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FROM INSIGHT TO ACTION:

**STRATEGIES FOR CULTIVATING
EQUITY AND EMPOWERING
WOMEN IN INDUSTRY**

CATALYST REPORTS No. 11

April 2023

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SAAGES

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Suggested citation:

Devis, D., Fowler, D., Vieira, M., Giannoni, K., Gabriel, F., Kennedy, J.P., Leonard, S. N., (2023). From Insight to Action: Strategies for Cultivating Equity and Empowering Women in Industry (Catalyst Reports, Issue 11). University of South Australia, Adelaide.

Funding Information

This project was funded by the Commonwealth Department of Employment and Workplace Relations, through the National Careers Institute Partnership Grants, COPWOOO013.

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EXECUTIVE SUMMARY

The economic and social problems associated with the gendered nature of the workforce in the STEM (science, technology, engineering, and mathematics) industry sector are widely recognised. STEM is a growth sector. That women and people of non-binary gender are not accessing, or are unable to access, this sector at a similar rate to men presents obvious equity issues in the short and long term. On the other side of this equation, the STEM industry across Australia is already struggling to fulfill its workforce needs; a challenge that is greatly exacerbated by its inability to recruit from the entire population.

The recognition of these challenges has led to a concerted investment by both industry and government into programs that seek to improve gender equity in STEM education and rebalance career trajectories. At the time of writing there are not dozens but hundreds of 'Women in STEM' programs operating in Australia, and as many as 204 such programs operating in South Australia.

The impact of these programs is, at best, unclear. At the macro level, we have seen an increase in women's participation in STEM education in schools and through into undergraduate education. Any gains from there into graduate education, career, and senior career, however, have been modest.

At the level of individual programs, impact assessment has been next to impossible. The technical challenges of impact assessment in this space are immense. For example, the programs operate in a complex social space where they are just one of numerous influences on the choices young people make; they are seeking to have long term impact many typically many years removed from the point of intervention; and participant cohorts are unstable due to factors like family relocation. Furthermore, the funding available for large scale impact assessment has not matched the investment in the programs themselves.

Recognising this complexity, the University of South Australia has established a different kind of intervention with the South Australian Academy for Gender Equity in STEM (SAAGES). The Theory of Change behind this initiative begins with the idea that the persistent issues of gender equity in the STEM workforce have many causes, and so our interventions will need to nudge the complex system in many places. With its direct contact with undergraduate and postgraduate students, partnerships with diverse businesses across the STEM industry sector, and strong relationships with schools and other youth services, the University of South Australia is an obvious node for the kind of complex response that we envisage is required to respond to this problem.

This report marks the conclusion of the first cycle of the development of SAAGES. This cycle has been one of 'developmental evaluation'. That is, we have sought to take an evaluative stance from the outset, and to include the primary intended beneficiaries of the intervention in its design. The developmental disposition here is important. We know, for

example, that mentoring is almost certainly an essential part of addressing the gender equity challenge. The easily identifiable danger in such a program, however, is that mentors may essentially end up telling young women and people of non-binary gender to ‘act more like men’. This is likely to occur if only because our models for career success in STEM are ‘masculine’ models.

To address such challenges, the founding principle of SAAGES has been to engage with beneficiaries. To this end, the SAAGES Think Tanks have been established. These workshops facilitate conversations with young women and people of non-binary gender, as well as people of all genders from the STEM sector. The primary purpose of the Think Tanks is to identify the challenges and solutions in STEM participation. The Think Tanks are also intended as a way to give a voice to people who are potentially excluded from the STEM sector through reports such as this.

This inaugural SAAGES report summarises the developmental evaluation work of the project in its first year. The findings are summarised in the figure below, which identifies key action points for SAAGES, and other organisations interested in addressing gender equity in STEM. The task ahead remains complex, but the findings recorded in the report offer a framework for multifaceted action.



Inclusive actions to support productive innovation for future employees, current employers and leaders

1. INTRODUCTION

An inclusive workforce

Diversity is an increasingly important consideration in the modern business world. Diversity is not just an ethical concern; it also has significant impact on Australian businesses and their potential to compete. A recent study of 1000 companies worldwide (Hunt et al., 2018), found that those in the top quartile for gender diversity were found to be 21% more likely to outperform on measures of profitability and 27% more likely to have superior value creation. These high performing companies not only had more women in their staffing, but they also had a greater gender mix in executive teams.

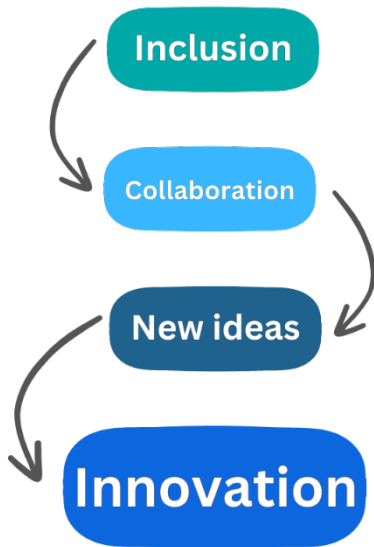


Figure 1: Inclusion leads to innovation.

It is widely known that a diverse and inclusive workforce fosters innovation through collaboration and the incorporation of varied perspectives. However, it is concerning that in Australia, only 16% of the STEM skilled workforce

comprises women and 9 out of 10 women with a STEM qualification are employed in non-STEM related fields (Australian Academy of Science, 2022; Barnes & Kingsley, 2023).

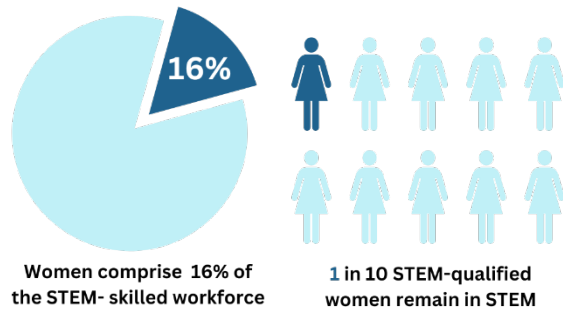


Figure 2: Women are underrepresented in the STEM fields.

