

## Some Recent Reports

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Statistics at Australian Universities: An SSAI-Sponsored Review. December 2005

[www.statsoc.org.au/WhatsNew/](http://www.statsoc.org.au/WhatsNew/)

Mathematic and Statistics: Critical Skills for Australia's Future. The National Strategic Review of Mathematical Sciences Research In Australia. December 2006

[www.review.ms.unimelb.edu.au/](http://www.review.ms.unimelb.edu.au/)

Also worth noting

The National Numeracy Review

and AMSI's Draft Submission to it

[www.amsi.org.au/Education.php#numeracy](http://www.amsi.org.au/Education.php#numeracy)

## Basic Issues

Long term drift of high school and university students from Mathematics, Science and Engineering.

Number of honours and PhD students reasonably constant.

Increasing demand and opportunities:  
ABS, Finance, Bioinformatics, Biostatistics,  
Security, Climate Change...

How do we get the messages through?

- Lots of opportunities
- Need to do intermediate and high level maths at school.

Universities tightening belts and losing  
Maths staff

- with some exceptions
- recent increase in funding per Maths student.

In the long term funding follows student numbers.

Who gets to teach Mathematics at  
University?

Fostering and exploiting industry links.

Adequate training, support and interaction  
with Primary and Secondary Teachers -  
how?

Input into curriculum reviews.

### Some Bright Spots

Still some really great students

Industry links are possible:

- Maths in Industry Study Group
- Australian Mathematical Sciences Institute
- Biostatistics Consortium Australia

- Applied Statistics Education and Research Collaboration
- Direct support of students: ABS, ...
- Contract research and consulting
- Vacation work placements.

## Key Findings of Maths Review

1. Mathematical research in Australia is becoming increasingly narrowly focused.
2. The number of mathematics and statistics students and lecturers at Australian universities is critically low.

3. Mathematicians and statisticians are not teaching all the university courses in mathematics and statistics. Many university courses such as engineering that should include a strong mathematics and statistics component, no longer do.

4. Not enough trained mathematics teachers are entering the high school system. Australian students are abandoning higher-level mathematics in favour of elementary mathematics.

## Key Recommendations

1. Significantly increase the number of university graduates with appropriate mathematical and statistical training.

- Viable Maths Dept in every university, which teaches service courses and provide consulting services.

2. Broaden the mathematical sciences research base

- Increase permanent staffing
- Support networks
- Encourage interdisciplinary work
- Support AMSI to support education and industry liaison.

3. Identify, anticipate and meet industry needs for a pool of tertiary trained expert mathematicians and statisticians

- Industry interchanges
- Support Industry Linkage grants
- Exploit international networks
- Joint appointments
- Short course programmes for industry.

4. Ensure that all mathematics teachers in Australian schools have appropriate training in the disciplines of mathematics and statistics to the highest international standards.

- Ensure maths in teacher training
- National accreditation standards and associated education programmes
- Appropriate maths training and professional developments.

5. Encourage greater numbers of high school students to study intermediate and advanced mathematics.

- Develop suitable syllabuses
- Promote careers available for mathematics and statistic students
- Make sure scaling rewards students doing intermediate and advanced mathematics.