PhD information session

Faculty of Applied Sciences

November 15, 2016
Outline

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

Original contribution

Your own journey

Not a revolution!

Further education

Consequent research

Not a fancy title!

Student + Researcher

Not alone!
What is specific to a PhD?

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

**Publications**
- Journals
- Conferences

- Visibility
- Feedback
- Professional network
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>Literature review</td>
<td></td>
</tr>
<tr>
<td>Familiarization with subject</td>
<td></td>
</tr>
<tr>
<td>Research definition and structure</td>
<td></td>
</tr>
<tr>
<td>Advance courses</td>
<td></td>
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<tr>
<td>Tools/experiments development</td>
<td></td>
</tr>
<tr>
<td>Measurements/simulations/…</td>
<td></td>
</tr>
<tr>
<td>Results analysis</td>
<td></td>
</tr>
<tr>
<td>Conference presentations</td>
<td></td>
</tr>
<tr>
<td>Papers publications</td>
<td></td>
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<tr>
<td>Refinements and optimization</td>
<td></td>
</tr>
<tr>
<td><strong>Written thesis</strong></td>
<td></td>
</tr>
<tr>
<td>Oral defense</td>
<td></td>
</tr>
</tbody>
</table>

- Literature review
- Familiarization with subject
- Research definition and structure
- Advance courses
- Tools/experiments development
- Measurements/simulations/…
- Results analysis
- Conference presentations
- Papers publications
- Refinements and optimization
- **Written thesis**
- Oral defense
What is the role of the advisor?

<table>
<thead>
<tr>
<th>A guide to help you ...</th>
<th>An evaluator who will ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• defining and <strong>structuring</strong> your project</td>
<td>• provide <strong>feedback</strong></td>
</tr>
<tr>
<td>• identifying potential issues and <strong>solutions</strong></td>
<td>• follow your advancement</td>
</tr>
<tr>
<td>• creating your scientific network</td>
<td>• <strong>assess</strong> your results</td>
</tr>
</tbody>
</table>
Outline

- The PhD in general
- **Practical aspects about the PhD**
- Testimony from the industry
- Posters and informal discussion
## What are the requirements?

<table>
<thead>
<tr>
<th>To start a PhD</th>
<th>To complete a PhD</th>
</tr>
</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
- ...

**Min. 15 credits**

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

**Min. 10 credits**

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

**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. 2017</td>
</tr>
<tr>
<td>FRIA Fellowship</td>
<td>Free (“industrial”)</td>
<td>~ Aug. 2017</td>
</tr>
<tr>
<td>Teaching Assistantship</td>
<td>Free</td>
<td>~ Jun. 2017</td>
</tr>
<tr>
<td>Research project</td>
<td>Imposed by project</td>
<td>Case dependent</td>
</tr>
<tr>
<td>Other (industry, own financing)</td>
<td>Free</td>
<td>Case dependent</td>
</tr>
</tbody>
</table>
### How does it work abroad?

<table>
<thead>
<tr>
<th>Belgium</th>
<th>Abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Same as ULg</td>
<td>• Often similar to Belgium</td>
</tr>
<tr>
<td></td>
<td>• Master thesis is a good entrance door</td>
</tr>
<tr>
<td></td>
<td>• Check university website</td>
</tr>
<tr>
<td></td>
<td>• Contact potential advisor for availability</td>
</tr>
<tr>
<td></td>
<td>• Talk to faculty members at ULg</td>
</tr>
</tbody>
</table>

#### USA

- Start application **1 year before** 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](http://www.red.ulg.ac.be))
- PhD in the Faculty of Applied Sciences ([www.facs.ulg.ac.be/cms/c_253087/doctorant](http://www.facs.ulg.ac.be/cms/c_253087/doctorant))
- Pars-en-thèse ([www.ulg.ac.be/books/pars-en-these](http://www.ulg.ac.be/books/pars-en-these))

**Belgium**
- FNRS ([www.frs-fnrs.be](http://www.frs-fnrs.be))
- doctorat.be ([www.doctorat.be](http://www.doctorat.be))

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

**Fun**
- PhD comics ([www.phdcomics.com](http://www.phdcomics.com))
Questions?

YOU MEAN TO TELL ME THAT YOU HAVEN'T DONE ANYTHING ALL SUMMER??
I OUGHT TO...

brrrings

HOLD ON.

NO NO, CHANNEL THE MONEY THROUGH THE DISCRETIONARY FUND.
ALLRIGHT.

SORRY ABOUT THAT. NOW, WHERE WERE WE?

UH...

WE WERE JUST WRAPPING UP?

OH.

WELL, SEE YOU NEXT WEEK THEN.

NEXT!

SOMETIMES, THEIR FORGETFULNESS HAS ITS ADVANTAGES.
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• The PhD in general
• Practical aspects about the PhD
• Testimony from the industry
• Posters and informal discussion
Testimony

Vincent de VILLE de GOYET

Cédric LEQUESNE

(LMS Samtech)
Outline

- The PhD in general
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- Testimony from the industry

- Posters and informal discussion
Posters and sandwiches

B52
Grand Rue
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: J. Lecomte-Beckers

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

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

Computer science
President: B. Vanderheyden
Vice-President: B. Boigelot
## FNRS fellowship

<table>
<thead>
<tr>
<th>Duration</th>
<th>2 years, renewable for 2 more years</th>
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<tbody>
<tr>
<td>Topic</td>
<td>Free to chose with advisor agreement</td>
</tr>
<tr>
<td>Requirements</td>
<td>Very good track record and very good project</td>
</tr>
<tr>
<td>Decision criteria</td>
<td>Application (grades, recommendation, project)</td>
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</table>
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

**Duration**
2 years, renewable twice (total of 6 years)

**Topic**
Free to choose with advisor agreement

**Requirements**
- Good track record
- PhD advisor support
- 2/3 research
- 1/3 course assistant

**Decision criteria**
Application (grades, recommendation, topic, letter of motivation, needs)

**Deadline**
<table>
<thead>
<tr>
<th><strong>Research project</strong></th>
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<tbody>
<tr>
<td><strong>Duration</strong></td>
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