

Gender in research webinar

Research Infrastructures

26 October 2018

**GENDER
ACTION**




YELLOW WINDOW



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Basic Concepts

SEX refers to the biologically determined characteristics of men and women in terms of reproductive organs and functions based on chromosomal complement and physiology. As such, sex is globally understood as the classification of living things as male or female.

GENDER refers to the social construction of women and men, of femininity and masculinity, which varies in time and place, and between cultures.

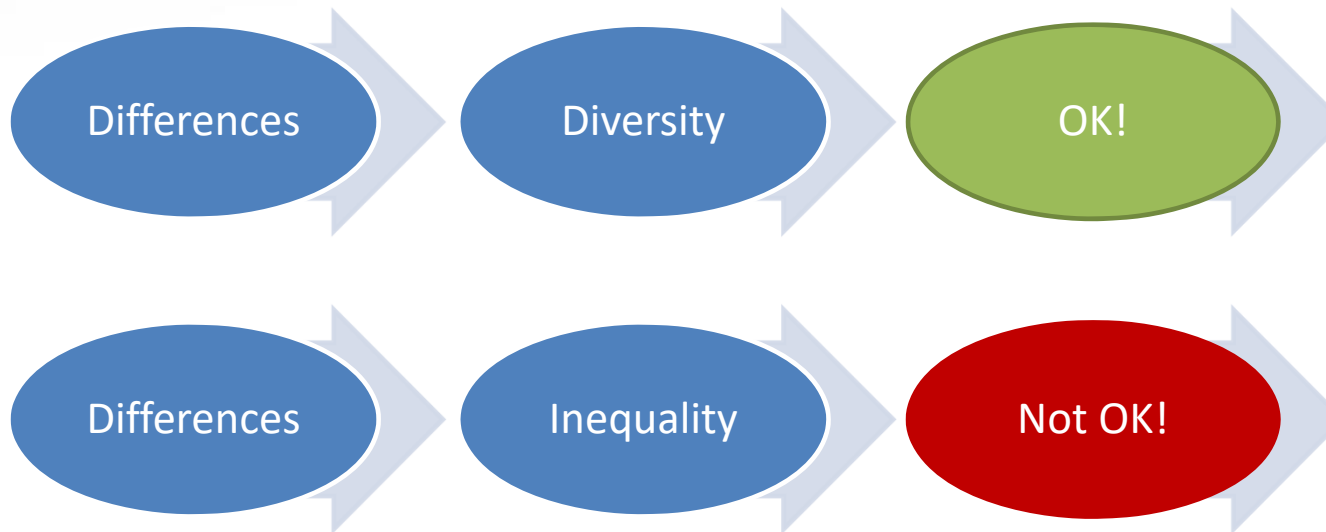


Natural or constructed competences?



NOTE THAT:

- The problem is not the difference between men and women as such, but the difference in how they are valued
- Certain aspects associated with 'masculinity' still tend to be valued more highly
- The result is inequality of opportunities, segregation & discrimination



GENDER EQUALITY

A situation where individuals of both sexes are free to develop their personal abilities and make choices without the limitations imposed by strict gender roles. The (possibly) different behaviours, aspirations and needs of women and men are considered, valued and favoured equally.

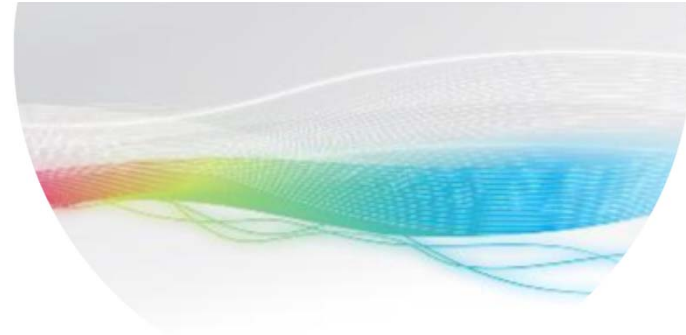




European Commission

Three objectives underpin the European Commission's strategy on gender equality in research and innovation policy:

- *Fostering equality in scientific careers*
- *Ensuring gender balance in decision-making processes and bodies*
- *Integrating the gender dimension in research and innovation content, i.e. taking into account the biological characteristics and the social features of women and men*



Equal
Opportunities
in research at
all levels

The diagram features a light blue background with a decorative header of colorful, wavy lines in shades of pink, orange, green, and blue. On the left, two blue circles are stacked vertically. The top circle contains the text 'Equal Opportunities in research at all levels'. Below it is a large, light blue plus sign. The bottom circle contains the text 'Gender and sex variable in the research content'. To the right of the plus sign is a large, light blue arrow pointing towards a large blue circle on the right side of the slide. This circle contains the text 'Gender in research'.



