

Promoting gender equality in physics:
barriers and opportunities
Weizmann Institute of Physics
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Women in Physics; Sweden

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Stockholm University

Outline

- Some words about Sweden
- Statistics from High schools and Universities
- The Swedish Research Council
- Past, present and future

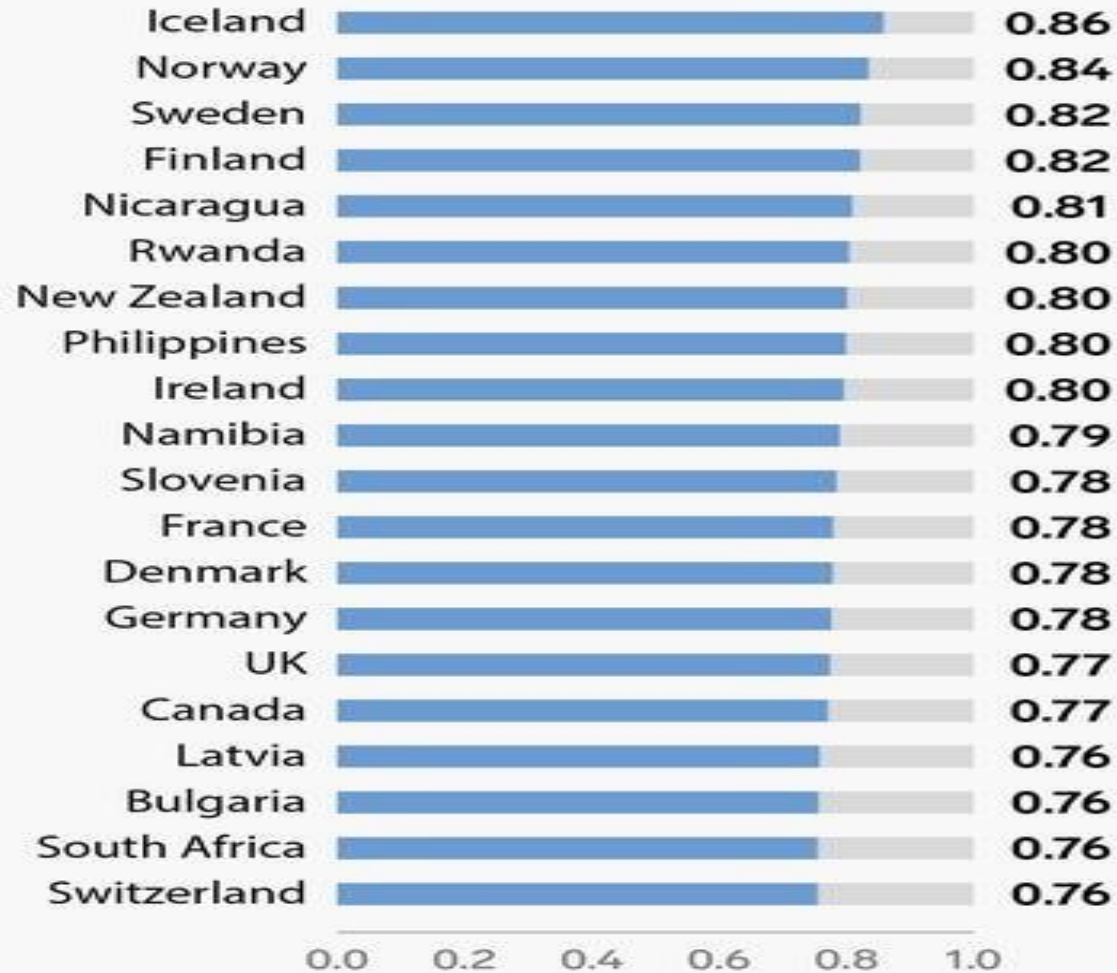


Carl Jacobson

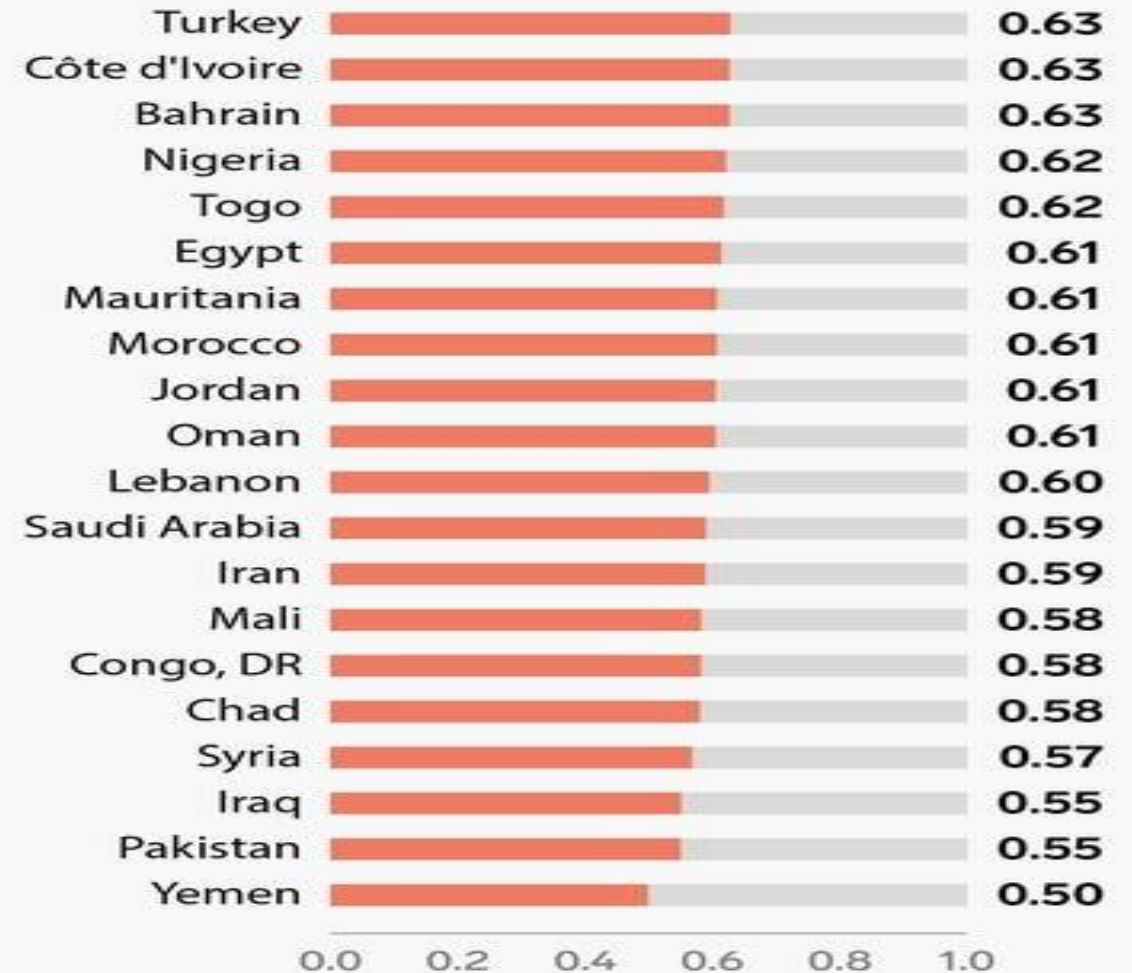
Countries with the highest and lowest gender gap

The Global Gender Gap Index examines the gap between men and women in four categories: Economic participation/opportunity, educational attainment, health/survival and political empowerment

