Société Française de Physique

Femmes et Physique

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- ✓ Table ronde

  Avec la participation de femmes qui ont participé aux évaluations dans différents comités: comité national du CNRS, ANR, CNU…

Diverses statistiques et suggestions

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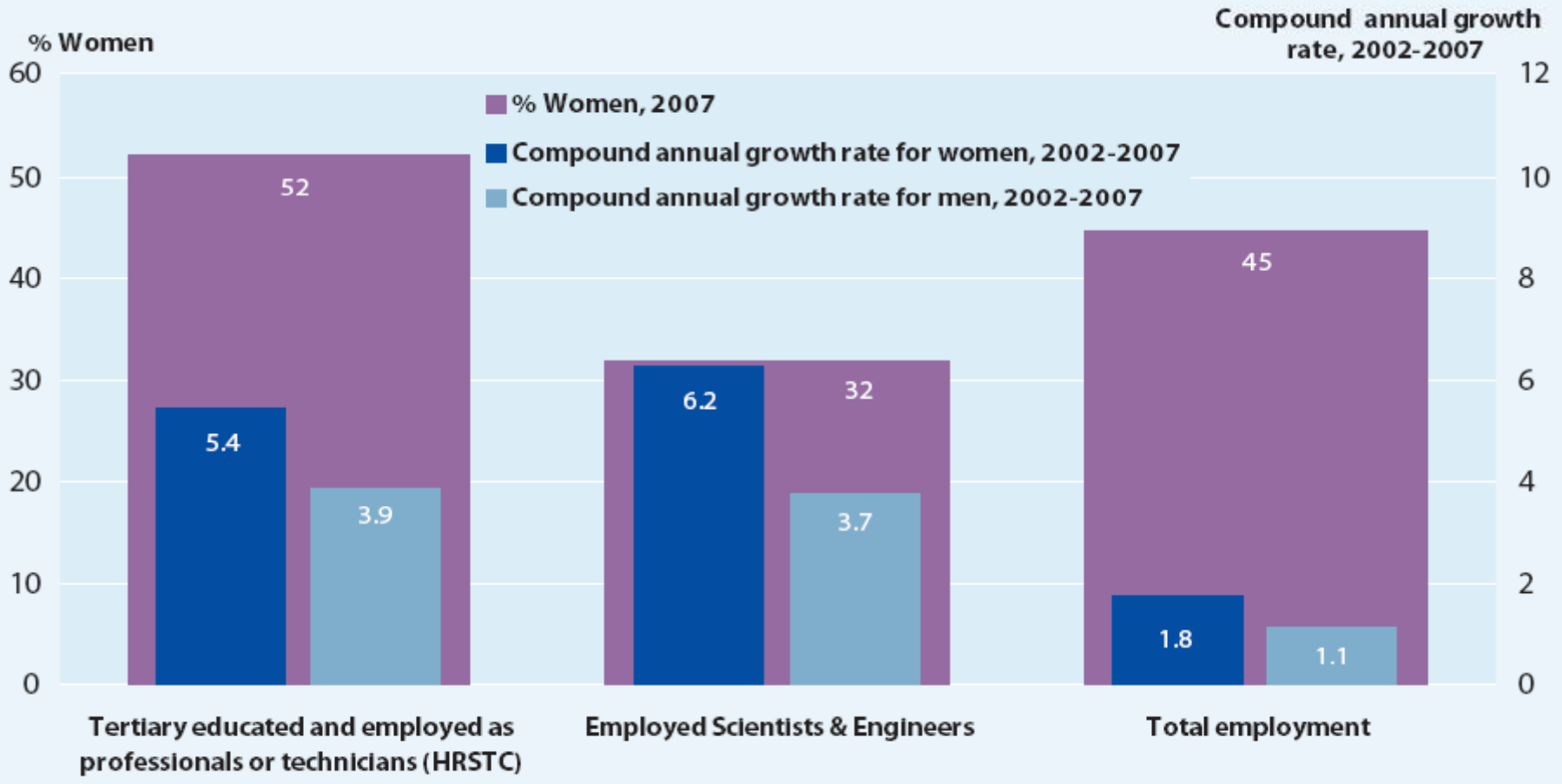
She Figures 2009

Statistics and Indicators on Gender Equality in Science

Europe, Japan, US

Numbers

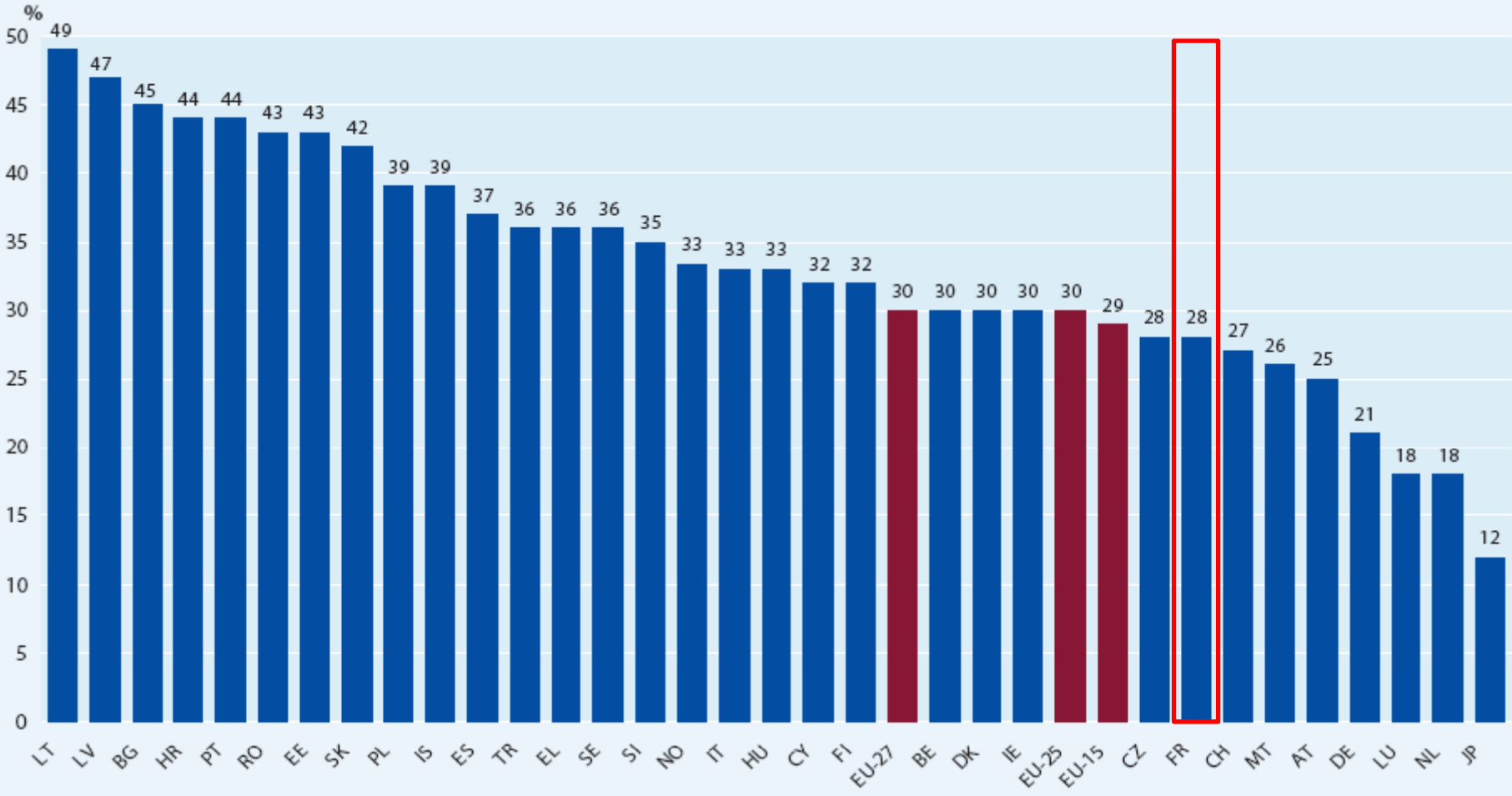
Figure 1.1: Proportion of women in the EU-27 for total employment, tertiary educated and employed (HRSTC) and scientists and engineers in 2007, compound annual growth rate for women and men, 2002-2007



Source: Labour Force Survey, HRST statistics (Eurostat)

Data estimated: EU-27 estimated by Eurostat (2002 - Employed Scientists & Engineers)

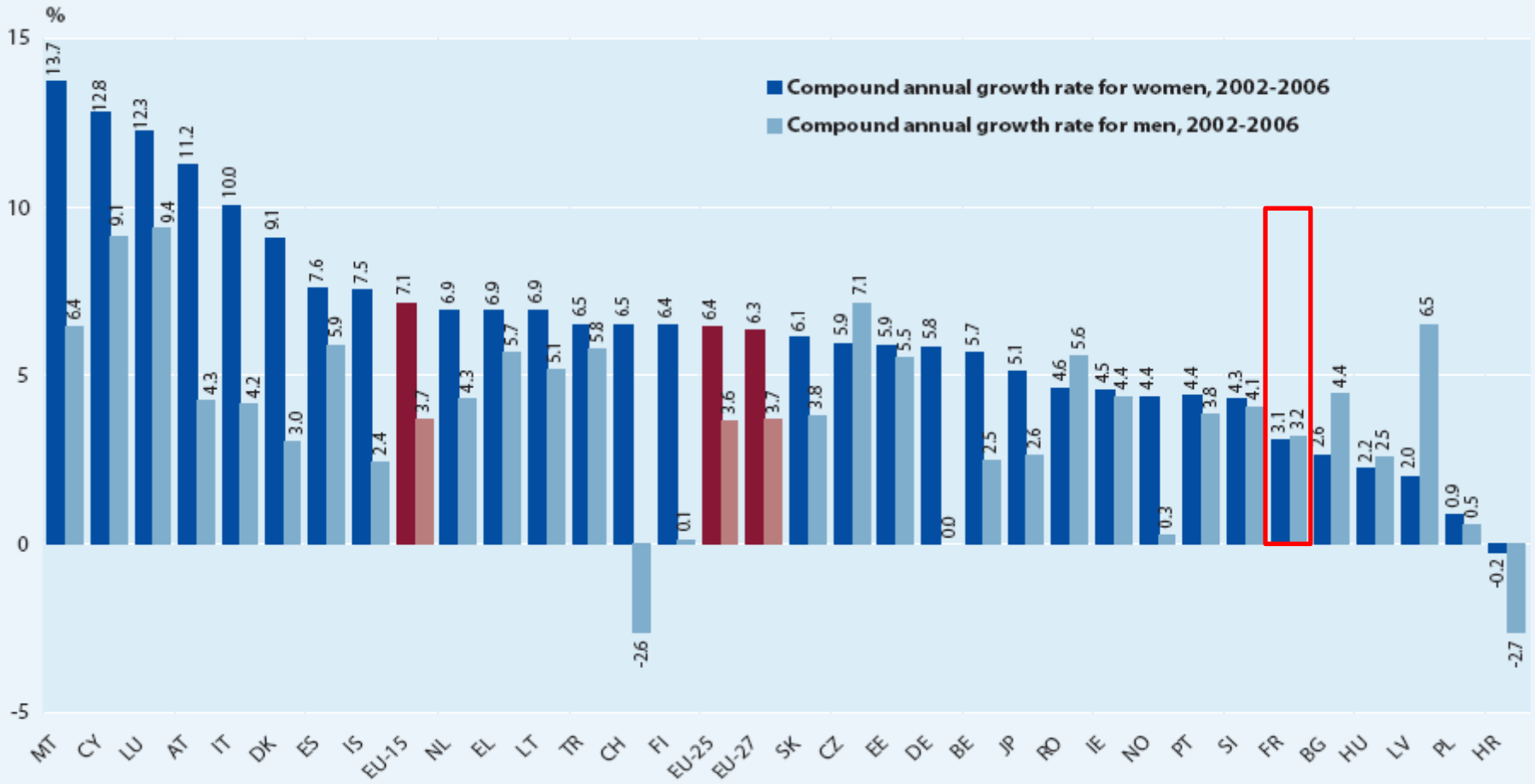
Figure 1.4: Proportion of female researchers, 2006



Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: CZ, EE, SK, NO: 2007; BE, DK, DE, IE, EL, LU, NL, PT, SE, IS, JP: 2005; CH: 2004
Data unavailable: UK, IL
Provisional data: NL
Data estimated: EU-27, EU-15 (by Eurostat), EU-25 (by DG Research), EE

Figure 1.5: Compound annual growth rate for researchers by sex, 2002-2006

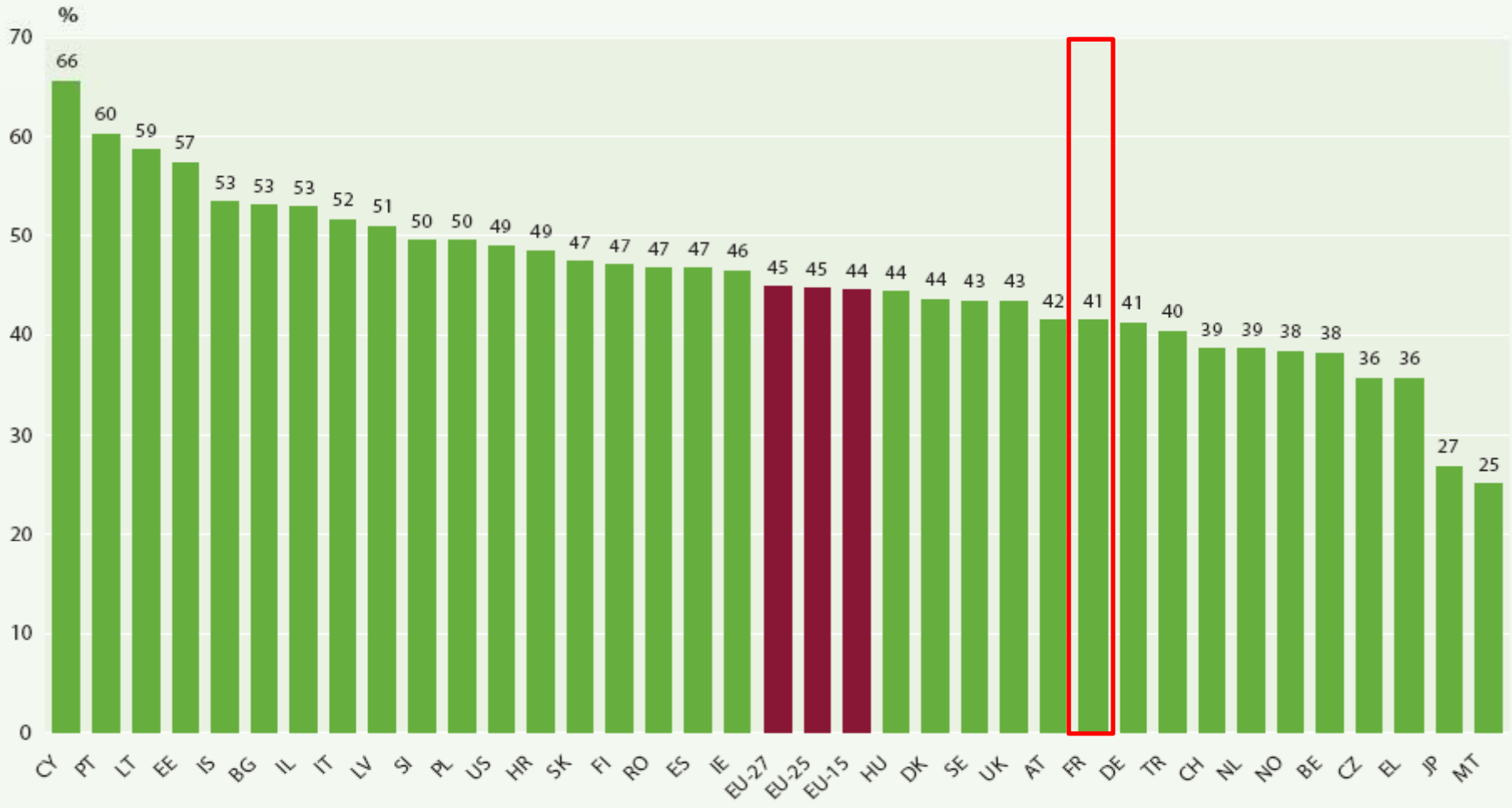


Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year (s): SK, CZ, EE: 2002-2007; CH: 2000-2004; EL, IS, NO: 2001-2005; BE, DK, IE, PT, JP: 2002-2005; DE, LU, NL: 2003-2005; PL: 2003-2006; MT, FI: 2004-2006
Data unavailable: UK, SE, IL
Break in series: MT (2004), DK (2002), FR (2002)
Provisional data: NL (2005)
Data estimated: EU-27, EU-25, EU-15 (by DG Research), LU (2003 - women), PT (2002), EE (2007)

PHD

Figure 2.1: Proportion of female PhD (ISCED 6) graduates, 2006



Source: Education Statistics (Eurostat), Central Bureau of Statistics (Israel), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: EL, IT: 2005
Data unavailable: LU
Data estimated: EU-27 (by Eurostat), EU-25, EU-15 (by DG Research)

Table 2.1: Proportion of female PhD (ISCED 6) graduates by broad field of study, 2006

	Education	Humanities & arts	Social sciences, business & law	Science, mathematics & computing	Engineering, manufacturing & construction	Agriculture & veterinary	Health & welfare
EU-27	64	52	47	41	25	51	54
EU-25	64	52	47	41	25	52	54
EU-15	64	52	47	40	25	52	54
BE	50	32	38	40	26	35	49
BG	52	68	58	56	33	54	56
CZ	62	42	41	39	20	41	43
DK	-	50	46	34	25	61	63
DE	53	51	37	35	14	60	51
EE	100	77	39	47	59	100	68
IE	64	52	57	45	26	61	57
EL	47	52	33	31	25	27	86
ES	57	48	46	48	25	44	54
FR	59	54	48	37	27	65	46
IT	68	59	52	52	36	55	62
CY	100	67	29	75	-	-	-
LV	67	69	54	36	43	50	48
LT	-	50	68	63	40	75	69
HU	61	49	52	39	29	45	39
MT	0	-	-	100	0	-	0
NL	:	40	44	29	20	38	51
AT	64	45	49	38	21	55	60
PL	:	54	51	57	24	54	54
PT	76	67	60	55	39	55	69
RO	30	47	47	62	35	46	49
SI	75	66	54	60	22	57	47
SK	54	46	52	44	33	38	65
FI	75	55	55	39	24	51	65
SE	58	54	42	37	29	46	62
UK	59	48	51	38	22	48	55
HR	64	48	54	58	38	42	44
TR	41	35	38	38	36	38	55
IS	100	0	0	60	100	-	40
NO	65	42	42	31	23	52	52
CH	67	49	38	33	19	68	46
JP	45	51	35	22	11	26	29
US	65	46	57	38	21	41	73

Source: S&T statistics (Eurostat)

Exceptions to the reference year: IT: 2005; EL: 2005
Data unavailable: IL, LU
Data estimated: EU-27, EU-25 (by Eurostat), EU-15 (by DG Research)

':': not available; '-': not applicable
Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS
Countries with small numbers of female PhD graduates: CY (19), IS (8), MT (1)

Table 2.3: Evolution of the proportion of female PhD (ISCED6) graduates by narrow field of study in natural science and engineering (fields 400 & 500), 2002-2006

	400 Science, Mathematics & Computing								500 Engineering, Manufacturing & Construction					
	Life science		Physical science		Mathematics & statistics		Computing		Engineering & engineering trades		Manufacturing & processing		Architecture & building	
	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006
EU-27	53	56	31	35	30	34	16	18	18	22	30	32	31	37
EU-25	53	56	31	35	30	34	16	18	17	21	30	32	31	37
EU-15	53	55	31	35	30	34	17	18	17	21	30	30	30	37
BE	45	51	30	38	46	40	10	8	18	24	50	45	15	33
BG	57	79	56	44	63	31	-	-	35	33	29	20	17	56
CZ	50	60	21	30	23	27	9	16	22	17	42	53	26	24
DK	37	-	-	-	-	34	-	-	23	25	-	-	-	-
DE	47	53	21	27	22	25	10	12	8	10	23	19	18	26
EE	50	57	21	30	0	88	25	20	33	42	0	100	-	100
IE	52	61	32	33	14	21	27	25	11	16	19	30	25	23
EL	37	31	35	36	36	38	12	7	17	19	24	28	38	41
ES	59	59	42	44	37	44	25	18	24	25	53	37	17	21
FR	53	54	34	32	24	26	19	17	23	26	38	33	28	34
IT	72	67	44	45	52	46	39	30	15	22	23	27	53	51
CY	-	-	-	85	-	0	-	50	-	-	-	-	-	-
LV	67	33	25	60	-	0	-	20	73	28	-	100	-	-
LT	71	83	45	53	50	60	33	40	41	39	-	-	43	50
HU	22	47	31	38	18	21	36	45	24	17	35	38	70	25
MT	-	100	-	-	-	-	-	-	-	0	-	-	-	-
NL	-	-	40	38	-	-	-	-	18	23	-	-	-	-
AT	46	59	24	29	30	24	12	15	17	21	36	14	13	20
PT	68	73	53	64	59	59	22	21	30	34	54	61	38	42
RO	46	62	-	-	-	-	-	-	27	35	-	-	33	50
SI	74	93	50	37	0	14	0	17	18	13	39	53	43	29
SK	72	59	28	35	38	43	17	6	19	26	37	44	58	48
FI	66	59	33	36	25	25	16	23	23	21	59	60	24	19
SE	48	51	35	38	16	23	17	21	23	27	30	31	39	47
UK	57	52	32	35	23	27	19	23	15	19	27	33	23	26
HR	79	62	39	56	33	56	0	33	17	26	44	70	43	67
TR	47	44	24	36	36	40	25	32	13	21	44	51	64	49
NO	-	-	0	-	-	-	-	31	13	-	-	-	20	23
CH	34	49	24	25	16	25	11	13	12	17	100	29	18	26
US	44	49	28	30	29	30	23	22	17	19	-	25	36	26

