



Women and Physics in Iceland

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The structure of University of Iceland

- ▶ It is organised in 5 Schools, we belong to the School of Engineering and Natural Sciences (SENS)
- ▶ Each School is divided in faculties, we belong to the Faculty of Physical Sciences (PhyS)
- ▶ Each Faculty is divided in departments, the Faculty of Physical Sciences has three departments: Mathematics, Physics, and Chemistry
- ▶ Geophysics belongs to a different faculty (Faculty of Earth Sciences), but same school (SENS)
- ▶ Science Institute is apart and is mainly focused on research (Institute of Physical Sciences and the Institute of Earth Sciences).

I am going to focus on **SENS** and the **Faculty of Physical Sciences (PhyS)**



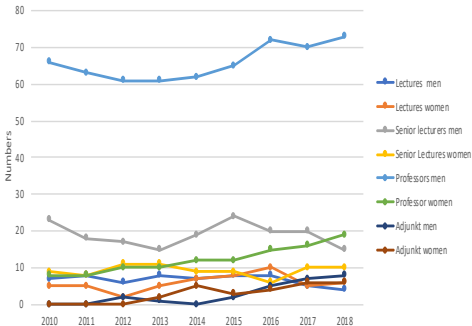
Teaching Staff at SENS and PhyS: Female/Male proportion

Before some comments:

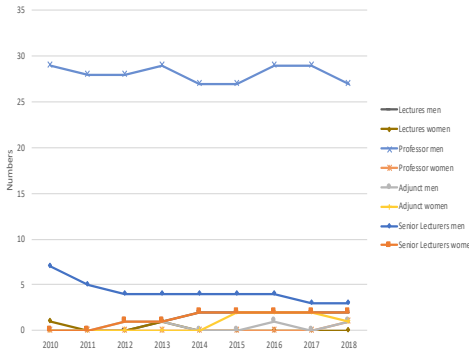
- ▶ “Teaching Staff”: Lecturers (Assistant professors), Senior Lecturers (Associate professors), Professors, Adjuncts (teaching positions, not necessarily with a PhD degree)
- ▶ It includes tenure track positions, permanent and temporary positions
- ▶ Postdoctoral positions and researchers are **not** included: we do not have “clean” data (mixing from Science Institute and changing of regulations recently)
- ▶ The data concerning the teaching staff refers to the period 2010-2018
- ▶ Numbers are small, so fluctuations matter

