

COMMISSION INTERNATIONALE
DE L'ENSEIGNEMENT MATHÉMATIQUE
(THE INTERNATIONAL COMMISSION
ON MATHEMATICAL INSTRUCTION)

**The 2015 ICMI Awards
Felix Klein and Hans Freudenthal Medals**

ICMI is proud to announce the seventh awardees of the Klein and Freudenthal medals.

- The *Felix Klein Medal* for 2015 is awarded to Alan J. Bishop, Emeritus Professor of Education, Monash University, Australia.
- The *Hans Freudenthal Medal* for 2015 is awarded to Jill Adler, University of the Witwatersrand, Johannesburg, South Africa.



Alan J. BISHOP



Jill ADLER

The ICMI Awards, given in each of the odd-numbered year since 2003, are the two prizes created by ICMI for recognising outstanding achievement in mathematics education research. They respectively honour a lifetime achievement (Felix Klein Award, named after the first president of ICMI – 1908–1920) and a major cumulative programme of research (Hans Freudenthal Award, named after the eighth president of ICMI – 1967–1970). By paying tribute to outstanding scholarship in mathematics education, the ICMI Awards serve not only to encourage the efforts of others, but also to contribute to the development of high standards for the field through the public recognition of exemplars. The awards consist of a medal and a certificate, accompanied by a citation.

The ICMI Awards represent the judgement of an (anonymous) jury of distinguished scholars of international stature. The jury for the 2015 Awards was chaired by Professor Carolyn Kieran, Université du Québec à Montréal, Canada.

Citations of the work of the two 2015 medallists can be found below.

Presentation of the medals, and invited addresses of the 2013 & 2015 medallists and of the 2014 Emma Castelnuovo new award (attributed for the first time to Hugh Burkhardt and Malcolm Swan – University of Nottingham, UK) will occur at ICME-13 opening ceremony to be held in Hamburg, on 25th July 2016.

Recipients of ICMI Awards since the creation of the medals in 2003

	Felix Klein medal	Hans Freudenthal medal
2003	Guy Brousseau	Celia Hoyles
2005	Ubiratan D'Ambrosio	Paul Cobb
2007	Jeremy Kilpatrick	Anna Sfard
2009	Gilah Leder	Yves Chevallard
2011	Alan Schoenfeld	Luis Radford
2013	Michèle Artigue	Frederick Leung
2015	Alan Bishop	Jill Adler

Citation for ICMI's 2015 Felix Klein award to Professor Alan J. Bishop

It is with great pleasure that the ICMI Awards Committee hereby announces that the Felix Klein Medal for 2015 is given to Alan J. Bishop, Emeritus Professor of Education, Monash University, Australia, in recognition of his more than forty-five years of sustained, consistent, and outstanding lifetime achievements in mathematics education research and scholarly development. Alan's early research on spatial abilities and visualization became transformed during a sabbatical leave in 1977 to Papua New Guinea where he began to think about the process of mathematical enculturation and how it is carried out in different countries. His subsequent book, *Mathematical Enculturation: A Cultural Perspective on Mathematics Education*, published in 1988, was groundbreaking in that it developed a new conception of mathematics – the notion of mathematics as a cultural product and the cultural values that mathematics embodies. Further evolution of this notion occurred as a result of his co-organizing a special day-long event during the 1988 Sixth *International Congress on Mathematical Education* devoted to "Mathematics, Education, and Society", and which eventually led to successive conferences on the political and social dimensions of mathematics education. Alan Bishop has been instrumental in bringing the political, social, and cultural dimensions of mathematics education to the attention of the field.

Alan Bishop has also contributed substantially to the field by means of the extensive editorial work he has done. In the late 1970s, Hans Freudenthal, who had been the founding editor of *Educational Studies in Mathematics*, tapped Alan to be the second editor. Alan began his editorship of the journal with Volume 10 in 1979, ending it with Volume 20 in 1989. In 1980, he founded and became the series editor of Kluwer's (now Springer's) *Mathematics Education Library*, which currently contains 63 volumes. He was the chief editor of the *International Handbook of Mathematics Education* (1996) and the *Second International Handbook of Mathematics Education* (2003), and he continued as an editor for the *Third International Handbook* (2013). Through his tireless and scholarly work in the area of publication, Alan Bishop has enabled research in mathematics education to become an established field.

Alan Bishop graduated with a B.Sc. in mathematics and science from the University of Southampton in 1961, followed by a Dip. Ed. in mathematics from Loughborough College in 1962.

After obtaining an M.A. in Teaching from Harvard University in 1964, he returned to the UK and earned a Ph.D. degree at the University of Hull in 1969. That same year he took a position at the Department of Education of the University of Cambridge, UK, where he remained for 23 years. In 1992 Alan moved to Monash University, Australia, where as Professor of Education he headed the Math, Science, and Technology Education group for 10 years, while also serving as Associate Dean during various periods. In 2002, Alan Bishop was named Emeritus Professor of Education at Monash and in 2006 was also named Visiting Fellow at Wolfson College at Cambridge.

