



Philip Broadbridge*

Still in there and still fighting

I give my best wishes to Garth Gaudry during his recovery following recent hospitalisation. During Garth's time as Director of ICE-EM, education in mathematics has made significant gains. The annual Summer School, including the most recent held at Monash University, has been an outstanding success. The next Summer School will be held at the University of Wollongong early in 2009. We have a budget line from the Federal Government's Collaboration and Structural Reform Fund (CASR) to cover the next two Summer Schools. They will be at a slightly reduced scale, almost exclusively for honours students.

The annual ICE-EM Graduate School, held at the ideal winter location of the University of Queensland, has given postgraduate students access to some of the world's top lecturers in the mathematical sciences. ICE-EM does not have funding for these in future but the CASR grant will cover a smaller Graduate Theme Program. On 7–18 July at the University of Queensland, courses will be given by two eminent lecturers in areas of applied statistics that relate to the theme of resource management. The guest lecturers are Professor Vijay Nair, Chairman of the Statistics Department at the University of Michigan, and Professor Peter Guttorp, a distinguished professor of statistics at the University of Washington. As another part of the theme, there will be a workshop and short course, 'Mathematics of Water Supply and Pricing', held at Surfers Paradise, 14–16 July.

During November and December 2007, AMSI and MASCOS hosted an extremely interesting theme program, 'Concepts of Entropy and their Applications'. We are now guest-editing a special issue of the journal *Entropy*. We continue to support a full program of scientific workshops, under the expert guidance of our Scientific Advisory Committee. AMSI has completed a large final report on its Carrick-funded project, 'Mathematics Education for 21st Century Engineering Students'. The report is already receiving strong feedback. I thank my project team members Simi, Parvin, Graham and Annabelle, as well as all the project advisors from many universities. In the future, we intend to work closely with the Australasian Association for Engineering Education and with the HELM Project of the UK, to develop a portal for disseminating context-based mathematics education materials. Please contact us if you would like to be involved.

Our experience with the Carrick project has reinforced my opinion on how important it is to work closely with other disciplines that rely on mathematical sciences, to better understand their needs and to gain their support. We certainly need more moral support. Our survey shows that in 2006 and 2007, several universities lost mathematics staff without replacement. In the 2007 Federal Budget, we gained an additional \$2700 in per-capita (EFTSU) support for mathematics students under

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the Discipline-Based Funding Model. This amounts to extra income of over one million dollars to most universities, and much more to the larger ones. Despite misinformation to the contrary being spread by some, at least eight universities have so far agreed to pass down a share of this money to the mathematics coalface. We believe that many more will follow suit. Despite an increase of funding of over 1.2 million dollars, the University of Southern Queensland has recently announced plans to shed most of its mathematics and statistics staff.

Until now, USQ has been one of several active contributors to our higher education program via the ICE-EM Access Grid Room network. In 2008, at least 10 universities will be delivering jointly accessible honours courses. Along with the annual Summer School, this greatly broadens the curriculum choices of Australian honours students. Due to a looming shortage in mathematics skills, outreach to students is very important. USQ and University of New England had jointly planned a distance education program in mathematics. Gippsland campus of Monash university offers a mathematics major by distance education, using printed study guides, online discussion — and in several units a tutorial CD ROM [‘Epsilon’]. They also offer a Graduate Certificate in Mathematics Studies for practising teachers. Charles Sturt University distance education offers undergraduate mathematics and statistics majors as well as graduate certificate programs. Macquarie University offers a Biostatistics Masters degree program entirely by distance education. The University of Wollongong School of Mathematics and Applied Statistics offers a mathematics program for trainee teachers at its Loftus campus. Some teaching is done remotely and some is on-site. We believe that the mathematics enrolments in our universities will increase. Our commissioned study on enrolments in Year 12 intermediate and advanced mathematics shows that the decline has bottomed out.

We have developed an intensive schedule of site visits by the 2008 AMSI Distinguished Lecturer Professor Linda Petzold (University of California, Santa Barbara), who will be touring after the CTAC Conference in July.

For more details on any of the above, consult our website: <http://www.amsi.org.au>



Director of AMSI since 2005, Phil Broadbridge was previously a professor of applied mathematics for 14 years, including a total of eight years as department chair at University of Wollongong and at University of Delaware.

His PhD was in mathematical physics (University of Adelaide). He has an unusually broad range of research interests, including mathematical physics, applied nonlinear partial differential equations, hydrology, heat and mass transport and population genetics. He has published two books and 100 refereed papers, including one with 150 ISI citations. He is a member of the editorial boards of three journals and one book series.