



TRAINING AND DEVELOPMENT OF PHD CANDIDATES



VRIJE
UNIVERSITEIT
BRUSSEL

DR. HANNELORE DE GRANDE

COORDINATOR RESEARCHER TRAINING & DEVELOPMENT OFFICE

OUTLINE

- Structure
- PhD in numbers
- PhD lifecycle
- Doctoral training
- Training for postdocs and supervisors
- Monitoring

structure



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Vicerector Research – R&D department

RTDO

- 1 FTE coordinator – teamleader
- 4 FTE administrative staff
- 2 FTE policy advisors (research professionalization and career development)

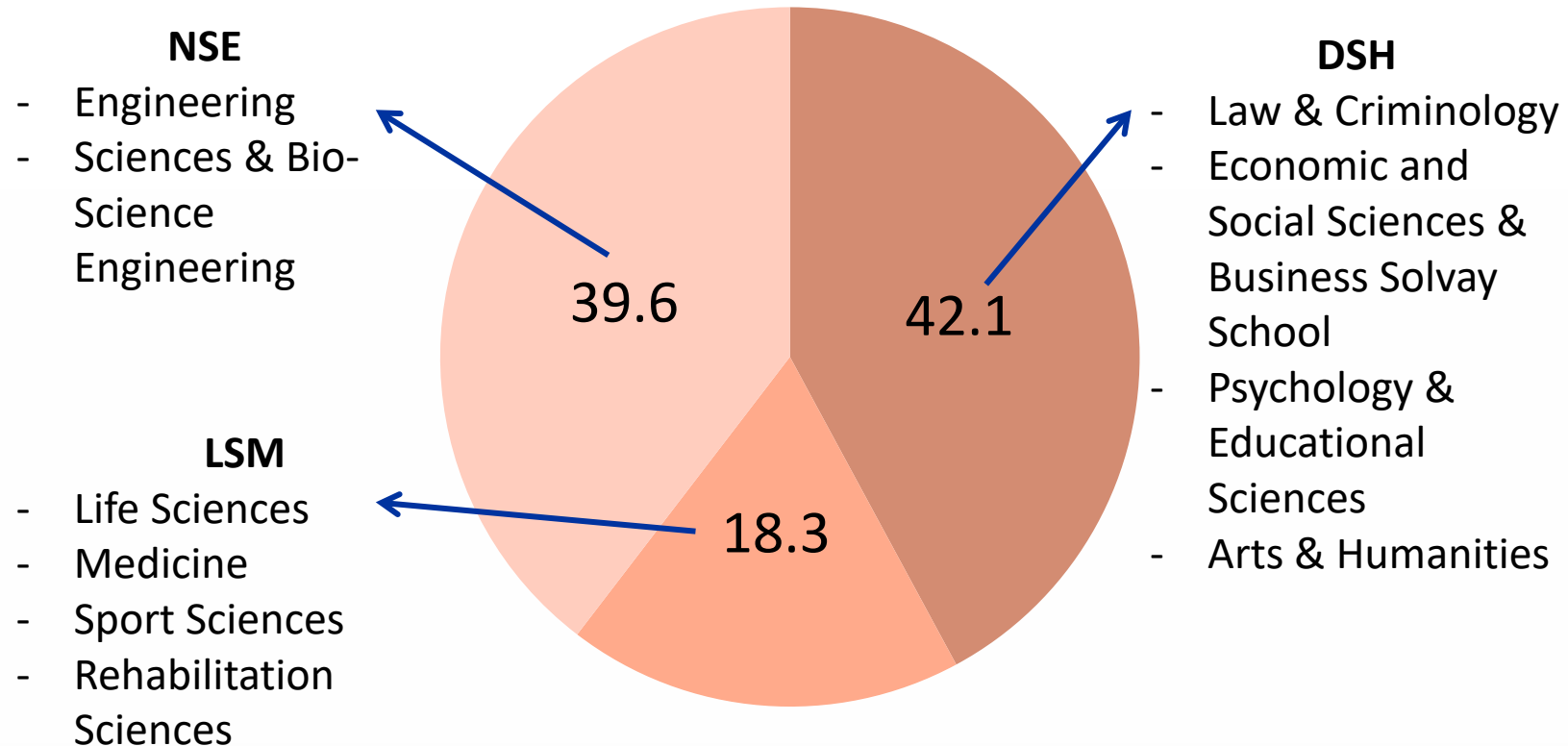
3 Doctoral Schools

- DS of Human Sciences (DSh)
- DS of Natural Sciences and Engineering (NSE)
- DS of Life Sciences and Medicine (LSM)