The underrepresentation of women in STEM has been further exacerbated by the COVID-19 pandemic, which has amplified some of the challenges they face including increased caring responsibilities, disruptions to working hours, and growing job insecurity (Rapid Research Information Forum, 2020). The problem of inequality further extends into senior leadership roles where, despite higher rates of achievement in higher education (Australian Bureau of Statistics, 2023), women remain underrepresented at senior management and board levels (Evans & Maley, 2021).

This gender imbalance affecting women in STEM fields requires urgent discussion if we are to avoid significant economic and societal impacts and an effective response must be imagined if we are to reach a solution (Commonwealth of Australia, 2019).

Barriers women face

Women who have ambitions to advance their careers have been shown to face various unique barriers to progression. These include; exclusion from informal networks, stereotypes, challenging work and/or home dynamics, lack of confidence, inadequate training opportunities, and many more (Artabane et al., 2017; Kulkarni & Mishra, 2022).

The Women in STEM Decadal Plan (Australian Academy of Science, 2018) suggests that one possible approach to achieving gender balance in STEM is to create partnerships between schools and industry. These arrangements might facilitate mentoring programs that encourage a greater proportion of female students to enter the STEM pipeline. However, these programs cannot be a “one-size fits all” solution as they need to be heavily tailored to the participants if they are to be successful.

Furthermore, Dawson et al. (2015) noted that the provision of appropriate guidance is just one of the essential tools that might help females to make progress in STEM careers. This research also identified that as many as six in seven women reported a lack of support in the workplace as a reason why they decided to leave their STEM role.

Clearly, the underrepresentation of women in STEM is a complex problem. Clark Blickenstaff (2006) described the problem of women in STEM careers using the metaphor of a “leaky pipeline”. In order to address this issue and suggest actionable solutions for implementation, it is essential to explore the multitude of

reasons that women give for being deterred from STEM careers.

This project established the South Australian Academy for Gender Equity in STEM (SAAGES) and brought together a wide range of people to explore these lived experiences and to consider ways in which more supportive and effective structures may be built to support women in STEM.

This report focuses on how South Australians have experienced gender inequity within their workplaces and what they believe to be the drivers of this imbalance. By exploring these stories, we suggest actionable strategies for organisations to implement to begin to combat this inequality.

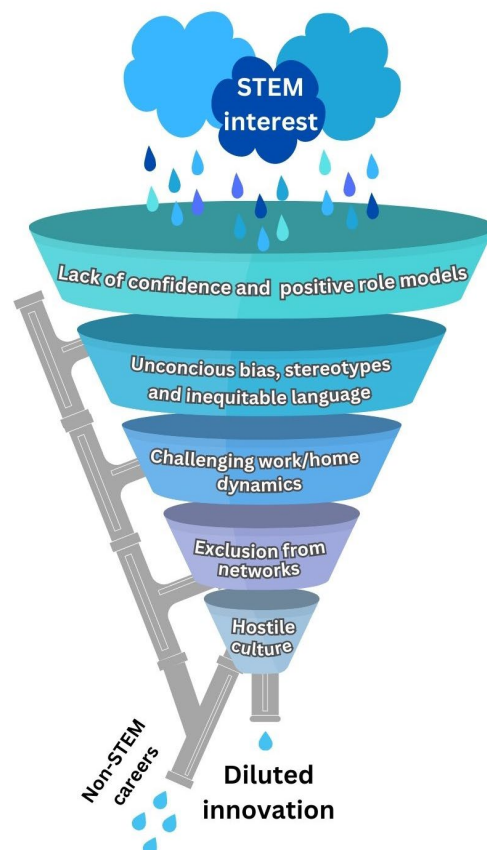


Figure 3: STEM careers are often thought of as being a “leaky pipeline”.

2. EXPLORING EXPERIENCES OF GENDER INEQUITY



To begin to explore the issues of gender inequity in the workplace, we brought together interested people from across the STEM fields to take part in the SAAGES Think Tanks. Participants came from various industries including Engineering, Mining, IT, Research, and Education, and were joined by secondary school, undergraduate, and postgraduate students who expressed a desire to pursue a STEM career.

Think Tanks were hosted in Adelaide, Mount Gambier, and Whyalla and 75 people representing a range of cultures and genders attended these forums. In order to ensure as level a playing field as possible for discussions, participants were requested to refer to each other by first name throughout the Think Tanks and they were encouraged to avoid using professional titles or naming the specific companies they were employed by. We hoped that this meant that participants felt comfortable and open to presenting their own personal views instead of feeling like they had to act as a representative of their company.

Four rounds of Think Tanks were held at each of three locations. Each of the first three Think Tank events made use of a roundtable protocol to explore two pertinent questions related to participants experiences of gender inequity. Think Tank 1 and Think Tank 2 focussed on defining the problem of gender inequity while Think Tank 3 considered participants' prior experiences of "solutions" to these problems. Think Tank 4 focussed on generating solutions (see section 3). Figure 4 outlines how the aims of each of the first three Think Tanks were conceptually linked.

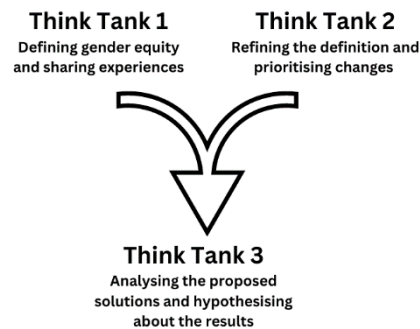


Figure 4: The conceptual organisation of Think Tanks 1 to 3.

