



The EUROPEAN MAGNETISM ASSOCIATION

A voice for Magnetism in Europe

LATEST NEWS   

The European School on Magnetism

Round table on training and careers

[RANDOM YOUNG
RESEARCHER GRANTS
ABSTRACTS TILL 15 MARCH](#)

[MICROBE READS TO RECYCLE
RARE EARTH METALS](#)

[2020 EUROPHYSCS PRIZE
CALL FOR NOMINATIONS](#)

[EMA AND AUMS SIGN A
MEMORANDUM OF
UNDERSTANDING](#)

[COLLABORATIVE RESEARCH
CENTRE HOMMAGE
ESTABLISHED](#)

FOCUS

Olivier Fruchart



ESM
The European School
on Magnetism

THE EUROPEAN SCHOOL ON MAGNETISM

LINKS

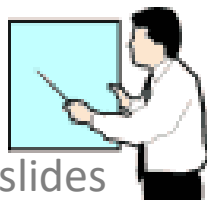
- Agenda
- Publications
- Companies
- Tools

The European School on Magnetism 2023



WHAT WILL WE DO ?

The EUROPEAN
MAGNETISM ASSOCIATION



- Quick warm-up with slides

- Small-groups discussion to address specific topics
Online & Onsite groups welcome. Send us 1 slide
of conclusions today (esm@magnetism.eu)

- Feedback tomorrow afternoon





THE DAILY WORK AND MISSION OF A RESEARCH SCIENTIST

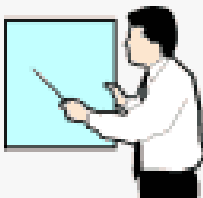
Conduct research

- ☐ Search and read literature
- ☐ Advance knowledge



Disseminate

- ☐ Write publications
- ☐ Communication: conferences, seminars...



Expertise in the academia

- ☐ Peer-review
- ☐ Grant evaluation
- ☐ Hiring / Promotion committees



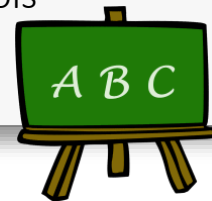
Collect funding

- ☐ What: grants, equipment, networking
- ☐ From: institutions, French funding agency ANR, Europe, bi-national etc.
- ☐ How: projects, grant management, reports



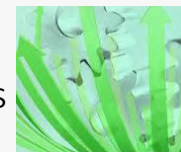
Train via research

- ☐ Advise PhDs and post-docs
- ☐ Teach: universities, research schools
- ☐ Write books



Contribute to innovation

- ☐ Write patents
- ☐ Provide expertise
- ☐ Research projects with companies
- ☐ Create start-ups



Management

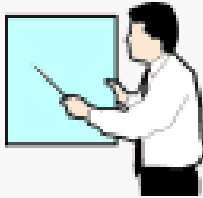
- ☐ Labs and teams
- ☐ Networks, research schools
- ☐ Science and education policy





Expertise

- ☐ Science
- ☐ Technology
- ☐ Instrumentation and programming



Team work

- ☐ Conduct meetings
- ☐ Reporting
- ☐ Seek and provide assistance



Personal development

- ☐ Face adversity, solve the unknown
- ☐ Project/Time management
- ☐ Mentoring (students)
- ☐ Teaching
- ☐ Practice English
- ☐ Communicate

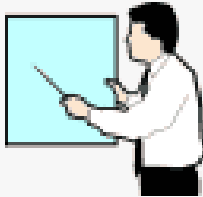


PhDs develop abilities to tackle and solve complex problems. They can implement this in a company from scratch, without the need for further training, unlike engineers and students just graduating from the university



Expertise

- ☐ Science
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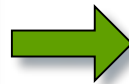
Team work

