SAGE submission to the Pathway to Diversity in STEM review dialogue starter

26 May 2023

SAGE
SCIENCE IN AUSTRALIA GENDER EQUITY

Higher education and research institutions hire Australia's top STEM talent. The practices in those workplaces could be perceived as what is accepted or even endorsed by the nation's leading thinkers.

Universities are also responsible for training the nation's future STEM workforce. What students see, learn and experience during their formative years in higher education sets a standard for the behaviours and practices that they should expect at their future place of work.

Given their tremendous social influence, it is paramount for higher education and research institutions to be models of best practice in diversity and inclusion.

Since 2014, Science in Australia Gender Equity (SAGE) has been delivering Athena Swan: an accreditation program for gender equity, diversity and inclusion (GEDI) in STEM (and beyond) in higher education and research.

Originating from the UK, the Athena Swan framework guides institutions to identify and respond to inequities in a systematic, data-driven way.

Our program participants ('SAGE subscribers') are universities, medical research institutes and publicly funded research agencies across Australia.

Our submission presents:

- solutions that increase diversity and inclusion in STEM, demonstrating how those features are embedded in the SAGE Athena Swan program
- how to amplify the impact of STEM diversity and inclusion initiatives
- case studies on how SAGE subscribers have addressed a lack of diversity, including where they have embraced opportunities for change and thrived
- evidence that SAGE's Athena Swan program has increased diversity in STEM

Summary of recommendations

Invest in context-specific interventions, such as SAGE, that have the four features common to sustainable solutions:

- ✓ are data-driven and evidence-based
- ✓ address systemic barriers throughout the STEM lifecycle
- ✓ are supported by organisational leaders who hold themselves accountable for the intervention's success, *and*
- ✓ are designed with an intersectional lens.

Enhance the uptake and success of GEDI interventions by:

- facilitating the development of sector-wide or industry-specific strategies to achieve GEDI
- developing a national complaints system for workplace sexual harassment and assault
- establishing GEDI performance as an assessment criterion for competitive funding
- encouraging organisations to share their actions to improve GEDI, and the outcomes and impact they achieved
- promoting mutual recognition pathways for GEDI compliance and accreditation schemes.

Contents

What solutions will increase diversity and inclusion in STEM?

The barriers to organisational GEDI are influenced by many factors, such as size, demographics, industry and location. For this reason, there is no specific interventions as 'the solution' to any diversity and inclusion problem, as the barriers and appropriate responses may differ according to the organisation's context.

However, sustainable solutions usually have four features in common.[1,2,3] These features can be used as criteria for funding GEDI programs. Using the SAGE Athena Swan program as an example, we illustrate how organisations might embed these features in their interventions.

Data-driven and evidence-based

Quantitative and qualitative data should be used to identify barriers, design interventions and measure outcomes and impact.

While representation is important, it should not be the sole measure of diversity and inclusion. The number of women, people with disability or Indigenous people (for example) in an organisation tells us little about their workplace experiences, opinions, attitudes and feelings. A gender-balanced board might still have a hostile culture where male directors hold more agency and power.[4]

Organisations that use qualitative data will have a better understanding of their culture and what they should to do improve it.

Organisations with sustainable solutions use these data to:

- conduct continuous monitoring and evaluation;
- adapt or expand interventions to achieve greater impact;
- report to senior management; and
- promote transparency by reporting on GEDI performance to their staff and stakeholders.

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[1] Ryan MK (2023) 'Addressing workplace gender inequality: using the evidence to avoid common pitfalls', *British Journal of Social Psychology*, 62:1–11.
[2] Ryan MK (2022) 'To advance equality for women, use the evidence', *Nature*, 604:403.
[3] See also research by Advancing Women in Healthcare Leadership, with whom SAGE has an affiliate partnership:
Mousa M, Boyle J, Skouteris H, Mullins AK, Currie G, Riach K and Teede HJ (2021) 'Advancing women in healthcare leadership: a systematic review and meta-synthesis of multi-sector evidence on organisational interventions', *eClinicalMedicine*, 39:101084.
Mousa M, Skouteris H, Boyle JA, Currie G, Riach K and Teede HJ (2022) 'Factors that influence the implementation of organisational interventions for advancing women in healthcare leadership: a meta-ethnographic study', *eClinicalMedicine*, 51:101514.
[4] Verhoeven D, Musial K, Hambusch G, Ghannam S and Shashnov M (2022) 'Net effects: examining strategies for women's inclusion and influence in ASX200 company boards', *Applied Network Science*, 7:48.

To apply for an Athena Swan Bronze Award, SAGE subscribers conduct a comprehensive GEDI self-assessment using workforce data (Table 1).

Table 1. Examples of data collected by SAGE subscribers to inform their GEDI interventions.

Quantitative indicators	Qualitative indicators
• Number of staff by gender (and other demographic characteristics, as relevant) • Student application, enrolment and completion dates by course and gender • Staff exit rates by gender • Recruitment application, interview and acceptance rates by gender • Parental leave uptake and return rates by gender	Staff feedback on: • reasons for leaving the organisation • performance development or appraisal processes • support provided before, during and after parental leave • the organisation's culture

Systemic, whole-of-lifecycle approach

The main barriers to retention and progression vary with career stage;[5] a person might overcome challenges arising from a lack of role models or childcare options early in their career, only to be affected by biased promotion pathways later on.

For everyone to enjoy long, fulfilling careers in STEM, organisations need to be equitable and inclusive in the way they attract, retain and progress workers. While interventions that provide individuals with resources to overcome barriers (e.g. a grant to support the publication of a research paper) are useful in the short-term, long-term solutions that address systems (e.g. de-emphasising publication output in academic promotion criteria,[6] and considering relative-to-opportunity achievement in selection processes[7]) are needed to change cultures and dismantle the power structures that reinforce inequity.

Workplace systems are also interdependent and can influence each other. For example, an organisation's flexible work practices (or lack thereof) will affect employees' transition back to work after parental leave; in STEM environments where onsite work is necessary, someone returning from parental leave might be accommodated with two flexible work-from-home hours around six core onsite hours. In all cases, potential barriers to GEDI should not be addressed in isolation.

