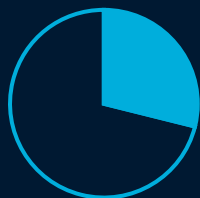




Women in STEM Decadal Plan 2023 at a glance

Women in leadership roles



2015: 29%



2023: 42.8%

Board and Executive Teams comprise

50% women

with Kathryn Fagg AO continuing as Board Chair and Professor Bronwyn Fox as Chief Scientist

Impossible Without You campaign recruited

200 people

into science roles with

48% women



In 2023, achieved our first **SAGE Cygnet Award**
> Progressing toward Silver accreditation

New DI&B governance structure

with new strategic direction, and a monitoring and evaluation plan that gives oversight of performance, progress and cultural change



611 students

actively engaged in the Young Indigenous Women's STEM Academy – having achieved its target, the Academy aims to secure additional partners to support 1000 young women nationwide by 2028

An average of 68% of participants in leadership programs were women



Professor Didar Zowghi developed guidelines for diversity and inclusion in Artificial Intelligence
> Now partnering with Champions of Change and businesses for evaluation

Talent Acquisition team awarded two LinkedIn Talent Awards including **Diversity Champion and Talent Insights Pioneer 2023**

Delivered 17+ STEM programs to **200,000+ primary and secondary students** and 5500+ teachers



Space and Astronomy Business Unit awarded **Silver Pleiades Award** from the Astronomical Society of Australia



Acknowledgements

Acknowledgment of Traditional Owners

CSIRO acknowledges the Traditional Owners of the lands, seas and waters of the area that we live and work on across Australia. We acknowledge all Aboriginal and Torres Strait Islander peoples and their continuing connection to their culture and pay our respects to Elders past and present. CSIRO is committed to reconciliation and recognises that Aboriginal and Torres Strait Islander peoples have made and will continue to make extraordinary contributions to all aspects of Australian life including culture, economy and science.

Acknowledging gender diversity

We acknowledge there are multiple dimensions to gender. This report includes metrics related to women, in these instances we are referring to people who identify as women.



1 Leadership and cohesion

The percentage of women in leadership roles at CSIRO has continued to increase from 29 per cent in 2015 to 42.8 per cent in 2023.

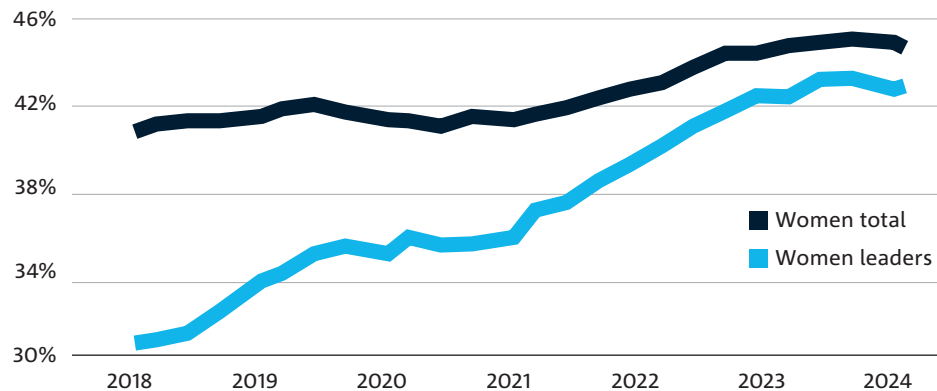
Specifically in research areas, women in leadership roles have increased from 20.6 per cent in 2015 to 34.2 per cent as at 31 December 2023.

Both the CSIRO Board and Executive Team are comprised of 50 per cent women, with Kathryn Fagg AO continuing as Board Chair, and Professor Bronwyn Fox as our Chief Scientist.

An enterprise-wide Gender Equity Action Plan Working Group reporting into CSIRO's Diversity, Inclusion and Belonging (DI&B) Council has been established, aligning to the three-year CSIRO DI&B Strategy.

CSIRO continues its commitment to the Champions of Change Coalition through our Chief Executive, Dr Doug Hilton and CSIRO Board Members, Professor Tanya Monro and Kathryn Fagg AO.

Percentage of women in leadership roles at CSIRO has increased



2 Evaluation

CSIRO continues to progress towards Science in Australia Gender Equity (SAGE) Silver Accreditation having been awarded our first SAGE Cygnet in 2023. Through focused effort, the percentage of women in research positions has increased from 32.8 per cent in 2014 to 38 per cent in 2023.


