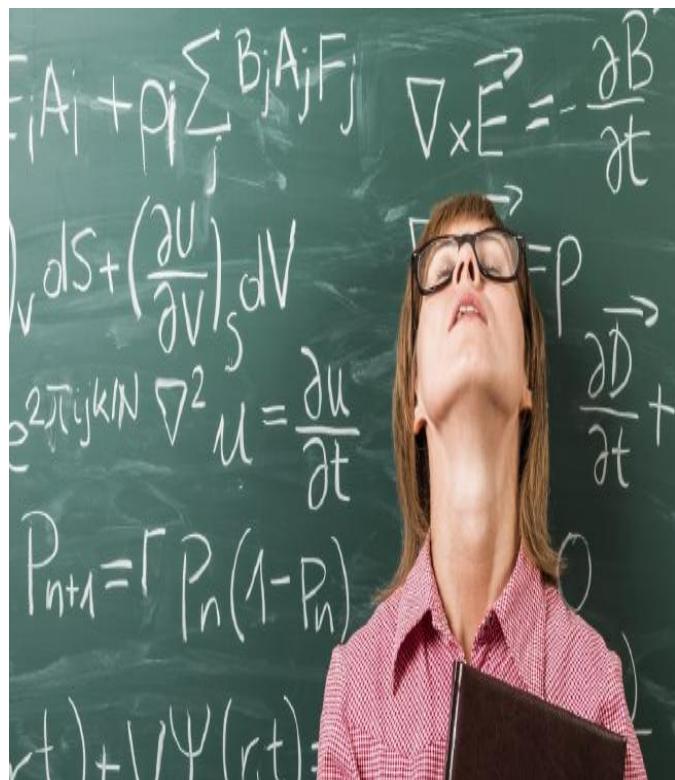


# Maths crisis looms as workforce ages



Students face substandard teaching that further discourages them from maths.

JOHN ROSS THE AUSTRALIAN 12:00AM November 8, 2016

Universities and business have been warned a demographic pincer movement is ushering in a workforce crisis in Australia's mathematical sciences, threatening the government's innovation agenda and jeopardising key industries such as finance, retail, mining and telecommunications.

A new report says the supply of mathematicians, statisticians and data analysts is being crunched at both ends, with study of advanced and intermediate maths in high schools at historic lows as much of the present workforce nears retirement.

The problem is exacerbated by business uninterest, with the mathematical sciences attracting just 0.2 per cent of Australian industry's modest research and development spend — the lowest of any field in the science, technology, engineering and maths sector.

The figures are outlined in a discipline profile released last week by the Australian Mathematical Sciences Institute.

"The maths workforce is getting old," AMSI director Geoff Prince said.

"Both our male and female workforces are ageing. We've got the lowest percentage of any discipline with a workforce under the age of 35."

He said the issue could derail future prosperity in an increasingly data-driven economy.

“Data science and data analytics are enormously interesting to companies. They are importing a lot of overseas talent and putting anybody with any sort of quantitative background to work as data scientists.”

The resupply of maths professionals is hampered by a widening gender gap, the report says, with women eschewing maths at university. While 40 per cent of the maths workforce is female, women accounted for just 34 per cent of undergraduate maths students last year.

Professor Prince said high school maths teachers were getting older and “more and more male”. This was aggravating a shortage of dedicated maths teachers — with 26 per cent of maths classes already taught by non-specialists — subjecting students to substandard teaching that further discouraged them from the field.

Adding to the problem was a “prerequisite scandal” at universities, with intermediate-level maths compulsory for few undergraduate science, engineering and commerce courses.

Jacqui Ramagge, head of the University of Sydney’s maths school, said companies recruiting mathematicians were “not making a big enough deal out of it”.

“If every company that values a mathematician on staff started a scholarship for a first-year maths student at university, that would have a bigger impact on enrolments than anything we can do,” she said.

“The fact is that they do value the mathematicians they have. Some are very clear that it is mathematicians they’re after, particularly those with high-level computation skills.”

Professor Ramagge said industry-funded scholarships would show parents “there’s an outlet for their kids”.

“Lots of students are keen to do maths, but they combine it with engineering or commerce because their family thinks that’s what’s going to get them jobs. It ends up being mathematics that gets them jobs, but they don’t see that at the outset.”

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