Source: Education Statistics (Eurostat)

Exceptions to the reference year (s): IE, IT: 2002-2005; EL: 2004-2005; FR: 2003-2006; NL: 2002-2004; RO, HR: 2004-2006

Data unavailable: PL, LU, IL, IS (not shown because of low figures)

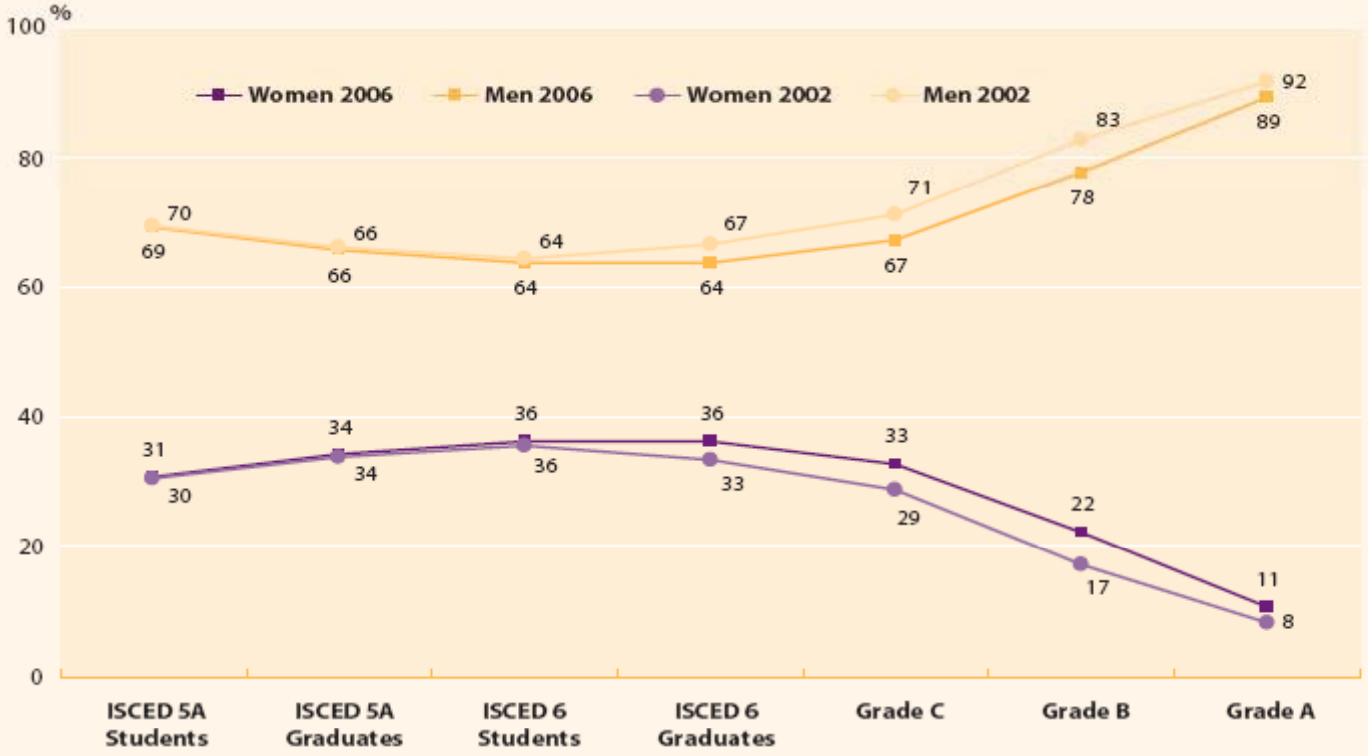
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

'-': not applicable

Most tertiary students study abroad and are not included: CY

Number through career in Science

Figure 3.2: Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-27, 2002/2006



Source: Education Statistics (Eurostat); WiS database (DG Research)

Exceptions to the reference year (s): **ISCED 6 students 2002**: RO (men 2003), SI (men 2005); **WiS 2006**: ES (2007), MT (2004), PT (2003), SI (2007), SK (2007), FI (2007); **2002**: IE (2004), FR (2000), LT (2005), NL (2003), UK (2003)
Data unavailable: **ISCED 6 students 2002**: DE, FR, LU, NL, SI (Women); **WiS 2006**: BG, EE, EL, FR, LV, LU, HU, RO, IE (Grade A); **2002**: BG, EE, EL, ES, LV, LU, HU, RO, IE (Grade A)
Break in series: CZ (2005)
Provisional data: ES
Data estimated: EU-27 (by DG Research) for WiS, ISCED 6 students, SI

Definition of grades:

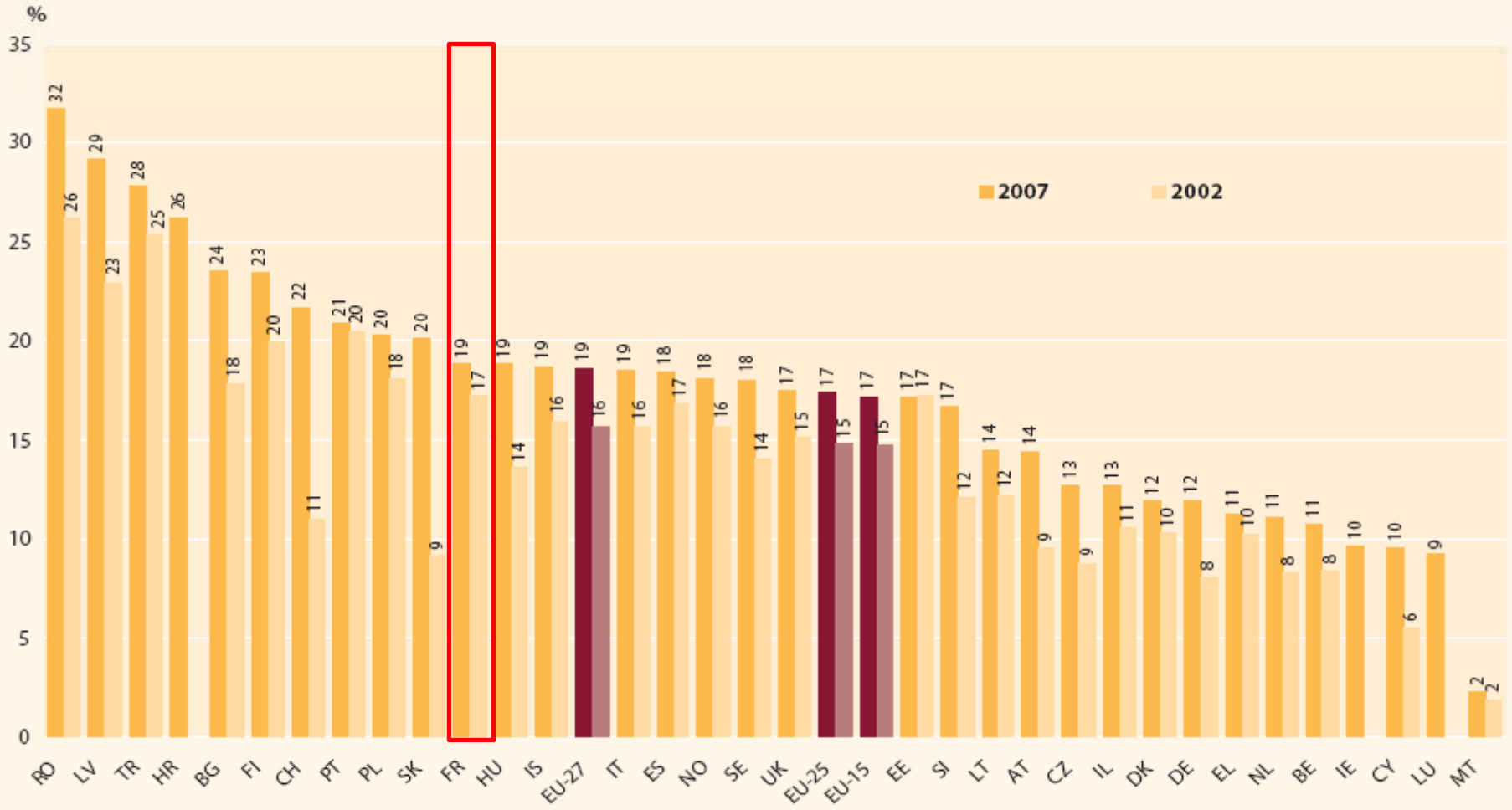
A: The single highest grade/post at which research is normally conducted.
B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders.
C: The first grade/post into which a newly qualified PhD graduate would normally be recruited.

ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements.
ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD).

SET fields of education = 400 Science, maths and computing + 500 Engineering, manufacturing and construction.
SET fields of science = Engineering and Technology + Natural Sciences.

Grade A

Figure 3.3: Proportion of women in grade A academic positions, 2002/2007



Source: WiS database (DG Research); Higher Education Authority for Ireland

Exceptions to the reference year (s): **2007** HR: 2008; UK: 2007/2006; DK, FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; IE: 2002-2003; EL: 2000; **2002** NO, UK, NL: 2003; IL: 2001; EL: 1999

Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Head count

NO: before 2007 biannual data

grade A, field

Table 3.2: Proportion of female grade A staff by main field of science, 2007

	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
EU-27	13.4	7.2	17.0	16.8	18.6	27.0
EU-25	13.4	7.2	17.0	16.8	18.6	27.0
EU-15	13.1	7.0	15.8	14.9	18.0	28.0
BE	10.7	5.2	9.6	3.6	14.0	13.6
CZ	12.7	6.0	21.4	9.9	14.4	16.3
DK	8.7	4.0	11.5	16.4	15.2	18.2
DE	7.4	5.0	7.0	11.1	9.8	21.5
ES	17.2	8.1	18.1	16.1	20.0	27.0
FR	12.3	6.5	15.3	x	17.0	30.1
IT	17.8	8.4	11.2	13.1	18.3	34.9
CY	16.7	0.0	-	-	10.0	0.0
LV	0.0	:	38.5	:	39.3	36.4
LT	6.8	4.5	22.6	10.3	17.8	26.5
MT	0.0	0.0	8.3	-	0.0	0.0
NL	6.8	5.3	8.9	9.0	13.5	16.9
AT	5.7	5.2	11.0	11.8	15.1	28.3
PL	17.1	9.1	29.2	25.5	22.4	22.6
PT	27.5	5.0	26.2	27.0	20.4	x
SI	6.4	8.6	23.2	22.4	19.5	20.4
SK	14.7	8.2	21.7	8.6	28.3	26.1
FI	11.9	6.4	24.2	37.5	30.5	37.1
SE	12.2	8.3	17.4	19.6	21.2	29.0
UK	10.1	7.0	23.2	13.4	22.6	18.8
HR	21.6	23.6	29.5	-	43.1	19.0
TR	24.0	19.2	35.3	18.8	27.0	25.3
NO	12.1	6.0	22.4	15.5	21.4	24.2
CH	10.6	11.7	21.3	8.9	30.6	26.6
IL	6.6	4.8	16.4	0.0	13.7	18.9

Source: WiS database (DG Research)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, CY, AT: 2006; MT: 2004; PT: Head count

grade, age

Table 3.3: Proportion of female A grade staff by age group, 2007

	<35	35-44	45-54	55+	Total
EU-27	25	23	21	18	19
EU-25	22	18	18	16	17
EU-15	23	18	18	15	17
BE	i	14	13	8	11
BG	i	38	26	23	24
DE	28	17	14	7	12
IT	i	20	20	18	19
LT	i	13	17	14	14
AT	39	24	20	8	14
PL	i	21	17	21	20
RO	28	45	34	26	32
SK	i	22	22	19	20
FI	24	21	28	21	23
SE	i	16	17	19	18
UK	15	17	20	15	17
HR	i	41	32	23	26
TR	i	30	31	24	28
IS	i	17	22	16	19
NO	i	20	19	17	18
CH	39	27	21	13	22

Source: WiS database (DG Research)

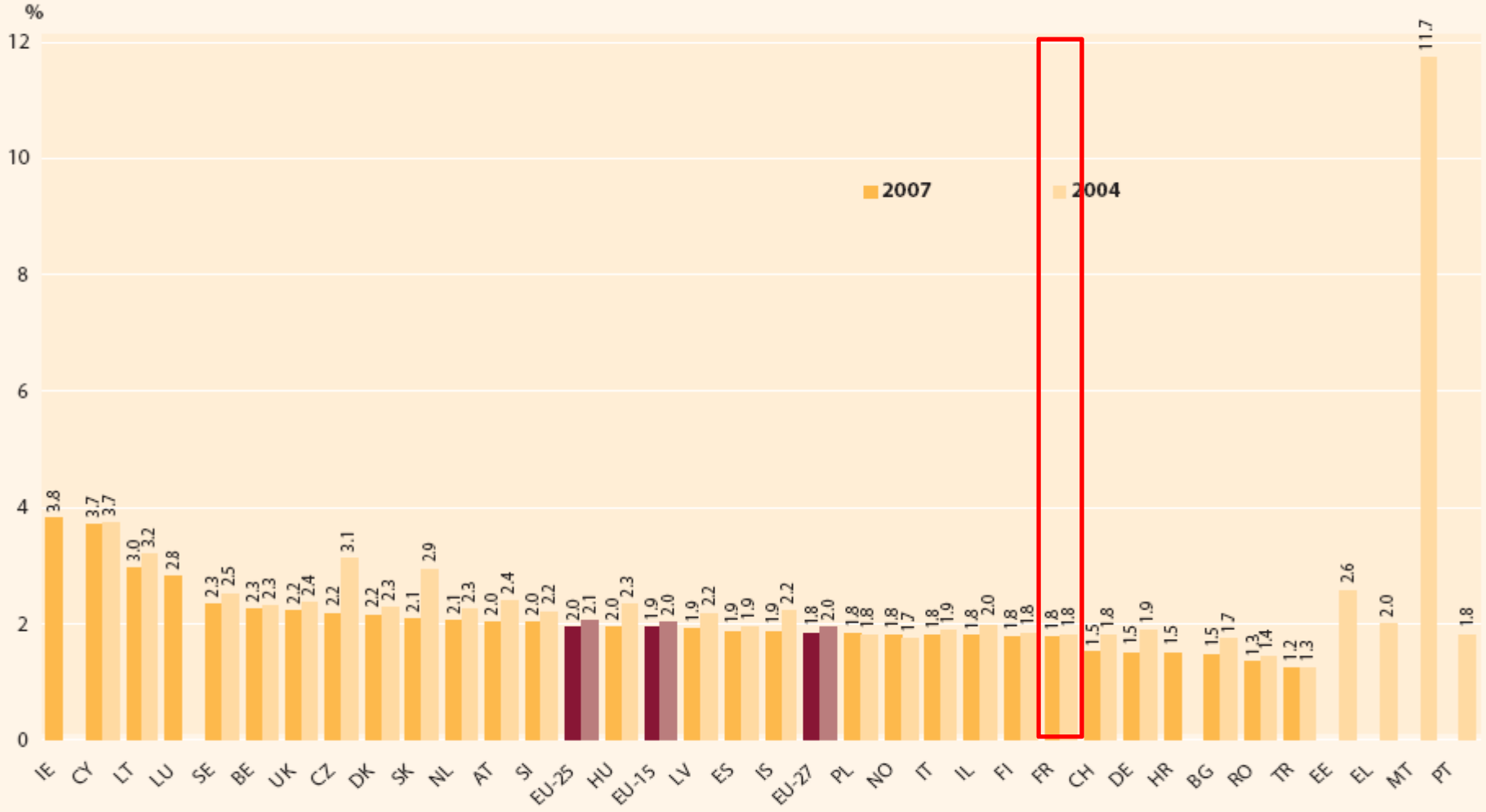
Exceptions to the reference year: BE (French-speaking community), HR: 2008; RO, UK: 2006/2007; AT: 2006

Head count

i: Countries with less than 10 members of academic staff not shown

Glass ceiling

Figure 3.5: Glass Ceiling Index, 2004/2007



Source: WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year (s): **2007** HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; **2004** PT, NO: 2003; IL: 2001; EL: 2000
Data unavailable: **2004**: LU, IE, HR; **2007**: EE, EL, MT, PT; Grade C unavailable for BG, RO (included in B)

Head count
Some differences exist in coverage and definitions between countries
Country with small numbers of academic staff: CY, MT, LU, IS
NO: before 2007 biannual data

Heads, deliver PhD

Table 4.1: Proportion of female heads of universities or assimilated institutions based on capacity to deliver PhDs, 2007

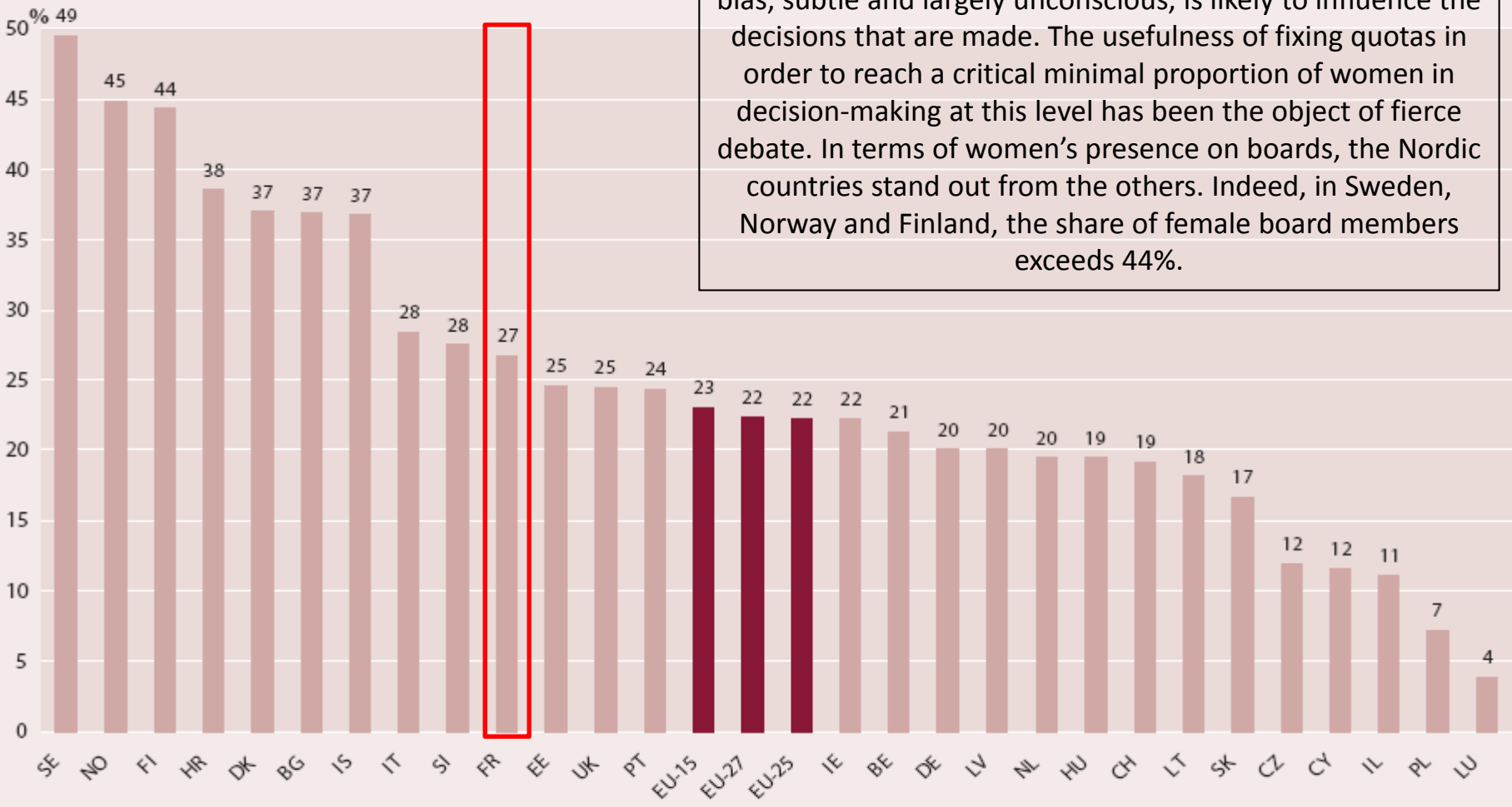
	Women	Men
EU-27	9	91
BE	7	93
BG	9	91
CZ	7	93
DK	0	100
DE	7	93
EE	18	82
IT	6	94
CY	0	100
LV	20	80
LT	0	100
LU	0	100
HU	0	100
NL	7	93
AT	4	96
PL	8	92
RO	2	98
SI	15	85
SK	4	96
FI	25	75
SE	43	57
HR	14	86
TR	9	91
IS	33	67
NO	29	71
CH	8	92
IL	29	71

Source: WiS database (DG Research)

Exceptions to the reference year: BE, DK, DE, EE, HU, AT, PL, SI, SK, FI, SE, CH, HR, *Data unavailable:* IE, EL, ES, FR, MT, PT, UK

Boards

Figure 4.2: Proportion of women on boards, 2007



Less than a quarter of all board members are women. In these boards, a gender bias, subtle and largely unconscious, is likely to influence the decisions that are made. The usefulness of fixing quotas in order to reach a critical minimal proportion of women in decision-making at this level has been the object of fierce debate. In terms of women's presence on boards, the Nordic countries stand out from the others. Indeed, in Sweden, Norway and Finland, the share of female board members exceeds 44%.