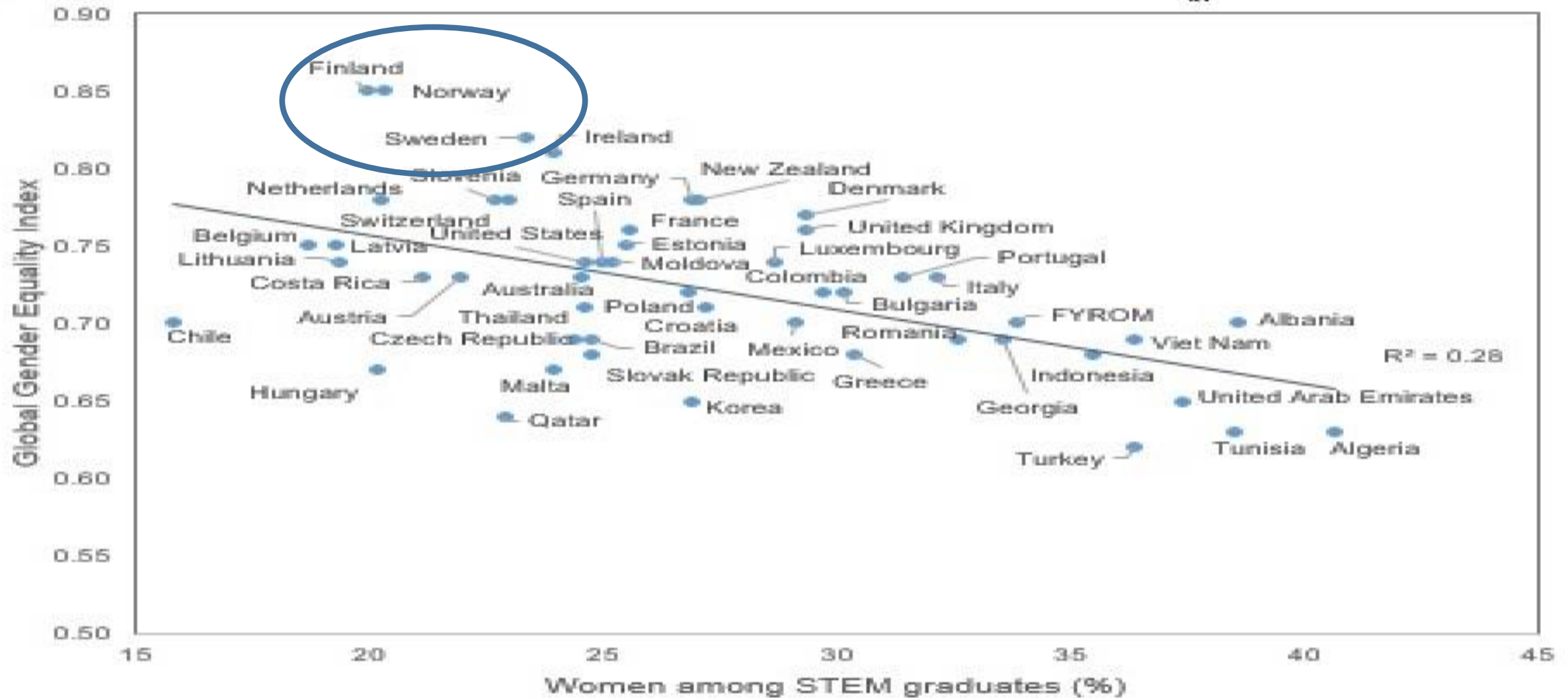
Countries with the lowest gap



Countries with the highest gap

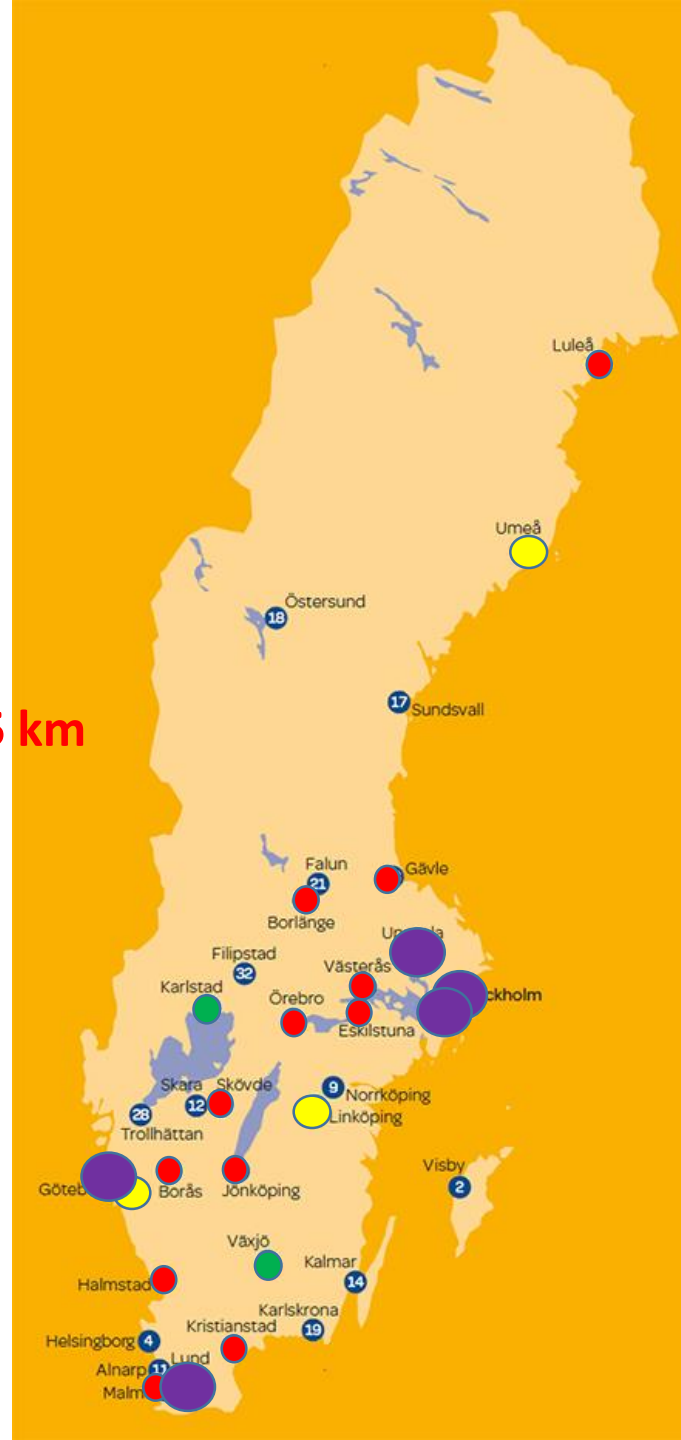


GGE Index versus Women among STEM graduates

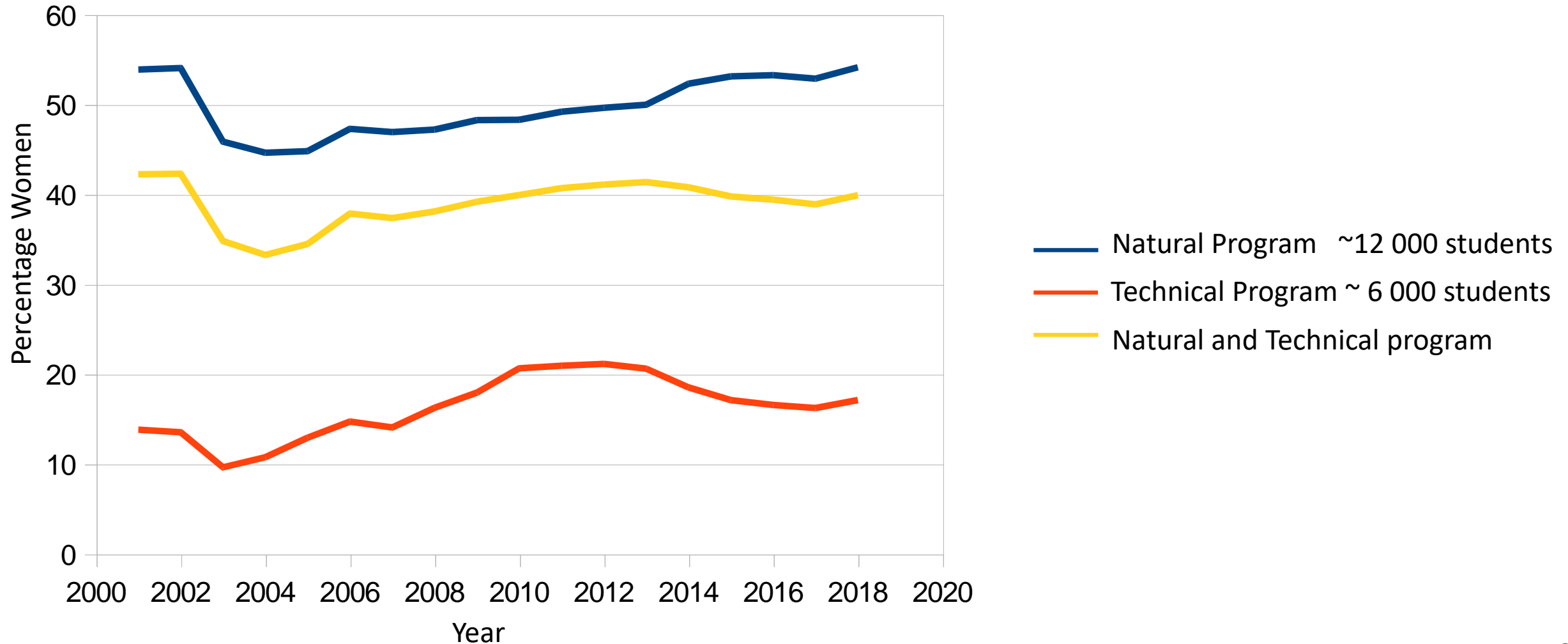


Number of employees in Physics			
			women
●	< 10	56	9%
●	~ 20	38	24%
●	40 – 70	164	14%
●			
	Uppsala University	249	21 %
	The Royal Technical University	146	16 %
	Stockholm University	197	18 %
	Chalmers Technical University	180	19 %
	Lund University	251	21%