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Personal development

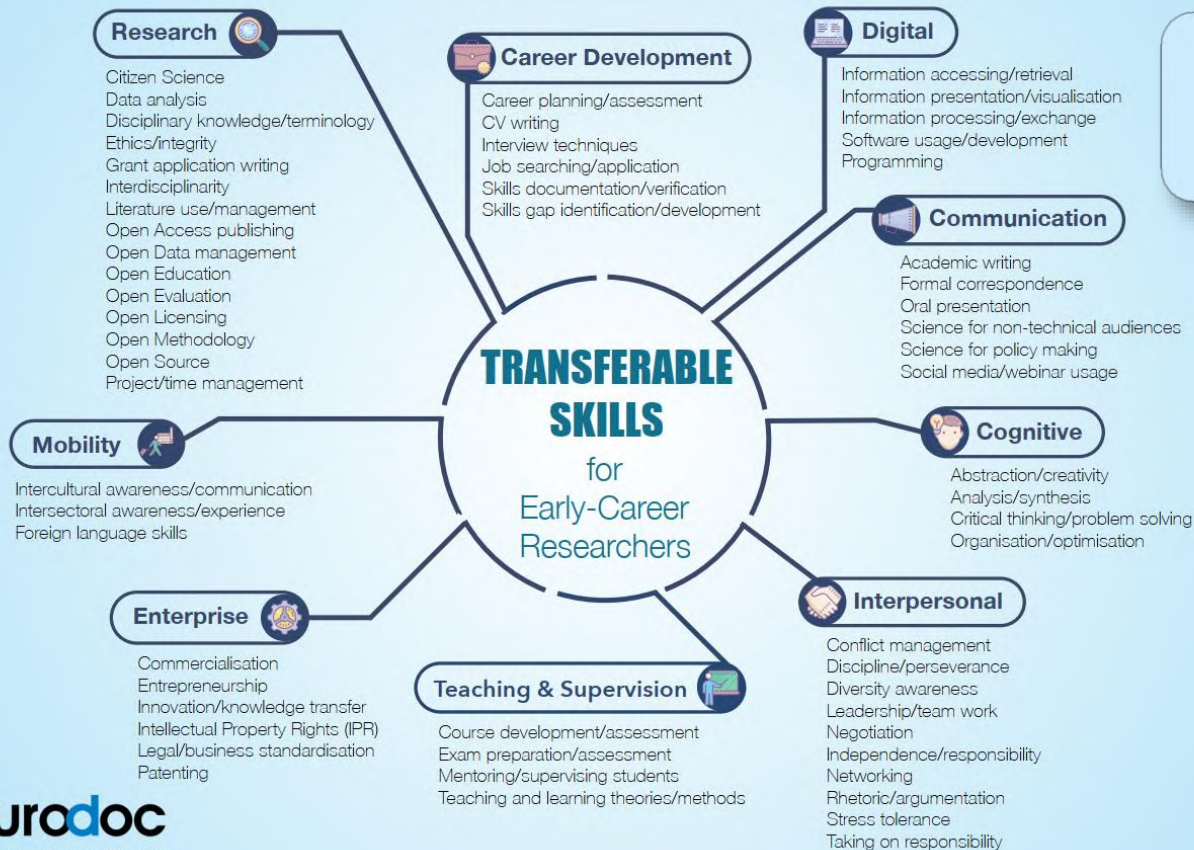
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PhDs develop abilities to tackle and solve complex problems. They can implement this in a company from scratch, without the need for further training, unlike engineers and students just graduating from the university



TRAINING BY RESEARCH – ASSETS FOR A CAREER



Extensive review
of skills from
Eurodoc



ASSETS FOR A CAREER – SKILLS VIEWED BY PHDS VERSUS EMPLOYERS

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Business sector (i.e., industry, services, or other sectors)

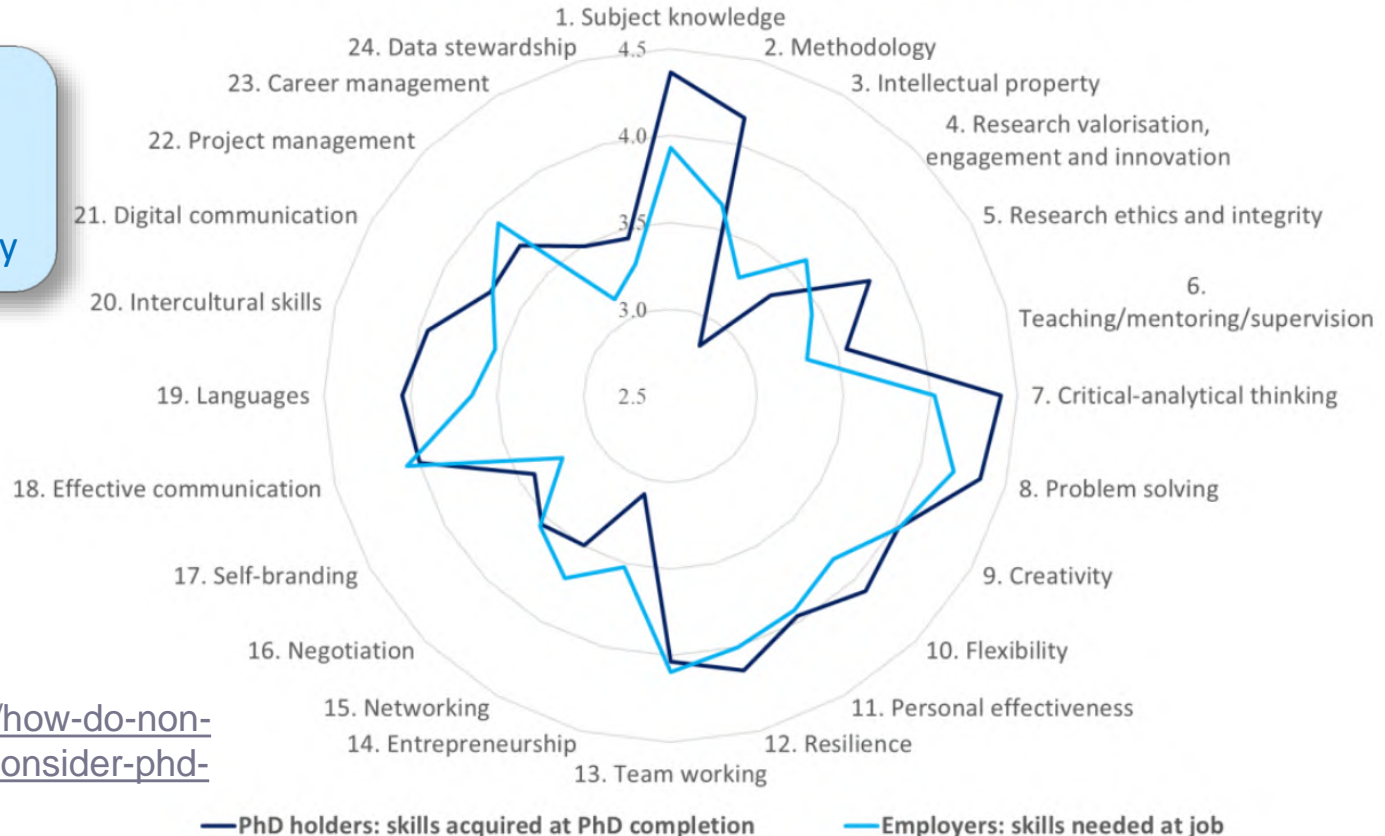
See discrepancies:

- * Networking / entrepreneurship;
- * Intellectual property

Note:
depends on
the sector



<https://docenhance.eu/how-do-non-academic-employers-consider-phd-holders-skills/>





ASSETS FOR A CAREER – WHICH SKILLS EMPLOYERS CONSIDER INITIALLY MISSING FROM PHDS

- Practical experience outside the academia: problem-solving, experience on projects
- Lack of industry knowledge and business skills: intellectual property, value-creation perspective from a business standpoint, ability to accept the speed of the industry world and to treat with clients
- Project management, team working, team management
- Lack the ability to connect theory and practice and to get to the point quickly instead of doing long research, to adapt to reality outside academia and to work on topics outside their specialty

<https://docenhance.eu/how-do-non-academic-employers-consider-phd-holders-skills/>



Skills

- Teaching opportunities
- Active contribution to the writing of manuscripts
- Share responsibility to write
 - Proposals, reports, manage projects
 - About: research, beamlines, mobility

Networking

- Secondments in other labs (typically a few months), possibly companies.
Provides:
 - International exposure
 - Build your network



Who may offer training

- ❑ The university responsible for your PhD
- ❑ Your employer (if different from the university)
- ❑ Your host lab
- ❑ Your advisor
- ❑ Research contracts (e.g. MSCA projects)

Examples of training

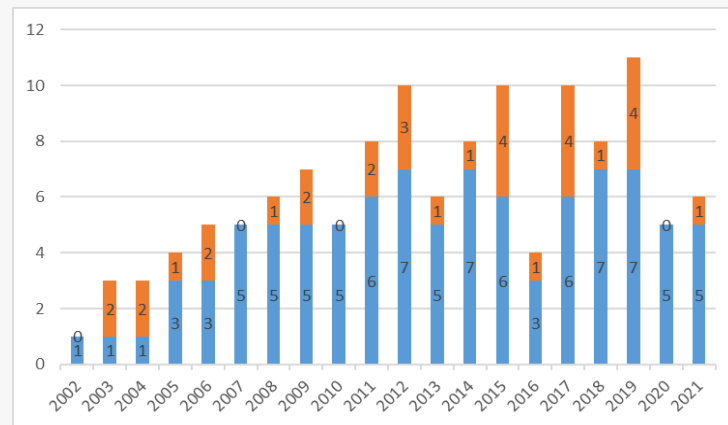
- ❑ Time & Project management
- ❑ CV writing and job hunting
- ❑ Identify your competences
- ❑ Language practice
- ❑ Write / Oral skills



SPINTEC – DOCTORS AFTER DEFENSE (2002-2021)

125 PhDs graduated

- 34 Women (25%) & 92 Men (75%)



