Informa(on session on the PhD

Faculty of Applied Sciences
November 16, 2017
Outline

• The PhD in general
  • Practical aspects about the PhD
  • Testimony from the industry
  • Posters and informal discussion
What is a PhD?

Not a revolution!

Original contribution

Student + Researcher

Your own journey

Not a TFE!

Not a fancy title!

Further education

Consequent research

Not alone!
What is specific to a PhD?

**International exposure**
- Collaborations
- Research stays
- Conferences

**Publications**
- Journals
- Conferences

- Visibility
- Feedback
- Professional network
What will I learn?

To become a scientist

• **Expert** in your field
• **Independent** and **creative** researcher
• **Analytical** and **critical** thinker
• Good **communicator**
• **Collaborator** with other research teams

... and an innovator

• Drive **innovation** (condition for survival in the future)
• Tackle **new** problems
• Understand **complex** thematics
• **Lead** research teams
• **Work** internationally
Am I cut for a PhD?

✔ Motivated?  ✔ Curious?  ✔ Independent?

Good PhD candidate

No need to be a genius!!!
What could I do after a PhD?

Sectors of employment 3 years after PhD, Belgium, 2010
Engineering and Technology

- Industry: 38%
- Academia: 27%
- Services: 9%
- Education: 9%
- Government: 7%
- Non-profit: 7%
- Others: 3%

Source: Belgian Science Policy Office, CDH Database 2010
So, how does it work?

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Approx. timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Familiarization with subject</td>
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<tr>
<td>• Literature review</td>
<td></td>
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<tr>
<td>• Research definition and structure</td>
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<tr>
<td>• Advance courses</td>
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<tr>
<td>• Tools/experiments development</td>
<td></td>
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<tr>
<td>• Measurements/simulations/…</td>
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<tr>
<td>• Results analysis</td>
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<tr>
<td>• Conference presentations</td>
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<tr>
<td>• Papers publications</td>
<td></td>
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<tr>
<td>• Refinements and optimization</td>
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<tr>
<td>• <strong>Written thesis</strong></td>
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<tr>
<td>• Oral defense</td>
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Approx. (melanie)

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
<td>1</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
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</tbody>
</table>
What is the role of the advisor?

Advisor = Mentor

A guide to help you ...
- defining and **structuring** your project
- identifying potential issues and **solutions**
- creating your scientific network

An evaluator who will ...
- provide **feedback**
- follow your advancement
- **assess** your results
Outline

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## What are the requirements?

<table>
<thead>
<tr>
<th>To start a PhD</th>
<th>To complete a PhD</th>
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</thead>
<tbody>
<tr>
<td>• Master degree (300 credits)</td>
<td>• Minimum 3 years</td>
</tr>
<tr>
<td>• Adequate grades (one prior “Distinction”)</td>
<td>• 60 credits of <strong>doctoral training</strong></td>
</tr>
<tr>
<td>• A research topic</td>
<td>• Written <strong>thesis</strong></td>
</tr>
<tr>
<td>• An advisor and adequate funding</td>
<td>• Oral <strong>defense</strong></td>
</tr>
</tbody>
</table>


What is the doctoral training?

**Thematic training**
- 3rd cycle courses
- Topical seminars
- Specialized courses
- ...

**Generic (soft) skills**
- Language / communication courses
- Teaching assistantship / supervision
- Research stays abroad
- ...

**Scientific production**
- Conferences and seminars
- Articles in peer-reviewed journals (min. 1)
- ...

Min. 15 credits
Min. 10 credits
Min. 25 credits

Min. 60 credits
# How can I finance my PhD at ULg?

<table>
<thead>
<tr>
<th>Funding source</th>
<th>Topic</th>
<th>Deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNRS Fellowship</td>
<td>Free</td>
<td>~ Feb. 2018</td>
</tr>
<tr>
<td>FRIA Fellowship</td>
<td>Free (“industrial”)</td>
<td>~ Aug. 2018</td>
</tr>
<tr>
<td>Teaching Assistantship</td>
<td>Free</td>
<td>~ Jun. 2018</td>
</tr>
<tr>
<td>Research project</td>
<td>Imposed by project</td>
<td>Case dependent</td>
</tr>
<tr>
<td>Other (industry, own funding)</td>
<td>Free</td>
<td>Case dependent</td>
</tr>
</tbody>
</table>
How does it work abroad?

