President's column by Tony Guttmann

This is my last column as President, so I thought I would indulge myself by musing on both the positive and the negative developments in the mathematical sciences over the last two years. Unfortunately, the negative developments far outweigh the positives.

It has been an exciting time for researchers, as I reported in the President's column in the previous issue, with breakthroughs in the search for solutions of a number of long-standing and celebrated problems. The positives also include the growing recognition by both State and Federal Governments of the importance of the mathematical sciences. This has been manifested by the support for AMSI, MASCOS and ICE-EM.

Unfortunately, the State and Federal Governments' generosity in establishing institutes has not been backed up by much needed expenditure across the board. Peter Hall, in his trenchant article in the March 2004 issue of the *Gazette*, listed many of the problems facing the profession, and highlighted the particular difficulties facing the discipline of statistics.

Currently, direct Federal Government funding typically accounts for less than 40% of a university's operating budget. It is the full-fee paying cohort of students, both overseas and local, that is propping up our universities, thereby making universities incredibly vulnerable to fluctuations in the level of this resource. Indeed, with the appreciation of the Australian dollar, we are already seeing a decline in overseas student enrolments. I have heard this process evocatively described as "strip mining" the educational sector. Rather than using income generated by full-fee paying students to create superb universities, the Federal Government is using it as an opportunity to allocate them ever-decreasing levels of funding. For the mathematical sciences, the effect of this is exacerbated by the current Relative Funding Model, which leaves us at a disadvantage relative to other disciplines.

As a result, while there are a reasonable number of fixed-term opportunities at universities for post-doctoral job seekers, there are only limited opportunities for them to obtain tenure track positions. As a result we are losing many of our best and brightest young mathematicians overseas.

The Federation Fellowship scheme has been essentially useless in addressing this issue. Not one young mathematical scientist has been attracted back to Australia by it, and only by using a broad definition of the mathematical sciences can we say that any mathematicians have been awarded Federation Fellowships at all. Indeed, the ARC seems to have lessened its regard for the mathematical sciences, as evidenced by the number of mathematicians on the relevant panel. As Peter Hall points out, the Canadian Research Chairs system is a far more effective (and less expensive) way of bolstering the university sector.

Nor have government budgets addressed the teacher crisis in schools. There are no new funds for professional development, no mechanism to address the problem of teach-

ers teaching out of field, and little sense of concern for, or even awareness of, a diminishing population of trained mathematics teachers, many of whom are approaching retiring age.

Support for R&D is also too low if Australia is to have a future as a scientifically advanced nation. Admittedly, government expenditure on R&D is above the OECD average, but little seems to be being done, by any political party, to promote policies to raise R&D expenditure by industry. The demand for mathematical scientists created by initiatives in bio-informatics, stem cell research, neuro-informatics and nanotechnology, to name but a few of the areas in which Australia seeks to have a major impact, is huge. Yet the supply of mathematical scientists is not there. The "brain drain", carefully quantified by our Executive Officer, Jan Thomas, shows no signs of improving.

The establishments of the three institutes mentioned above may buy more time, but cannot work miracles, nor compensate for billions of dollars of lost funding. Unfortunately, there seems little sense of urgency in the policies of any political party to address these issues.

It has been a privilege to have been President of the Society for the past two years, and I have been ably assisted—perhaps "propped up" is a more accurate description—by many members of the Executive. I am grateful to all of them, particularly our Secretary, Liz Billington, Treasurer Algy Howe and Executive Officer Jan Thomas. I congratulate and welcome Michael Cowling as the incoming President, and wish him every success in addressing some of the issues raised above.