

# ANNUAL REVIEW 2023



An Australian Government Initiative

Women in STEM  
Ambassador



UNSW  
SYDNEY

# TABLE OF CONTENTS

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<b>Outcomes</b>	<b>4</b>
<b>Downloads</b>	<b>5</b>
<b>Foreword</b>	<b>6</b>
<b>Overview</b>	<b>8</b>
<b>Research Highlights</b>	<b>12</b>
A review of workforce equity and inclusion	12
An analysis of awarded Australian research grants by gender	16
A national trial of anonymising applications for scientific equipment in the Australian research sector	17
<b>Advocacy and Creating Change</b>	<b>18</b>
<b>Informing Policy and Decision Making</b>	<b>19</b>
<b>Future You</b>	<b>20</b>
The Pathfinders Series	21
Imagining the Future	21
<b>External Engagement</b>	<b>22</b>
Australian Education and Outreach	22
International Engagement	24
Research and Higher Education	25
Industry, Business and Peak Bodies	27
<b>Media Highlights</b>	<b>28</b>
<b>Resources</b>	<b>30</b>
<b>Our People</b>	<b>32</b>
<b>Who We Work With</b>	<b>33</b>
<b>Grant Budget</b>	<b>34</b>

# OUTCOMES

Since 2018 the Office of the Women in STEM Ambassador has worked closely with governments, peak bodies, industry organisations, businesses and educators to drive evidence-based policy, practices and initiatives.

## ENGAGEMENT

- Engagement with **286,568** unique participants.
- Participation in **936** hours of outreach and engagement.
- A collective audience reach of **107** million.
- **2845** media appearances.
- The Evaluation Portal has attained **145** registered users and hosts **45** evaluations.



## FUTURE YOU



The Future You initiative to promote an understanding of diverse STEM career pathways achieved the following milestones in 2023.

- A total audience reach of **23.65** million children, parents, and teachers.
- **56,211** individuals reached through social media channels.
- **913** primary school students undertaking distance and remote education have utilised the program's resources.
- A collaboration with Tonic Media secured **16** million views per month of the Pathfinder films in healthcare settings across Australia.
- The Future You team has **directly engaged with 100,138** parents, teachers and students through activities such as conferences, webinars and events.
- More than **200** Indigenous schools and communities are set to receive copies of the *Imagining the Future* stories.
- Future You digital resources have been downloaded more than **3,000** times.

# DOWNLOADS

Over the course of the initiative, the Office of the Women in STEM Ambassador has led numerous research papers and reports.



## RESOURCES

-  Evaluating STEM equity programs: A guide to effective program evaluation
-  Workplace gender equity: An implementation guide

## REPORTS

-  Research Brief: Gender differences in Australian research grant awards, applications, amounts, and workforce participation
-  Research Brief: Making research applications anonymous
-  Initiatives for Workplace Equity and Inclusion: A series of rapid systematic reviews of the peer-reviewed literature
-  Better Decisions, Better Futures

## RESEARCH PAPERS

-  Evaluating the cross-disciplinary utility of anonymizing applications for scientific equipment in the Australian research sector
-  Gender differences in Australian research grant awards, applications, amounts, and workforce participation

## FOREWORD

It is with pleasure that I share with you our Annual Review for 2023. It was a year of intensive research for the team, with a tranche of research reports prepared and submitted to the Diversity in STEM Review taskforce and panel at the Department of Industry, Science and Resources.

This research took the form of a series of rapid systematic reviews of the peer-reviewed literature on a range of topics including initiatives for workplace gender equity, disability inclusion, gender pay equity, and anti-harassment.

The findings were clear: workplace policies, designed to change systems not individuals, are well placed to shift the dial on workplace equity and inclusion. Professional standards of program design, monitoring and evaluation are also crucial to ensure that programs are well targeted and supported to achieve the desired outcomes. Our STEM Equity Evaluation Portal, used by almost 150 programs across Australia and internationally, is our national hub for finding out and sharing what works to achieve equity in STEM.

We also completed two multi-year research studies in 2023; one on the results of anonymising applications to use national scientific facilities, and the other on a 20-year study of the outcomes of grant applications by gender. We found that overall success rates of grant applications to the ARC and NHMRC did not vary according to lead investigator gender. In other words, gender differences in awarded Australian competitive government grants mirror unequal workforce participation.

Second, we found that the introduction of anonymisation boosted the success rates for applications led by early-career researchers in some cases, but there was a noteworthy absence of gender differences in application scores, success rates and allocated resources before anonymisation at all four entities.



These results underscore the importance of context-specific research that continually tests our assumptions about the causes and drivers of inequities in STEM. Without it, we rely on guesswork and opinion, leaving us with no realistic chance of effectively improving the equity landscape across the STEM sector.

Our national awareness-raising initiative for STEM careers, Future You, went from strength to strength in 2023. Development of curriculum-aligned resources was a game-changer, and the milestones speak for themselves. Thank you to the team and our partners including Deadly Science, Questacon, Tonic Media and State and Territory Education Departments for ensuring that our incredible STEM role models and diverse career pathways reach children nationwide.

I want to pay tribute to the extraordinary Women in STEM Ambassador team at UNSW, with special mention of Associate Professor Lisa Williams, whose exemplary research leadership has helped to drive the ground-breaking work of the Office.

Thank you for reading our Annual Report and engaging with this transformative work. Please visit [our website](#) to learn more – and to access our research, tools and resources.