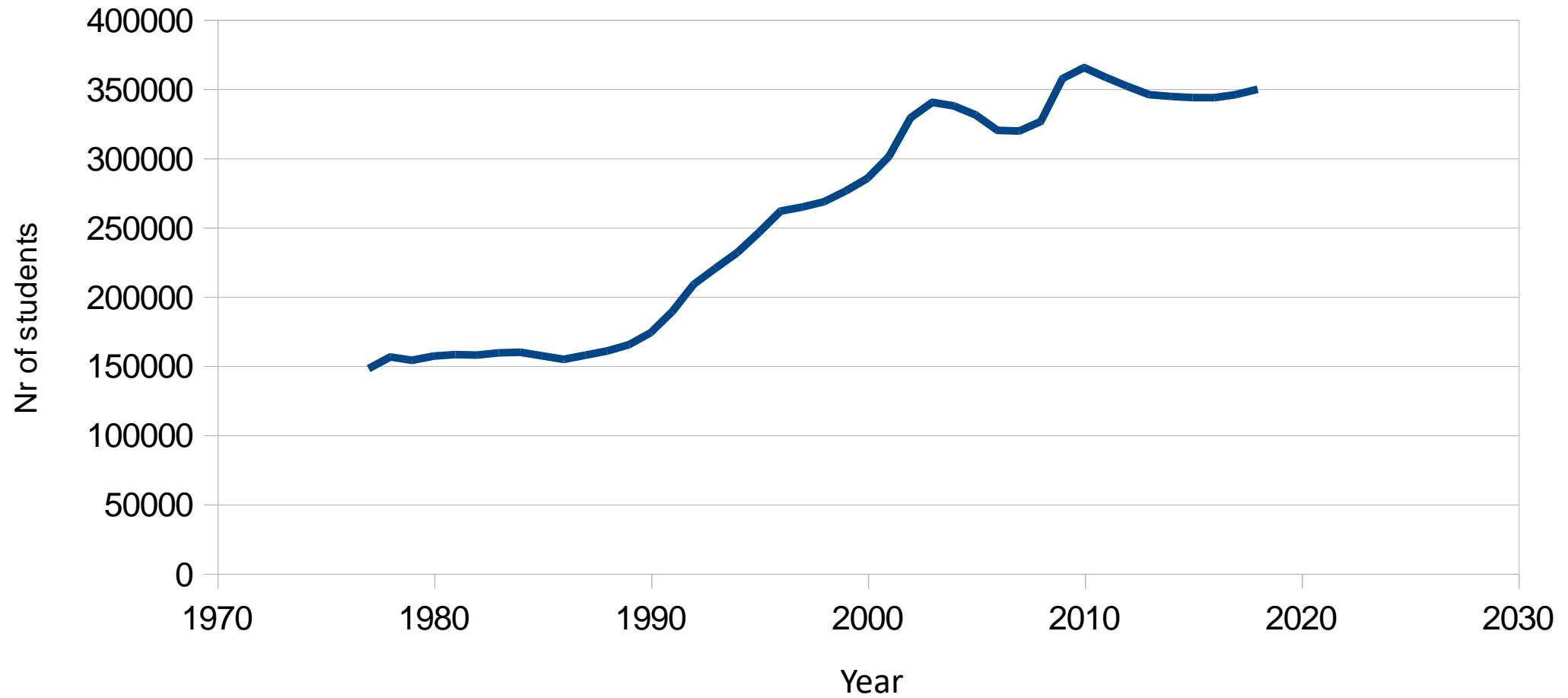
1575 km



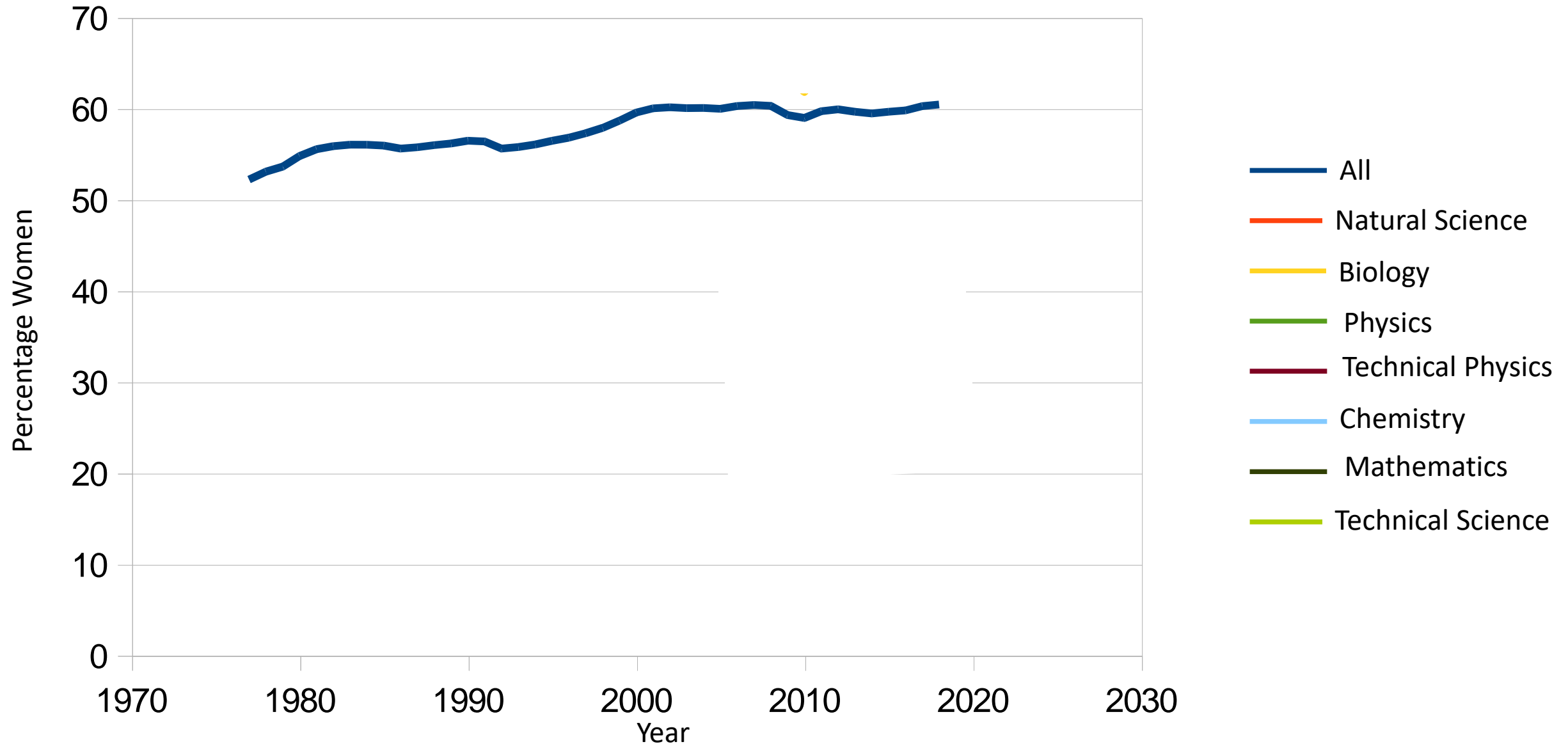
High School Students



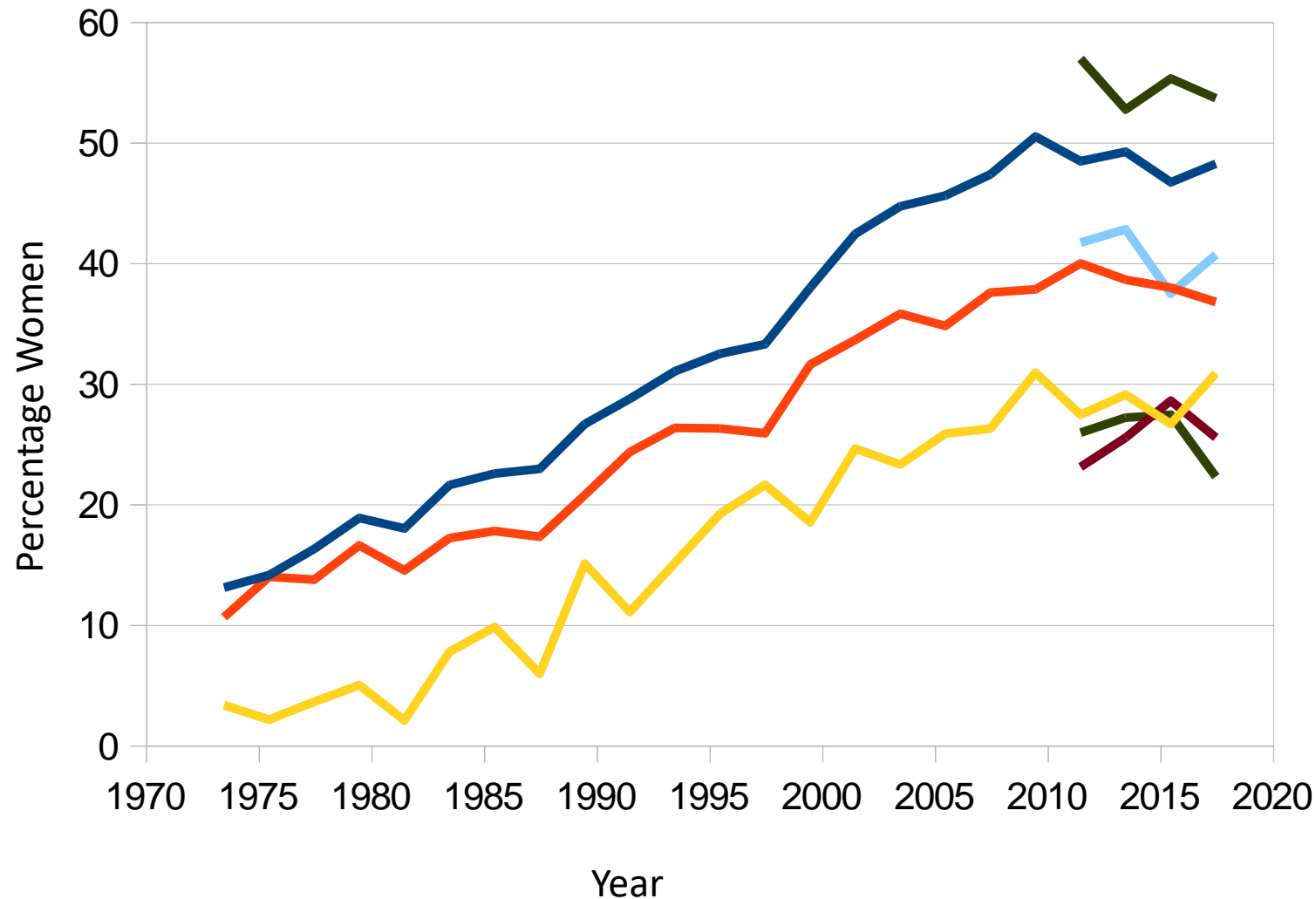
Number of University Students



Percentage Women among Students

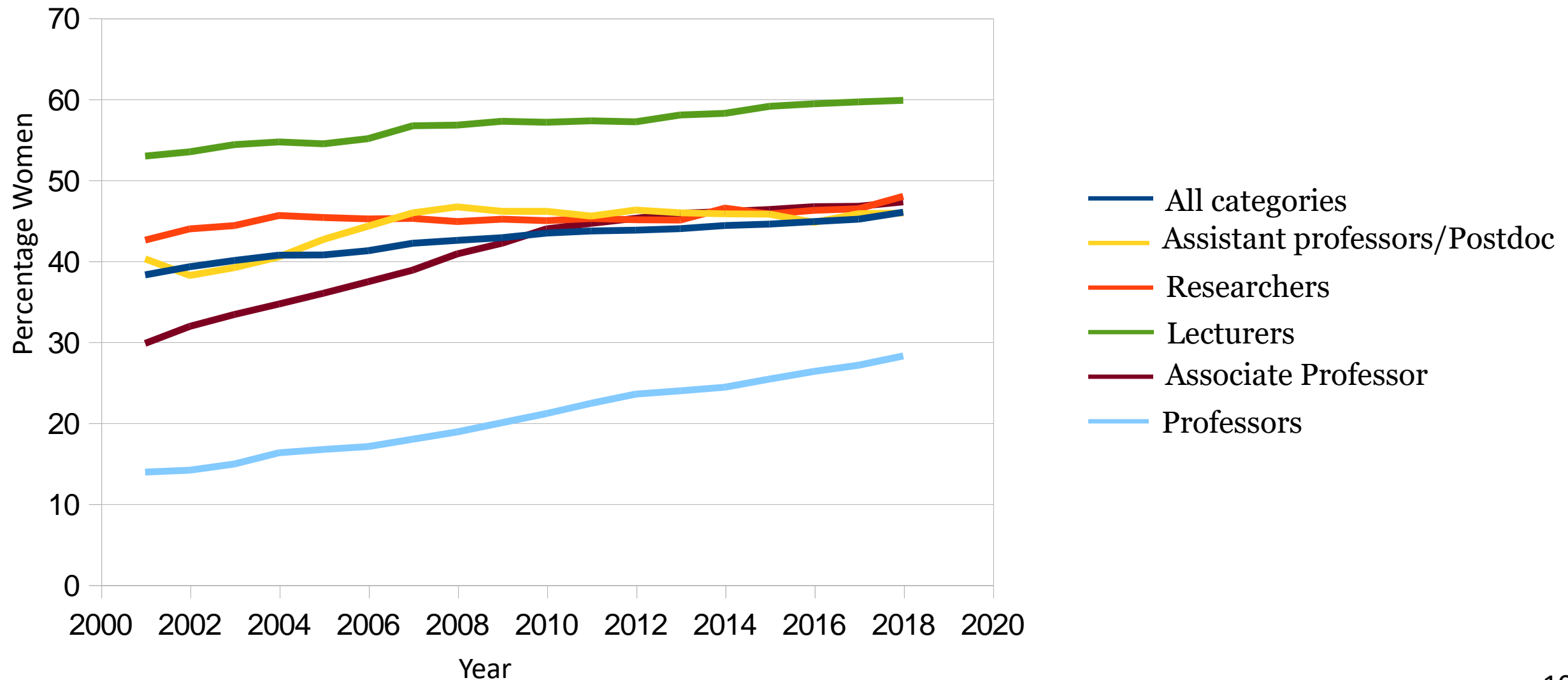


