Gender aspects in academic leadership – Examples from the Department of Information Technology

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with input from Lina Von Sydow, Head of Department

Equal opportunities group at the IT Department

- Equal opportunities officer (Ginevra Castellano)
- Secretary
- One representative for each Division
- Representative for IT and Administration staff
- PhD students and students representatives

Funding equal opportunities work

- Prestationsresurs B
  - ca. 1 300 000 SEK / year
- 10% equal opportunities officer
- Equal opportunities projects

How the equal opportunities group works

- Monthly meetings
- Monthly equal opportunities fikas
- Annual retreats
  - Output: verksamhetsplan for equal opportunities
- 4 calls for equal opportunities projects and work every year
  - Equal opportunities group makes recommendations
  - Projects approved by Head of Department
- Organising equal opportunities days

Head of Department’s work with equal opportunities

- Contact point and follow up for gender related violations
- Equal opportunities aspects in recruitment
- Salary revisions from an equal opportunities perspective
- Gender aspects in appointment of groups with important strategic or decision-making functions

Verksamhetsplan for equal opportunities (6 areas)

1) Enhance capacity of the equal opportunities group to work as change agents

WHAT: The goal of this action is to enhance the capacity to work as change agents at the department, and to learn about equal opportunities

2) Support gender mainstreaming work at the Department

WHAT: The goal is to raise organizational awareness of gender issues at the IT Department.

3) Diversity aware education that creates a better learning environment for all

WHAT: The goal is to support students from a diversity perspective, educate teaching faculty in diversity awareness in teaching and support changes in the introductory courses for teachers

Verksamhetsplan for equal opportunities (6 areas)

4) Best PhD student education for all

WHAT: The goal is to have equal opportunities-aware PhD students and supervisors and create a playing field where all PhD students at the IT Department have the same opportunities

5) Career development from an equal opportunities' perspective

WHAT: Support early career faculty from an equal opportunity perspective

6) Supporting equal opportunities aware research

WHAT: Support integration of equal opportunities perspective in research activities at the IT Department

Examples of projects we fund

- Visiting Researcher to promote equal opportunities
- Equal Opportunities Related Education
- Organizing Events Related to Equal Opportunities
- Development Projects Related to Equal Opportunities
  - Studies of the work environment from an equal opportunities perspective
  - Gender mainstreaming projects
  - Work on equal opportunities aspects in research projects
  - Work to write about aspects of relevance to equal opportunities in research funding applications

Examples of equal opportunities work that we do

Gender mainstreaming project

- *Using gender equality indicators to support gender mainstreaming work at the Department of Information Technology*

- Funded by Teknat and UU gender mainstreaming funding

- Team members: Ginevra Castellano, Lina von Sydow (Head of Department), Robin Strand (Vice Head of Department), Gunilla Kreiss (former Head of Research)

- Data and statistical analysis: Wiola Öhlund (economist) and Natalia Calvo-Barajas (PhD students)

- Advisory board: Karin Stenjö and Nina Almgren

Aim

This project aims to investigate how Uppsala University’s gender equality indicators can be used to monitor the **gender distribution of research resources and funding** at the Department of Information Technology and how they can be used in a long-term perspective to improve gender mainstreaming work at the Department

Background

- Monitoring of internal resources allocation is one of the target areas of Uppsala University's Plan for Gender Mainstreaming for 2020-2022 [1] and Teknat's 2019 equal opportunities action plan [2]

- Two gender equality indicators developed to analyse the distribution of research resources and research funding within the university from a gender perspective

- Research shows that gender statistics can be a powerful tool to raise organizational awareness of gender issues [3]

[1] Plan för jämställdhetsintegrering 2020-2022, Uppsala University

[2] Åtgärdsplan för Lika villkorsarbete 2019 på fakultetsnivå. Teknat, Uppsala University.

[3] The FESTA handbook of organizational change. http://www.festa-europa.eu/

Specific aims

- To investigate how gender equality indicators in GLIS can be used to monitor distribution of research resources and research funding
- To map the distribution of research resources and funding and produce gender statistics
- To explore how the gender equality indicators can be used as tools to support gender mainstreaming work at the Department

Work packages

- Work Package 1: Gender statistics
- Work Package 2: Supporting gender mainstreaming work

WP1

- Work in close collaboration with economist Wiola Öhlund to find out how accounting and coding work at the Department and how gender equality indicators can be extracted from GLIS

- Find out if the indicators can also be connected to other data systems other than GLIS

WP1

- Map the distribution of staff’s research time
- Map the distribution of staff’s research grants
- Produce gender statistics reflecting the distribution of research time and grants and investigate whether imbalances exist in the distribution between the two legal genders

