



LABORATÓRIO DE INSTRUMENTAÇÃO  
E FÍSICA EXPERIMENTAL DE PARTÍCULAS  
*partículas e tecnologia*

# What to do after the PhD?

Bachelor Of Engineering	
Masters in Engineering	
PhD in Engineering	
Lecturing In Engineering Having Never Built Anything & No Experience In Industry	

## 7<sup>th</sup> IDPASC/LIP PhD Students Workshop



# After the PhD... post-doc?

## Post hoc vs Post-Doc

*The Post hoc Fallacy*  
To incorrectly assume 'A' is the cause of 'B' just because 'A' preceded 'B'.

e.g. "All Professors have Ph.D.'s, therefore getting a Ph.D. means you'll get a Professor job (right?)"

JORGE CHAM © 2009



*The Post-Doc Fallacy*  
To incorrectly assume you'll have a job just because you have a PhD.

e.g. "Now what??"

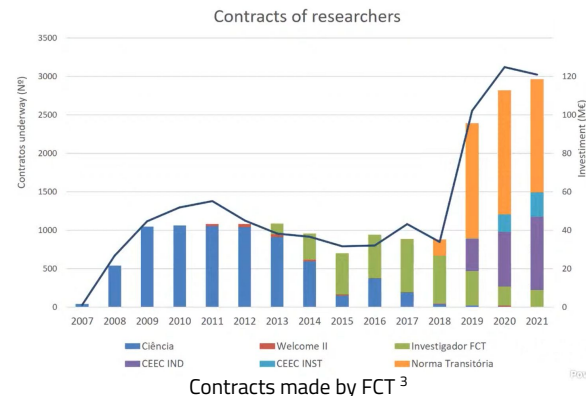
WWW.PHDCOMICS.COM

*"In countries like the UK or Switzerland, a low percentage of doctorates apply for a post-doc. However, in Portugal it is quite the opposite."*<sup>1</sup>

- (i) **Most companies are small** and **do not benefit from hiring a doctorate**
- (ii) **Doctorates do not have certain "transverse" competences** seen as **relevant by companies** (ability to communication, planning, leadership and management)
- (iii) **Some doctorates are not available for positions other than research** or that force a change in the field of study
- (iv) **The Public Administration** (except the higher education sector) **does not hire doctorates** nor differentiate the remuneration level

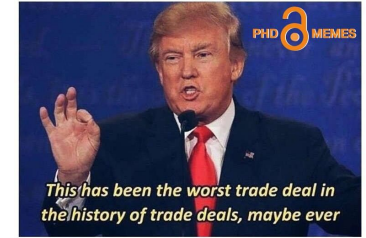
*"In 2016, legislative measures<sup>2</sup> were taken to recruit doctorates through employment contracts in public functions for a **fixed term (3 to 6 years)**, and employment contracts for **an uncertain term**, in the case of entities covered by under private law (**up to 6 years**)."*

- **Individual-CEEC?** (8 of 74 applications funded in the 4<sup>th</sup>/2021 edition, Physics panel)
- **FCT projects?** (unlikely with PeXs... in IC&DTs? 8 of 102 approved in the 2021 edition, Physics panel)
- **Institutional-CEEC?**
- **Abroad...**



<sup>1</sup> "Relatório de avaliação da implementação do Programa de Estímulo ao Emprego Científico". Comissão de avaliação constituída pelo Despacho n.º 349/2020, publicado em Diário da República, 2.ª série, de 10 de janeiro de 2020

<sup>2</sup> Decreto-Lei n.º 57/2016, de 29 de agosto, alterado pela Lei n.º 57/2017, de 19 de julho



# After the PhD... post-doc?

(some) **Recommendations** are made in <sup>1</sup>:

1. **Medium-term planning by the Government and institutions:** strategic 5/6 year plan focused on the career path of researchers
2. **Prioritize areas with the greatest impact on the country's economic and social development**

*"In Science there are no scientific areas smaller than others. They have, however, different contributions to the common goal of wealth creation. (...) Areas such as **mathematics, life sciences, life sciences health, engineering, information science, computer science, and behavior science** should be given priority because they are **most necessary** for the social development."*<sup>1</sup> (Physics?)

