

























AMSI delivers for women in STEM

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The mission of the Australian Mathematical Sciences Institute (AMSI) is to champion the mathematical sciences for Australia's advancement. The benefits of a mathematically capable workforce extend to all STEM disciplines.

Diversity in the workforce is vital, and all our major programs include a substantial focus on improving the gender balance in the mathematical sciences as well as in STEM disciplines more broadly. Our programs cover the widest possible spectrum, from school education, university education and research to industry participation.



Jyothi Jose

AMSI Winter School attendee

PhD Student at Murdoch University and recipient of a ChooseMaths travel grant

















Leadership

AMSI has initiated the delivery of major programs with a substantial focus on increasing gender diversity in these areas:

School Education

AMSI's CHOOSE**MATHS** program, supported by the BHP Foundation, covers initiatives to increase participation, engagement, enthusiasm and confidence in mathematics, particularly girls and young women. CHOOSE**MATHS** works across four components (careers awareness, mentoring, school outreach and teacher and student awards) with an underlying research stream that informs the work undertaken.

Higher Education & Research:

With support from the the Department of Education and Training AMSI delivers higher education and research programs in the mathematical sciences, with increasing female participation a major component.

Research Training & Industry Engagement:

In partnership with the Department of Education and Training AMSI facilitates industry–based training of PhD research students to increase their employment opportunities, with a focus on women in STEM fields.

Key to the delivery of AMSI's programs and its advocacy work is a collaborative approach, partnering with members and stakeholders in schools, universities, industry and government.

For more information, visit amsi.org.au

Evaluation

Monitoring progress of current programs through continuous collection of evidence is a standard part of AMSI's operations. We measure our activities against predefined targets by:

- **Recording participation and engagement**
- Administering "before" and "after" surveys to record changes in attitudes and perceptions
- Measuring the reach of publicity
- Measuring the effectiveness of campaigns among the target group.

The evaluation of advertising impact before and after the 2019 ChooseMaths Careers Campaign among Year 10 students of both genders showed that it increased the likelihood of students considering Maths Methods or Specialist Maths in Years 11 and 12. While girls continued to prefer careers in health and social work over engineering, technology or trades, the campaign gave students greater clarity around how maths enables many careers and the need for taking mathematics to keep future options open.



Before & After - Teacher Confidence

Teacher confidence increased after participating in professional development through the CHOOSE**MATHS** project



Female participation AMSI's research workshop program

Culture change in the mathematical sciences

To increase historically low female participation AMSI has set an immediate participation target of 30 per cent in all higher education and research program activities. With significant success, AMSI actively works with event and workshop partners towards the target, by:

- mandating female presence on event organising committees
- engagement of high-profile female speakers
- supporting women with family responsibilities with travel and carer grants
- creating "Women in Maths" networking events in partnership with the Women in Mathematics Special Interest group.

Visibility

AMSI has made important contributions to increasing the visibility of girls and women in STEM careers, in media and events.

Career Awareness

The national CHOOSE**MATHS** campaign to help students, teachers, parents and the public see that rewarding and interesting careers exist for people who 'stick with maths'. The program has used social media, radio, public transport, outdoor billboards, and delivered careers materials to schools

STEM ambassadors

featuring in publicity and engaging with girls at careers events across Australia

Mentoring

introduces Year 9 and 10 girls to the community of high achieving mathematical women and men currently working in industry, academia and business

Supporting more women into STEM careers

increased visibility of female PhD graduates and their contribution to innovation in leading Australian businesses through APR Intern placements. *aprintern.org.au/2019/04/01/video-open-up-your-world*

STEM events aimed at girls and women

such as International Women's Day and STEMFest

Fostering female spokeswomen

in mathematics advocacy in the media

For more information, visit amsi.org.au







PROTECT US















Media reach via annual national careers awareness campaign 2017-19 with focus on women in STEM professions



Female participation AMSI's higher education programs

Education

AMSI has long been involved in strengthening the education system across the pipeline, from primary to tertiary education, to encourage girls and women to engage with mathematics.

Schools Outreach

delivered through the CHOOSEMATHS project in 120 Australian schools. Teachers work with an AMSI Schools Outreach officer to focus on enhancing content knowledge in mathematics. Teacher support is delivered face-to-face and online.

Awards for Excellence

in the Teaching and Learning of Mathematics rewarding high achieving teachers with an emphasis on exceptional initiatives involving girls.

Fostering female participation

in tertiary studies in mathematics and statistics through opportunities to attend annual residential Summer and Winter schools and vacation research scholarship placements; industry research training symposia in bioinformatics and optimization; travel grants to strengthen participation of women and Aboriginal and Torres Strait Islander peoples in AMSI's programs.

For more information, visit **schools.amsi.org.au**

Industry action

AMSI's APR Intern program supports industry–based training of PhD research students in all Australian universities to increase their employment opportunities, in particular for women in STEM fields. The program will place PhD students into research internships with private and public sector organisations across Australia from 2017 to 2020.

While the female participation rate over the life of the program has been 44%, we have reached the overall target of 50% female participation for the 2019 calendar year.



Jie Jian

Former PhD Intern at the Bureau of Meteorology