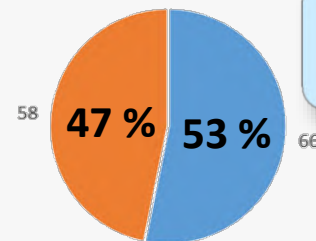
- 3 theses not completed

- 34 on-going PhD theses

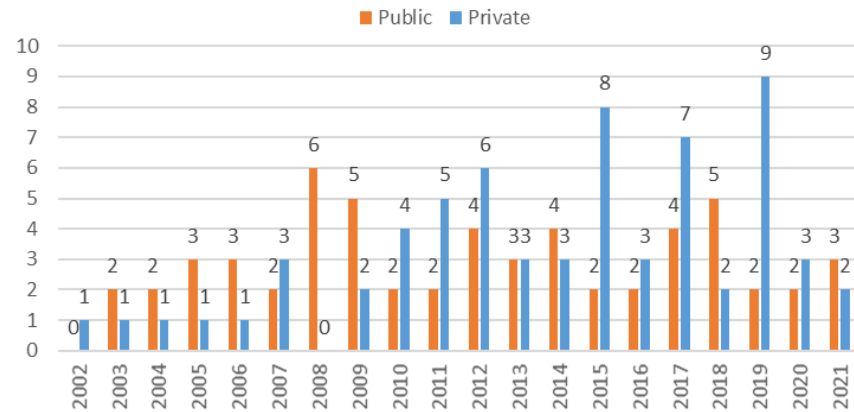


An average of 8 defenses per year

Now working
in Academia / Private



Balanced:
Academia / Private

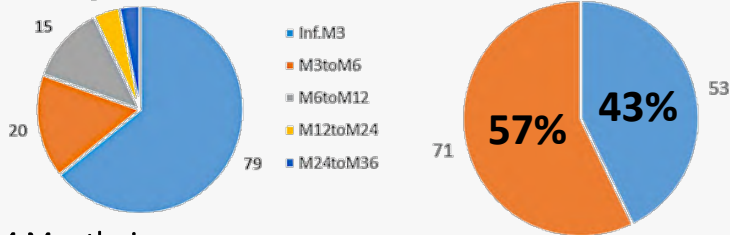




SPINTEC – DOCTORS OVER TIME AFTER DEFENSE (2002-2021)

First professional experience

Job-hunt duration Academia vs. Private

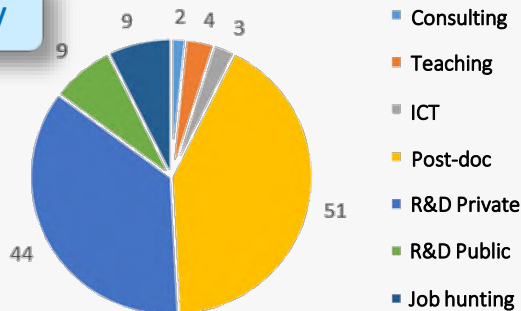


4 Months in average

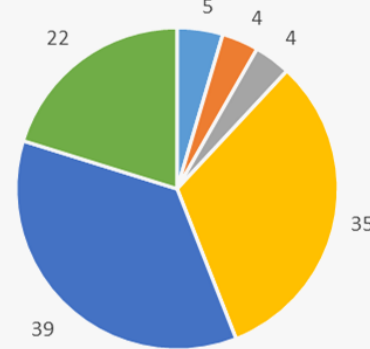
93% employed at M12 [81% at M6]

High employability

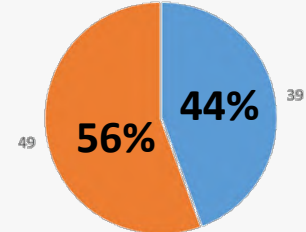
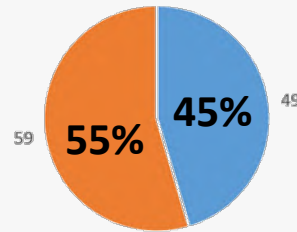
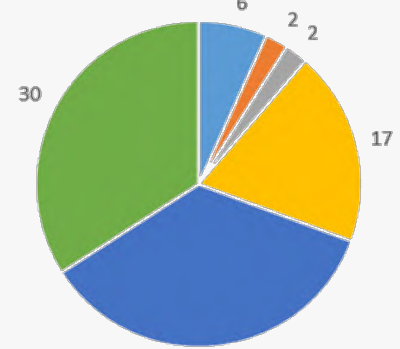
Job profiles



Status after 3 years



After 5 years



Transverse mobility : A to P (20); P to A (15)

