Reimagining a STEM Research Culture

Lessons Learnt from 20 years of Evolution for Inclusive Representation in Science and Engineering

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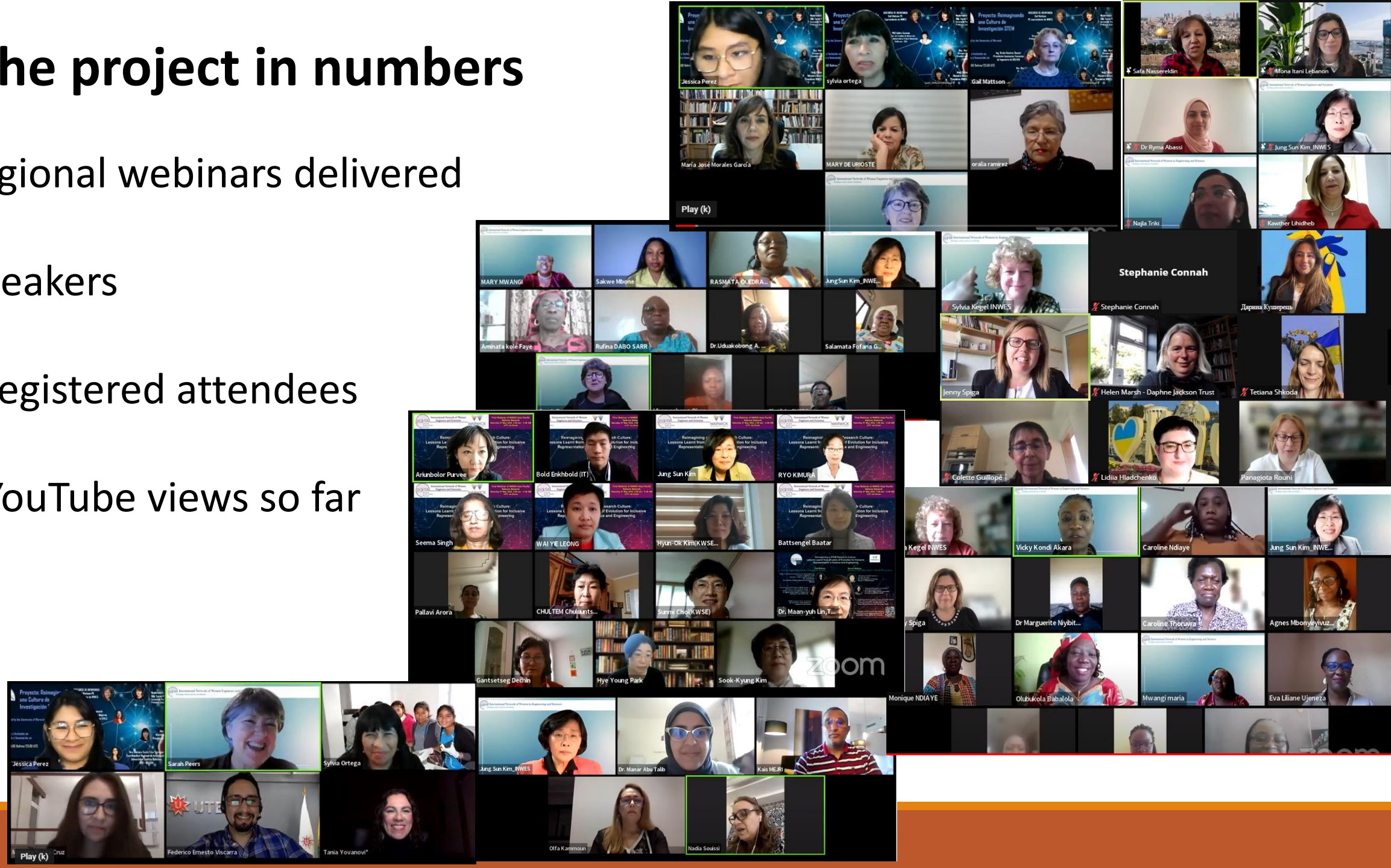
The project in numbers

10 regional webinars delivered

40 speakers

670 registered attendees

500 YouTube views so far



Underrepresentation in STEM - 1

Women, people with disabilities and those from ethnic-minorities or socially-disadvantaged groups are consistently underrepresented, particularly at senior levels, in Science, Technology, Engineering and Mathematics (STEM).

