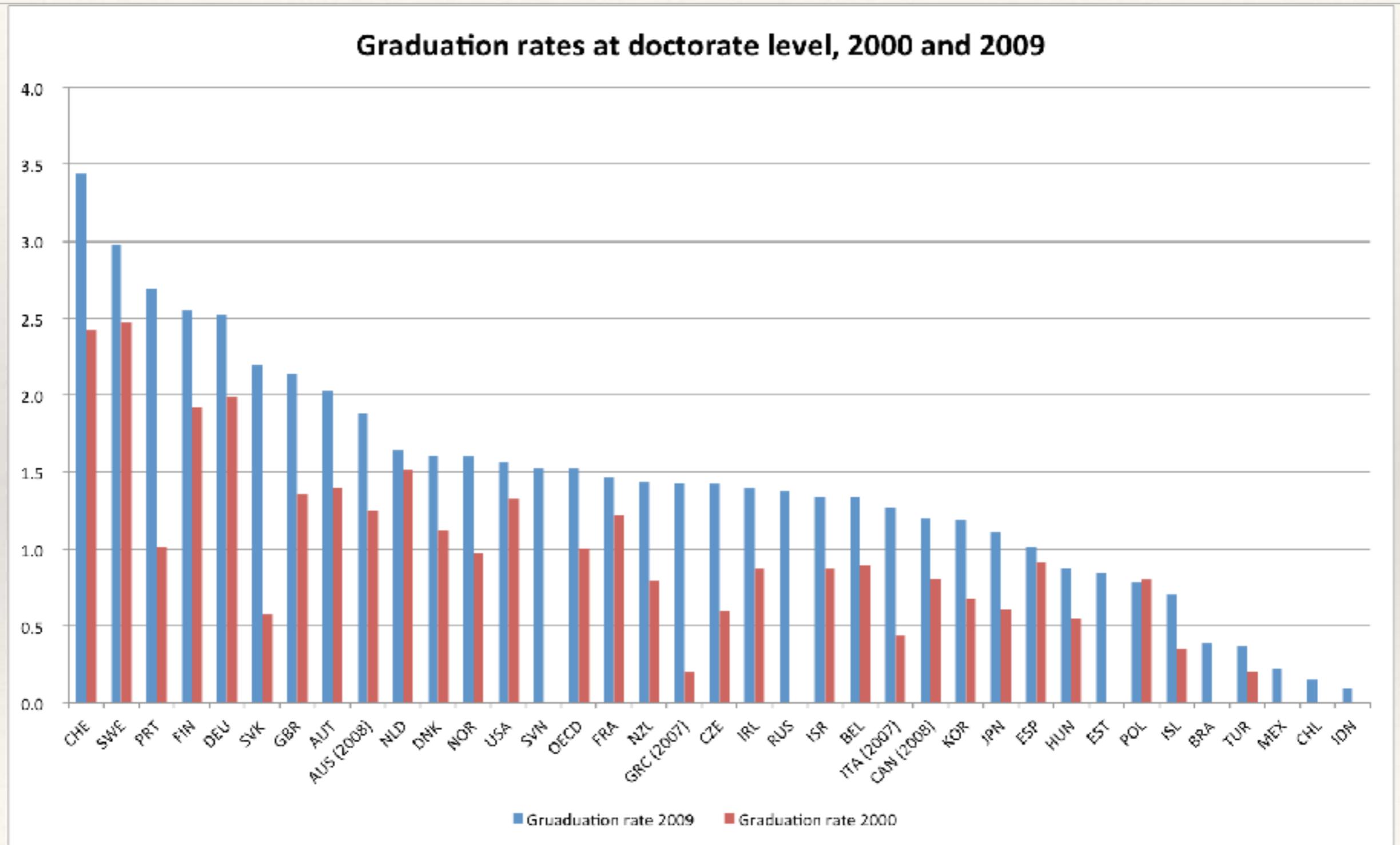
Ph.D. @ France

- ❖ length: strictly limited to 3 years (from start to defence)
 - ❖ exceptions possible, but difficult (typical for 1 / 2 year)
- ❖ different high-education system
 - ❖ universities: “scientific” similar as elsewhere
 - ❖ engineering schools: preparation (bac+3) + engineering (2 y)
- ❖ PhD is always affiliated to “Ecole doctorale” (part of a univ.)
 - ❖ but research done at research institute (Inria, CNRS, Inserm)
- ❖ employee: contracts, taxes; 1,200 — 1,500 € net
- ❖ “industrial theses” (CIFRE)
 - ❖ employee of a company (e.g., EDF, Altran, Airbus), subsidized