The Roundtable Protocol

There are many variations of roundtable protocols. However, the common aims of this style of approach are to ensure that all participants are able to contribute freely to the discussion, to capture a variety of perspectives, and to come to a consensus summary of the topic of focus.

The protocol used in the SAAGES Think Tanks adopted the following steps.

- (1) The room moderator presented a short statement, video, or other resource to act as provocation for the discussion.
- (2) At round tables of no more than nine people, a moderator asked an open-ended question to the participants.
- (3) Participants had 1 minute of personal thinking time during which no one spoke.
- (4) Moving sequentially around the table, each participant had 1 minute to respond to the moderator's question as they saw fit. During this time, other participants were required to actively listen but not speak or interject.
- (5) After every participant had the opportunity to speak, the moderator gave everyone the chance to respond. Once again, moving around the table sequentially, each participant was given 1 minute to respond directly to another participant, or to identify and highlight a common idea that they had noticed, or to summarise the key points of the discussion so far from their perspective.
- (6) After all responses had been given, the moderator opened the table for group discussion for around 10 minutes. During this discussion, the moderator openly recorded the ideas discussed at the table. At the end of the time allotted, these notes were shared among the participants who clarified and confirmed them as an accurate record of the table's thoughts by consensus.
- (7) Following a short break, the protocol was repeated with a second, related open-ended prompt.



Figure 5: Moderating a round table group.



The Driving Questions

The prompts for discussion at each Think Tank location were the same. These are presented here:

Think Tank 1

Aim: to gain a common understanding of the term gender equity and to capture what equity might look like in practice.

Question A: What does “Gender Equity” mean to you?

Question B: What has Gender Equity looked like in your experience?

Think Tank 2

Think Tank 1 identified that participants often used the term “culture” to explain their experiences. This required further unpacking.

Aim: to better understand the milieu that participants describe as culture

Question A: If culture is “an umbrella term that includes beliefs and customs that lead to social norms and behaviours in human societies,” what aspects of this definition affect gender equity, and how?

Question B: If you could change only one aspect of culture to improve gender equity, what would it be? How would you go about it?

Think Tank 3

Think Tanks 1 and 2 had identified a wide range of perceived problems and some aspirational ideas that could form the basis of solutions. These needed deeper exploration.

Aim: to hypothesise about the relative effectiveness of the lived experience in engaging with previously proposed “solutions”.

Question A: What solutions to the problem of gender inequity have you seen used in the past that were effective and why did they work?

Question B: What might be some of the unintended consequences of implementing these solutions?

Analysing the data

The moderator notes from each table at each Think Tank were analysed by the researchers using thematic analysis. Two researchers independently coded the summaries from each table to ensure intercoder reliability. A shared codebook was developed using a hybrid coding approach. The resulting themes identified commonalities in the participants beliefs and experiences as well as ideas identified as drivers of inequity from national and international policy reports (Foley & Cooper, 2021; OECD, 2019a, 2019b, 2021; UNESCO, 2017)

3. GENERATING AND EVALUATING SOLUTIONS

Think Tank 4 adopted a slightly different approach from the previous Think Tanks and focused on generating and evaluating solutions to gender inequity.

The protocol adopted took the following form.

Phase 1: Participants were given 5 minutes to individually back-cast their long term hopes and dreams with regards to achieving gender equity in STEM. Back-casting (Figure 6) is a technique that allows participants to explore their future goals and the steps that may need to be taken to achieve these. Participants are encouraged to dream big and then step back slowly to discover the essential first step that needs to be taken in achieving the goal.

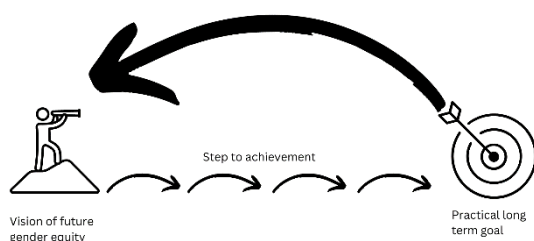


Figure 6: The process of back-casting.

Participants identified their own personal goal in relation to the general problem of achieving gender equity. They were guided, but not constrained, in this process by the following questions:

- (1) What do you want the future to look like in relation to gender equity?

- (2) What is the first step to getting there?
- (3) What might be a practical long-term solution to achieving that goal?

Phase 2: Moving around the table in order, each participant had 1 minute to describe their back-casting vision to the other participants.

Phase 3: The Moderator facilitated an open discussion at the table around the participants' back-casting visions. Around 10 minutes was allowed for this. During this discussion, the moderator openly recorded notes about the ideas discussed at the table.

Phase 4: Participants formed consensus about the possible presented solutions on how to achieve the goal of gender equity, and considered which of the goals should be prioritised. This was achieved through use of a gallery walk protocol. Participants moved through the room to view all the different back-casting diagrams. They placed stars next to solutions that resonated with them. In addition, participants could add elaborations to the presented back castings using sticky notes.

Phase 5: Participants reconvened in table groups for a final 10-minute discussion, during which they focused on solutions that had been given the most stars. The Moderator again recorded key points from the discussion, as well as the top 3 solutions as identified by the group as most important and/or most achievable.