Percentage Women obtain PHD grade

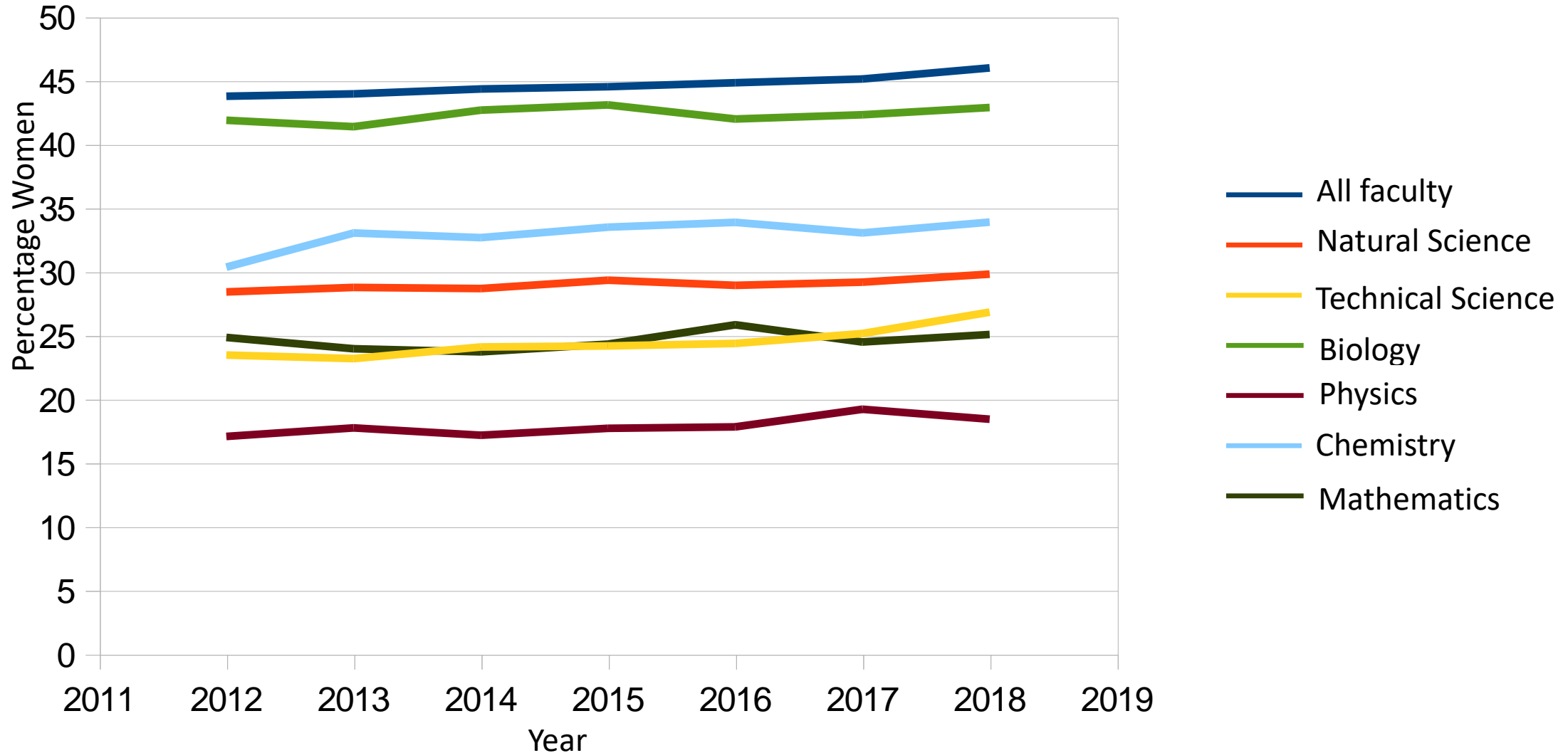


	Total number	
	1973	2018
All	~700	~2800
Natural Sciences	~200	~670
Technical Sciences	~100	~500
Biology		~140
Physics		~140
Chemistry		~ 120
Mathematics		~ 60

