GEND ERA
Gender Debate in the European Research Area

Practical recommendations for research organisations to lead the change towards gender equality in science and technology

Why?

Why are there so few women at the top of science? Why is their advancement so slow?

> *"Although the percentage of women in European research has been high for a long time, only a few of them reach the very top – even today."*
> **Luisa Prista**, Head of Scientific Culture and Gender Issues Unit, Directorate General Research, European Commission

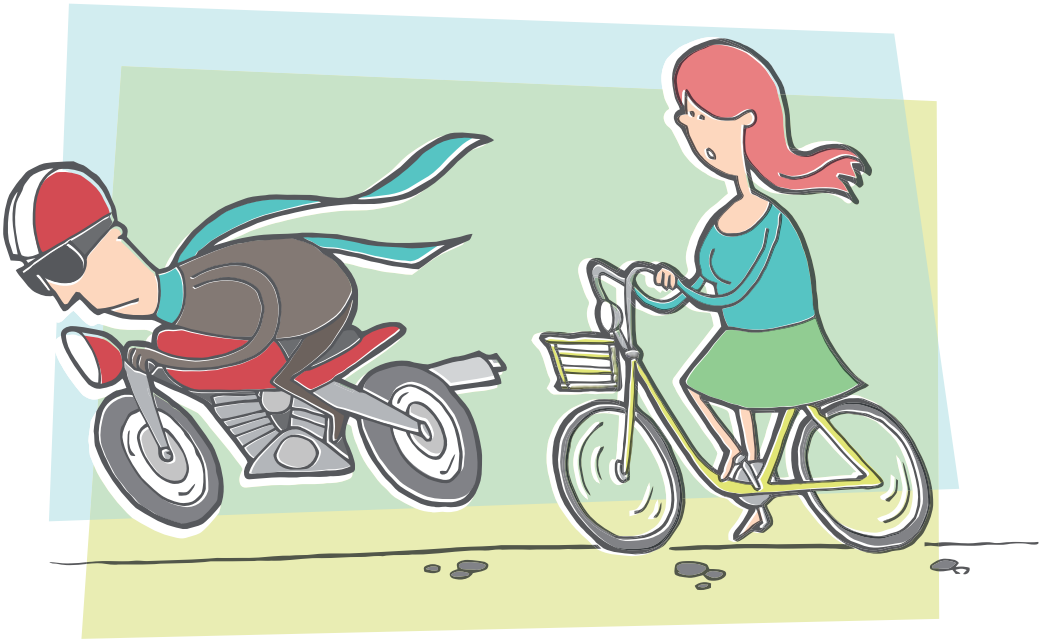
Even at this point in time, gender equality is not really the norm in all fields and in all stages of life. Stereotypes, hidden messages, gender blindness and direct discrimination are rampant in many areas of social life, and science and technology are no exception.

Human talent and motivation are lost when capable people, female or male refrain from studying certain fields, do not pursue their studies as far as they could or drop out of the scientific career at later stages.

The situation of women in R&D today is described as "allowed in but not to fully partake of science"[1]. Women's advancement in science is slow with not nearly as many women reaching the top as men. Of particular concern is the situation in science, engineering and technology (SET) where both female students and scientists are still a minority.

Research studies show that many excellent women who could contribute to the scientific community, to academia, to research and industry, refrain from pursuing scientific careers. Others start careers in these fields but drop out at later stages that often coincide with childbearing years. This process is usually referred to as the leaky pipeline and the loss of experienced, high quality individuals is a disadvantage to all.

[1] In Etzkowitz, H.; Fuchs, S., Gupta, N., Kemelgor, C., Ranga, M., 2008 'The coming gender revolution in science' in E. J. Hackett, O. Amsterdamska, M. Lynch and J. Wajcman (eds), The handbook of science and technology studies, Cambridge, MIT Press, pp. 405



Why are there so few women at the top in science and why is their advancement so slow? If there are no differences between men and women regarding intellectual abilities and career-relevant skills, why do women disproportionately drop out of the scientific career path?

