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Research Training at Uppsala University

...with focus on

Medicine and Pharmacy

**Anders Backlund,
Tartu University, 2018.X.12**

Uppsala University, numbers

- **Founded in 1477, now 541 years later...**
- **ca 7500 employees of which 684 full professors**
- **43,591 students, of which 5,743 (23%) at Master's level**
- **Annual turnover of ca 700 M€**
... and attracts ca 11% of the Swedish research funding
- **70 Bachelor programmes**
- **70 Master programmes**
- **2,000 freestanding courses**
- **Degrees conferred: 5,833 – 49% at Master's level**

Numbers from 2017.

UU research foci

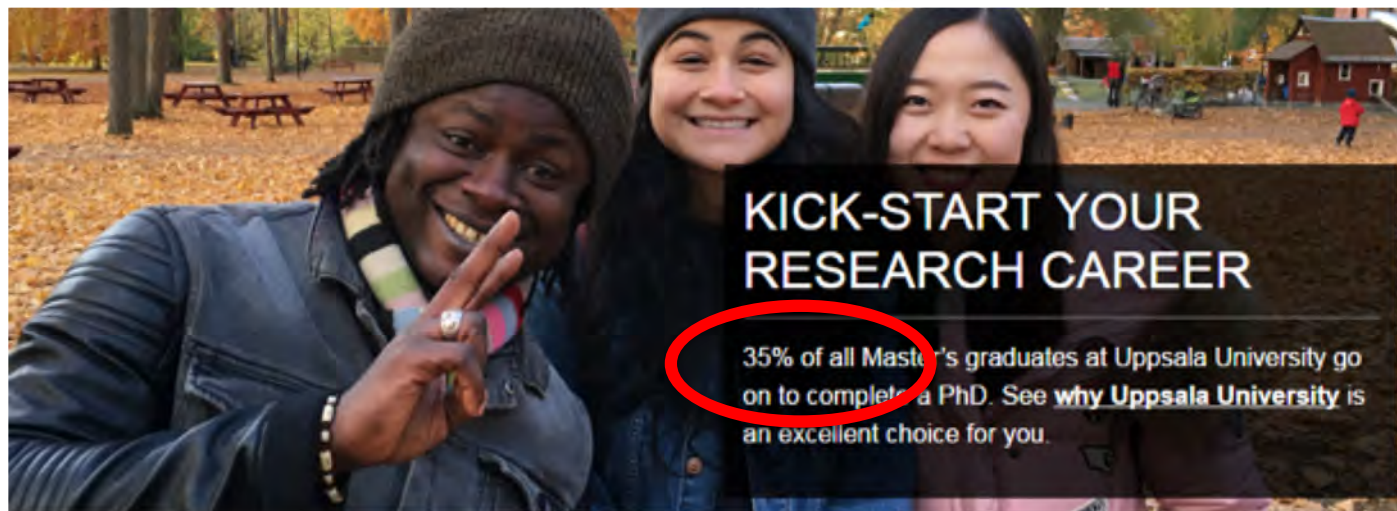
- **Antibiotics resistance**
- **The digital society and the "new world of work"**
- **Sustainable development**
- **Biomedical engineering**
- **Migration, integration and racism**
- **Novel energy systems and batteries**
- **Precision medicine**
- **Material sciences**





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WHO WE ARE LOOKING FOR

You acquired a broad theoretical base during your Bachelor's studies and now want to expand your skillset and dig deeper into your chosen subject. You may have gained some practical experience in a professional role after earning your Bachelor's degree, but the knowledge you obtained as an undergraduate student is still fresh, as are the study techniques you acquired.

You have a good working knowledge of the English language. You are willing and able to express your thoughts in both written and oral form and expect to contribute as much to the educational experience of others as you expect to learn from their experiences and knowledge.

Research training - statistics

- Annual spending on research and PhD studies:
ca SEK 4.6 billion (€485 million)
- 70% of total UU turnover
- 54% of research funded by external sources, e.g. national/EU grants