Equity and inclusion lead to…

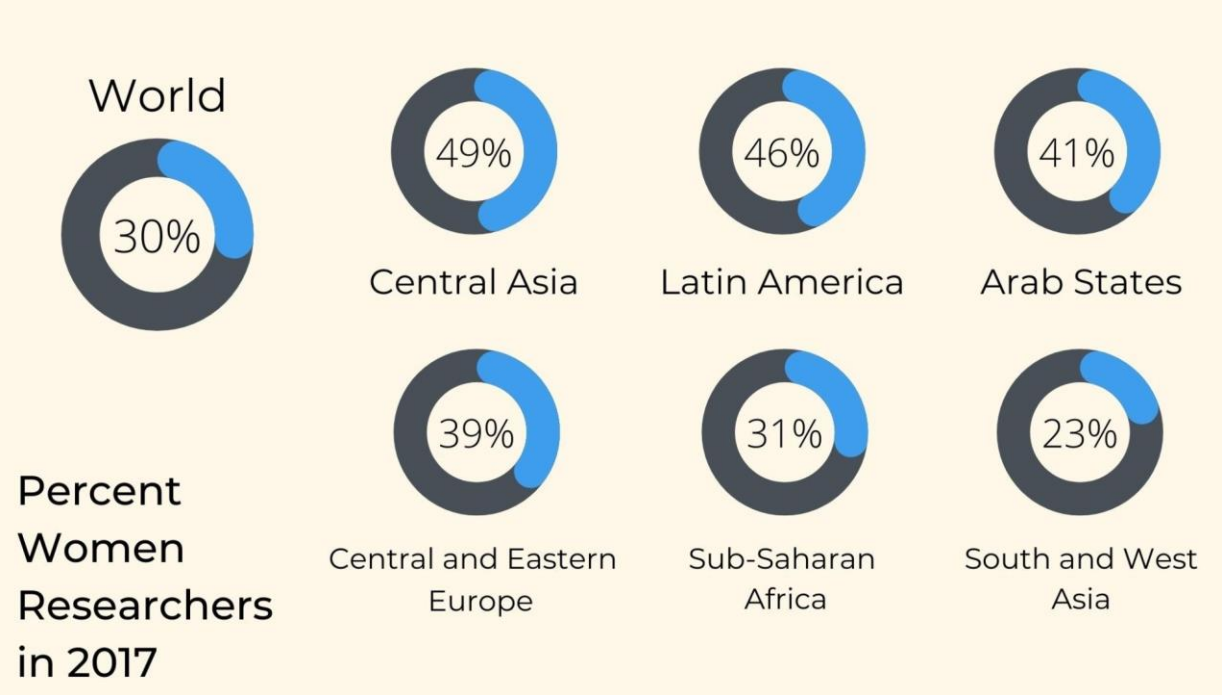
1. Greater innovations
2. Different knowledge production
3. Different Higher Education Institutions and industry discourses and practices

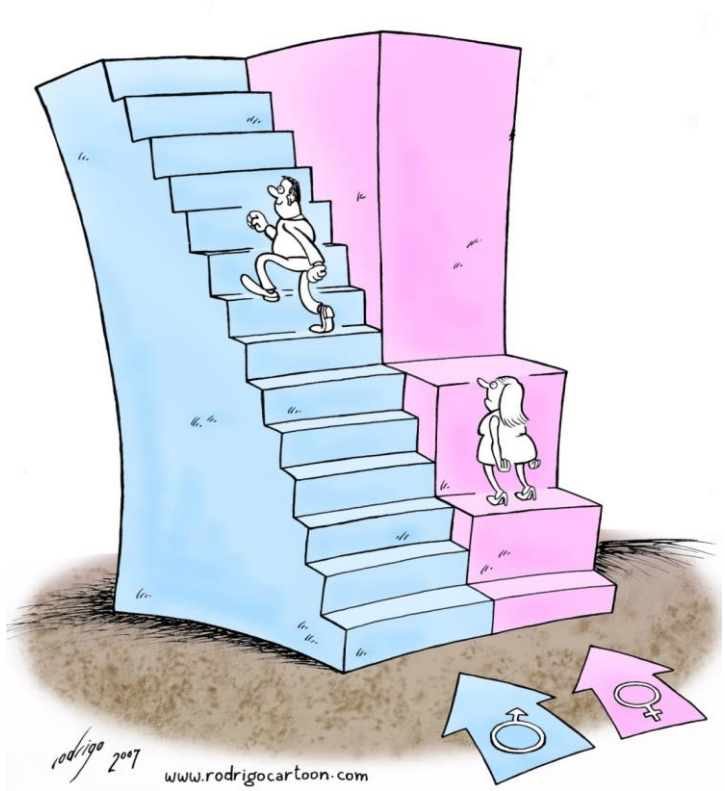
Underrepresentation in STEM can be due to:

Individuals choosing not to study the subjects that lead to STEM careers

or

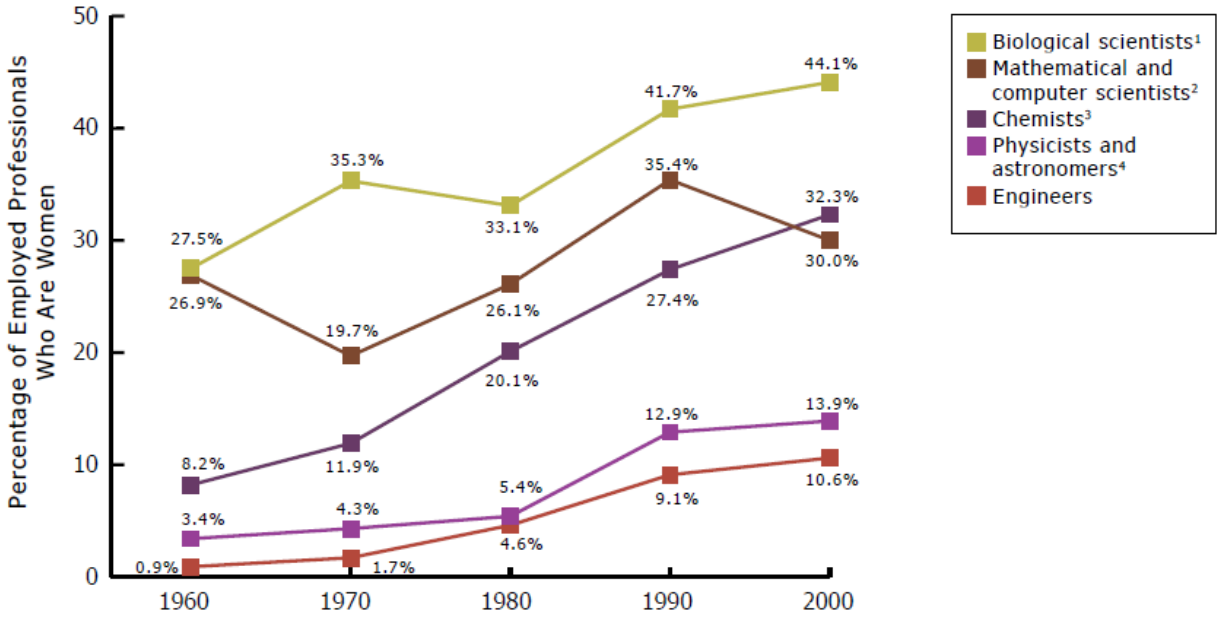
Leaky pipeline (difficulty to be retained and to progress to senior levels)





Stereotyping often leads to women being assigned more responsibility for co-ordination, teaching/training and mentorship.

Women in selected STEM occupations



Notes: Data on postsecondary teachers by field of instruction were not gathered in the 2000 census, so postsecondary teachers are not included here. When postsecondary teachers were included from 1960 to 1990, the general trends remained the same.