Studies point out two basic explanations for this fact. One is role conflict - those matters that directly deal with time and mobility constraints related with the need to reconcile professional life and personal/family life. The other is that beyond these work-life issues, there are "subtle" forms of discrimination: subtle differences between women's and men's work conditions, support for career advancement and recognition.

"The Member States that participate in EU research cooperation need to become involved in efforts to promote gender equality in their research systems".
Luisa Prista, Head of Scientific Culture and Gender Issues Unit, Directorate General Research, European Commission

What?

What can an effective equal opportunity strategy do for research organisations?

Make the research organisation more attractive

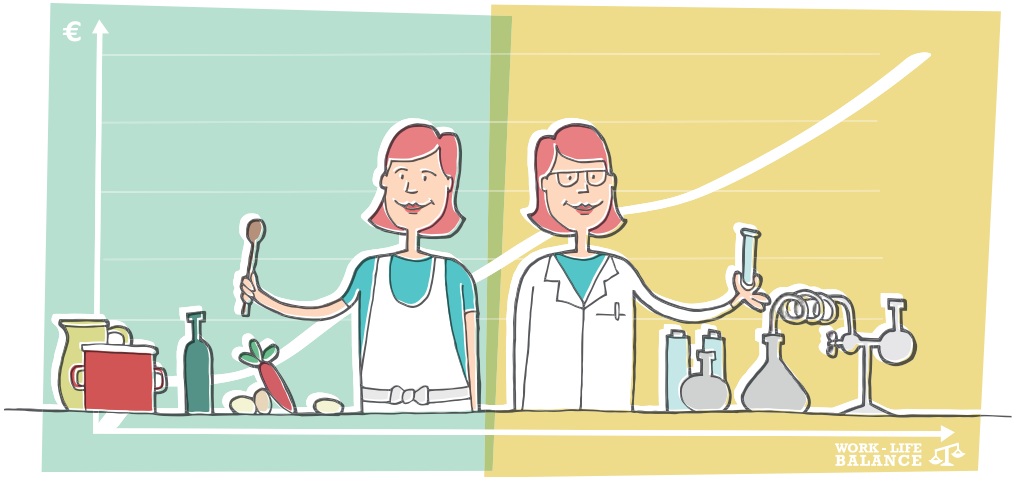
Organisations that effectively manage their equal opportunity strategies increase the attractiveness and consequently are likely to have more and better candidates to choose from.

Increase researchers' commitment

Effectively managing the work-life balance and other equal opportunity measures will drive researchers to higher levels of effort. Employee's dissatisfaction with the work-life balance has negative consequences: employees with low work-life balance satisfaction are less likely to put extra effort into their work.

Achieve more loyalty through researchers

Effective management of an equal opportunity strategy leads to higher levels of employee retention.



How?

How can research organisations lead the change?

"The European Commission has two main objectives for its work on gender equality in research. The first is to promote more women in senior positions. The second is to integrate gender perspectives into research".

Luisa Prista, Head of Scientific Culture and Gender Issues Unit, Directorate General Research, European Commission

Companies, research institutes and universities have been developing and implementing policies towards gender equality in research for many years, some of them have excellent policies to support women in their scientific careers. However, the challenge is still there. More efforts are needed to tackle behaviours and practices and to change the traditional model of doing science that penalises women and also some men in their scientific paths. Practical recommendations to lead the change towards gender equality in research:

Time management

- Offer flexible work schedules and ensure appropriate workloads and predictable working hours for all scientists.
- Offer work-life balance arrangements to be taken up both by men and women. This could contribute to a change towards a scientific culture that enables fathers and mothers to balance work and family and sustain productivity.
- Schedule essential meetings and networking events during the standard working day and hours and organise these meetings efficiently.