CSIRO voluntarily reported to the Workplace Gender Equality Agency's public sector reporting in 2022. Our gender pay gap of 14 per cent (2022 calculation for 2021) compares favourably to our Professional, Scientific and Technical Services industry average of 24.4 per cent (February 2022 data) and the Australia gender pay gap of 22.8 per cent, although there is still work to be done.

Recognising that all forms of diversity contribute to a better workplace, CSIRO's 'Impossible Without You' Early and Mid-Career Researcher recruitment campaign resulted in over 200 people commencing in science roles with women representing 48 per cent of the cohort.

Our Data61 Business Unit (538 people) also adopted innovative hiring approaches resulting in a marked 8 per cent shift in gender composition with ongoing improvement. Hiring cycles were divided into three stages with inclusive initiatives targeting: 1) preparation/role design/advertising, 2) long/shortlisting guidelines and 3) interviewing. De-identified diversity data and executive oversight at each stage of screening was recommended to inform future success metrics.

The DI&B governance structure represents a new way of providing strategic direction. It includes a monitoring and evaluation plan that gives oversight of our performance, measuring progress of outcomes and assesses DI&B impact across the organisation.

38%
women in
research positions



3 Workplace culture

CSIRO's 2023 Culture Survey showed that significantly more women felt there was 'widespread agreement about objectives' and that 'leaders set ambitious but realistic goals' (up 13 per cent from 2022). This suggests a more consistent experience for women working at CSIRO with regard to goals and objectives that impact everyday work.

CSIRO's Talent Acquisition Team was awarded two LinkedIn Talent Awards in 2023: Diversity Champion and Talent Insights Pioneer, as well as being nominated as a SEEK STAR Award finalist in the 'Best Employer Brand Initiative' category.

The proportion of CEO blogs that mentioned inclusion and belonging grew from 35 per cent in 2017 to 75 per cent in 2023 (as at September 2023).

CSIRO continues to support flexible work arrangements through a variety of options including working-from-home, flexible start and finish times (within core hours), part-time options and compressed working weeks.



CSIRO's Deputy Hydrogen Industry Mission Lead Dr Vicky Au with CSIRO research scientists Dr Christian Hornung and Dr John Chiefari holding catalytic static mixers.

4 Visibility

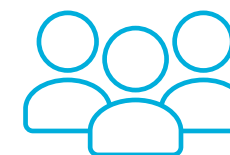
We continue to strive for gender-balanced images and spokespeople in our internal and external communications, so we put ourselves to the test – do we actually achieve balance?

We conducted an audit of a sub-sample of CSIRO.au news articles. It revealed the number of articles that had images or references to women were well balanced compared to men. The specific nature of how women are represented is the next opportunity for evaluation.

We share the methodology and the findings of the audit in our case study, see page 6.

International Women's Day was marked by features in our staff newsletter and events showcasing women researchers, tech experts and celebrated scientists from across CSIRO, including the publication in the Australian Journal of Chemistry *Breaking down barriers: standing on the shoulders of Australia's early female chemists* and a message from our Chief Scientist, Professor Bronwyn Fox: "Diversity is a CSIRO Superpower".

In 2023 CSIRO's leadership and talent programs met or exceeded 60.5 per cent female leader participation (68 per cent on average) and we continue to provide access to bespoke programs for women, including the Digital Transformation Agency's *Coaching for Women in Digital* and the *Women in IT Executive Mentoring Program* sponsored by Dell.



68%
female leader
participation

5 Education

The Young Indigenous Women's STEM Academy is an award-winning, first-of-its-kind program, offering long-term support to Aboriginal and/or Torres Strait Islander young women wanting to pursue STEM studies and careers. In partnership with CareerTrackers, the Academy's objective is to build a generation of women leaders, role models and game-changers in STEM fields by increasing enrolments in high school STEM classes, tertiary studies and high-quality STEM related employment. Having achieved its target ahead of schedule with 611 students actively engaged, the Academy's goal ongoing is to secure additional partners to extend this recruitment, and support 1000 young women nationwide by 2028.



17+ programs
200,000 students
5500 teachers

Building Australia's pipeline early and with key performance indicators for gender participation, CSIRO delivered more than 17 education programs reaching over 200,000 primary and secondary students and over 5500 teachers. Some of these programs include: Future Shapers, Living STEM, Generation STEM, Young Indigenous Women's STEM Academy, STEM Professionals in Schools and Deadly in Generation STEM (DiGS).