[5] Australian Academy of Science (2019) *Women in STEM Decadal Plan*, Australian Academy of Science.
[6] Hughes L (2022) *Promoting gender equity within the academic promotions process*, SAGE, accessed 23 May 2023.
[7] Lewis M, Bhaskaran M, Yewers M, Love A, Latham K and Corzo C (2022) *Achievement relative to opportunity – beyond academic promotion*, SAGE, accessed 24 May 2023.

In the SAGE accreditation program, organisations investigate all potential barriers to attraction, retention and progression, ensuring that none are missed. Where systemic barriers are found, they change the policies and processes that cause these.

Strong leadership support and accountability

Interventions only work when they are well-resourced and have strong institutional buy-in. To achieve these, leadership support is essential.[8,9]

For instance, when an organisation joins SAGE, the head of an organisation must make a commitment to GEDI and take accountability for the organisation's accreditation work.

In their SAGE action plan, each item is clearly assigned to a responsible person/group for implementation, and to a senior leader who is accountable for its delivery.

Designed with an intersectional lens[10,11]

While there is growing awareness of intersectionality, many organisations still struggle to apply this concept.

Universities, with their wealth of expertise in the social sciences, humanities and business, can further the public's understanding of intersectionality and model an intersectional approach to workplace GEDI.

SAGE brings these universities together in a community of practice to help develop what it looks like and how to achieve it. Although this work is still in its infancy, their learnings can serve as a guide for other sectors in future.[12]

The Department has supported these efforts by including in the STEM Equity Monitor data on graduates who are born outside Australia, identify as First Nations, have a disability and speak a language other than English at home.

The Monitor is a useful resource and example of good GEDI data presentation. We look forward to data on these demographic groups being available in other sections of the Monitor and for more demographic groups to be included, e.g. non-binary and LGBTQIA+ people.

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[8] Fitzsimmons TW, Yates MS and Callan VJ (2020) *Employer of Choice for Gender Equality: leading practices in strategy, policy and implementation*, AIBE Centre for Gender Equality in the Workplace.
[9] Cassells R and Duncan A (2019) *Gender equity insights 2019: breaking through the glass ceiling*, Bankwest Curtin Economics Centre.
[10] CYE Wong, Kirby TA, Rink F and Ryan MK (2022) 'Intersectional invisibility in women's diversity interventions', *Frontiers in Psychology*, 13:791572.
[11] Harpur P, Szucs B and Willox D (2023) 'Strategic and policy responses to intersectionality in higher education', *Journal of Higher Education Policy and Management*, 45:19–35.
[12] See for example this research led by a SAGE subscriber organisation: Robinson K, Wolfinger E, Nicholas L and Sullivan C (2022) *Addressing intersectionality in gender 'equity' at WSU: experiences, policies and everyday practices*, Western Sydney University.

How can efforts to increase diversity and inclusion in STEM be better and have more impact in future?

Develop sector-specific goals and plans

Although some STEM organisations have strategies in place to achieve GEDI, coordinated approaches are needed to change norms across Australia's science and technology sectors. When most organisations from the same sector collectively agree to act on GEDI, it becomes less socially acceptable for an organisation to not do the same. It also promotes healthy competition by motivating organisations to become leaders in GEDI.

Each sector should:

- have programs with a holistic focus on attracting, retaining and progressing marginalised groups;
- agree on meaningful sector-wide metrics for GEDI success;
- establish targets to achieve these metrics;[13] and
- *regularly* and *publicly* report on the progress, outcomes and impact they have achieved in GEDI.

The SAGE experience shows that having industry peak bodies lead this work, in partnership with government, is an effective way to galvanise a sector. When the Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering (ATSE) launched the SAGE pilot in 2014, over 80% of Australian universities signed up to participate, not wanting to be left out of a high-profile initiative. Leaders of SAGE subscriber organisations collectively made the following pledge:

> ***The Athena Swan Senior Leaders' Commitment***
>
> *In committing to the principles of the Athena Swan Charter, we recognise that we join a global community with a shared goal of advancing gender equity, diversity and inclusion in higher education and research.*
>
> *Each Institution is at a different stage in its gender equity, diversity and inclusion journey, and has different challenges and priority areas for action.*
>
> *In determining our institutional priorities, and designing and implementing interventions, we commit to:*
>
> - *ensuring that gender equity, diversity and inclusion work is appropriately resourced, distributed, recognised, and rewarded.*

[13] Peach L and Pearce A (2019) *Strategies for success: implementing gender workforce targets*, UTS Centre for Social Justice and Inclusion.

- *undertaking transparent and rigorous self-assessment processes, analysing institutional structures, systems, and cultures to identify the barriers to attraction, retention and progression for staff and students, and thus to gender equity, diversity and inclusion.*

- *designing initiatives based on institutional data, and national and global evidence of best practice.*

- *monitoring, evaluating, and publicly reporting on progress made, challenges experienced, and impact achieved, to inform continuous improvement.*

- *actively incorporating Indigenous knowledges and perspectives to address the specific inequities and injustices experienced by Aboriginal and/or Torres Strait Islander staff and students.*

- *consciously considering all genders, recognising that gender is not binary, and that trans and gender diverse people face specific inequities because of their gender identities.*

- *taking an intersectional approach to advancing gender equity, diversity and inclusion, recognising that people of any particular identity are not a homogeneous group.*

- *engaging with those most impacted by inequitable practice to proactively redesign and reshape structures, systems and culture.*

- *increasing the safety and wellbeing of staff and students by proactively and transparently preventing and responding to bullying, harassment, sexual harassment, gender-based violence and discrimination.*

- *embedding change in institutional governance and accountability structures; actively and visibly championing and promoting gender equity, diversity and inclusion in our Institutions, the Athena Swan community, and across the sector; and holding ourselves and other senior leaders accountable for driving sustainable transformational change.*

The SAGE Athena Swan framework also has specific definitions for progress/output, outcomes and impact,[14] against which all participating organisations must report to gain accreditation. This ensures that organisations are held to the same standards and enables sector-wide benchmarking.