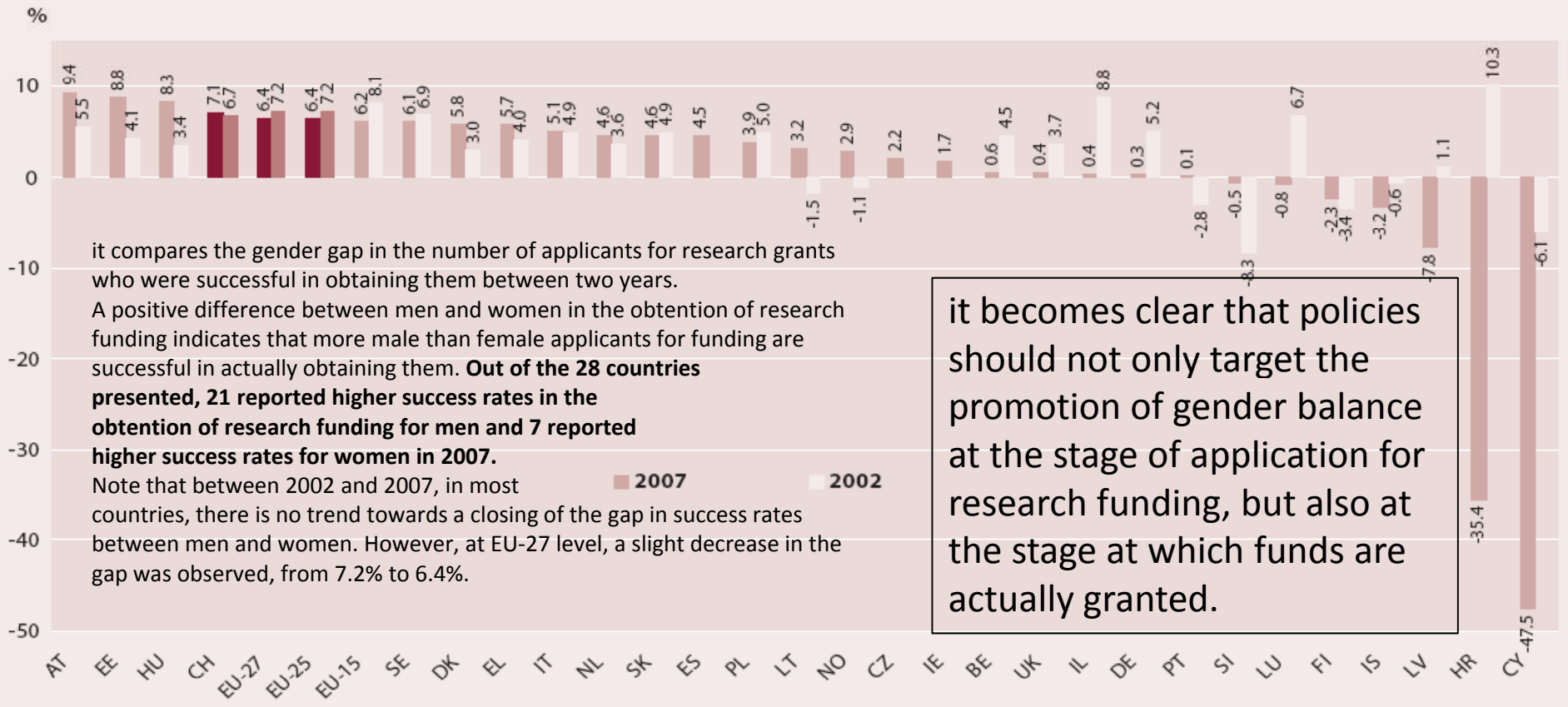
Source: WiS database (DG Research)

Exceptions to the reference year: IT: 2009; CZ, SK, IL: 2008; IE: 2004; PT: 2003; FR, PL: 2002
Data unavailable: BE (Dutch-speaking community), EL, ES, MT, AT, RO, TR
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

There is no common definition of boards
The total number of boards varies considerably between countries
BE data refer to French-speaking community

Funding

Figure 4.3: Evolution in research funding success rate differences between women and men, 2002/2007



it compares the gender gap in the number of applicants for research grants who were successful in obtaining them between two years.
A positive difference between men and women in the obtention of research funding indicates that more male than female applicants for funding are successful in actually obtaining them. **Out of the 28 countries presented, 21 reported higher success rates in the obtention of research funding for men and 7 reported higher success rates for women in 2007.**
Note that between 2002 and 2007, in most countries, there is no trend towards a closing of the gap in success rates between men and women. However, at EU-27 level, a slight decrease in the gap was observed, from 7.2% to 6.4%.

it becomes clear that policies should not only target the promotion of gender balance at the stage of application for research funding, but also at the stage at which funds are actually granted.

Source: WiS database (DG Research)

Exceptions to the reference year (s): **2007** CZ, IE, LV: 2003; EL, PT: 2002; SE: 1999; **2002** UK, HR: 2005; NL, SK: 2003; LV, SI: 2001; IL: 2000; EL, PT: 1999; SE: 1995
Data unavailable: BE (French-speaking community), BG, CZ (2002), IE (2002), ES (2002), FR, MT, RO, TR
Break in series: DK (2004), AT (2007): incl. ÖAW

There is no common definition of funds
The total number of funds varies considerably between countries and over the period considered
Male success rate minus female success rate
BE data refer to Dutch-speaking community

Global Survey of Physicists

The Global Survey of Physicists: A Collaborative Effort Illuminates the Situation of Women in Physics

Rachel Ivie and Casey Tesfaye

Funded by Henry Luce Foundation

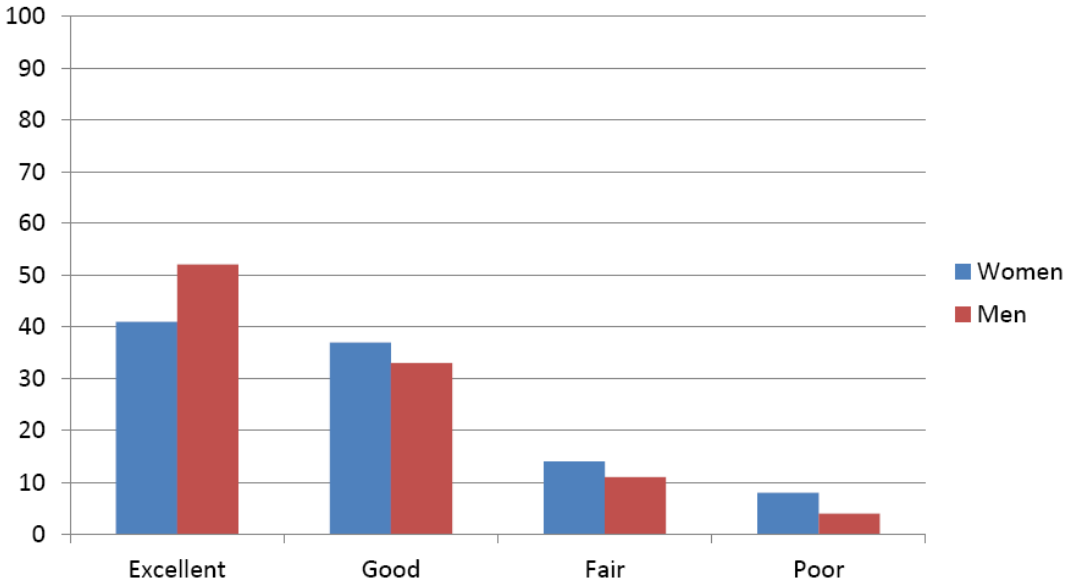
- To ensure comparability across countries—one report at the end of the process
- To show whether women physicists' experiences are different from men's

Who Responded?

- 130 countries
- 14,932 respondents

EDUCATION

Students' quality of relationships with doctoral advisors

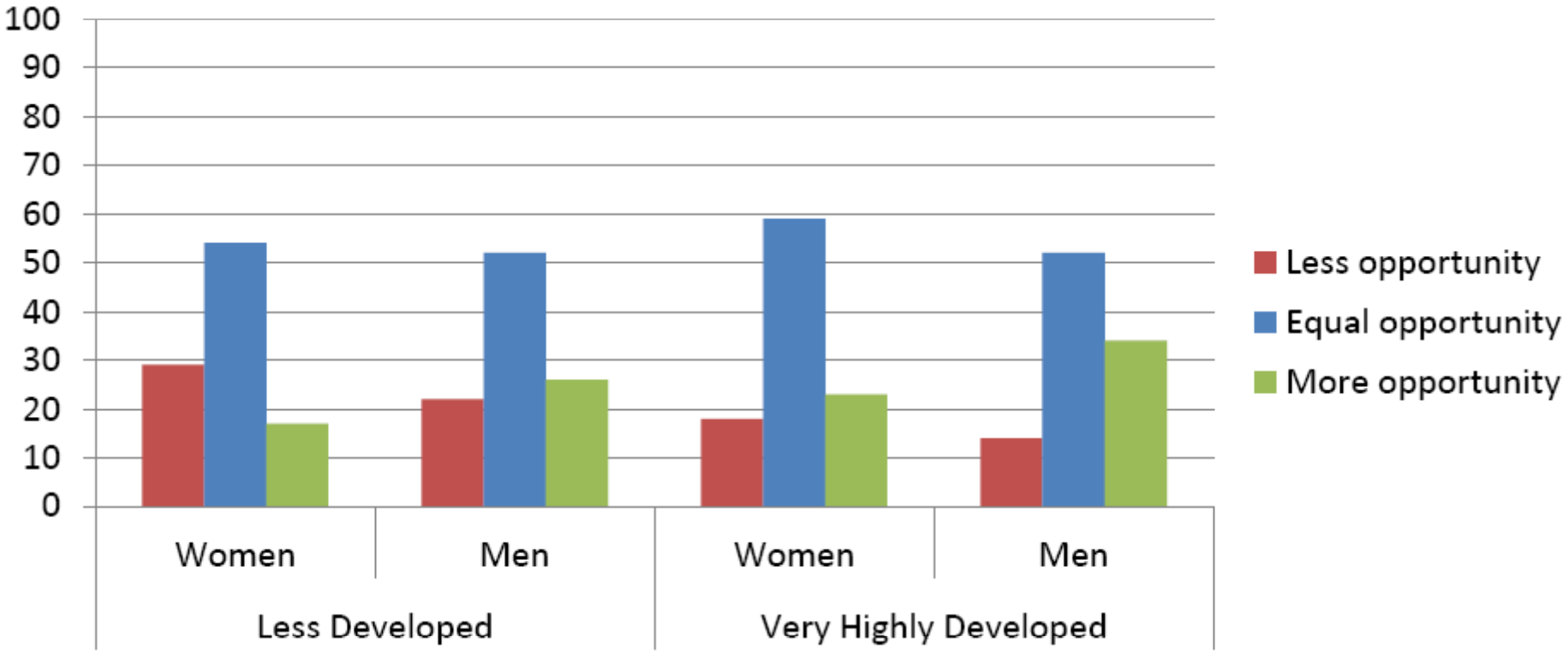


PROFESSIONAL OPPORTUNITIES, RESOURCES, AND WORKPLACE

Have you participated in the following?

% Yes	Less Developed		Very Highly Developed	
	Women	Men	Women	Men
Given a talk at a conference as an invited speaker	51	67	58	73
Attended a conference abroad	75	81	83	87
Conducted research abroad	54	71	61	69
Acted as a boss or manager	38	53	46	61
Served as editor of a journal	16	24	11	19
Served on committees for grant agencies	22	37	26	36
Served on important committees at your institute or company	50	62	48	60
Served on an organizing committee for a conference in your field	48	59	48	55
Advised undergraduate students	82	84	69	74
Advised graduate students	63	77	58	70
Served on thesis or dissertation committees (not as an advisor)	52	66	37	52

Compared to your colleagues, did you have the same, fewer, or more opportunities to conduct research abroad?



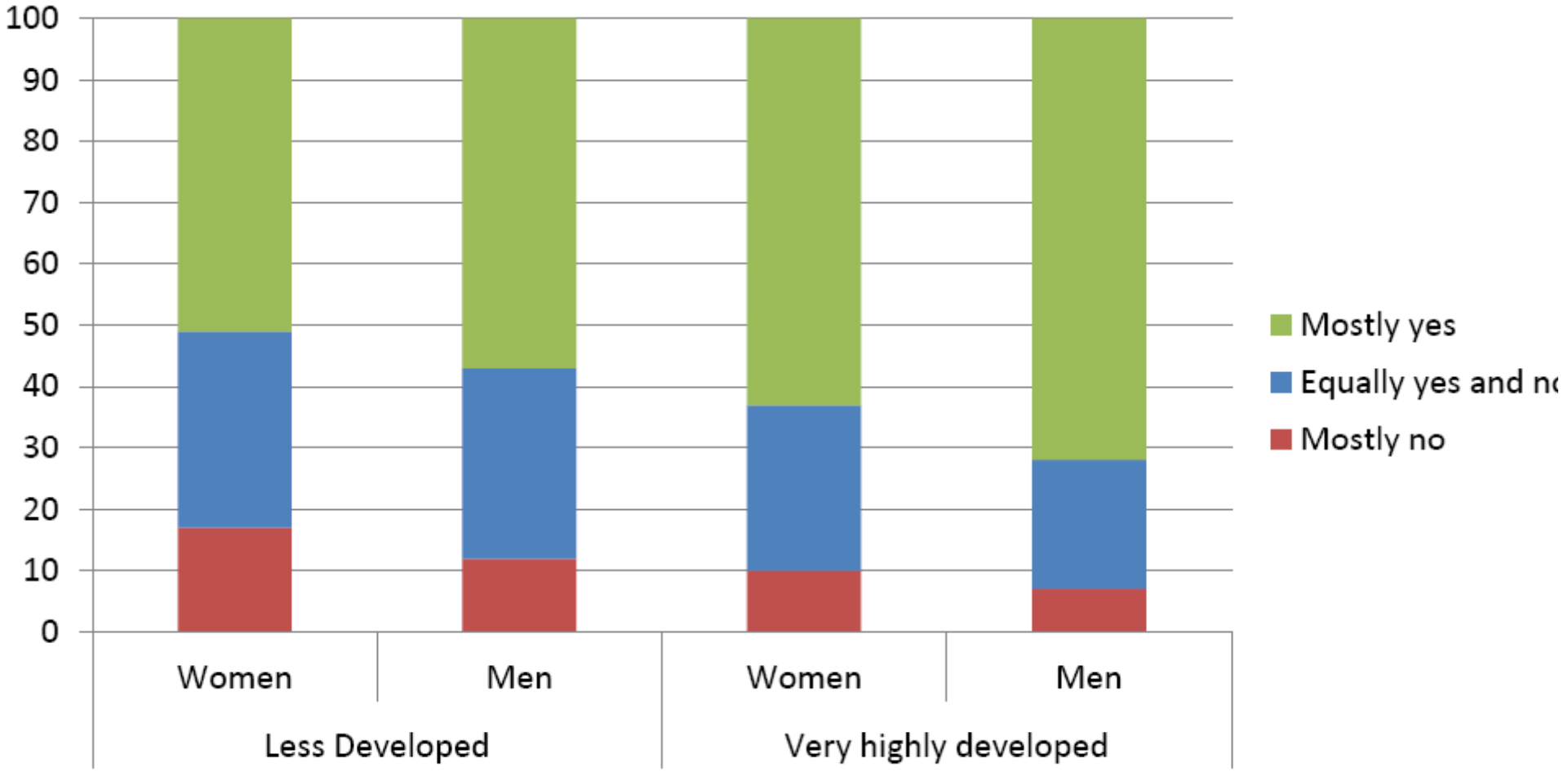
Not enough…

Do you have enough of the following to conduct or present your research?

% Yes	Less Developed		Very Highly Developed	
	Women	Men	Women	Men
Funding	34	51	52	60
Office space	64	74	72	77
Lab space	42	47	46	52
Equipment	42	49	58	64
Travel money	31	47	57	64
Clerical support	22	38	30	43
Employees or students	42	53	33	43

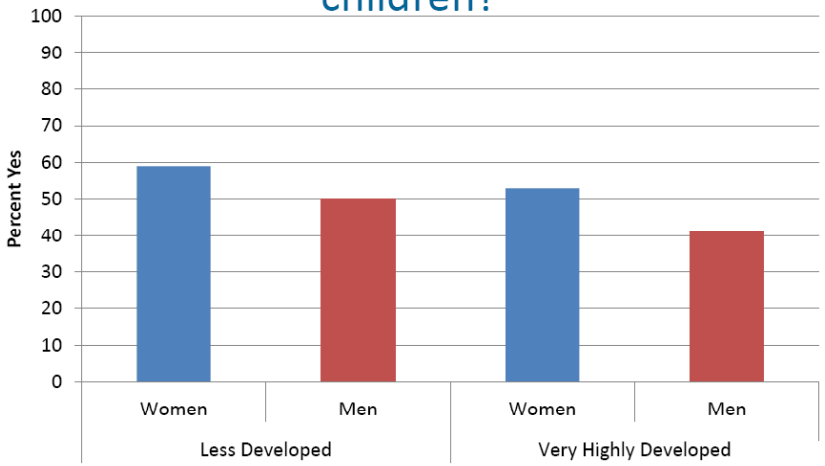
Relation with Boss

I feel comfortable raising concerns with my boss or manager

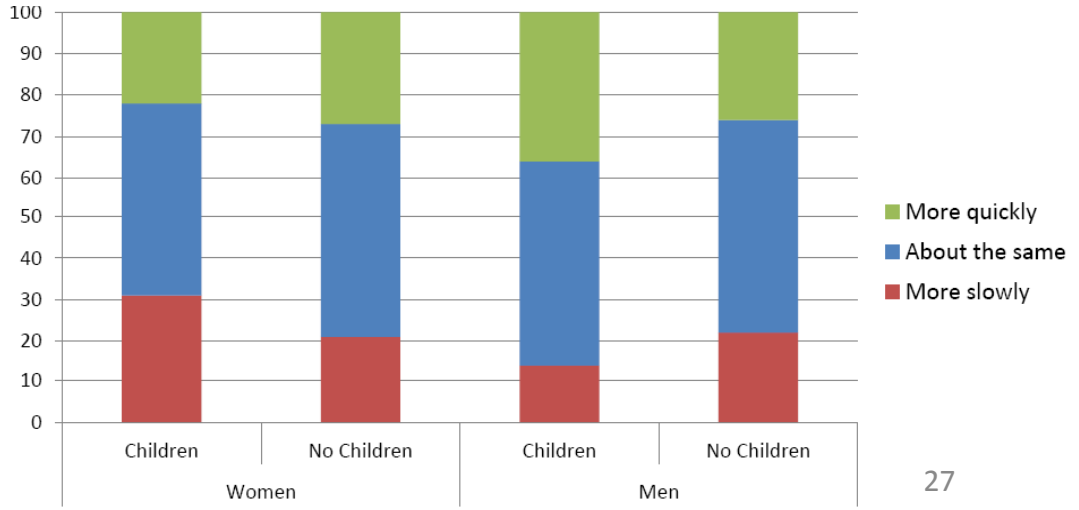


WORK AND FAMILY

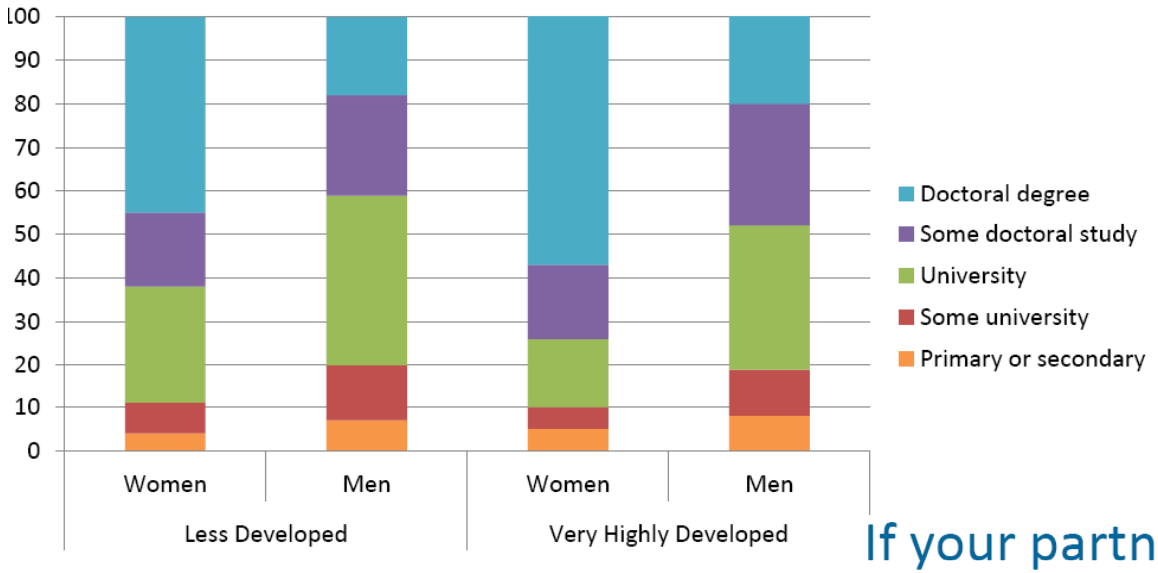
Has your career changed your personal life, such as decisions about marriage or children?