What GLIS provides

- % of total time spent on research
- % of research time spent on ***FFF research*** (research funded by Faculty)
- Gender equality indicator

$$\left| \frac{\frac{KÅrsarb_{forsk.kvinnor}}{KÅrsarb_{tot.kvinnor}} - \frac{Kårsarb_{forsk.män}}{KÅrsarb_{tot.män}}}{\frac{KÅrsarb_{forsk.kvinnor}}{KÅrsarb_{tot.kvinnor}} + \frac{KÅrsarb_{forsk.män}}{KÅrsarb_{tot.män}}} \right|$$

- Data is disaggregated by gender

What we can extract

- % of total time spent on FFF research
- % of total time spent on externally funded research

New indicators being deployed

Jämställdhetsindikatorer

Universitetets jämställdhetsindikatorer är ett verktyg som ska underlätta i jämställdhetsarbetet. Genom att använda indikatorerna kan man snabbt bilda sig en uppfattning om hur könsfördelningen ser ut inom olika områden.

Indikatorerna är 11 stycken:

Ledning
Yrkesgrupper
Anställningsförhållanden
Sjukfrånvaro
Forskningskontering totalt
Forskningskontering anslag
Doktorander aktivitet
Doktorander studiefinansiering
Doktorander examen
Studenter helårsstudenter
Studenter examen

De flesta indikatorer är uppdelade i olika delgrupper.

Indikatorerna är av två typer:

Samindikatorer: Andel kvinnor och män i en viss grupp, t ex andelen kvinnor och män bland studenterna (helårsstudenter).

Indikatorer av denna typ är: Ledning, Yrkesgrupper, Doktorander examen, Studenter helårsstudenter och Studenter examen.
Målet för samindikatorerna är att det ska finnas minst 40 procent av vartdera könet i en grupp. Om målet inte uppfylls visas en röd markering i tabellen.

Särindikatorer: Andel personer som tillhör en viss kategori i en enkönad grupp, t ex den tid män är sjukfrånvarande jämfört med den tid de arbetar.

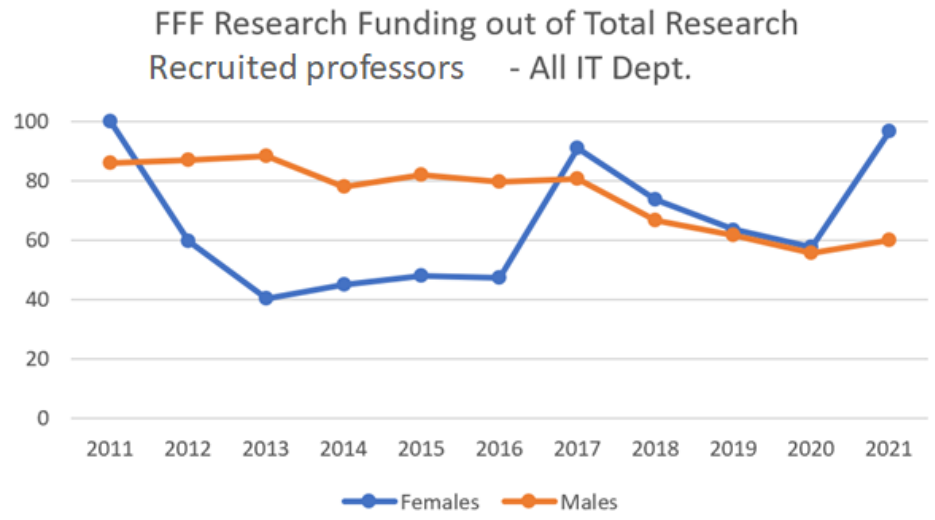
Indikatorer av denna typ är: Anställningsförhållanden, Sjukfrånvaro, Forskningskontering totalt, Forskningskontering anslag, Doktorander aktivitet och Doktorander studiefinansiering.
Målet för särindikatorerna är att det inte ska skilja mer än 5 procentenheter mellan den relativa andelen kvinnor och män som tillhör en viss kategori. Om målet inte uppfylls visas en röd markering i tabellen.

För den som är intresserad av hur värdena beräknas så har varje indikator en tillhörande sida där detta förklaras.