Gender and
sex variable in
the research
content



Gender
in
research

Equal
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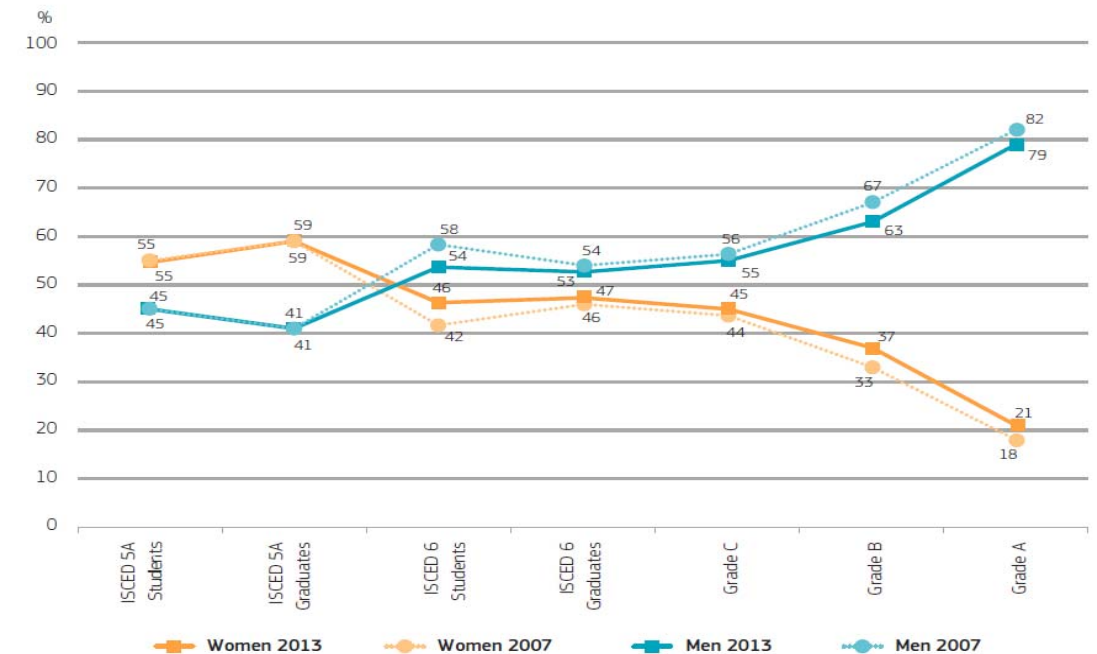
Gender and
sex variable in
the research
content

Gender in
research

SHE – figures – 2015: The scissors - diagram

- In only eight out of 28 EU Member States did women account for more than 40 % of researchers.
- Women in the EU have a stronger presence amongst researchers in the higher education and government sectors. In the business enterprise sector, they make up close to one in five researchers (2011)."

Figure 6.1. Proportion of women and men in a typical academic career, students and academic staff, EU-28, 2007–2013



Notes: Reference years Eurostat data: 2007–2012; Reference years for Women in Science (WIS) data: 2007–2013; Exceptions to the reference years (WIS): AT: 2007–2011; BE (FR), LV, RO: 2010–2013; CY, PT: 2007–2012; DK, LU (Grade A and B, C not available): 2009–2013; ES, IE: 2008–2012; BE (FL), NL, FI: 2011–2013; PL, SK: 2012–2013; FR: 2012; HR: 2014; MT: 2015; EE: 2004 (She Figures 2012); LT: 2007 (She Figures 2012); UK: 2006 (She Figures 2012); Data unavailable for: (Eurostat) ISCED 5A Students: LU (2007); ISCED 5A Graduates: FR (2012), LU (2007); ISCED 6 Students: DE (2007), LU (2007); ISCED 6 Graduates: FR (2012), LU (2007).

Source: Women in Science database, DG Research and Innovation and Eurostat – Education Statistics (online data code: educ_grad5)

The gap is even bigger if we look at the proportion of women and men in the areas of science and engineering.

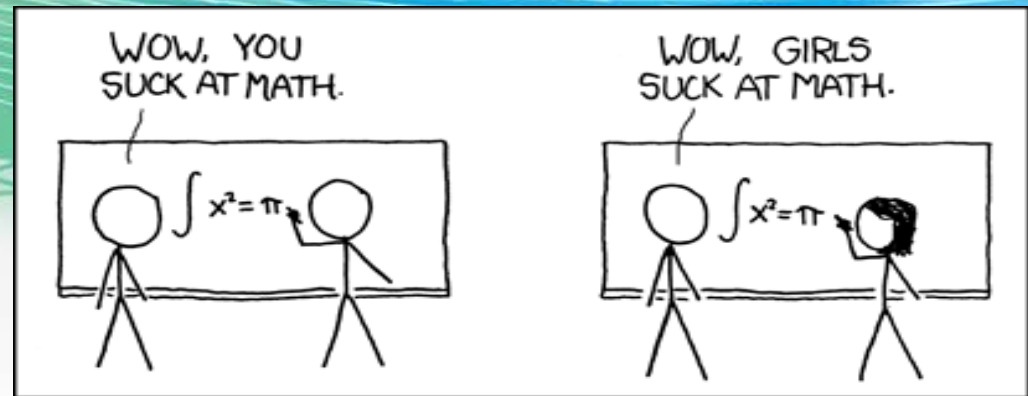
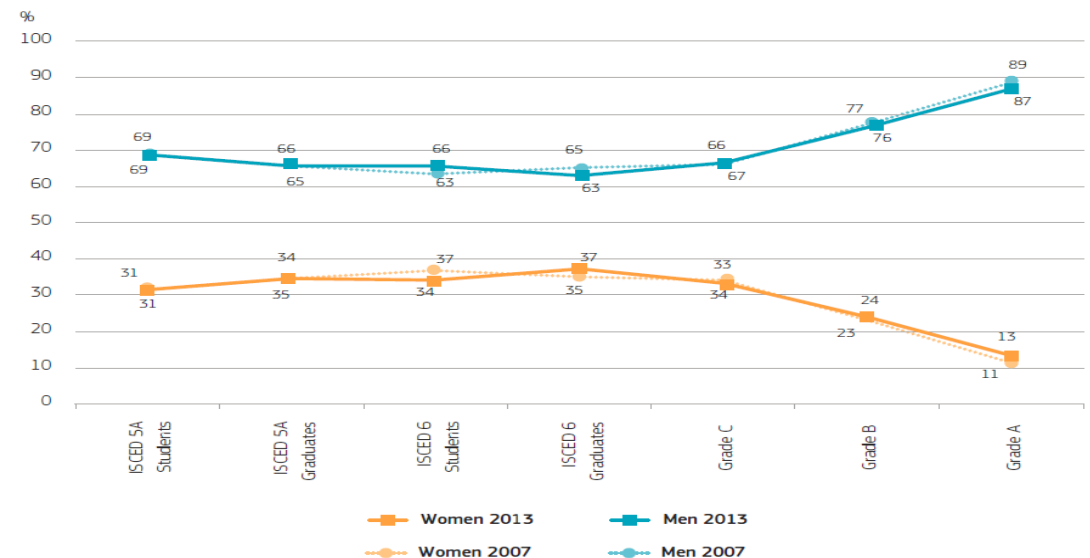


