THE GENDER GAP IN SCIENCE

A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to Measure It, How to Reduce It?

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https://gender-gap-in-science.org/
Gender Gap in Science Book

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A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: RESULTS AND RECOMMENDATIONS

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Three parts

• Global Survey of Scientists: 32,000 answers
• Analysis of Academic Publications: millions of publications analyzed since 1970
• Database of Good Practices: 68 activities

Recommendations

• Instructors and parents
• Local organizations
• Scientific unions
Global Survey of Scientists
32,000 answers, men and women, 130 countries, 7 languages

• Women’s experiences in both educational and employment settings are consistently less positive than men’s.

• Over a quarter of women respondents across the sciences reported personally experiencing sexual harassment at school or work.
Global Survey of Scientists (cont’d)

We do the same job!

BUT I’m paid 30% less

[Drawing of people running]
Analysis of Academic Publications (millions of publications, since 1970)

• Steady increase of the proportion of women authors of scientific papers (10% to 27%)

Figure 13: Number of active (publishing) mathematicians since 1970 and percentage of them that are women.
Figure 24: Ratio of first-author publications from women astronomers over men as a function of the years after career start.

- Productivity of female scientists has increased over time (now 85% to 95% of that of male scientists)
Publications in “Top Journals”

improve in Astronomy and Chemistry,
remain static in Mathematics and Theoretical Physics

1970

< 10% of top journals papers are authored by women

2020

20% in astronomy, astrophysics and chemistry and still < 10% in mathematics and theoretical physics
Database of Good Practices

- Engage families and communities in promoting STEM careers to girls, especially when these careers are contrary to cultural expectations and norms.
- Engage females in exploring socio-scientific issues.
- Promote social support for females, such as peer networks and mentoring by more experienced STEM researchers or professionals.
- Develop females’ STEM leadership, advocacy and communication skills.
Recommendations

For instructors and parents
• Avoid gender bias
• Promote gender balance and gender awareness

For scientific and educational organizations
• Promote a respectful, collegial working environment
• Prevent, report and address sexual harassment and discrimination
• Address impact of parenthood, promote child friendly environments
• Promote gender equality in institutional policies

For Scientific Unions and similar worldwide organizations
• Work to change culture and norms
• Promote best practices
• Increase visibility of female scientists, awards, editorial boards, etc.
• Create committees for women in science
Gender Gap in Science Booklet

Summary of the project in 8 pages:
Currently in English, French, and Spanish, as well as Chinese (both simplified Chinese and traditional Chinese characters)

https://gender-gap-in-science.org/promotional-materials/
Links to the Tools of the Project

- List of all survey questions:  
- Interactive tool on publication patterns:  
- Database of good practices:  

Slides prepared by Marie-Françoise Roy
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Graphics from the Gender Gap in Science Book
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