Other sectors have made coordinated commitments to change. The Australian Constructors Association have pledged to improve pay equity, workplace flexibility and culture in the construction industry.[15] Industry groups such as the Australian Institute of Company Directors, the 30% Club Australia, Chief Executive Women, the Champions of Change

[14] **Progress/output:** A deliverable produced as part of an action.
Outcome: A measurable change that occurs as a result of implementing an action (or group of actions).
Impact: A change to the self-reported lived experience of staff (and/or students) as a result of removing or reducing a barrier.

[15] Build Australia (3 May 2023) '[Construction majors vow to transform the culture from within]', *Build Australia*, accessed 16 May 2023.

Coalition and Women on Boards have also been shown to be influential drivers of gender parity on boards.[16]

Prioritise eliminating bullying and harassment

Bullying and harassment are specific problems that cannot be solved through institutional action alone and require cross-sector coordination to be addressed. This need is illustrated below, in the context of the higher education and research sector.

University power structures

In the higher education and research context, the imbalance of power strongly deters students or junior academics from reporting misconduct by faculty members, who may damage their future career prospects in retaliation.[17] This is more likely to happen when the perpetrator is a 'star researcher' and/or holds a powerful position.

On the rare occasions where a formal report is made, cases tend to be ignored, dismissed or mishandled to protect the institution's funding and reputation.[18] As a result, perpetrators often move between institutions and continue to harm others with little to no repercussions.

Cross-institutional nature of higher education and research

University staff and students often interact with those from medical research institutes and publicly funded research agencies through joint research projects, work placement programs, conferences or employee movements.

Hypercasualisation of the university workforce

The Respect@Work report found that casual employees were less likely to speak up about sexual harassment or seek remedies when it occurred, due to fear of losing their jobs. This was compounded by the fact that casual employees were easy to replace and usually hold lower-level positions with little power.

Given the prevalence of casual and short-term contracts in universities, the workforce is especially vulnerable. Indeed, the third highest proportion of sexual harassment incidents (10%) occurred in the education and training industry, even though the industry only makes up 8% of the Australian workforce.

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[16] Fitzsimmons TW, Yates MS and Callan VJ (2021) *Towards board gender parity: lessons from the past – directions for the future*, University of Queensland Business School.

[17] Young SL and Wiley KK (2021) 'Erased: why faculty sexual misconduct is prevalent and how we could prevent it', *Journal of Public Affairs Education*, 27(3):276–300.

[18] Ellinghaus K, Henningham N, Kaladelfos A, Piper A, Rademaker L, Rees A, Silverstein J, Tomsic M and Wolfe N (2018) 'It destroyed my research career': survey of sexual and gender-based discrimination and abuse in Australian academia, Australian Women's History Network.

For respect and safety to become the norm across the sector, we propose developing a national reporting system/process for bullying, harassment and assault,[19] with the aim to encourage reporting, provide complainants with victim-centred support and a pathway to justice, detect serial perpetrators, improve monitoring of complaint numbers/types and enhance transparency.

For example, survivors of campus sexual assault can use the Callisto matching escrow system[20] to make a private record of the incident and their perpetrator. If another survivor submits a record with the same perpetrator, both survivors are alerted and a trained support person will help them navigate their legal options.

We believe that this system will bring greater oversight (by the government or another independent agency) and consistency to how complaints are handled, leading to better outcomes for victims and increased public trust in reporting mechanisms.

Link funding to GEDI performance

Government has access to a powerful lever through providing funding. Making GEDI a part of the assessment criteria for government funding, and establishing an organisation's commitment to GEDI as a requirement for funding, would provide a strong incentive for change. For example, criteria might relate to:

- the organisation's GEDI strategy and performance[21]
- the demographic diversity of the project team
- demonstrating a GEDI lens on project design, implementation and the expected benefits.

Projects that can demonstrate the inclusion of and value to marginalised groups could similarly be ranked more highly for competitive funding.

[19] The features of this system must be developed in consultation with experts in the relevant discrimination, harassment and assault laws and trauma-informed practice.

[20] Callisto (n.d.) *Callisto Vault*, Callisto website, accessed 2 April 2023. For an overview of how escrows can be used to detect misconduct, see Ayres I and Unkovic C (2012) 'Information escrows', Michigan Law Review, 111(2):145–196.

[21] For example, the institution has a GEDI action plan and/or can demonstrate progress, outcomes and impact against that action plan.

There are several Australian and international examples of linking research funding to GEDI:

- **The European Union** introduced funding that links to gender equity, diversity and inclusion. To be eligible for Horizon Europe funding,[22] applicants must show that:[23]
  - their institution has a Gender Equality Plan that is publicly available, adequately resourced, evidence-based and supported by capacity building; *and*
  - they have integrated a gender dimension in their research proposal, for example by examining any sex or gender differences in the outcomes of a drug trial.

  Applications are also ranked on the gender balance of the research teams.

  Horizon Europe also offers dedicated funding for gender and intersectional research and the development of inclusive gender equality policies.
- In **Ireland**, top research funding agencies have made Athena Swan gender equality accreditation a condition of funding.[24] To be eligible for funding, higher education institutions must apply for an Athena Swan Institutional Bronze Award by the end of 2019, and they must retain that Award until they obtain an Athena Swan Institutional Silver Award.
- The **Snow Medical Research Foundation** – Australia's largest donor to medical research – will only provide new funding to research organisations that meet gender balance benchmarks in leadership, recruitment, promotions and honorary awards.[25]

The above approaches could be complemented by affirmative action in funding allocation. For example, the **National Health and Medical Research Council** (NHMRC) has set targets to award equal numbers of Investigator Grants to women and men.[26] Structural priority funding is also allocated for Aboriginal and Torres Strait Islander health researchers in selected NHMRC grant schemes.