Best wishes,

A handwritten signature in black ink, appearing to read 'L. Harvey-Smith'.

**Professor Lisa Harvey-Smith**

Australian Government's Women in STEM Ambassador

# OVERVIEW

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The Annual Review 2023 provides a summary of the activities and achievements of the Office of Australia's Women in STEM Ambassador in the 2023 calendar year.

## ABOUT

The Women in STEM Ambassador is an Australian Government initiative that works to remove structural barriers to participation in science, technology, engineering, and mathematics (STEM). Professor Lisa Harvey-Smith was first appointed to the role in 2018 and was subsequently reappointed in 2020, 2022 and 2023. Based at the University of New South Wales, the staff in the Office of the Women in STEM Ambassador actively engage with Australia's business leaders, educators, and policymakers to enhance the involvement of women and girls in STEM.

We employ a collaborative and evidence-based approach to identify effective strategies for mitigating STEM inequities. Our initiatives encompass outreach, research projects, and a national digital campaign tailored for children, parents and caregivers.

Our team conducts rigorous research to evaluate and inform strategies that promote diversity and inclusion in STEM sectors. Through the development of publicly available programs and tools, our activities contribute to and guide equity at all stages of the STEM pipeline, benefitting schoolchildren, educators, parents, businesses, government and employers alike.

In partnership with government, educational institutions, research entities, and private sector organisations, the team advocates for systemic changes that facilitate the full engagement of all people in STEM education and the workforce. Supported by a Commonwealth grant, our work aligns with national efforts to promote gender equity in STEM, including the Australian Government's Advancing Women in STEM Strategy and the Women in STEM Decadal Plan.

## VISION

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A more inclusive, dynamic, and sustainable STEM sector in Australia.

## PURPOSE

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To cultivate the conditions in which all Australians can pursue successful and rewarding careers in STEM.

## MISSION

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To mobilise Australians to remove barriers to full participation in STEM.

## GOALS

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To provide knowledge, resources, and tools to enable systemic change and remove barriers to equitable participation in STEM education and workplace settings.

To embed a consideration of intersectional barriers into everything we do.



## THE AUSTRALIAN STEM ECOSYSTEM

The **STEM Equity Monitor**, a national data resource, tracks the participation of girls and women in STEM fields. It encompasses key stages in the STEM pathway, from schooling through higher education, graduate outcomes, to the workforce.

From 2012 to 2022, the number of women in STEM-qualified occupations in Australia rose from approximately 147,000 to approximately 247,000 – about a 68% increase, revealing a notable growth in women’s participation in Australia’s STEM workforce. However, whilst women’s participation in the STEM workforce is increasing rapidly, the representation of women and girls is not consistent across all STEM subjects and remains significantly below parity in several areas.

Examining high school enrolment trends, the report shows that the number of enrolments in year 12 STEM subjects increased between 2020 and 2021 for girls and boys. However, girls are still underrepresented in information technology, engineering and related technologies, and physics and astronomy.

Furthermore, despite comprising 37% of university STEM enrolments, women constitute only 17% of vocational education and training enrolments in STEM areas. The number of university STEM course completions by women grew by 15%, from 16,072 in 2020 to 18,428 in 2021 (this includes both undergraduate and postgraduate completions).

In 2021, women made up 27% of the workforce across all STEM industries, 1% less than in 2020. In 2022, the gap between women’s and men’s pay in STEM industries was \$27,012, or 17%. Within the research workforce, women made up 29% of workers in 2021, and their representation in the highest academic level (professor) in STEM fields was at 18%.

Women’s representation in leadership positions in STEM-qualified industries was 23% at the senior management level and 8% at the CEO level in 2021. The gender pay gap persists following completion of undergraduate and postgraduate courses, with women earning less than men in two of the four STEM fields following undergraduate study and across all four fields postgraduate study in 2022.

These findings highlight the existing challenges in achieving gender equity in STEM and underscore the need for continued efforts to address these disparities at various stages of the STEM pathway.



# RESEARCH HIGHLIGHTS

The staff in the Office of the Women in STEM Ambassador lead a range of comprehensive research programs.

In 2023, the research areas included:

- A review of workforce equity and inclusion initiatives
- An analysis of awarded Australian research grants by gender
- A national trial of anonymising applications for scientific equipment in the Australian research sector

## A REVIEW OF WORKFORCE EQUITY AND INCLUSION

With a commitment to rigour, our research team reviewed the evidence on initiatives supporting diversity, equity, and inclusion in workplaces. The reviews of four areas – gender equity, anti-harassment, pay equity, and disability inclusion – covered over 11,000 scientific articles and summarised the evidence about best practices for advancing progress to workplace equity.

Led jointly by Dr Jesse Bergman and Dr Sarah Ratcliffe, our research team provided initial reports on the findings of this work to the Department of Industry, Science and Resources (DISR). A final report collating together all four arms of the research was released in February 2024. This research was supervised by Associate Professor Lisa Williams and involved a team of seven research assistants (Dylan Barrett, Antonia Boulton, Shannon Eckhardt, Fun Kaoru Hui Sato, Kyle Morrison, Kate Nicholls, and Sarah Rubenstein).