Diana Lee from INPEX assists a student from the CSIRO Young Indigenous Women's STEM Academy with VR technology at a STEM experience hosted by the Academy in the Northern Territory.

6 Industry action

Partnering with the Champions of Change Coalition, Professor Didar Zowghi from CSIRO's Data61, is working with interested corporate enterprises to test and explore guidelines for diversity and inclusion in Artificial Intelligence (AI) in the workplace. She also contributed to the Diversity Council Australia's multi-stage research project, *Inclusive AI at Work in Recruitment*. This research explores the impact of recruitment decisions using AI, and offers interventions and guidelines to minimise bias.

In July 2023 our Space and Astronomy Business Unit was awarded the Silver Pleiades Award from the Astronomical Society of Australia. The award recognised the high level of sustained positive impact improving the work environment with regard to inclusion, diversity and equity, as well as leadership promoting positive actions exemplifying best practice to other organisations in the astronomy community.



Silver
Pleiades
Award

to Space and Astronomy
Business Unit from the
Astronomical Society
of Australia



Professor Didar Zowghi (right) with colleague and fellow Responsible AI Lead, Dr Liming Zhu.



Case study Communications audit

Introduction

How an organisation communicates with stakeholders is critical for building and maintaining relationships and reputation. It reveals the values, priorities and character of an organisation. Sometimes this is overt and often it is built into the fabric of the communication—the words we choose, the images we select, the themes we feature. This includes our attitudes around diversity, equity and inclusion. An understanding of the approaches we might employ to assess our efforts in communication is important for writers of content, leaders and those managing stakeholder engagement.

Purpose of this case study

- To assess options for efficient analysis of equity, diversity, and inclusion in written communication.
- To examine recent external communications and the degree to which these reflect equity, diversity, and inclusion priorities, in particular gender equity.

Content of this case study

For this audit the following content components were evaluated.

- **Imagery:** what people are pictured in communications, in particular gender representation.
- **Representation:** who is selected to be quoted or noted in communications.
- **Language:** does the text carry gendered-coded language.

Scope of this case study

External news articles published on CSIRO.au during 2023 were evaluated.

Method

A sample of 67 news articles published in the news section of CSIRO's external website (CSIRO.au) during 2023 were randomly selected. This was done using an online random number generator producing numbers between one and 45 for each month. Each generated number was assigned to a written piece on CSIRO.au, where "1" is the first article published that month, "9" is the ninth article, and so on. As a result, the sample included articles from each month of 2023, with no fewer than four and no greater than eight articles in any given month.

For each article:

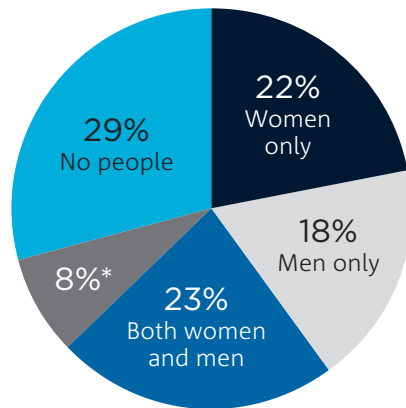
- Text for the title, byline and body text were put through Gender Decoder <<https://gender-decoder.katmatfield.com/>>, an online tool that checks for the occurrence of any masculine and feminine-coded words. The relevant frequency of these was calculated for each article and across the whole sample.
- Images were manually assessed for depictions of people and the characteristics of these, in particular gender representation. The approach taken was to interpret the images as could be reasonably expected of a random member of the public (Australian and worldwide). The assumption is that most image interpretations would be based on traditional binary gender parameters.

Images, quotes and mentions were assessed using a brief custom-designed Microsoft Forms survey. See Appendix 1 for the logic flowchart that was used for this case study.

Image: Pamela Melroy (NASA Dep. Administrator) and the Yarning Circle, the Young Indigenous Women's STEM Academy.

Results

Images



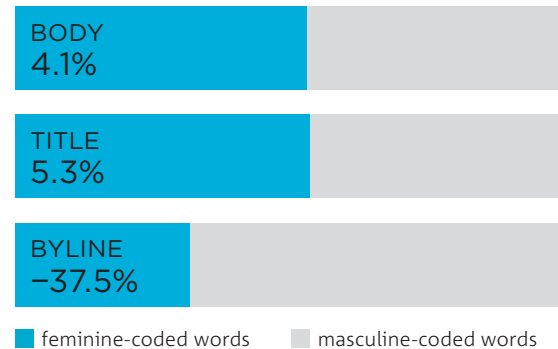
- 67 articles were audited
- 46 of the 67 articles included images of people
- 14 articles included images of women only
- 12 articles include images of men only
- 15 articles include images of both women and men

This data reflects the nature of the people depicted in images included with articles, as could be reasonably expected of a random member of the public (Australian and worldwide), not the topic of the article. The assumption is that most image interpretations would be based on traditional binary gender parameters.