Figure 6.2. Proportions of women and men in a typical academic career in science and engineering, students and academic staff, EU-28, 2007–2013



Notes: Reference year for Eurostat data: 2007–2012; Reference year for WIS data: 2007–2013; Exceptions to the reference years (WIS): AT: 2007–2011; BE (FR): 2010–2013; BE (FL), NL, FI: 2011–2013; CZ: 2007–2008; DK: 2009–2013; IE: 2008–2012; EL, MK: 2012; PL, SK: 2012–2013; BA, SI: 2013; HR: 2014; LT: 2007 (She Figures 2012); UK: 2006 (She Figures 2012); Data unavailable for WIS Grade A, B and C: AT, BG, EE, FR, HU, LU, LV, RO; Eurostat: ISCED 5A Students: LU (2007), ISCED 5A Graduates: FR (2012), LU (2007), ISCED 6 Students: DE (2007), LU (2007), NL (2007), ISCED 6 Graduates: FR (2012), IT (2007), LU (2007), PL (2012); Others: SET fields of education = Science, maths and computing + Engineering, manufacturing and construction; SET fields of science = Engineering and technology + Natural sciences.

Source: Women in Science database, DG Research and Innovation and Eurostat – Education Statistics (online data code: educ_grad5)



(Un)conscious biases influence job segregation

Ada Lovelace: British mathematician: laid foundation for software programming



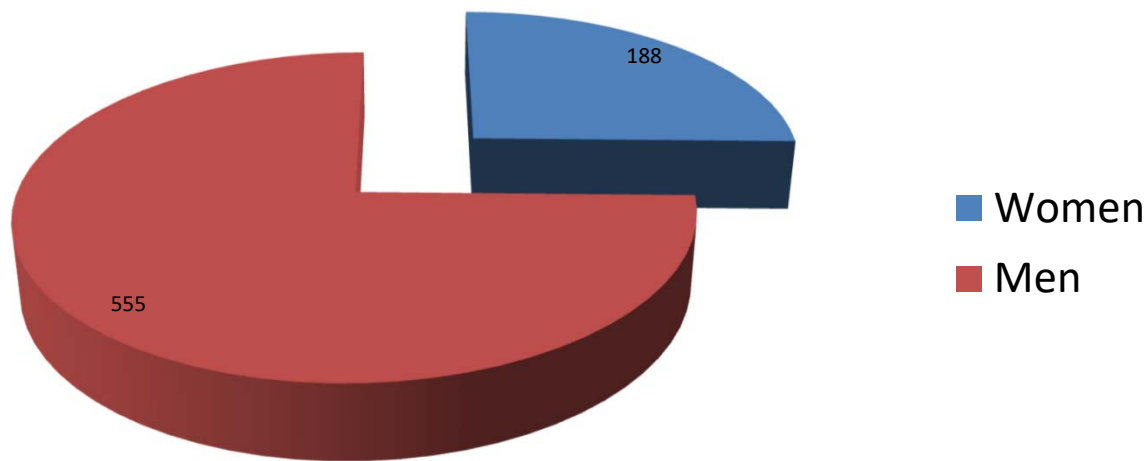
Margaret Hamilton wrote entire software package that send Apollo rockets to the moon.



Female 'Computers' doing astronomy research and making groundbreaking discoveries.

Small survey in the US:

27 design and engineering consulting firms with public information about their teams: 743 people (24,4% women)



Among the 188 women, only 34 were in roles that focus on physical product design. Others are in UX/UI and administrative / support positions.

Gender based bullying in computer games

When girls/women threaten the male hierarchy, they tend to be bullied by males losing the game.



Gender Equality Plan

As defined by the European Commission, a gender equality plan consists of a set of actions aiming at:

- Conducting impact assessment / audits of procedures and practices to identify gender bias.
- Identifying and implementing innovative strategies to correct any bias.
- Setting targets and monitoring progress via indicators.



European Commission Communication
on 'A Reinforced European Research Area
Partnership for Excellence and Growth' (COM(2012) 392 final)

Good practice examples - Areas of intervention:

- Organisational culture:
 - ✓ Organise gender training
- Reconciliation of work and private life:
 - ✓ Measures to facilitate return to work after parental leave
- Recruitment, selection and career progression:
 - ✓ Organise unconscious bias awareness sessions
- Leadership and decision-making:
 - ✓ Gender quota in all decision making bodies
- Sexual and gender-based harassment:
 - ✓ 'Special Contact Person' for sexual harassment