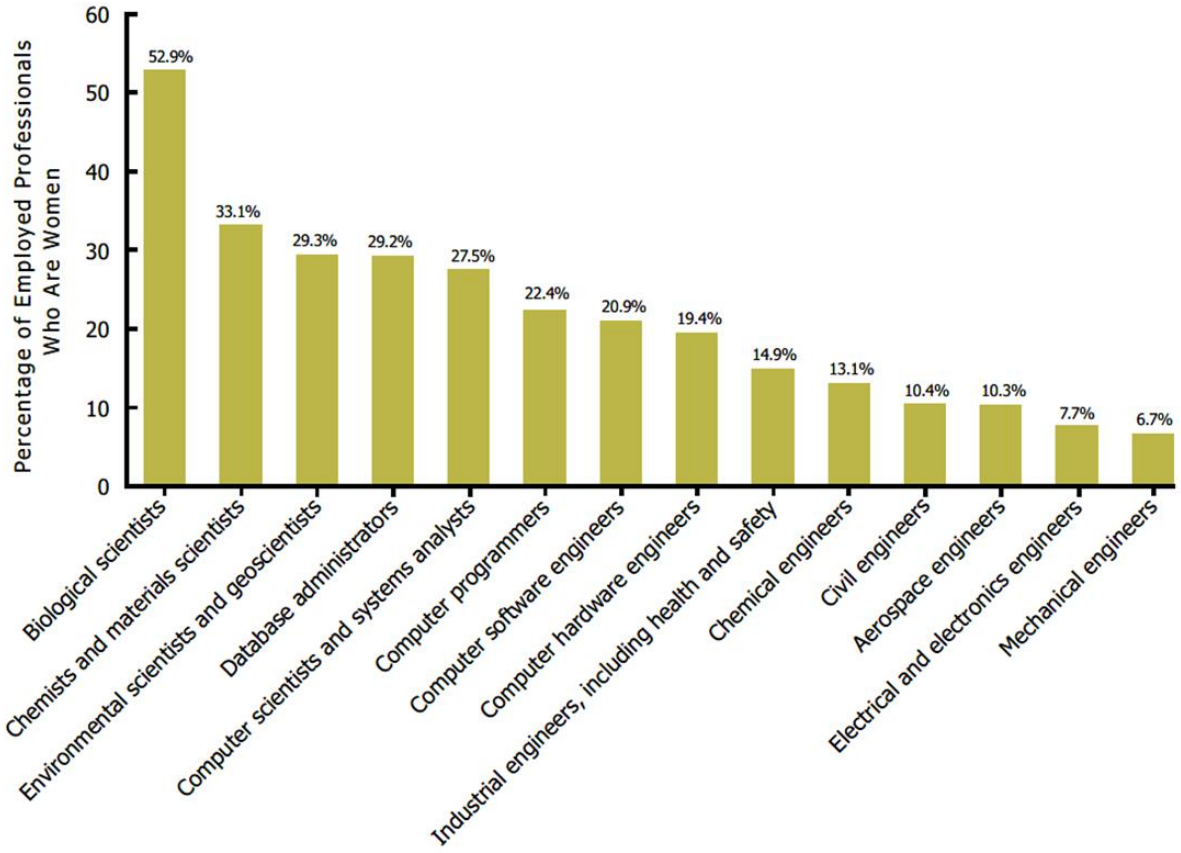
[1] In the 1980 and 1990 censuses, data include life scientists as well as biological scientists.

[2] In the 1960 census, no category for computer scientists was included; in the 1970 census, the category was titled "mathematicians and computer specialists."

[3] In the 1980 and 1990 censuses, the category was titled "chemists except biochemists"; in the 2000 census, the category was titled "chemists and material scientists."

[4] In the 1960 census, the category was titled "physicists."