Teaching Staff: An overview of female/male proportion

Teaching Staff
School of Engineering and Natural Sciences 2010-2018

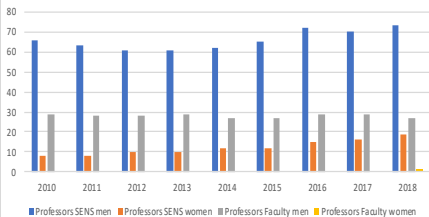


Teaching Staff
Faculty of Physical Sciences 2010-2018

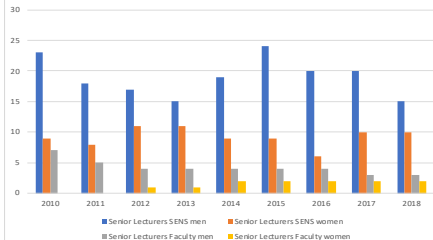


Teaching Staff: Female/male proportion

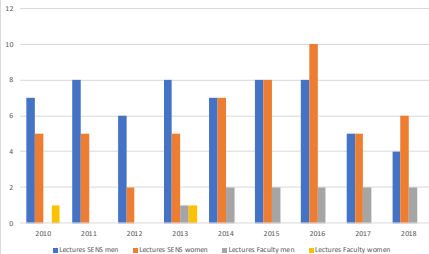
Professors 2018-2010



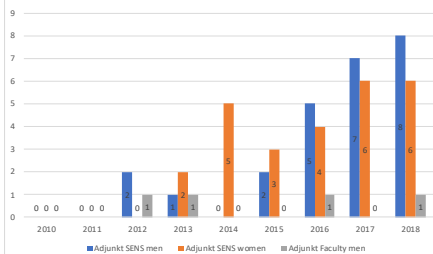
Senior Lectures 2018-2010



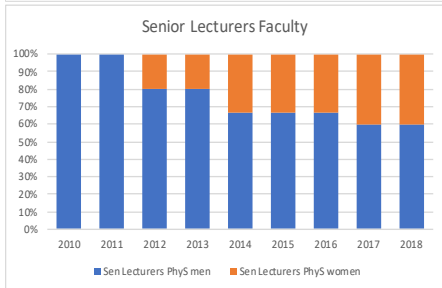
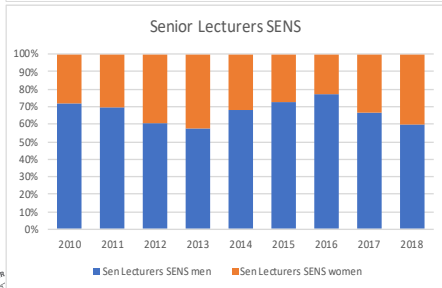
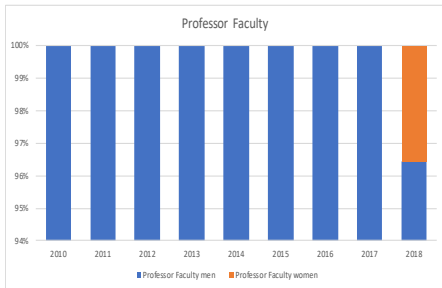
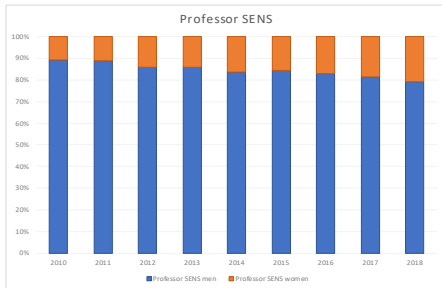
Lectures 2010-2018



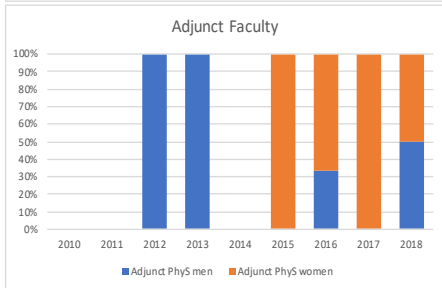
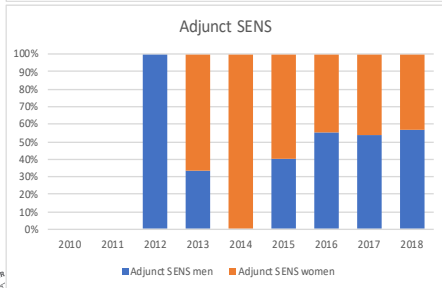
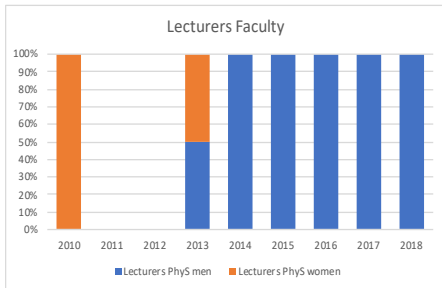
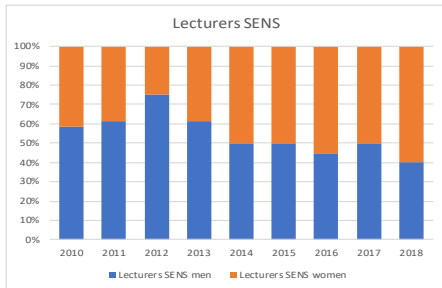
Adjunkt 2018-2010



Teaching Staff: Female/male proportion detailed percentage I

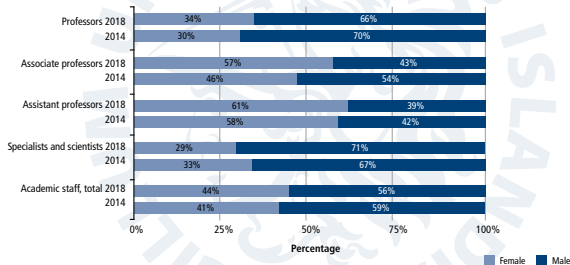


Teaching Staff: Female/male proportion detailed percentage II



What do we learn from these graphs?