Private sector: right after PhD
Academia: post-doc converts to full staff



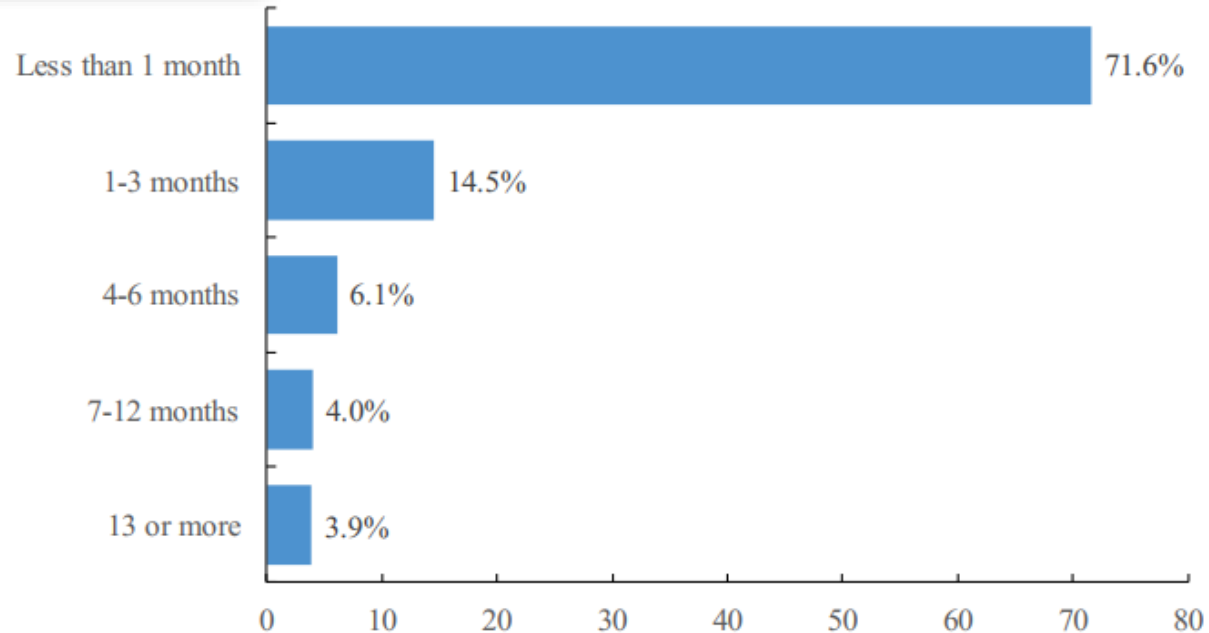
PHDS – DURATION OF 1ST JOB HUNTING

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High employability

*Average time to find a paid job since PhD completion
(n=1751)*



Note: Only applicable to those having a job after completing their doctorate



<https://docenhance.eu/results-from-docenhance-career-tracking-survey/>

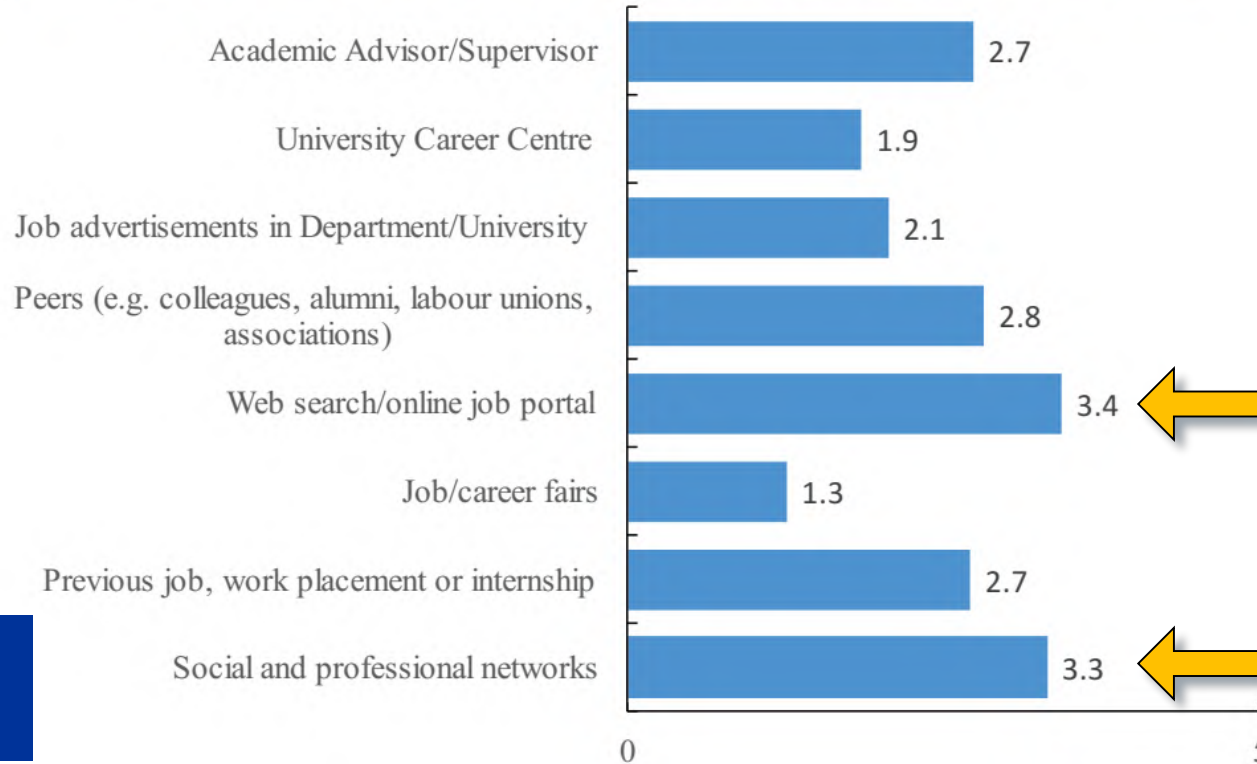


PHDS – MEANS FOR 1ST JOB HUNTING

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Importance of different resources when looking for a first job after the completion of the doctorate



Major job hunting resources to be found outside your lab and University



<https://docenhance.eu/results-from-docenhance-career-tracking-survey/>



Figure 19. The sector of employment by gender
(n=1599)