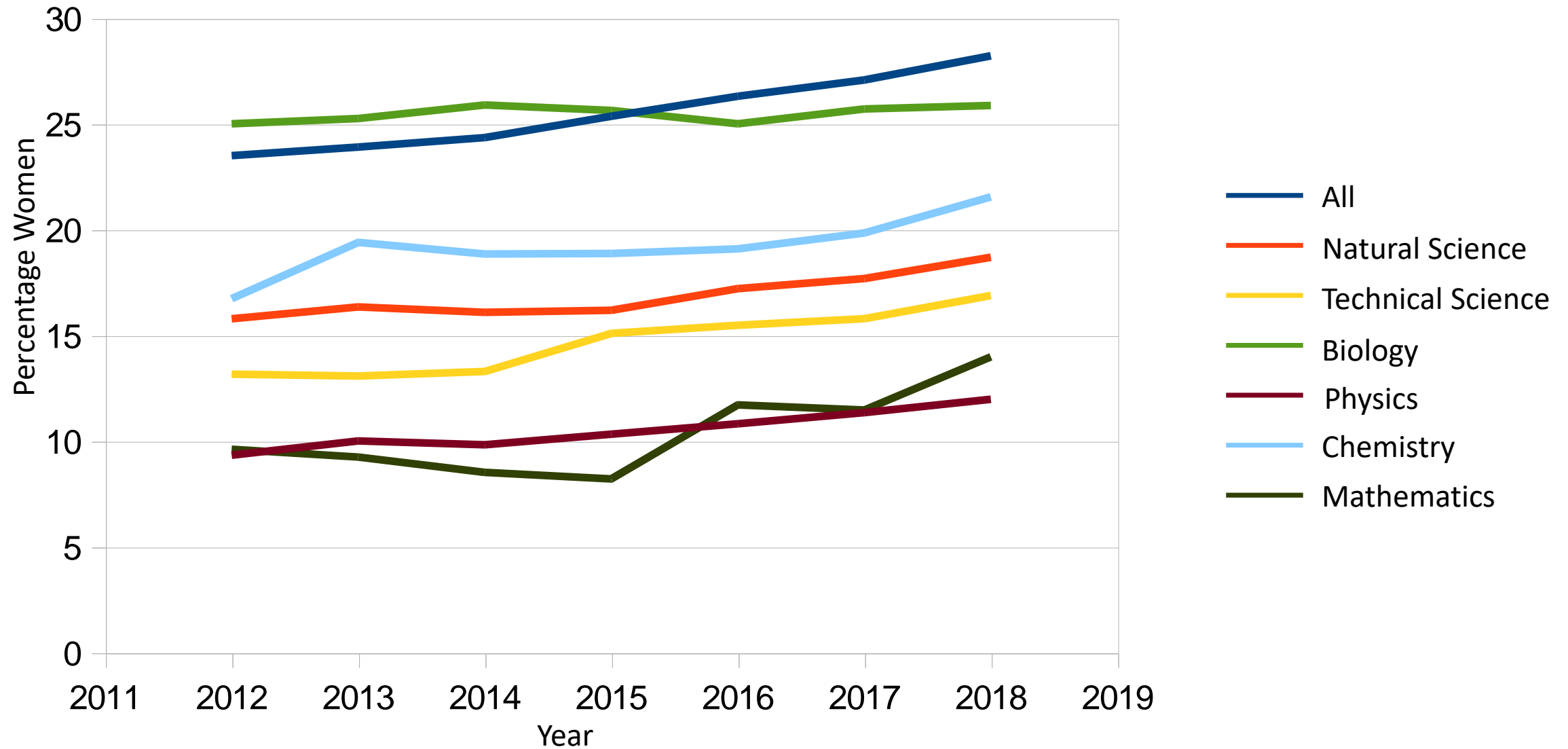
Academic Employees



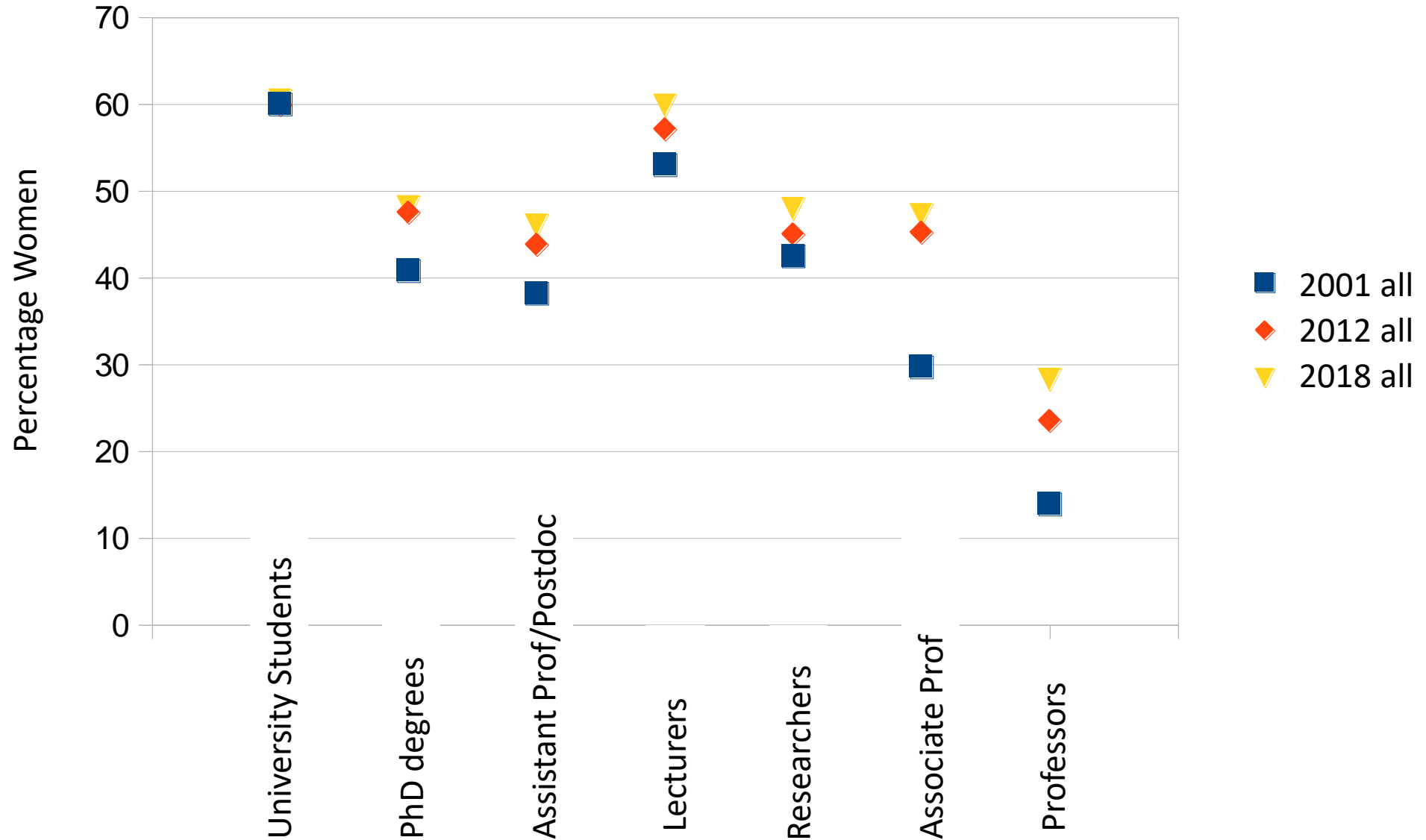
All faculty in different fields



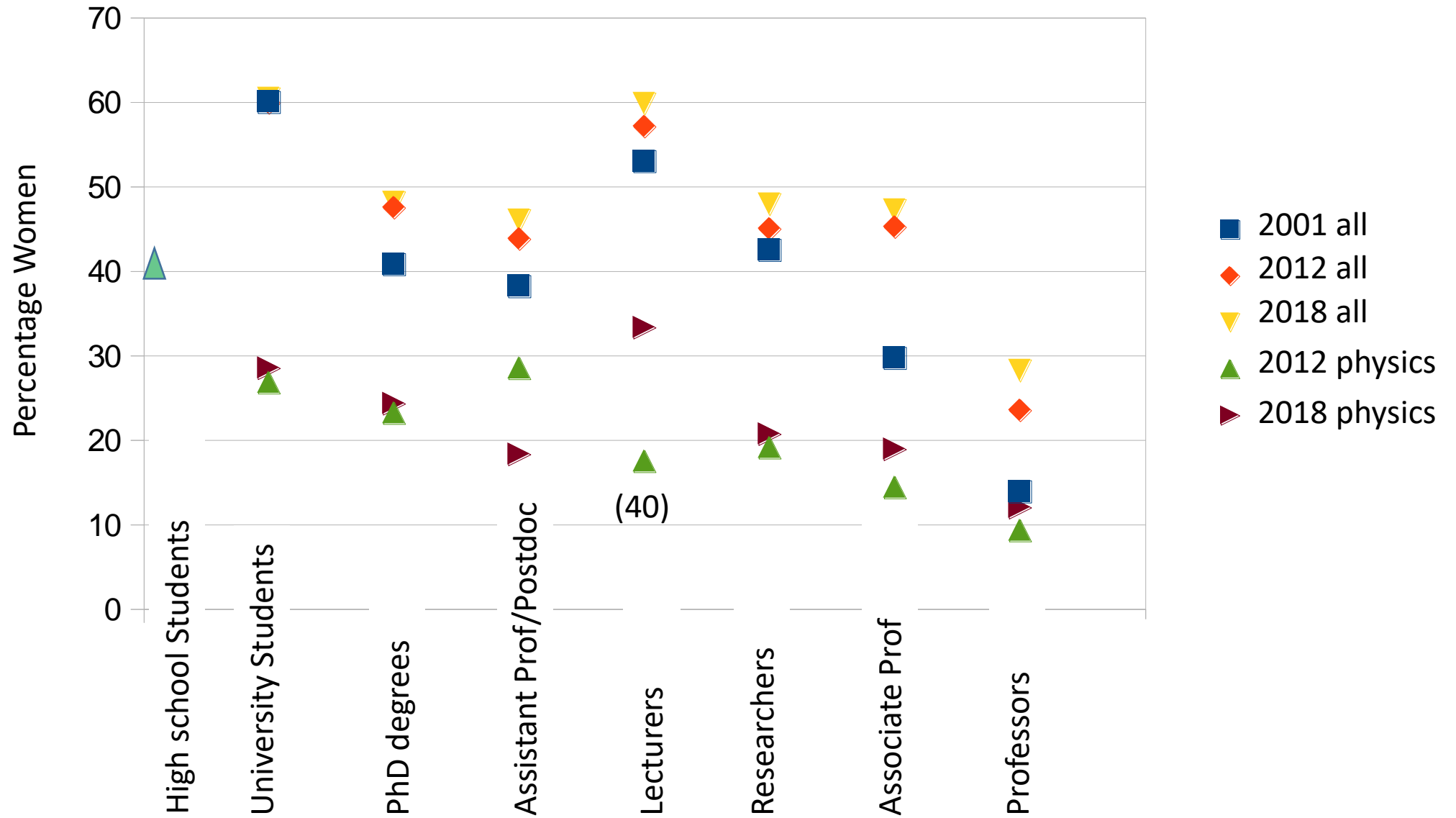
Professors



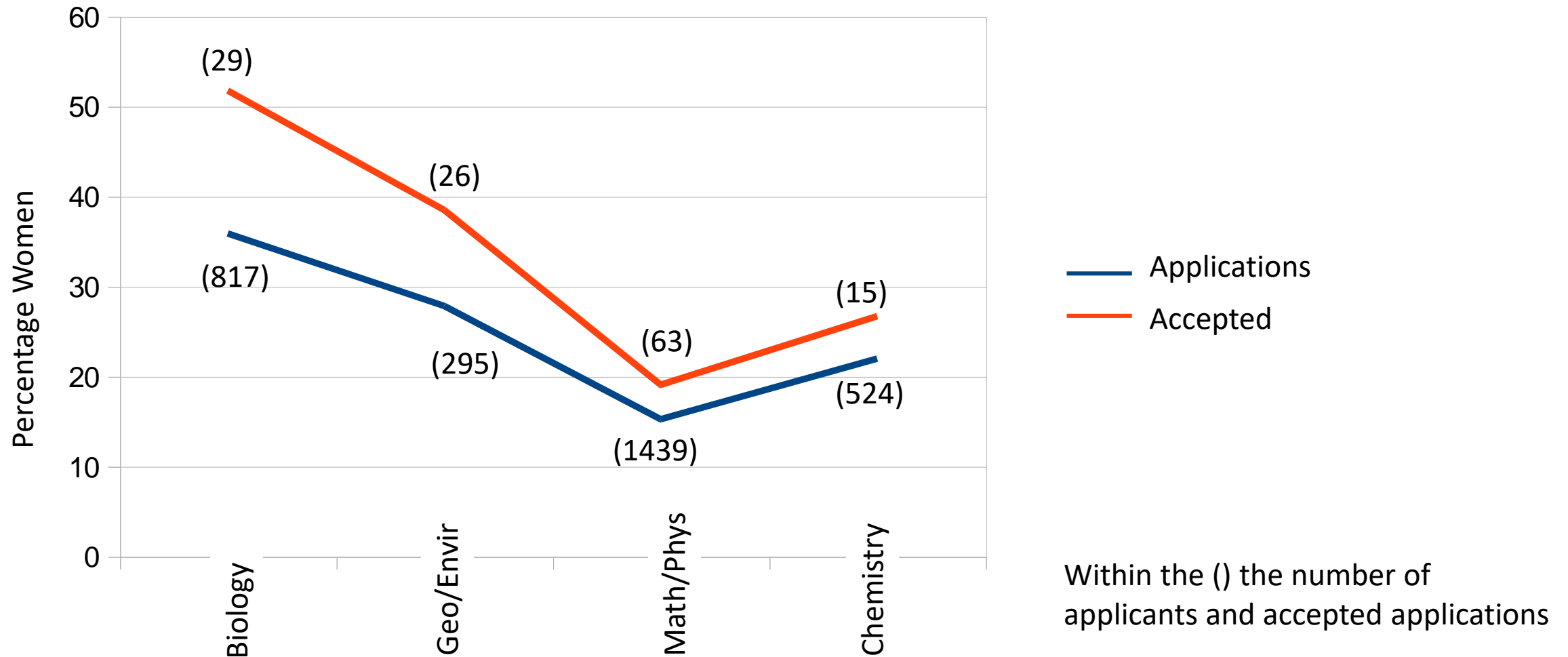
From Students to Professors



From Students to Professors



Recruitments at Stockholm University



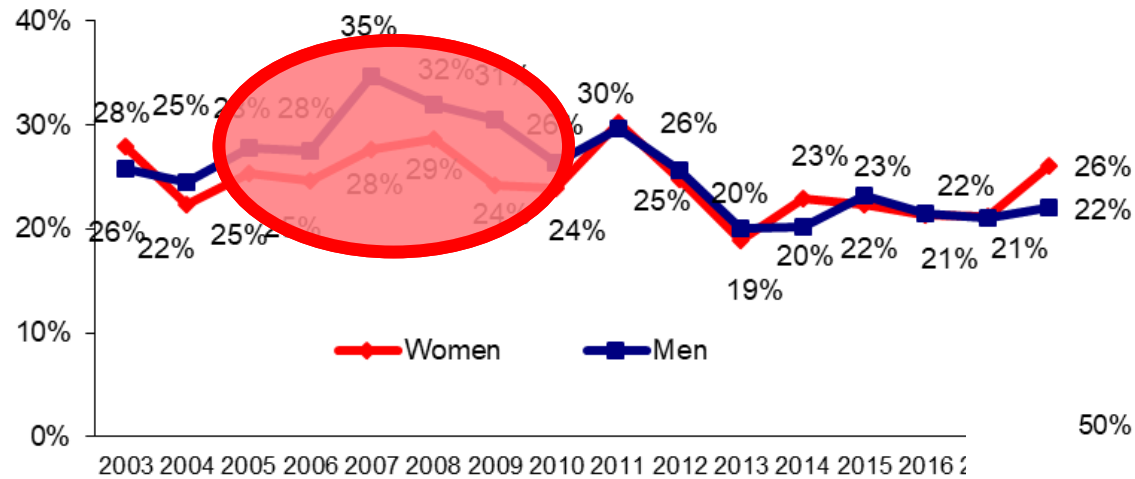
The Swedish Research Council

- Supports basic research in all disciplines with funding
- A Board, a DG, plus Scientific Councils for
 - Humanities and social sciences
 - Medicine and health
 - Natural and engineering sciences
- Receives more than 6000 applications annually
- About 90 peer review groups (900 peers)

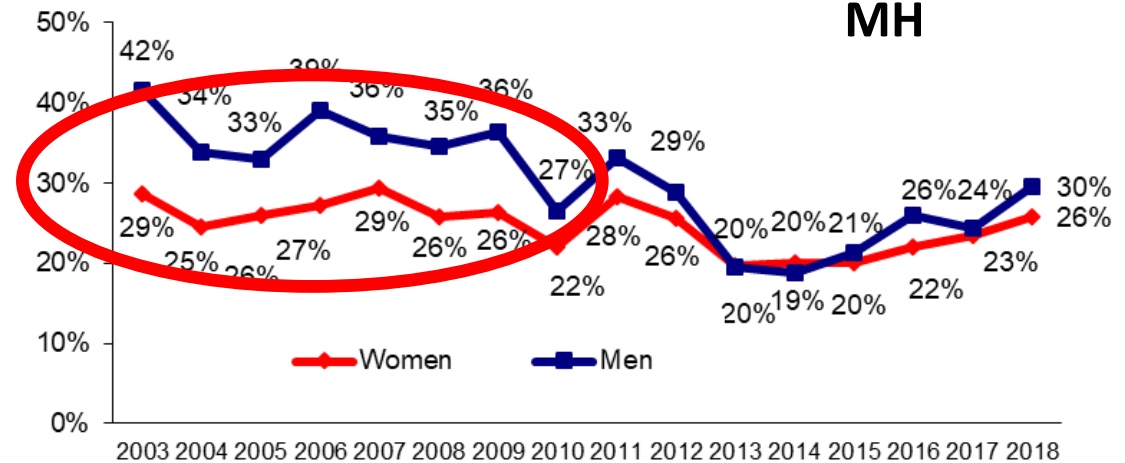
Project grants 2003-2018: success rate by gender

Natural sciences and Engineering sciences - Medicine and Health

NE



MH



SRC's gender main-streaming plan: Some examples

- Analysis of gender in call texts etc.
- Education of panel members and SRC staff
- Education of SRC's board and scientific councils
- Analysis of gender equality in SRC's outward communication
- Gender equality observations every 2-3 years

Gender equality observations in peer review panels

Some examples of findings

- Certain members, often women, played down their competence
- Some panelists, often women, changed their preliminary grades
- In one panel the men spontaneously took the floor, and the women raised their hands. In this panel, men spoke twice as much as women.
- In another panel, men dominated by interrupting and belittling comments made by women
- Women applicants independence were more often questioned

Different tries to change things

My experiences

- Educated teachers for small children
- Invited High School girls to Physics department
- Responsible for a special physics program with the aim to attract women to physics
- Responsible for a course in Physics and Gender
- Devolved Equal Opportunity Plans (see backup slides)
- Chair of NorNDiP Nordic Network for Diversity in Physics

NORNDiP Conferences



**What can we learn from
Athena SWAN and JUNO?**



Implicit Bias or Unconscious Bias

What is needed

Support from the top!

Funding!

Education of Everybody!