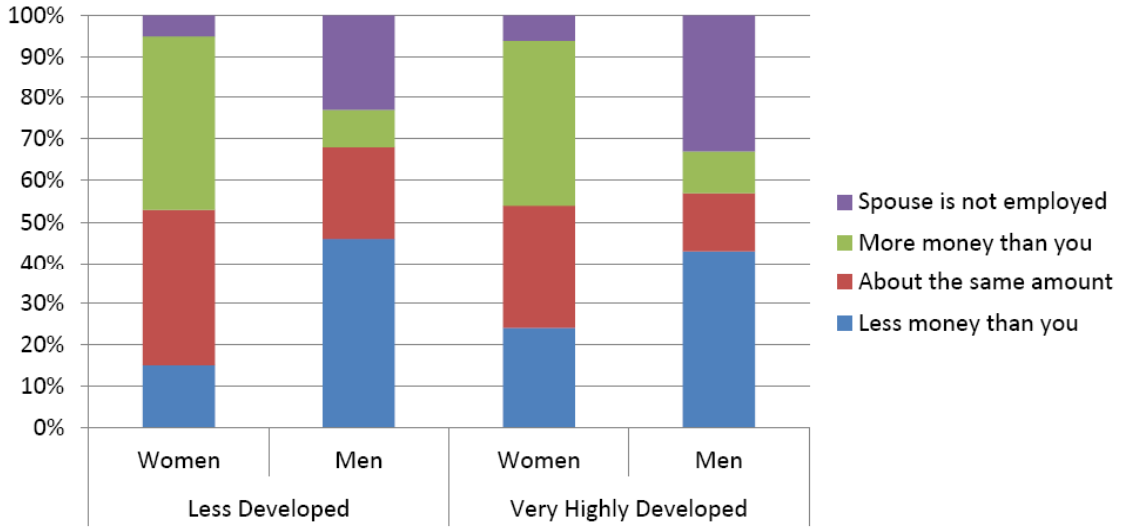
Compared to colleagues, how quickly have you progressed in your career?



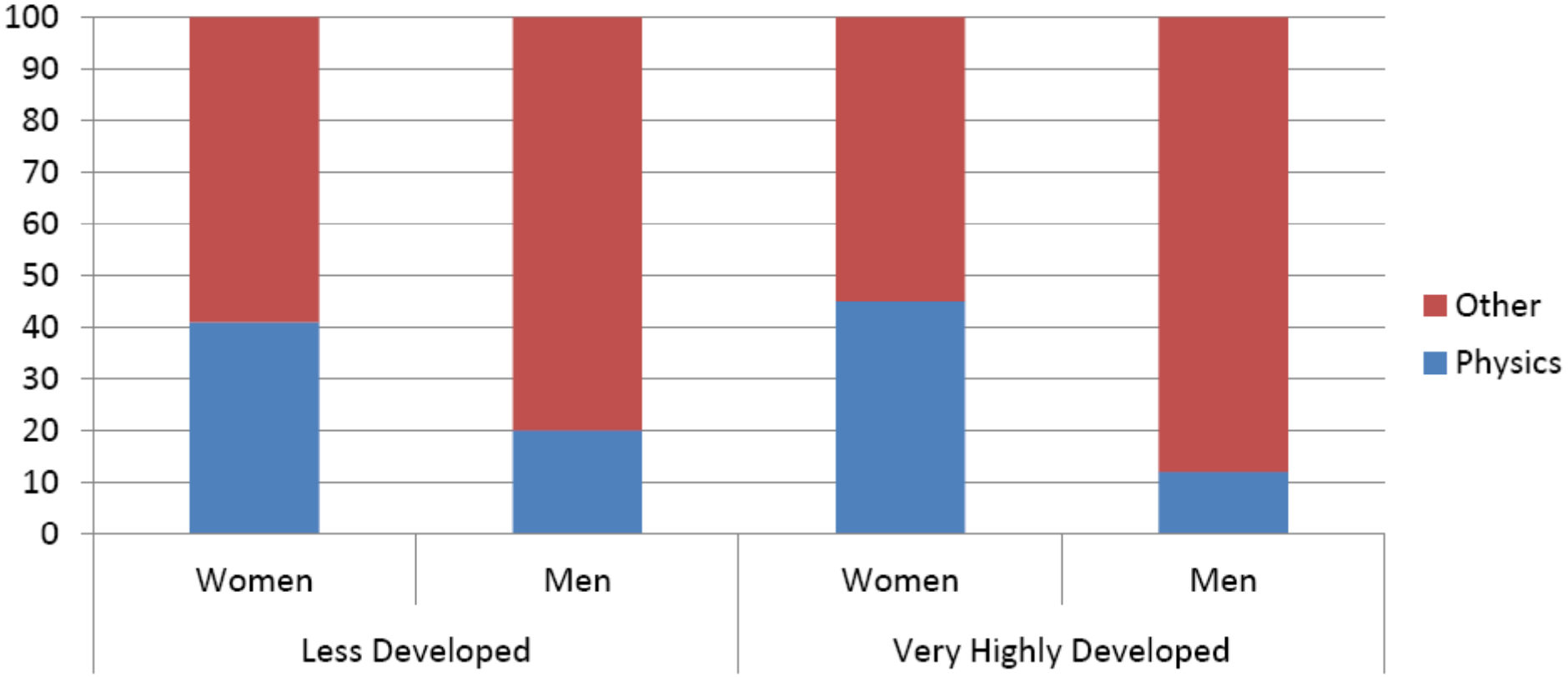
How much school did your partner or spouse complete?



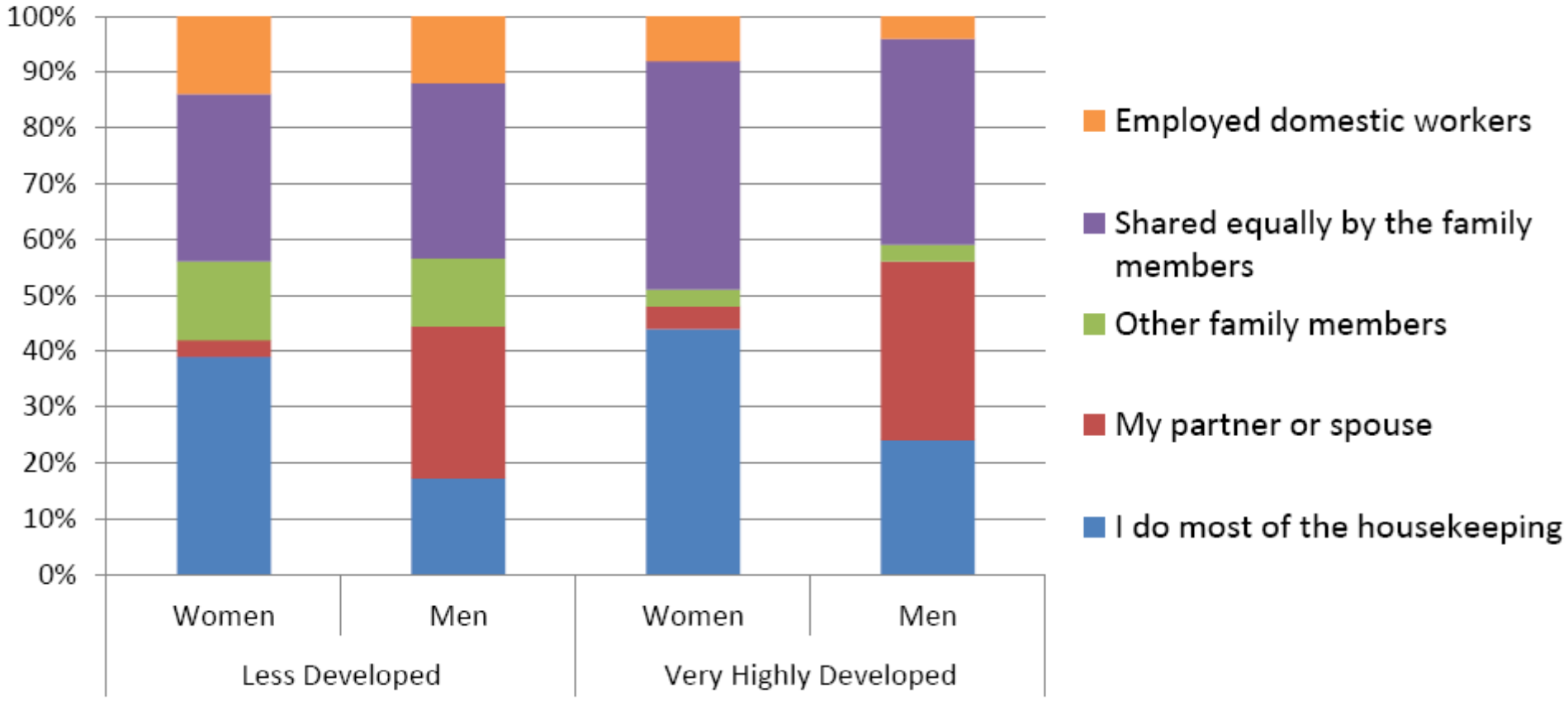
If your partner is employed, does he or she earn:



Is your partner or spouse employed in the field of physics?

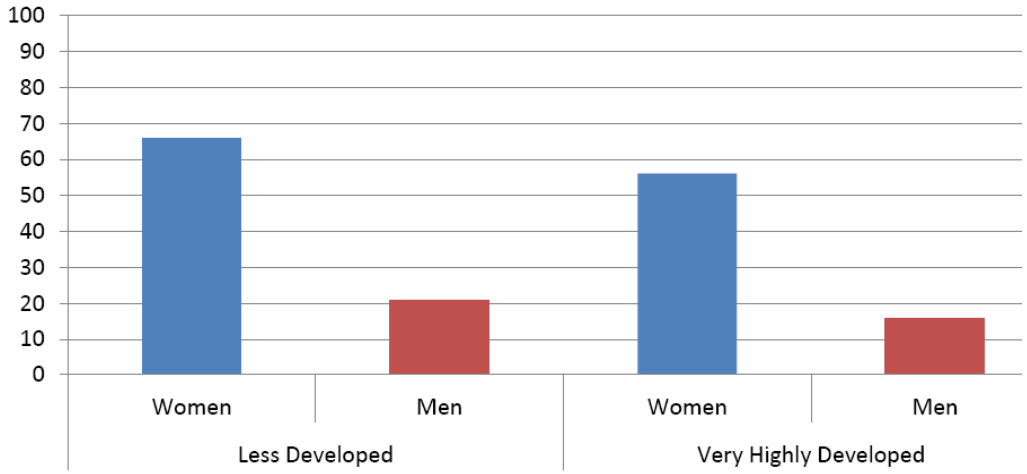


Who is responsible for the majority of the housekeeping in your household?



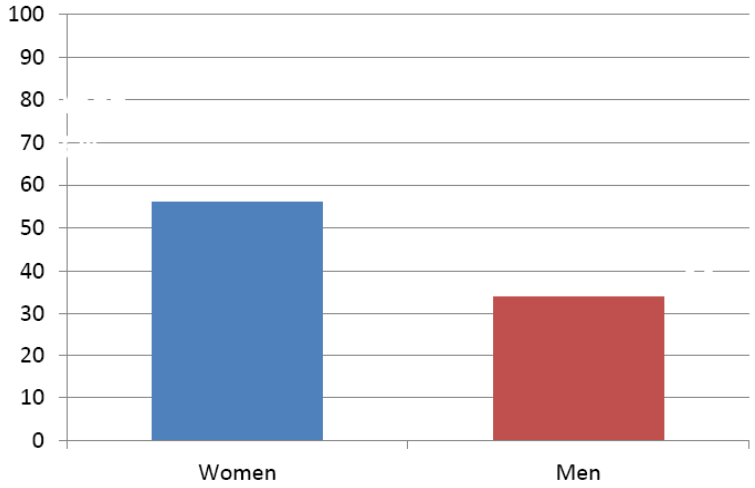
With Child

Percentage who had significant breaks or interruptions in doctoral studies



* Limited to respondents whose first child was born during their doctoral studies

Has the search for quality affordable child care been difficult for you?

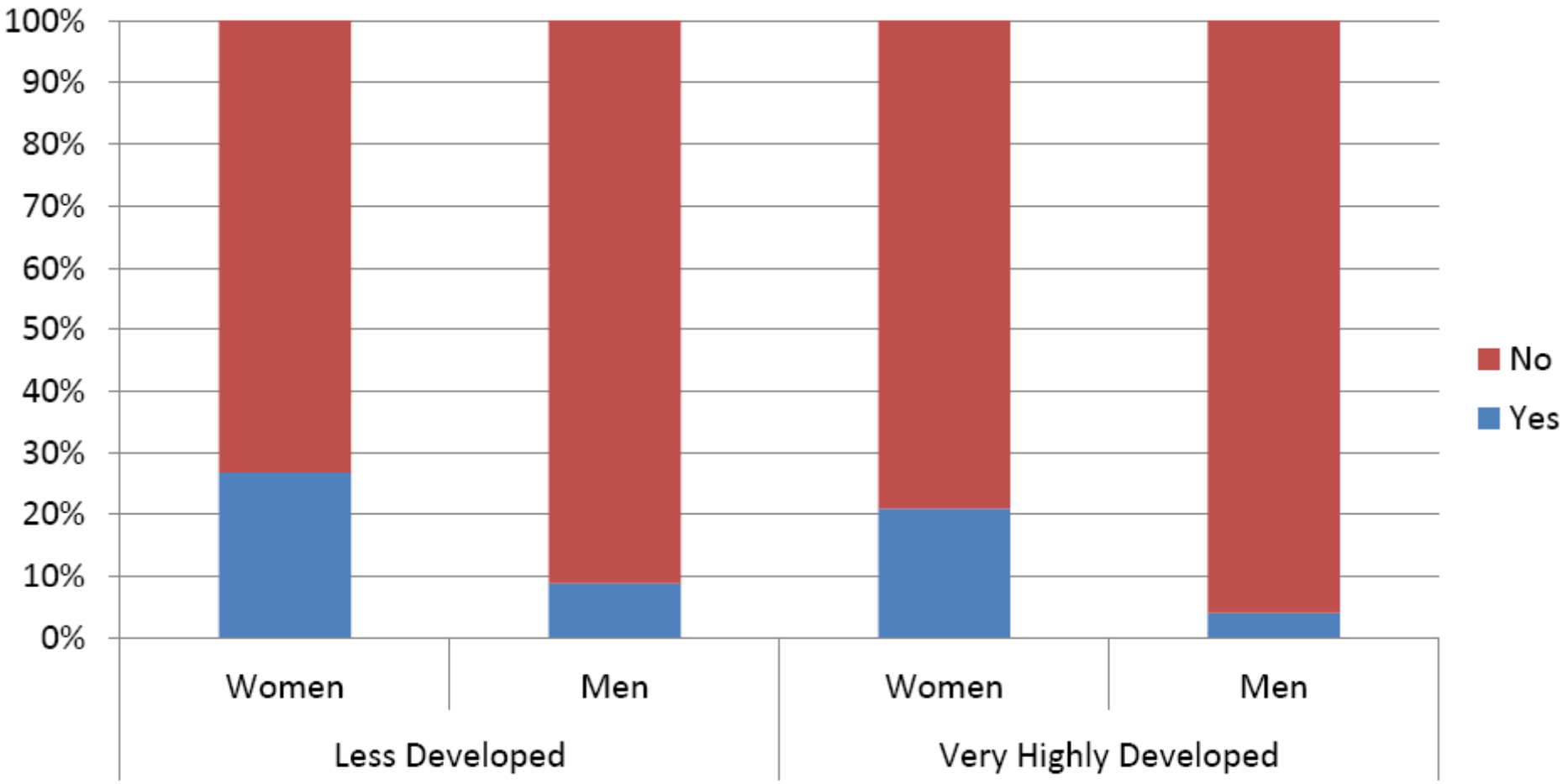


64% of female graduate students with children had difficulty finding care

How did your work or career change because you are a parent?

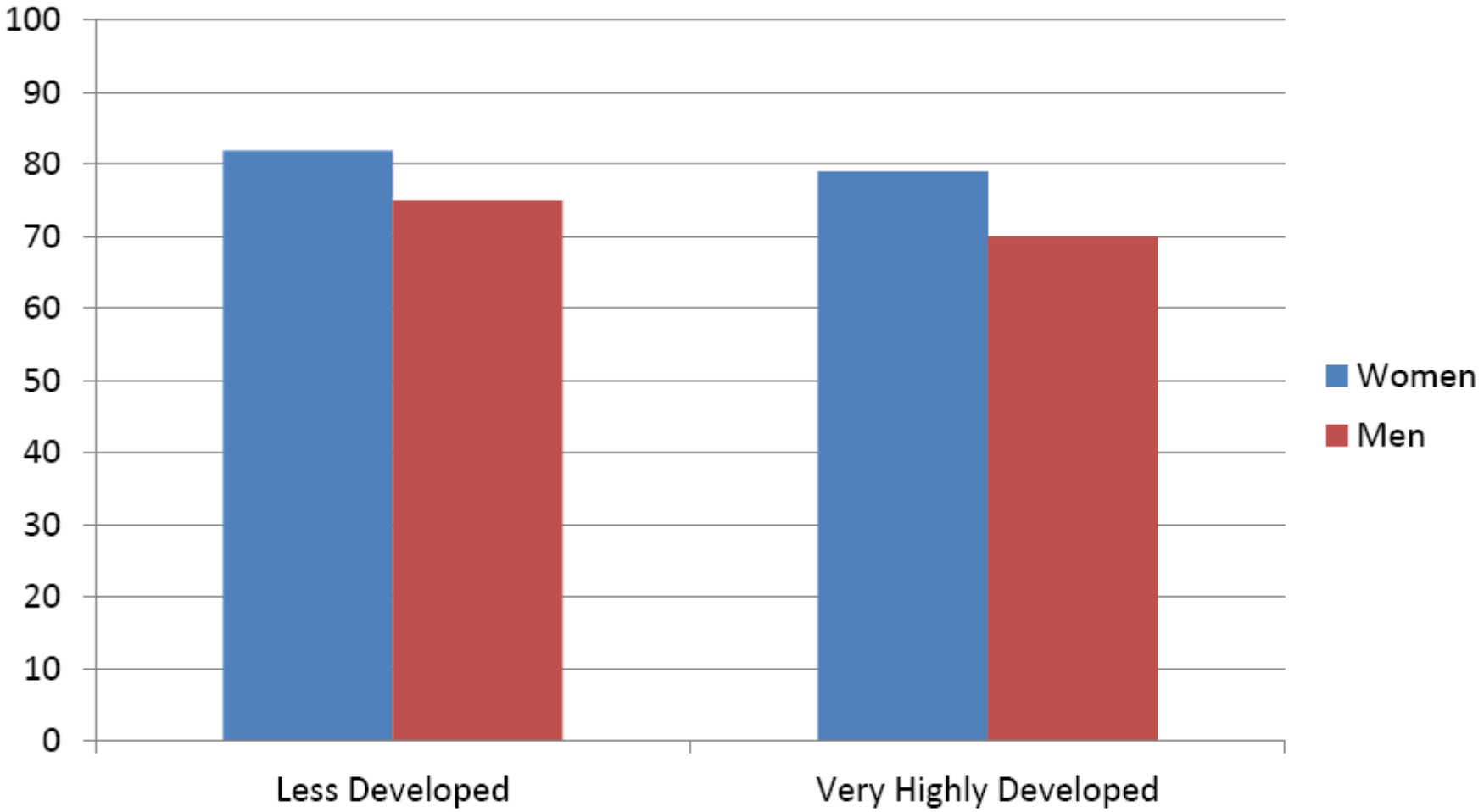
	Women	Men
I chose a less demanding or more flexible work schedule	39	20
I changed my employer or field of employment	7	4
I spent significantly less time at work	35	18
I was more productive and efficient at work	29	15
My career or rate of promotion slowed significantly	34	9
I became a stay at home parent	6	1
My work or career did not change significantly	**32**	**65**

Did your employer assign less challenging work to you when you became a parent?