Ph.D. @ Elsewhere

- ❖ Switzerland, Norway
 - ❖ much higher salary (3,000 € net and higher)
 - ❖ much higher cost of living
- ❖ Netherlands
 - ❖ very competitive universities (U.S.-style)
 - ❖ typically very solemn defense
- ❖ Japan
 - ❖ tuition fees for PhD study, possibility of having scholarship
 - ❖ learn Japanese

Ph.D. in Population (OECD)



After PhD: Post-Doc

- ❖ usually an obligatory step of *ladder climbing*
 - ❖ forces people to get out and try living somewhere else
 - ❖ not only different work, but different country, culture, society
- ❖ best time to think about options when you start writing the thesis
- ❖ often member of PhD committee proposes a post-doc
- ❖ the idea: “*You have something, they have something, you put it together and start generating papers.*”
- ❖ fellow should be autonomous and demonstrate independent thinking
- ❖ typically 12 — 18 months, rarely longer (up to 2 years)
- ❖ sometimes a different type of contract is presented as a post-doc

Post-Doc: My Observations

- ❖ numerous offers these days
 - ❖ usually project-funded (H2020, national projects)
 - ❖ institutional post-docs, funded by university or institute
- ❖ steady flow from east to west
- ❖ paradox:
 - ❖ very important for the remaining career (remembered as the best part of it by many researchers)
 - ❖ often not very successful in terms of results, publications, evaluation by fellows

Post-Doc: Possible Problems

- ❖ timing-related problem:
 - ❖ too short: an expertise to be acquired, research to be done, papers to be written and published...
 - ❖ bad timing: depends on other outcomes, groups, individuals
 - ❖ no “final check”
- ❖ topic-related problem
 - ❖ topic defined too vague, approximative, generic
 - ❖ too engineering, development oriented
- ❖ **a trap: is there a life beyond... a post-doc...?**
 - ❖ post-doc is the latest time when you should clearly define your career goals and strategy to achieve them

Post-Doc: Lessons Learned

- ❖ be clear about the topic (time is short but precious)
- ❖ have a clearly defined supervision (if there is any)
- ❖ before starting working with someone, talk to their / your supervisor, visit them in person
- ❖ have your say (authorship, communication, travelling)
- ❖ get details about your funding and finances (*manage your tax declaration yourself*)
- ❖ do not neglect social and networking aspects
- ❖ already plan the life after the post-doc when you start one