- ▶ Overall: The faculty of Physical Sciences is doing worse than SENS in terms of balancing the proportion of male/female staff
- ▶ In this respect: Physics even worse
- ▶ Overall: Higher unbalance is at the professor level (not surprisingly)
- ▶ Overall proportion Women/Men among staff at UI



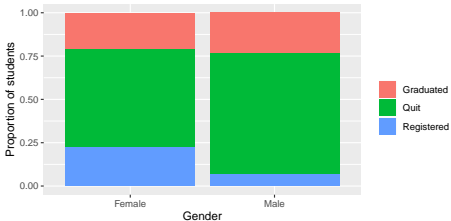
From the students' point of view: An overview

Before some comments:

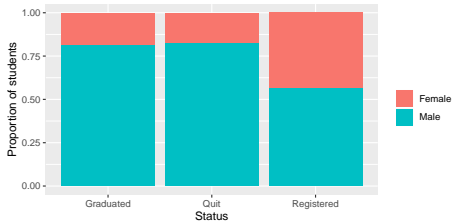
- ▶ Physics, Geophysics, and Engineering Physics
- ▶ BS students, MSc students, PhD students: proportion male/female for
 - ▶ currently registered
 - ▶ quit over the years 2009 - 2019
 - ▶ graduated over the years 2009 - 2019
- ▶ Exceptions of the line "Engineering Physics": years 2014-2019 and only BS
- ▶ Warning for BS students: changing from one line of study to another one
- ▶ System of education