Follow Up

Following the Think Tank, participants were given the opportunity to further expand on their thoughts about the solutions that had been discussed. Each participant was emailed the set of solutions, and asked to pick the **one** solution they deemed the most important from **each** of the following categories:



Supporting future employees

- Mentoring opportunities for university students to be mentored by industry professionals
- Dedicated, paid outreach positions within companies to engage with schools/universities/vocational learners
- Network-building events/programs between industry professionals and students (outside of mentoring)
- Company-led networking events specifically for building relationships between students

Supporting current employees

- Menopause and fertility policies to accommodate for people who menstruate (i.e., additional leave)
- Optional workplace flexibility (i.e., WHF, flexi hours, job-share)
- Equal, paid parental leave for primary and secondary carer with use-it-or-lose-it provisions (Single parents would be entitled the total weeks of leave or primary and secondary carers)
- Regular, internal (or external) evaluation of the impact of internal culture and/or gender equity programs

Supporting current and future leaders

- Regular training for leaders that explicitly outlines the advantages of diversity, and ways to use specific design tools that incorporate equity into all company programs and planning
- Greater allocation of funding/tenders or incentives to leaders who demonstrate diversity and equity
- Adding more non-financial incentives to leadership roles that encourage women to pursue leadership roles (i.e., extra leave, recognition and awards, medical benefits, commute subsidies)
- Incentives for male leaders participating in mentoring, gender equity programs and advocacy for female employees.

4. REDEFINING THE PROBLEM

Overall, participants did not believe that gender equity has been achieved in the workplace.

The concept of **'culture'** was regularly offered by way of an explanation. This was the most common theme mentioned across all the Think Tanks where culture was inferred to mean the beliefs and customs that lead to social norms and behaviours in human societies. Culture was often used as an umbrella term and included workplace culture, family culture, societal culture, and community culture.

“If only one aspect is changed, the whole system will still remain the same. We can’t change only one thing”

(Think Tank participant)

Many attendees said that cultures shape personal and interpersonal expectations of what is and what is not acceptable behaviour—both within and outside of the workplace—and consequently affect how people of different genders are compared to one another. It was frequently mentioned that these social norms impact on gender equity for people of all genders.

A second theme that emerged from the discussion was the concept of the **unconscious bias** and **stereotypes**. For example, a common point of discussion was how women—especially mothers—

were seen as generally having a different skill set than men, but that sometimes this did not represent the actual skill set a specific woman possessed. Participants also commonly noted that these biases resulted in people encountering barriers to opportunities. To begin to address this, it was suggested that promoting **positive role models** more visibly would both help girls to see what they can be in the future and help boys to reframe what is considered to be acceptable behaviour.

I have an idea of what I want and how I want to model that to my kids, but that isn’t reflected [in my workplace]

(Think Tank participant)

Participants also frequently noted that family culture and **unconscious bias outside of the work environment** both contribute to and sustain gender inequity within the workplace, regardless of the support structures put in place to counter it.

Finally, the Think Tank participants also discussed that the use of **inequitable language**—in the workplace, in society and in the media—reinforces gendered stereotypes and exacerbate attempts to address this. This includes language that appears to sustain stereotypes such as ‘masculine’ technical skills versus ‘feminine’ soft skills.



From the summaries of the Think Tank discussions, we were able to identify three distinct categories of people who are impacted by gender inequity, and who have a need for different support mechanisms:

- Current employees,
- Future employees,
- Current or future leaders

Our recommendations for addressing the needs of these different stakeholder groups are presented in Figure 7 and discussed in the next sections.

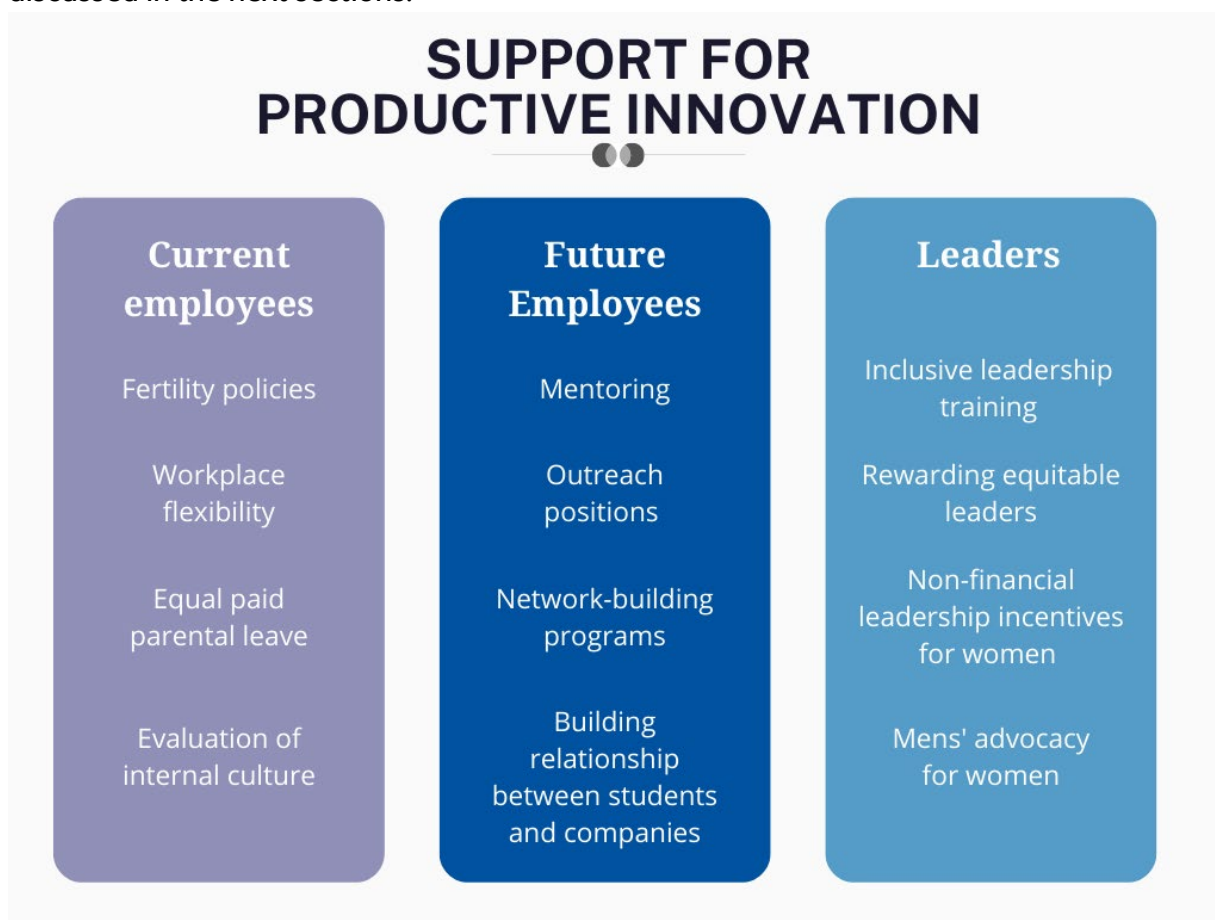


Figure 7: Actions that support productive innovation through inclusive workplaces.