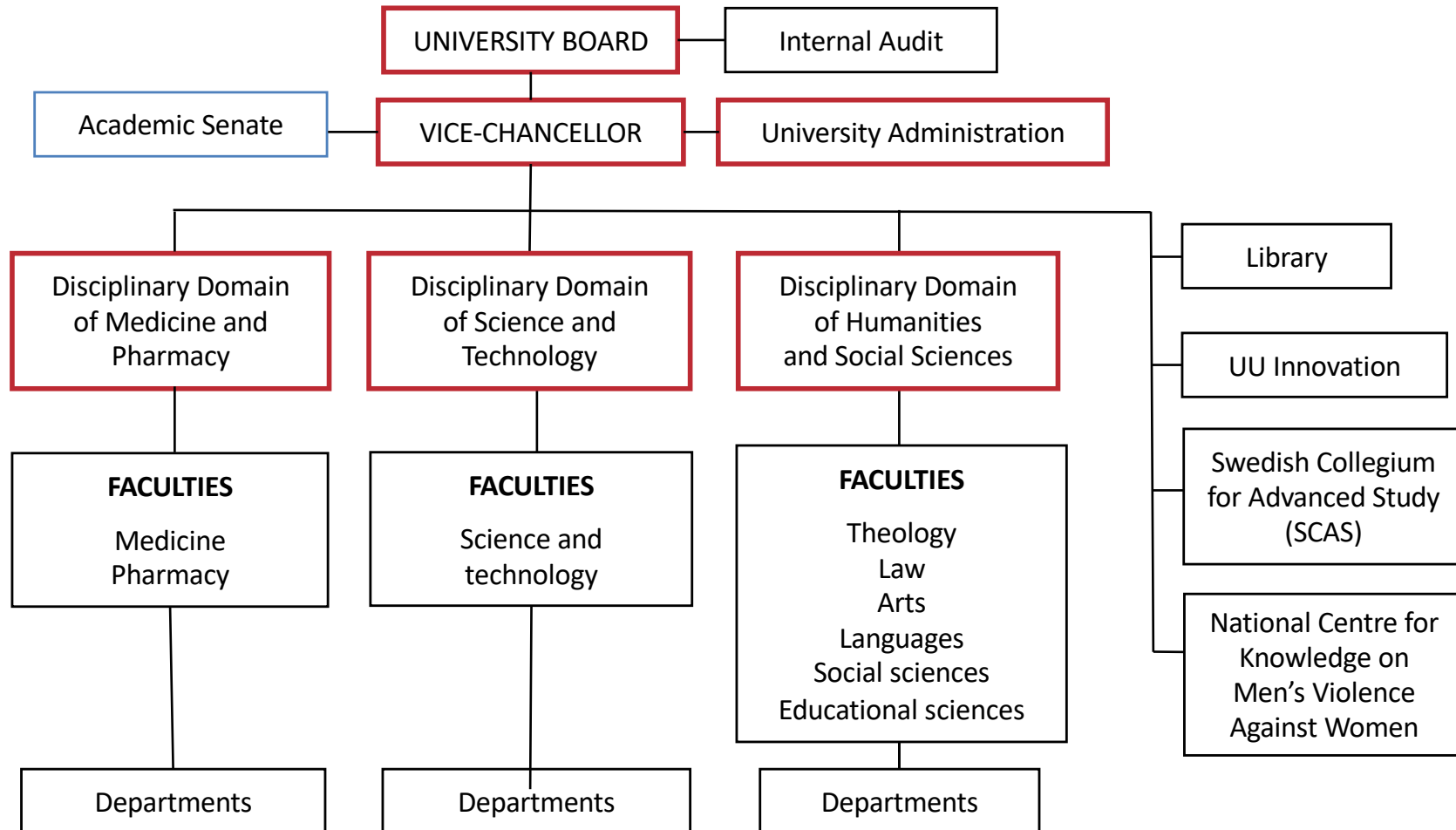
- Doctoral students: 2,289 (48% women, ca 45% international)
...of these 926 at Medicine & Pharmacy

- PhD degrees conferred: 389 - overall trend & reasons
- Scientific publications: 5,627

Numbers from 2017.



