

## The African Institute for Mathematical Sciences

Kevin Burrage\*

I am not sure how many of the readers of the *Gazette* are aware of the African Institute for Mathematical Sciences (AIMS), based at Muizenberg in South Africa. Muizenberg is a small beach community about half an hour's drive from Cape Town CBD, situated on the eastern coast of the Cape of Good Hope. AIMS has gorgeous views down the Coast of the Cape Hope Ranges (an extension of Table Mountain) and across False Bay. AIMS was established in 2003 under the directorship of Fritz Hahne, formerly Dean of Science at the University of Stellenbosch. AIMS is housed in an old hotel that was built in the early 20th century, and which has been substantially renovated.



Students and tutors, 2006–2007

Its mission is to promote Mathematics and Science in Africa and to provide a focal point for Mathematics university training in Africa. It offers scholarships for up to 50 students to come and study for a period of nine months. Of the 50 students, about 15 positions are reserved for females. In the 2006/2007 intake there were over 250 applicants.

The students are housed and fed and their return travel from their home town is fully funded. Lecturers also stay at AIMS and share their meals with the students, so that a rapport quickly develops. The students are away from their families and friends for nine months and are absolutely committed to the discipline of Mathematics. When they first arrive, some of them have little ability in English but since all tuition is in English they quickly learn. Some find the transitions difficult but they all support one another and at the end of their time their English skills are very good. The students do a series of subjects that last for about three weeks each, consisting of 30 contact hours, as well as a thesis/project. Each course has a number of assignments associated with it and these get evaluated. AIMS has seven or eight teaching assistants who help with the tutorials, marking, advice, and who are a vital component of AIMS.

---

\*Federation Fellow of the ARC, Department of Mathematics, The University of Queensland, QLD 4071  
E-mail: kb@maths.uq.edu.au

It is a pleasure to teach these students. They seem to prefer the blackboard style of presentation and copy all the notes down. In the classes they are very responsive. If they do not understand something they will ask questions, if they do understand they will murmur assent. This means that the lecturer ends up presenting in a very interactive way and ends up responding to the students rather than vice-versa, as in Australia.

The students' backgrounds are quite varied. Two countries that seemed to have very strong students (at least while I was there) are Nigeria and Madagascar. One of the students, a young female student, is from the Darfur, so you can imagine the challenges that must be met in order to make a career there in Mathematics.

The way it works if you would like to teach at AIMS is that academics go to the AIMS website (<http://www.aims.ac.za>) and fill in a form saying what topic they would like to present and when. The courses start in October and go through to the end of March. AIMS is willing to cover travel costs but always appreciates if lecturers can pay their own way. I was the first Australian to teach at AIMS — my course being on Computational Biology.

I can recommend the experience whole heartedly. It is very rewarding and gives a greater appreciation of how students in other countries, not as wealthy as Australia, struggle to make a career in this profession. Their dedication to their chosen career is marvellous to see. Most of these students want to carry on to do PhDs and many choose Europe as the fees are low and many scholarships are available. Many of them had little knowledge of Australia and were very keen to study here until I told them the fee costs!

AIMS is looking to help establish mathematical institutes in other African countries but the struggle is, as always, in the financing. I also hope that they can develop strong relationships with Australia. I wish AIMS all the luck in the world and if they do succeed in setting up other institutes in Africa I will be volunteering again.



Kevin Burrage (on left) with students at AIMS in March 2007



Kevin Burrage is Professor of Computational Mathematics at the University of Queensland and Federation Fellow of the ARC. For the last five years his research has been in Computational and Systems Biology and, in particular, on the roles of noise in Cell Biology.