- Each DS has its own Council and representatives



Division Doctoral Schools



Source: Student Database VUB

Two financial sources

1/ Flemish government - "OJO" funding

- ▶ OJO= Support for Young Researchers
- ▶ 5 million eur for all Flemish universities, +- 620K for VUB
- ▶ Activities including
 - ▶ Training for young researchers
 - ▶ Career Development
 - ▶ International orientation
 - ▶ Interuniversity collaboration (at least 35% of all means)

Enormous boost for all Doctoral Schools in terms of personnel, training possibilities and IT projects

2/ VUB Research Council adds up to this funding to

- ▶ Ensure administrative support and follow-up
- ▶ Professionalise senior researchers
- ▶ Monitoring PhD trajectories & wellbeing

PhD in numbers

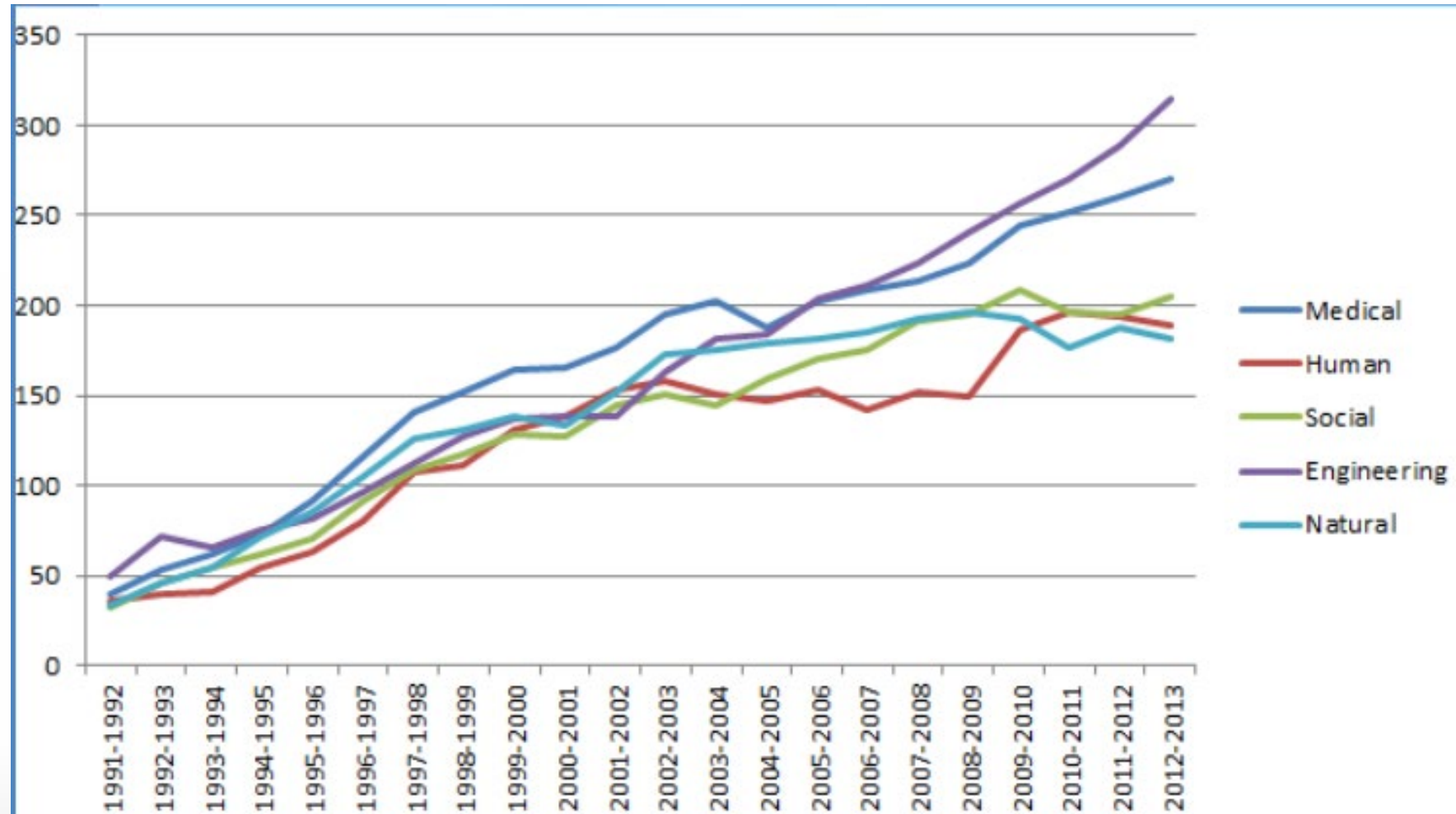


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ABOUT OUR PHD CANDIDATES

- 1800 PhD candidates
- 300 new PhD candidates each year
- 52% international students coming from >90 different countries
- about 230-250 defences/year
- Mean time to degree: 5.3 years
- 600 professors