Towards the Tenure

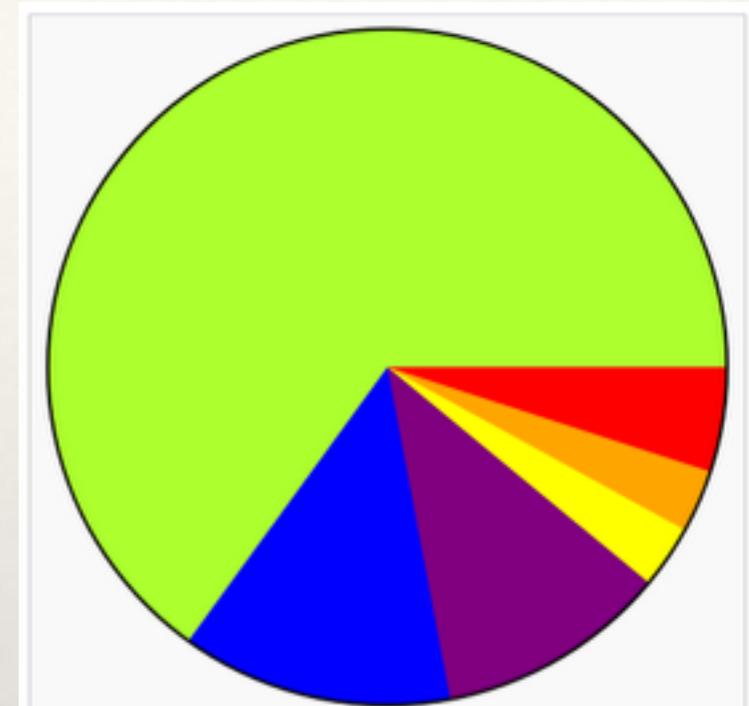
- ❖ typical post-post-doc scenarios
 - ❖ coming back to your *alma mater* after post-doc
 - ❖ turning the post-doc into a tenure-track and / or tenure
 - ❖ leaving the academy (for good...)
- ❖ scientific results is necessary but not the only one factor
 - ❖ contacts & networking (in any case)
 - ❖ teaching & supervising (mainly if targeting university)
 - ❖ membership in committees, editorial boards (mainly if targeting institute)
 - ❖ popularization of science
 - ❖ already obtained prestigious fundings

Towards the Tenure: America

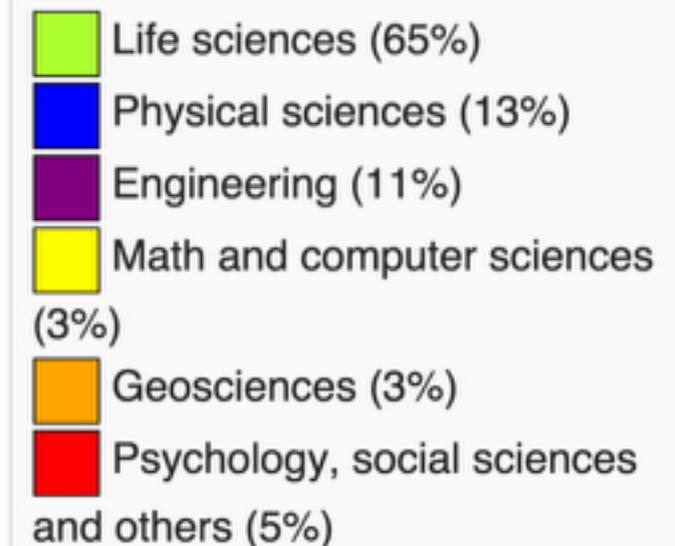
- ❖ needed for tenure track:
 - ❖ 39% in 5 years after having Ph.D.
 - ❖ 10% still waiting (>40 old)



WWW.PHDCOMICS.COM



Post-doctoral researchers by discipline (United States, 2012)^[1]