*Unknown: People in full protective equipment or too small in the image to distinguish gender.

Gendered language

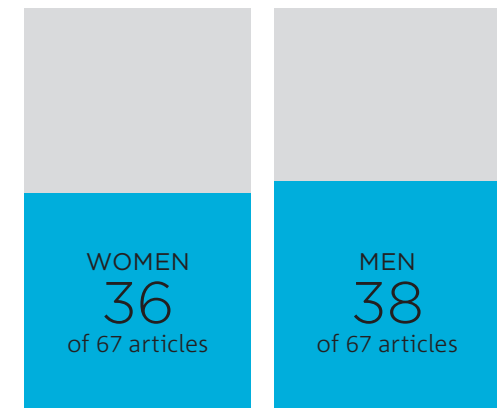
Ratio of feminine to masculine-coded words



The Gender Decoder tool identifies 50 words that are feminine-coded and 52 words that are masculine-coded.

Across the 67 sample articles, 23 masculine-coded and 25 feminine-coded words were found (40 of these on multiple occasions). The overall ratio of feminine-coded to masculine-coded words across the sample articles was well balanced, with four per cent more feminine-coded words than masculine-coded words. Bylines contained significantly more masculine-coded words compared to the body and title of articles. The reason for this warrants further investigation, including the impact on readership and an increased awareness when writing bylines in future.

Featured people



- 78 per cent of the articles feature specific people
- The breakdown of people featured is in the chart above, noting that some articles mention multiple people and in some cases this includes both women and men

This data shows details of people featured in articles, including people who are quoted or referred to by name. Women and men were determined by reference to pronouns and/or by name, as could be reasonably interpreted by a random member of the public (Australian and worldwide).

Discussion

People are represented in various ways within images, for example *in situ*, depicting the work being undertaken; individual portraits; posed team photos; individual or groups in the context of where the work is done or where the impact of the work may manifest. The impression that is given of the roles, status, and experience of people (in particular women) is influenced greatly by the nature of the depiction, as well as the proportion of women to men. So, beyond the absolute number of images of women included in an article, the nature of their depiction is important.

RECOMMENDATION: More detailed proportional evaluation of women and men depicted with articles would be a worthwhile future study, as well as exploration of the nature of images or the activities depicted in images.

There is generally a balance to be found between content that is representative of the current state of the organisation and the organisation's aspirations. For example, CSIRO currently has a work force of 44.8 per cent women (as at 31 Dec 2023). The organisation has set targets of 47.4 per cent women by 2025, so including more images of women supports this aspirational increase.

Men were quoted or mentioned slightly more frequently than women, but at a ratio that is much less pronounced than the current ratios in the CSIRO workforce. This might also reflect the difference in women and men in leadership positions in CSIRO (currently 57.4 per cent of leadership positions are held by men).

RECOMMENDATION: A more targeted evaluation of individual attributes versus instances of intersectionality would be an interesting undertaking.

Gender-coded words did not feature at a problematic rate. We do not have data to indicate if readers responded differently at all to articles with less balanced gender-coded language. Nor do we have detailed enough readership demographics to know if any readers are more or less likely to read an article with an unbalanced gender-coded title or byline.

RECOMMENDATION: If it is possible to gather readership demographics, this information could be compared to articles which feature gender-coded language to ascertain whether this impacts on readership, views or reception.

Conclusion

This case study aimed to assess some options for analysis of equity, diversity, and inclusion in written communication. The study was limited to articles published in the news section of CSIRO's external website during 2023. The external webpage for an organisation is a familiar source of insights, but in many cases (including this one) represents only a small part of the organisation's communication endeavours. CSIRO also maintains an active external presence on social media (such as Facebook, X, Instagram), in targeted sector/industry publications, as well as coordinating events, workshops, summits and conferences, and seeking media placement by employing media releases.

RECOMMENDATION: It would be worthwhile considering a similar audit of other communication channels, as well as internal communication and engagement platforms such as intranet, Microsoft Viva Engage, and internal newsletters.

