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Towards gender equality in STEM

Seminar at UFSC, Florianopolis, Brasil

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December 5th 2025

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Being a female scientist in STEM

Has gender equality in STEM been achieved?

Being a female scientist in STEM

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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
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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 (GenderScan study):

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But this environnement 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)
- **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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- Fighting sexual and gender-based violence, harassment and discrimination