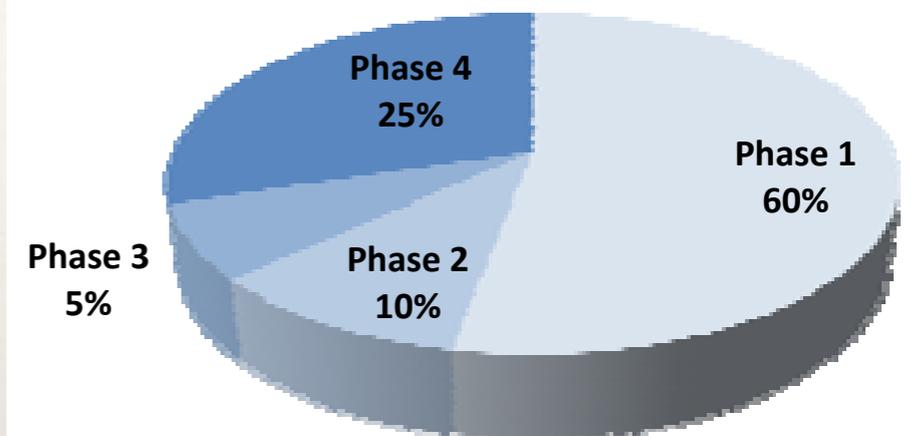
Scientific Career: US/Canada

- ❖ tenure-track:
 - ❖ 6-7 years (assistant professor)
 - ❖ involved in teaching (9-12 hours), services
 - ❖ individual universities carry out the promotion
- ❖ tenured:
 - ❖ associated professor: research, teaching (6-9 hours)
 - ❖ full professor: after at least 5 years of associated
 - ❖ directing the research, teaching (3-6 hours)
 - ❖ sabbatical year: 1 paid year after 7 years of “full service”

Scientific Career: Germany

- ❖ Phase 1: PhD student
- ❖ Phase 2: non-tenured (temporary contracts)
 - ❖ post-doc, typically required elsewhere
 - ❖ staff scientist, research expert (very few positions)
- ❖ Phase 3: tenure-track (temporary contracts)
 - ❖ lecturer, associate professor, temporary professor
 - ❖ W1 Junior-Professor
- ❖ Phase 4: tenured (permanent contracts)
 - ❖ W2 & W3 Professor: 2nd class, 1st class, exceptional
 - ❖ W3 proposed elsewhere, not at the actual university

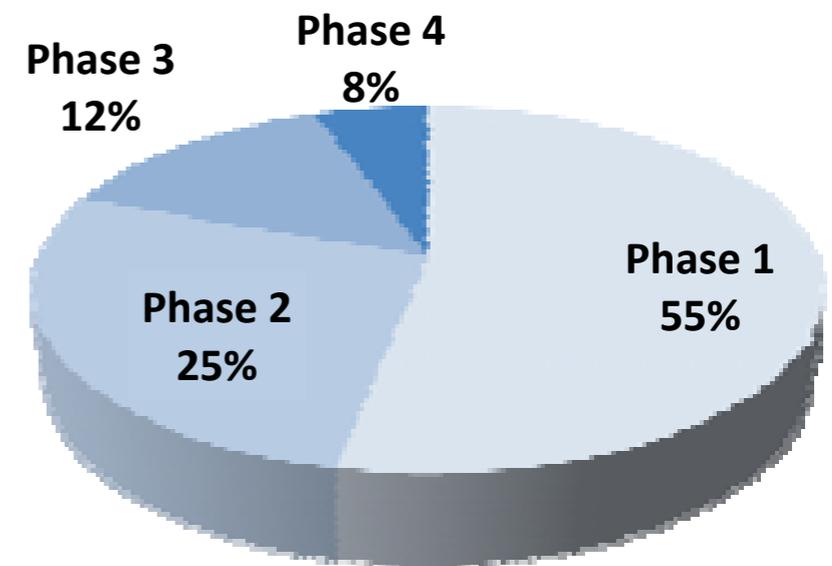
Typical Proportions of Researchers



Scientific Career: UK

- ❖ Phase 1: PhD student
- ❖ Phase 2: non-tenured
 - ❖ post-doc, (junior) researcher
 - ❖ lecturer
- ❖ Phase 3: tenure-track (temporary contracts)
 - ❖ independent or senior researcher
 - ❖ senior lecturer
- ❖ Phase 4: tenured (permanent contracts)
 - ❖ full professor
 - ❖ research professor (professorial fellow)