Visibility

- Encourage efficiency, rather than valuing those who are more visible/loud for longer time (but often less efficient). Value employees' non-work time and question the idea of the constantly visible and available scientist.
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Support care responsibilities

- Provide childcare and eldercare support (financial and practical) for scientists who are required to work abroad or travel to congresses, seminars, conferences or meetings. Enough advance notice of travel should be given to employees so that they can make appropriate arrangements.
- Provide the possibility for men and women to take career breaks either to do family care work or for other personal development activities.

Career planning

- Recognise that scientists who wish to work flexible or reduced hours still need opportunities to learn and develop and to advance in their career.
- Encourage women to actively plan their scientific careers. This includes planning pre- and post-maternity breaks, but also as a long term strategy to support and motivate women and maintain ambition.
- Introduce a mentoring scheme for young scientists, both men and women, to include them in informal networks, raise motivation and help to define ambitions.

Roles and stereotypes

- Identify senior women scientists as role models, but also men who have taken career breaks or work part time so that it is no longer seen as only a women's issue.
- Offer training and awareness-raising, especially for directors and managers, with the main aim of challenging gendered myths and stereotypes. The attitudes and actions of line managers can be critical to the success of a woman's scientific career.

Promotion and progression

- Ensure that promotion criteria are clear, transparent and fair. If visibility, availability and mobility are criteria, consider innovative alternatives or make sure these criteria are justifiable . For example, availability for travel is an important factor in career progression in many global SET companies. However, alternative methods of communication (video and telephone conferencing) could be more widely used.

- Recognise that high potential may emerge at different stages of a scientist's career. Remove any formal or informal age barriers and ensure that promotion and progression are not limited to a specific age group. Ensure that scientists whose careers have slowed down due to career breaks or periods of part time work have the possibility of promotion and progression at a later stage.

Support for returners

- Avoid making assumptions about a woman's availability or reduced capacity following a maternity leave or a career break. Maintain ongoing dialogue and discussion to establish what women want and are able to do.

- Implement a structured system of "keeping in touch" during maternity/parental leave. Ensure employees on leave are consulted and informed about opportunities and changes that are taking place.

- Review internal financial procedures to ensure that they do not penalise departments/groups in which someone has taken a maternity/parental leave or a career break.

Monitoring

- Monitor pay rises and progression of scientists to really assess the impact of the equal opportunity measures and strategies. Data collection should include should collect information on sex, career breaks, family situation, etc.

"... new slogan, which we have taken from science historian Londa Schiebinger, is 'fixing the knowledge'. This is what we need to do now".
Luisa Prista, Head of Scientific Culture and Gender Issues Unit, Directorate General Research, European Commission

Who?

These practical guidelines have been developed in the framework of the GENDERA project.

The overall objective of the GENDERA project is to facilitate the implementation of gender balance in science and create an enabling environment to integrate gender dimension into science policy throughout Europe. This general objective is achieved through the following specific objectives:

- Collection, systematisation and analysis of experiences in gender equality policies and activities on gender balance in different research organisations.
- Identification and discussion of good practices for the empowerment of women to get on the top of research organisations and scientific committees with top policy and decision makers and other stakeholders at national and European level.