### Workforce Gender Equity

Ongoing gender inequity in the Australian workforce prompted a review of initiatives aimed at removing obstacles, barriers, and biases to equitable employment. Led by Dr Jesse Bergman, our research team of Dr Sarah Ratcliffe, Associate Professor Lisa Williams, and four research assistants (Dylan Barrett, Shannon Eckhardt, Kyle Morrison, and Kate Nicholls) conducted a systematic review of the evidence found in peer-reviewed literature regarding initiatives addressing gender equity in the workforce.

The analysis of 65 peer-reviewed articles revealed that most initiatives have not been specifically assessed in STEM workplaces. As a result, the report provided recommendations on how workforce gender equity initiatives can be universally beneficial across all workplaces, including those specific to STEM fields. This synthesis offers guidance to employers on effective measures to eliminate barriers and biases to gender equity, fostering an inclusive and equitable workforce across all career stages.



This research is reported in **Section 2** of our report, [Initiatives for workplace equity and inclusion: A series of rapid systematic reviews of the peer-reviewed literature](#).



Dr Jesse Bergman discussing Workforce Gender Equity Initiatives at the Advancing the Future: Gender Equity in STEM Workshop

## Workplace Anti-Harassment

In Australia, workplace violence and harassment are major problems, affecting nearly half of the workforce (49.1%; World Risk Poll 2021). This has led to significant impacts on workers and employers, causing 39% of Australia's workplace mental illness claims (Safe Work Australia, 2015) and costing over \$30 billion each year (Ballard and Bozin, 2023). Dr Jesse Bergman, Dr Sarah Ratcliffe, Associate Professor Lisa Williams, and a team of three research assistants (Shannon Eckhardt, Kyle Morrison, and Kate Nicholls) delved into this issue by analysing peer-reviewed academic papers that assess various initiatives for addressing workplace harassment amongst employees.

The initiatives evaluated across the 51 peer-reviewed articles targeted various forms of harassment, employing strategies designed to prevent, mitigate, and respond to bullying. The team looked into specific focus areas - implemented policies, deployed programs, and evaluation methods of these initiatives. Our findings form the basis for our recommendations aimed at fostering healthier workplace environments, emphasising the critical role of safe and respectful workplaces in attracting and retaining employees while minimising reputational, financial, and legal risks.



This research is reported in **Section 3** of our report, [Initiatives for workplace equity and inclusion: A series of rapid systematic reviews of the peer-reviewed literature](#).

## Gender Pay Equity

Australia currently has a national gender pay gap of 13%, as reported by the Workplace Gender Equality Agency (WGEA). To address this disparity, Dr Jesse Bergman and the research team, including Dr Sarah Ratcliffe, Associate Professor Lisa Williams, and four research assistants (Dylan Barrett, Shannon Eckhardt, Kyle Morrison, and Kate Nicholls), conducted a comprehensive review of peer-reviewed literature on different pay equity initiatives.

The research, summarising 31 peer-reviewed articles on the impact of various pay equity initiatives, provides evidence-based recommendations that align with existing legislation in Australia. It underscores the importance of publishing and analysing gender pay gaps in organisations, a step taken at a national level in 2024 thanks to recent pay transparency legislation. Our findings also offer both government and organisations guidance in successfully implementing initiatives that go beyond federal policies, to further reduce the gender pay gap.



This research is reported in **Section 4** of our report, [Initiatives for workplace equity and inclusion: A series of rapid systematic reviews of the peer-reviewed literature](#).

## Workplace Disability Inclusion

Australia's workplaces encompass higher rates of unemployment, underpayment, and discrimination for people with disability compared to those without. These inequities are exacerbated for people with disability who belong to multiple marginalised groups, including women, younger individuals, those in regional or remote areas, and people with more severe disabilities.

Led by Dr. Sarah Ratcliffe, our research team of Dr. Jesse Bergman, Associate Professor Lisa Williams, and five research assistants (Dylan Barrett, Antonia Boulton, Fun Kaoru Hui Sato, Kate Nicholls, and Sarah Rubenstein) conducted a rigorous synthesis of 92 academic reviews about initiatives seeking to improve the employment, retention, and progression of people with disability. The evidence-base covers 59 years (1963 to 2022) of various initiatives assessed for changes in the rates of employment and job-related skills of people with various disability and the interpersonal work environment. Our research findings provide evidence-based insight into effective strategies for improving workplace inclusion of people with disability, contributing to more equitable work environments.



This research is reported in **Section 5** of our report, [Initiatives for workplace equity and inclusion: A series of rapid systematic reviews of the peer-reviewed literature](#).



## AN ANALYSIS OF AWARDED AUSTRALIAN RESEARCH GRANTS BY GENDER

The Office produced an in-depth analysis of Australian government grants awarded by esteemed research bodies, the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC). The research team, led by Dr Isabelle Kingsley, included Dr Eve Slavich, Professor Lisa Harvey-Smith, Professor Emma Johnston and Associate Professor Lisa Williams. The comprehensive analysis spanned two decades (2000-2020) of data and scrutinised the trends in awarded grants based on the gender of awardees.

Results indicated a research ecosystem in which fewer women in the research workforce and leading grant applications likely result in fewer awarded grants led by women than by men. To resolve these differences, barriers to women's entry and, more critically, retention and progression in the research workforce must be addressed. The responsibility to remove barriers rests with several entities. Our findings inform recommendations for higher education and research institutions, government, and research funders.



The pre-print of this research, titled [Research Brief: Gender differences in Australian research grant awards, applications, amounts, and workforce participation](#).