Belgium
• Same as ULg

Abroad
• Often similar to Belgium
• Master thesis is a good entrance door
• Check university website
• Contact potential advisor for availability
• Talk to faculty members at ULg

USA
• Start application 1 year before PhD start (deadline in the Fall)
• Need TOEFL + GRE
• Application fee
• Qualification exam ("quals")
What are the next steps?

1. **Talk** to faculty members and other PhD students about **opportunities** and experiences

2. **Identify** potential **topic** that interests you and **advisor** with whom you would like to work

3. **Discuss** directly with your future advisor about concrete steps to take and funding options
Where can I find more information?

**ULg**
- Réseau des doctorants ULg (www.red.ulg.ac.be)
- PhD at ULg (www.ulg.ac.be/cms/c_37995/doctoral-thesis)
- PhD in the Faculty of Applied Sciences (www.facs.ulg.ac.be/cms/c_253087/doctorant)
- Pars-en-thèse (www.ulg.ac.be/books/pars-en-these)

**Belgium**
- FNRS (www.frs-fnrs.be/)
- doctorat.be (www.doctorat.be)

**Abroad**
- Wallonie - Bruxelles International (www.wbi.be)
- The Belgian American Educational Foundation (www.baef.be)
- Euraxess (www.euraxess-cfwb.be)
- Fulbright commission (www.fulbright.be)
- Agence universitaire de la francophonie (www.auf.org)
- phdportal (www.phdportal.eu)
- FindAPhD (www.findaphd.com)

**Fun**
- PhD comics (www.phdcomics.com)
Questions?

You mean to tell me that you haven't done anything all summer??

I ought to...

brrring!

Hold on.

UH HUH.

UH HUH.

No no, channel the money through the discretionary fund.

All right.

UH...

Sorry about that. Now, where were we?

We were just wrapping up?

Oh.

Well, see you next week then.

Next!

Sometimes, their forgetfulness has its advantages.
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Testimony

Patrick SCARPA

Elke MERGNY
Outline

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BACKUP
Doctoral colleges

Architecture, Civil engineering and geology
President: F. Nguyen
Vice-President: B. Dewals

Art of building and urban planning
President: P. Leclercq
Vice-President: M. Roosen

Aerospace Engineering and Mechanics
President: J.-P. Ponthot
Vice-President: L. Noels

Chemical Engineering
President: B. Heinrichs
Vice-President: A. Léonard

Electricity, Electronics and Computer science
President: B. Vanderheyden
Vice-President: B. Boigelot
FNRS fellowship

Duration: 2 years, renewable for 2 more years

Topic: Free to choose with advisor agreement

Requirements: Very good track record and very good project

Decision criteria: Application (grades, recommendation, project)

FRIA fellowship

Duration
27 months, renewable for 21 more months (total of 4 years)

Topic
Free topic (industrial/agricultural application) (letter of support from industry helpful)

Requirements
• Master in Sciences or Engineering
• Good track record and project

Decision criteria
• Application (grades, recommendation, project)
• Oral presentation and interview

Deadline
## Teaching assistantship

<table>
<thead>
<tr>
<th><strong>Duration</strong></th>
<th>2 years, renewable twice (total of 6 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topic</strong></td>
<td>Free to chose with advisor agreement</td>
</tr>
</tbody>
</table>
| **Requirements** | • Good track record  
                   • PhD advisor support |
| **Decision criteria** | Application (grades, recommendation, topic, letter of motivation, needs) |
Research project

Duration: Project dependent

Topic: Imposed by project (some freedom)

Requirements: PhD advisor support

Decision criteria: PhD advisor agreement

Deadline: None (start depends on project)