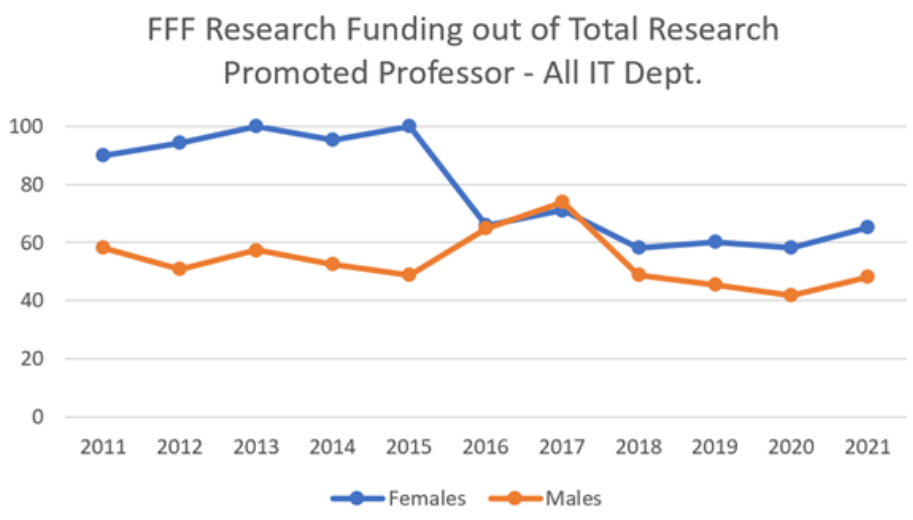
Gender-based analysis

- Gender differences from 2011 to 2021
  - Total research
  - FFF research funding out of total research
  - FFF research out of total time
  - External funding
  - Average number of PhD students funded by FFF
  - FFF disaggregated (research vs research support)

Example of analysis



Avg females: 65.8 %
Avg males: 75.1 %
P > 0.05



Avg females: 78 %
Avg males: 53.7 %
P < 0.01

Summary and open question s

- Gender differences exist and they are sometimes in favour of females and sometimes in favour of males

- **What is the interesting question to ask to understand if we allocate funding properly from a gender mainstreaming perspective? Or from a fairness perspective?**
  - Should we aim for gender balance in FFF out of total research?
  - Should it vary depending on the position?
  - Gender should not be the only thing to take into account (Recruited vs Promoted professors?)

- What difference in %s do we consider acceptable?

- How do we inform budgeting work at the Divisions?

Organising equal opportunities days

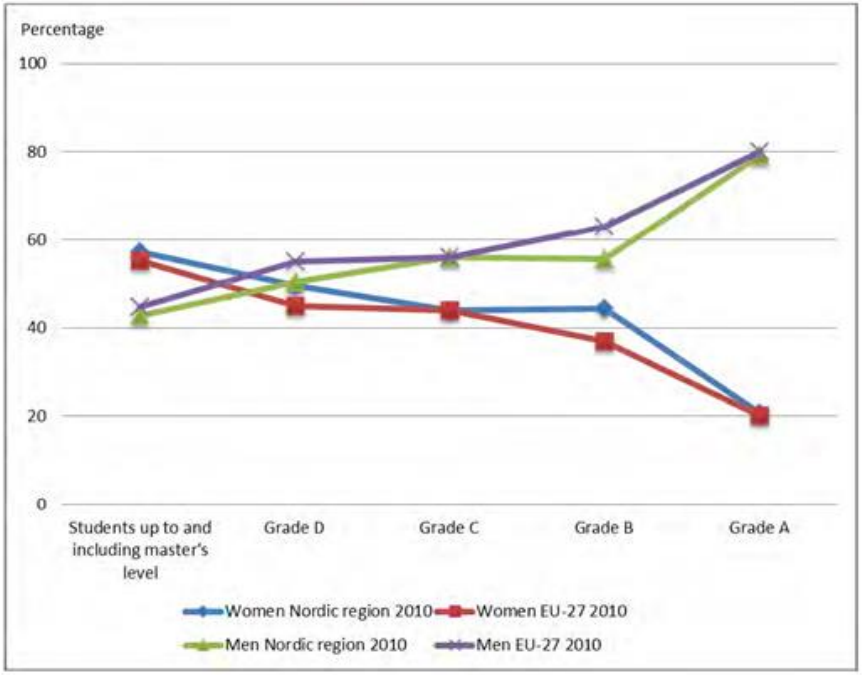
- Organised International Celebration Day 2019
  - Intercultural skills for a diverse world

- Co-organised Department Strategy Day on equal opportunities 2021
  - Watched documentary “Picture a scientist”
  - presented gender disaggregated statistics on employment

Employment at the Department of Information Technology: Gender Disaggregated Statistics