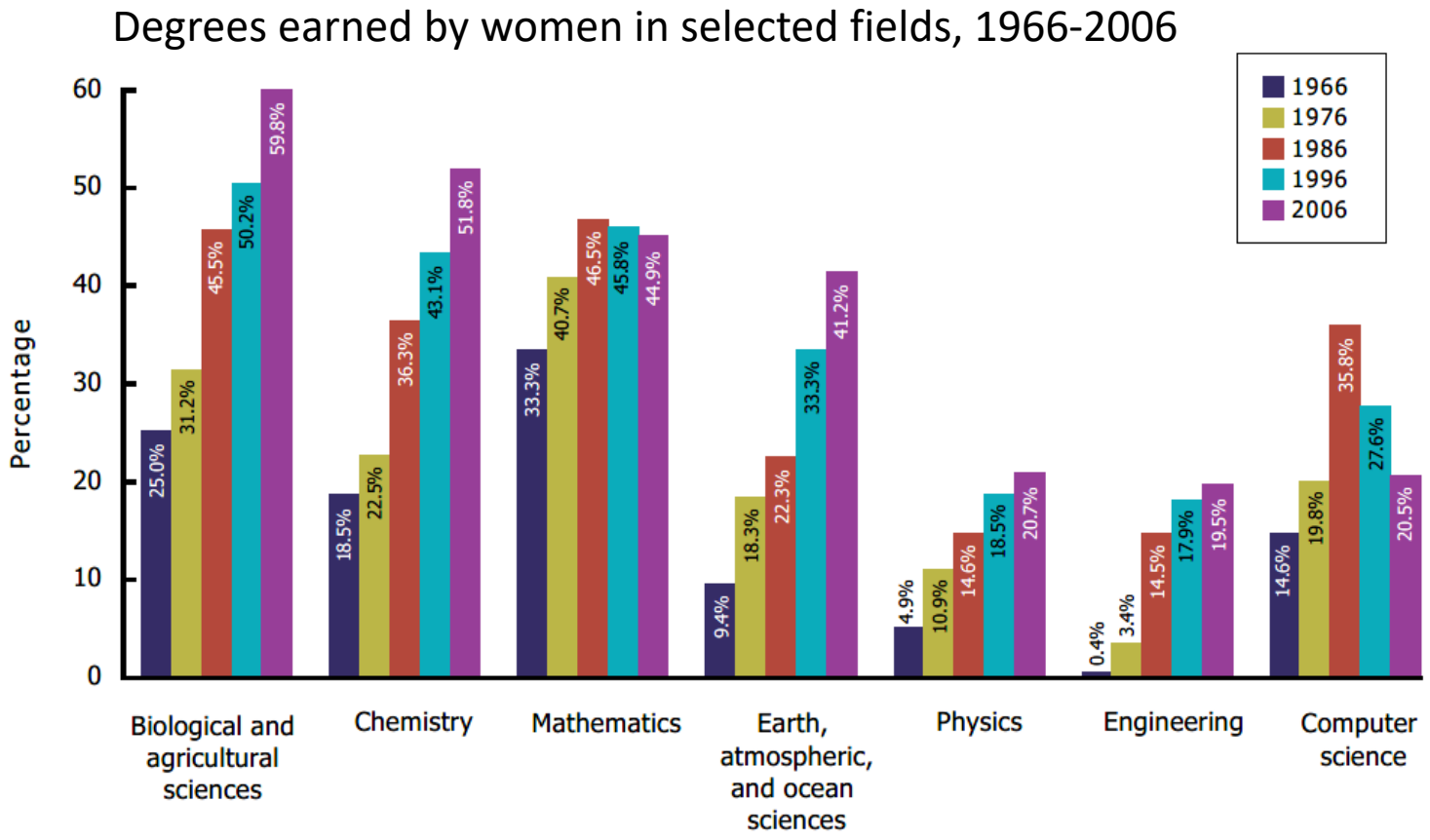
Source: U.S. Census Bureau, 1960, 1970, 1980, 1990, & 2000, *Census of the population* (Washington, DC).



Note: Occupations are self-reported.

Source: U.S. Department of Labor, Bureau of Labor Statistics, 2009, *Women in the labor force: A databook* (Report 1018) (Washington, DC), Table 11.

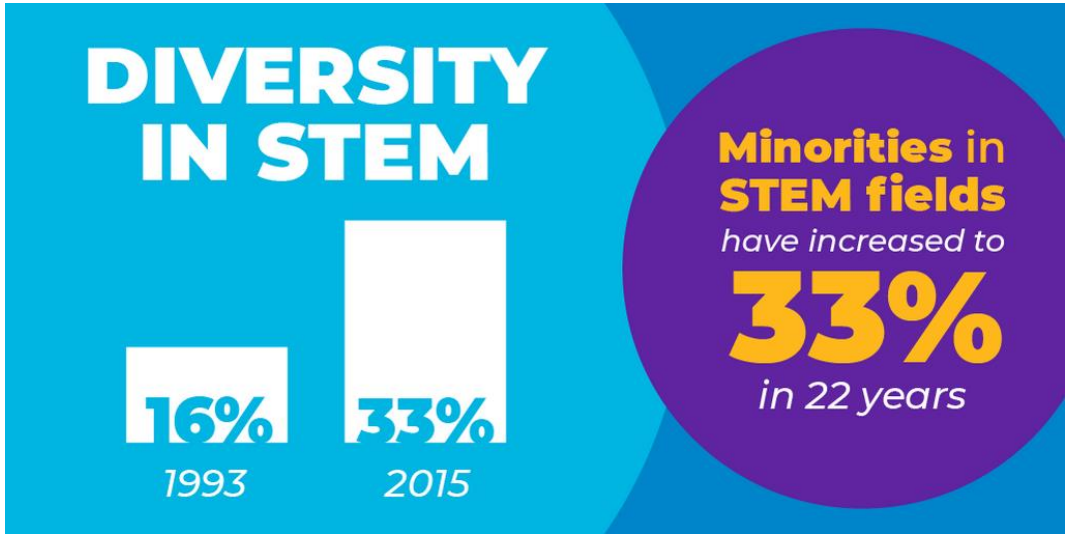
Is the situation improving over time?