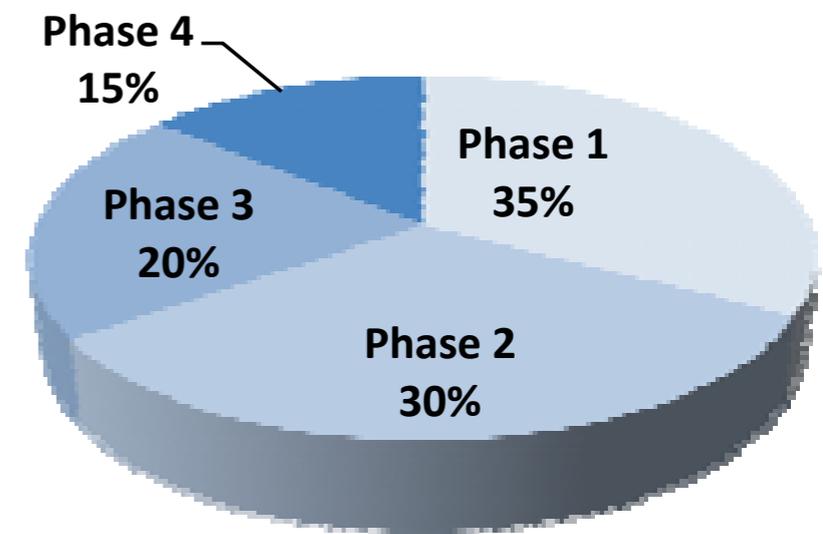
Typical Proportions of Researchers



Scientific Career: Sweden

- ❖ Phase 1: PhD student
- ❖ Phase 2: non-tenured
 - ❖ post-doc, staff scientist
 - ❖ post-doctoral assistant lecturer
- ❖ Phase 3: tenured (typically permanent)
 - ❖ senior researcher
 - ❖ senior lecturer
- ❖ Phase 4: tenured (permanent contracts)
 - ❖ full professor
 - ❖ research professor (professorial fellow)

