

Towards gender equality in STEM

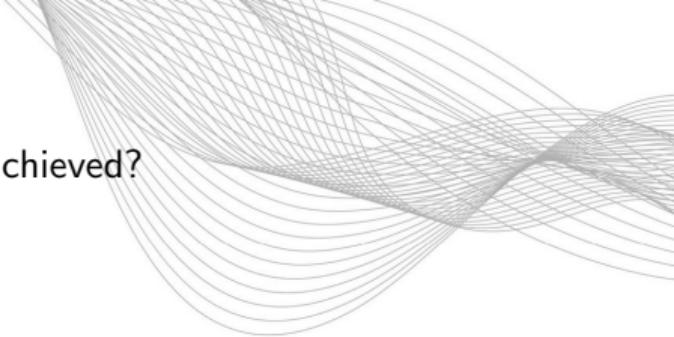
Seminar at UFSC, Florianopolis, Brasil

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Being a female scientist in STEM

Has gender equality in STEM been achieved?



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Worldwide (source: UNESCO and UIS data)

- ▶ Only 35% of STEM graduates are women
- ▶ Stagnation over the last 10 years
- ▶ Hides variations among STEM subjects
- ▶ High shares of female STEM graduates in Arab countries coincide with lower mathematics anxiety

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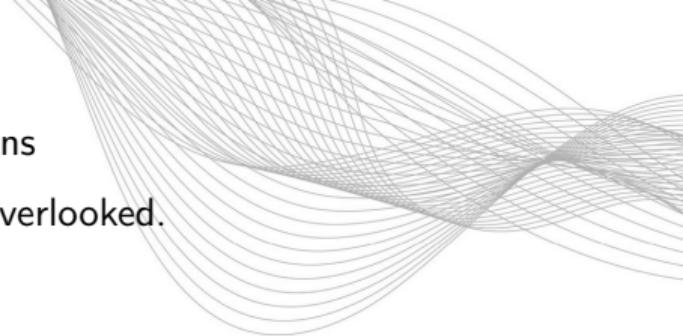
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The answer is **NO!**

Why does it matter?

- ▶ Limits creativity, diversity of perspectives, and innovations
- ▶ Issues such as gender bias, social needs, etc... may be overlooked.



Economic Benefits of Gender Equality in the European Union - Overall economic impacts of gender equality, *European Institute for Gender Equality*, available [here](#)

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- ▶ Increasing female participation in STEM can boost economic development
- By 2050, increase in EU Gross Domestic Product (GDP) per capita by 6.1 to 9.6% (1.95 to 3.15 trillion euros)
- For the STEM gap only: 2.2 to 3.0% (610 to 820 billion euros).
- Additional 10.5 million jobs by 2050 for both men and women (850k to 1,2M for STEM only).

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- ▶ Improvement of gender equality → overall employment rates rise significantly

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What can we do about it?

Female french students about the influential factors in their education choices
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But this environment is often source of discouragement:

- ▶ 33% of female students in digital fields report that their relatives made them feel that this area would be hostile to women and would not be a female-friendly profession
- ▶ Nearly 60% of female STEM students cite teachers as their primary source of discouragement
- ▶ Only 33% of girls are encouraged by their parents to pursue careers in the digital field, compared to 61% of boys ([source](#))

What can we do about it?

Identifying structural barriers

- ▶ **Gender stereotypes**, for instance in movies ([Gender Bias Without Borders](#))
 - ▶ Less than 1/3 of all big screen speaking roles are played by females
 - ▶ Engineers, scientists and mathematicians are largely played by men (7 times more male than female STEM roles in movies)
 - ▶ Just 12% of characters with identifiable STEM jobs onscreen were women.

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- ▶ **Lack of role models** ([Breda et al, 2023](#))

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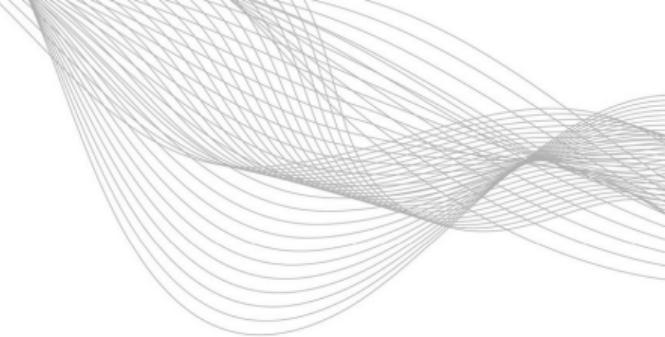
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- ▶ **Lack of role models** ([Breda et al, 2023](#))
- ▶ **Work–Life Balance and Institutional Bias** ([Hill et al, 2010](#))
 - ▶ Long hours, frequent travel, and inflexible work structures affect women particularly, especially those with caregiving responsibilities.
 - ▶ Pay gaps, lack of mentorship, and gender bias in hiring and promotion

Call to action

- ▶ Inclusive STEM Education starting at a young age + teacher training on unconscious bias
- ▶ Visibility of female STEM professionals
- ▶ Mentorship and peer-support networks for young women in STEM fields.
- ▶ Dedicated scholarships, research grants, and startup incubators for women in STEM, particularly in underrepresented fields.
- ▶ Workplace Equity Policies
 - ▶ Promote flexible work arrangements, parental leave, and childcare support.
 - ▶ Collect data and use indicators such as retention rates, promotion statistics, and wage equality to guide policy refinement.

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 - ▶ Work-life balance
- ▶ Fighting sexual and gender-based violence, harassment and discrimination