EVOLUTION POPULATION PHD CANDIDATES BETWEEN 1991 AND 2013



Source: HRRF database - ECOOM

Doctorates by Gender & Faculty*

Social Sciences & Solvay Business School

31



51.6% international

Medicine & Pharmacy

48



31.3% international

Engineering

53



58.5% international

Arts & Philosophy

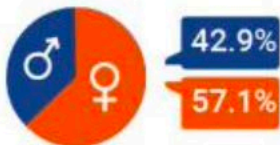
18



61.1% international

Physical Education & Physiotherapy

7



71.4% international

Psychology & Educational Sciences

12



41.7% international

Law & Criminology

8



62.5% international

Sciences & Bio-Engineering Sciences

47



57.5% international

PhD lifecycle



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PHD LIFECYCLE

REPEAT 4 TIMES OR MORE



PHD ENROLMENT

Requirements

- Diploma: master degree or equivalent in accordance with the stipulations of the Codex Higher Education of December 20th 2013, with a European guideline or bilateral agreement
 - Proposal / research plan / research topic → detail depends on the faculty but if a detailed research plan is not handed in during admission, it needs to be completed within 9 months after starting the PhD
 - You need a supervisor
 - Funding (teaching assistant, project funding, personal scholarship, Self-financing)
- Application is processed by Faculty

PROGRESS MONITORING

PhD Progress Monitoring Commission per faculty

- At least 5 professors + teaching assistant or other junior researcher per faculty
- Yearly discussion of individual PhD trajectories

Advisory committee

- Supervisor(s) + at least one postdoc/professor (preferably external to VUB)
- At least yearly discussion of progress
- Compulsory 18 months after start of the PhD

Progress report

- Minimally: PhD candidate has to report on the supervision of the supervisor, the activities (conferences, teaching tasks) of the last year, the progress and research completed and the plans for the upcoming year(s)
- Also the supervisor has to report on each of its PhD candidates, with reference to feedback of the advisory committee
- Approval of the report → re-enrollment

SUBMISSION OF PHD

“The PhD examination demonstrates the PhD candidate’s capacity to independently contribute to the development and growth of academic knowledge, as well as his/her ability to report about their contribution both orally and in writing. The PhD thesis has to *reflect the ability to create new academic knowledge* in a certain field of expertise or across fields of expertise based on *independent academic research*, including the arts, and has to be able to lead to academic publications. The thesis needs to be shaped in the form allowed by the supplementary faculty PhD regulations (for example a completely unpublished manuscript, or a body of publications)”

PHD DEFENCE

- Dissertation is written in Dutch or English
- Examination panel needs to be approved by faculty with at least 3 professors of VUB and 2 external members
- Two months period to examine the dissertation
- Private and public defence
- Private defence: discussion with the PhD candidate and examination panel without audience, after which four types of conclusions can be made:
 1. Proceed to public defence without adjustments
 2. Proceed to public defence with minor adjustments (approval of chair necessary – “minor revisions”)
 3. Revise dissertation and a second round of private defence (“major revisions”)
 4. Dissertation may not be defended / Refusing the student to re-enroll (“rejection”)

Doctoral training



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DOCTORAL TRAINING AT VUB

- Continuous development of academic & generic skills
- Composed individually
- Compulsory from 2019-2020
- What?
 - 30 credits BEFORE submission doctoral thesis
 - Minimum 5 credits per category (see next figure)
- Exemptions
 - Joint PhDs with VUB NOT as the main institution
 - Sandwich PhD ($\geq 50\%$ of full trajectory abroad)
 - $\geq 50\%$ working not research-related

RESEARCH OUTPUT

Min. 5

TEACHING AND
SOCIETAL OUTREACH

Min. 5

OVERARCHING WILDCARD

international/interinstitutional/
interdisciplinary/intersectoral
Collaborations and/or Mobility

Max. 4

DOMAIN SPECIFIC
SKILLS

Min. 5

Min. 5

TRANSFERABLE
SKILLS

@a glance

1. Total credits = 30
2. /quadrant=5 credits
3. Wildcard=4 max
4. /quadrant ≠ 0

DOCTORAL TRAINING AT VUB

PORTFOLIO

Online platform to keep track of research activities and credits.

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
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Name

DOC Sciences

	Available	Submitted	Acquired	Required
Research output	0	0	23	5
Teaching & societal outreach	0	0	9	5
Domain specific skills	0	0	24	5
Transferable skills	0	0	2	5
Overarching wildcards	0	0	0	0
Total	0	0	58	30

Doctoral training attestation (internal use only)

RTF format

Doctoral training attestation

PDF format

DOCTORAL TRAINING AT VUB

PORTFOLIO: RESEARCH OUTPUT

Scientific **publications** and **presentations** for academic audiences are rewarded within the doctoral training programme.