Left to right: Dr Isabelle Kingsley, Associate Professor Lisa Williams, Rae Johnston, Professor Emma Johnston and Dr Janin Bredehoeft at the WISA x SAGE event



## A NATIONAL TRIAL OF ANONYMISING APPLICATIONS FOR SCIENTIFIC EQUIPMENT IN THE AUSTRALIAN RESEARCH SECTOR

The Office initiated and led a nationwide trial across Australia to investigate the impact of anonymising applications to use high-demand scientific equipment, including telescopes, the Australian synchrotron, and supercomputers. The twofold purpose of the study was to observe the degree and existence of disparities, and to evaluate how anonymising applications would affect application scores, success rates and resource allocation based on the gender and career seniority of the lead researcher. Collaboration with four prominent Australian research organisations, including CSIRO, ANSTO, NCI, and AAL, facilitated assessment of the influence of anonymised peer-review processes on application outcomes.



The pre-print of this research, titled [Research Brief: Making research applications anonymous](#).

The results showed that introducing anonymisation led to improved success rates for early-career researchers at one organisation, while generally maintaining the pre-existing gender equity landscape prior to anonymisation at all organisations. By enhancing success rates for early career researchers, anonymisation may create a positive ripple effect in the career pipeline, diversifying the research pool, and supporting the broader issue—retaining and advancing the careers of researchers facing barriers in STEM research.

# ADVOCACY AND CREATING CHANGE

The Women in STEM Ambassador, plays a pivotal role in shaping policies and strategies that promote equity, diversity and inclusion within the STEM workforce.

Professor Lisa Harvey-Smith and the team regularly engages with industry, government and peak bodies to increase understanding and provide expert advice on how organisations in the STEM sector can take proactive steps to address gender equity issues and implement measures that attract and retain women in STEM education and careers.



Dr Isabelle Kingsley at the WISA x SAGE event

We have developed evidence-based tools aimed at fostering transformative initiatives for equity within STEM workplaces. One such resource released in 2023, the [Workplace gender equity: An implementation guide](#), authored by Susan Barnes and Dr Isabelle Kingsley, simplifies the gender equity journey into a four-step process. The guide offers practical insights to assist organisations in developing and successfully implementing evidence-based gender equity programs. It serves as a valuable resource, enabling organisations to design effective gender equity initiatives, navigate common challenges, and bring about transformative change.

The guide complements our existing suite of publicly available, evidence-based evaluation tools, including [Evaluating STEM equity programs: A guide to effective program evaluation](#) authored by Dr Isabelle Kingsley, and the [STEM Equity Evaluation Portal](#). Together, these resources empower organisations to evaluate their initiatives and gain a deeper understanding of effective strategies for promoting gender equity.

# INFORMING POLICY AND DECISION MAKING

The research outputs of the Office, as highlighted in the sections above, contribute significantly to evidence-based recommendations for government and decision makers. This not only demonstrates the importance of the Office's work but also provides unique insights that impact policy development.



Professor Lisa Harvey-Smith presentation to United Nations Science Assembly

Regular meetings, both operational and executive, provide a platform for ongoing collaboration and information exchange. Briefings and meetings with the Diversity in STEM Review Taskforce and Panel ensure alignment with broader government initiatives. The Office serves as a trusted advisor, offering ad hoc advice and actively participating in discussions with key national bodies and associations.

The research outputs of the Office, as highlighted in the descriptions above, contribute significantly to evidence-based recommendations for government and stakeholders. The outputs not only demonstrate the importance of the Office's work but also provide unique insights that impact policy development. Furthermore, the tools and resources collectively produced by the Office continue to be utilised by diverse stakeholders, showcasing increased uptake and garnering positive feedback. This sustained utilisation underscores the enduring importance and significant impact of the Office's efforts in advancing women in STEM and informing strategic decision-making at various levels.

# FUTURE YOU

Future You is a national digital awareness-raising initiative led by the Australian Government's Women in STEM Ambassador and funded through the Women in STEM National Awareness Raising Initiative as part of the Australian Government's Advancing Women in STEM strategy.



Becky Laurence and Hilary Schubert-Jones promoting the Future You program

The initiative aims to increase the participation of girls in STEM by raising awareness of the range of exciting STEM-skilled career opportunities available, raising the visibility of girls and women in STEM and challenging stereotypes and misconceptions.

The program has undergone significant evolution since its commencement in 2020, incorporating insights from evaluation recommendations, user surveys, and peer-reviewed evidence. This section provides a detailed overview of the current program, highlighting its key components and recent developments.

Future You now comprises two primary program streams, each with distinct objectives and content: the Pathfinder Series and Imagining the Future:

## THE PATHFINDERS SERIES

Featuring individuals working in diverse STEM fields and industries, the **Pathfinders** series seeks to challenge stereotypes and promote awareness of the varied career pathways available within STEM. This program stream comprises a series of films spotlighting the first six Pathfinders, providing viewers with valuable insights into the Pathfinders' respective career journeys. In 2023, an additional six Pathfinders were introduced to broaden the range of role models. In addition, written synopses were developed detailing Pathfinders' career paths, interests, and individuality, offering students comparable information to the films.

Each Pathfinder is complemented by a suite of educational resources, including career pathway infographics showcasing the breadth of opportunities within specific career streams, classroom activities aligned with the Australian Curriculum V9.0, and career information sheets tailored for both children and adults, providing age-appropriate details.