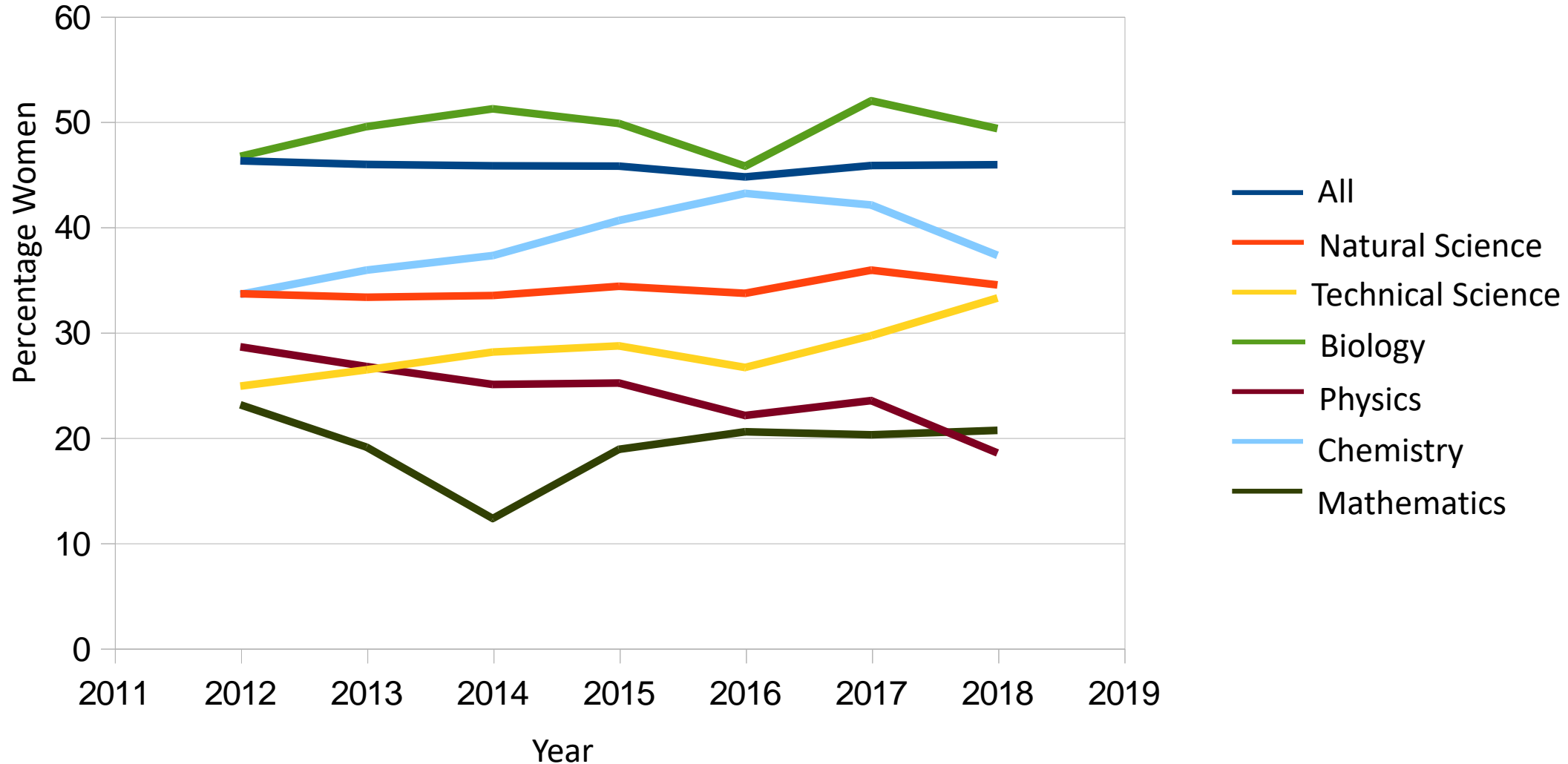
Thank you for your attention

- Back up Slides

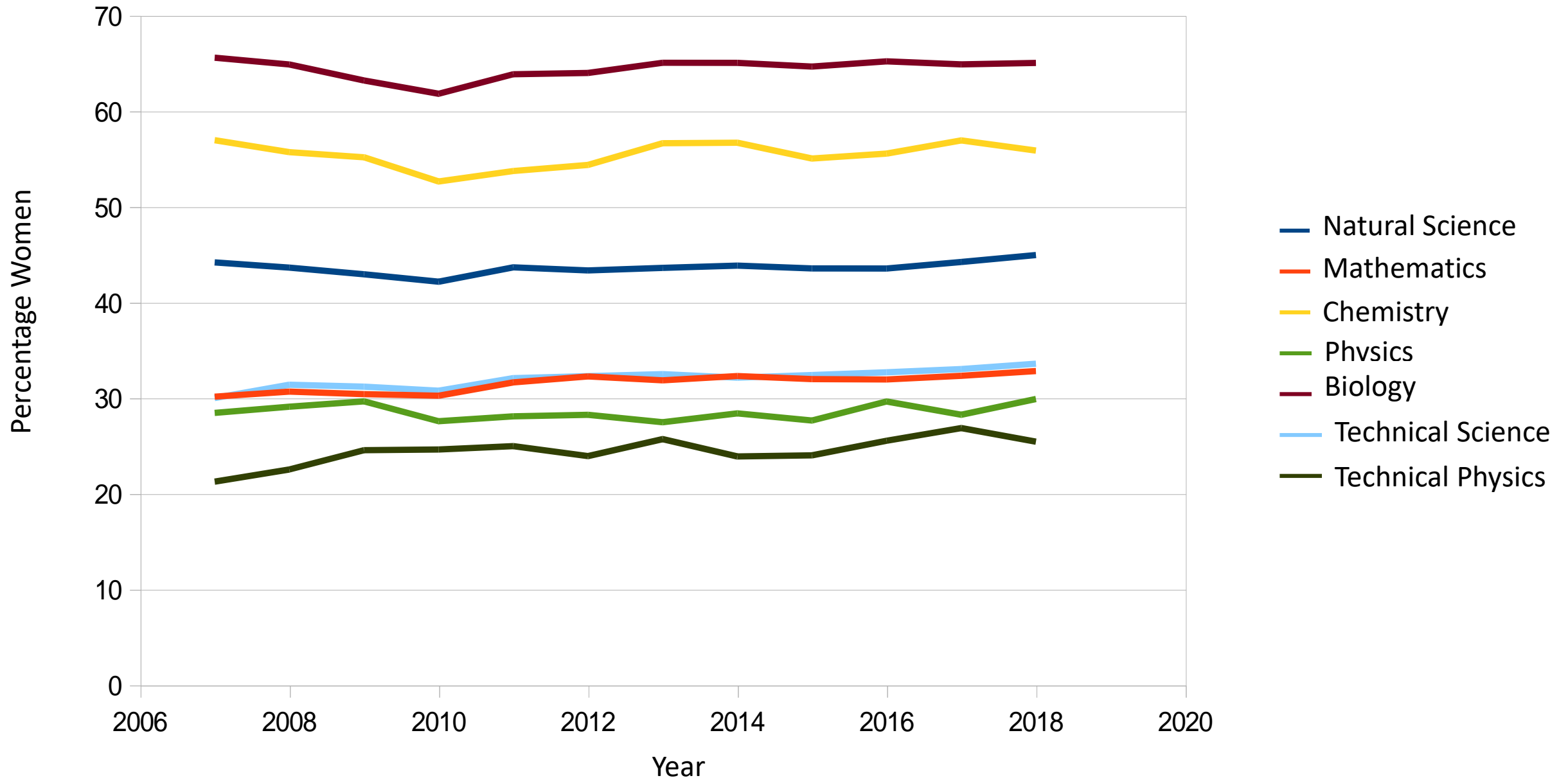
Gender equality at Swedish Universities - very brief history

- 1872: first woman student at university (Betty Pettersson, UU)
- 1883: first woman PhD (Ellen Fries, UU, history)
- 1884: Sonja Kovalevskaja professor at Stockholm University College
- 1937: first woman professor at a public University (Nanna Svartz, KI)
- 1992: first woman rector of university (Boel Flodgren, LU, Sigbrit Franke, UmU)
- 1993-2017: share of women among professors from 7% to 27%
- 2001: rule of 50% women in research council boards
- 2003-2014: share of women among rectors from 20% to 58%