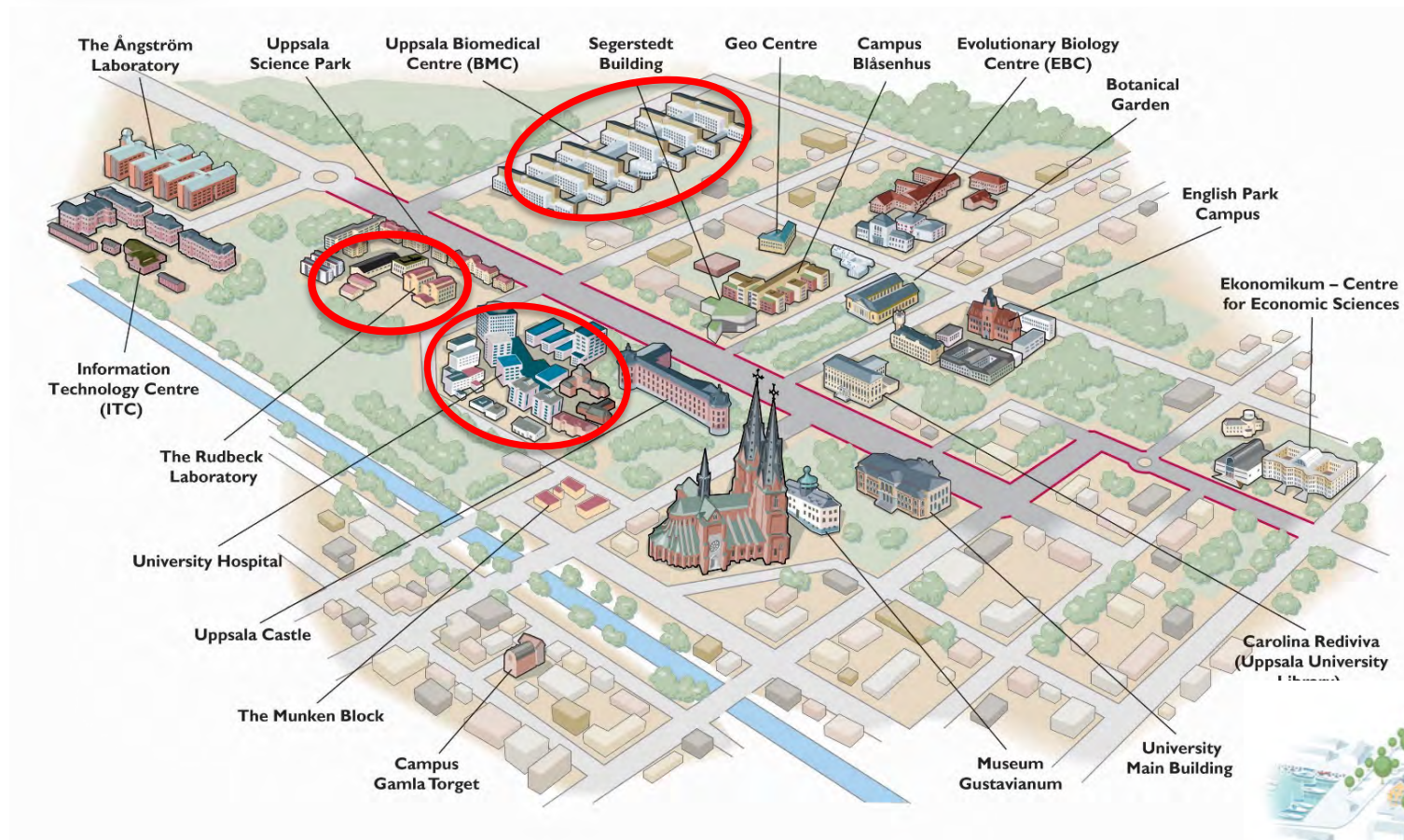
Organisation...





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Medicine & Pharmacy...





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The Disciplinary domain of Medicine and Pharmacy