Pathfinder Mikaela, The Storyteller



Students reading *The Callistan Cycle* stories

## IMAGINING THE FUTURE

Comprising five captivating short stories set in space, **Imagining the Future** is crafted to spark the imagination of primary school-aged children throughout Australia, fostering an early interest in STEM careers. This series takes readers on an adventurous journey with diverse young protagonists as they navigate the technological, ecological, and societal challenges of space travel and life on the distant moon. Each story seamlessly integrates various STEM elements, providing an engaging and educational experience.

To cater to diverse learning styles, the stories are available in three different formats: text, audio and audio-visual to suit all learning styles. Furthermore, an accompanying activity matrix enhances the educational value, featuring a wide range of activities suitable for various year levels within the Australian Curriculum V9.0. Adapted for family use in home settings, these activities promote critical thinking and creativity, addressing the diverse needs of individual learners. The design aligns with educational frameworks such as Bloom's Taxonomy and Gardner's Multiple Intelligences.

# EXTERNAL ENGAGEMENT

Throughout the past year, Professor Harvey-Smith and the team have actively engaged with stakeholders through educational outreach, research conferences, public talks, industry engagements and expert consultations.

## AUSTRALIAN EDUCATION AND OUTREACH

In February, the Ambassador delivered a keynote presentation at the 10th Annual STEM Education Conference about inclusive STEM education and the Future You program.

In March, Professor Harvey-Smith took part in a panel discussion with UN Women for International Women's Day. She invited organisations to drive lasting change and shared free, evidence-based tools developed by the Office to support the design of effective programs and interventions that promote gender equity. She also presented a keynote address at the Australian Government Department of Industry's flagship International Women's Day event, as well as the Defence Science and Technology International Women's Day event. Both presentations encouraged participants to be bold and follow the evidence when planning policies and initiatives

Also in March, the Future You team delivered a presentation to primary school librarians at the School Libraries Association of New South Wales' Professional Learning Summit, focusing on the Future You program. The webinar highlighted the resources available for librarians to inspire more students to pursue STEM subjects and careers. The team also actively participated in a STEM Conference for primary schools in Tasmania during this period.

In April, Professor Harvey-Smith conducted a Q&A about astronomy with students participating in the Science Olympiad.

In May, Future You was showcased on the Teachers Supporting Teachers podcast, which garners 695 weekly downloads.

In July, the Future You team participated in the Conference of the Australian Science Teachers Association (CONASTA), engaging with 300 educators and conducting a workshop for 100 teachers. This event provided a valuable platform for the team to connect with the education community, demonstrating our commitment to inspiring the next generation. Also in July, Professor Harvey-Smith delivered a keynote address at the 10th Annual STEM Education Conference held in Sydney.

In August, the Future You team expanded their reach at Science Alive in South Australia, interacting with over 20,000 individuals over the weekend and witnessing tremendous enthusiasm for science and the future among attendees.

Also in August, Future You developed a strategic partnership with Tonic Media's Health Network to promote the Pathfinder videos. Through this collaboration the videos achieved 16 million views per month in over 4400 healthcare settings across Australia.

In late August, the Future You team attended the NSW STEM 2023 Conference, engaging with 600 educators over two enlightening days and Professor Harvey-Smith gave an address to the assembled participants. The team also extended support to the community by participating in a Young Change Agents mentoring session in Lismore in September and November, providing guidance to students creating innovative transport solutions for the future. Furthermore, Deadly Science began distributing the Imagining the Future booklet packs to more than 200 First Nations communities and schools across Australia, ensuring that the Future You resources reach even the most remote areas.

Also that month, the Professor Harvey-Smith took part in the Vogue Codes Campus Q&A session: 'Want to get into STEM?', speaking to an audience of young people about career pathways and opportunities.

In September, Professor Harvey-Smith spoke with the national Youth Advisory Group on the promotion of STEM, sharing perspectives on how public outreach and engagement with government and the media can lead to significant social change. She also spoke with hundreds of students at St Aloisius Catholic College in Tasmania and the Sarah Redfern High School in NSW as part of their STEM Showcase.



*Lisa was extremely engaging and if we'd had more time the kids would have happily listened to her for hours. She made a big impression - Press Gang reporters were talking about the interview for weeks afterwards.*

**Cat Rodie**

The Schools News Project



Professor Lisa Harvey-Smith presenting at the Vogue Codes Campus



*Thank you again for supporting UN Women Australia in celebrating International Women's Day and our mission to accelerate the pace towards gender equality for us all... a clear theme that came out across all the event presentations was that achieving a gender equal future requires transformative, systemic shifts in the way we live and work – integrated approaches and innovative solutions.*

**Simone Clarke (she/her)**  
Chief Executive Officer  
UN Women Australia

## INTERNATIONAL ENGAGEMENT

In February, Professor Harvey-Smith addressed the United Nations Science Assembly held in New York, spotlighting Australia's gender equity initiatives to a global audience. This contribution coincided with the International Day of Women and Girls in Science on February 11, aligning with the Office's commitment to advancing gender equity in STEM fields.

Dr. Isabelle Kingsley participated in the Asia-Pacific UN Women consultation on the Commission on the Status of Women (CSW). Her recommendations emphasized the importance of monitoring and evaluating the impact of gender equity initiatives, influencing formal recommendations across two key pillars.