3. **Professionalize the R&D activity in Academic and Scientific institutions**
4. **Simplify R&D funding calls**
5. **Review the funding scheme**
6. **Change the funding process used by FCT:** eliminate the financial constraints currently generated by delays in reimbursements
7. **Promote the renewal of the teaching staff in the higher education sector**
8. **Increase the PhDs done in collaboration with companies**

obtain a  
5 years degree  
at university



obtain a PhD



do 6 years  
of Postdoc

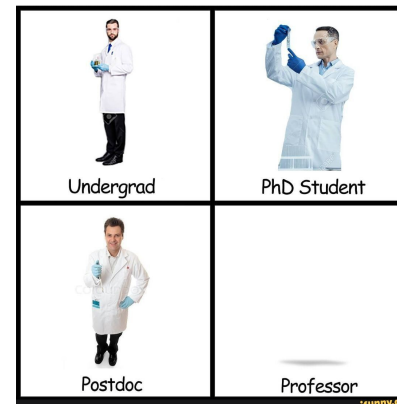


# After the PhD... teaching? (uni edition)

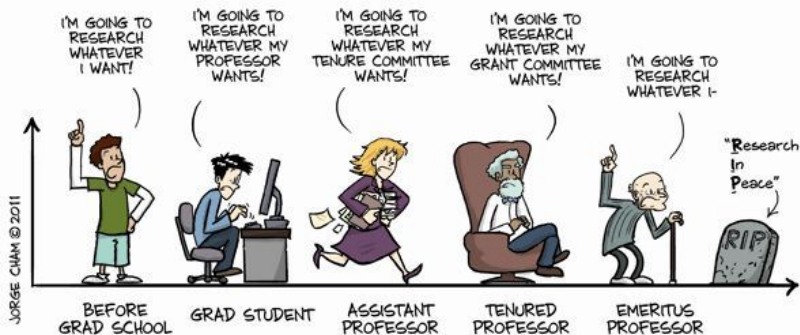
$$\forall x \in \text{Ph.D.} : x \rightarrow \text{Teaching}$$

- Having a PhD implies teaching?
- Having a PhD makes you a good teacher?
- Do I really want to teach?

Types of people in the lab



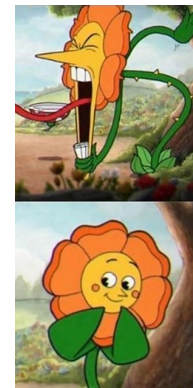
## THE EVOLUTION OF INTELLECTUAL FREEDOM



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When the physics teacher starts teaching torque

The Door :



Teachers when you miss a deadline by 1 minute

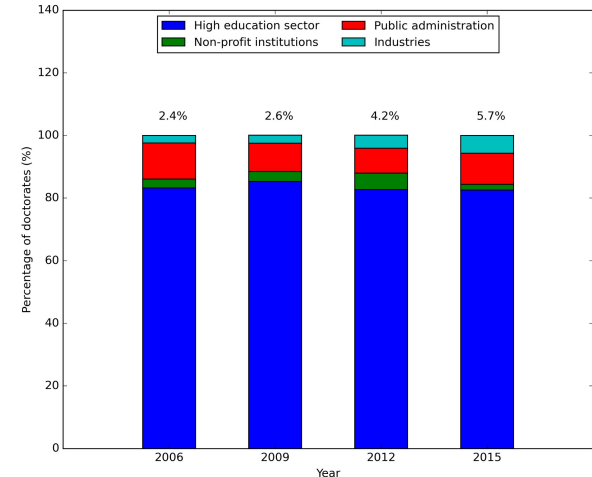
Teachers when they're 2 weeks late with grading exams

# After the PhD... industry?

*"The over-representation of hired doctorates is explained due to the **reduced size and technological intensity** of many companies in the national economy, and the **absence of effective incentives** for hiring doctorates outside academia."*<sup>4</sup>

*"PhD courses **must focus on the acquisition of transversal skills**, employability, entrepreneurship and career planning more focused on the labor market outside academia. A **development of partnerships between industry and civil society and academia** should also be encouraged."*<sup>4</sup>

*"**Creation of intermediary institutions and public-private research partnerships** that promote greater approximation between industry and academia."*<sup>4</sup>



Areas where doctorates are hired <sup>4</sup>

<sup>4</sup> "O mercado de trabalho dos doutorados em Portugal e seus desafios" (15 de julho de 2021). Observatório do emprego jovem.



# After the PhD... flash mob at FCT?

*"E Portugal já dizia,  
Temos de ser os melhores,  
Encher o país de engenheiros e doutores"*

Polígrafo

**Maior encontro anual de ciência abriu com performance de música de José Cid com letra adaptada à FCT? Sim, é verdade**

<https://poligrafo.sapo.pt/fact-check/maior-encontro-anual-de-ciencia-abriu-com-performance-de-musica-de-jose-cid-com-letra-adaptada-a-fct-sim-e-verdade>



[https://www.youtube.com/watch?v=RPKqM\\_OK9IO](https://www.youtube.com/watch?v=RPKqM_OK9IO)