Summary of the School’s activities,
SMAS School Advisory Committee

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Summary

The School of Mathematics and Applied Statistics is composed of 40 academic staff, of whom 30 are teaching and research staff and the other 10 are research only.

We have teaching and research activities in all the main areas of the mathematical sciences; applied, financial and pure mathematics and statistics. The School also has a strong postgraduate research and teaching program with about 30 coursework and 40 research students.

At the undergraduate level we offer a couple of “traditional” degrees, BMath and BMath(Adv), which offer a great deal of flexibility and also “career” degrees such as BMathFin and BMathBCompSc, which are more highly prescribed. From 2009 the BMathFin degree will have four new majors, all of which have clear career paths. We also offer the four year BMathEd degree at the Loftus Education Centre, which is designed for students intending to become mathematics teachers.

SMAS is well known for its innovative teaching with a strong research theme in Mathematics and Statistics Education (led by Dr. Porter). Our main first year mathematics subjects have been significantly modified for 2009, with a much stronger differentiation between the courses taken by mathematics degree and engineering degree students. The first year mathematics subjects have had the amount of lecture material reduced, and new workshops and computer laboratories introduced, in order to make the material more relevant and applicable. SMAS also uses new technologies such as
video conferencing and the Access Grid Room (AGR), to teach remotely. In 2009 this will comprise undergraduate courses to Loftus and UOW's other remote campuses, and undergraduate and Honours courses to other Australian Universities, as part of the Applied Statistics Education and Research Collaboration (ASEARC) project and the National Honours Mathematics program, lead by the Australian Mathematics Sciences Institute (AMSI).

We have a number of research strengths within the School. The Centre for Statistical and Survey Methodology (CSSM) is led by Prof. Steel and includes the Research Professors Prof. Chambers (sponsored by ABS) and Prof. Wand. A new research group in Operator Algebras arrived in UOW in 2007, headed by Prof. Raeburn. In Applied Mathematics Prof. Hill leads a strong team in Nanomechanics. There are also a research strength in Financial Mathematics, led by Prof. Zhu.

**Strengths and recent highlights**

- New majors for the BMathFin to begin in 2009. These are accredited by ASIC and FINSIA. One of the majors articulates into various Masters degrees in Actuarial Science

- Accreditation of SMAS degrees by the Australian Mathematical Society, in 2007

- New undergraduate scholarships sponsored by Tibra Capital, for students doing mathematics degrees. Total sponsorship of $75,000 a year, for up to four years

- Appointment in 2007 of a world class research team to UOW, in Operator Algebras. This team is composed of Prof. Raeburn, A/Prof. Pask, A/Prof. Ramage and Dr. Sims. Prof. Raeburn is on the ISI mostly highly cited list and was selected as an RQF panel member in 2007

- Appointment in 2007 of Prof. Wand to a Research Professorship in Statistics. In 2008 he was made a Fellow of the Australian Academy of Science and won the award, as NSW Scientist of the year, in the Mathematical Science category. Prof. Wand is also on the ISI most high cited list
• Prof. Hill won the ANZIAM medal in early 2008. This is recognition for outstanding career contributions to Applied Mathematics within Australia and NZ

• Hosting of the AMSI Summer School at UOW in Jan. 2009 with Director A/Prof. Ramagge. This is a national event normally held be at G8 Universities and will attract 50-100 of Australia’s best postgrads to UOW to do summer courses

• Hosting of the Mathematics and Statistics in Industry Study Group (MISG) at UOW, in late Jan. 2009 (Directors Prof. Marchant and Dr. Edwards). This is third time UOW has hosted the meeting, following on from 2007-8. Typically the Study Group attracts six industry partners and 100 delegates from Australia and O/S

• CSSM has strong links with the Australian Bureau of Statistics (ABS) and won a $1 million dollar CASR grant to fund the ASEARC project, to build links with other regional NSW Universities. This includes sharing the delivery of courses between the institutions using video conferencing

Challenges

• Attracting enough highly qualified school leavers into Mathematics degrees at UOW. In 2008 about 40 students started Maths degrees at UOW. We need this to increase in 2009

• SMAS has had very strong growth in staff numbers and its research profile in the last few years. One challenge ahead is to maintain these gains and consolidate as one of leading Schools of Mathematical Science, in the country

• Incorporating the Loftus Education students more fully into our mainstream teaching programme. Currently these students are mostly taught in small classes using casual lecturers with little exposure to the permanent academic staff of SMAS. In 2008 the Loftus students took two courses from the Wollongong Campus, via video conferencing. There were various difficulties with this and it is an important challenge to make this teaching mode successful in 2009
SMAS is embracing the use of remote teaching on a number of fronts via new technologies such as video conferencing and the AGR. These include initiatives in statistics teaching for the ASEARC grant, the national Honours teaching program, via the AGR, and videoconferencing to Loftus. There a number of challenges associated with these technologies; ease of use, student acceptance and new teaching techniques.