→ See GEAR tool:
<http://eige.europa.eu/gender-mainstreaming/toolkits/gear>

Equal
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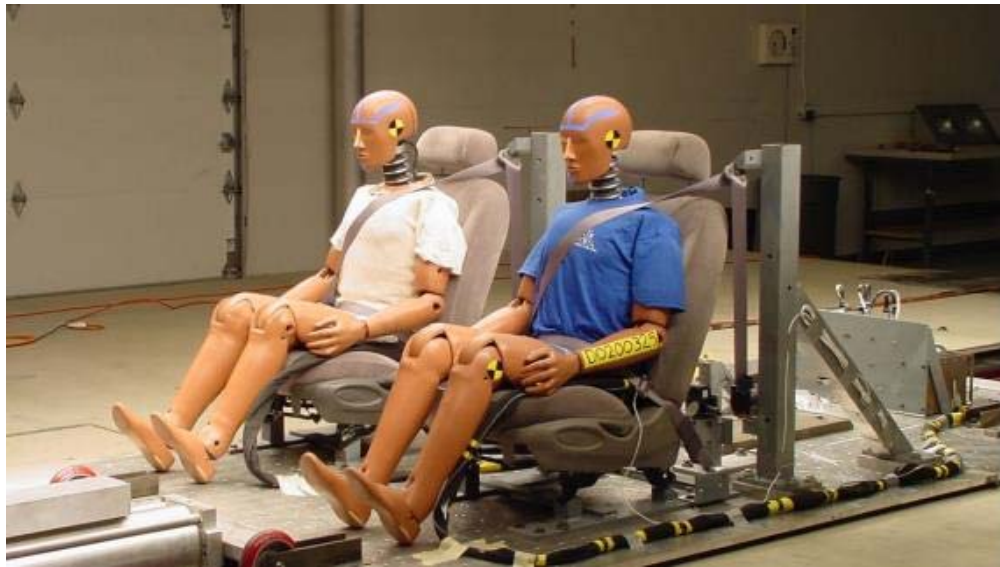
Gender and
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content



Gender
in
research

Dominance of male norm

Seat belts are designed for people with the average height of a man



Algorithms that dictate temperature regulation in many office buildings were designed in the 1960 for the average man of 70 kg.



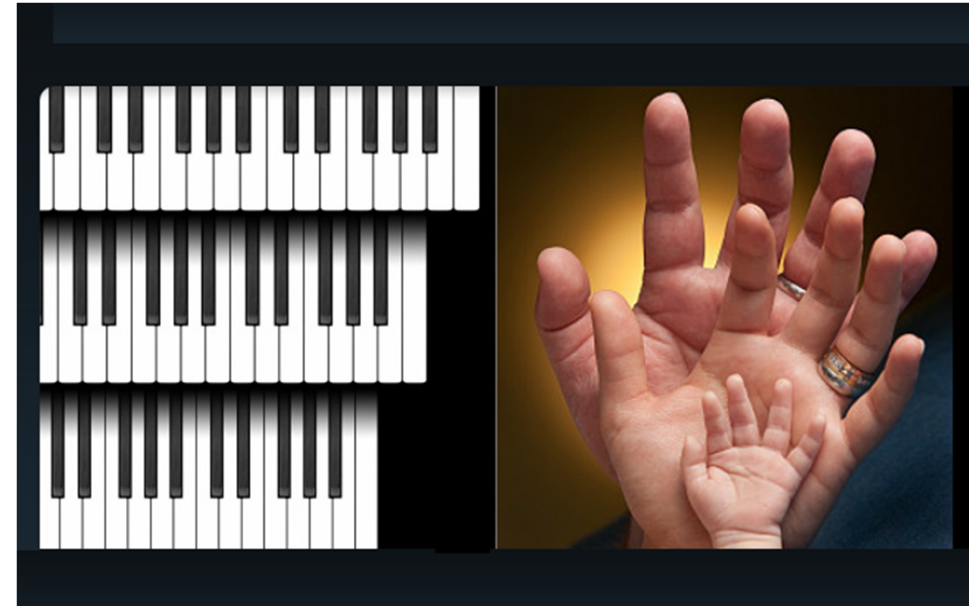
Dominance of male norm

Another example: the size of piano keys.

The universal piano keyboard size was standardized at a time when pianists were predominantly males of European descent.

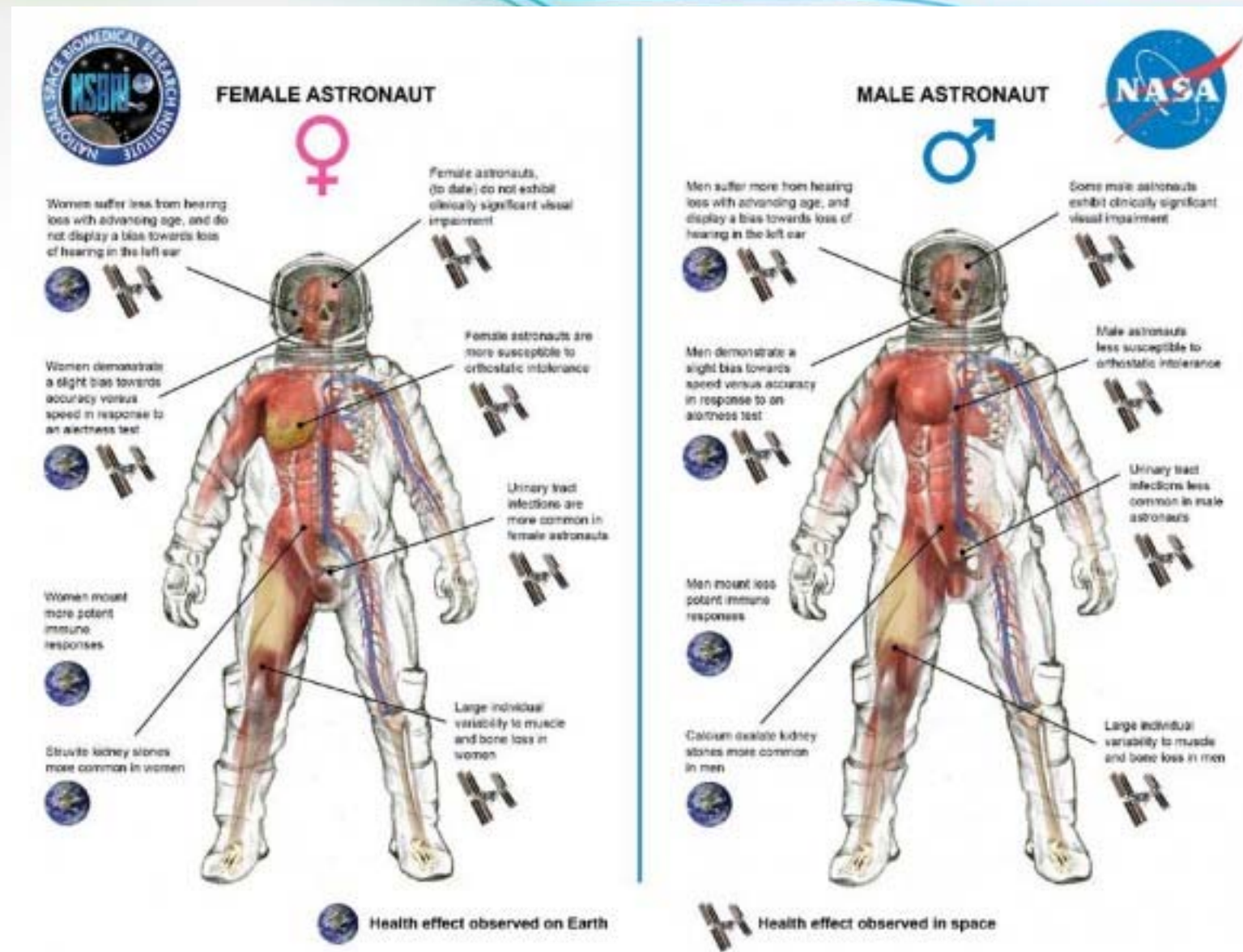
This size is too large for many pianists.