While most of these examples focus on gender, ideally, funding criteria would also consider other forms of marginalisation, for example based on race, disability, sexuality and First Nations identity.

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[22] Horizon Europe is the EU's 2021–2027 framework programme for research and innovation. It was preceded by Horizon 2020, which was delivered from 2014–2020. Both programmes evaluate proposals based on the gender balance of the research teams and the way gender is integrated into the research, but Gender Equality Plans were only required from 2021 onwards. An interim evaluation report for Horizon 2020 will be published in December 2023.

[23] European Commission, (n.d.) *Gender quality in research and innovation*, European Commission website, accessed 31 March 2023.

[24] Science Foundation Ireland (n.d.) *Irish funding bodies to require Athena SWAN gender equality accreditation for higher education institutions to be eligible for research funding*, SFI website, accessed 31 March 2023.

[25] Hare J (6 March 2023) 'No gender equality? Then no money from this major philanthropist', *Australian Financial Review*, accessed 31 March 2023.

[26] National Health and Medical Research Council (12 October 2022) Working towards gender equity in Investigator Grants, NHMRC website, accessed 11 April 2023.

This assessment of organisations' GEDI performance must itself be equitable; that is, it should take into account differences in size, industry, revenue, location and other contextual factors in determining what constitutes reasonable targets and achievements for each organisation.

Encourage organisations to share their actions, outcomes and impact in GEDI

Many organisations (particularly smaller, less well-resourced ones) want to improve GEDI, but do not know how or where to start. They would benefit from guidance by peer organisations that have progressed further on their GEDI journey, for example in the form of:

- easily accessible case studies in plain, concise language
- industry forums or webinars
- community of practice groups

SAGE publishes our subscribers' Cygnet Award applications, which document what actions they took to improve organisational GEDI, and what changed as a result of those actions. We also hold regular meetings where SAGE subscribers can exchange updates and advice on their GEDI work.

While there is plenty of literature on GEDI, we believe that some aspects set SAGE's knowledge-sharing methods apart:

1. Our subscribers find it most useful to learn from institutions that are similar in size, sector and location.
2. Unlike lab-based or simulated studies where variables are carefully controlled, Cygnet Award applications are real-world accounts that resemble actual workplace conditions. These case studies include detailed, practical insights on change management and implementation, which are often not present in purely academic research or trade publications.[27]
3. As there are common GEDI challenges across the sector, many SAGE subscribers are likely to take actions that are broadly similar. This allows us to study if these interventions work across different contexts.
4. Published case studies typically focus on 'success stories', but it is just as critical to learn which interventions don't produce desired results and why. SAGE explicitly encourages organisations to reflect on any unintended or negative outcomes in their Cygnet Award applications.

These insights from the higher education and research sector could be translated to other STEM sectors as well.

[27] For the pivotal role that implementation plays in the success or failure of GEDI initiatives, see: Mousa M, Skouteris H, Boyle JA, Currie G, Riach K and Teede HJ (2022) 'Factors that influence the implementation of organisational interventions for advancing women in healthcare leadership: a meta-ethnographic study', *eClinicalMedicine*, 51:101514.

The Office of Australia's Women in STEM Ambassador has laid much of the groundwork by raising awareness of the importance of evaluating equity initiatives and developing a portal where any STEM organisation can publish their evaluations. We suggest building on this work by continuing to promote the portal and encourage organisations to use it.

Promote mutual recognition pathways

Reporting on GEDI indicators (for example to the Workplace Gender Equality Agency, the Victorian Commission for Gender Equality in the Public Sector, and to accreditation schemes like SAGE) is a highly resource-intensive activity.

For organisations that report to more than one body, we suggest these options to reduce administrative burden and free up resources for implementation efforts:

- Harmonise the requirements of various reporting schemes as much as possible to enable organisation to 'collect once, report multiple times'.
- Rank various reporting schemes according to the level of data and analysis required. Organisations need only report to the body that are relevant to them who have the highest-ranked requirements, and are automatically considered compliant with the requirements of any lower-ranked programs.

Case studies from SAGE subscribers

We have included three case studies to show how organisations have embedded the four features of sustainable GEDI solutions in their SAGE Athena Swan work, and achieved greater diversity and inclusion as a result.

SAGE subscribers achieve Athena Swan Bronze Award accreditation by identifying barriers to GEDI and designing actions to dismantle these barriers.

In the next stage of the accreditation pathway, they report on the progress, outcomes and impact of those actions. Subscribers receive Cygnet Awards for demonstrating sufficient progress, outcomes and impact in reducing a barrier.

The following case studies were extracted from each organisation's Cygnet Award application.

Key terms and definitions

Outcomes: A measurable change that occurs as a result of implementing an action (or group of actions).

Impact: A change to the self-reported lived experience of staff (and/or students) as a result of removing or reducing a barrier.

Geoscience Australia develops an inclusive institutional culture

Identified barriers

- Women weren't attracted to apply for roles in the organisation.
- Low representation of women in STEM roles and senior leadership positions.
- Limited and inconsistent leadership accountability for creating environments where all individuals can participate equally.
- A lack of individual accountability to actively invite and act upon women's expertise, particularly in STEM and leadership roles.
- Female staff were less likely than male staff to agree that:
    - Geoscience Australia promotes an inclusive culture.
    - They were satisfied with the recognition they receive at work.

Actions

Recruitment

- Updated policies and procedures to remove bias and add inclusive language.
- Ensured recruitment panels are diverse and have a mix of genders (50:50 men and women where possible).
- Promoted the availability of flexible work options (e.g. part-time, flexible hours, work from home), a dedicated parents room and breastfeeding room in advertising materials.

Governance

- Reviewed the terms of reference for boards and committees to ensure a 40:40:20[28] gender mix of membership and chair and co-chairs of different genders, where possible.

Inclusive leadership capabilities

- Conducted the *Small Acts of Inclusion* program to help staff embed inclusive behaviours, such as:
    - Engaging with others in a way that makes everyone feel seen, safe, heard and respected.
    - Celebrating the way teams work together as much as the outcomes they achieve.