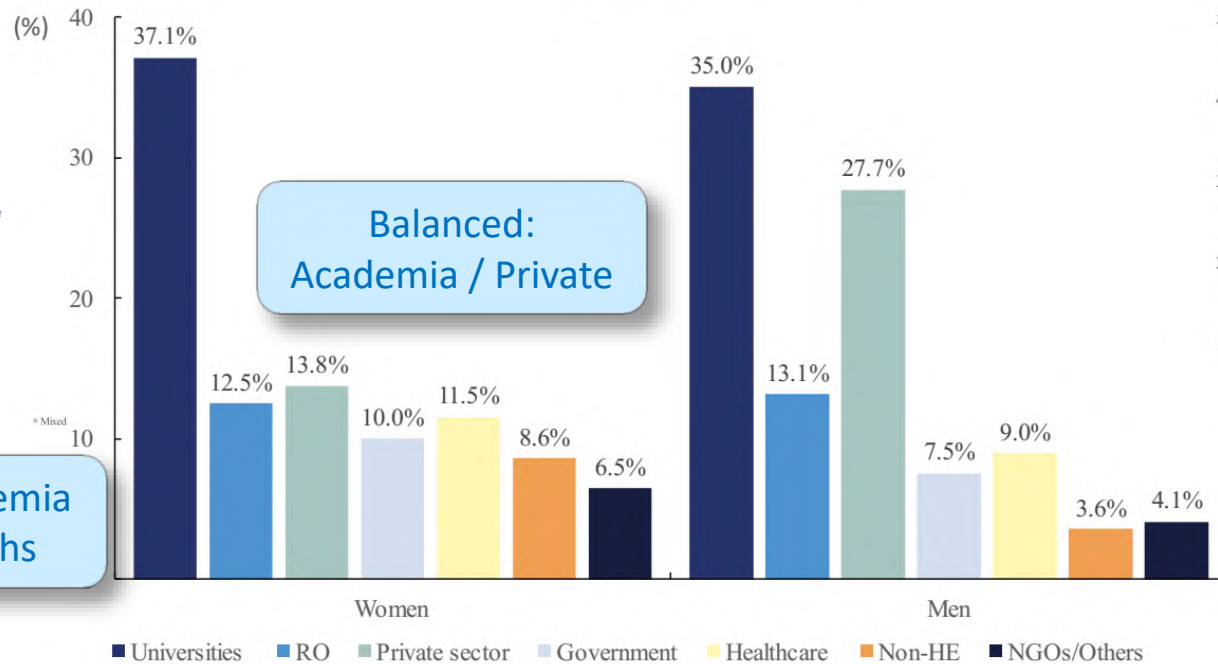
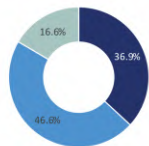
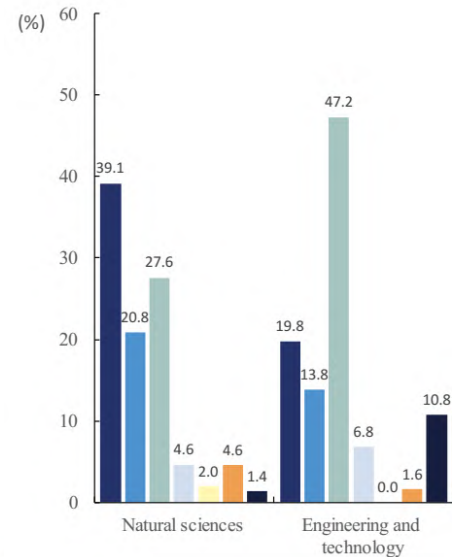


Figure 411. Career paths based on the sector of employment
(n=1685)