Example:

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
Name	DOC Sciences				
Research Output					
Scientific publications					
Reference	Subtype	Year	Credits	Status	
Simulation and Optimisation for the Radar Echo Telescope for Cosmic Rays. In Proceedings of 37th International Cosmic Ray Conference - PoS(ICRC2021). Sissa Medialab srl Partita IVA. 2022. 416 https://doi.org/10.22323/1.395.0416	Proceedings paper	2022	3	Acquired	
et al. Modeling in-ice radio propagation with parabolic equation methods. Phys. Rev. D. 2021 May 6;2021(103): 103007. https://doi.org/10.1103/PhysRevD.103.103007	International peer-reviewed article	2021	6	Acquired	
et al. The Radar Echo Telescope for Cosmic Rays: Pathfinder Experiment for a Next-Generation Neutrino Observatory. Physical Review D. Particles, Fields, Gravitation, and Cosmology. 2021 Nov 23;2021(104):1-12. 102006. https://doi.org/10.1103/PhysRevD.104.102006	International peer-reviewed article	2021	6	Acquired	
Presentations for academic audience					
Reference	Year	Subtype	Credits	Status	
The Surface Detector for the Radar Echo Telescope for Cosmic Rays: Status and Future Plans Rose (Speaker) 3 Apr 2022 Activity: Talk or presentation › Talk or presentation at a conference	2022	Paper presentation	2	Acquired	
The Radar Echo Telescope (Speaker) 7 Jun 2022 Activity: Talk or presentation › Talk or presentation at a conference	2022	Paper presentation	2	Acquired	
The Radar Echo Telescope for Cosmic Rays (Speaker) 19 Apr 2021 Activity: Talk or presentation › Talk or presentation at a conference	2021	Paper presentation	2	Acquired	
The Radar Echo Telescope: Simulation and Optimization (Speaker), (Speaker), (Speaker), (Speaker), (Speaker) 22 Jun 2020 → 2 Jul 2020 Activity: Talk or presentation › Talk or presentation at a conference	2020	Paper presentation	2	Acquired	

DOCTORAL TRAINING AT VUB

PORTFOLIO: TEACHING AND SOCIETAL OUTREACH

PhD candidates can earn credits by adding educational and public engagement activities to their Portfolio

Example:

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
Name		DOC Sciences			
Teaching & Societal Outreach					
Societal outreach					
Reference	Subtype	Year	Credits	Status	
Particles from the Cosmos Masterclass (Organiser), (Organiser), (Organiser), (Organiser) 27 Apr 2022 Activity: Participating in or organising an event › Participating in or organizing a school event	School engagement	2022	1	Acquired	
IceCube Masterclass 2021 (virtual) (Organiser), (Organiser), (Organiser), (Organiser), (Organiser) 21 Apr 2021 Activity: Participating in or organising an event › Participating in or organizing a school event	School engagement	2021	1	Acquired	
IceCube Masterclass 2020 (Organiser), (Organiser), (Organiser), (Organiser), (Organiser) 19 Feb 2020 Activity: Participating in or organising an event › Participating in or organizing a school event	School engagement	2020	1	Acquired	
Taught courses					
Reference	Subtype	Academic Year	Credits	Status	
Introduction to Astrophysics, Vrije Universiteit Brussel	Teaching courses	2122	2	Acquired	
Introduction to Astrophysics, Vrije Universiteit Brussel	Teaching courses	2021	2	Acquired	

DOCTORAL TRAINING AT VUB

PORTFOLIO: DOMAIN SPECIFIC SKILLS

PhD candidates can earn credits by working on skill improving your **research skills**, via workshops, courses, but also by developing new websites/handbooks/apps, being members of faculty boards etc

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
Name		DOC Engineering Sciences			
Please note that the director could change an activity quadrant					
Domain specific skills					
Attended courses					
Reference	Subtype	Academic Year	Credits	Status	
Identification of Dynamical Systems, Vrije Universiteit Brussel	Attended course	1516	4	Acquired	
Attended seminars					
Reference	Subtype	Academic Year	Credits	Status	
Soirée Pratique: Build your own long range plant sensor, KU Leuven	Attended seminar	1617	1	Acquired	
Add patent preparation Add attended non VUB course Add attended seminar					

DOCTORAL TRAINING AT VUB

PORTFOLIO: TRANSFERABLE SKILLS

PhD candidates can earn credits by developing skills useful in a **future career in or outside academia**

Example:

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
Name	DOC Engineering Sciences				
Please note that the director could change an activity quadrant					
Transferable skills					
Attended courses					
Reference	Subtype	Academic Year	Credits	Status	
In-Service Teacher Education: Part 1, Vrije Universiteit Brussel	Attended course	1819	15	Acquired	
Module 2: Tutoring of Individual Learners for LIO, Vrije Universiteit Brussel	Attended course	1819	6	Acquired	
Attended seminars					
Reference	Subtype	Academic Year	Credits	Status	
Introduction days for new PhD researchers, Vrije Universiteit Brussel	Attended seminar	1516	2	Acquired	
Effective Scientific Communication, Vrije Universiteit Brussel	Attended seminar	1516	3	Acquired	
Add attended non VUB course Add attended seminar					

DOCTORAL TRAINING AT VUB

PORTFOLIO: WILDCARDS

PhD candidates can earn wildcard credits by participating in **interdisciplinary, intersectoral** or **international** activities.