[28] 40% women, 40% men, 20% any gender.

- Updated the performance management framework to incorporate mandatory deliverables on contributing to an inclusive culture and preventing bullying and harassment.
- Formally recognised inclusive leadership as an award category in Reward and Recognition Framework.
- Set expectations for mandatory online learning completion for inclusion modules.

Visible senior executive support for GEDI

- Senior executives were established as diversity champions, in areas such as gender equity, pride, disability, age, cultural and linguistic diversity, First Nations Australians, and inclusive culture.
- Included diversity messages in at least 50% of all senior executive communications, with the Chief Executive Officer being the most visible.

Outcomes

Increased women's representation in:

- STEM roles from 31.3% (110) women in 2019 to 37.8% (176) women in 2022.
- Senior leadership teams from 25% (4) women in 2019 to 50% (7) in 2022.

From 2018 to 2021, increased proportion of employees (men and women) who:

- believe Geoscience Australia promotes an inclusive culture (up 10 percentage points, Figure 1)
- are satisfied with the recognition they get at work (up 16 percentage points, Figure 2)

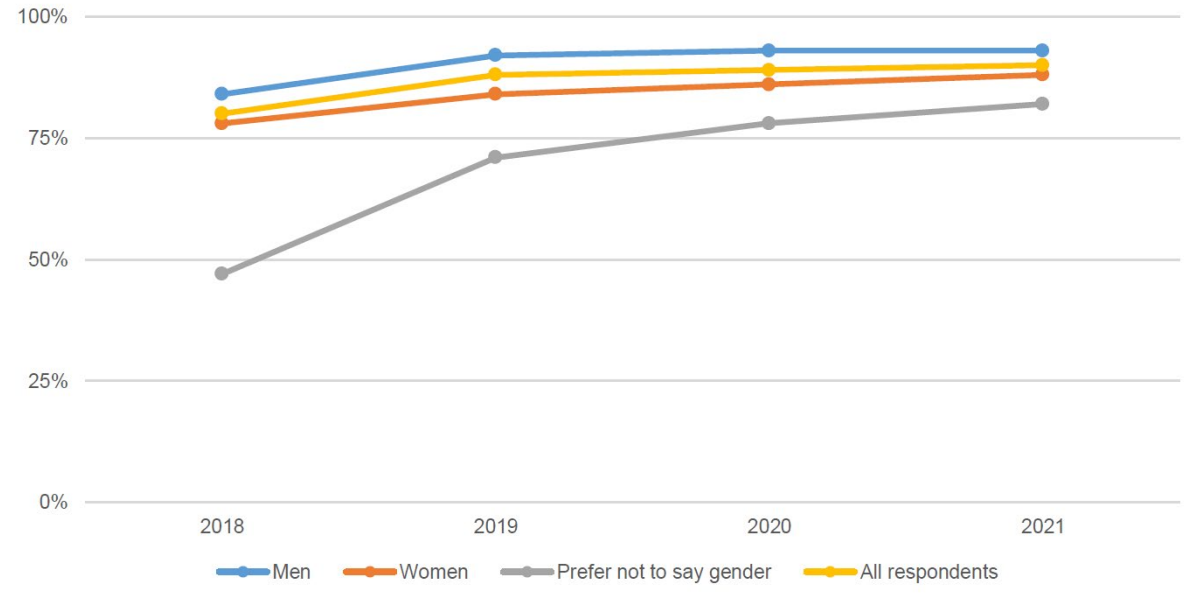

Figure 1. Percentage of Geoscience Australia's workforce who believe the organisation promotes an inclusive culture.

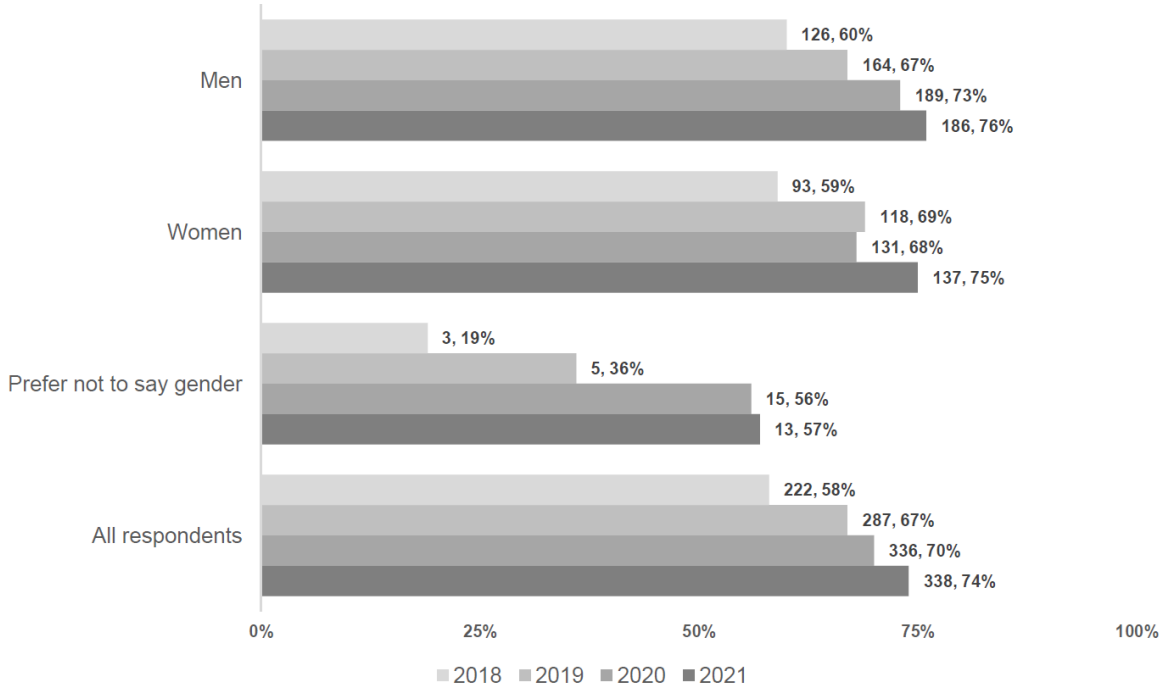

Figure 2. Number of Geoscience Australia employees who are satisfied with the recognition they receive at work.