Share of Academia
/ Private paths

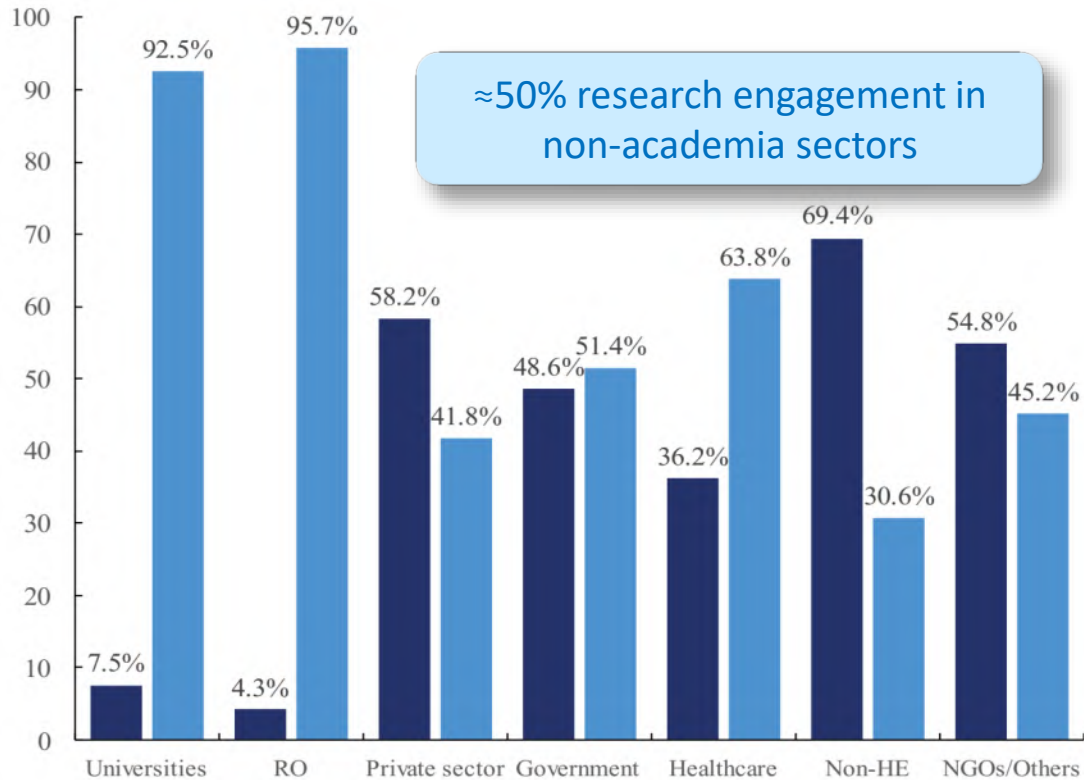
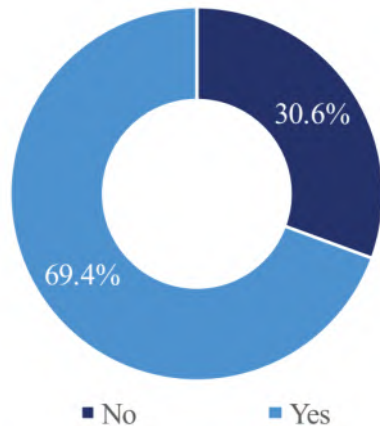


More private
sector
opportunities in
engineering





PhD holders involved in research (researchers VS non-researchers) rchers
(n=1702)



<https://docenhance.eu/results-from-docenhance-career-tracking-survey/>

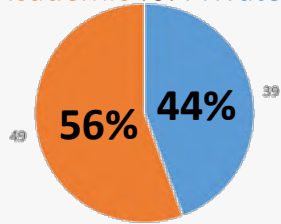


SPINTEC – DOCTORS AFTER DEFENSE (2002-2021)

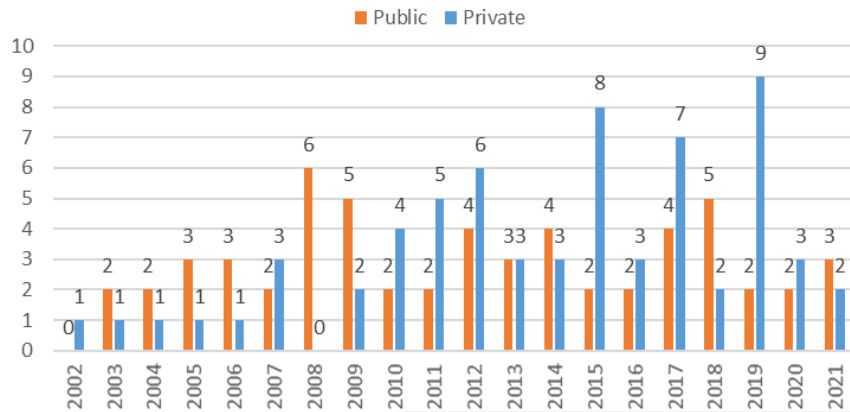
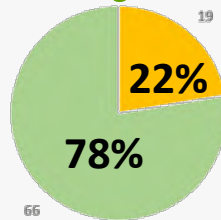
Professional experiences