This may explain why there are so few women at the highest levels of piano performance competitions, even though there are more women than men studying piano.



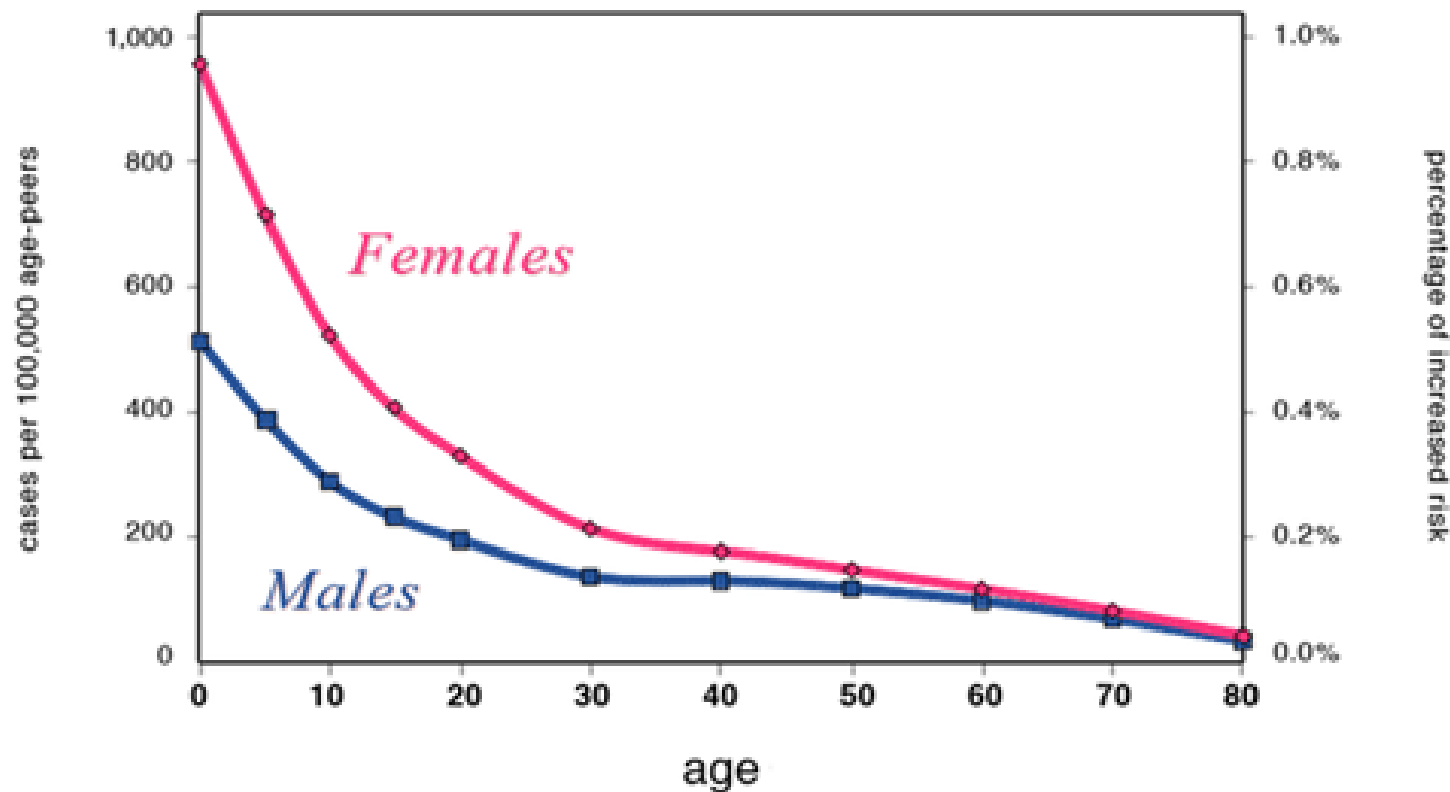
<http://smallpianokeyboards.org/index.html>

Female and Male astronauts have different challenges and advantages.



Safety and security : radiation exposure

Increased Cancer Risk by Age at Exposure to 20 mSv Radiation



Sex and gender variables are relevant for radiation levels.

U.S. National Academy of Sciences BEIR VII Phase 2 Risk Model

Gender Bias in machine-learning algorithms:

Algorithms not only reflect cultural bias, they also AMPLIFY them.