Impact

Feedback received through staff focus groups and interviews showed that:

- Breastfeeding parents felt more comfortable going to work.
- Female staff benefited from existing role models within the organisation.
- LGBTQIA+ staff felt free to discuss their challenges and experiences with colleagues.

For more details, see Geoscience Australia's Cygnet Award application on inclusive culture.

RMIT University recruits more women and gender-diverse staff in Science, Technology, Engineering, Mathematics and Medicine (STEMM)

Identified barriers

The proportion of STEMM-qualified women applying for positions at RMIT was lower (approximately 22%) than the higher education STEMM-qualified female population (34%) in Australia.

This reduces the number of women to be considered at each stage of the selection process and ultimately the number of women appointed at all levels in STEMM. The resulting underrepresentation of women was especially pronounced in senior leadership positions.

Actions

To address this barrier, RMIT undertook these actions from 2018 to June 2021:

- Introduced university Key Performance Indicators (KPIs) for:
    - the proportion women in leadership
    - Indigenous staff recruitment and retention
- Provided hiring managers with training and guidelines for inclusive hiring and decision-making.
- Used Special Measures under the Victorian Equal Employment Opportunity Act (2010) to appoint women, trans and gender-diverse, and Indigenous academic staff.
- Developed tailored recruitment campaigns and employee value propositions for women, trans and gender diverse, and Indigenous people.
- Piloted Achievement Relative to Opportunity (ARtO) in academic recruitment. By acknowledging what candidates have achieved given the opportunities they had, ARtO shifts the focus to the quality and impact of someone's work, rather than the quantity and rate at which it was produced.
- Created new/extended pathways for continuing employment for early- to mid-career academics on fixed-term or casual contracts.
- Reduced recruitment bias by:
    - advertising flexible work options for all roles;
    - using Textio to screen job advertisements, position descriptions and collateral for inclusive language;
    - requiring shortlists to be gender-balanced (50% women and/or gender-diverse candidates);
    - using structured behavioural-based interviews for all candidates; and
    - monitoring selection panels and shortlists.

Recognising that female jobseekers are not a homogenous group, RMIT took care to apply an intersectional lens to their recruitment strategy. To attract a diverse pool of women, the university:

- achieved Disability Confident Recruiter status in 2020;
- became an endorsed employer on LGBTIjobs.com.au;
- were explicitly inclusive of trans and gender diverse applicants on the RMIT Careers website;
- engaged Pride in Diversity to train RMIT's Talent Acquisition team on LGBTIQ+ and trans inclusion; and
- set targets for employing and retaining Indigenous people in all Colleges.

Outcomes

Compared to the 2015–2017 period, in 2018–2021:

- On average, 19% more women applied for STEMM roles, and 36% more women were appointed.
- The proportion of **applications** from women increased from 22% to 31% for STEMM roles – close to 34% benchmark of STEMM tertiary-qualified women.
- Across all STEMM colleges, the proportion of female **appointments** increased by 3 percentage points, but the STEM College, which was targeted for most interventions, showed the most improvement (20% to 29%).

The proportion of women in senior leadership increased from 33% in 2015 to 45% in 2021. Concurrent actions to improve the academic promotion process (not described here) also contributed to this increase.

RMIT piloted the use of ARtO in two recruitment rounds. The results indicate that ARtO could help achieve gender equity in future rounds.

- Over 60% of candidates activated ARtO in their application, and over 50% of successful appointees had activated ARtO.
- Feedback from hiring managers showed high levels of buy-in for using ARtO:
    - *"ARtO provided pieces of information we would otherwise not have had, it gave a richer picture of candidate's skills, experience, and perspective and was very valuable."*
    - *"ARtO was activated not just for parental reasons, but also to explain job gaps on migration, and hybrid careers where candidates had also spent some time in industry, so their track record looks somewhat different to those that have spent their whole careers in academia, etc."*

Impact

In recent years, candidates reported feeling safer disclosing their gender, within applications and at interviews, often citing RMIT's growing reputation as an LGBTQIA+ inclusive employer.

Candidates also appreciated having diverse interview panels and ARtO considerations:

- *"Panel was gender-balanced and there were different HEW levels and different cultural backgrounds. Not everyone was English speaking which was important for me."*
- *"It was hard for me to return to academia after having my son. At other universities, they wanted to know about my past 3 years and what I had been doing. But at RMIT, they were more understanding that I was being a parent and raising a child."*

For more details, see RMIT's Cygnet Award application on recruitment.

The University of Newcastle grows the STEM pipeline

Identified barriers

- Low gender diversity in the College of Engineering, Science and Environment (CESE).
    - In 2018, women only made up 24% of academic staff and 31% of student enrolments in the College.
- Low proportion of women applying for continuing and fixed-term positions in CESE.

Actions

The university's recruitment strategy was designed to increase diversity along dimensions other than gender, reflecting an intersectional approach. To achieve this, the university:

- Conducted female-targeted and Indigenous-targeted recruitment in CESE, including the use of identified positions.
- Tailored recruitment materials by:
    - using inclusive language software to write job advertisements and position descriptions;
    - highlighting the availability of part-time and flexible work options where appropriate; and
    - featuring images of existing female and Indigenous academic staff.
- Established three Indigenous New Career Academics in STEMM faculties.
- Appointed Assistant Deans of Equity and Diversity for each STEMM faculty and three senior Women in Science Chairs.