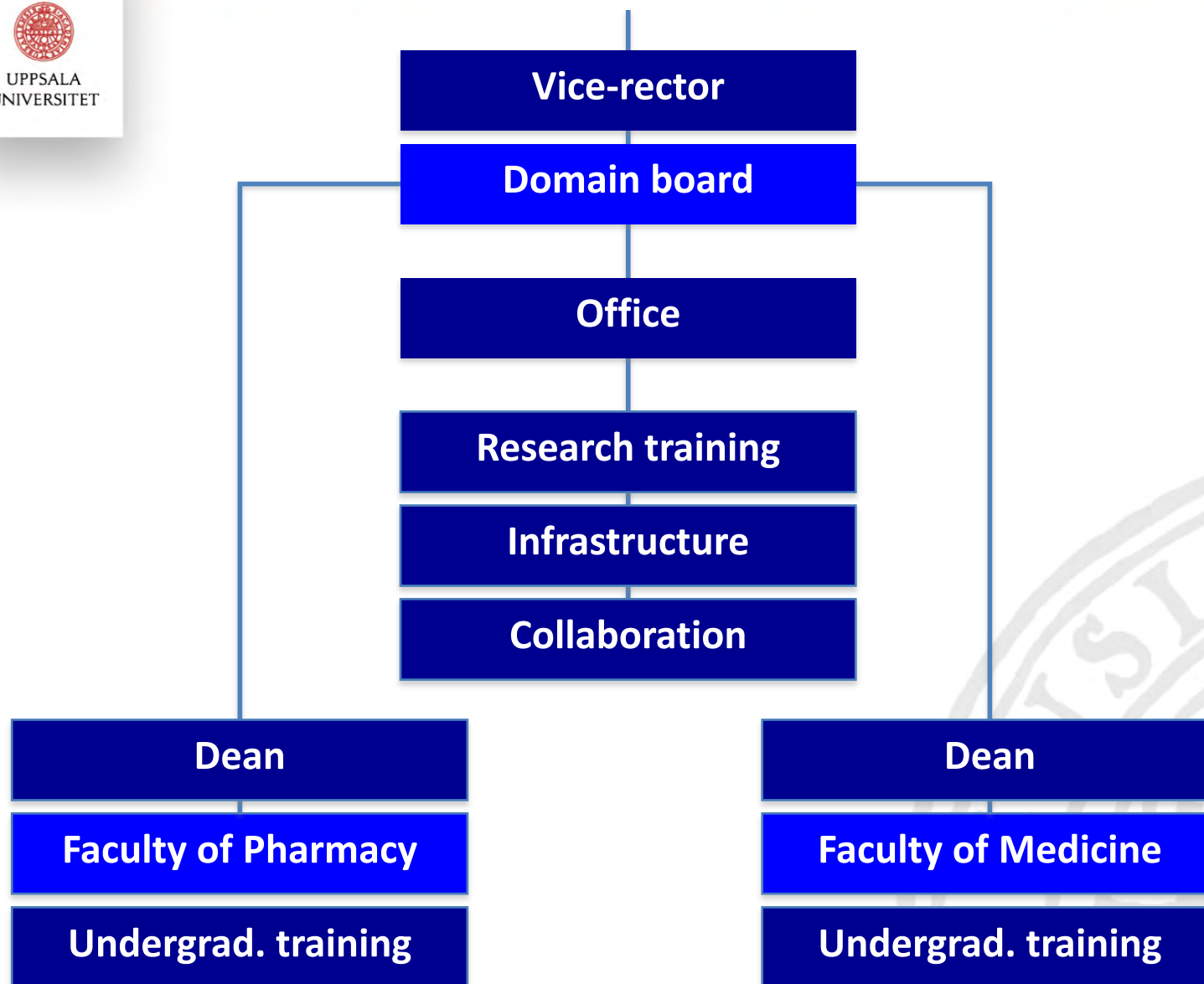
Has a joint 'Domain board' for both faculties,

....and also joint:

- Domain office for Medicine and Pharmacy
- Committee for research training
- Committee for infrastructure
- Committee for outreach and collaboration

....but separate:

- Committee for undergraduate training in medicine
- Committee for undergraduate training in pharmacy



Research training committee

Chairman: Anders Backlund, *vice-dean*, member of Domain board

Vice chairman: Ulrika Winblad

Dir. of Studies for Faculty of Pharmacy: Ulf Göransson

Dir. of Studies for Faculty of Medicine, preclin: Per Jemth

Dir. of Studies for Faculty of Medicine, clin: Peter Ståhlberg

Dir. of Studies for courses: Sebastian Barg

Secretaries: Pernille Husberg & Daniel Nihal Svensson

Teacher representatives:

Erika Roman, Jan Dumanski, Jan Eriksson, Per-Ola Carlsson

Alternate/deputy teacher representatives:

Göran Frenning, Svante Winberg, Birgitta Johansson,

Elisabeth Nielsen

Doctoral student representatives: Marina Senek, Stina Lundberg

*...members from both **medicine** and **pharmacy***

Research training committee

Primary task:

To assure and maintain quality in the research training.

Pursued by e.g.:

- Supervisor training & instruction
- Performing admission to research training
- Scrutinizing applications to defend theses
- Controlling composition of dissertation board
- Defining guidelines and regulations
- Support in conflicts
-etc.

Research training committee

Additional tasks:

- Adapting PhD-programme to central and local rules & regulations
- Facilitate PhD-studies for the students
- Facilitate the examination (dissertation) for supervisor and student
- Continuously support striving for "equal opportunity" treatment, e.g. with regard to composition of supervisor team and dissertation boards
- Inform on resources and support directed to students from abroad and participants in international research training networks.

Hierarchy....

Rules and regulations

- **Law for higher education (Högskolelagen)
SFS 1992:1434 updated to and including SFS 2010:2002**
- **Ordinance for higher education (Högskoleförordningen)
SFS 1993:100 updated to and including SFS 2011:1021.**
- **Local university regulations**
- **Disciplinary domain board decisions**
- **Research Training Committee guidelines and decisions**

Research training...

