

CENTREFOLD

Bill Barton



We are delighted to be able to write this item about our colleague, Bill Barton, during his term as President of the International Commission on Mathematical Instruction (ICMI). We can all be proud of Bill, not only for being elected to this position — which is arguably the highest position in the international mathematical sciences community ever held by a New Zealand based mathematician — but also because of what he is achieving in the role.

A particular highlight is the ‘Klein project’. This project, co-sponsored by ICMI and the International Mathematical Union (IMU), was inspired by Felix Klein’s famous book *Elementary Mathematics from an Advanced Standpoint*, published a century ago. Under Bill’s leadership, the project is intended as a stimulus for mathematics teachers, to help them to reawaken their interest in mathematics, by making connections between the mathematics they teach (or might be asked to teach) and the wider field of mathematics, while taking into account the evolution of mathematics over the last century. The Klein project will eventually produce a book in several languages, but currently exists as a collection of readable ‘Vignettes’ (see <http://blog.kleinproject.org>).

At the 2010 International Congress of Mathematicians held in India, Bill gave a public lecture on ‘Where is mathematics taking us?’. This attracted an audience of hundreds of students and teachers, and was highlighted on the cover of the November 2010 issue of the Notices of the American Mathematical Society, and described in an article on pages 1276 and 1277 of that issue. (A copy of the article can be downloaded from the website <http://www.ams.org/notices/201010/index.html>, by clicking on “The Public Lectures in Hyderabad”.) Bill also gave a follow-up lecture to educators on ‘Why are mathematics lecturers like Sachin Tendulkar?’, about developing a culture of continual professional development.

Bill was born in New Zealand, and as a child, moved with his family around the country, from school to school. His love of travel and interest in other cultures was kindled when his family moved to Khartoum (Egypt), where his father had a position with UNESCO, and where he learned to sail on the Nile. He returned to New Zealand to finish his schooling, and his academic career began in the early 1970s with a Masters degree in Mathematics at the University of Auckland, followed by a Diploma in Teaching at Christchurch Teachers College. He then spent much of the next 17 years teaching in secondary schools, as well studying for a Masters degree in Education from Massey University.

Bill spent four years teaching at the University College of Botswana, Lesotho and Swaziland, where he learned about the importance of language in mathematics. Also in the 1980s he produced two series of public television programmes, which helped him learn about popularising mathematics, and he became involved in a project to develop the Maori language of New Zealand so that it could be the language of instruction for mathematics, which helped him learn the joys of research. These experiences, his high

level of imagination and his ability to entice people into new activity with well-chosen metaphors, have helped Bill develop a varied and successful career.

He completed his years of secondary school teaching as a Maori/English bilingual teacher at Wellington High School (1987-89), before moving into teacher education, and began studying for a PhD in Ethnomathematics at the University of Auckland. He joined the Mathematics Education Unit (MEU) in the Mathematics Department at the University of Auckland in 1993, completed his PhD in 1996, and continued his career as a mathematics educator, specialising in mathematics and language. He has written a Springer volume on this topic.

Bill has served two terms as head of the MEU and a four-year term as Head of the Mathematics Department at the University of Auckland. He was promoted to professor in 2009. Bill won a Claude McCarthy Fellowship (at Victoria University) in 1990, and a Hood Fellowship (at the University of Auckland) in 2007. He was Bevan Werry Memorial speaker at the biennial conference of the NZ Association of Mathematics Teachers in 1995, and he won a Faculty of Science Teaching Award in 2003 for his involvement as leader of the teaching team for the introductory course Maths 102.

Bill has published extensively in the field of mathematics education. He has served as Editor of the Australasian regional *Mathematics Education Research Journal*, and Assistant Editor for the leading international journal *Educational Studies in Mathematics*. Bill was co-director of the NZIMA programme on 'Senior Secondary and Undergraduate Mathematical Science in New Zealand' (2008-2011), with Megan Clark (VU Wellington).

The research of which Bill is most proud is in three fields: the part he played in the development of Maori mathematics vocabulary development (in the 1980s), his work in showing that 'English as a second language' (ESL) learners suffer more disadvantage the higher they go in mathematics (1990s and 2000s), and his recent work in the professional development of mathematics lecturers. The second of these has included joint work with his wife Pip Neville-Barton, who is an applied linguist. Also some of his recent research has been involved with the mathematical development of senior secondary teachers, and the ways in which language affects the mathematical thinking of research mathematics. Bill undertook a project with Ivan Reilly on the latter topic, supported by a grant from the Marsden Fund.

In 2010, Bill was elected President of ICMI. This led not only to his leadership of the Klein project, but also to initiating and leading the 'Capacity and Networking Project' (CANP). This is a major development initiative on behalf of ICMI and the IMU. Each year a developing region is selected, and a programme of activities is mounted in that region that has the aim of developing a regional self-sustaining network of mathematicians, mathematics educators, teachers, and government curriculum and research people from four or five countries in the region.

The idea behind the CANP initiative is to get key people together, with the aid of the international community, and then offer continued expertise when it is requested. Other activities include public lectures, outreach to schools, and media events in the hosting country. So far, CANP programmes have been run in West Africa (2011) and Central America (2012), and both succeeded beyond expectations. The next one will take place in South East Asia in 2013, and then another one in Africa in 2014. The annual cost of CANP is larger than the whole of the ICMI budget, so significant effort has been made by Bill and others in raising funds, from UNESCO, ICSU and various governments. Benefits will go well beyond the immediate ones: regional groupings have formed that are already organising their own activities, to promote mathematics and mathematics education in the region.

Marston Conder, Judy Paterson, Ivan Reilly and Mike Thomas