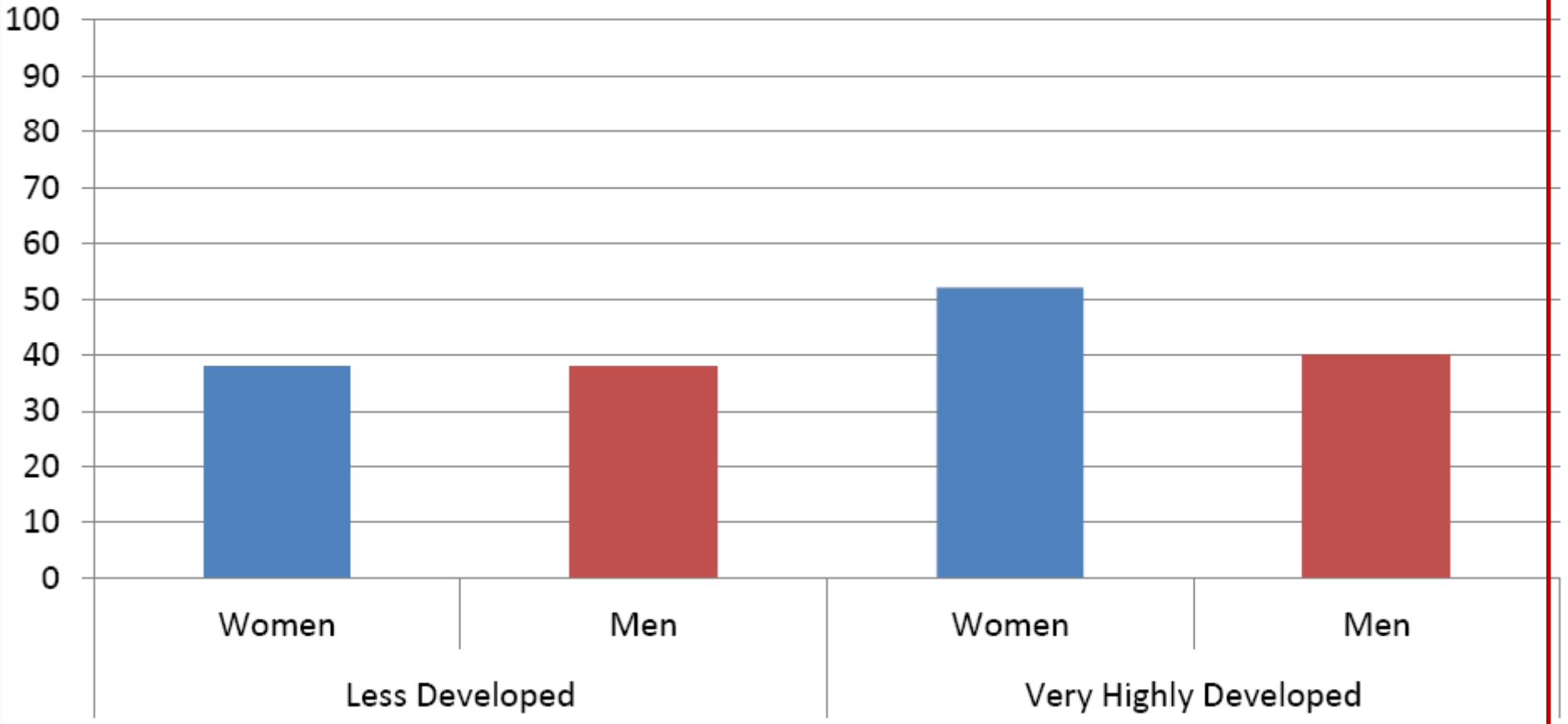


Discouraged

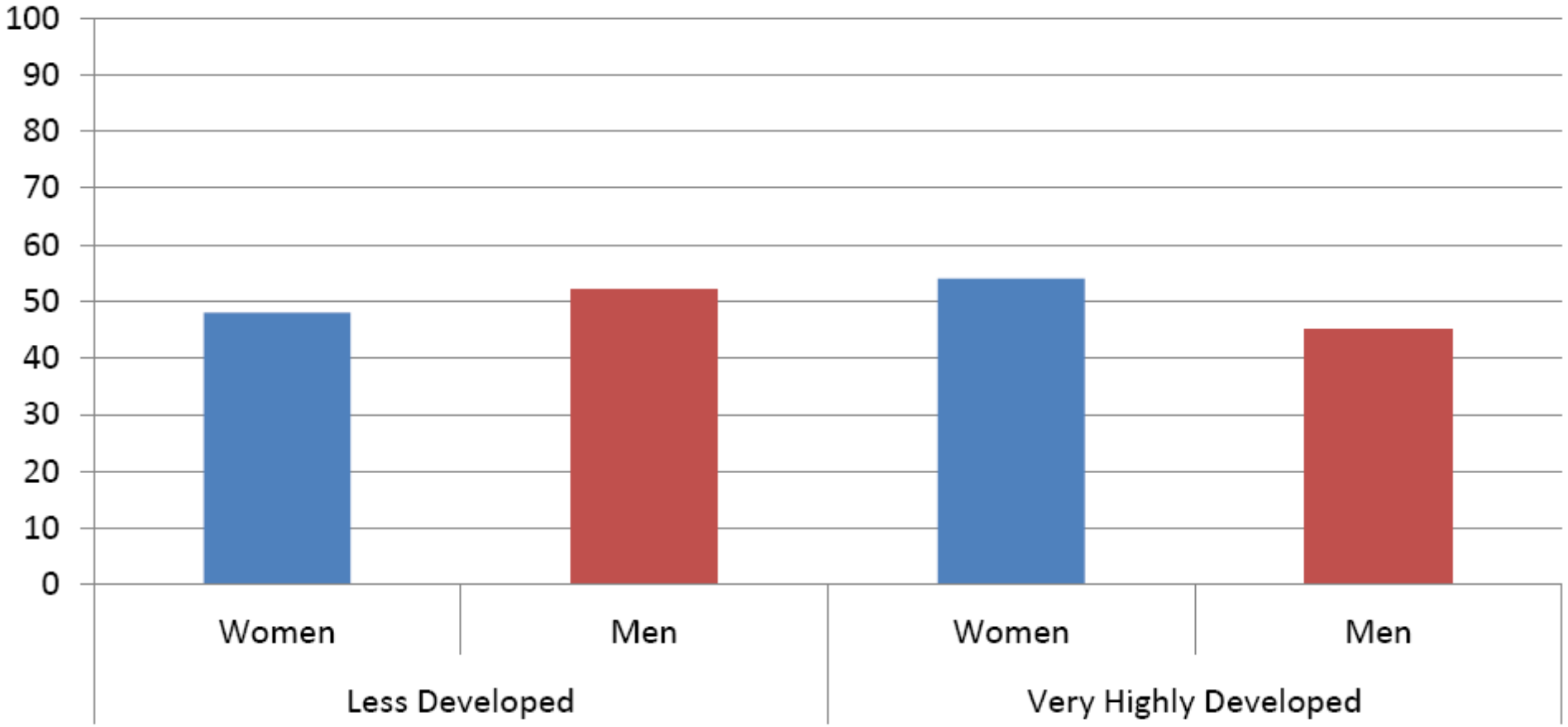
Percentage of respondents who have felt discouraged about physics



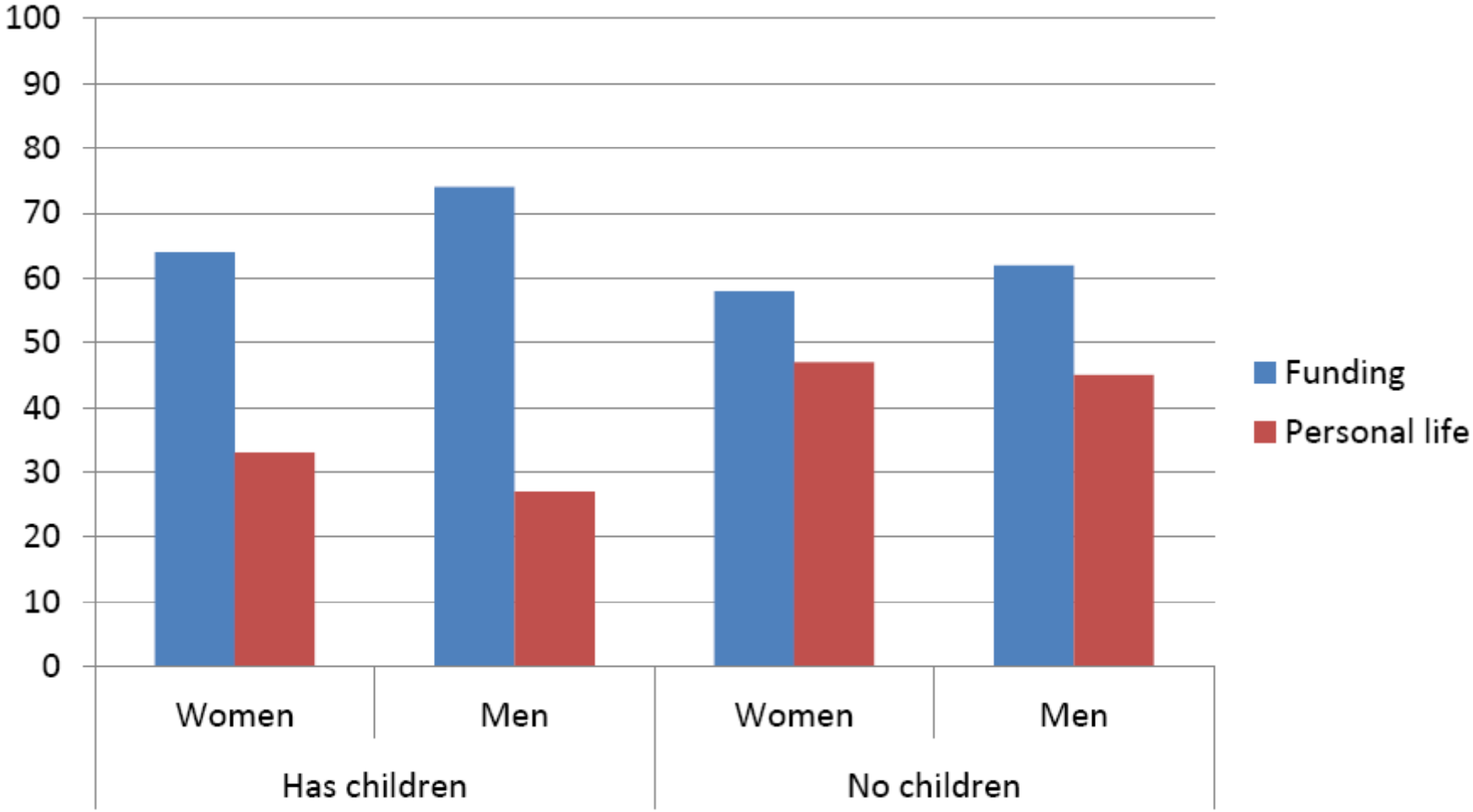
Percent who felt discouraged because of interaction with colleagues



Percent who felt discouraged about workplace environment



Percent who felt discouraged about funding and personal life



Would you choose physics again?

- 89% said yes

All physicists may feel discouraged from time to time, but women are more likely to be discouraged than men.

Second international Conference of Women in Physics

• More than 1350 women physicists from more than 70 countries responded to a survey designed to elicit information about their educational backgrounds, careers, the balance between work and family, and opinions about physics as a career (**Table 1**). The survey was conducted in conjunction with the Second International Conference of Women in Physics in 2005. The report includes data on degrees awarded to women in about twenty countries (**Appendix**).

Table 4. Quality of Attention From Undergraduate Physics Professors Received by Responding Women Physicists	
	Percent
Positive	59
Negative	5
Neutral	32
No attention	4

Table 6. Ratings of Responding Women Physicists' Relationships with Their Graduate Advisors	
	Percent
Excellent	37
Good	41
Fair	14
Poor	8

Table 14. Percent of Responding Women Physicists Who Said That They Do Not Have Adequate:		
	Developing Countries	Developed Countries
Funding	60	33
Office space	18	12
Lab space	29	15
Equipment	49	22
Travel money	63	32
Clerical support	49	39

Table 19. Percent of Responding Women Physicists Who Have Children		
	Developed Countries	Developing Countries
Before final degree	33	69
After final degree	67	31

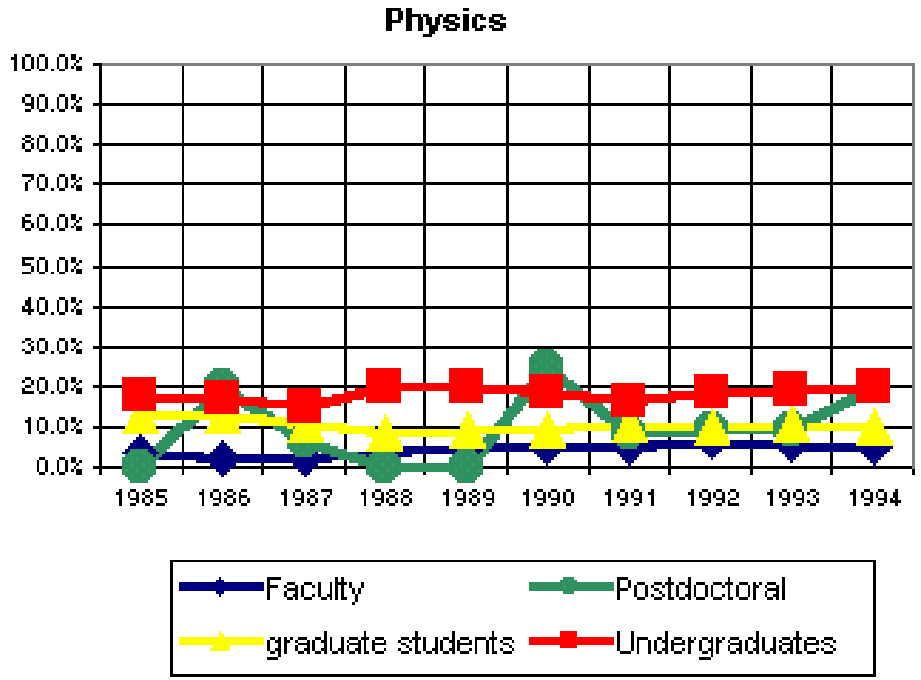
Table 17. Reasons Responding Women Physicists Gave for Being Discouraged About Physics	
	Percent
Research	49
Funding	52
Interaction with colleagues	55
Climate for women	43
Personal life	48
Family obligations	35

*Respondents could choose more than one answer.

Table 18. Percent of Responding Women Physicists Who Agreed That the Following Needs Improvement	
	Percent
Daycare cost	55
Daycare availability	65
Travel with young children	58
Balance of child care in family	69
Discrimination	65
Attitude about women in physics	80

MIT

Junior/senior women



The Committee documented women faculty's perceptions about their status and that of their female colleagues. These interviews were invaluable and provided a compelling picture of the lives of women faculty in the School of Science at MIT and the necessity for change. While there was variation between departments**, a common finding for most senior women faculty was that the women were "invisible", excluded from a voice in their departments and from positions of any real power.** This "marginalization" had occurred as the women progressed through their careers at MIT, making their jobs increasingly difficult and less satisfying. In contrast, junior women faculty felt included and supported in their departments. Their most common concern was the extraordinary difficulty of combining family and work.

An important finding to emerge from the interviews was that the difference in the perception of junior and senior women faculty about the impact of gender on their careers is a difference that repeats itself over generations. Each generation of young women, including those who are currently senior faculty, began by believing that gender discrimination was "solved" in the previous generation and would not touch them. Gradually however, their eyes were opened to the realization that the playing field is not level after all, and that they had paid a high price both personally and professionally as a result.

President Charles M. Vest:

I commend this study of Women Faculty in Science to all of my faculty colleagues. Please read it, contemplate its messages and information, and act upon it personally and collectively.
I learned two particularly important lessons from this report and from discussions while it was being crafted. First, I have always believed that contemporary gender discrimination within universities is part reality and part perception. True, but I now understand that reality is by far the greater part of the balance.

Second, I, like most of my male colleagues, believe that we are highly supportive of our junior women faculty members. This also is true. They generally are content and well supported in many, though not all dimensions. However, I sat bolt upright in my chair when a senior woman, who has felt unfairly treated for some time, said "I also felt very positive when I was young."

From The MIT Faculty Chair: Professor Lotte Bailyn

The key conclusion that one gets from the report is that gender discrimination in the 1990s is subtle but pervasive, and stems largely from unconscious ways of thinking that have been socialized into all of us, men and women alike. This makes the situation better than in previous decades where blatant inequities and sexual assault and intimidation were endured but not spoken of. We can all be thankful for that. But the consequences of these more subtle forms of discrimination are equally real and equally demoralizing.

The women who worked on these issues over the past five years are all gifted scientists, themselves convinced that gender had nothing to do with their careers: if they succeeded it was on the basis of their competence, and recognition would certainly follow; if they didn't it was based on something they lacked and rewards weren't warranted. During their earlier years, this belief was continuously reinforced, but then something seemed to change. It was only when they came together, and with persistence and ingenuity, that they saw that as their careers advanced something else besides competence came into play, which for them meant an accumulation of slight disadvantages, with just the opposite for their male colleagues. Their ability to identify the inequities that resulted and the Dean's willingness to respond, have changed the environment for their work and enhanced their ability to contribute productively to the institution.

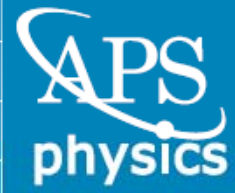
In order to keep the momentum of this effort, and to extend it to other parts of the Institute, we need to implement Institute-wide means of continuously tracking progress and to find ways to keep senior faculty women involved in the process. This is hard work. Our first instinct is to deny that a problem exists (if it existed, it would surely have been solved by now) or to blame it on the pipeline or the circumstances and choices of individual women. None of these, however, explains the inequities surfaced by the Committee. To ensure an equitable faculty environment, we need committees such as these (including also, as in the present case, male faculty with administrative experience) in all Schools of the Institute. Their task is not only to track and monitor, but also to keep underrepresented faculty closely tied to the administrators who make the Institute's critical decisions. As both President Vest and Dean Birgeneau emphasize in their comments, we have made progress, but there is still a long way to go.

APS

GENDER EQUITY

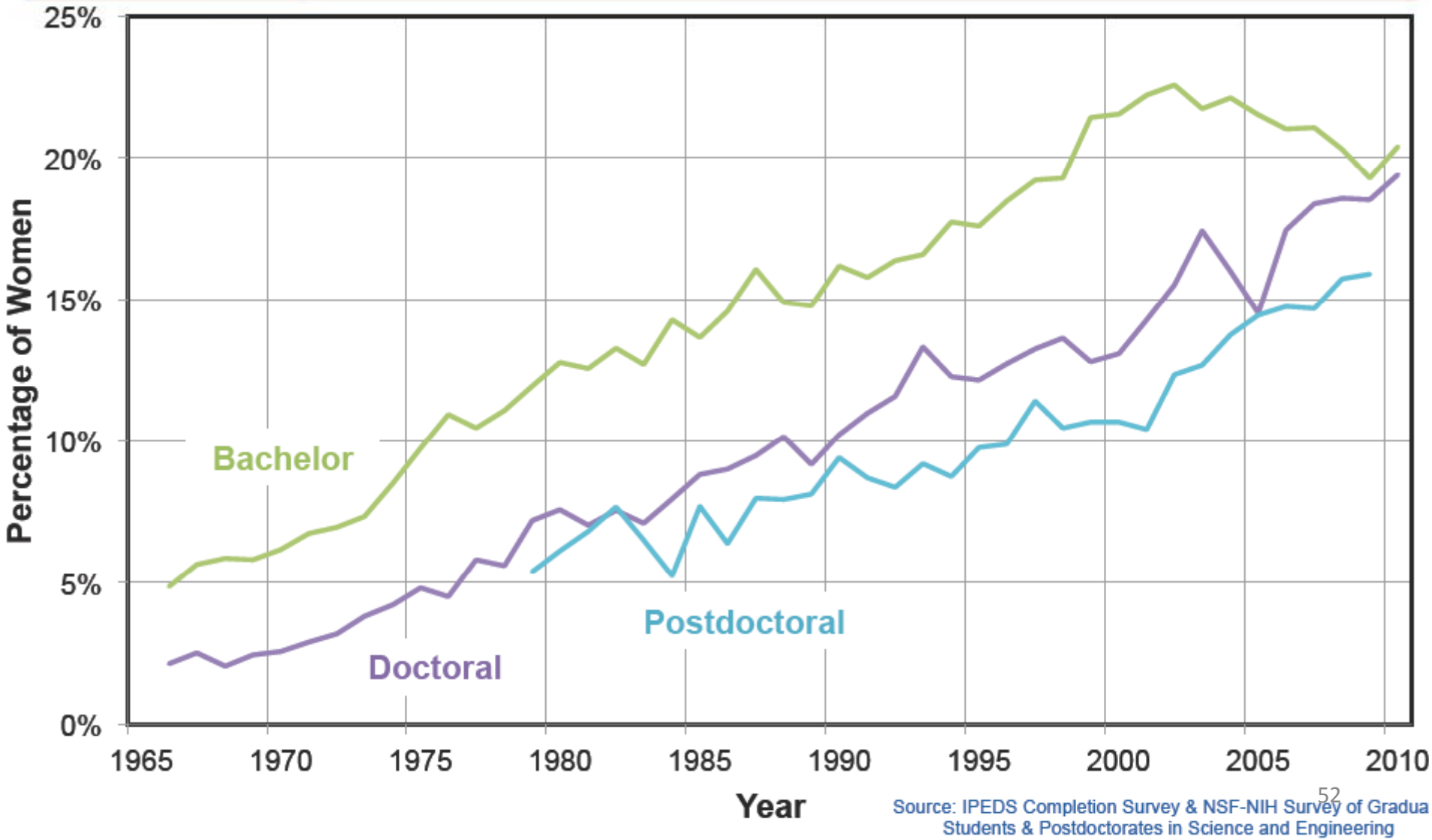
STRENGTHENING THE PHYSICS ENTERPRISE IN UNIVERSITIES AND NATIONAL LABORATORIES

MAY 6-8, 2007



APS physics | Education & Diversity

Percentage of Women in Physics 1966 - 2010



Source: IPEDS Completion Survey & NSF-NIH Survey of Gradua Students & Postdoctorates in Science and Engineering