Maximum 4 of these wildcard credits can be used to fill in a deficit of credits in a quadrant.

Example:

Home	Research output	Teaching and societal outreach	Domain specific skills	Transferable skills	Overarching wildcards
Name	DOC Engineering Sciences				
Overarching Wildcards					
Reference	Subtype	Period	Credits	Status	
. et al. A review on self-healing polymers for soft robotics. Materials Today. 2021 Mar 20;47:187-205. https://doi.org/10.1016/j.mattod.2021.01.009	Interdisciplinary collaboration	2021	3	Acquired	Add interdisciplinary collaboration

COURSES AND WORKSHOPS

- BA/MA/MANAMA courses – free of charge in Flanders
- Specific training offer for PhD candidates including
 - e-learnings
 - on campus trainings
 - interuniversity training & events (collaboration with other Flemish institutions and ULB)
 - online external platforms (datacamp & nature masterclasses as of 2023)
- External courses offered by other universities or institutions

Overview Doctoral Training Offer



Grants for Summer/Winter schools and stays abroad



Nova Academy



TEO LRN workshops



VUB bachelor and master courses



Courses or workshops at other Flemish Universities



SQUARE: Support for Quantitative and Qualitative Research



DataCamp: trainings for data scientists



FLAMES: trainings in methodology and statistics



VAIA - Flemish AI Academy



VIB: trainings in science, skills, bioinformatics & coaching



PhD Introduction Package

OFFER FOR PHD CANDIDATES

VUB
information &
research
culture

Writing &
Presenting

Specialist

Transferable

Methodology

Career
development
&
Entrepreneur-
ship

Introduction Package

Introduction days including

- Rules and Regulations of doing a PhD at the VUB – Doctoral Schools
- Services at VUB you might need during your PhD
- Intro to Research Data Management
- Intro to Scientific Integrity & Ethics

Datamanagement track: e-learning + Q&A

Scientific Integrity & Ethics track: e-learning + 2 seminars during Ethics Week

Academic English Courses

Cooperation with internal service

Started of with one course on upgrading level of English – in cooperation with Academic Language Center VUB

At present: 4 courses per semester

- Introductory course to Academic English
- Academic English I
- Academic English II
- Academic English III

Master Classes / PhD research reviews: a master class is a workshop based on the presence of an expert in a specific field, giving feedback to a group of PhD students on their research.

PhD Presentation Days: A PhD Presentation Day consists of a meeting where a reasonably large group of PhD students presents their own work to the research community. There are two sub-formats possible: a PhD poster day and a PhD presentation seminar.

Content seminars / Workshops: A seminar, workshop or a small conference aimed to discuss specific content that is relevant for a substantial group of PhD students.

Interdisciplinary lectures

Inter-university activities

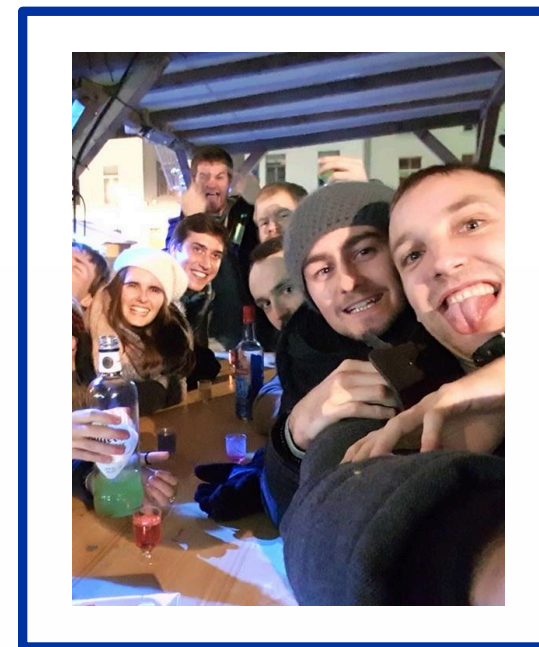
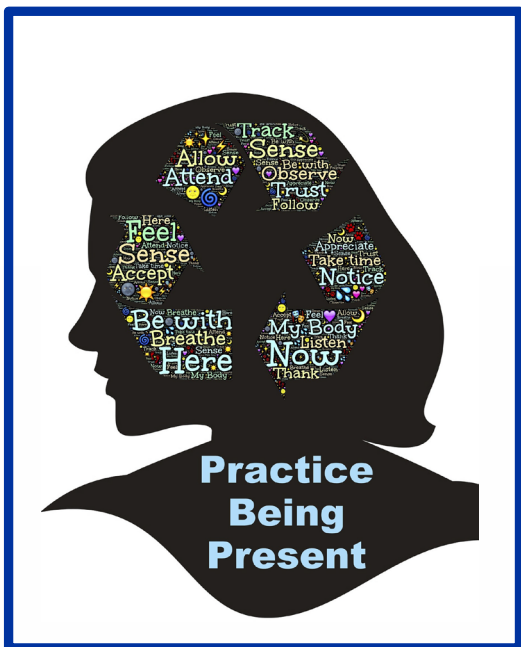
Other (activity must be described in detail in the application form)

