

Recommendations

These guidelines are based on the findings of the project “**A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to measure it? How to reduce it?**” and from discussions in the network created around the project.



We start with **instructors and parents**, who have an important role to play in changing societal perceptions and stereotypes towards women in science and in engaging girls in primary, secondary, and higher education. We continue with recommendations for **scientific**

or **educational organizations** of all kinds, since these are the places where scientific life takes place daily. We conclude with recommendations for **Scientific Unions** and other worldwide organizations, in particular the unions members of the project.

Website of the project: <https://gender-gap-in-science.org/>

For instructors and parents

1. Avoid **gender stereotyping and unconscious gender bias** in interactions with female students and children. Adopt practices that encourage girls to participate in scientific activities in schools and non-school settings. Teach boys and girls gender equity.
2. Avoid books and social media that reinforce the gender gap in science. Use books and media **promoting gender balance** and highlighting the contributions of women in science.
3. Develop **gender awareness** in the classroom and encourage girls in their learning of scientific subjects. Track who you are engaging in class to ensure that every student has a chance to participate and that girls feel comfortable in speaking up.

4. Encourage **relevant single-sex activities** to raise and boost girls' self-confidence and possibilities for expressing themselves.

For local organizations

These are all types of scientific or educational venues: universities' science departments, conference centers, research groups in industry.

1. Promote a **respectful, collegial working atmosphere**. Monitor support, well-being, and mentoring of female academics.
2. Define best practices to prevent, report, and address **sexual harassment and discrimination** in professional spaces.
3. Address the **impact of parenthood** on the careers of women. Introduce proper accounting for child care responsibilities (18 months per child recommended) when evaluating candidates in hiring and promotions processes. In practice, this applies mainly to women. Encourage provision of a research-only year after maternity or parental leave. Acknowledge and accept the existence of discontinuous careers and family responsibilities and take these into account in hiring and funding policies.
4. Ensure **transparency** of statistics on salaries, course loadings, bonuses, hiring and promotion, observing progress or difficulties experienced by female academics. Encourage policies to help reduce gendered salary disparities. Ensure female and male representation on recruitment committees and provide unconscious bias training for all members. Make the gender lens the responsibility of a dedicated person.
5. Welcome families and provide **child friendly environments**. Provide improved support systems for parents. Allocate teaching loads with suitable hours for parents. For conference centres, take care of the issues of families attending with children and equip family rooms in the guest houses to cater for all basic needs (e.g. children's toys, high chairs, and changing tables for babies).

6. Address **gender equality** in all institutional policies. Identify a person or a group in charge of gender equality inside the organization, looking at the gender balance in all kinds of activities. Put in place initiatives encouraging women. Involve men in identifying barriers and addressing them. Diversity action plans should have financial consequences if not met.
7. In all outreach and educational programs, include the **aim of reducing the gender gap**. Adapt such programs to the region or discipline concerned by the organization and evaluate their effectiveness. Develop gender awareness of future teachers and provide training in critical thinking.

For scientific unions

By Unions we mean worldwide members of the International Science Council, in particular those that are members of our project.

1. Work collectively to **change culture and norms** to reduce the various aspects of the gender gap. Share policy, toolkits and learnings to enable member organizations and members. Launch campaigns to increase awareness of the benefits to society of reducing the gender gap.
2. Define and advertise **best practices** to prevent, report and address sexual harassment and discrimination in professional spaces.
3. In order to address the disproportionate **impact of parenthood** on the careers of women, recommend and disseminate in the scientific community proper accounting of child bearing/caring responsibilities (18 months per child recommended) when evaluating candidates in hiring and promotion processes. Recognise the existence and impact of discontinuous careers and suggest strategies for developing responsive hiring and funding policies. Encourage policies to help reduce salary disparities.
4. Actively promote the **visibility of female scientists**, in particular at conferences. Program a session for all participants on

diversity and inclusion in their discipline in union-sponsored conferences. Develop policies on gender balance for funding conferences with representative speaker and panel lists, scientific organizing Committees and local organizing committees. Request a reporting mechanism for these concerns at the conference.

5. Encourage the **diversification of scientific awards**, actively encouraging the nomination of women. Add 18 months per child to all age-limits in scientific awards for people having taken care of children.
6. Encourage the presence of **women in editorial boards** in your discipline and publish reports on the proportion of papers published by women. Use double blind reviews. Manage constructive feedback on submitted papers.
7. **Welcome families** in scientific activities. For scientific meetings that you sponsor or support, encourage taking care of all issues of family attending with children and putting a budget in place to offer childcare solutions.
8. Create a **committee for women** and/or gender equality, with an assigned budget line. Organize specific meetings to promote women's networking. Support women in writing better grant proposals. Develop websites on women in science, reporting all the news relevant for women in science such as success stories of female scientists, conferences or activities relevant to women in science. Encourage and advertise books and media written by women, biographies of women, and media releases.
9. Actively **promote gender balance** at every level of your organization, including its leadership, its committees and also institutional events.
10. In all outreach and educational programs and products, **raise awareness** about the gender gap and include specific actions and events that aim at reducing the gender gap. When role models are introduced, include diverse backgrounds, ages and those who did not necessarily have a straightforward traditional career, including scientists not employed in academia.