

Online submission

16 June 2023



Australian Academy of Science submission to the *Diversity in STEM Review*

The Australian Academy of Science (the Academy) welcomes the opportunity to comment on the *Diversity in STEM Review: Let's talk solutions*.

The Academy recommends that the Review:

- Be guided by the Women in STEM Decadal Plan, which includes solutions identified through a review of the research literature and national, sector-wide consultations.
- Be guided by the submissions made by the Women in STEM [Decadal Plan Champions](#) which offer practical solutions on how organisations across the country are achieving gender equity, with actions mapped against the opportunities presented in the Women in STEM Decadal Plan.
- Recommend that investment in research focuses on gaps in understanding of barriers to diversity beyond women in STEM, and includes intersectionality and STEM participation in the Australian context.
- Recommend scaling up diversity and inclusion initiatives that have proven efficacy.
- Propose a strategic, whole-of-STEM ecosystem approach to advance diversity in STEM, which considers how the government's diversity in STEM policy aligns with broader policy settings and tools and with other stakeholders.
- Consider how diversity in STEM priorities align with wider national efforts and policy settings, such as the National Strategy to Achieve Gender Equality and the work of the Workplace Gender Equality Agency.

[Support evidence-based solutions to advance diversity in STEM](#)

To achieve increased inclusion and diversity in STEM, solutions must be evidence-based. Programs and initiatives must be backed by ongoing evaluation, and investments should be made to scale up effective programs.

The [Women in STEM Decadal Plan](#) (the Decadal Plan), developed by the Australian Academy of Science and the Australian Academy of Technology and Engineering, presents recommendations to improve women's participation in STEM based on sector-wide national consultations and a review of research literature and practice. It includes a comprehensive summary of suggested solutions from consultations mapped against identified barriers (Appendix 3), insights from research and practice (Appendix 4) and case studies of effective initiatives. Selected solutions suggested in Decadal Plan consultations and in the Decadal Plan Champions submissions include but are not limited to:

- Award government contracts only to organisations with gender parity or formal accreditation for gender equity practice.
- Adopt a gender equity accreditation process appropriate to the organisation, such as Science in Australia Gender Equity (SAGE) or WGEA Employer of Choice.
- Conduct internal campaigns to normalise men accessing flexible working arrangements and actively encouraging and facilitating men's access to parental leave entitlements.

- Expand the collection of demographic data undertaken by funding agencies to enable an understanding of intersectionality and how it impacts STEM research.
- Implement transparent mechanisms to ensure accountability and implementation of equity by leadership, including transparent reporting to shareholders and other stakeholders.
- Undertake regular pay gap analysis.
- Prioritise funding and expansion of proven pilot and small-scale STEM education and outreach programs for girls and women.
- Recognise public engagement and outreach as measures for recruitment and promotion and provide incentives such as childcare and grant writing assistance in return for taking part in activities that may not contribute to promotion, such as serving on committees, speaking at events and mentoring.
- Implement and report on a gender equity policy when organising conferences and events. Consider initiatives such as onsite child care and care support bursaries.
- Adopt best practice when assessing and awarding scientific awards. Consider mechanisms such as unconscious bias training, blind assessment of applications, and removing gendered language from award applications and advertisements.
- Support professional learning for teachers and career advisors to increase awareness of STEM career options and the impact of unconscious bias.
- Provide incentives for STEM graduates and professionals to train as educators in primary and secondary schools, and encourage STEM skilled workers to retrain into education.
- Provide high-quality training to support cultural change related to diversity and gender within organisations.
- Review recruitment processes to ensure no steps in the process are undervaluing or disadvantaging candidates. Consider reviewing job advertisements for the presence of non-inclusive or gendered language, introducing de-identified review panels, and unconscious bias training.
- Establish mechanisms to address instances of proven bullying or harassment in the research sector through removal of funding, and/or exclusion from applying for funding. Consequences to be extended to organisations if they are found to have acted inappropriately.
- Expand the collection of demographic data undertaken by funding agencies to enable an understanding of intersectionality and how it impacts women in STEM research.

The Academy recommends that the Decadal Plan be used as a foundation for the Diversity in STEM Review to consider effective interventions and programs to improve diversity in STEM.

Many existing initiatives focus on individual-level intervention, such as scholarships, media training and mentorship. These do not necessarily address the fundamental, systemic changes that the STEM sector needs to be more equitable.

SAGE is a national accreditation program that recognises and incentivises sustained, evidence-based change at an organisational level. SAGE members must demonstrate genuine achievement on key metrics for gender equity, such as the proportion of women in key leadership positions and policies and actions taken on gender equality.

The Decadal Plan Champions organisations, which span all parts of the STEM ecosystem, including academia and research, industry, small to medium enterprises, institutions and the public sector, are also taking practical actions in their organisations aligned to the opportunities in the Decadal Plan. Details of these actions can be found [here](#).

Establish an evidence-base to support effective action on diversity and inclusion for underrepresented groups in STEM

Diversity in STEM is broader than women in STEM. Participation in STEM in Australia should reflect the diversity of our community. Solutions aimed at advancing diversity in STEM should apply an intersectional lens to address multiple, intersecting identities. Intersectionality is a conceptual framework to understand how a person's identities – gender, sexuality, ethnicity, ability, socioeconomic status, etc. – overlap and produce unique circumstances of privilege or discrimination. Intersectional issues create additional barriers to participation in STEM.

There is an opportunity for the Review to recommend research to establish a strong evidence base for effective actions to improve diversity for underrepresented groups beyond women and understanding intersectionality and STEM participation in the Australian context. As identified in the Decadal Plan, there is an opportunity to undertake in-depth research into intersectionality in STEM in Australia.

The Review should consider the imperative for investment in this research to expand the evidence base, identify what best practice looks like and inform direct action.

Monitoring progress towards a refreshed national vision and goals for diversity in STEM is essential. There is scope to expand the diversity indicators captured in assessments by government departments, research funding agencies and research organisations and presented in the STEM Equity Monitor.

Key outcomes for the Diversity in STEM Review

The Academy welcomes the review of the Australian Government's women in STEM programs and views this as a valuable opportunity to broaden the focus to improve inclusion across all underrepresented groups in STEM.

A successful Review will build on the Decadal Plan and provide clear direction for a strategic, whole-of-STEM ecosystem approach that consolidates effort and effective initiatives.

It will also provide guidance on addressing bias in important national policy initiatives which impact STEM fields, such as the National Reconstruction Fund, ensuring equality in access to opportunities.

The Review should also consider how diversity in STEM priorities align with wider national efforts and policy settings, such as the National Strategy to Achieve Gender Equality and the work of the Workplace Gender Equality Agency.

To discuss or clarify any aspect of this submission, please contact Dr Stuart Barrow, Research and Policy Manager, stuart.barrow@science.org.au.