Gender specific differences in the academic career cycle

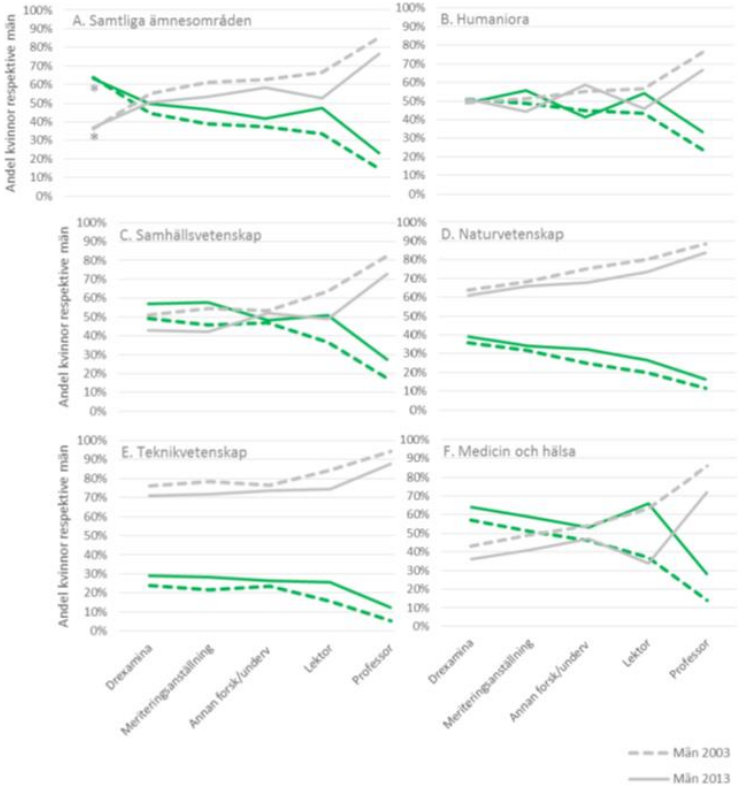
Figure 1. Proportion of women and men at various rungs of the academic career ladder in the Nordic region in 2010 and the EU-27 in 2010



Sources: Nordic Institute for Studies in Innovation, Research and Education (NIFU), She Figures 2012 and national statistics producers.

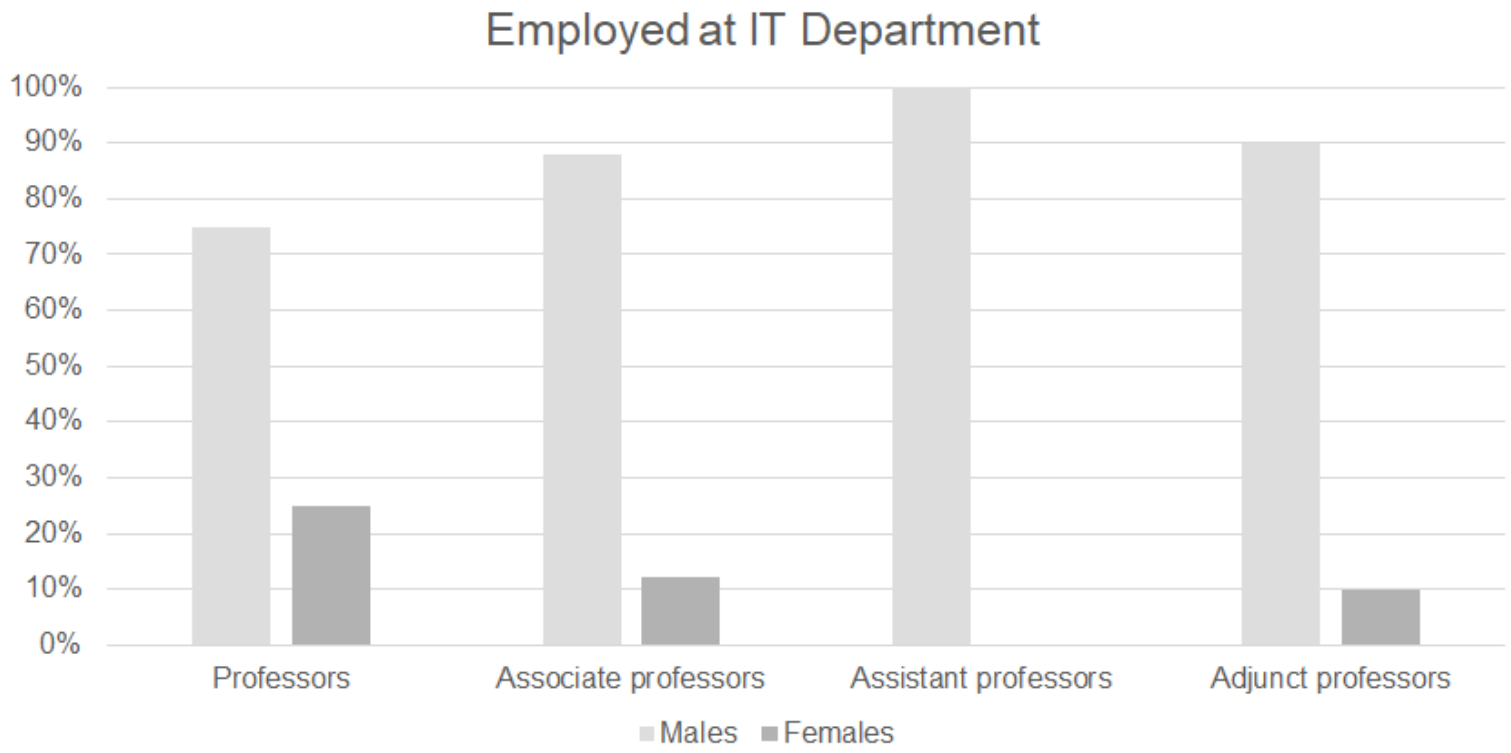
The Nordic region - a step closer to gender balance in research? Joint Nordic strategies and measures to promote gender balance among researchers in academia.
Solveig Bergman with assistance from Linda M. Rustad and a Nordic reference group. Nordic Council of Ministers 2013

