

Terms of Reference

To prepare a strategy for the mathematical sciences in Australia over the next ten to fifteen years which will

- ensure an internationally competitive and sustainable research base in the mathematical sciences which values theory, application, and interdisciplinary activity,
- stimulate mutually beneficial interactions among academia, business, industry, government, research institutions and other users of the mathematical sciences, and
- ensure a supply of appropriately trained researchers in the mathematical sciences to fulfill the needs of business, industry, government, research institutions, universities, and other organisations.

A. Mathematical Sciences Research

To make recommendations on research in the mathematical sciences that advance those sciences and contribute to the scientific, economic and cultural welfare of Australia.

1. To determine the degree to which an internationally competitive fundamental research base is required in all branches of the mathematical sciences in Australia.
2. To identify areas of current and anticipated strength and weakness in research in the mathematical sciences in Australia, in light of Australia's strategic needs.
3. To evaluate the effects of participation in collaborative national and international research ventures in the mathematical sciences.
4. To evaluate benefits and challenges arising from interdisciplinary research involving the mathematical sciences.
5. To identify any factors which impinge on the quantity and quality of research in the mathematical sciences.
6. To recommend actions which will, now and in the next decade,
 - (a) provide appropriate funding for research in the mathematical sciences and for interdisciplinary research involving the mathematical sciences, and
 - (b) ensure the ongoing intellectual health of the mathematical sciences.

B. Provision of Advanced Mathematical Services

To make recommendations on the provision of advanced services in the mathematical sciences, including mathematical and statistical research and consulting, and advanced mathematical and statistical training, to business, industry, government, research institutions, and other users in Australia.

1. To examine how advanced services in the mathematical sciences contribute to other fields of endeavour, and to assess the benefits of the nation's investment in the mathematical sciences.

2. To determine the areas of the mathematical sciences most used by business, industry, government, and other organisations, and identify those most likely to be needed in the next decade.
3. To identify strengths and weaknesses in the provision of advanced services in the mathematical sciences in Australia.
4. To identify any factors which impinge on the provision of and demand for advanced services in the mathematical sciences.
5. To recommend policy and funding changes that will
 - (a) enable the mathematical sciences community to offer better services to business, industry and government and other organisations,
 - (b) facilitate the uptake of advanced services in the mathematical sciences by organisations that may benefit from the use of these, and
 - (c) improve communication and mobility between the academic mathematical sciences community and business, industry and government.

C. Infrastructure

To make recommendations for structural modifications and resource allocations to implement the recommendations in **A** and **B** above.

1. To assess the flow of high quality students into training and research in the mathematical sciences and areas utilising the mathematical sciences.
2. To investigate human resource issues associated with mathematical, statistical and interdisciplinary research and the provision of advanced services in the mathematical sciences.
3. To assess educational programs in the mathematical sciences leading to the training of researchers and the delivery of advanced services in the mathematical sciences to business, industry and government.
4. To examine how computing, communications and information technology have influenced research and training and the provision of advanced services in the mathematical sciences.
5. To examine current government support for research and for the provision of advanced services in the mathematical sciences.
6. To identify any other infrastructural factors which impinge on the quality and quantity of research and the provision of and demand for advanced services in the mathematical sciences.
7. To make recommendations to
 - (a) improve educational programs in the mathematical sciences,
 - (b) ensure that an adequate supply of appropriately trained people will be available to meet the nation's needs over the next ten to fifteen years, and
 - (c) direct future support to areas of priority, quantifying any increase in required funding.