Communicating with impact

- Demand for empowerment courses – inter- and intrapersonal communication skills
- Evidence-based Leadership Courses
- Tutor=has a PhD and works as a parttime professor
- Several tailor-made courses for
 - PhD candidates
 - Postdocs

Several kinds of training & events:

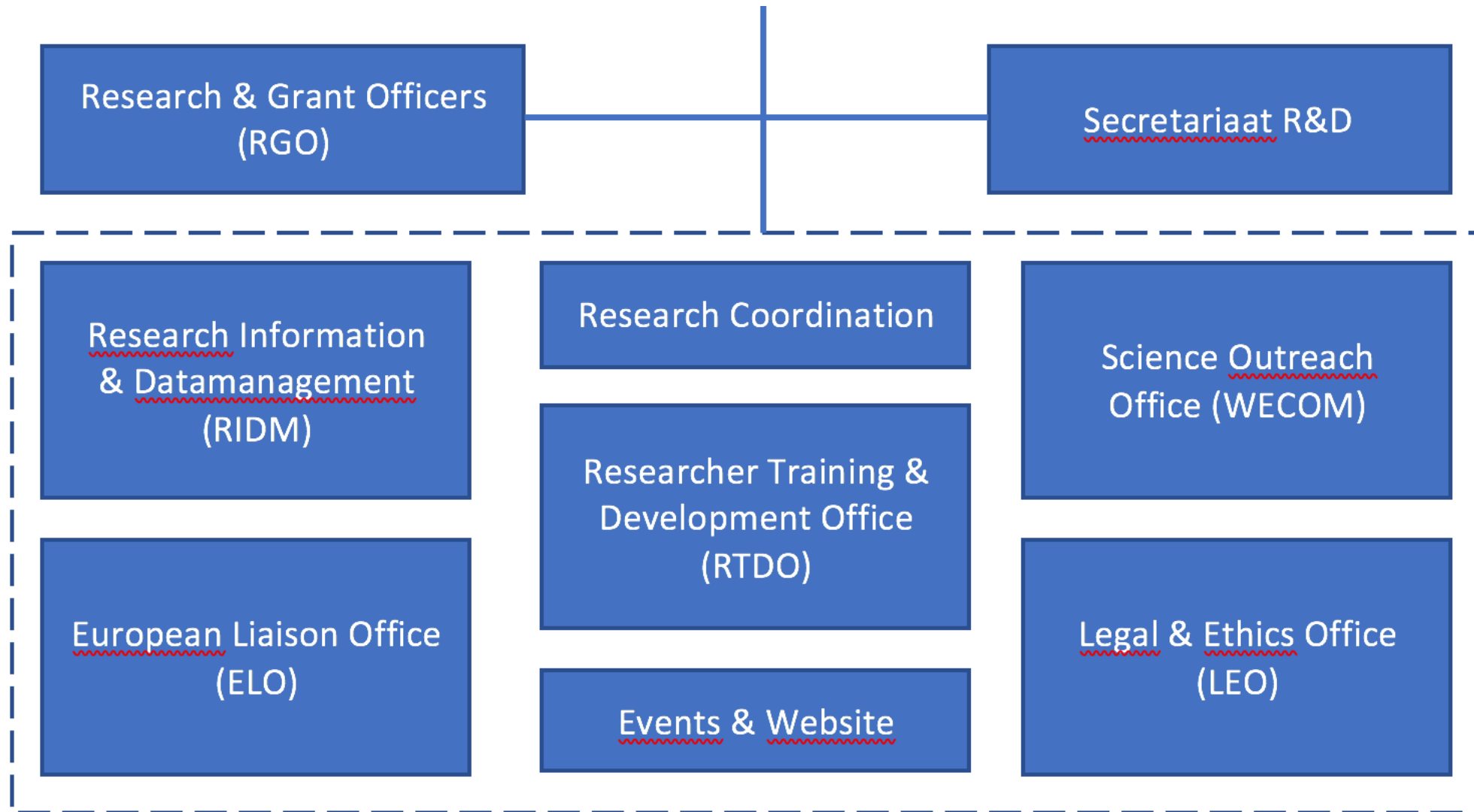
- Career advise (e.g. Writing a non-academic CV)
- Academic skills & development (e.g. Webinar Series 'Your PhD: What's next?')
- Interaction with other sectors (company visits, session on United Nations, secondments etc.)
- Networking