Typical Proportions of Researchers

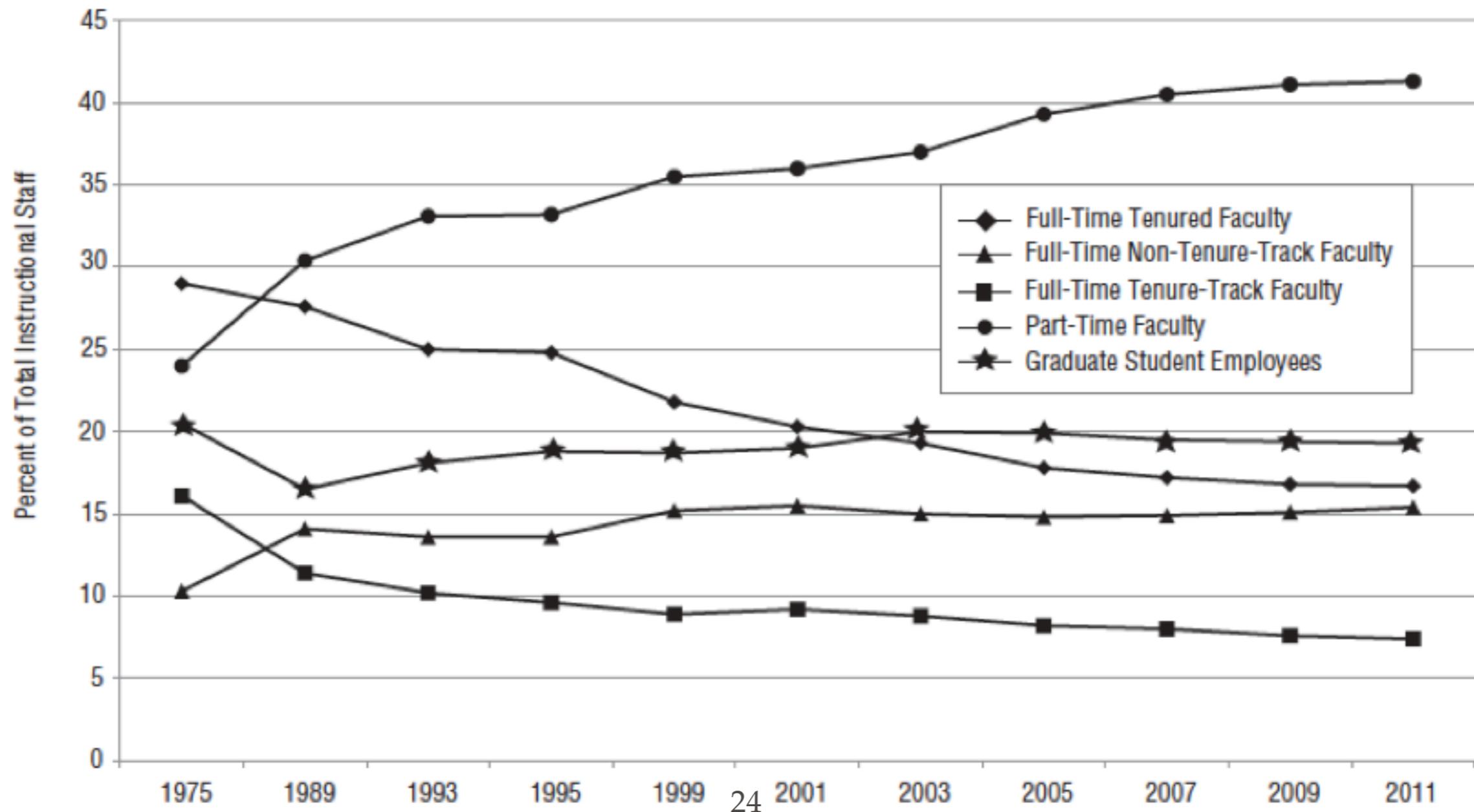


Scientific Career: France

- ❖ non-tenured:
 - ❖ post-doctoral fellowship, typically required outside of France
 - ❖ research engineer (typically related to a project), teaching assistant
- ❖ tenured without habilitation
 - ❖ university: associated professor [maître de conférences]
 - ❖ research institute: researcher [CR2, CR1]
- ❖ tenured with required habilitation (HDR)
 - ❖ university: full professor (2nd class, 1st class, exceptional)
 - ❖ research institute: research director (DR2, DR1, exceptional),

Tenured vs. Non-Tenured (U.S.)

FIGURE 1
Trends in Instructional Staff Employment Status, 1975–2011
All Institutions, National Totals



Notes: Strategy and Personality

- ❖ short-term vs. long-term
 - ❖ solving the actual problem is important and motivating but:
 - ❖ define long-term goals and have a strategy how to achieve them
 - ❖ learn what it takes to get there
- ❖ γνῶθι σεαυτόν [*gnothi seauton*]: know thyself
 - ❖ when procrastinating, try some typology tests (MBTI)
- ❖ being an excellent scientist is half of the story
 - ❖ contacts, networking, socializing

Notes: Money

- ❖ money matters (sooner or later)
- ❖ financial literacy: important not only for writing research proposals
 - ❖ your income: structure & where it comes from
 - ❖ your environment: cost of living
- ❖ extremely important if moving to another country
 - ❖ get familiar with the system in details (taxes, insurance)
 - ❖ minimize number of unpleasant surprises (cannot be avoided)

Salaries: First Look (rep. 2007)

Country/ Level of experience	The average weighted total yearly salary adjusted
Austria	62.406
Belgium	58.462
Bulgaria	3.556
Croatia	16.671
Cyprus	45.039
Czech Republic	19.620
Denmark	61.355
Estonia	11.748
Finland	44.635
France	50.879
Germany	56.132
Greece	25.685
Hungary	15.812
Iceland	50.803
Ireland	60.727
Israel	42.552

Country/ Level of experience	The average weighted total yearly salary adjusted
Italy	36.201
Latvia	10.488
Lithuania	13.851
Luxembourg	63.865
Malta	28.078
Netherlands	59.103
Norway	58.997
Poland	11.659
Portugal	29.001
Romania	6.286
Slovakia	9.178
Slovenia	27.756
Spain	34.908
Sweden	56.053
Switzerland	82.725
Turkey	16.249
United Kingdom	56.048

Salaries: Cost of Living

<i>European countries</i>	
EU-25	100
EU-15	104,5
Euro area ⁽¹⁾	103,1
Austria	103,1
Belgium	104,4
Cyprus	89,1
Czech Republic	53,1
Denmark	140,5
Estonia	55,8
Finland	121,8
France	107
Germany	105,2
Greece	83,3
Hungary	57,1