Proportion female/male for undergraduate students

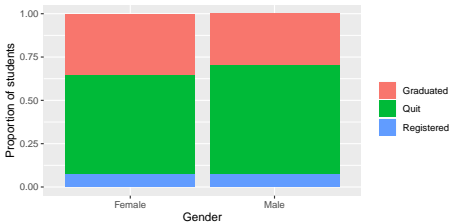
Physics



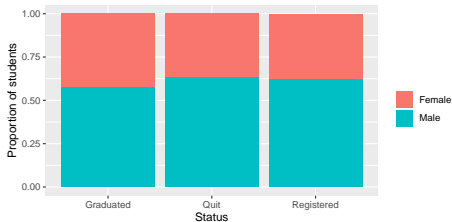
Physics



Geophysics

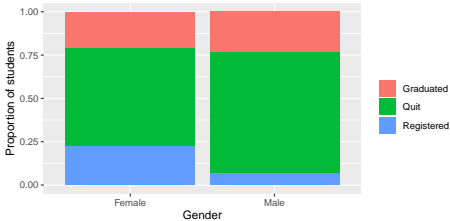


Geophysics

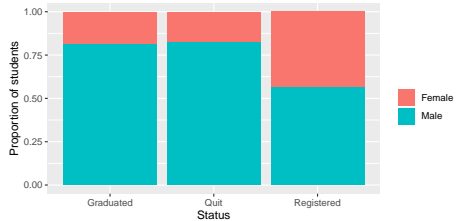


Proportion female/male for undergraduate students

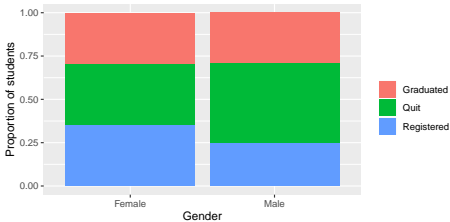
Physics



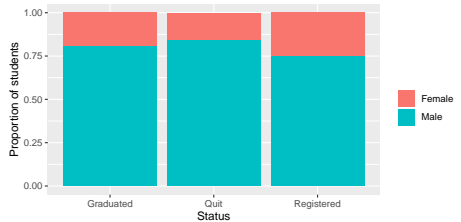
Physics



Engineering Physics

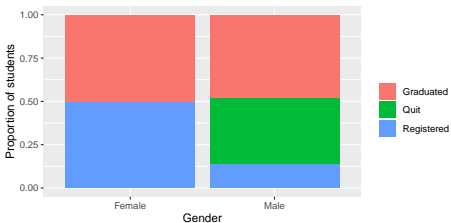


Engineering Physics

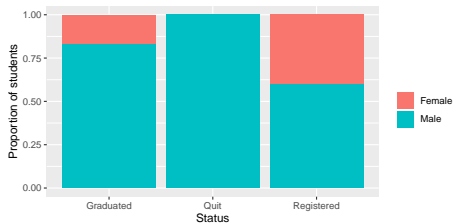


Proportion female/male for MSc students

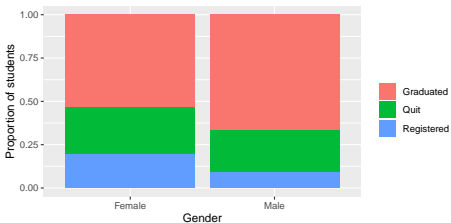
Physics



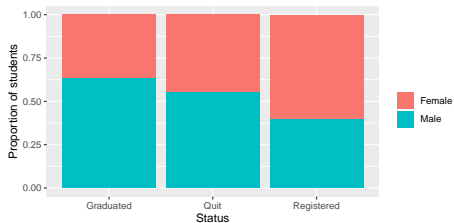
Physics



Geophysics

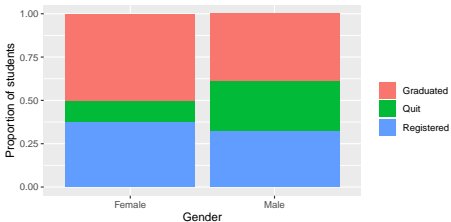


Geophysics

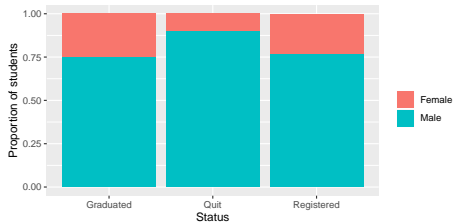


Proportion female/male for PhD students

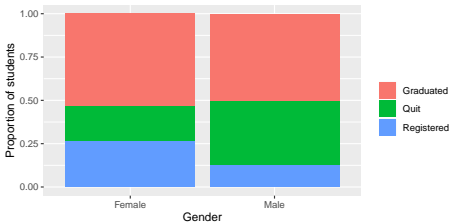
Physics



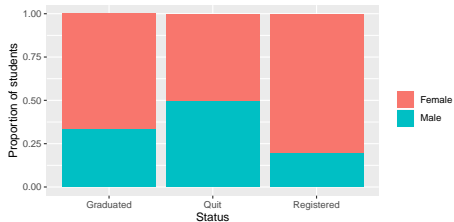
Physics



Geophysics



Geophysics



What do we learn from these graphs?

- ▶ At BS level: registered students seem to be more female/male balanced among all the three lines of studies with the exception of Eng Phys
- ▶ At BS level: over the years graduated students show unbalance between female/male with the exception of GeoPhys
- ▶ At BS level: Eng Phys is the line of study capable to attract less female students
- ▶ Overall: Female students tend to not quit, stronger at MSc and PhD level
- ▶ Overall: GeoPhys is the line of study capable to attract more female students, majority at PhD level

An overview - data for 2018

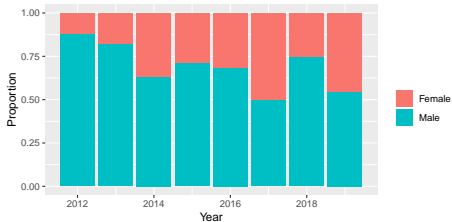
- ▶ PhD enrolled: 43% women for SENS vs 27% women for PhyS vs 60% women for UI
- ▶ PhD graduated: 30% women for SENS vs 55% women for UI
- ▶ BS graduated: 40% women for SENS vs 42% women for PhyS vs 78% women for UI
- ▶ MSc graduated: 50% women for SENS vs 27% women for PhyS vs 72% women for UI

A look at the pre- first year test

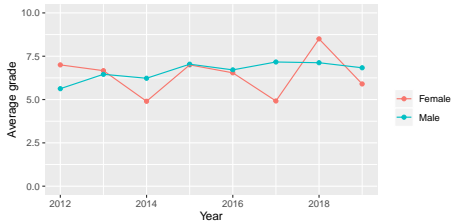
- ▶ A test on basic mathematics that students of SENS take just before to start their first year
- ▶ It is not mandatory
- ▶ It helps students to understand where they stand
- ▶ It helps teachers to prepare
- ▶ Warning: Not all the students take the test
- ▶ Data from 2012 - 2019 and for students enrolled in Mathematics and Physics

A look at the pre- first year test

- ▶ Proportion of female/male students taking the test over the years



- ▶ Average grade per female/male students



What do we learn from these graphs?

- ▶ It confirms the tendency of the recent years to have a more balanced proportion between male/female students
- ▶ More visible fluctuations in the average grade of female students: is it because of the high school of origin?