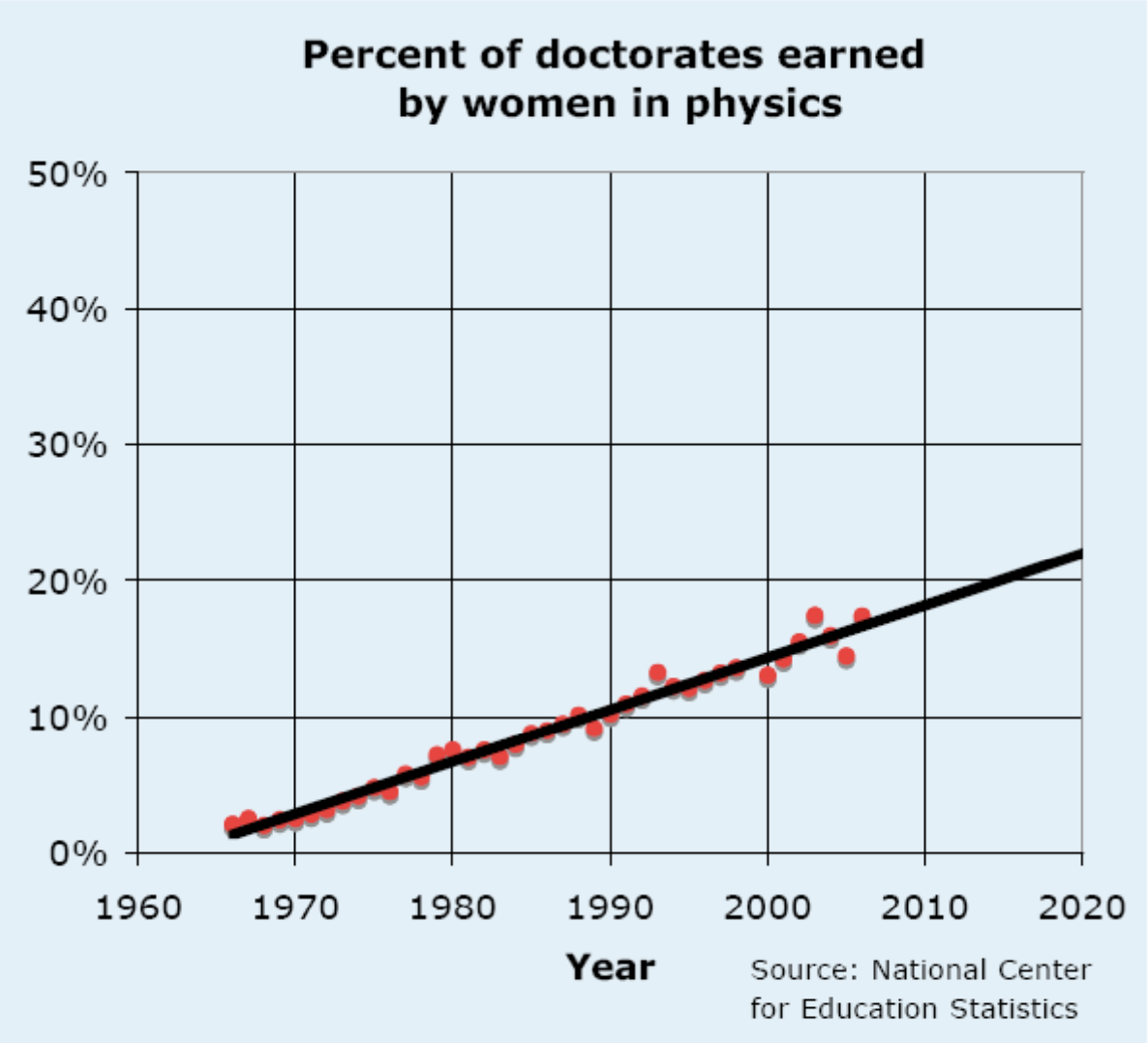
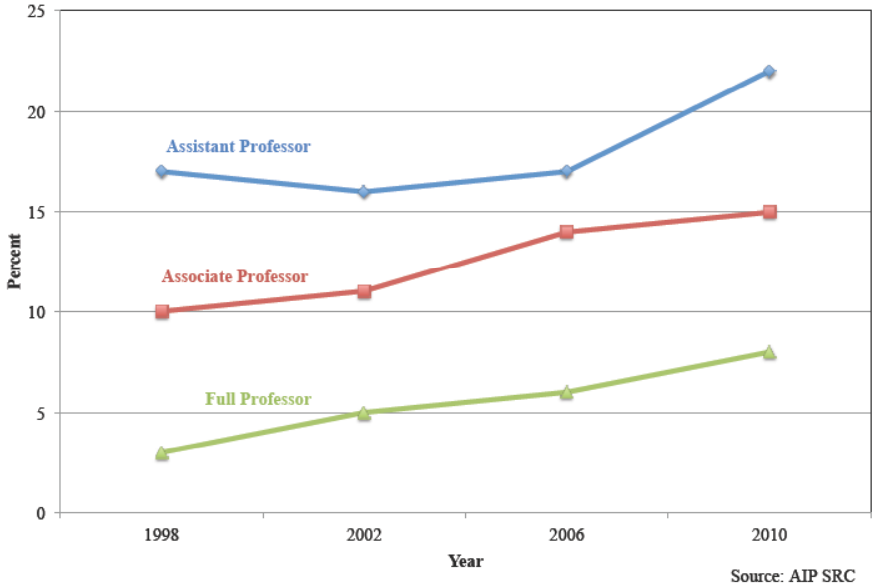


Figure 1. Fraction of physics PhD's earned by women showing a 0.4% annual increase[18]

Percentage of physics faculty members who are women

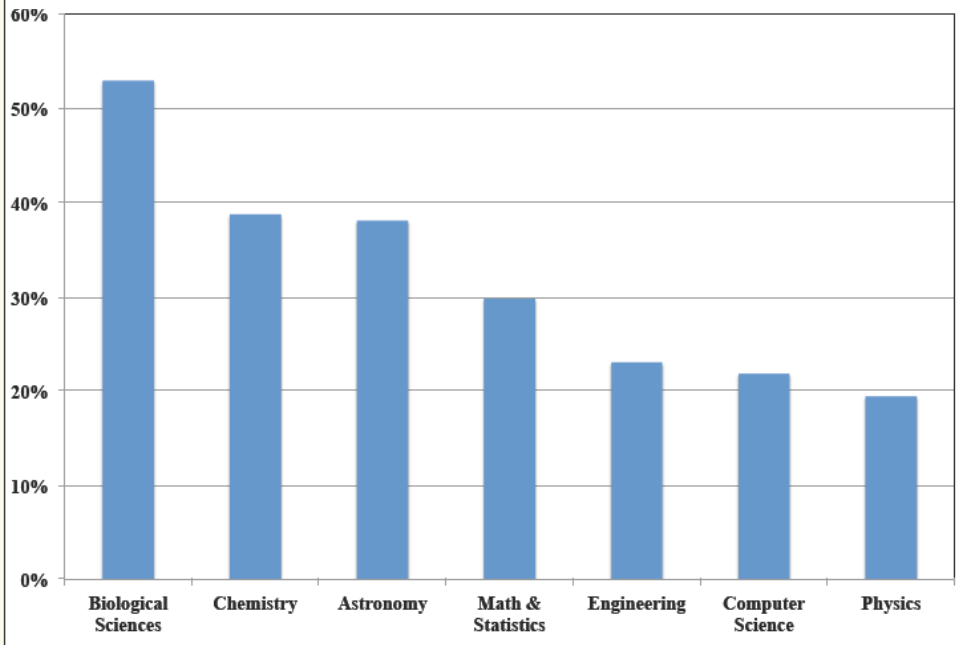
	1998	2002	2006	2010
Academic Rank				
Full Professor	3	5	6	8
Associate Professor	10	11	14	15
Assistant Professor	17	16	17	22
Instructor/Adjunct	N/A	16	19	21
Other ranks	13	15	12	18
Highest Degree Offered				
PhD	6	7	10	12
Master's	9	13	14	15
Bachelor's	11	14	15	17
Overall	8	10	12	14

Figure 2. Percent of faculty positions in physics held by women.



Source: AIP SRC

Figure 3. Percentage of PhDs earned by women in 2010.



Source: IPEDS Completion Survey

Solutions from APS

1.1 Recruitment

Increasing the number of women in physics involves both increased hiring of women at all academic levels as well as the active seeking of new women majors at both the undergraduate and graduate levels. Recommendations include:

- Actively recruit women. Keep apprised of women in the pipeline and let them know you would like them to apply for positions at your institution. Have faculty/scientists help keep a current list of up-and-coming women.
- Advertise broadly for positions to attract more women candidates with different backgrounds. It has been observed that women are not likely to apply for positions that have tightly constrained qualifications unless they see a near exact fit.
- Invite more women to interview. It is documented that women often under-sell themselves when compared to men. Digging deeper into the candidate pool might identify an excellent fit that is not immediately apparent.
- Mentor postdoctoral associates (and graduate students where appropriate) into faculty or scientist positions. Advice on how to succeed in the academic or the national laboratory arena will help them better prepare themselves for hiring and for coping with the difficulties inherent to the field.
- Provide training for search committee members in the recognition of unintended bias. It is particularly important that those reviewing applicants be aware of the role of unintended bias in the writing of letters of recommendation. Those interviewing candidates should be advised of the types of questions allowable in an interview and guidelines for equitable treatment. Questions should focus on job-related issues, and avoid questions of a personal nature such as marital or family status.
- Have candidates meet with a diverse group of individuals including graduate students, postdocs, and women inside and outside the department/national laboratory unit to get a sense of the environment at the institution.
- Women physicists are much more likely than men to marry other scientists[6]. Many universities have creative solutions for hiring a pair of individuals, such as upper-administration assistance in offering an additional position, or partial payment of the spouse's salary to another department or institution during some fraction of the pre-tenure period. Investigate these arrangements well in advance of hiring so that your job opening will be more attractive to woman candidates.

1.2 Climate

- Chairs/Managers should schedule regular meetings (at least once a year) with female students in their organizational unit to get their opinion of the environment for women in that unit. This can also be useful with postdoctoral associates or early career faculty/scientists.
- A mentoring committee of women faculty/scientists and students should be formed.
- Have a zero-tolerance policy for offensive comments. Chairs and managers should set the example by challenging offenders, perhaps even publicly, and making it known that comments of this nature are inappropriate and will not be tolerated. Make sure harassment policies are clear, equitable, and enforced uniformly.
- Ensure that all policies (e.g., hiring, tenure, promotion, harassment, discrimination, space allocation, teaching assignments, etc.) are transparent and easily available to all. It is suggested that these be posted electronically for easy and anonymous access.
- Develop policies that support a work/life balance for all. Examples include allowing personal leave for dependent care, or setting meeting times that do not interfere with parental responsibilities.
- Ensure meetings are run fairly for all by providing training for faculty/scientists on meeting facilitation.
- Publicly recognize awards and achievements for all in an equitable manner.

1.3 Retention

- Provide new faculty/scientists with more than one mentor, and encourage faculty/scientists to seek out additional mentors and support networks. Provide mentors with training that includes issues relevant to gender and cultural issues.

- As a chair/manager, follow the careers of new faculty/scientists, and check in frequently on the status of their activities. Corporate managers often use a technique called "coaching by walking around" to gain insight into employee activities and provide support. Chairs/managers can provide an open atmosphere of support and encouragement through informal visits and an open-door policy.

best

- Form an early-career faculty/scientist committee to encourage networking and to enable anonymous feedback of the department's/unit's environment to the chair/managers.

- "Stopping the tenure clock" for family leave should be available at all institutions for both women and men. Although at some institutions this has been viewed as a stigma, policies should be developed and chairs/managers should make public comments to encourage all faculty/scientists to take advantage of this option. Such policies should make the extension automatic while allowing the scientist the option to be evaluated for tenure on the original schedule.

- Nominate women for both small and large awards, prizes, and honors to recognize their accomplishments. This will help build their reputations and enhance their chances for winning larger awards.

FUNDING AGENCIES

- All funding agencies need to collect data on gender and minority status in funding support. These data should be aggregated and made publicly available.

- The funding agencies should set clear guidelines on building diversity and ensure that these values are incorporated in the award process. Awareness of diversity issues should be embedded at all decision-making levels in the funding agencies and at the national labs that they fund. For example, the National Science Foundation (NSF) "broader impacts" criterion can be used to encourage diversity among grant awardees and those supported by these grants, but applicants and reviewers may not understand how this is to be interpreted. Such policies should be clearly stated and explained.

- Funding agencies should continue to support workshops and other activities to promote diversity and to monitor progress on gender equity. Programs that enable early-career women to establish research programs leading to tenure should be created. In addition, funding for implementation of programs developed under NSF ADVANCE grants, which have been extremely beneficial to women, needs to be increased to allow more national programs across the US.

- Funding agencies and institutions should brainstorm additional ways to increase the diversity of the grantees.

1.5 Improving the Grant Process

- To improve the prospects for early career scientists to obtain grants, support should be made available for programs that educate postdocs and graduate students about the grant writing process.
- Early career faculty/scientists should have the means to meet with program officers. Agencies are encouraged to set up individual and group meetings with program officers at conferences.
- It is very helpful for junior people if they can get the opportunity to learn what is important to reviewers. Funding agencies are encouraged to include early career researchers on their review panels.
- Sustained funding for scientists is as important as starter grants. It is suggested that the proposal process be streamlined as much as possible to enhance overall productivity.
- The agencies should better advertise small grants for exploratory research, if they have them, or consider creating similar opportunities if they do not.

To ensure fair consideration in the granting process, the following items are suggested:

- Evaluation criteria for grant applications should be set in advance and should be clear.
- Important decision-making panels should have a critical mass of women, although it is important not to overburden the women who are frequently tasked to serve on them. We encourage funding agencies to keep track of who is asked to serve on committees and make an effort to include some of the lesser-known women.
- Reviewers should be sensitive to the elements of hidden bias that can enter the review process. A short discussion on diversity at the beginning of all agency review panels and other meetings where decisions on resources are made is encouraged. Specific examples, both good and bad, should be given on items that could arise, such as gaps in a résumé due to family issues or the accumulation of subtle biases.

Recognizing that concerns for the ability to balance family needs with the demands of an academic career often discourage women from pursuing faculty positions, steps to improve work/life considerations for grant recipients are suggested:

- Research grants with a longer structure (4-5 years) and more umbrella grants would significantly reduce the overhead of maintaining a successful research program while making research more attractive to early career scientists. All funding agencies are encouraged to form a task force to review the optimum balance between long/short grant periods and individual/group awards.
- To help enable transitions for those re-entering the workforce after having children, the length of time for people to work on their grant should be extended by the length of time taken off for child-rearing. The ability to do this with a no-cost extension should be widely publicized.
- Funding agencies should be supportive of university maternity/family leave options for graduate students. Small supplements to grants should be allowed if an additional person is needed on the project to maintain momentum. No-cost extensions and/or re-allocation of funds as well as allowances for slower progress in these situations should also be an option for the PI.
- Funding agencies should provide ways to ensure that childcare needs do not prevent attendance at professional meetings.
- Agencies should consider a task force to brainstorm ways to help people to transition through life changes (children, elder care, etc.) and continue to be part of the scientific workforce. Examples of programs that would retain people in the field include:
- Grants that allow faculty to focus on research but decrease teaching/service activities following family care/life changes.
- Grants funding additional post-docs to help keep a lab active during a family leave.
- Re-tooling grants for people returning after a short absence.

"Spreading best practices through workshops makes the environment better for everyone, not just women."

Patricia Rankin,
University of Colorado

"Constant collection and monitoring of data to chart equity progress, coupled with attention to family friendly policies, subtle biases in promotion and tenure processes, and support from top leadership are needed for women to advance in academic science."

Sue Rosser, Georgia Tech

"We will not achieve gender equity in the academy until we confront—and conquer—biases against caregiving."

Robert Drago, Penn State

"Dual-career couples represent a challenge to departments seeking to enhance the representation of women among their faculty, and it is very much in the interests of departments to identify and implement effective responses to that challenge."

Laurie McNeil, University of North Carolina Chapel Hill

au CNRS,
à l’université et
au CEA

2.2 ■ Conseils scientifiques d'institut

Mandat 2010-2014

INSTITUT	DR/PR			CR/MCF			IT			AUTRE			TOTAL		
	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes
INSB	11	5	31,3%	1	3	75,0%	2	1	33,3%				14	9	39,1%
INC	9	6	40,0%	2	3	60,0%	2	1	33,3%				13	10	43,5%
INEE	12	4	25,0%	1	4	80,0%	2	1	33,3%				15	9	37,5%
INSHS	7	8	53,3%	4	2	33,3%	2	1	33,3%				13	11	45,8%
INS2I	12	5	29,4%	1	3	75,0%	1	1	50,0%				14	9	39,1%
INSIS	8	5	38,5%	4		0,0%	3		0,0%	4		0,0%	19	5	20,8%
INSMI	12	5	29,4%	1	3	75,0%	2	1	33,3%				15	9	37,5%
INP	11	4	26,7%	2	3	60,0%	2	1	33,3%	1		0,0%	16	8	33,3%
IN2P3	10	4	28,6%	3		0,0%	3		0,0%	3		0,0%	19	4	17,4%
INSU	8	5	38,5%	1	4	80,0%	1	2	66,7%		1	100,0%	10	12	54,5%
TOTAL	**100**	**51**	**33,8%**	**20**	**25**	**55,6%**	**20**	**9**	**31,0%**	**8**	**1**	**11,1%**	**148**	**86**	**36,8%**

Sections

Mandat 2008-2012

SECTION	COMPOSITION									TOTAL			PRÉSIDENT
	DR/PR			CR/MCF			IT						
	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Hommes	Femmes	% Femmes	Femmes
1	10	4	28,6%	2	1	33,3%	2	1	33,3%	14	6	30,0%	
2	11	3	21,4%	4		0,0%	1	2	66,7%	16	5	23,8%	
3	6	5	45,5%	4	1	20,0%	2		0,0%	12	6	33,3%	
4	10	2	16,7%	2	4	66,7%	2	1	33,3%	14	7	33,3%	
5	9	4	30,8%	5		0,0%	2	1	33,3%	16	5	23,8%	
6	10	3	23,1%	5		0,0%	2	1	33,3%	17	4	19,0%	
7	10	3	23,1%	4	1	20,0%	3		0,0%	17	4	19,0%	
8	10	3	23,1%	4		0,0%	3		0,0%	17	3	15,0%	
9	10	2	16,7%	4	2	33,3%	3		0,0%	17	4	19,0%	
10	10	4	28,6%	1	3	75,0%	3		0,0%	14	7	33,3%	
11	8	5	38,5%	4	1	20,0%	3		0,0%	15	6	28,6%	
12	9	3	25,0%	4	1	20,0%	3		0,0%	16	4	20,0%	
13	10	3	23,1%	3	2	40,0%	3		0,0%	16	5	23,8%	
14	8	5	38,5%	3	2	40,0%	2	1	33,3%	13	8	38,1%	
15	11	2	15,4%	5		0,0%	3		0,0%	19	2	9,5%	
16	7	6	46,2%	2	3	60,0%	3		0,0%	12	9	42,9%	1
17	9	5	35,7%	2	2	50,0%	3		0,0%	14	7	33,3%	1
18	10	2	16,7%	4	2	33,3%	3		0,0%	17	4	19,0%	
19	10	2	16,7%	2	4	66,7%	3		0,0%	15	6	28,6%	
20	6	4	40,0%	3	5	62,5%	1	2	66,7%	10	11	52,4%	1

Répartition par corps et par section

N° ET LIBELLÉ DES SECTIONS		DR				CR				TOTAL			
		Hommes	Femmes	Total	*IP*	Hommes	Femmes	Total	*IP*	Hommes	Femmes	Total	*IP*
1	Mathématiques et interactions des mathématiques	120	21	141	*0,18*	178	34	212	*0,19*	298	55	353	*0,18*
2	Théories physiques : méthodes, modèles et applications	109	10	119	*0,09*	113	16	129	*0,14*	222	26	248	*0,12*
3	Interactions, particules, noyaux du laboratoire au cosmos	155	22	177	*0,14*	187	60	247	*0,32*	342	82	424	*0,24*
4	Atomes et molécules - Optique et lasers - Plasmas chauds	106	26	132	*0,25*	142	39	181	*0,27*	248	65	313	*0,26*
5	Matière condensée : organisation et dynamique	100	20	120	*0,20*	126	46	172	*0,37*	226	66	292	*0,29*
6	Matière condensée : structures et propriétés électroniques	109	17	126	*0,16*	125	34	159	*0,27*	234	51	285	*0,22*
7	Sciences et technologies de l'information (informatique, automatique, signal et communication)	141	24	165	*0,17*	254	70	324	*0,28*	395	94	489	*0,24*
8	Micro et nanotechnologies, électronique, photonique, électromagnétisme, énergie électrique	107	17	124	*0,16*	179	56	235	*0,31*	286	73	359	*0,26*
9	Ingénierie des matériaux et des structures - Mécanique des solides - Acoustique	81	7	88	*0,09*	98	24	122	*0,24*	179	31	210	*0,17*
10	Milieux fluides et réactifs : transports, transferts, procédés de transformation	127	29	156	*0,23*	159	55	214	*0,35*	286	84	370	*0,29*

N° ET	DR				CR			
	Hommes	Femmes	Total	*IP*	Hommes	Femmes	Total	*IP*
1	120	21	141	*0,18*	178	34	212	*0,19*
2	109	10	119	*0,09*	113	16	129	*0,14*
3	155	22	177	*0,14*	187	60	247	*0,32*
4	106	26	132	*0,25*	142	39	181	*0,27*
5	100	20	120	*0,20*	126	46	172	*0,37*
6	109	17	126	*0,16*	125	34	159	*0,27*
7	141	24	165	*0,17*	254	70	324	*0,28*
8	107	17	124	*0,16*	179	56	235	*0,31*
9	81	7	88	*0,09*	98	24	122	*0,24*
10	127	29	156	*0,23*	159	55	214	*0,35*

Statistiques universités

DGRH A1-1 le 14 février 2011

Professeurs Grande discipline / / Section CNU			Ile de France					Province					Total			
			Hommes	Femmes	% Fe.	Total	% IDF / France	Hommes	Femmes	% Fe.	Total	% Prov. / France	Hommes	Femmes	% Fe.	Total
Sciences	maths	25	112	8	6,7%	120	21,8%	403	28	6,5%	431	78,2%	515	36	6,5%	551
	m.appl.	26	142	37	20,7%	179	28,9%	387	54	12,2%	441	71,1%	529	91	14,7%	620
	Info	27	157	63	28,6%	220	24,1%	581	113	16,3%	694	75,9%	738	176	19,3%	914
	Total 05		411	108	20,8%	519	24,9%	1 371	195	12,5%	1 566	75,1%	1 782	303	14,5%	2 085
	matériaux	28	85	2(	19.0%	105	20,4%	366	4(	10.7%	410	79,6%	451	64	12,4%	515
	élém	29	47	6	11,3%	53	29,1%	119	10	7,8%	129	70,9%	166	16	8,8%	182
	optique	30	44	1	22.8%	57	24,5%	157	1(	10.8%	176	75,5%	201	32	13,7%	233
	Total 06		176	39	18,1%	215	23,1%	642	73	10,2%	715	76,9%	818	112	12,0%	930

Professeurs des universités : répartition par discipline, région géographique (Ile de France ou province) et sexe

source GESUP 2 -novembre 2010

Maîtres de conférences Grande discipline / / Section CNU			Ile de France					Province					Total			
			Hommes	Femmes	% Fe.	Total	% IDF / France	Hommes	Femmes	% Fe.	Total	% Prov. / France	Hommes	Femmes	% Fe.	Total
Sciences	maths	25	171	49	22,3%	220	24,4%	563	117	17,2%	680	75,6%	734	166	18,4%	900
	m.appl.	26	210	116	35,6%	326	28,2%	557	271	32,7%	828	71,8%	767	387	33,5%	1 154
	Info	27	360	167	31,7%	527	22,1%	1 408	452	24,3%	1 860	77,9%	1 768	619	25,9%	2 387
	Total 05		741	332	30,9%	1 073	24,2%	2 528	840	24,9%	3 368	75,8%	3 269	1 172	26,4%	4 441
	matériaux	28	131	7(	34.8%	201	22,3%	489	21	30.1%	700	77,7%	620	281	31,2%	901
	élém	29	58	19	24,7%	77	32,9%	121	36	22,9%	157	67,1%	179	55	23,5%	234
	optique	30	89	38	29.9%	127	30,9%	234	5(	17.6%	284	69,1%	323	88	21,4%	411
	Total 06		278	127	31,4%	405	26,2%	844	297	26,0%	1 141	73,8%	1 122	424	27,4%	1 546

Maîtres de conférences : répartition par discipline, région géographique (Ile de France ou province) et sexe

source GESUP 2 -novembre 2010

Pourcentages de femmes dans les deux corps de chercheur(se)s pour l'enseignement supérieur, le CNRS et le CEA.