Gender specific differences in the academic career cycle

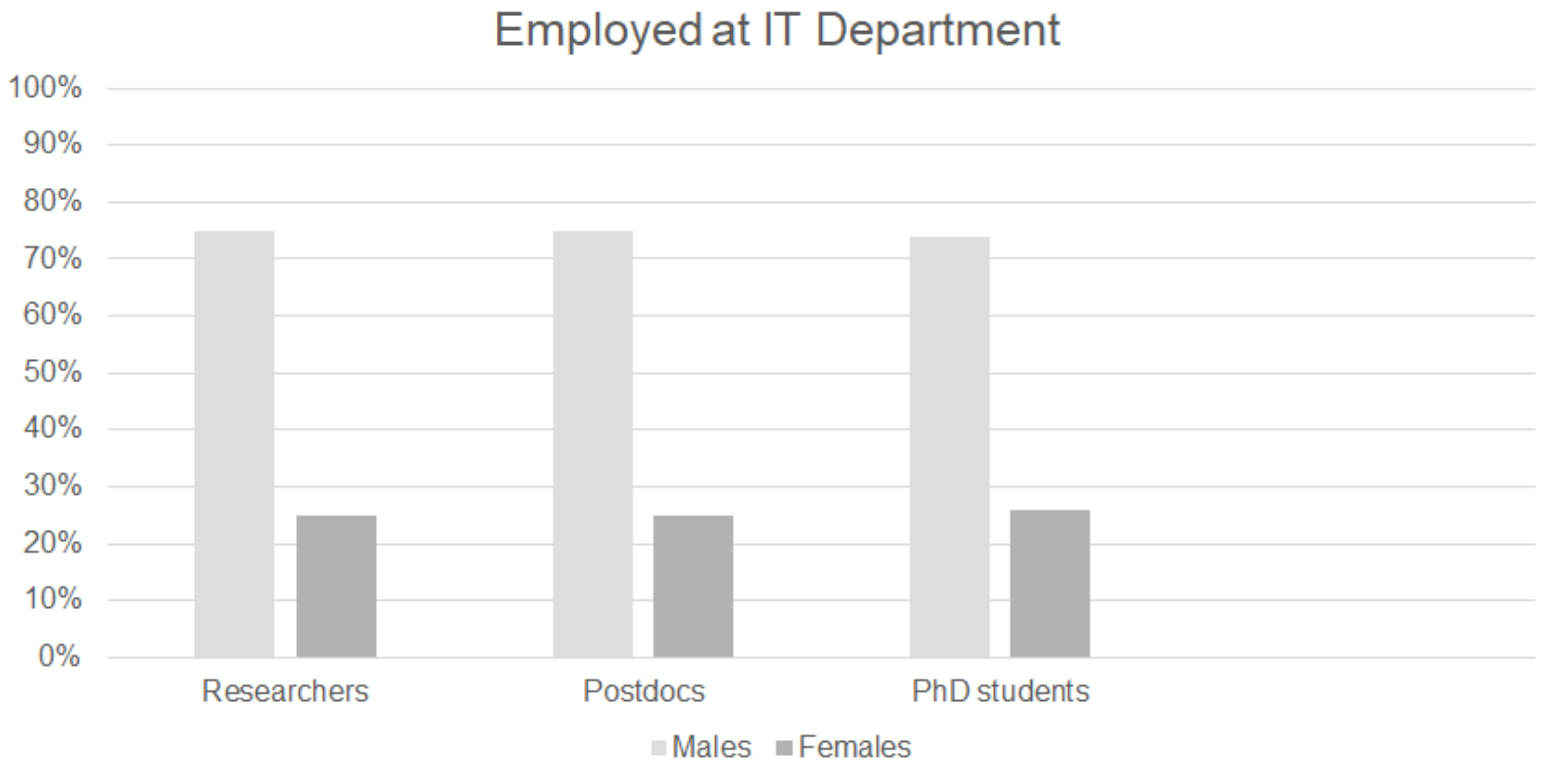


Forskningens framtid - Jämställdheten i högskolan and Vetenskapsrådets Forskningsstöd, VR, 2015