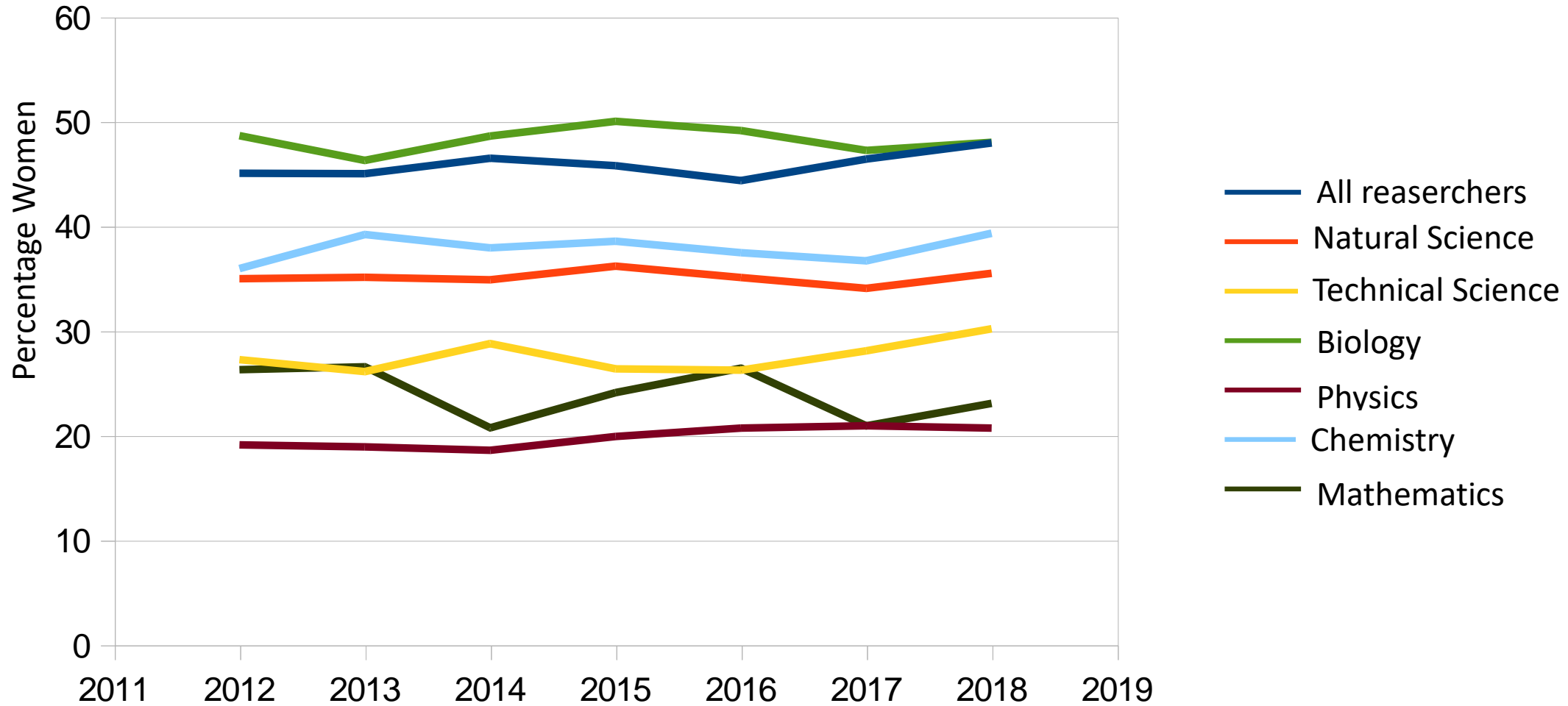
Assistant Professor and Postdocs



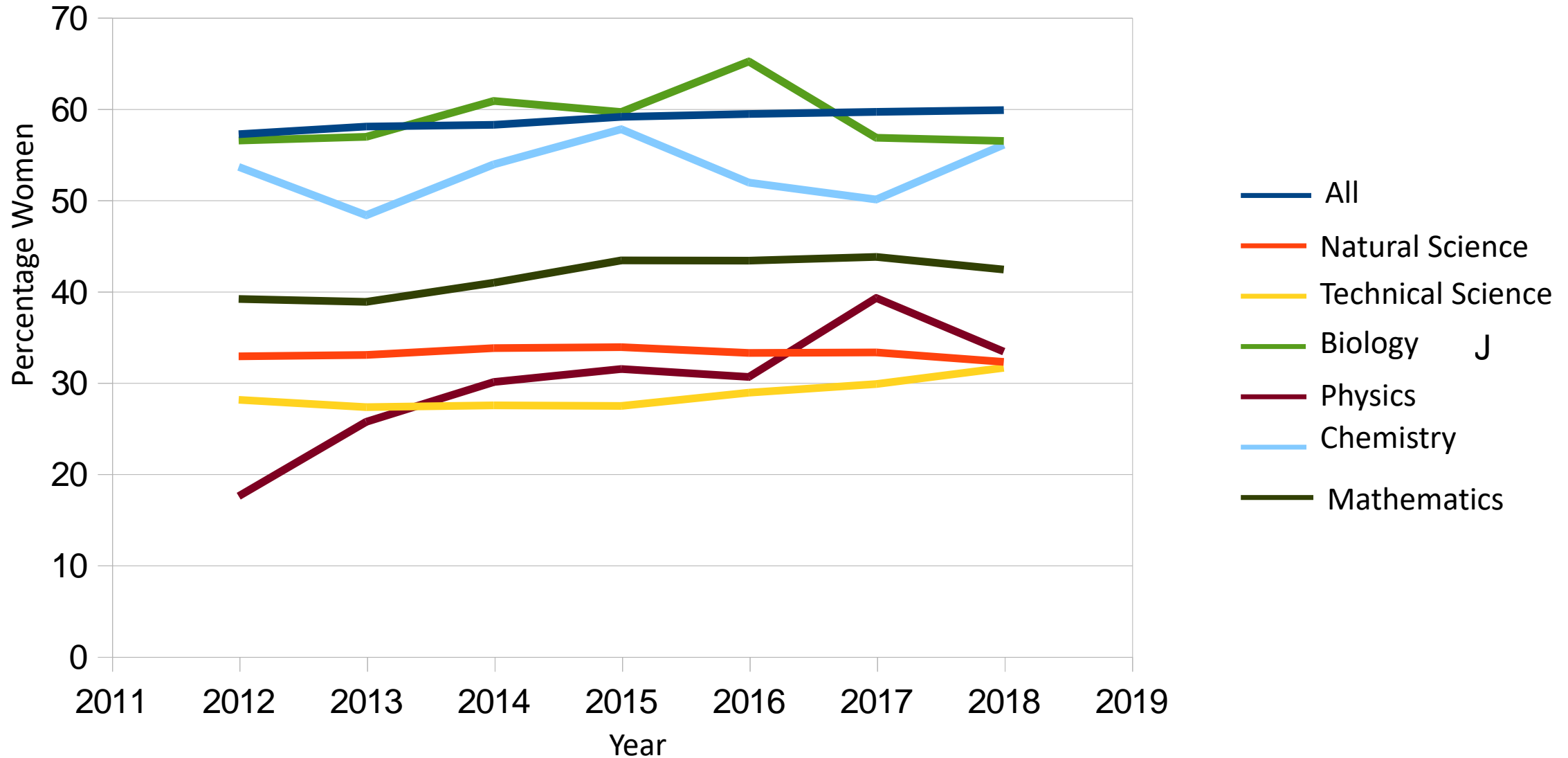
Percentage Women in STEM, Students



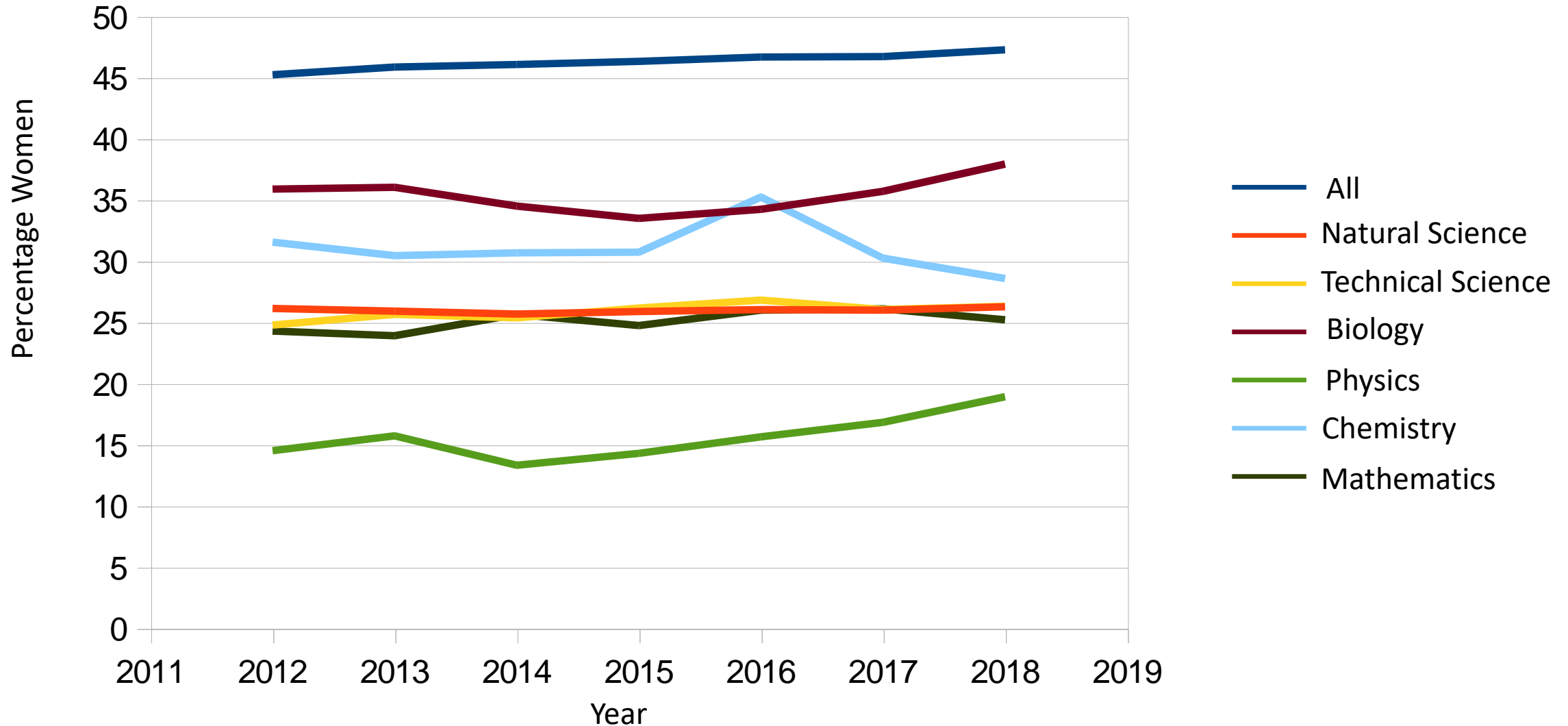
Researcher



Lecturers

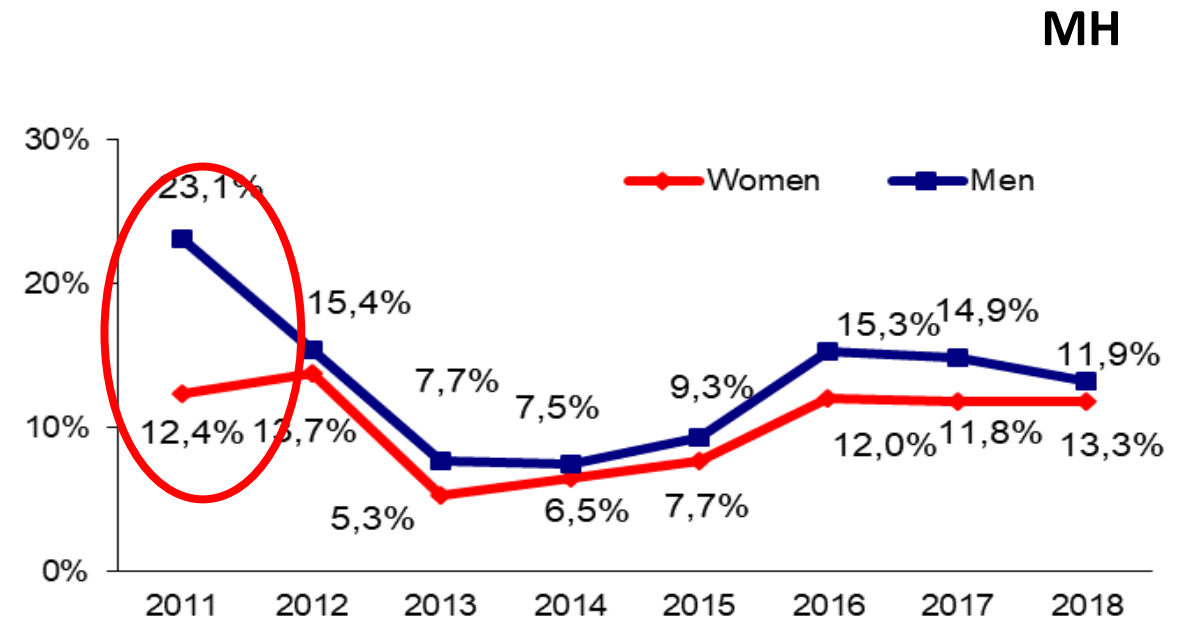
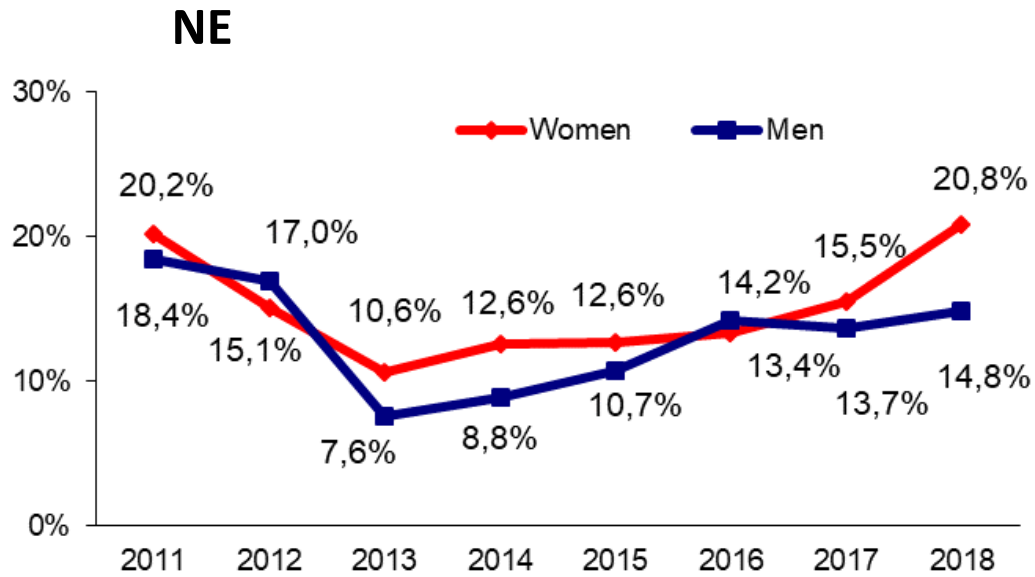


Associated Professors



Starting grants 2011-2018: success rate by gender

Natural sciences and Engineering sciences, Medicine and Health



Equal Opportunity Plan

- Give information about the policy concerning inappropriate behaviour
- Make surveys among students
- Keep statistics of salaries gapes
- Keep track of the number of women in committees
- Work for more seminars given by women
- Give one seminar per year about gender and physics
- Evaluate the literature from a gender prospective
- Work towards recruiting more women ...