After 60M

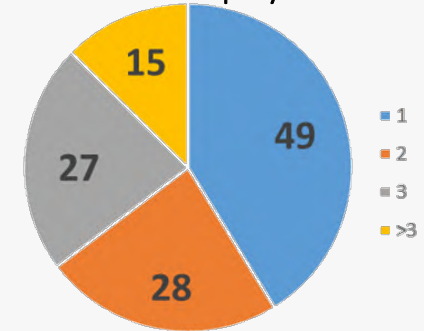
Academic vs. Private



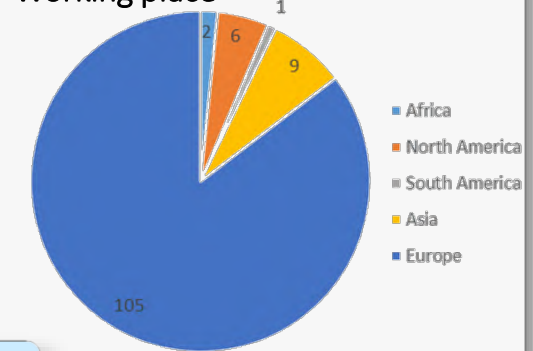
Short vs. Long-term contract



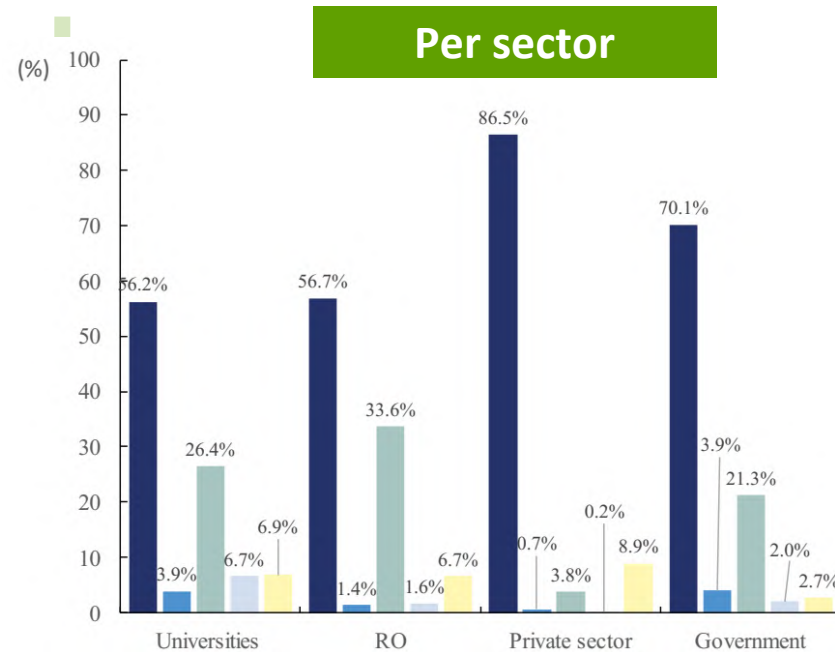
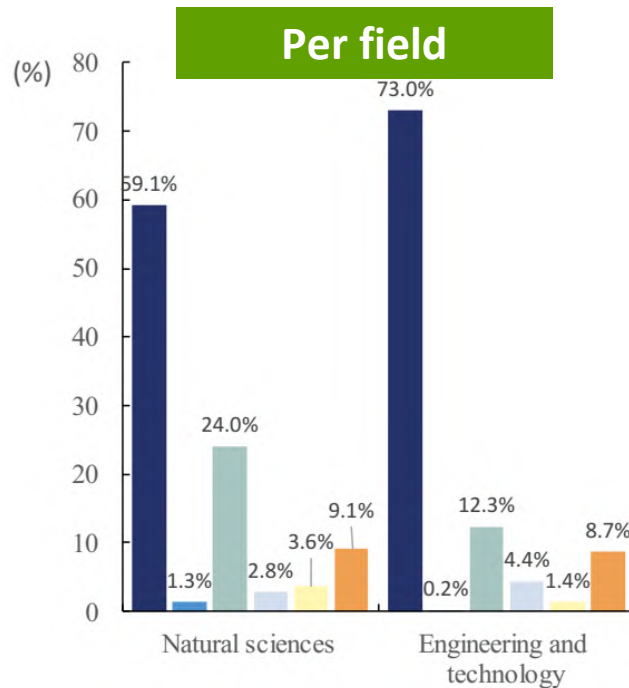
Number of employers



Working place



A majority of PhDs have stable positions



■ Permanent Full-time ■ Permanent Part-time ■ Temporary Full-time
■ Temporary Part-time ■ Self Employed ■ Other

≈100% of stable positions in the private sector





- OECD work on careers of doctorate holders (July 2019):
<https://www.oecd.org/innovation/inno/careers-of-doctorate-holders.htm>
- DocEnhance EU project : <https://docenhance.eu>
 - How do non-academic employers consider PhD holders' skills?
<https://docenhance.eu/how-do-non-academic-employers-consider-phd-holders-skills/>
 - What comes after a PhD? Findings from a survey of doctorate holders on their employment situation, skills match, and the value of the doctorate ->
<https://docenhance.eu/results-from-docenhance-career-tracking-survey/>
 - Interaction model for educational collaboration between the academic and non-academic sector -> <https://docenhance.eu/interaction-model-for-educational-collaboration-between-the-academic-and-non-academic-sector/>
- A systematic review of doctoral graduate attributes: Domains and definitions by Janine S. Senekal, Erica Munnik and Jose M. Frantz
<https://www.frontiersin.org/articles/10.3389/feduc.2022.1009106/full>



POSSIBLE TOPICS FOR SMALL-GROUP DISCUSSION

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Self-organize in small groups, each with a topic, agree on a spokesperson for a feedback + discussion tomorrow.

- ☐ Sectors, topics and types of positions in the private sector after a PhD
- ☐ Practical actions in the PhD to prepare your career (besides daily research)
- ☐ Assets for a career in the academia – Content of a CV
- ☐ Assets for a career in the private sector – Content of a CV
- ☐ What can ESM and EMA do better or more for your career development ?
- ☐ Actions and expectations of the advisor, the lab, the university
- ☐ Gender and other balances in careers
- ☐ Balance with the private life in careers
- ☐ Opportunities and time (delay) to get a position in the academia

Feel free to suggest add another topic

Online groups are welcome

Self-organize on Discord\#career-perspectives