In Sweden, by law:

- Equivalent to 48 months of full time studies
- At a minimum pace of 50%
- No tuition fee – teaching is free
- Up to 40% of departmental duties

At Uppsala University:

- All PhD-students are employed (government, county, industry etc.)
- All governmental positions are filled after public announcement
- Minimum salaries
- Eligibility minimum MSc or corresponding

At the Uppsala University Domain of Medicine and Pharmacy:

- English test required unless...
- Mandatory set of courses + additional courses, minimum 30 ECTS
- Up to 20% of departmental duties, often teaching in course lab

Research training...

A dualism between employment and studies

- A PhD-student is employed by the department or similar,who ensures financing, resources, supervision etc.

....but:

- A PhD-student is admitted to research training by the committeewho controls eligibility, admission, quality, etc.

Financing and resource allocation must be completed for the full 48 months before admission can be granted.

Research training...

Financing and resources

Minimum salary negotiated between trade unions and university.

Year number	PhD student	Cost for group / year
1	25 600 SEK	603 000 SEK
2	26 300	619 000
3	26 800	631 000
50%*	28 500	671 000
80%*	30 500	718 000

...including LBK (50,9%) and OH (30%), as of 2018

Research training...

Employing

After that resources are allocated

Position publicly announced (unless already employed elsewhere)

Selection and interviews made

Candidate chosen

Admission and eligibility to research training

Eligibility control of MSc + English-speaking abilities documented

Control of supervisor qualifications (associate prof., + course)

Control of examiners 'lack of challenge' (not involved in project)

Control of research project plan and availability of resources

Control of the "ISP" – the students individual study plan

Research training...

The ISP – the students "individual study plan"

The tool by which the supervisor instructs the student

Should include e.g.:

- Supervisor, co-supervisors, examiner, etc.
- Research project plan including ethical and safety considerations
- Defined delivery points and milestones
- Requirements for the training, e.g. field work, lab methods etc.
- Formal courses in addition to mandatory package
- Requirements for teaching or other department duties
- Location for work
- Access to and organization of supervision
- Participation in international conferences and internships
- Selection of "research track"

Research tracks...

The 'Research tracks' defined today 2018.X.12 consists of:

- Inflammation
- Cardiovascular diseases
- Cancer
- Drug development
- Infection
- Neuroscience
- Metabolism
- Reproduction and development
- Musculoskeletal system



Research tracks...

Main purposes of creating the research tracks:

- **Increase critical mass in small research subjects**
- **Create more collaboration between the faculties**
- **Joint 'research days' exploiting the width of each track**
- **Collaborative course on research skills as well as transferable or generic skills.**

Credited to the student as 9 ECTS if fulfilling track requirements

Manifested by an addition to the formal degree:

"PhD in Pharmaceutical Sciences on metabolic diseases"

Dissertation and thesis...

Approaching dissertation...

In Sweden a PhD-student can never be forbidden to defend his/her thesis....

– but the permission to defend ones thesis with the support from the disciplinary domain (including using the university logotype, obtaining a number in the university acta-series, obtaining financial support for opponent etc.) is granted by the Research training committee.

Such permission is granted after external pre-emptive scrutiny by the intended dissertation board.



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Dissertation and thesis...

- The student has the **right to 48 months** full time studies, but may defend the thesis at an earlier stage if one so wishes – the salary is in such a case not necessarily extended the full time.
- A typical thesis at the Domain of Medicine and Pharmacy consists of **4-5 papers** of which 1-2 are already published and the remainder submitted + a summary, the "**thesis propre**", of ca 50 pages.
- In addition to the thesis some documentation has to be submitted, including excerpt from **study documentation** records showing all **mandatory courses** completed, a **letter from the supervisor** regarding the novelty of the findings in the thesis, and a letter from the **student explaining the contribution** to the work in the different papers.

Dissertation and thesis...

- Before submission the student has a face-to-face meeting with a member of the committee going through all material.
- After submission, if complete, the material is sent for review by the intended dissertation board. Their task at this stage is to define if the material is worthy of a defence.
- If so, the thesis + included material is sent to the printing shop.
- Minimum 21 days before the planned dissertation, the thesis must be made public. This is now done electronically, but often a physical 'nailing' is symbolically performed.

Dissertation and thesis...

- On the day of the dissertation a **public hearing** is pursued.
- An external '**opponent**' has been selected to motor the discussion.
- The **dissertation committee** of 3 or 5 members observes, ask questions, and try to probe "the scientific maturity" of the student. This committee is selected specifically for the dissertation.
- After the public part, which often lasts for 3h, the committee convenes and after hearing in turn supervisors, opponent and examiner the committee is left in solitude to **decide on the grading**: in Sweden only pass or fail.