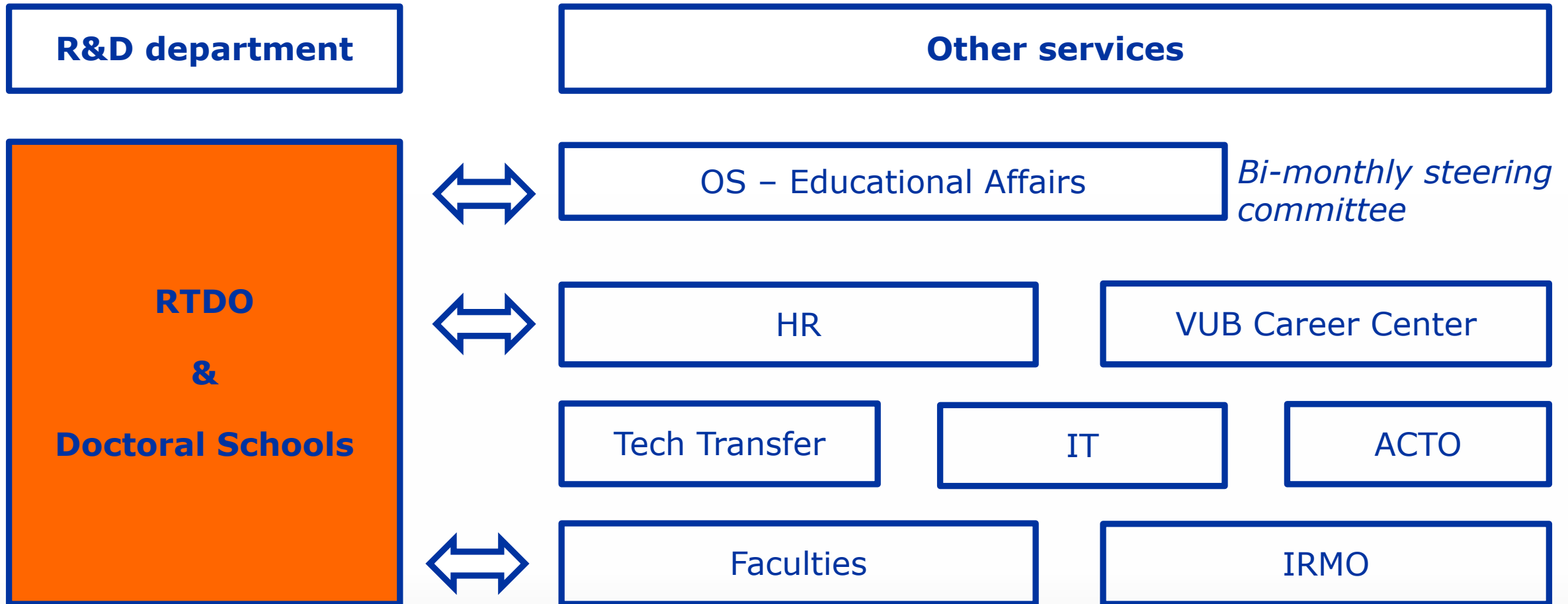
Tips and Tricks

- Work together within university
- Work together between universities
- Get involved in an international network of professionals in doctoral education
- Listen to your PhD candidates

INTERNAL COLLABORATION R&D



INTERNAL COOPERATION



EXTERNAL COOPERATION

WITH FLEMISH UNI

- Ad hoc doctoral training (via calls)
- Structural collaboration (vb. Flames)
- VLIR

WITH ULB

- Exchange good practices
- Training open for ULB PhD candidates
- Shared Supervisor training

INTERNATIONAL

- European projects
- Active in PRIDE network / EUA-CDE
- Eutopia European Universities Network Alliance

Training for postdocs & supervisors



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www.phdcomics.com

OFFER POSTDOCS

General offer

- Leadership
- Coaching
- Negotiating
- Grant writing
- Getting things done with others

New in the offer

- Postdoc Appreciation DAY
- Recent developments in research (DMP, GDPR, ethics etc)
- Proposal writing (ism RGO)
- Career orientation workshop

Offer for supervisor with ULB

- Advanced workshop on PhD supervision
 - 2 day workshop
 - Theory: 5 approaches to supervision (Rob Bongaardt)
 - Practice: warning signs, 10 commandments to supervision (mix of internal trainers: staff members and professors)
 - Based on input supervisors
 - Learn from best practices of colleagues
- Round table on PhD supervision
- Intervention session
 - Solutions and support from colleagues about specific cases
 - <https://www.ulb.ac.be/rech/doctorants/phd-supervisors.html>