To attract new female students and retain existing ones, the university:

- Updated student recruitment and marketing materials with gender-balanced imagery that foregrounded women and/or showed them working equally with a man on a project.
- Implemented the HunterWiSE (Women in STEMM and Entrepreneurship) outreach program to encourage high school girls to consider a career in science. In the last 4 years, 454 young girls engaged in weekly workshops with mentors, University and industry visits, and presentations of STEM based projects.
- Profiled female role models in STEMM on internal communications channels.
- Launched a Women in STEM Mentoring Program in 2022, which connected female STEM students with industry professionals and alumni.

CESE also organised a Queers in Science event for queer staff and students to share their experience of working or studying in science.

Outcomes

- Increased representation of female academic staff in CESE (Figure 1Figure 3a).
- Doubled the number of female Heads of School in CESE (Figure 3b).
- Increased proportion of women getting shortlisted for interview and hired for CESE jobs (Figure 3c).
- Increased the representation of women and Indigenous staff in the School of Architecture and Built Environment (Figure 3d).

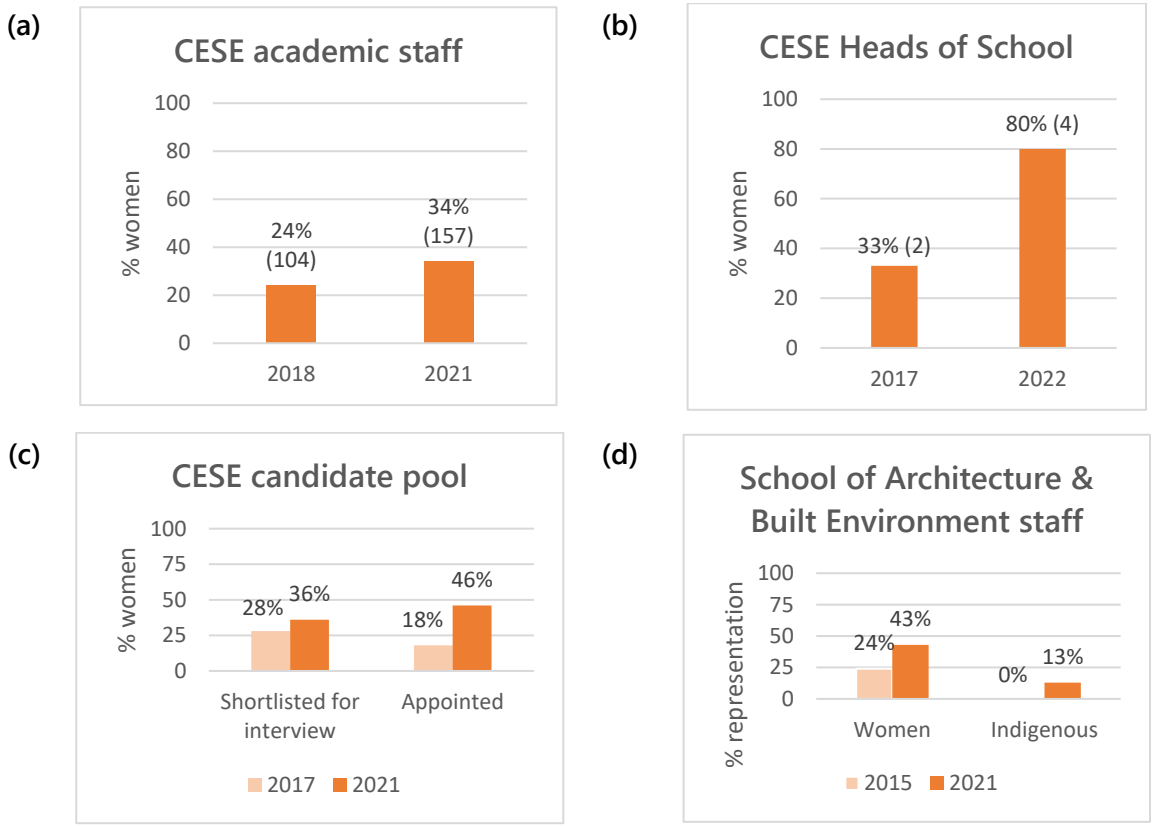

Figure 3. Change in female representation in (a) **academics,** (b) **Heads of Schools and** (c) **shortlisted/successful candidates.** (d) **shows the increase in female and Indigenous staff representation in the School of Architecture and Built Environment.**

- Between 2017–2021 in CESE, increased the proportion of:
    - female students overall from 31% to 36% of all enrolments; and
    - female Indigenous students from 33% to 45% of all Indigenous enrolments.

Impact

- Candidates were motivated to apply because positions were marked as identified:

  "When the position says it's identified, then I feel there's a strong want for an identified person. You recognise that's probably culturally safe."

- Semi-structured interviews showed that after participating in HunterWiSE, girls held more positive attitudes towards STEM careers.

  "I didn't know what I wanted to do but as soon as I did HunterWiSE, I was like 'that's what I want to do'."

Learnings

For others who want to experiment with targeted recruitment strategies, the university shared these tips from their experience:

- Women and candidates from other marginalised groups are more likely to be appointed when there are more women on the panel and the hiring school is led by women.[29]
- Panellists should receive support and guidance on the targeting process from the organisation's HR team at the critical time of deliberations.

For more details, see the University of Newcastle's Cygnet Award application on the STEM pipeline.

[29] Milam J and Fowell R (1 June 2022) 'Targeted recruitment at the University of Newcastle', *SAGE*, accessed 25 May 2023.

Evidence of SAGE impact: a comparison of accredited and non-accredited organisations

SAGE-accredited organisations outperform non-subscribers on key gender equality metrics. Our analysis[30] of 2021–22 data from the Workplace Gender Equality Agency (WGEA) shows that compared to non-subscribers, SAGE-accredited organisations are more likely to:

- have a higher representation of women and non-binary people in senior leadership positions and on governing bodies;
- have policies, strategies and actions to support gender equity; and
- hold management accountable for supporting flexible working arrangements.

Universities

Gender diversity in leadership

Women make up 30% of CEOs at SAGE-accredited universities, but only 20% of non-subscriber CEOs.

SAGE-accredited universities also have a higher proportion of female board members and chairs (Table 2).