<i>European countries</i>	
Ireland	122,3
Italy	106,1
Latvia	48,6
Lithuania	46,7
Luxembourg	113,5
Malta	69,6
Netherlands	104,2
Poland	54
Portugal	87
Slovakia	50,2
Slovenia	73,1
Spain	89,8
Sweden	118,9
United Kingdom	106,2

<i>Associated countries</i>	
Bulgaria	36,4
Croatia	61,6
Iceland	150,3
Israel ⁽²⁾	71,4
Norway	141,1
Romania	46,6
Switzerland	138,1
Turkey	61,9
<i>Other countries</i>	
Australia ⁽²⁾	102,9
China ⁽²⁾	22,9
India ⁽²⁾	20,3
Japan	111,1
United States	95,8

Salaries: Adjusted

Country	The average weighted total yearly salary in terms of PPS
Austria	60.530
Belgium	55.998
Bulgaria	9.770
Croatia	27.063
Cyprus	50.549
Czech Republic	36.950
Denmark	43.669
Estonia	21.053
Finland	36.646
France	47.550
Germany	53.358
Greece	30.835
Hungary	27.692
Iceland	33.801
Ireland	49.654
Israel	59.580

Country	The average weighted total yearly salary in terms of PPS
Italy	34.120
Latvia	21.580
Lithuania	29.660
Luxembourg	56.268
Malta	40.342
Netherlands	56.721
Norway	41.813
Poland	21.591
Portugal	33.334
Romania	13.489
Slovakia	18.282
Slovenia	37.970
Spain	38.873
Sweden	47.143
Switzerland	59.902
Turkey	26.250
United Kingdom	52.776

Salaries: Adjusted Net

Country	Net Yearly salary average in terms of PPS
Austria	30.603
Belgium	26.336
Bulgaria	9.801
Croatia	20.254
Cyprus	39.732
Czech Republic	22.252
Denmark	24.917
Estonia	13.777
Finland	22.971
France	26.983
Germany	28.687
Greece	24.326
Hungary	16.723
Iceland	22.354
Ireland	28.193
Israel	37.389

Country	Net Yearly salary average in terms of PPS
Italy	22.372
Latvia	18.828
Lithuania	13.507
Luxembourg	40.942
Malta	28.498
Netherlands	35.573
Norway	26.088
Poland	14.104
Portugal	21.835
Romania	12.500
Slovakia	12.173
Slovenia	18.211
Spain	27.060
Sweden	22.801
Switzerland	46.432
Turkey	23.530
United Kingdom	35.372

Salaries: Selected Countries

Country	Nominal	Adjusted	Adjusted Net
Czech Republic	19.620	36.950	22.252
Austria	62.406	60.530	30.603
Germany	56.132	53.358	28.687
France	50.879	47.550	26.983
Switzerland	82.725	59.902	46.432
Slovakia	9.178	18.282	12.173

Money's not Everything

- ❖ quality of the research team
 - ❖ extremely important already PhD, even more for post-doc
- ❖ quality of the scientific environment
 - ❖ competitiveness, openness, fair play
- ❖ support of university / institute
 - ❖ for doing research
 - ❖ **for performing transfer**
- ❖ doing things that have sense and are useful
 - ❖ participating in “something cool and meaningful”

Notes: Environment

- ❖ no place is perfect but there are really good/bad ones



Notes: Leisure

- ❖ work and home are not the only places to be



Interesting Links

- ❖ general information portal about academic career in E.U.:
 - ❖ <http://www.leru.org/>
 - ❖ <http://www.leru.org/index.php/public/extra/careermapseurope>
- ❖ academic careers in different countries:
 - ❖ <http://www.eui.eu/ProgrammesAndFellowships/AcademicCareersObservatory/AcademicCareersbyCountry/Index.aspx>
- ❖ “mafia” issue (mainly in social sciences):
 - ❖ <http://blogs.lse.ac.uk/impactofsocialsciences/2013/12/11/how-academia-resembles-a-drug-gang/>

Thank you!