5. RECOMMENDED ACTIONS TO SUPPORT CURRENT EMPLOYEES

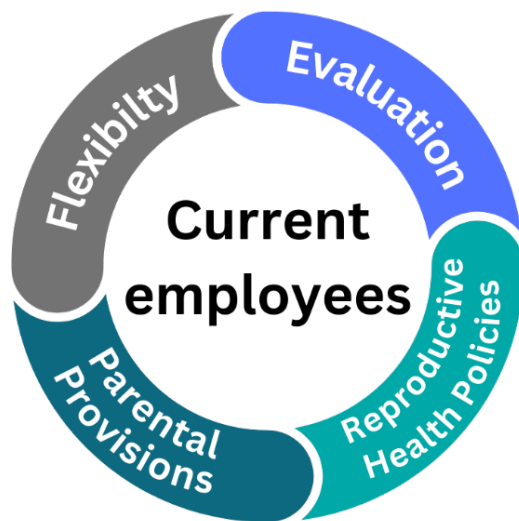


Figure 8: Actions that can support current employees.

“STEM isn’t nerdy or unpopular anymore. Pursuing STEM is normal but staying in STEM is hard for girls”.

(Think Tank participant)

Across all of the Think Tanks, culture emerged as one of the biggest drivers of gender inequity. By defining culture as “the beliefs and customs that lead to social norms and behaviours in human societies, including the social norms in workplaces, families or society at large” we were able to explore this further. Unsupportive or hostile culture was consistently mentioned during the Think Tanks as a major barrier to women in the workplace and was often reported as a cause for women leaving a job.

The following recommendations are made to drive a change in culture for the benefit of current employees.

Workplace Flexibility

As noted, the burden of unpaid care work often falls disproportionately onto women—especially for women in low-income households. This has the potential to compromise their participation in the workforce, which in turn is a key driver of workplace inequity (OECD, 2019a). The most significant change that can be made to overcome this barrier is to enhance workplace flexibility. This allows employees to have more choice in when, where, and how they work, providing them with the opportunity to balance their work, childcare, and eldercare responsibilities.

To enable this change, employers can implement policies that enact flexible work hours, remote work options, and/or job sharing. Furthermore, employers can create a supportive and inclusive work culture that recognises and values employees’ diverse needs and circumstances. This can be done through open communication, feedback mechanisms, and regular policy reviews.

However, in recommending these changes it is important that we avoid creating a gender divide, where only women are expected to take advantage of flexible work arrangements. Employers need to make flexible arrangements available to all employees regardless of gender, age, or other characteristics, and in doing so establish a more equitable approach to employment including single parents, same-sex couples, and people who provide

eldercare. Additionally, the adoption of such policies could also encourage men to participate more in these sorts of responsibilities, thus starting a move to shift societal stereotypes and messaging.

Equal Paid Parental Provisions

Along with increased workplace flexibility, equity can be improved by ensuring that paid parental provisions are available to all carers. This enables men to participate more fully in family life, while also reducing the burden of caregiving that societal norms dictate often falls on women. This can help to break down traditional gender stereotypes and alleviate some of the workplace stigma that women report experiencing, while increasing gender equity in the wider community.

“A more open [and] honest work means that men can now take time off to spend time with kids.”

(Think Tank participant)

Parental provisions should be offered to any parent regardless of gender, with recognition that single parents may require additional flexibility as they reintegrate back into the workplace following parental leave. Incentives such as subsidised childcare can also allow women to reintegrate into the workplace more easily (OECD, 2019a, 2021).

In enacting these changes, it will be crucial that employers make training and education available to managers and other employees aimed at addressing

unconscious biases and stereotypes. This will be particularly important when it comes to caregiving responsibilities if a culture that values and supports caregiving responsibilities is to be established.

Health Policies

Acting in concert with the need for increased workplace flexibility is the need to create accommodations for the unique challenges women face regarding reproductive health, menopause and menstruation (Duffy et al., 2022). Using well-crafted policies, employers should be able to create a work environment that is more cognisant and accommodating to women's diverse needs. This can help reduce stigma and discrimination, and support women's participation in the workforce (Workplace Gender Equity Agency, 2019).

An actionable example of a fertility policy is to allow for paid leave for fertility treatments, such as in-vitro fertilisation (IVF) or egg freezing, from existing personal leave entitlements. These treatments can be costly and time-consuming, and enabling access to personal leave alleviates some of the financial and emotional burdens associated with fertility treatments that fall more heavily on women.

Employers can also enact menstruation policies that would provide access to personal hygiene products, such as tampons and pads, in workplace bathrooms. They might also offer increased flexible work arrangements, such as the option to work from home, to accommodate women's physical and emotional needs during menstruation or menopause.

However, while policies such as these have the potential to address some aspects of gender inequity, it is important to note that reproductive health can be a private and personal topic for many people. As such organisations must be aware of the potential harm to inclusive culture any associated mandatory reporting might bring. Instead, like all other health-related policies, women’s health information should be treated as sensitive and confidential. Instead, time off for reproductive health should be considered reasonable cause for personal leave.