Some statistics (April 2021)



Some statistics (April 2021)



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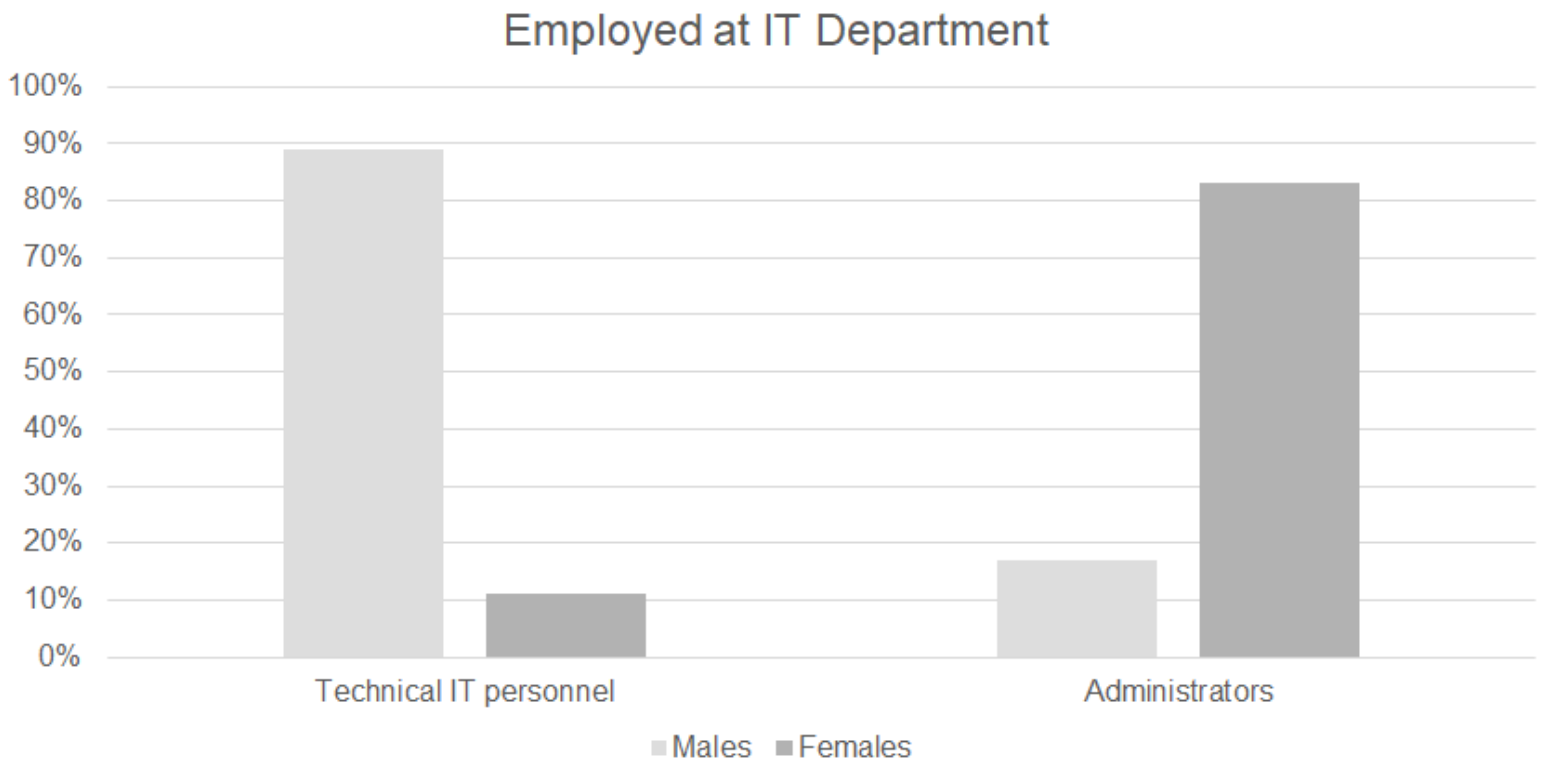


Some statistics (April 2021)

	Prof		UL		BUL		Forskare		Postoc	
	män	kvinnor	män	kvinnor	män	kvinnor	män	kvinnor	män	kvinnor
CSD	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%
DOcS	100%	0%	80%	20%	100%	0%	66%	34%	80%	20%
TDB	50%	50%	86%	14%	100%	0%	50%	50%	100%	0%
Vi2	55%	45%	75%	25%	100%	0%	80%	20%	33%	67%
SysCon	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%
Summa	**75%**	**25%**	**88%**	**12%**	**100%**	**0%**	**75%**	**25%**	**75%**	**25%**