Further international engagement in February included Dr. Kingsley's attendance at the Asia-Pacific Regional Consultation on the 67th session of the Commission on the Status of Women, where her insights contributed to the comprehensive report.

In July, Dr. Kingsley served as a judge for the APEC-Australia Women in Research Fellowship, supporting women researchers from developing economies in completing fellowships at Australian research institutions. This initiative, backed by the Australian Government, aimed to foster collaboration and provide access to leading academics, facilities, and equipment.

In October, Dr. Kingsley presented to the New Zealand Ministry of Business, Innovation and Employment, engaging policymakers and research administrators in discussions on strategies to accelerate gender equity in the research workforce. Key points included the need for equity and diversity plans at universities, strengthened pay gap legislation, support for workplace safety initiatives, and endorsement of family-work policies.

These external engagement activities underline our dedication to advancing gender equity on a global scale and highlight our commitment to positive change within the international community.

## RESEARCH AND HIGHER EDUCATION

In August, Dr. Jesse Bergman attended the "Advancing the Future: Gender Equity in STEM" workshop in Canberra. This event focused on initiatives to achieve gender equity in STEM and provided an opportunity to network and liaise with other organisations conducting similar work in Australia.

In September, Dr. Isabelle Kingsley travelled to Auckland, New Zealand, to participate in the 19th International Conference of Women Engineers and Scientists (ICWES). During this conference, she presented the findings of the Office's comprehensive study she led, which analysed 46,912 grants awarded in Australia by the Australian Research Council and the National Health and Medical Research Council over the past two decades.

In October, Dr. Jesse Bergman joined representatives from 15 different universities at the Women in STEM Collective Workshop in Adelaide. This two-day event focused on tangible actions and outcomes aimed at driving gender equity in STEM. Dr. Bergman's participation contributed to a collaborative effort to address gender disparities in the STEM sector.



Professor Lisa Harvey-Smith gave the keynote address and joined the discussion panel at the Science Teachers Association of Victoria conference

Also in October, Professor Lisa Harvey-Smith and Dr. Janin Bredehoeft, CEO of Science in Gender Equity (SAGE), co-hosted an event dedicated to inspiring action on gender equity issues within the research sector. Attended by representatives from the university, research, STEM, and government sectors, this occasion served as a catalyst for a solutions-driven conversation, tackling long-standing gender disparities in the field. The dialogue provided a platform for the exchange of practical strategies and best practices. Professor Emma Johnston and Rae Johnston deliberated on actionable measures proven to expedite progress toward gender equity in the research workforce, aiming to equip and empower leaders in higher education and research with the necessary insights and tools for meaningful change. Later that month, the Ambassador spoke with Susan Barnes at the Aviation/Aerospace Australia Canberra Summit about the [Workplace Gender Equity: An implementation guide](#).

In November, Dr Isabelle Kingsley presented at the Gender and STEM Summit in Melbourne. The same week, she also presented at DigiCon 2023, a teacher-led conference hosted by Digital Learning and Teaching Victoria (DLTV).

Also in November, team members from the Office travelled to Noosa, Queensland, to speak at the joint Society for Australasian Social Psychologists (SASP) and Australasian Congress on Personality and Individual Differences (ACPID) conference. Dr. Jesse Bergman presented “A multi-part systematic review of workplace gender equity initiatives,” and Dr. Sarah Ratcliffe presented “What supports workplace disability inclusion? Recommendations from an umbrella review of evaluated initiatives.” These presentations highlighted key findings from one arm of the research that informed the Australian Government’s Diversity in STEM Review presenting another arm of research recently completed to inform the Diversity in STEM Review.



**Left to right: Associate Professor Lisa Williams, Dr Sarah Ratcliffe and Dr Jesse Bergman at SASP-APCID 2023 conference**

In November, Professor Harvey-Smith delivered the invited Ben Chuwen Lecture at the Australian Academy of Science Early- and Mid-Career Researcher Forum. Her talk, titled ‘Make your career count: change the world with external engagement’, gave advice and shared learnings from a career journey from pure research to working with industry, government and the media to drive social change. Also in November, she took part in a panel discussion on diversity in STEM featuring members of the LGBTQIA+ community, hosted by the Office of the Science Convenor at the Australian Government’s Department of Climate Change, Energy, the Environment and Water.

In December, Professor Harvey-Smith presented an invited talk to the College of Sciences and Engineering at James Cook University. In it, she shared learnings from the Women in STEM Ambassador initiative and research, giving advice on how the College can advance gender equity in its workforce.



**Left to right: Dr Janin Bredehoeft, Dr Isabelle Kingsley, Professor Jill Blackmore, Professor Jan van Driel and Dr Marguerite Evans-Galea AM**

## INDUSTRY, BUSINESS AND PEAK BODIES

Professor Harvey-Smith and her team have actively engaged in a series of significant advocacy efforts, including participating in meetings, workshops, engagements, and research discussions. Notable highlights from 2023 include:

- Joining the Champions of Change Coalition STEM group roundtable, where discussions centred on strategies for leaders to foster a gender-equal and diverse STEM-skilled pipeline and workforce.
- Participating in the Diversity and Inclusion for the Space Sector workshop, and contributing to the development of a comprehensive D&I statement for the sector.
- Meeting with the Technology Council of Australia to provide guidance on the design of gender equity initiatives aimed at fostering industry-wide change.
- Offering advice to the South Australia Defence Industry Workforce & Skills Taskforce to inform their Women in STEM Sprint recommendations.
- Taking part in the Elevate: Boosting Women in STEM advisory group to oversee the design and progress of ATSE’s scholarship program for women and non-binary students.
- Collaborating with colleagues from the Office of Australia’s Chief Scientist, Science and Technology Australia (STA), and the Australian Council of Learned Academies (ACOLA) to share insights across STEM workforce research projects conducted by the respective organizations.
- Participating in meetings with the Diversity in STEM review panel and taskforce to provide updates on the development of research programs to provide to the government.
- The Ambassador’s involvement in the AI Group webinar panel, where she spoke alongside prominent figures in the STEM community to discuss strategies for growing Australia’s STEM-skilled workforce.