When planning and writing articles, it would be advisable to consider who will be featured in the article, what images might be included and how well this reflects both the current and aspirational state of the organisation. A list of guiding questions is included in Appendix 2.

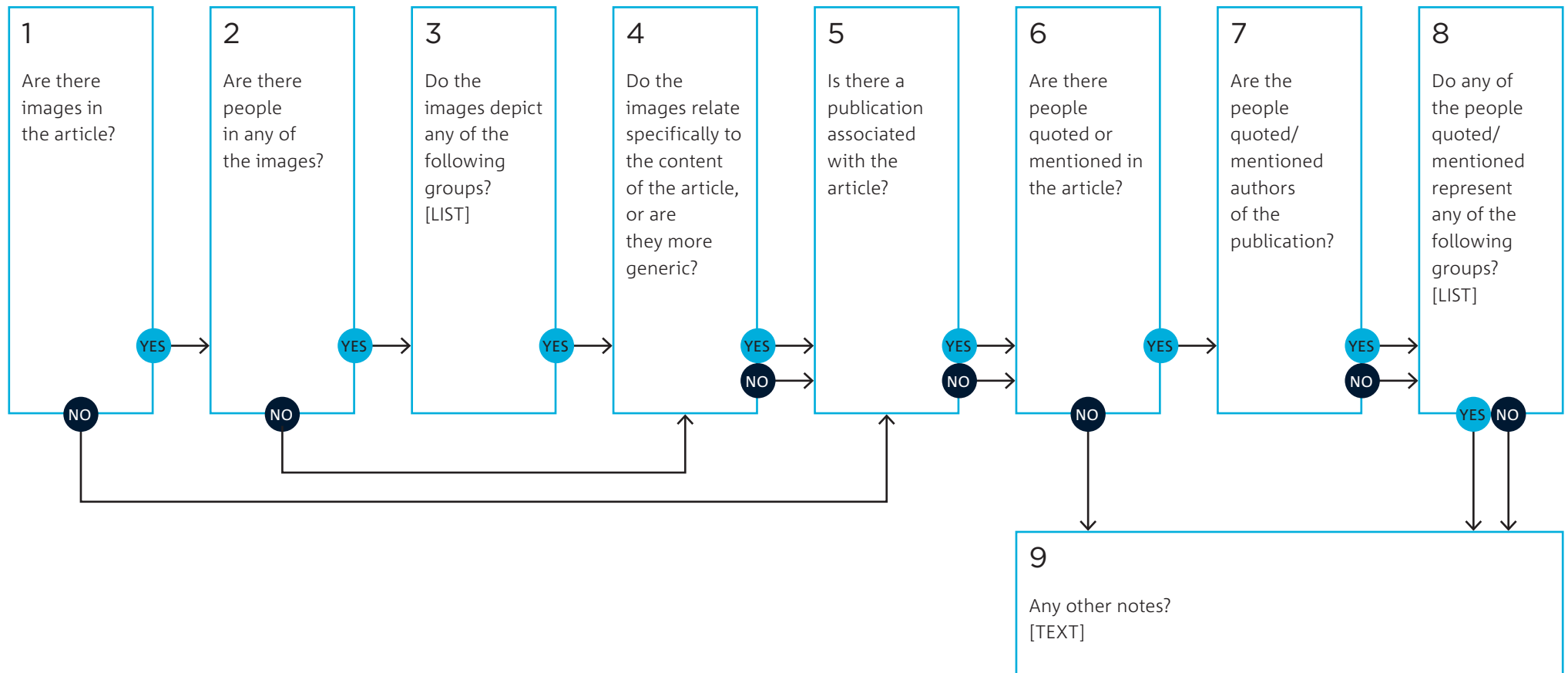
It is worth using a gender-coded language tool as an editing mechanism during the writing process and/or as a cumulative test of a sample suite of published (or planned) articles.



Panel discussion with STEM professionals at the Generation STEM inaugural Careers Expo.

Appendix 1

Flowchart for assessment form



Appendix 2

Guiding questions for authors

Will there be images associated with the article?

If so, are there images of people and if so:

- Are they directly related to the article or the work being featured?
- Are images of people at risk of perpetuating stereotypes?
- Is there an opportunity to include images or women contributing to the work being featured?

Will people be quoted or mentioned in the article?

Is there an opportunity to quote/feature women?

e.g. authors on scientific papers, consumers impacted by research outcomes, etc

Has the language in the article been checked?

Is there a risk of linguistic gender-coding?

Have you run it through a language checker

e.g <https://gender-decoder.katmatfield.com/>

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