Some statistics (April 2021)

Percentage of female faculty over time

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Prof	10%	15%	14%	15%	16%	19%	16%	16%	17%	25%	25%
UL	19%	23%	20%	16%	19%	18%	20%	23%	25%	13%	12%
BUL	23%	11%	12%	21%	40%	0%	0%	0%	0%	0%	0%

Admitted PhD students 2011-2020

Uppdaterad från Ladok torsdag 18 mars 2021 kl. 08:07

Antal nyantagna forskarstuderande per år och vald dimension

År: Grupp (10 av 24)
Vetenskapsområde: Alla värden (3)
Fakultet: Alla värden (9)
Institution: 106 Inst f informationsteknologi
Antagningsstatus: Nyantagna inkl ämnesbytare
Ämnesbytare (av nyantagna): Alla värden (2)
Kön: Grupp (Män, Kvinnor)

Kön	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Kvinnor	4	4	5	1	3	10	3	8	3	5	46
Män	22	22	23	9	19	12	13	10	18	11	158
Total	26	26	28	10	22	22	16	18	21	16	204
% Kvinnor	15,4%	15,4%	17,9%	10,0%	13,6%	45,5%	18,8%	44,4%	14,3%	31,3%	22,5%

2011-2015: 14.5% females

2016-2020: 30.9% females

Graduated PhD students 2011-2020

Uppdaterad från Ladok torsdag 18 mars 2021 kl. 08:07

Forskarutbildning: Antal examina, andel kvinnor/män och medelålder för vald dimension

Vetenskapsområde: Alla värden (4)
Fakultet: Alla värden (10)
Institution: 106 Inst f informationsteknologi
År: Grupp (10 av 24)
Examenstyp: Doktorsexamen
Examenskombination: Alla värden (2)

År	Antal examina	Andel kvinnor (%)	Andel män (%)	Ålder vid utfärdande av examensbevis Medel
2011	9	11	89	33
2012	11	27	73	31
2013	10	30	70	33
2014	20	20	80	35
2015	11	18	82	32
2016	28	14	86	34
2017	16	25	75	32
2018	19	5	95	33
2019	16	13	88	32
2020	12	17	83	35
Total	152	17	83	33

2011-2015: 19.8% females 2016-2020: 14.8% females

Admitted PhD students 2011-2020 by PhD program

	% Females	% Males
Beräkningsvetenskap	34,78	65,22
Beräkningsvetenskap med inriktning mot numerisk analys	12,50	87,50
Datavetenskap	10,53	89,47
Datavetenskap med inriktning mot databasteknik	0	100,00
Datavetenskap med inriktning mot datavetenskapens didaktik	80,00	20,00
Datavetenskap med inriktning mot datorkommunikation	22,22	77,78
Datavetenskap med inriktning mot inbyggda system	0	100,00
Datavetenskap med inriktning mot människa-datorinteraktion	50,00	50,00
Datoriserad bildbehandling	27,59	72,41
Elektroteknik med inriktning mot reglerteknik	40,00	60,00
Elektroteknik med inriktning mot signalbehandling	25,00	75,00
Total	22,55	77,45

PhD outcome

- Admissions 2006-2015
  - 17.9% females
  - 82.1% males
- Out of 17.9% females:
  - 77.8 % has graduated
  - 19.4% has not graduated yet (average active semesters: 7.7)
  - 2.8 % has officially quit
- Out of the 82.1% males:
  - 75.8 % has graduated
  - 18.8% has not graduated yet (average active semesters: 10.9)
  - 5.5 % has officially quit