Monitoring



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www.phdcomics.com

DATA DRIVEN POLICY MAKING

- PhD survey (pilot in 2017, now 5 years of information of PhDs in all faculties)
- Supervisor survey (pilot in 2022, all faculties foreseen in 2023)
- Exit survey (pilot in GF in 2022, all faculties foreseen in 2023)
- Monitoring of training activities
- Data on doctorates and doctoral education (in development)

Annual PhD survey

Make both the PhD researchers and their scientific (guidance) network (supervisors...) aware of good practices by:

1. self-evaluation
2. early problem detection
3. Feedback to other relevant services (Docbe, Doctoral Schools, HR,...)

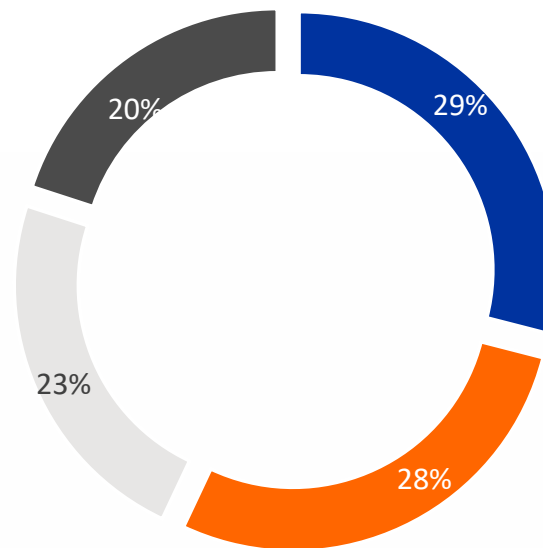
4 CLUSTERS

Lyrical

Everything is going great

Unsupported & Uncertain

Negative on most items



Healthy doubter

Personal doubts and high time pressure but positive concerning supervision & working conditions

Average

Average/Neutral on all items

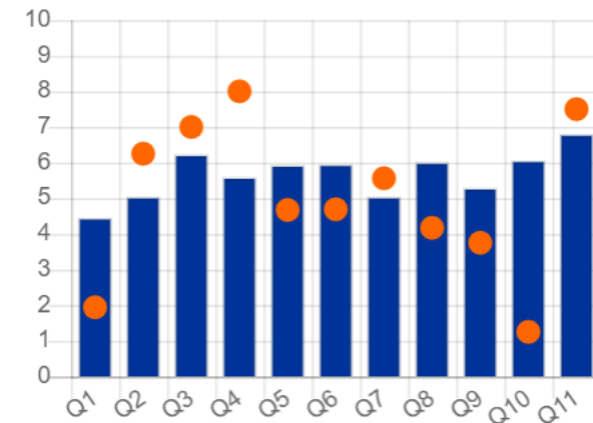
SELF-REFLECTION TOOL

www.vubphdsurvey.be

Compare yourself with:

Cluster 3: The unsupported and uncertain cluster

Question	You	Cluster 3
Q1. Satisfaction support supervisor (on 10)	1,94	4,46
Q2. No doubts concerning research (on 10)	6,25	5,05
Q3. Submitting PhD successfully (on 10)	7,00	6,24



PHD SURVEY 2022 - POLICY RECOMMENDATIONS

Research plan

- Develop clear guidelines on what elements a good, elaborated research plan should include
- Pay extra attention to stimulating teaching assistants to develop a plan

Motivation & Expectation

- Being aware of different profiles that enter PhD trajectory, in order to be able to cater to their needs
- Inform PhD candidates about realistic (career) expectations

Personal work environment

- Initiatives to temper feeling of competition and ignite feeling of collegiality should be stimulated
- Actively stimulate supervisors to introduce their PhD candidates to their own academic network

Work family balance

- Think about ways to continue giving PhD candidates the freedom and flexibility to organize own work, while at the same time protecting them from too much work-life spill-over

PHD SURVEY 2022 - POLICY RECOMMENDATIONS

Harassment

- More than one way to reach central registration point (not only by e-mail – no written trace)
- Transparency: VUB should take it as a responsibility to communicate and openly condemn known cases of misconduct
- There should be a systematic monitoring and reporting of the incoming complaints
- Training / awareness courses for supervisors to recognize harassment and learn what actions can and should be taken

Infrastructure

- VUB should ensure that suitable labs and lab materials are available to conduct research
- Provide sufficient access to library materials, offline as well as online
- Setting up a system to monitor these needs

CONTACT AND FURTHER READING

Hannelore.de.grande@vub.be / rtdo@vub.be

Wearephd.vub.be

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[Regulations](#)

[Training offer](#)

Questions?



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