	Enseignement supérieur[9]				CNRS[10]				CEA[11]	
	MdC Maîtres de conférences	Prof. Professeures des universités	*AM*	Sections CNU[12]	CR Chargées de recherche	DR Directrices de recherche	*AM*	Institut	ES Expertes-seniors	DR-EI Directrices de recherche – Expertes internationales
Mathématiques et informatique	26,4%	14,5%	*2,18*	s25-s27	13,8%	15,3%	*0,89**	INM	9%	0%
Physique : matériaux, milieux dilués, optique	28,0%	12,8%	2.6	s28+s30	23,1%	16,7%	1.5	INP	13%	10%
Physique nucléaire et des particules élémentaires	23,5%	8,8%	*3,00*	s29	27,0%	16,7%	*1,85*	IN2P3	14%	19%
Chimie	42,8%	21,3%	*2,78*	s31-s33	36,7%	23,1%	*1,93*	INC	22%	8%
Biologie	53,0%	24,6%	*3,42*	s64-s69	49,5%	29,1%	*2,39*	INB	27%	17%

Le pourcentage de filles[8] est de 47% pour la réussite au baccalauréat S.
AM ou Avantage masculin : rapport des indices de parité (= nombre de femmes/nombre d'hommes) entre les cadres B et A ; plus la valeur de AM est supérieure à 1, plus les femmes ont des difficultés à passer cadre A comparées aux hommes.
* En mathématiques, les chargés de recherche candidatent plus systématiquement comme professeurs que dans les autres spécialités, ce qui explique les chiffres singuliers dans cet institut du CNRS. Il est plus juste de considérer les chiffres globaux CNRS + ES : 26% de femmes pour le total B (MdC+ CR) et 15% de femmes pour le total A (Prof + DR), soit AM = 2,05.

AM ou Avantage masculin :
rapport des indices de parité

(8) Source : *Filles et garçons sur le chemin de l'égalité de l'école à l'enseignement supérieur* : http://media.eduscol.education.fr/file/Valeurs_republicaines/46/0/filles_garcons_chiffres2010_139460.pdf
(9) Source : *Enseignants-chercheurs : répartition par discipline, région et sexe* : http://sd-2.archive-host.com/membres/up/38164215153597045/_Stat_CNU_Sexuee_IDF_Regions.pdf
(10) Source : *La parité dans les métiers du CNRS 2008/09* : www.cnrs.fr/mpdf/IMG/pdf/livretparite20082009_bd.pdf.pdf
(11) Source : A-M. Jonquière, responsable de la filière « Experts » du CEA.

Parcours Scolaire jusqu'à PhD en FRANCE


filles et garçons
sur le chemin de l'égalité
de l'école à l'enseignement supérieur
2012

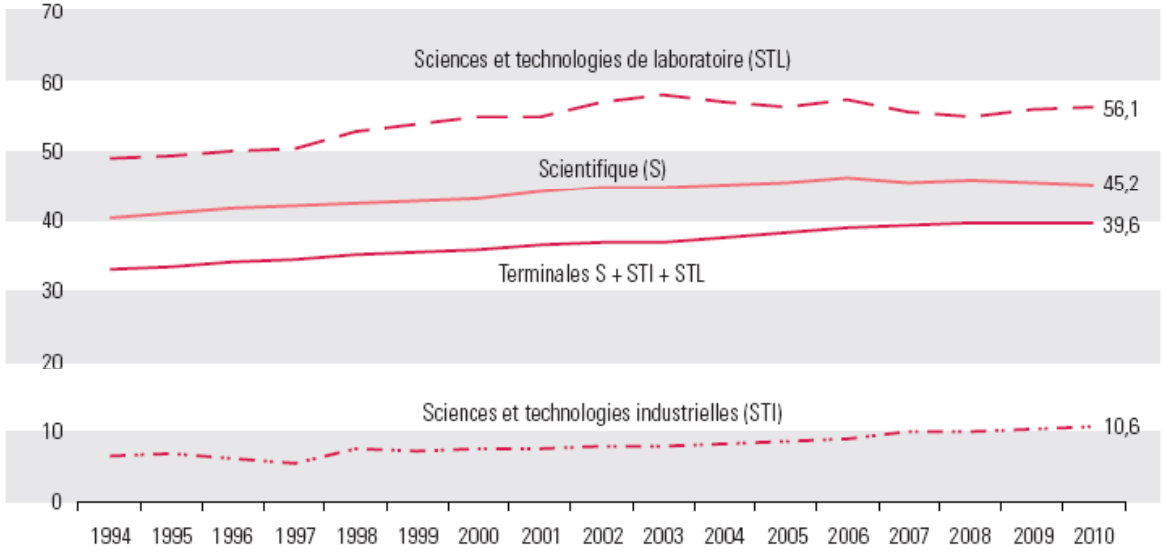
Rentrée 2010

	Effectifs en milliers	Filles en %
Élèves, étudiants et apprentis	**14 997,5**	**49,7**
Nombre d'élèves des premier et second degrés (MENJVA)	**12 017,5**	**49,3**
Premier degré	6 664,3	48,9
Second degré	5 353,2	49,8
Collégiens (1er cycle et SEGPA)	3 222,0	48,8
Lycéens (2nd cycle général et technologique)	1 425,7	54,3
dont terminales S	158,8	45,2
dont terminales L	52,0	78,7
dont terminales ES	104,0	61,0
dont terminales STI	35,0	10,6
dont terminales STG	76,4	56,0
dont terminales STL	7,4	56,1
dont terminales ST2S	25,8	92,8
Nombre d'étudiants	**2 318,7**	**55,4**
dont CPGE	79,9	41,9
dont STS	242,2	51,0
dont universités (hors IUT et écoles d'ingénieurs)	1 299,8	59,2
dont IUT	116,5	39,9
dont formations d'ingénieurs	122,3	26,5

40 % des élèves des terminales scientifiques (S, STI et STL) sont des filles

L'objectif de la LOLF est d'atteindre 42 % en 2013.

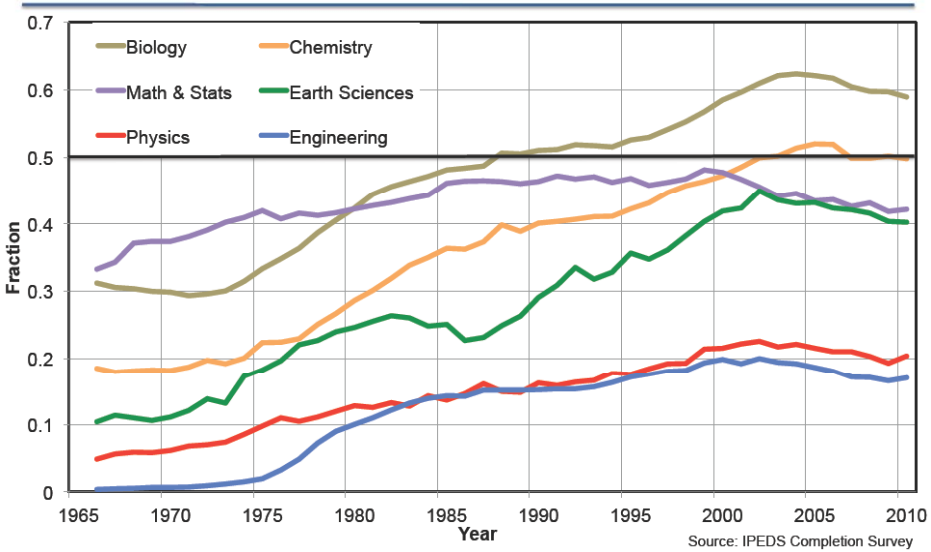
Part des filles en terminales scientifiques en 2010 (%)



Lecture – En 2010, 45,2 % des élèves inscrits en terminale générale S sont des filles.
Champ : France métropolitaine et DOM, Enseignement public et privé, MENJVA
Source : MENJVA-MESR DEPP

APS physics | Education & Diversity

Fraction of Women Earning Bachelor's Degrees 1966 – 2010



Source: IPEDS Completion Survey

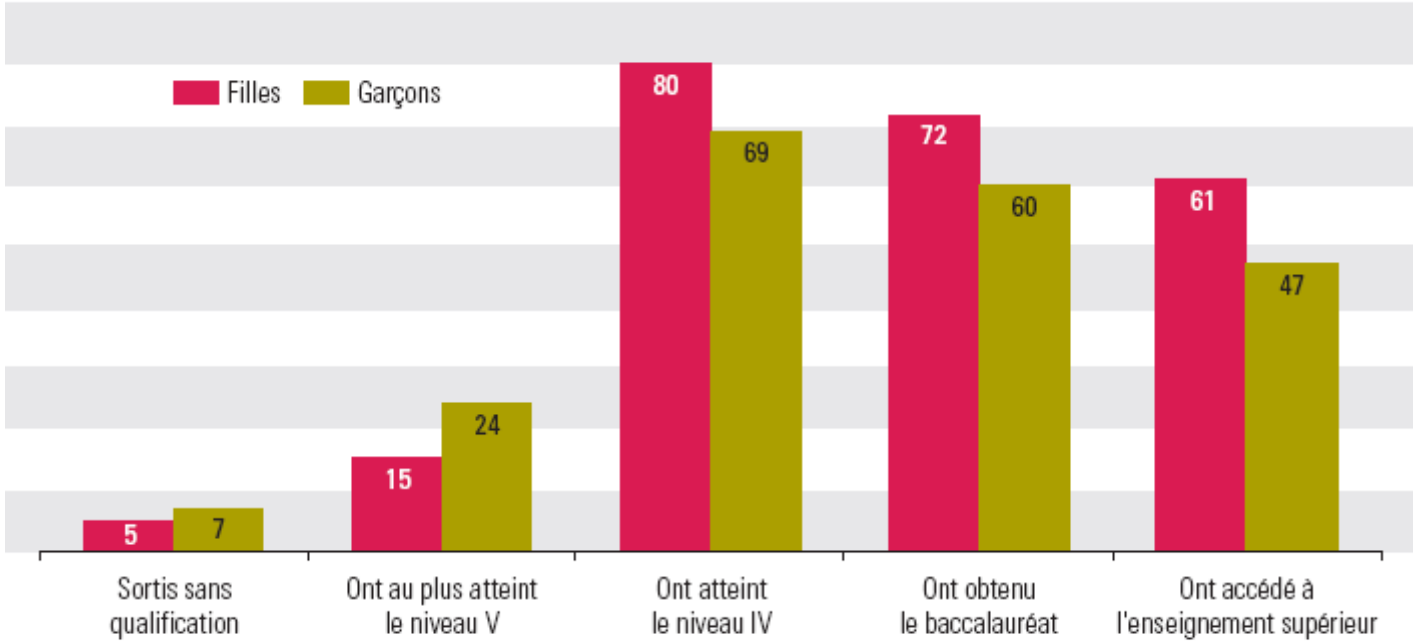
Avantage scolaire filles

… et à 17 ans

Lecture – À 17 ans, 40 % des filles et 29 % des garçons sont scolarisés en classe de terminale générale et technologique.
Champ : France métropolitaine, ensemble des établissements d'enseignement et centres de formation d'apprentis
Source : MENJVA-MESR DEPP

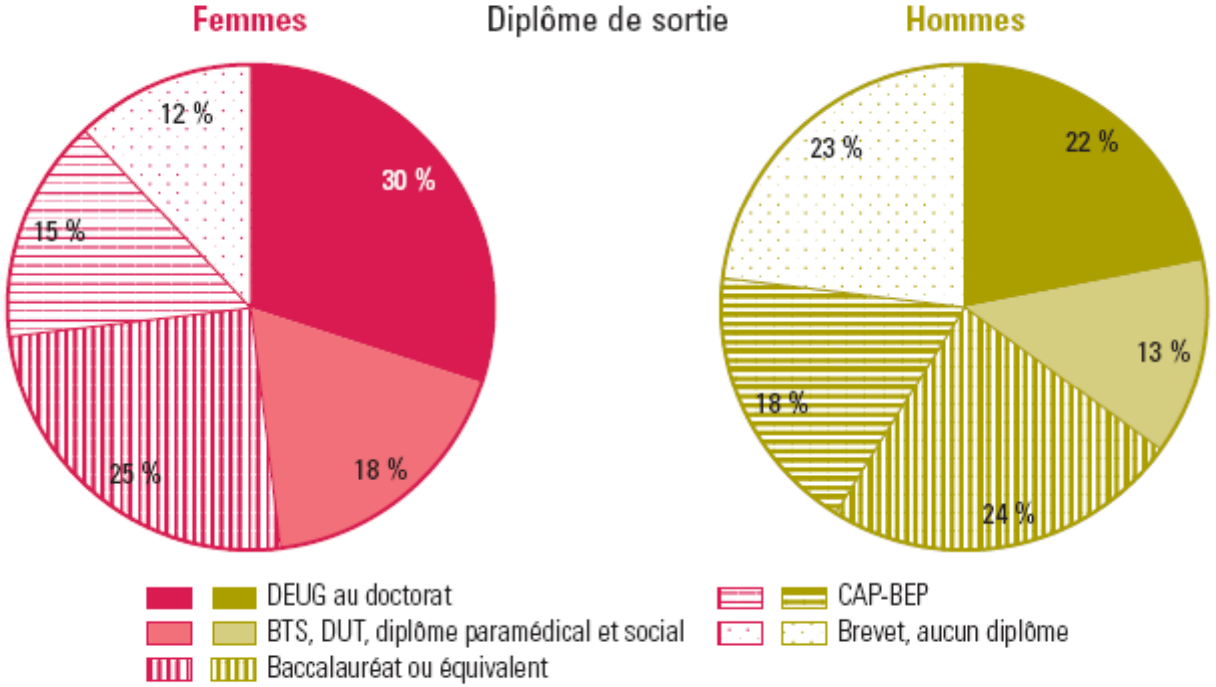
Des parcours scolaires à l'avantage des filles

Parcours scolaires 10 ans après l'entrée en sixième en 1995 (%)



Lecture – Sur 100 filles entrées en sixième en 1995, 5 sont sorties sans qualification du système éducatif dix ans plus tard, 15 ont au plus atteint

À la sortie du système éducatif, les femmes sont plus diplômées…



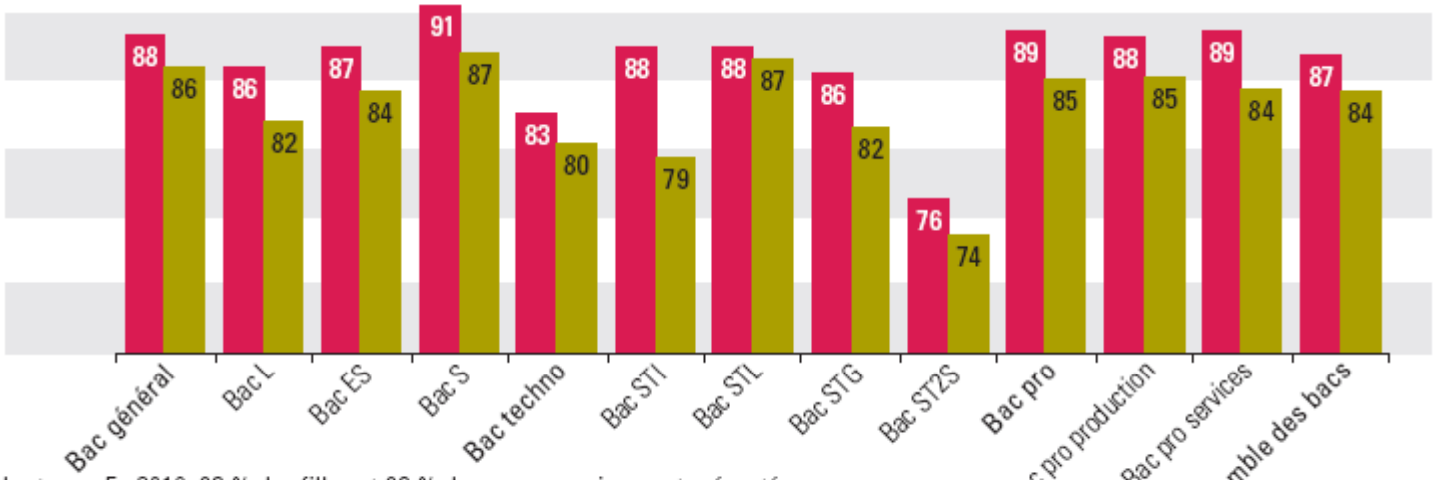
Lecture – En moyenne sur 2007, 2008 et 2009, 30 % des filles sorties du système éducatif sont diplômées de l'enseignement supérieur du DEUG au doctorat, contre 22 % des garçons.

Champ : France métropolitaine

Source : Enquêtes Emploi INSEE 2008 à 2010 (moyennes des quatre trimestres), traitement MENJVA-MESR DEPP

De meilleurs taux de réussite pour les filles

Taux de réussite au baccalauréat en 2010 (%)

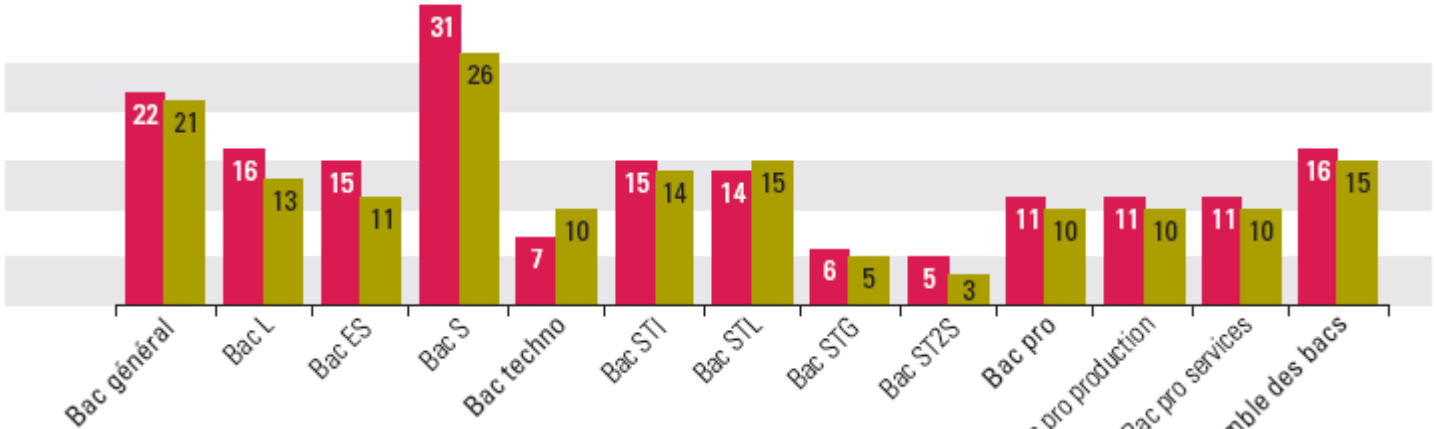


Lecture – En 2010, 88 % des filles et 86 % des garçons qui se sont présentés au baccalauréat général l'ont obtenu.