Equal Right Policy of University of Iceland

- ▶ Among the goals of the University of Iceland
- ▶ Web page: [Equality web page](#)
- ▶ [Equal Rights Policy](#)
- ▶ Not only a list of beautiful wishes: [Equal Right Action Plan](#)
- ▶ What is it, the role of the Equal Right committees for the Schools and the University in 2014-2017, and after 2017
- ▶ Some actions have been taken:
 - ▶ Equal right list in teaching during the pedagogical course for teaching staff/seminars
 - ▶ Policy in case of harassment: very clear on the UI homepage and on intranet
 - ▶ Pointing to work/family balance: e.g. no seminars/teaching after certain hours
- ▶ some are more difficult to be enforced/implemented: courses on biases/micro-aggressions, gaps, ...
- ▶ Equal Right days

Conclusions

- ▶ We need to reach at least a critical mass to attract more women
- ▶ Positive trend in the last years among students
- ▶ mobility, balance between work/family need to be seriously discussed
- ▶ concrete actions should be taken: i.e. kindergartens
- ▶ more data should be collected, perhaps within Norndip: researchers, grant distributions, ...
- ▶ can we have a Nordic version of Athena Swan project?

... There is a lot of work to be done!

Thanks



An overview of the system of education

System of education

- ▶ Students choose a line of study at high school when they are around 16 years old
- ▶ High school: Line in Natural Sciences and Physics line, very few schools have a Physics line now
- ▶ Students can graduate from high school after 3 years now
- ▶ Teachers in high school: mostly men - Education: very few of them have a degree in Mathematics and Physics - One of our main goals is to change this!

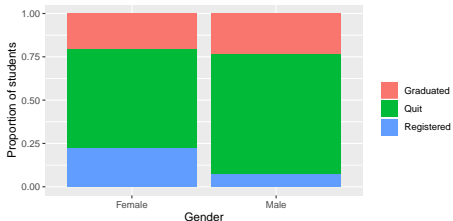
An overview - data for 2018

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Physics - BS

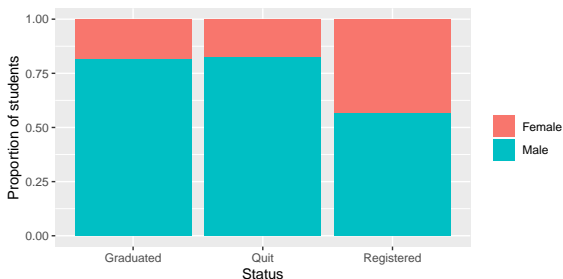
	Graduated	Quit	Registered
Female	12	33	13
Male	53	158	17

	Graduated	Quit	Registered
Female	0.21	0.57	0.22
Male	0.23	0.69	0.07



Physics - BS

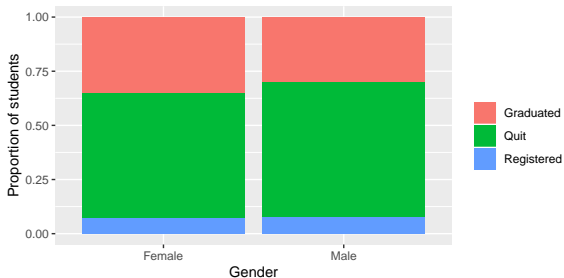
	Graduated	Quit	Registered
Female	0.18	0.17	0.43
Male	0.82	0.83	0.57



Geophysics - BS

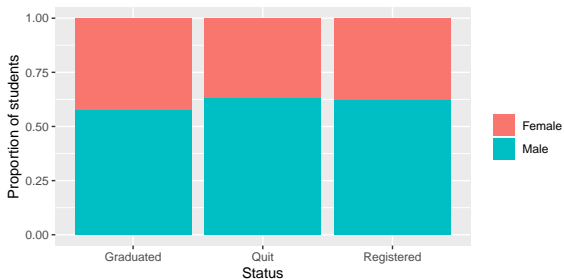
	Graduated	Quit	Registered
Female	14	23	3
Male	19	40	5