A research group trained the system on Google News articles, and then asked it to [complete a different analogy](#):

“Man is to Computer Programmer as Woman is to X.” The answer came back: “Homemaker.”

Examples of bias detected in machine learning word analysis.

Gender stereotype *she-he* analogies.

sewing-carpentry	registered nurse-physician	housewife-shopkeeper
nurse-surgeon	interior designer-architect	softball-baseball
blond-burly	feminism-conservatism	cosmetics-pharmaceuticals
giggle-chuckle	vocalist-guitarist	petite-lanky
sassy-snappy	diva-superstar	charming-affable
volleyball-football	cupcakes-pizzas	lovely-brilliant

Google image search: gender stereotypes

Google image query: “**Doctor**”



Google image query: “**Nurse**”



M. Kay, C. Matuszek, S. Munson (2015): [*Unequal Representation and Gender Stereotypes in Image Search Results for Occupations*](#). CHI'15.

Google image search: 'famous scientists'

famous scientists - Google Search

https://www.google.be/search?biw=1920&bih=938&tbm=isch&sa=1&ei=pt-xW-XVM462kwW227GIAG&q=famous+scientists&oq=famous+scientists&gs_l=img.3..010.21995.25605.0.26168.17.10.0.7.7.0.86.599.10.10.0...0...1c.1.64.img.0.17.641...0167k1.0.H...

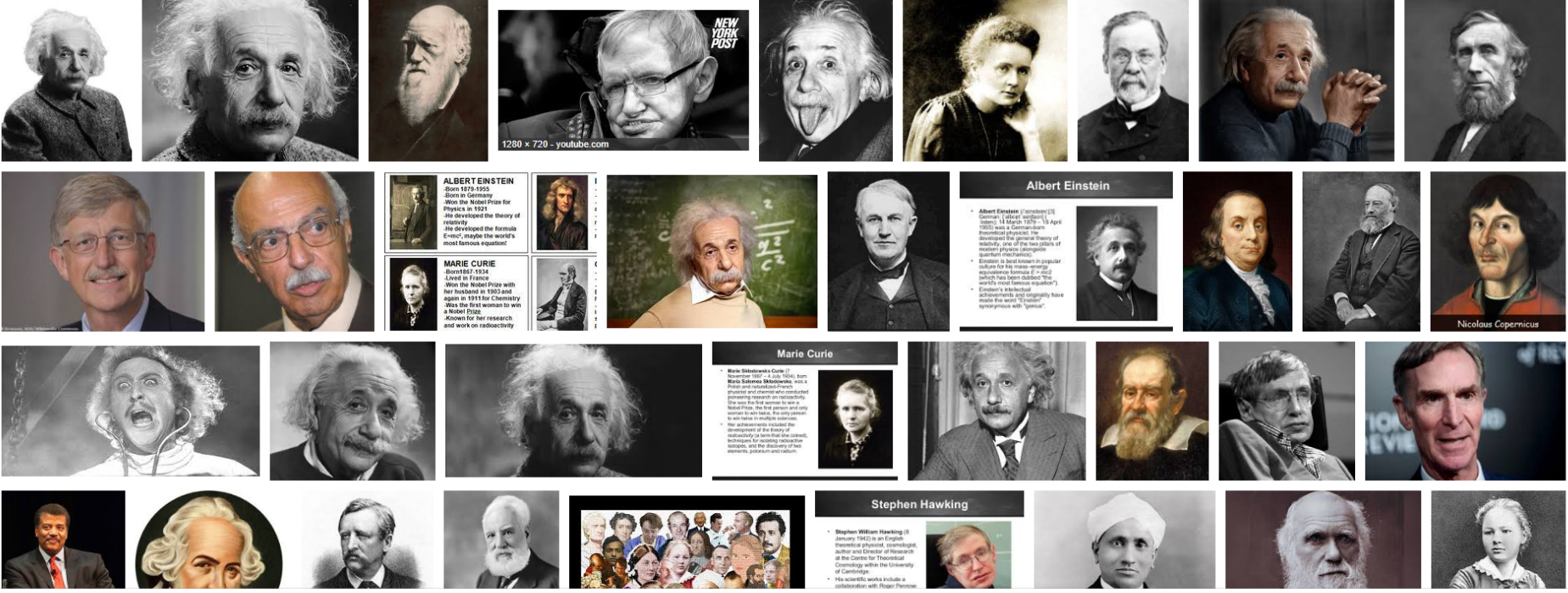
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Google famous scientists

All Images Videos News Books More Settings Tools

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Albert Einstein

Albert Einstein (born 14 March 1879 – 18 April 1955) was a German-born theoretical physicist. He developed the general theory of relativity, one of the two pillars of modern physics (alongside quantum mechanics). Einstein is regarded as one of the greatest minds in the history of science. He is best known for his mass-energy equivalence formula $E=mc^2$, which has been dubbed "the world's most famous equation".

Marie Curie

Marie Skłodowska Curie (7 November 1867 – 4 July 1935), born Maria Salomea Skłodowska, was a Polish and naturalized-French physicist and chemist who conducted pioneering research on radioactivity. She was the first woman to win a Nobel Prize, the first person and only woman to win twice in multiple categories. Her achievements include the development of the theory of radioactivity, the discovery of the elements polonium and radium.