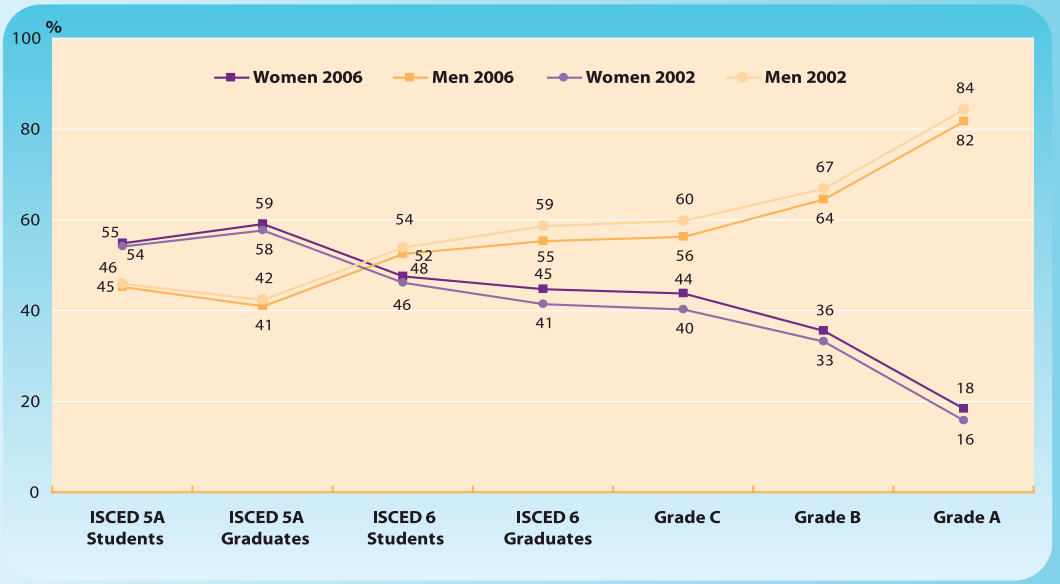
Review the 60+ initiatives that are featured on the GENDERA website, (www.gendera.eu).

Project team

- TETALAP – Tudományos és Technológiai Alapítvány (Hungary)
- Center for European Initiatives and Research in the Mediterranean (CIREM), Spain
- National Documentation Centre/National Hellenic Research Foundation (EKT/NHRF), Greece
- Jozef Stefan Institute, Slovenia
- Univerzita Mateja Bela v Banskej Bystrici, Slovakia
- Joanneum Research Forschungsgesellschaft mbH, Austria
- Steinbeis-Europa-Zentrum, Germany
- Agenzia per la Promozione della Ricerca Europea (APRE), Italy
- Ort Braude College of Engineering, Israel

Some interesting statistics

Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002/2006



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).

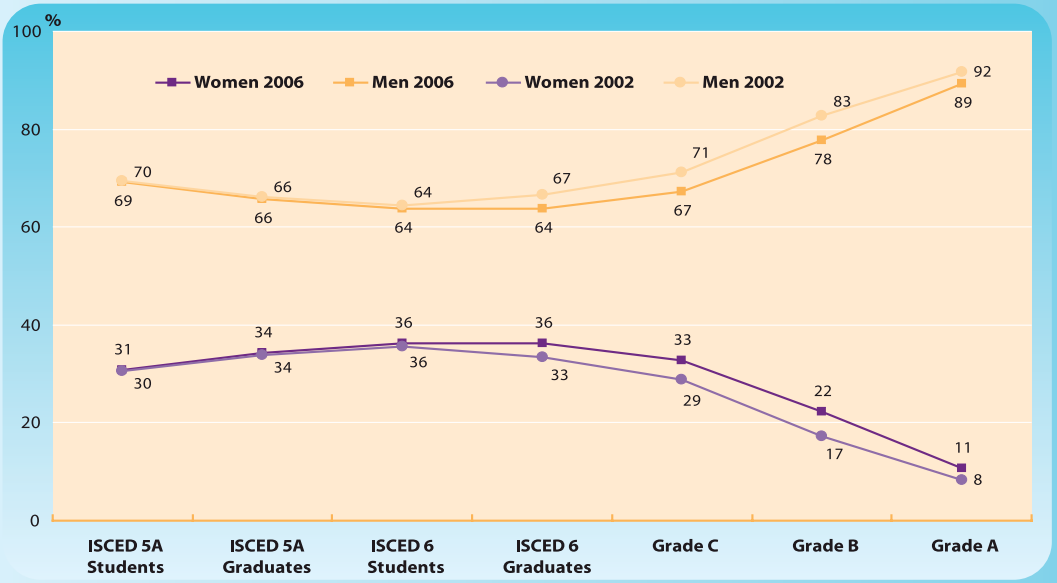
Source: Education Statistics (Eurostat); WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year (s): **ISCED 5A Graduates 2002**: DK (2003), FR (2003); **ISCED 6 Graduates 2006**: IT (2004); **2002**: DK (2003), FR (2003), RO (2003); **WiS 2006**: EE (2004), IE (Grade A: 2002-2003), EL (2000), MT (2004), PT (2003), SI (2007), SK (2007), FI (2007); **2002**: IE (2004), EL (1999), NL (2003), UK (2003)
Data unavailable: **ISCED 6 students 2006**: DE, LU; **2002**: DE, LU, RO, SI; **ISCED 5A - 6 Graduates** LU; **WiS 2002**: LU, IE (2004 - no grade A); Grade C unavailable: BG, RO (included in B)
Break in series: CZ (2005)
Provisional data: ES
Data estimated: EU-27 (by DG Research) for WiS, ISCED 6 students, ISCED 5A-6 graduates; SI