	Graduated	Quit	Registered
Female	0.35	0.57	0.08
Male	0.30	0.62	0.08



Geophysics - BS

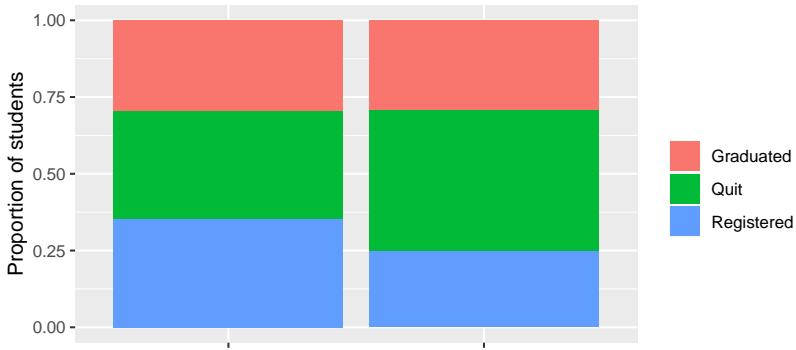
	Graduated	Quit	Registered
Female	0.42	0.37	0.38
Male	0.58	0.63	0.62



Engineering Physics - BS

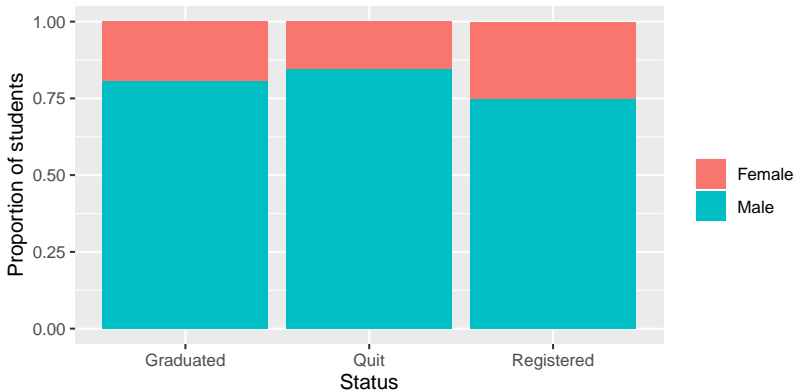
	Graduated	Quit	Registered
Female	5	6	6
Male	21	33	18

	Graduated	Quit	Registered
Female	0.29	0.35	0.35
Male	0.29	0.46	0.25



Geophysics - BS

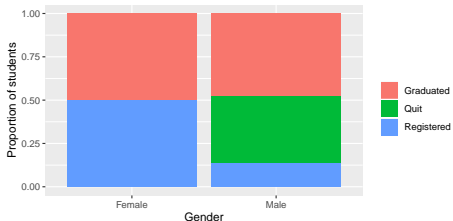
	Graduated	Quit	Registered
Female	0.19	0.15	0.25
Male	0.81	0.85	0.75



Physics - MS

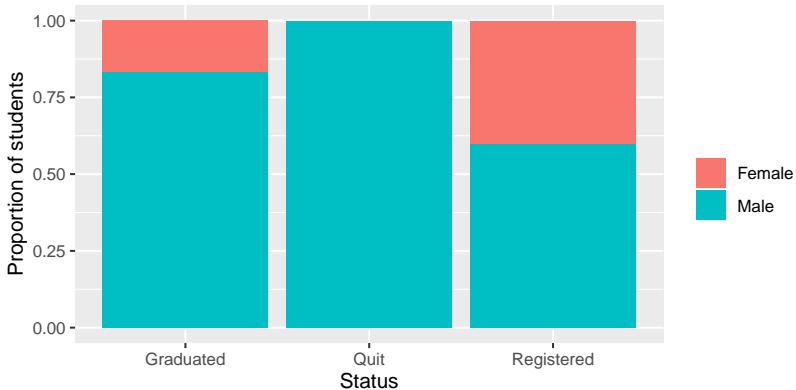
	Graduated	Quit	Registered
Female	2	0	2
Male	10	8	3

	Graduated	Quit	Registered
Female	0.50	0.00	0.50
Male	0.48	0.38	0.14



Physics - MS

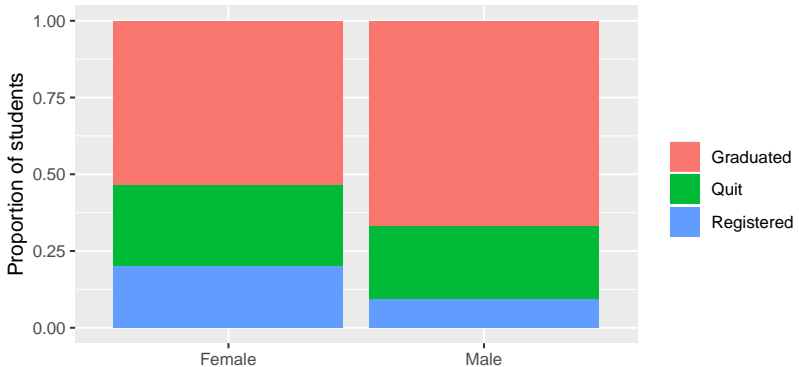
	Graduated	Quit	Registered
Female	0.17	0	0.4
Male	0.83	1	0.6