Evaluation of Programs to Support Women’s Career Development

Participants suggested that conducting regular evaluations of an organisations internal culture, as well as evaluating the impact of gender equity programs, would

likely support and empower employees. This approach would ensure that policies and programs aiming to achieve gender equity are both effective and remain fit for purpose.

Kingsley (2020) proposed a five-step process to evaluation (Table 1) in response to the perceived lack of formal evaluation of STEM gender equity programs.

The most confronting stage of this process for an organisation is likely the sharing-stage. The results of the evaluations need to be shared publicly—both internally and externally—if the process is to be seen to be serious. The findings, however, can take any number of forms including reports, newsletters, or social media infographics. Furthermore, the organisation must be willing to act on these results to consequently update, enhance, or review policies and procedures.

Table 1: Kingsley's (2020) five step evaluation process for gender equity programs

Stage	Explanation
Define	To evaluate the final product, define the problem being addressed, the affected stakeholders, and the necessary changes to address the problem. This ensures that the outcome aligns with the needs and expectations of all involved parties.
Plan	Designers determine the indicators of success. This allows them to measure and evaluate the effectiveness of the design solution against established criteria.
Design	Evaluation criteria are chosen and data collection is determined.
Execute	Participants are recruited, data is collected and analysed.
Share	Results are shared publicly through appropriate media channels.



6. RECOMMENDED ACTIONS TO SUPPORT FUTURE EMPLOYEES



Figure 9: Actions that can support future employees.

External culture and stereotypes were highlighted as major barriers for young women entering STEM careers. The following suggestions address ways to empower young women to follow their ambitions.

Mentoring

The Think Tank participants emphasised the positive impact of mentoring for developing empathy for the barriers women face, and for empowering women to pursue non-traditional career paths.

Mentoring offers a personalised approach to accelerating early career progression through one-on-one collaboration with inspiring individuals who possess a clear understanding of their mentee's current situation. Mentors can help the mentee to navigate the many different paths and obstacles on the way to achieving their goals.

The mentor may also be able to assist the mentee in developing effective leadership

skills, or by providing context specific skills needed to ease their transition to the next step on their career pathway. Mentors become particularly impactful when they have the opportunity to take on the role of a sponsor, highlighting the specific positive attributes of their mentee to potential employers (Liataud, 2016).

It is important to recognise that some mentors may not possess the necessary skills to be effective in this role. It is therefore crucial to provide mentorship training or resources to ensure that those offering support can meaningfully guide and empower their mentee in their professional growth (Pon-Barry et al., 2017). This training may include working through typical scenarios, participating in discussions around inclusion and cultural awareness, exploring community development strategies, and engaging in reflective practices (Rockinson-Szapkiw et al., 2021).

“Give students opportunity to hear from people who have been in their position and where they are now. Provide role models through mentoring.”

(Think Tank participant)

The successful implementation of a mentoring program necessitates a significant investment of time and a strong commitment from all stakeholders involved

in the process. This can be challenging when attempting to attract mentors and coordinate meetings, but it can also result in more positive outcomes (McGill et al., 2015). Regrettably, the critical resources are required for a successful mentoring program are often lacking within organisations (Carbajal, 2018). Thus, organisations need to actively engage with third party providers to ensure that the necessary supports that contribute to women's career advancement are in place.

Equally important in achieving the goal of gender equity is to encourage mentoring relationships between men and women, as men can often be critical agents of change (Dean, 2009). By participating in such a mentoring program, men have the chance to acknowledge the skills of their female colleagues and recognise their importance in their workplace's success. They also get the opportunity to empathise with the unique experiences of women, and to help promote the aims of such a program throughout their organisation. Ultimately, changes within organisations to address issues which disproportionately impact women's career paths, such as temporal flexibility (Cech & Blair-Loy, 2014), will likely also provide benefits to men, and build better organisational processes for all.

Outreach

Ensuring that roles within the STEM industries are visible to the wider community—such as company-led mentoring programs, presence at careers expos, and giving expert comments to media—can positively impact the career choices of young people. When students are connected with local industry partners they are more likely to see career paths

within that industry as viable options, even increasing their own career self-efficacy—that is, their belief they can participate in those careers—long-term (D'Angelo & Dollinger, 2021; Fletcher et al., 2021).

Possible outreach opportunities proposed by the research literature for achieving this outcome include providing exposure to achievable role models (De Gioannis et al., 2023), creating partnerships between schools and industry to offer mentoring programs (Australian Academy of Science, 2019), and building networks of young entrepreneurs (Anid et al., 2016). Each of these mechanisms has the potential to build higher degrees of community engagement, assist in developing student self-efficacy towards STEM, and increase the likelihood that women will be more likely to persist in their STEM pathway (Dawson et al., 2015; Rockinson-Szapkiw et al., 2021). Furthermore, building supportive communities and promoting mentoring can also assist women to recognise their value in the job market (Elliott et al., 2020). This is particularly significant for international students or recent migrants and can empower them with the necessary tools to adapt to a new culture and ultimately achieve better career opportunities.

It is also important to recognise that in many industries organising or facilitating outreach activities often occurs on an ad-hoc and voluntary basis, and disproportionately by women. However, in seeking to outwardly promote gender equity it often happens that the same group(s) of volunteers are approached to participate which may inadvertently lead to feelings of inequity.



“Dedicated and paid outreach may allow for more people from the company to be involved vs. being “volun-told” by management. Usually this falls on the already small percentage of females in the STEM workforce.”