Champ : France métropolitaine + DOM

Source : MENJVA-MESR DEPP

Proportion de mentions « bien » ou « très bien » au baccalauréat en 2010 (%)



Lecture – 31 % des filles et 26 % des garçons admis au baccalauréat scientifique (S) en 2010 l'ont obtenu avec une mention « bien » ou « très bien ».

Champ : France métropolitaine + DOM

Source : MENJVA-MESR DEPP

Les choix

À notes équivalentes au brevet, filles et garçons font des vœux semblables

Vœux d'orientation des filles et des garçons en fin de troisième générale (%)

Moyenne des notes au contrôle continu du brevet	Filles				Garçons			
	Seconde générale et techno	BEP	CAP	Redouble-ment	Seconde générale et techno	BEP	CAP	Redouble-ment
Moins de 9 sur 20	25	61	9	5	23	60	11	6
Entre 9 et 13	78	19	2	1	77	20	2	1
Plus de 13 sur 20	98	1	0	0	99	1	0	0
Ensemble	**75**	**21**	**3**	**1**	**68**	**26**	**4**	**2**

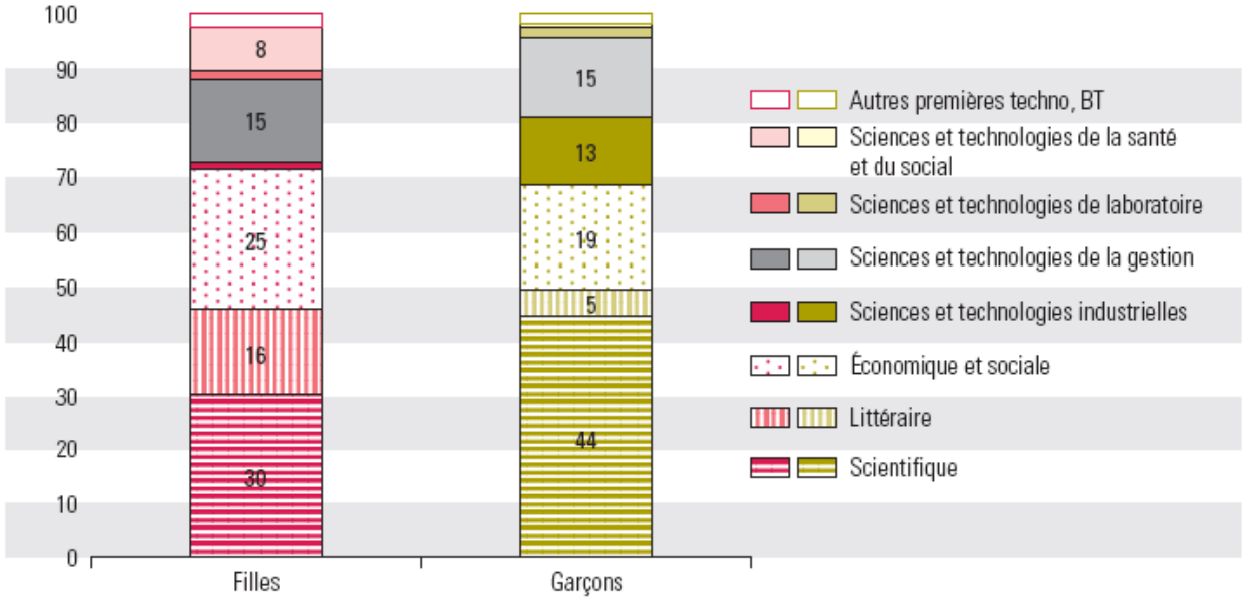
Lecture – Lorsqu'elles ont obtenu des notes entre 9 et 13 au contrôle continu, 78 % des filles veulent s'orienter en seconde générale et technologique et 19 % en BEP. Les garçons, dans la même situation, font des vœux semblables : respectivement 77 % et 20 %.

Champ : France métropolitaine

Source : MENJVA-MESR DEPP, Panel de la DEPP – élèves entrés en sixième en 1995

En première, les choix de séries diffèrent : les filles vont davantage en ES et L et les garçons en S et STI…

Répartition des filles et des garçons selon la série de première générale et technologique à la rentrée 2010 (%)



Lecture – En 2010, 30 % des filles et 44 % des garçons qui suivent une classe de première générale et technologique sont inscrits en

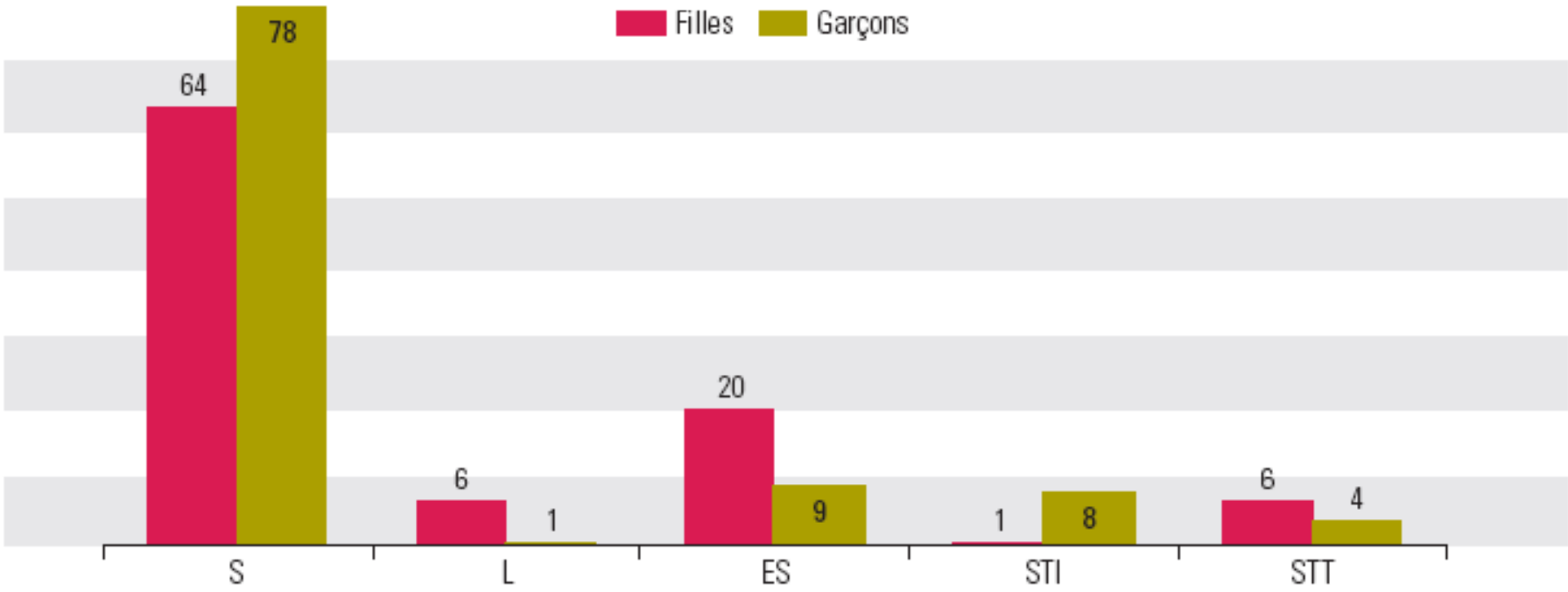
Les filles font plus souvent des choix d'enseignement littéraire et les garçons d'enseignement scientifique ou technologique…

Enseignements d'exploration suivis en seconde générale et technologique à la rentrée 2010 (%)

Profils des enseignements d'exploration	Choix des filles	Choix des garçons
Profil économie-gestion (SES + PFEG) (1)	**9,1**	**9,8**
Profil lettres, langues, arts	**42,8**	**20,7**
dont profil lettres, langues, arts avec sciences économiques et sociales	37,9	17,8
Littérature et société	20,9	9,6
Troisième langue vivante	9,8	4,5
Arts (2)	9,4	4,6
Latin/grec (avec ou sans troisième langue vivante) (3)	2,7	2,0
Profil scientifique ou technologique	**48,0**	**69,5**
dont profil scientifique ou technologique avec sciences économiques et sociales	41,9	55,5
Méthodes et pratiques scientifiques	27,9	35,9
Sciences de l'ingénieur	2,2	12,0
Sciences et laboratoire	7,1	7,6
Santé et social	4,7	0,8
Création et innovation technologiques	1,0	4,4
Biotechnologies	1,5	1,2
Sciences de l'ingénieur + création et innovation technologiques	0,4	5,7
Biotechnologies + santé et social ou sciences et laboratoire	2,6	0,7
Autres profils scientifiques ou technologiques	0,7	1,3

Quand ils se jugent très bons en mathématiques, 8 garçons sur 10 vont en S, quand elles se jugent très bonnes en mathématiques, 6 filles sur 10 vont en S

… en mathématiques (%)



Lecture – 64 % des filles qui se jugent très bonnes en mathématiques en fin de collège se sont orientées vers un baccalauréat scientifique (S). À jugement identique, 78 % des garçons ont intégré la série S.

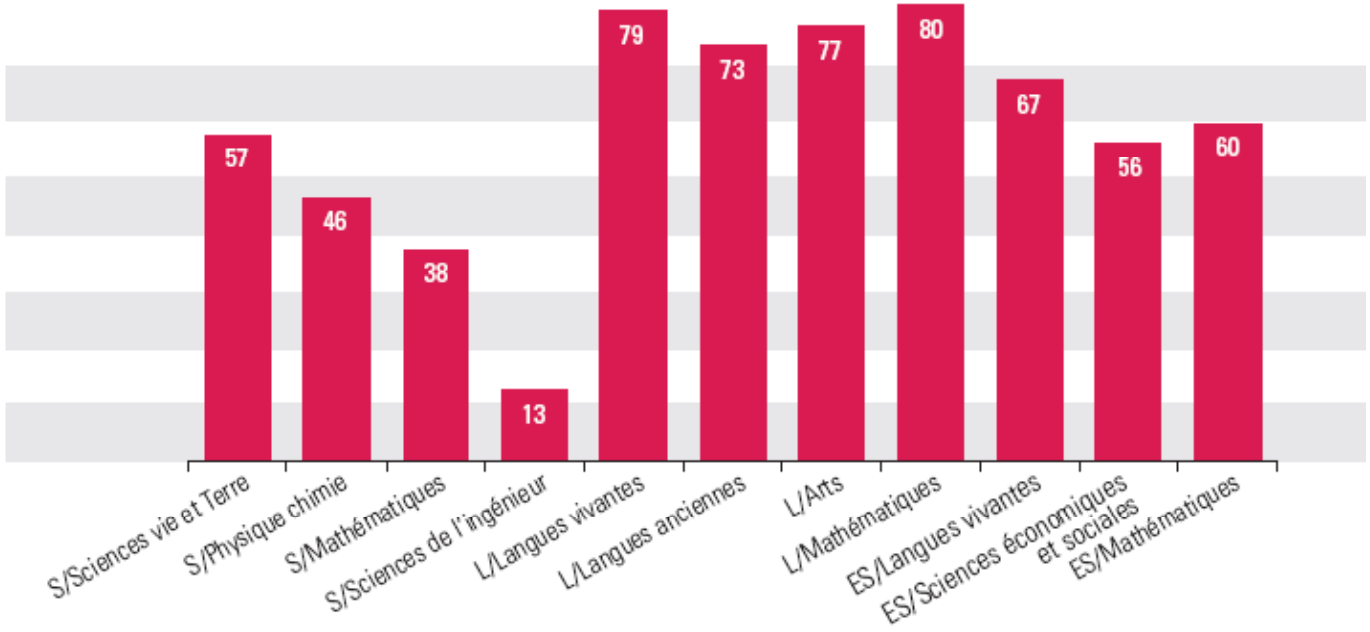
Champ : France métropolitaine

Source : MENJVA-MESR DEPP, panel de la DEPP – Élèves entrés en sixième en 1995

En Terminale et après

La parité est presque atteinte en terminale S, spécialité « physique chimie »

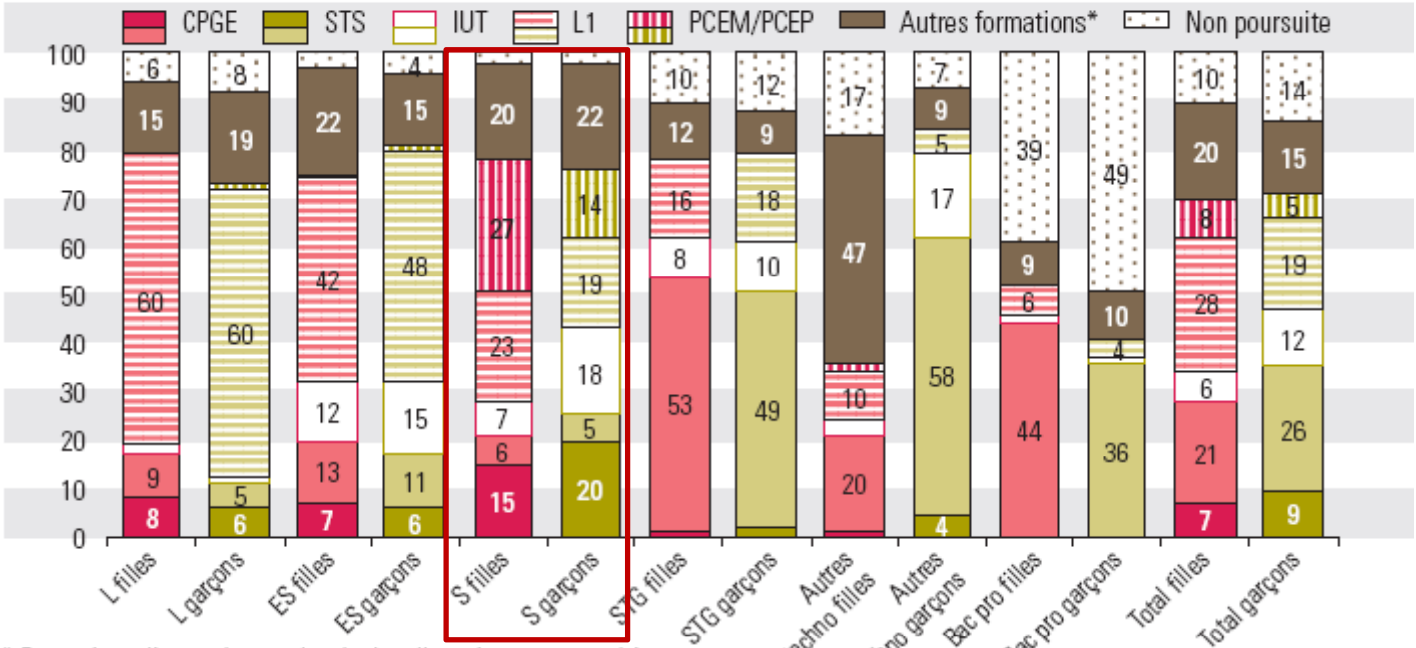
Part des filles en terminale selon l'enseignement de spécialité à la rentrée 2010 (%)



Après le baccalauréat

À série de baccalauréat équivalente, les filles et les garçons ne font pas les mêmes choix de poursuite d'études dans l'enseignement supérieur…

Taux de poursuites des bacheliers dans l'enseignement supérieur selon la série du baccalauréat (%)



* Formations dispensées par les écoles d'enseignement supérieur, et notamment préparations intégrées des écoles de commerce et d'ingénieurs.

Lecture – 15 % des filles et 20 % des garçons titulaires d'un baccalauréat S poursuivent dans l'enseignement supérieur via une classe préparatoire aux grandes écoles (CPGE).

Champ : France métropolitaine

Source : MESR-DGESIP-DGRI SIES – Panel de bacheliers 2008

Peu de filles en classes préparatoires scientifiques et peu de garçons en classes préparatoires littéraires

Effectifs des classes supérieures par filière en 2010

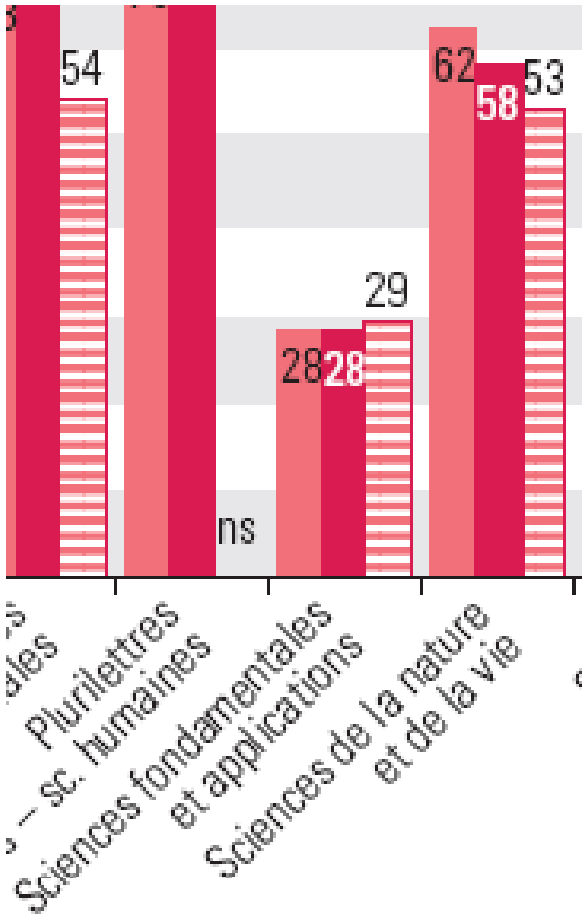
France métropolitaine + DOM, public + privé

	Filles	Garçons	Total	% filles
Classes préparatoires aux grandes écoles	33 502	46 372	79 874	41,9
Préparations scientifiques	14 951	34 727	49 678	30,1
Préparations économiques	10 007	8 483	18 490	54,1
Préparations littéraires	8 544	3 162	11 706	73,0
Sections de techniciens supérieurs	123 587	118 660	242 247	51,0
Total général	157 089	165 032	322 121	48,8

Lecture – 41,9 % des étudiants en classes préparatoires aux grandes écoles sont des filles. Elles sont à parité avec les garçons en sections de techniciens supérieurs (51 %).

Source : MESR-DGESIP-DGRI SIES

Part des femmes à l'université selon le cursus et la discipline en 2010 (%)



Deux adresses mail à noter

pour participer à Global Survey of Physicists
(very few french answers):

http://www.aipsurveys.org/global/

Pour se tester: Test de Biais:

https://implicit.harvard.edu/implicit/

ou

https://implicit.harvard.edu/implicit/france/

Femmes et Physique,

la commission reprend du service

La commission « Femmes et Physique »
de la Société Française de Physique
a pour objectif d'attirer, d'encourager
et de promouvoir les femmes dans
les métiers de la physique[1].
La proportion de femmes chercheuses,
enseignantes-chercheuses ou ingénieures
reste encore faible en France, même
au niveau des candidatures[2].
Cette démotivation pour la physique
a de multiples causes. Pour attirer plus
de filles dans nos métiers, il faut
leur faire rencontrer des physiciennes
accomplies et enthousiastes.

**Si cette action vous intéresse, femme ou homme, rejoignez-nous !
Envoyez un mail à vero@ipcms.unistra.fr**

Pour tenter de corriger les facteurs à l'origine de cet état de fait, les actions de la commission F&Φ (Femmes et Physique) seront les suivantes :

- Inciter les femmes de la SFP à donner des conférences dans les collèges et les lycées pour inciter les jeunes (filles et garçons) à faire de la physique (notamment dans le cadre des contacts existants avec les rectorats, universités et associations[1] comme « Femmes et sciences »).
- Mettre sur le site internet de la SFP une base de données de conférencières pour les différents types d'interventions : conférences de spécialistes, « grand public de physicien(ne)s », « grand public » et « public de collégien(ne)s et lycéen(ne)s ».
- Augmenter la proportion de femmes dans les différents conseils et comités de sélection (SFP, CNRS, CNU, ANR, Europe…), en encourageant les femmes à se présenter aux élections ou à s'inscrire dans les bases de données, et en précisant sur le site de la commission « Femmes et Physique »[5] les modalités pour candidater.
- Demander aux différentes instances de prendre plus largement en compte dans les critères de sélection pour les embauches, les prix ou les promotions, les travaux de vulgarisation (vers les scolaires ou le grand public), les actions au service de la collectivité, etc., souvent plus présents dans les carrières des femmes.
- Proposer des femmes pour les prix de la SFP.
- Mettre en place un système de mentorat (par une interlocutrice pour aider les femmes lors de leurs évaluations, candidatures et reprises d'activité après un congé de maternité ou de maladie, pour les inciter à demander/accepter des responsabilités…).
- Représenter la SFP à différentes conférences et structures internationales sur l'égalité des genres ("Women in Physics" de l'IUPAP[6] et de l'EPS).
- Aider les femmes à se déplacer pour participer à des conférences (encourager les organisateurs à prévoir des modes de garde d'enfants accessibles aux congressistes et/ou à créer une ligne budgétaire dédiée aux frais de garde[7], suggérer aux employeurs de prendre en compte ces frais dans les frais de mission, mettre en place des bourses pour les femmes pour participer à des congrès internationaux).