Source: National Science Foundation, Division of Science Resources Statistics, 2008, *Science and engineering degrees: 1966–2006* (Detailed Statistical Tables) (NSF 08-321) (Arlington, VA), Table 11, Author's analysis of Tables 34, 35, 38, & 39.

Women's representation in computer science is actually declining—a stark reminder that women's progress cannot be taken for granted.

Impact of Covid



Now 135.6 years

99.5 years to reach gender parity

The Global Gender Gap Report 2020
https://www.weforum.org/reports/the-global-gender-gap-report-2020/

Impact of conflicts?

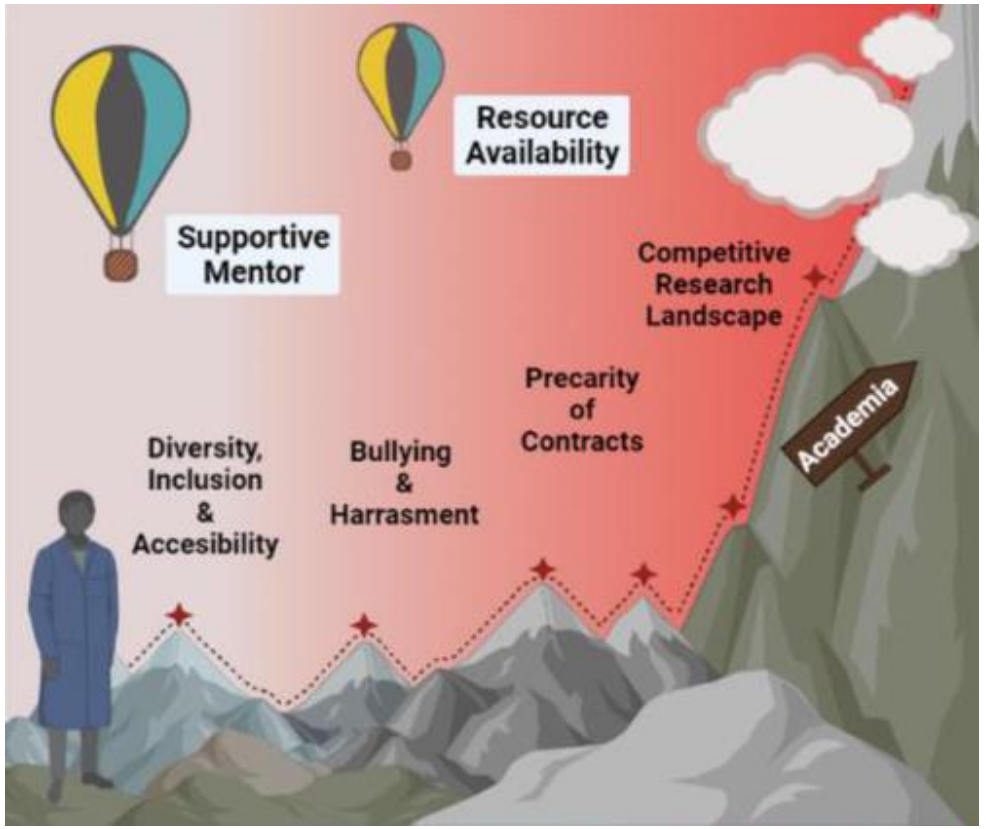
Strategic approaches for equity and inclusion in STEM

1. “**Fix the Numbers**” increasing women's and underrepresented groups' participation

2. “**Fix the Institutions**” promoting inclusive equality in careers through structural change in research organizations

3. “**Fix the Knowledge**” (“gendered innovations”) stimulating excellence in STEM by integrating sex, gender, and intersectional analysis into research

Impact of Research Culture



- Sharing knowledge and empowering
- Teaching
- Mentoring
- Putting up ladders, leaving them there
- Giving a helping hand to stay up the ladder

“In the long history of humankind (and animal kind too) those who learned to collaborate and improvise most effectively have prevailed.” Charles Darwin

Suggested measures for ensuring inclusiveness in STEM

- Develop new policies (i.e. to financially support women after a career break)
- Create inclusive working environment (i.e. meeting people with disabilities' needs)
- Develop a pool of mentors
- Guarantee flexibility (i.e. flexible hours for caring responsibilities, work/life balance)
- Create underrepresented groups networks
- Produce and share videos of scientists to serve as role models

Thanks to…

- The University of Warwick for funding
- The INWES network for collaboration
- Our wonderful speakers for inspiring us and sharing ideas and resources

Finally, thanks to you all for listening and participating!