(Survey participant)

To preserve the valuable and supportive relationships established through networking and mentoring, coordinators need to look beyond the traditional approaches to developing such outreach programs and address the complexities associated with them. Virtual activities are beneficial to disrupt geographic barriers and can allow for the inclusion of a broader range of participants and facilitators than the traditional face-to-face format (Rockinson-Szapkiw et al., 2021). Therefore, making use of technology-enhanced outreach activities such as blogs, podcasts, and social networks will likely enhance the effectiveness and accessibility of networking and mentoring programs (Dean, 2009). However, it is important to retain the human touch by adopting blended delivery strategies where possible and this is especially important when working with cultural groups that are particularly communal (Rockinson-Szapkiw et al., 2022).

Student Networking

A benefit that flows on from outreach and mentoring is the opportunity for students to network with industry professionals in the

fields that they are interested in, or to identify unknown career pathways. This may be especially relevant for girls and women from other underrepresented groups. These networking opportunities can facilitate meaningful relationships between professionals and students. Through networking, students can ask questions, gain insights into various industries, and identify pathways to success in their future careers.

Networking can be initiated from two standpoints. Firstly, professionals can be introduced to the students' learning environment through events such as guest lectures or panel discussions integrated into university courses. Alternatively, more relaxed alumni events can also provide opportunities for students to connect with industry professionals.

Conversely, the student can enter the professional environment to network. This approach is often most effective at industry conferences, which can provide opportunities for students to interact with professionals, attend talks by industry experts, and potentially present their own research or knowledge. While many conferences offer reduced rates for students—thus making the event more attractive to participants on a tighter budget—this barrier could be alleviated further through industry subsidy.

The connections formed during networking events can lead students along other enhanced career development paths to provide further experiences for them. These might include job shadowing, informational interviews, internships, and possibly even volunteering. Each of these approaches presents its own opportunities and challenges, yet they not only elucidate the

essence of a participant’s target industry but also furnish valuable experience that can facilitate future employment.

“There needs to be better connection with industry and secondary students— [there is] currently none in regional South Australia. Most students are unaware of what jobs and careers are available outside traditional roles [such as] teaching/nursing for girls, or trades for boys”

(Survey participant)

A supportive structure that is likely to be very helpful is networking facilitated by successful women serving as positive role models. These relatable individuals play an important role in reducing the self-stereotyping that may impede career progression (Florance & Winskel, 2018; González-Pérez et al., 2020). Ideally these role models would emerge organically from a young person’s family or experiences, but the low levels of female representation in STEM roles means that these naturalistic opportunities are limited. This becomes particularly evident as women progress through the phases of their career pathway towards roles involving leadership (Stavig & Stavig, 2022). A particular effort therefore must be made to find, highlight, and celebrate those that have succeeded so that they can instil confidence in those that follow them.

Professional Networking

Networking is another practice which begins to build the capacities and self-efficacy of young women especially as they move into leadership roles (Singh et al., 2013). Optimising networking opportunities for women is crucial because they report that they are frequently excluded or otherwise hesitant to participate in traditional, highly effective networks, especially across disciplines. This is often compounded by the low representation of women in certain careers or roles, which makes it challenging to establish connections with like-minded individuals in other industries.

Building a professional network is essential for those who are considering a career change or looking to engage with interdisciplinary collaborators. While some of the networking strategies for students can also be effective for those in the workforce there are additional avenues available for those with a work track record.

An effective approach for building a professional network is the leveraging of current connections, including colleagues, friends, and family. This might involve attending events together, or collaboration projects, and connecting with each other’s networks. Social media platforms have also been shown to be powerful tools for expanding a professional network.

However, effective networking skills are not always innate and may require training and development. Organisations should offer development and training in mastering effective communication skills and professional image, and how to adopt strategic approaches to building a network.



7. RECOMMENDED ACTIONS TO SUPPORT CURRENT AND FUTURE LEADERS



Figure 10: Actions that can support current and future leaders.

Participants considered leaders and leadership to be another major influence in achieving gender equity within the workplace. A common sentiment from the Think Tanks was that leaders were integral to creating change, but that greater representation of women in leadership is required. Similarly, participants highlighted the importance of current leaders as drivers of change, suggesting that they need to be more proactive in achieving gender equity.

“The leadership that got us here today is not going to be the leadership that achieves a better tomorrow. Leaders model change.”

(Think Tank participant)

Non-financial Incentives for Leaders

Societal norms and stereotypes mean that women, especially mothers, tend to shoulder more unpaid responsibilities at home than their male counterparts. This leads to a situation where they are more likely to feel they need to make trade-offs between work and external responsibilities. In time, this can act to disincentivise women in taking on leadership roles, as increase in pay is not seen to balance out the additional responsibilities or the potential for increased disruptions to obligations outside the workplace.

Moreover, women are less likely to aspire for top management roles. For example, research has found that aspirations for these positions has declined in female business undergraduates over the 21st century (Powell & Butterfield, 2022). It is well understood that leadership positions have significantly larger responsibilities, particularly in regard to the line-management of other staff. Yet, for many women, the financial incentives of a promotion do not justify the additional cognitive or emotional load.

That being said, researchers have found that women are more likely to see non-financial incentives as potentially attractive (Sittenthaler & Mohnen, 2020). In order to make leadership positions more attractive to women and gender diverse people, organisations could offer both financial and other non-traditional incentives to their potential leaders. These might include

more work-place flexibility, optional extended or purchased leave options, and part-time or leadership-sharing opportunities.

Initiatives that promote work-life balance, especially when communicated clearly in recruitment or corporate communications, have a positive effect on the number of women in management positions in Australia (Baker et al., 2019). When women in leadership positions engage with these initiatives, it can signal to other women that the organisation is supportive of gender equity, which further encourages more women to take up leadership positions.

Women with leadership potential are also more likely to be incentivised further by increased access to (possibly subsidised) professional development and outreach activities, such as opportunities to be a mentor, better access to training courses, or support in pursuing formal recognition through external awards and accreditation.