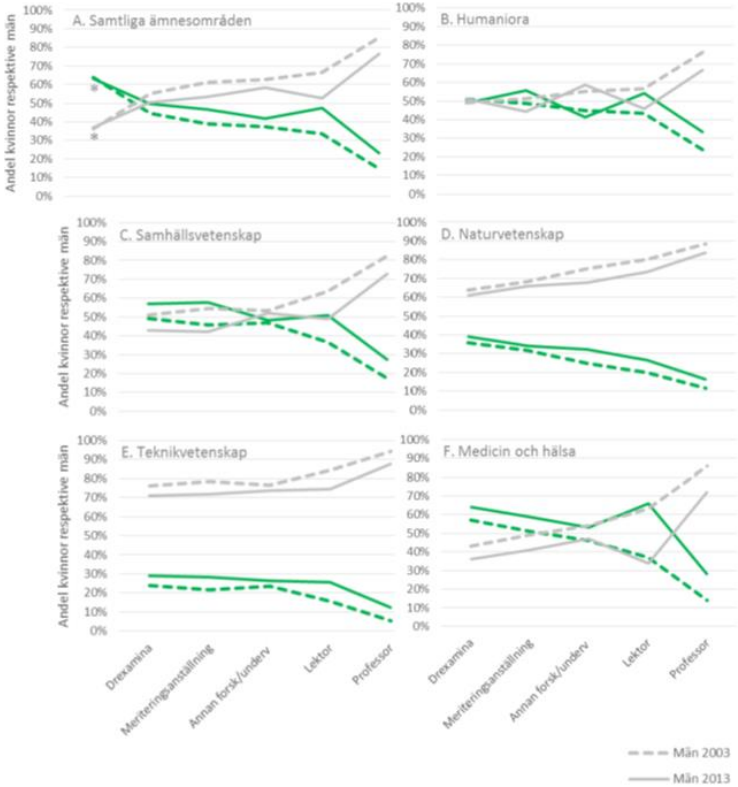
Formal dropouts

- 1 female, 10 males
- Covers 2006-2020=15 years
- 11/15=0,73 formal dropouts/year

Kurstillfällets starttermin	Andel kvinnor av förstagångsregistrerade (%)	Andel män av förstagångsregistrerade (%)
VT2021	25	75
HT2020	26	74
VT2020	26	74
HT2019	25	75
VT2019	24	76
HT2018	25	75
VT2018	23	77
HT2017	22	78
VT2017	15	85
HT2016	18	82
VT2016	14	86
HT2015	14	86
VT2015	18	82
HT2014	17	83
VT2014	8	92
HT2013	11	89
VT2013	8	92
HT2012	14	86
VT2012	18	82
HT2011	23	77
VT2011	23	77
HT2010	20	80
VT2010	17	83
HT2009	19	81
VT2009	15	85
HT2008	19	81
VT2008	33	67
HT2007	33	67
Total	20	80

MSc students who enrolled

Gender specific differences in the academic career cycle



Forskningens framtid - Jämställdheten i högskolan and Vetenskapsrådets Forskningsstöd, VR, 2015

Gender disparity within academic science

- Science faculty's subtle gender biases favor male students (Moss-Racusin et al., 2012)

- High-achieving faculty members who are male train 10–40% fewer women in their laboratories relative to the number of women trained by other investigators (Sheltzer & Smith, 2014)
    - self-selection among female scientists or gender biases among male faculty members?

Gender gap in grant funding

- Gender gaps in grant funding are attributable to less favourable assessments of women as principal investigators, not of the quality of their proposed research (Witteman et al., 2019)

A changing landscape?

- Women are underrepresented in most mathematically intensive fields
- Other reasons beyond gender discrimination
- Barriers rooted in pre-university factors
  (Ceci et al., 2014)

Gender diversity leads to better science

- Gender diversity leads to smarter, more creative teams (Nielsen et al., 2017)

Gender diversity and collective problem solving

- Collective intelligence predicts group performance better than the IQ of individual group members (Woolley et al., 2010)
    - Social sensitivity
    - Parity in conversational turn-taking
    - Proportion of females in the group
- Women show higher levels of social sensitivity

Need for carefully designed policies for gender inclusion

- ”Diversity in” not sufficient for ”creativity out” (Nielsen et al., 2017)
- Women flourish in organisations with high degrees of cross-job communication and non-hierarchical structures (Smith-Doerr, 2004)
- Cultivate culture for gender inclusion (Nishii, 2013)

Follow up on Department’s Strategy Day 2021

- Routines to prevent and inform on harassment and sexual harassment
- Video with information on processes and contact points aimed at 1st year students
- Extend visibility to all staff

Follow up on Department’s Strategy Day

- Gender mainstreaming work to increase women representation in academia
- Ongoing: updating instructions for search groups
- Proposal:

"The search group for BUL, UL and professor positions has to contact and identify at least two candidates (with diverse backgrounds, i.e. at least one woman and one man; and accounting for ethnic diversity, whenever possible) who indicate they will apply for the position when it is announced. Should a candidate not wish to be named, it is sufficient to write "Candidate X has been contacted by member of staff Y, where Y should be named, and has indicated that they will apply". If this is not fulfilled, the announcement focus should be adjusted until it is."

Promoting training on equal opportunities

- Annual lecture by Martin Holmberg integrated in the introductory courses in our BSc and MSc programs
  - Social exclusion / inclusion
  - Suppression techniques and countermeasures
  - Unconscious bias
  - Intersectionality
  - Cultural and linguistic factors

- Bi-annual training for Teaching Assistants

Training on equal opportunities aspects in research

- Idea for a PhD course currently being discussed
  - social consequences of AI, trustworthy AI, including aspects related to bias, inclusion, fairness and non-discrimination

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