Geophysics - MS

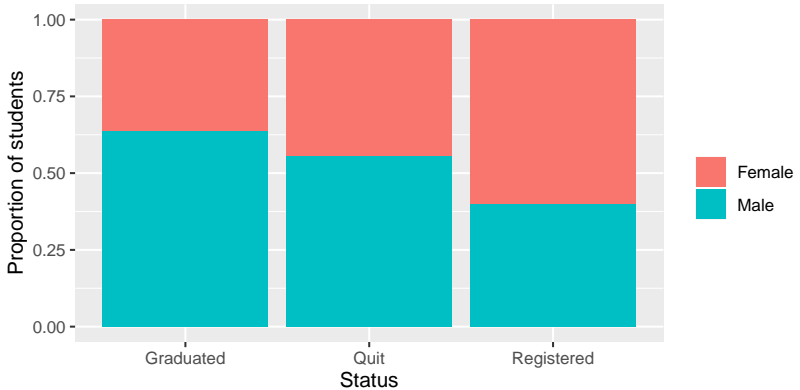
	Graduated	Quit	Registered
Female	8	4	3
Male	14	5	2

	Graduated	Quit	Registered
Female	0.53	0.27	0.2
Male	0.67	0.24	0.1



Geophysics - MS

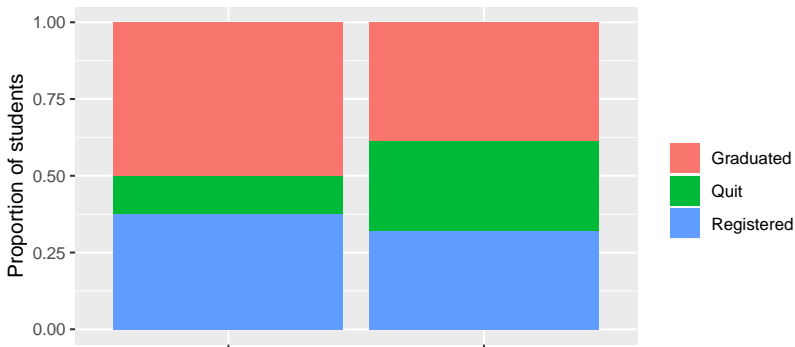
	Graduated	Quit	Registered
Female	0.36	0.44	0.6
Male	0.64	0.56	0.4



Physics - PhD

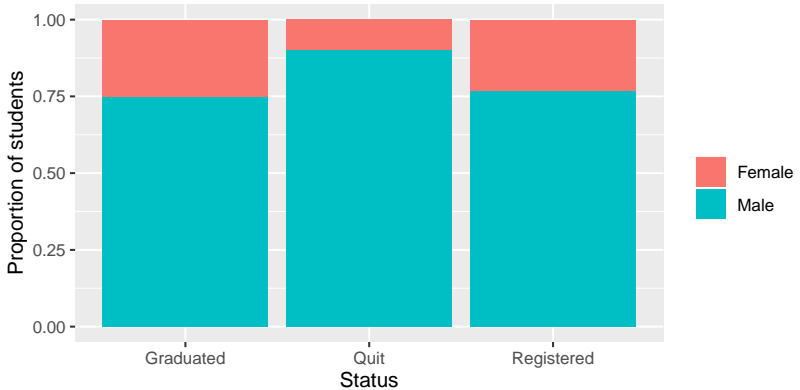
	Graduated	Quit	Registered
Female	4	1	3
Male	12	9	10

