



Standards for PhD education

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Why standards for PhD?

- The PhD is an international degree. What is the “international standard”?
- Sustaining quality in face of increased quantity.
- Safeguarding the PhD as a research degree while ensuring employability of doctoral graduates.

Outline and background

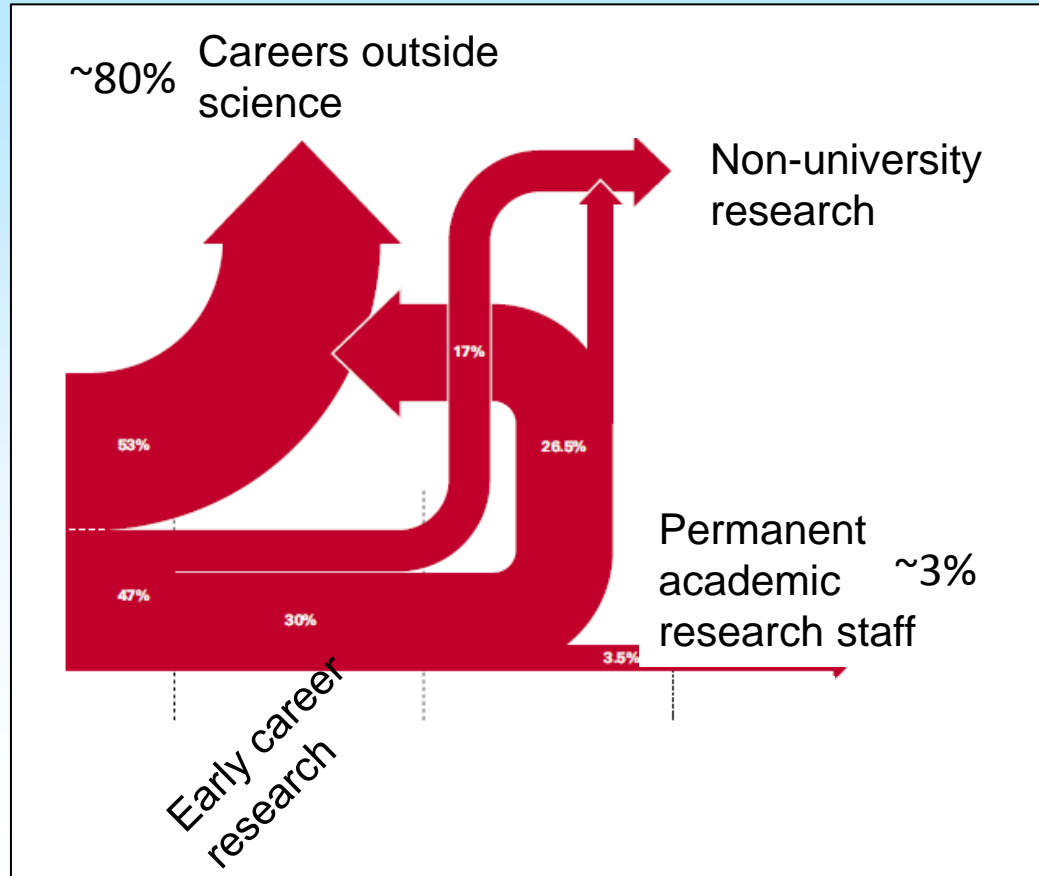
1. Outcomes
2. Enrolment
3. Content



ORPHEUS/AMSE/WFME
PhD standards document
2012

Consensus documents from ORPHEUS 2013
Prague 25-27 April

Career paths for doctoral graduates



Report of the
Royal Society,
UK, 2010

Scientific outcomes of doctoral education

- Have developed the ability as a scientist to conduct responsible, independent research, according to principles of **good research practice**.
- Have demonstrated the ability to conceive, design, implement and adapt a substantial process of original research with scholarly integrity at a level that merits **international refereed publications**.
- Have demonstrated a systematic understanding of a field of study and mastery of the **skills and methods of research** associated with that field.

Generic outcomes of doctoral education

- Have developed specific competences **relevant to specific employment** opportunities (e.g. in the pharmaceutical industry).
- Have developed the ability to **communicate** with their peers, the wider scholarly community and with society in general about their areas of expertise.
- Have developed the ability to **promote**, within academic and professional contexts, technological, social or cultural advancement in a knowledge-based society.
- Have developed **further competencies** including leadership, ability to supervise work of others, project management and ability to teach.

Admission requirements

Formal requirements

- masters degree
- honours bachelor or masters+PhD programme

Key indicators of later successful doctoral theses

- successful research experience
- motivation to do research
- academic excellence

Admission process

- interview
- establish relation with supervisor



Content of doctoral programmes

- Structured programmes
- 3-4 years
- Project agreed at start (or at defined point)
- Trained supervisor team (at least two)
- Coursework
- Time abroad or job placement
- Doctoral candidate interaction with leadership

6 months including preparation

short courses

- project-related methodology
- ethics
- statistics
- generic skills

also perhaps

- seminar series
- time abroad / placement
- teaching

purpose

- to improve project

PhD thesis

Review

- extensive review of the literature
- critical analysis of the methods used
- discussion of the results of the project in the context of the literature

Project results

- equivalent of three papers in mid-ranking journals
 - published or manuscripts
 - possible inclusion of other data

New proposal at ORPHEUS 2013

- *Satisfactory portfolio of scientific activities*

Assessment

Assessment committee

- at least two external members
- preferably one from abroad
- supervisor must not be a member

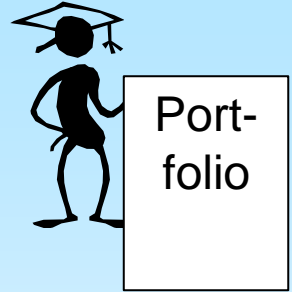
Assessment procedure

- written assessment of thesis
- detailed oral examination
- public defence

Regular monitoring during doctoral programme by supervisors with formative feedback should prevent not properly prepared doctoral candidates reaching the stage of the thesis defence.

Outcomes of PhD training

- PhD thesis
 - hypothesis development
 - protocol development
 - methodology
 - project execution (probably with help from others)
 - interpretation of results
- Presentation
 - Articles, reviews, abstracts
 - International conferences: participation, posters, lectures
 - Local meetings, department, national
 - Lay lectures
 - Patents
- Development of project related and generic (transferable) skills
- Team management
- Grants received
- Time in other laboratories, time abroad, time in industry or job placement
- Networks established
- Teaching



In summary

We should

- safeguard the PhD as a research degree
- while ensuring employability of doctoral graduates.

Mulvany MJ.
Biomedical PhD education: An international perspective.
Basic Clin Pharmacol Toxicol 2013; 112: 289-295.

Thank you!