Stephen Hawking

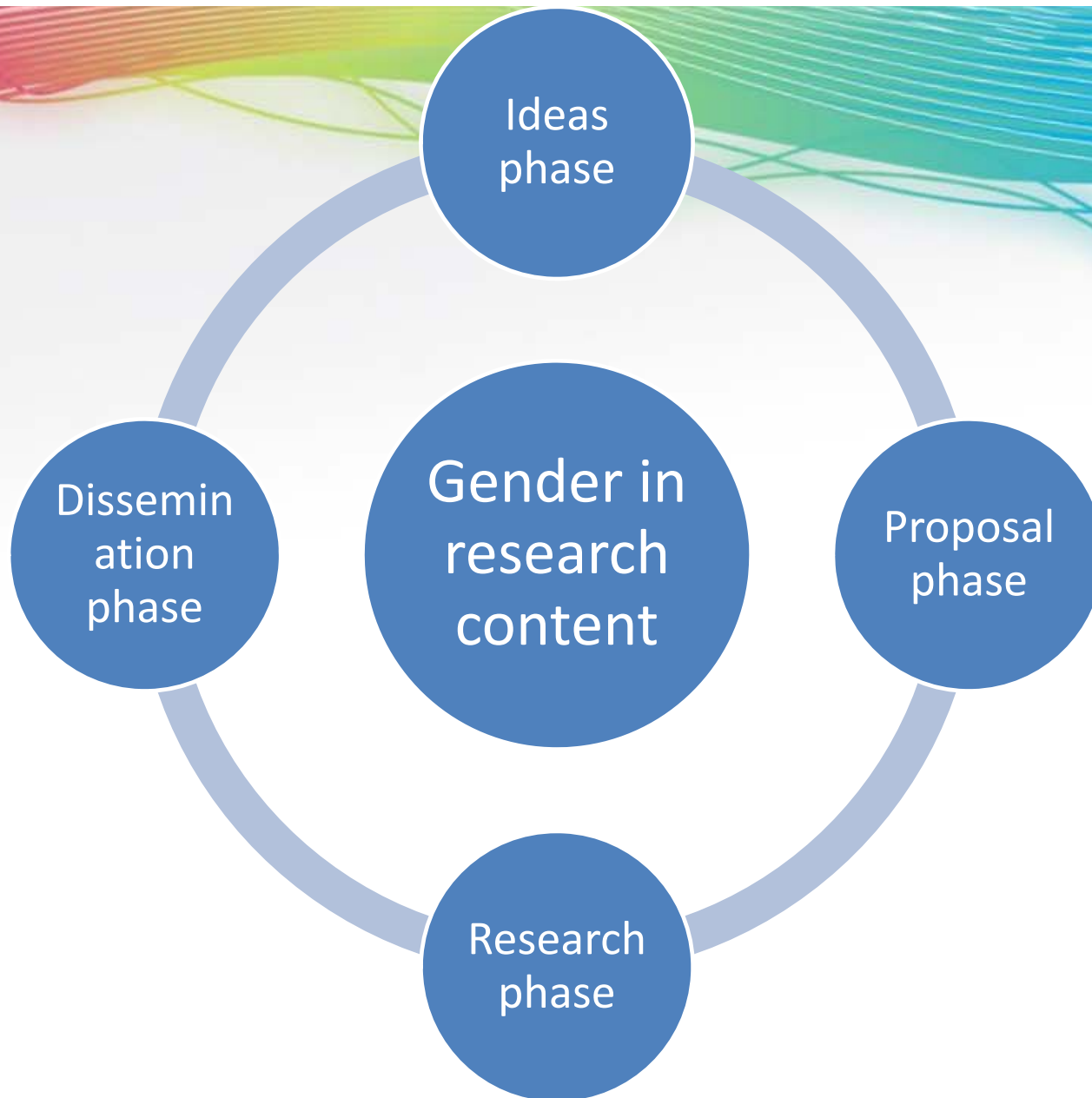
Stephen William Hawking (8 January 1942) is an English theoretical physicist, cosmologist, and author. He is a professor of cosmology at the University of Cambridge. His scientific work includes a collaboration with Roger Penrose.

10:52 1/10/2018

Some tips....

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- Use sex-disaggregated datasets
 - Use research methodologies that allow a differentiated analysis of female and male target groups
 - Use gender-sensitive indicators to measure the impact of your research on women and men
 - Test your designs with female and male groups and pay attention to differences in user experience





**Remember:
Both the variables
sex AND gender can
be relevant**

Integrating sex / gender in a H2020 proposal

- Make 'gender' visible straight away (e.g. in abstract, key words)
- Budget: foresee resources; remember gender training is an eligible cost (budget for training under 'other direct costs')
- Keep 'gender' in mind throughout the proposal preparation and drafting (gender balance in team; management structures; expertise in the consortium; research activities;...)

→ *No 'magic formula' or couple of paragraphs*

→ *No 'excellence' without gender equality!*

→ *Mobilise expertise*

Integrating sex / gender in a H2020 proposal

Technical part of the proposal:

1. Excellence:

1.1: Objectives: point out relevance; include analysis of sex / gender in relation to the main research topic as objective; explain which knowledge exists already and which are the gaps the research will fill

1.2 Relation to the Work Programme: especially when gender is flagged → explain how furthering gender knowledge will help advance the WP objectives

1.3 Concept and Method:

a) Explain / show the gender expertise in the consortium (interdisciplinary research!), and if missing, say how this will be solved. Refer to existing research on sex/gender in relation to the topic and explain how the project will build on the existing research (if relevant)

b) Explain the project's approach to sex / gender throughout the research cycle

1.4 Ambition: include also a reflection on what the ambition of the project is in relation to gender knowledge

Integrating sex / gender in a H2020 proposal

Technical part of the proposal:

2. Impact:

2.1 Expected impacts: include gender! Point out any obstacles or barriers, e.g. missing sex-disaggregated data → explain how the project will contribute to solving this obstacle

2.2 Maximise impact

- a) dissemination and exploitation: be consistent and integrate also sex/gender findings in how exploitation is planned; show what the added value will be; how including sex/gender variable will raise the quality of the research
- b) communication: communicate findings! (conference papers; posters; research articles); show how results will be disseminated in a way that makes the sex/gender variable visible

Integrating sex / gender in a H2020 proposal

Technical part of the proposal:

3. Implementation

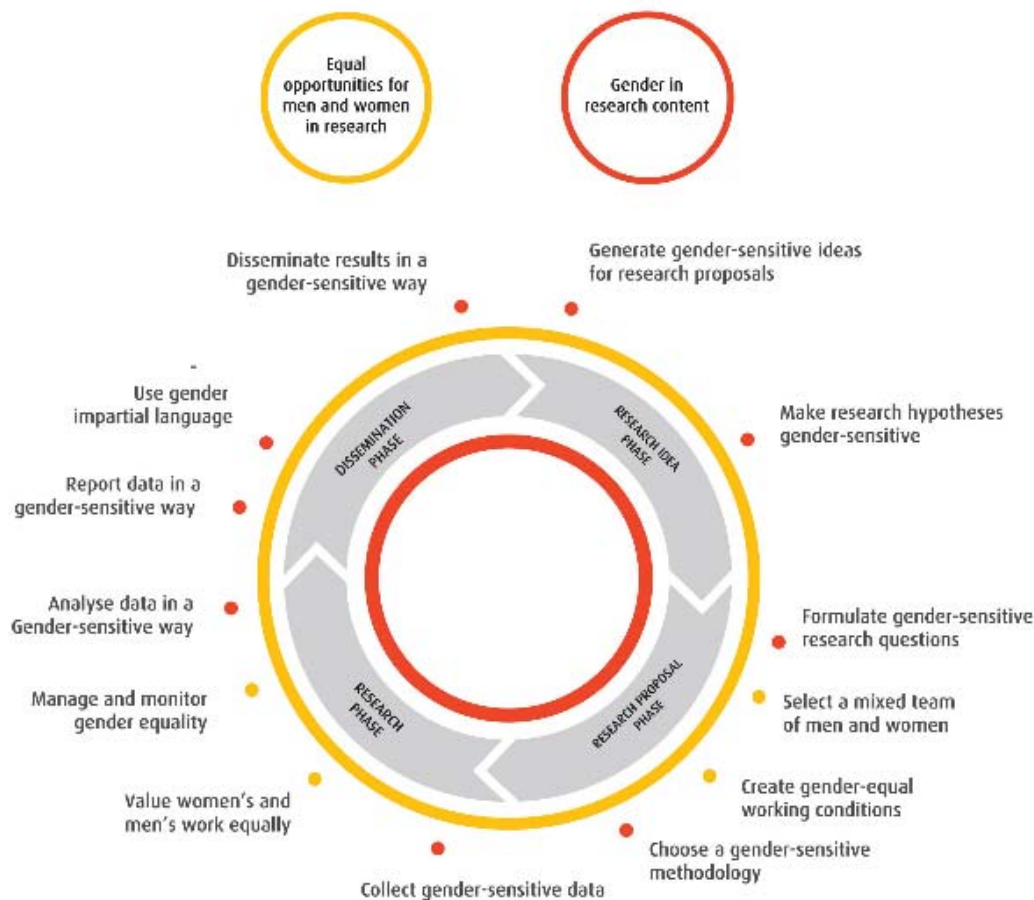
3.1: Work Plan: WP's and deliverables: integrate sex / gender throughout; show how the variables sex and/or gender will be taken on board; involve/consult relevant stakeholder groups and experts; consider separate deliverable on gender issues; present Gender Equality Plan in Management work package

3.2 Management structures: ensure gender balance in management structures!

3.3 Consortium as a whole: ensure and point out gender balance and gender expertise

3.4 Resources: gender training to be foreseen; sufficient resources for gender issues in the work plan

Tool: checklist, in <https://www.yellowwindow.com/genderinresearch>



4

How to make research gender-sensitive

CHECKLIST FOR GENDER IN RESEARCH

Equal opportunities for women and men in research

- ☐ Is there a gender balance in the project consortium and team, at all levels and in decision-making positions?
- ☐ Do working conditions allow all members of staff to combine work and family life in a satisfactory manner?
- ☐ Are there mechanisms in place to manage and monitor gender equality aspects, e.g. workforce statistics, as required by FP7?

Gender in research content

Research ideas phase:

- ☐ If the research involves humans as research objects, has the relevance of gender to the research topic been analysed?
- ☐ If the research does not directly involve humans, are the possibly differentiated relations of men and women to the research subject sufficiently clear?
- ☐ Have you reviewed literature and other sources relating to gender differences in the research field?

Proposal phase:

- ☐ Does the methodology ensure that (possible) gender differences will be investigated: that sex/gender-differentiated data will be collected and analysed throughout the research cycle and will be part of the final publication?
- ☐ Does the proposal explicitly and comprehensively explain how gender issues will be handled (e.g. in a specific work package)?
- ☐ Have possibly differentiated outcomes and impacts of the research on women and men been considered?

Research phase:

- ☐ Are questionnaires, surveys, focus groups, etc. designed to unravel potentially relevant sex and/or gender differences in your data?
- ☐ Are the groups involved in the project (e.g. samples, testing groups) gender-balanced? Is data analysed according to the sex variable? Are other relevant variables analysed with respect to sex?

Dissemination phase:

- ☐ Do analyses present statistics, tables, figures and descriptions that focus on the relevant gender differences that came up in the course of the project?
- ☐ Are institutions, departments and journals that focus on gender included among the target audience for dissemination, along with mainstream research magazines?



Gender relevance and “Spreading Excellence and Widening Participation” **Twinning event – November, Lisbon:**

- “**Twinning** aims to build on the huge potential of *networking for excellence* through knowledge transfer and exchange of best practice between research institutions and leading partners.”
 - **Twinning offers opportunities for transfer and exchange of gender knowledge and capability AND to identify good practices in sex- and gender-sensitive research**
 - **Twinning offers opportunities for promoting women’s careers**



Thank you for attending this webinar

For background information, some resources, reading list → see the 'hand-out' that you will receive.