

# MEDIA RELEASE

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## **Gender imbalance in maths threatens pandemic recovery and future crisis response**

**Latest research by the Australian Mathematical Sciences Institute (AMSI) reveals gender imbalance and inequity continue to negatively impact the nation's intellectual capability, compromising post-coronavirus recovery effort and response to future pandemics.**

Released to coincide with 2020 International Women in Mathematics Day (Tuesday 12th May), latest AMSI data provides a snapshot of female participation across Australia's mathematical pipeline from the classroom and higher education to research and the workforce.

Addressing this gender imbalance is critical to ensuring skills are in place enabling data modelling during pandemics and to guide recovery.

"The work of Australia's epidemiologists is decisive in informing governmental response to the current crisis and guiding the nation's recovery", said AMSI's ChooseMATHS project director, Janine Sprakel. "Experts like Professor Jodie McVernon at the Doherty Institute and Professor Raina MacIntyre are applying cross-disciplinary approaches including mathematical and computational models in synthesising insights from biological, epidemiological and sociological data", Ms Sprakel said.

"So many talented women are at the forefront of modelling enabling government, policy experts and Australia's people in general, enhancing understanding of infectious diseases and determining optimal interventions for pandemic control. Restrictions will be eased based upon mathematically-based advice from these scientists."

According to report author Maaïke Wienk, this report card for Year 12 participation in mathematics is a cause for concern, threatening capacity to build the STEM workforce needed for Australia's post-pandemic recovery. In 2018, only 7.2 per cent of female Year 12 students took higher maths compared to 12.2 per cent of male students.

"This risk is compounded by gender distribution between employment divisions and occupations", Ms Wienk said. "Women form the majority of the professional workforce within the healthcare and social assistance sectors, but the number of girls entering tertiary education in maths disciplines is far less than boys, accounting for an estimated 38 per cent of undergraduate mathematics students. This percentage remains static despite the promotion of STEM subjects in schools, compromising future trained workforce capability."

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A positive trend is growth in the number of PhDs in mathematical sciences completed by women over the past 15 years, largely attributable to a rising influx of international students. However, domestic participation in PhD programs in the mathematical sciences by women has remained largely stagnant, placing Australia's sustainable, long-term recovery at risk.

The goal of International Women in Mathematics Day is to inspire women everywhere to celebrate their achievements in mathematics. AMSI is working to redress this gender inequity, recognising the potential of women in enhancing the innovation, science and technology needed by all Australians in pandemic control and recovery.

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### **FURTHER INFORMATION**

The complete 2020 AMSI *State of Mathematical Sciences: Discipline profile for mathematics and statistics* is available for download online at: [amsi.org.au/media-releases/](https://amsi.org.au/media-releases/)

Information on the international 12<sup>th</sup> May initiative – Celebrating Women in Maths is available at: [may12.womeninmaths.org](https://may12.womeninmaths.org)

### **INTERVIEW**

Report author Maaïke Wienk, AMSI ChooseMATHS project director Janine Sprakel (quoted), and AMSI Director Professor Tim Brown are available for media interview.

### **CONTACT**

Clint Rodgers; AMSI Media [24 hours] 0428587350 / [clint.rodgers@amsi.org.au](mailto:clint.rodgers@amsi.org.au)

### **BACKGROUND**

In high demand across all industry sectors, the mathematical sciences are central to powering Australia's STEM capability with the skills to drive new technologies and innovation.

The **Australian Mathematical Sciences Institute** (AMSI) is championing mathematics and statistics – working with schools, universities, industry, philanthropy, government and the community as a policy influencer enhancing impact, and as a program provider supporting education, research and innovation.

A collaboration of Australia's university mathematics departments, its membership network includes over 41 Australian universities, mathematics societies and government agencies.

**[amsi.org.au](https://amsi.org.au)**