	Graduated	Quit	Registered
Female	0.50	0.12	0.38
Male	0.39	0.29	0.32



Physics - PhD

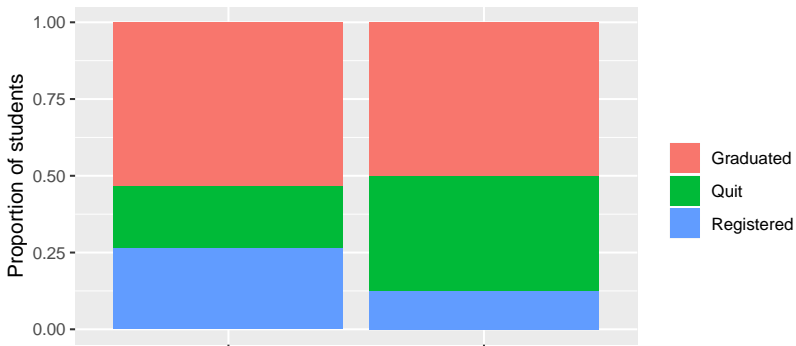
	Graduated	Quit	Registered
Female	0.25	0.1	0.23
Male	0.75	0.9	0.77



Geophysics - PhD

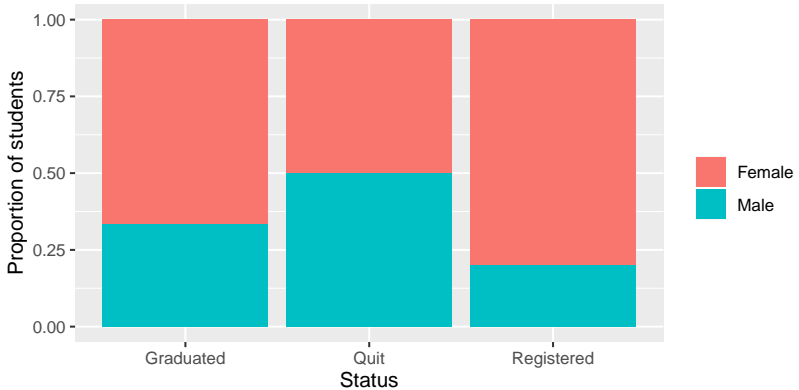
	Graduated	Quit	Registered
Female	8	3	4
Male	4	3	1

	Graduated	Quit	Registered
Female	0.53	0.20	0.27
Male	0.50	0.38	0.12



GeoPhysics -PhD

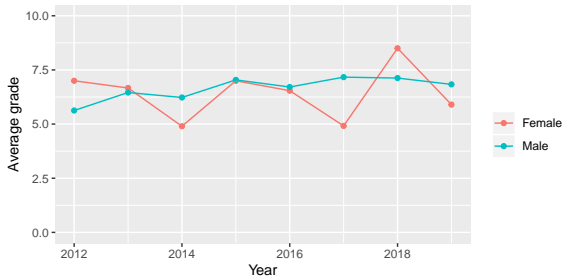
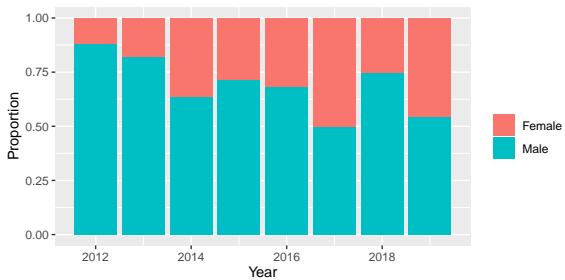
	Graduated	Quit	Registered
Female	0.67	0.5	0.8
Male	0.33	0.5	0.2



The status exam in math - physics students

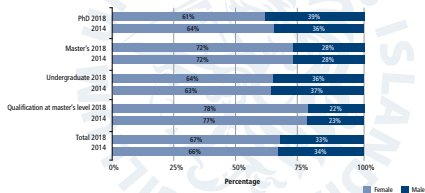
Var1	Freq
2012	17
2013	17
2014	11
2015	7
2016	19
2017	12
2018	16
2019	11

	Female	Male
2012	0.12	0.88
2013	0.18	0.82
2014	0.36	0.64
2015	0.29	0.71
2016	0.32	0.68
2017	0.50	0.50
2018	0.25	0.75
2019	0.45	0.55

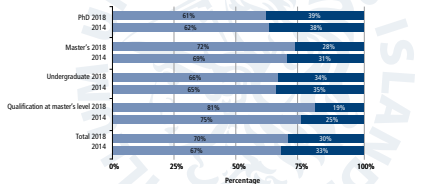


An overview of the University of Iceland

- ▶ Total number of students enrolled last year: ca 12500 at UI vs 1510 at SENS
- ▶ Overall proportion Women/Men among students at UI



- ▶ Overall proportion Women/Men among graduated at UI



An overview of the University of Iceland II

► Overall proportion Women/Men among staff at UI