Table 2. Proportion of female + non-binary staff on governing body.

Female + non-binary representation on governing body	SAGE	Non-SAGE
Board members	53%	45%
Chairs	35%	0%

Gender pay equity

80% of SAGE-accredited universities have a **formal policy or strategy** that includes objectives for gender pay equity (vs 20% of non-subscribers).

70% of SAGE-accredited universities have conducted a **remuneration gap analysis** within the last 12 months (vs 20% of non-subscribers).

While 97% of SAGE-accredited universities **took action** as a result of their pay gap analysis, only 80% of non-subscribers have done so.

Gender equity strategies and consultation

All SAGE-accredited universities have a formal policy or strategy on gender equality and have consulted with employees on gender equality issues, compared to only 60% of non-subscribers.

[30] See Appendix for methodology.

Flexible working

All SAGE-accredited universities have a **formal policy or strategy** for flexible working arrangements and promote flexible work throughout the organisation, compared to only 60% of non-subscribers.

63% of SAGE-accredited universities **hold their leaders accountable** for improving workplace flexibility, but only 20% of non-subscribers do the same.

Evidence of sustained change

To measure the longer-term "SAGE effect", we compared SAGE-accredited and non-subscriber universities' performance on key WGEA indicators in 2017 and 2021. This period was chosen because most SAGE-accredited universities achieved their Athena Swan Bronze Award between 2018 and 2020.

Over this period, SAGE-accredited universities reported:

- growth in the proportion of women in more senior leadership categories (three categories vs only two for non-subscribers);
- a smaller decline in the proportion of female CEOs (only 3 percentage points vs 20 percentage points for non-subscribers);
- growth in the proportion of female board members and chairs, whereas there was no change for non-subscribers (Table 3); and
- a 7 percentage point increase in the proportion of institutions with a formal policy or strategy on gender pay equality, while non-subscribers reported a 20 percentage point decrease.

Table 3. Female representation on university governing bodies in 2017 and 2021.

Governing body	SAGE			Non-SAGE		
	2017	2021	Change (2021 – 2017)	2017	2021	Change (2021 – 2017)
Board members	46%	53%	7%	45%	45%	0%
Chairs	16%	35%	19%	0%	0%	0%

Medical research institutes (MRIs)

Gender diversity in leadership

SAGE-accredited MRIs have greater female representation on their governing body.

- 43% of the governing board in SAGE-accredited MRIs are female, compared to 36% in non-accredited MRIs.
- 40% of chairs are female at SAGE-accredited MRIs, compared to 20% in non-accredited MRIs.

Gender pay equity

100% of SAGE-accredited MRIs have a policy or strategy on pay equity, compared to 50% of non-accredited MRIs.

80% of SAGE-accredited MRIs have done a remuneration gap analysis in the past 2 years, all of whom identified the cause(s) of the gaps found. By contrast, only 50% of non-accredited MRIs conducted a remuneration gap analysis in the past 2 years, and none identified the cause(s) behind their gaps.

Gender equity strategies

All SAGE-accredited MRIs have a policy or strategy in gender equality overall, compared to 90% of non-accredited MRIs.

About Science in Australia Gender Equity (SAGE)

> *"SAGE is the only transformative gender equity program of its kind in Australia designed to achieve sustained cultural change via a national accreditation framework. Measures to enable SAGE to be adopted by all higher education and research institutions across Australia would bring unparalleled impact."*
>
> *— Women in STEM Decadal Plan*

SAGE was founded in 2014 as a partnership between the Australian Academy of Science and the Australian Academy of Technology and Engineering to advance the careers of women, trans and gender diverse people in Science, Technology, Engineering, Mathematics and Medicine (STEMM).

We became a fully independent entity in 2020 and expanded our remit to all higher education and research employees, including professional staff and those who work in non-STEMM disciplines.

As of April 2023, SAGE has 43 participating organisations across Australia. Our subscribers comprise universities, medical research institutes and publicly funded research agencies.

We enable organisations to achieve meaningful systemic, structural and cultural change by:

- accrediting and granting awards for gender equity, diversity and inclusion. We are the only Australian organisation licensed to grant awards under the internationally recognised Athena Swan Charter;
- raising awareness of and building capacity to improve gender equity, diversity and inclusion; and
- collaborating with like-minded organisations to support initiatives aimed at addressing systemic barriers to gender equity, diversity and inclusion.

Contact

Dr Janin Bredehoeft
Chief Executive Officer
Science in Australia Gender Equity (SAGE)
sage@sciencegenderequity.org.au

Appendix

Research questions

For the SAGE impact analysis, we sought to answer:

- What are the key differences between SAGE-accredited institutions and institutions who are not SAGE subscribers?
- What is the change over time (progress) in GEDI?

Data source

The analysis was conducted using publicly available 2021–22 data from the WGEA Data Explorer.[31] We chose this data set because all universities and MRIs report to WGEA, including those that are not subscribed to SAGE. This allowed us to explore the impact of joining SAGE by comparing SAGE-accredited and non-subscriber organisations of the same type.

The main data points for comparison were:

- Proportion of women and non-binary people in senior leadership positions
- Gender pay gap analysis and actions
- Gender equity strategy and consultation
- Flexible working

Definitions

SAGE-accredited universities are those that have achieved an Athena Swan Bronze Award and are subscribed to SAGE as of May 2023.

Non-subscribers are universities that have never subscribed to SAGE.

SAGE-accredited MRIs are those that have achieved an Athena Swan Bronze Award and are subscribed to SAGE as of May 2023.

Non-accredited MRIs are medical research institutes that have never subscribed to SAGE.

The analysis excludes universities and MRIs that:

- are subscribed to SAGE but have not yet achieved an Athena Swan Bronze Award (Australian Catholic University and the Murdoch Children's Research Institute)
- were former SAGE subscribers (Bond University, Queensland University of Technology and University of Tasmania)

[31] WGEA (Workplace Gender Equality Agency) (n.d.) *WGEA data explorer*, WGEA, accessed 22 May 2023.