Head count (Grades A, B, C)
NO: before 2007 biannual data
Data for Ireland on Grade A professors does not include the Institutes of Technology

Data source: She Figures 2009

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



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

SET fields of science = Engineering and Technology + Natural Sciences.

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

Head count (Grades A, B, C)
NO: before 2007 biannual data

Data source: She Figures 2009

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, IL: 2008; CY, LT, IT, IS: 2008/2007; RO: 2007/2006

Data unavailable: IE, EL, ES, FR, MT, PT, UK
Data estimated: EU-27 (by DG Research)

Data source: She Figures 2009

Number of academic staff by grade and sex, 2007

	Grade A		Grade B		Grade C		Grade D	
	Women	Men	Women	Men	Women	Men	Women	Men
BE	246	2047	657	1997	1475	3341	4175	4548
BG	551	1792	2776	4480	:	:	7324	6284
CZ	267	1832	2669	5862	253	566	3304	3915
DK	150	1107	917	2753	672	1128	1783	2271
DE	1509	11138	4854	21747	1618	3311	49342	81434
EE	94	454	372	630	966	740	653	328
IE	58	544	458	690	589	663	720	857
EL	216	1699	431	1468	753	1608	1481	2280
ES	2041	9034	24926	43754	2200	2368	37682	35059
FR	6069	26084	30870	48522	3036	5781	8523	11685
IT	3631	15994	6280	12453	10658	12913	:	:
CY	6	57	21	85	142	166	107	246
LV	157	382	254	346	2631	1683	:	:
LT	106	628	925	1297	1135	979	3246	1879
LU	5	49	12	30	50	113	:	:
HU	502	2166	1571	3379	4006	4918	778	1225
MT	1	43	193	415	23	139	2	6
NL	318	2552	422	1938	1586	3413	6453	9050
AT	309	1847	615	2708	2579	3930	3972	5641
PL	1940	7628	3254	8280	19219	24982	:	:
PT	303	1148	917	1750	2751	3581	2349	2312
RO	3644	7869	8935	9209	x	x	1260	1047
SI	214	1073	307	718	994	1182	275	336
SK	350	1388	869	1631	3520	3497	514	425
FI	609	1991	1660	1723	773	608	3804	4717
SE	841	3811	10848	12260	416	578	4647	4518
UK	2885	13601	12374	21273	24591	27340	16816	19927
HR	148	416	444	549	106	97	715	640
TR	3675	9541	8037	15380	3754	4336	16188	18209
IS	44	192	74	158	128	112	:	:
NO	537	2427	1863	3548	1109	1291	4841	4197
CH	1304	4708	626	2001	7837	12997	1294	1402
IL	184	1267	232	835	434	782	273	324

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

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; EL: 2000
Data unavailable: Grade C unavailable: BG, RO (included in B); Grade D unavailable: BE (French-speaking community), IT, LV, LU, PL, IS
Provisional data: ES
Data estimated: SI

Head count
Data for Ireland on Grade A professors does not include the Institutes of Technology
Some differences exist in coverage and definitions between countries
'x': data included in another cell; ':': not available

Data source: She Figures 2009

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JOIN THE DEBATE ON GENDER EQUALITY IN RESEARCH!

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Find out more about the GENDERA initiative under:
www.gendera.eu

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