These engagements exemplify the commitment of Professor Harvey-Smith and her team to actively advocate for gender equity and diversity in STEM across various sectors and platforms.

# MEDIA HIGHLIGHTS

In 2023 the Ambassador and the Office had a collective media reach of over 20 million people.

Some highlights include:

- Women's Agenda article *We must better value the 'female' side of Australia's gender-segregated workforce* featured research produced by the Women in STEM Ambassador Office. (January 2023)
- Professor Harvey-Smith appeared on *Brian Cox: Life of a Universe*, which was syndicated across several ABC TV outlets. On the show, Professor Harvey-Smith talked about black hole formation, showcasing her knowledge as an astrophysicist. (January 2023)
- The STEM Equity Evaluation Portal was mentioned by Agriculture Victoria Research Scientist Jo Newton in their article for *Stock and Land*. Newton referenced the portal as one of the initiatives working to remove gender barriers in workforce participation. (February 2023)
- Megan Daily's article in *Children's Books Daily* featured Future You and the Imaging the Future stories available for students, educators and caregivers. (February 2023)



Professor Lisa Harvey-Smith interviews on SBS News



Professor Lisa Harvey-Smith interviews on The Project

- Dr Isabelle Kingsley, Associate Professor Lisa Williams and Professor Harvey-Smith co-authored an article for *The Conversation* which was syndicated across several outlets, calling on the removal of barriers to gender equity in STEM workplaces and outlining different strategies to address these issues (March 2023)
- Natalie Moutafis spoke with Professor Harvey-Smith, about why it's important to make sure everyone is included in science, technology, engineering, and mathematics for the *isPodcast* (April 2023)
- Dr Isabelle Kingsley was interviewed in the *Cosmos* magazine article "Want diversity in robotics? Address workplace culture first." (April 2023)
- Dr Isabelle Kingsley was interviewed for *Times Higher Education* about the Grants by Gender study. (August 2023)
- An *ABC Radio* segment featuring Professor Harvey-Smith discussed her work with teachers and the lack of women scientists represented in the Australian curricula. *Teacher Magazine* also referenced this topic. (October 2023)
- Professor Harvey-Smith appeared on *ABC Radio Drive* with Lucy Breden to discuss the numerous pathways to STEM careers for students who are approaching their Year 12 exams. Professor Harvey-Smith also noted that many STEM jobs do not require university degrees, emphasising the versatility of STEM careers on offer. (November 2023)
- Professor Harvey-Smith spoke with *ABC Radio* about the ARC ASTRO 3D Centre of Excellence's achievement of gender parity among staff, highlighting the effective use of a scientific approach in effecting change. (November 2023)

# RESOURCES

Based on research findings and stakeholder engagement, the Office continues to develop resources that support understanding of diversity and inclusion actions and initiatives. These tools are designed to support equity and empowerment within workplaces, facilitate research endeavours, inspire students, and empower entrepreneurs.

## FOR THE WORKPLACE

### Workplace Gender Equity: An implementation guide

This practical guide offers step-by-step advice on developing and implementing evidence-based gender equity programs, simplifying the gender equity journey into a four-step process.

### Evaluating STEM equity programs: A guide to effective program evaluation

A comprehensive resource aiding organisations in evaluating initiatives and gaining insights into effective strategies for promoting equity in STEM.

### STEM Equity Evaluation Portal

This online portal provides a platform for organisations to evaluate their STEM equity initiatives and access valuable insights for ongoing improvement.

### Initiatives for Workplace Equity and Inclusion: A series of rapid systematic reviews of the peer-reviewed literature

This report summarises the evidence in the peer-reviewed literature on what initiatives benefit gender equity in STEM, and how they can be successfully implemented and evaluated.

## FOR RESEARCH ORGANISATIONS AND FUNDING BODIES

### Gender differences in Australian research grant awards, applications, amounts, and workforce participation

The report examines gender differences in the outcomes of competitive grant programs across 20 years (2000-2020) of Australian national competitive grants and funding amounts according to lead investigator gender.

### Evaluating the cross-disciplinary utility of anonymizing applications for scientific equipment in the Australian research sector

This national trial examined the effects of anonymising grant applications for in-demand scientific equipment. The report shows that anonymising applications for scientific equipment opens doors for early-career researchers, enhancing their chances of success.

## FOR ENTREPRENEURS

### Australian Resource Directory for Women Entrepreneurs

Aligned with the Boosting Female Founders Initiative, this directory compiles relevant programs, funding sources, networks, mentors, and tools to empower women entrepreneurs in advancing the growth of their startup ventures.

