General Introduction for Doctoral Students

Vice president research education, Karin Andersson
Welcome (back) to Chalmers
1829 Chalmerska Slöjdeskolan is founded by the will of William Chalmers

1937 Chalmers becomes a governmental university with the authority to award doctoral degrees

1994 Chalmers becomes a private university, owned by a foundation
“FOR A SUSTAINABLE FUTURE”

• Our vision is allowed to permeate all activity within the fields of research, education and innovation

• The goal is to develop technical solutions that are needed to create a sustainable future
CAMPUS | SITES

Our Campuses
- Johanneberg
- Lindholmen

Three Science Parks
- Johanneberg
- Lindholmen
- Sahlgrenska

- Onsala Space Observatory
- The House of William Chalmers
Trying to understand Chalmers organisation

- Owner
- Management
- Education
- Research
- Areas of advance
- Utilisation
President, First Vice President, President (rektor) and CEO (VD) Stefan Bengtsson
First Vice President (prorektor) with responsibility for research Mats Viberg

Vice Presidents
• Vice President (vicerektor) of Undergraduate- and Master's Education Maria Knutson Wedel
• Vice President of Utilisation (nyttiggörande) Fredrik Hörstedt
• Vice President Areas of Advance (styrkeområden) Anna Dubois
• Acting Vice President of Research Education Karin Andersson

Head of department (prefekt) – 13 departments
Head of operations support (chef verksamhetsstöd)

Head of division (avdelningschef)
PROGRAMMES

We educate engineers, architects, master mariners and teachers

• Bachelor of Science in Engineering 3 years
• Master of Science in Engineering 5 years
• 41 Master’s programmes
  – all except one taught in English
  – 30% international Master’s students from 79 countries
Educational areas, bachelor and master

Architecture and Urban Design (ASAM)

Mechanical engineering, mechatronics and automation, design, as well as shipping and marine engineering (MATS)

Electrical engineering, computer technology, IT and industrial economics (EDIT-I)

Physics, chemistry and bioengineering, as well as mathematics and engineering preparatory year (KFM)
13 DEPARTMENTS
8 AREAS OF ADVANCE

2016
• 9435 students, 1142 PhD students
• 3055 peer reviewed publications
• 221 chaired professors
• 3253 employees, (985 in administration/techn. support)
• Total turnover 3 610 MSEK
CROSS-BOUNDARY AREAS OF ADVANCE

- Expertise across institutions and disciplines
- Complex societal challenges
- Thematic entrances to Chalmers University of Technology
- Platforms for utilisation and long-term collaboration
Infrastructures

- **C3SE** (Chalmers Centre for Computational Science and Engineering)
- **CMSI** (Chalmers Mass Spectrometry Infrastructure)
- **Chalmers Power Central**
- **Chalmers Material Analysis Laboratory**
- **Chalmers Simulator Centre**
- **HSB Living Lab**
- **Nanofabrication Laboratory**
- **Onsala Space Observatory**
- **Revere** (Chalmers Resource for Vehicle Research)
- **National Laboratory in Terahertz Characterisation**
- **Facility for computational Systems Biology**
- **Chemical Imaging infrastructure**
EFFECT BEYOND THE UNIVERSITY

Longstanding tradition of cooperation with the community
Strong track record in industry cooperation
  – ranked 2:nd in the world in the CWTS Leiden Ranking
POWERFUL innovation systems set up to support researchers, students and others looking to turn their knowledge and skills into innovations
LOOKING TOWARDS THE FUTURE

• CHALMERS SCHOOL OF ENTREPRENEURSHIP
• CHALLENGE LAB
• MOOCS
  – massive open online courses
• NATIONAL SPORTS UNIVERSITY
Facts and figures

MSEK: 3,597 turnover
Aktiva
RESEARCH EDUCATION

“New comers”

Gender distribution. Varies locally between 50 and 96 % men, depending on department

Nyantagna

Könsfördelning
Chalmers’ goals for research education

- kunna formulera vetenskapliga frågeställningar
- kunna bedriva forskning genom att tillämpa vetenskaplig forskningsmetodik och sätta in resultaten i ett vidare sammanhang.
- kunna kritiskt värdera egen och andras forskning.
- kunna samverka effektivt i tvärdisciplinära forskargrupper genom ett öppet förhållningssätt till andra vetenskapsområden.
- kunna förmedla kunskap på ett pedagogiskt sätt.
- kunna tillämpa ett forskningsetiskt förhållningssätt.
- kunna leda forskningsverksamhet

- formulate scientific issues
- perform research by applying scientific research methodology and place the results in a broader context
- critically evaluate their own and others' research
- cooperate effectively in cross-disciplinary research groups through an open attitude to other scientific fields
- convey knowledge in a pedagogical manner
- apply a research-ethical attitude
- lead research activities
ORGANISATION OF RESEARCH EDUCATION

- 13 departments – employ PhD students

- 33 Graduate Shools – defined by a
  - Student belongs to a school
  - School may be common to several departments
  - Each department can have more than one school
  - General syllabus for the school and individual syllabus for the student that is followed up regularly
ROLES

Department
• (vice)Head of department
• Examiner
• Supervisor
• Deputy supervisor

Research school
• Director of studies
How to reach the goal…
"independent. researcher"

• Your project - working with supervisors and colleagues
• “Being a scientist” - discussion with supervisors and in research group
• Courses – GTS and others supporting the project
• Presentations at scientific conferences and work-shops
• Writing scientific journal papers
• Applying for funding
• Teaching
• Presentations/discussions for external groups (industry, authorities, public…..)
• Discussions at department and research groups
• ….
THE ROAD TO THESIS DEFENCE

varies

And sometimes you go back a little and start over
Being a PhD student

• Much more than the project
  • Employee
  • Teacher
  • Colleague
  • …
Some “good research practice” issues

• Permits - research involving humans and animals
• Relations - secrecy, confidentiality, anonymity
• Collaborations - legal and ethical considerations
• Publishing – contributions, funding, ownership of results, coauthor…
• Roles of supervisor - ownership of ideas, ethical and legal responsibility
• Falsification, data fabrication, plagiarism
• Personal data handling, secrecy
• ….
How can it be? From a former student

• I have been to conferences and met people, present and future researchers to collaborate with. …
• I have talked with other PhD students in the department, learning about all sorts of things…
• I have planned the structure of a whole MSc course…
• I have supervised students on a variety of subjects…
• I have applied for many different scholarships for doing anything from going to conferences to financing my networking…
• I have learned a new language, and have become part of new communities…
• I participated to the organization of two conferences and to the redaction of a book…
• I have made three posters…
• I have taken courses on design of experiments, on leadership, on project management, on programming and on data analysis.
And after thesis??

- Researcher
- Industry
- Public sector
- Consultant
- Authorities
- ...

11/8/17 Chalmers
Good luck

And

Enjoy your time as Chalmers PhD students