“Being in a leadership role can be exhausting, especially as we know that women still bear the brunt of the mental load at home and tend to get lower profile items at work. [Management] is just babysitting, and I already have children”

(Think Tank participant)

Regular Equity Training for People in Leadership Roles

Think Tank participants highlighted the need for leaders to be continuously trained in awareness around gender equity. Many participants noted that simply highlighting the ethical challenges around gender equity is insufficient to cause significant changes; instead, training needs to highlight the benefits of diversity as a driver of innovation and economic success.

This could comprise inclusive leadership and unconscious bias training, or training on how to properly analyse and interpret data related to gender equity in the workplace. An organisation’s leaders might be supported further by training them in the use of iterative design processes to better utilise the findings of internal (or external) evaluations of policies and processes related to gender equity such as changes to recruitment practices, flexible work arrangements or pay audits.

Beyond this, leaders may also benefit from training that highlights specific actionable tools and suggestions that strive to achieve gender equity. Actionable suggestions, such as the ones discussed in this report, need to become a standard component of leadership training to ensure that all leaders, current and future, have the necessary tools to implement gender equity practices within their teams.

Advocacy for Women’s and Men’s Participation.

Gender equity protects people of all genders. It is therefore important that men engage with measures to promote gender equity, including advocating for women and non-binary people.



Men—especially those in leadership positions—can advocate for women in the workplace by actively supporting gender equity initiatives and promoting diversity and inclusion (Walker, 2022). They can use their positions of influence and power to amplify women's voices and advocate for equal opportunities and fair treatment. This can involve mentoring and sponsoring women, advocating for their career advancement and promotion, and addressing any instances of bias or discrimination.

“Male leaders should be encouraged to be advocates through education and exposure rather than incentives”

(Think Tank participant)

Ideally, much of the needed change will result from the training processes outlined previously, but this may be furthered promoted by including diversity and inclusion metrics into performance evaluations and bonus structures for all employees. However, unless all employees believe in the goal of gender equity, there is a risk that this last step may inadvertently lead to tokenism or ‘box-ticking’. As one Think Tank participant observed, “if it’s [an action] just a practice, it doesn’t change culture”, yet a hostile workplace culture is still what the participants considered a significant cause of inequity that needs to be addressed.

One participant in the Think Tank expressed the idea that, “men in male-dominated

areas don’t know how to act around women and it [that environment] can feel hostile to women.” However, another participant highlighted that, “being around women normalises being around women”, thus indicating that increased exposure to women in male-dominated industries can lead to positive changes in attitudes and behaviour.

Mentoring women—or being mentored by women—can also help men develop empathy and understand the challenges of gender bias in the workplace. It can inspire men to become important allies in promoting gender equity, creating a more supportive and inclusive environment for women. In turn, this can help men develop into effective, innovative leaders.

Another way for men to advocate for women is to enact cultural change within their teams (Walker, 2022). One participant stated that, “men are more likely to listen to other men. Calling out your own gender is effective.” Therefore, men who witness their colleagues displaying hostile behaviour towards women, or perpetuating harmful stereotypes about women, need to feel safe about challenging this conduct. People exhibiting such behaviours also provide positive male role models for other men in the workplace.

Funding Incentives and Budgeting

Financial allocation for specific funding or tenders can promote gender equity by providing resources and support for initiatives that actively address gender inequity in the workplace.

One approach is to adopt gender-responsive budgeting. This promotes equity through tangible budgeting strategies and

drives spending into the areas of greatest need (Khalifa & Scarparo, 2021; Sharp & Broomhill, 2014). This includes auditing how previous budgets have addressed aspects of gender inequity—based on gender disaggregated data—and setting out clear, gender focused goals to meet identified needs in new and continuing areas (KPMG, 2022). It is important to use gender disaggregated data in this process to highlight the unique experiences men and women may have in the workplace, especially when considering issues such as the gender pay gap. Without this disaggregation, the specific needs of women may remain invisible in the data; a sentiment many participants noted as a common source of inequity during Think Tank 1.

Allocating sufficient resources to these initiatives can help to increase the number of women in leadership roles and encourage men to advocate for women without placing a further unpaid burden upon women to support other women.

“Let’s plan with gender in mind from the start, not as an afterthought.”

(Think Tank participant)

Likewise, allocating long-term resources to allow for sustainable workplace flexibility and regular policy and program reviews is essential to ensuring that the benefits of any changes an organisation makes can be maintained in the long-term (KPMG, 2022).



8. CONCLUSIONS

The participation of women and people of diverse gender in the STEM fields is essential for innovation and productivity. However, the barrier of gender inequity still stands in the way. As identified, there are many drivers behind this barrier; however, a major driver of workplace gender inequity are the cultural norms and beliefs that perpetuate and underpin harmful biases and stereotypes.

Simple policy changes within the STEM fields are important, yet they are not sufficient to solving the complex network of issues at the heart of the problem. In our recommendations, we have outlined four actions for each of three important stakeholder groups: current employees, future employees, and current and future leaders. Each group has significantly different needs, and therefore the actionable recommendations for each group are different.

We also recommend companies to support their current employees by offering greater workplace flexibility—including equal parental leave and women’s health provisions—and undertake regular

evaluations of their programs and policies that are designed to address gender inequity.

We recommend companies to support their future employees, and enhance their recruitment processes, by facilitating mentoring and networking events that encourage women to participate and develop their confidence in the STEM fields through outreach events and programs.

Finally, we recommend that companies identify, support and develop their leaders through the provision of regular equity training, offer non-financial incentives that attract women to leadership positions, and strongly encourage more men to engage with gender equity programs and to advocate for their female and non-binary peers.

To support all of these initiatives, it is essential that organisations make sufficient funding available to ensure success. Taken as a whole, these actions will work to rework the social norms that cause hostile workplace cultures and replace them with new norms that lead to a more equitable and innovative future.



Figure 11: Inclusive actions to support productive innovation for future employees, current employers and leaders.

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