## FOR STUDENTS

### Future You

An initiative challenging STEM stereotypes and biases, inspiring kids aged 8 to 12 to explore STEM themes and fostering a love for science, technology, engineering, and mathematics.

### DART Learning Module

As part of the education and outreach initiative aimed at fostering early engagement with STEM, Professor Harvey-Smith has collaborated with the NSW Department of Education to record a variety of virtual modules. These free, online resources support educational engagement and curriculum enrichment for teachers, parents, and students with engaging experiences and professional development opportunities.

### STEM Careers Hub

A comprehensive resource for STEM graduates, offering insights into various employment opportunities, employer reviews, and narratives from STEM professionals.

### STEM Story Time

Engaging videos featuring Australia's Women in STEM Ambassador designed for early learners and their caregivers, providing a valuable educational tool for early childhood development.



*Evaluation is important to help us know we're doing the right thing, and we're on the right track. The STEM Equity Evaluation Portal is a valuable tool for understanding how organisations can improve their activities, and it's simple and easy to use.*

**Bonnie Scott**

Program and Communications Manager  
Dream Big

*My sincere thanks again for sharing your passion and expertise with VCE science teachers in Victoria. We hope you remain engaged with STAV in support of our state-wide community of practice.*

**Alexandra Abela**

President  
Science Teachers Association of Victoria

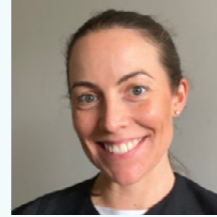


# OUR PEOPLE

The team includes:



**Professor  
Lisa Harvey-Smith**  
Australian Government's  
Women in STEM Ambassador



**Becky Laurence**  
Future You Program  
Coordinator and  
Digital Content Officer



**Associate Professor  
Lisa A. Williams**  
Chief Investigator



**Jaqui Pyke**  
Operations Manager



**Dr Isabelle Kingsley**  
Senior Research Associate



**Dr Lucy Buxton**  
Operations Manager



**Dr Jesse Bergman**  
Research Associate

## RESEARCH ASSISTANTS

Dylan Barrett  
Antonia Boulton  
Amanda Chan  
Shannon Eckhardt  
Fun Kaoru Hui Sato  
Kyle Morrison  
Kate Nicholls  
Sarah Rubenstein



**Dr Sarah Ratcliffe**  
Research Associate



**Hilary Schubert-Jones**  
Future You Program Manager

## CONTRACTED CREATIVES

Professional staff, filmmakers, authors/writers, actors, musicians, composers, graphic artists, web developers and web designers.

# WHO WE WORK WITH

The Office works with stakeholders across government, industry, research, and education to:

- Advocate for the removal of systemic barriers to drive change
- Identify, support, and encourage evaluation of existing gender equity activities
- Collaborate to boost the reach and impact of STEM equity initiatives

## KEY STAKEHOLDERS IN 2023

### Government

ANSTO, AusIndustry, Australia's Chief Scientist, Australian Research Council, Australian Space Agency, CSIRO, Department of the Prime Minister and Cabinet, National Health and Medical Research Council, NSW Department of Education, QLD Department of Education, Questacon, SA Department of Education, Science in Australia Gender Equity (SAGE), TAS Department of Education, The Australian Department of Education, VIC Department of Education, Workplace Gender Equality Agency (WGEA), The Office for Women

### Peak Bodies

Australian Academy of Science, Australian Academy of Technological Sciences and Engineering, Australian Space Agency, Australian Space Discovery Center, Chief Executive Women, National Quantum Collaboration Initiative, Science and Technology Australia, Space Command, STEM Sisters, Technology Council of Australia, Women in Aviation Australia, Women in Leadership Australia

### Industry

Alphabet Design, ASG, BioMelbourne Network, CCC Power, CommBank, Education Services Australia, Google, Jala, Refraction Media, Tonic Media

### Education

Australian Science Teachers Association, Careers with STEM, DART Learning, Day of AI, Deadly Science, IncludeHer, James Cook University, Little Ripples, National Science Week Committee, NUW Alliance, Science Alive!, The Girls in STEM Toolkit, The Smith Family, University of New England, Young Change Agents

### Media

ABC News Breakfast, ABC Radio's Drive with Lucy Breaden, ABC Radio's Drive with Richard Glover, ABC Radio National, ABC TV, Australian Financial Review, Children's Books Daily, Cosmos, Daily Aus, Helix Magazine, NITV, News.com.au, SBS, Stock and Land, Teacher Magazine, The Age, The Australian, The Conversation, The Guardian, The Sydney Morning Herald, Times Higher Education, Women's Agenda

# GRANT BUDGET

The Women in STEM Ambassador initiative is funded through a Commonwealth Grant Agreement, which provides \$3.645 million in activity funding until May 2024.

The cost breakdown of the budget and expenditure (to 30 November 2023) is shown below:

	Total Project Budget (\$)	Total Expenditure (\$)
<b>Contract expenditure</b>	699,487	720,777
<b>Delivery of work program</b>	374,501	226,964
<b>Independent audit</b>	10,000	0
<b>Labour</b>	2,529,052	2,014,462
<b>Staff training</b>	2,000	18,979
<b>Travel</b>	29,960	14,535
<b>Total Project Costs</b>	<b>3,645,000</b>	<b>2,995,717</b>



An Australian Government Initiative

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## Women in STEM Ambassador



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