Alan Bishop has a long history of advising prospective and practicing teachers of mathematics, encouraging them to conduct and use research in their practice. Through the *Association of Teachers of Mathematics* (ATM), he began in the early 1970s to work as a mentor to individual teachers and groups of teachers. He developed full-time M.Ed. and Ph.D. programs in mathematics education at Cambridge and supervised large numbers of doctoral students, many from outside the UK, and several of whom have become distinguished internationally. He always made sure that the graduate students and visiting scholars from different parts of the world would have occasions to meet together socially and discuss ideas, even on Sunday afternoons in his own home. Alan has long been a leader in helping mathematics educators in countries around the world establish communities of inquiry by teaching courses; speaking at conferences and workshops; directing research and development projects; and serving as consultant, project evaluator, and external examiner. Few researchers can match the way in which his research has improved mathematics education through the connections he has forged between research and practice.

During his years in Cambridge, Alan Bishop was active in the ATM and the *British Society for Research into Learning Mathematics*. He was President and Council Chair of the *Mathematical Association*, a founding member of the *British Educational Research Association*, a member of the *Royal Society's Mathematics Education Committee*, and the UK National Representative on the *International Commission for Mathematics Instruction*, advising Government agencies on policies regarding mathematics education. He was a founding member and co-director for 5 years of BACOMET (Basic Components of Mathematics Education for Teachers), an invitational international research group, and was active in the International Group for the *Psychology of Mathematics Education* including being a member of the International Committee. During his years in Australia, he also served on a large number of commissions, committees, boards, and panels: the *Mozambique aid project*, the *Swedish Development Agency*, *Commonwealth Universities Appointments Committees*, the *Australian Council for Educational Research*, to mention just a few.

Alan Bishop's lists of publications and presentations at national and international meetings are equally impressive. Both have to be counted in the hundreds. He has also been the recipient of dozens of research grants. Alan has established a truly impressive record of lifetime achievement in mathematics education research. That record is documented and detailed in the 2008 Springer book that was written by colleagues and ex-students in honor of his career-long contributions to the field, *Critical Issues in Mathematics Education: Major Contributions of Alan Bishop*. As noted by one of the persons who nominated Alan Bishop for the Felix Klein award: "Alan is an excellent scholar and researcher who has shaped our field not only over his lifetime but also over its lifetime, not only in England and Australia (the countries he has called 'home'), but also internationally".

In summary, Alan J. Bishop is an eminently worthy recipient of the Felix Klein Medal for 2015.

Citation for ICMI's 2015 Hans Freudenthal award to Professor Jill Adler

It is with great pleasure that the ICMI Awards Committee hereby announces that the Hans Freudenthal Medal for 2015 is given to Professor Jill Adler, FRF Chair of Mathematics Education,

University of the Witwatersrand, South Africa, in recognition of her outstanding research program dedicated to improving the teaching and learning of mathematics in South Africa – from her 1990s ground-breaking, sociocultural research on the inherent dilemmas of teaching mathematics in multilingual classrooms through to her subsequent focus on problems related to mathematical knowledge for teaching and mathematics teacher professional development. Jill’s research of multilingual classrooms during a period of change in South Africa puts into stark relief the tensions involved in teaching and learning mathematics in classrooms where the language of instruction is different from the language of teachers’ and students’ every-day lives. In her 2001 book, *Teaching Mathematics in Multilingual Classrooms*, she displays the strong theoretical grounding that has served to advance the field’s understanding of the relationship between language and mathematics in the classroom. During the years from 1996 onward, Jill spearheaded several large-scale teacher development projects. The most recent one, begun in 2009, called the *Wits Maths Connect Secondary project*, aims to further develop mathematics teaching practice at the secondary level so as to enable more learners from disadvantaged communities to qualify for the study of mathematics-related courses at university. This ongoing research and development project is a further testament to Jill’s unstinting efforts to face head-on the challenges of improving mathematics teaching in post-apartheid South Africa — efforts that have been recognized by several awards over the years, including the *University of the Witwatersrand Vice Chancellor’s Research Award* for 2003, the FRF Chair of Mathematics Education in 2009, the Gold Medal for Science in the Service of Society from the *Academy of Science of South Africa* in 2012, and the *Svend Pedersen Lecture Award* in Mathematics Education from Stockholm University in 2015. For the inspiring, persistent, and scholarly leadership that Jill Adler has provided to the field of mathematics education research and practice in South Africa and beyond, she is truly deserving of the Hans Freudenthal medal for 2015.

Jill Adler, who was born in Johannesburg, graduated from the University of the Witwatersrand with a B.Sc. in mathematics and psychology in 1972. She taught secondary school mathematics for three years in a so-called ‘coloured’ school in Cape Town – an experience that she credits for strengthening her concerns about educational inequality and leading her to work in that direction. This was followed by ten years spent on developing materials for adults and alienated youth excluded from school mathematics learning in apartheid South Africa. In 1985, she obtained an M.Ed. from the University of the Witwatersrand for her dissertation titled, *Mathematics by newspaper in South Africa: junior secondary mathematics for adults through the medium of a newspaper*. Four years later, Jill began teaching as Lecturer in the Education Department of the same university. Soon afterward she began her doctoral research, which culminated in a Ph.D. in 1996 from the University of the Witwatersrand for her dissertation titled, *Secondary teachers’ knowledge of the dynamics of teaching and learning mathematics in multilingual classrooms*. In July 1997, she was appointed to the Sentrachem Chair of Mathematics Education, and in 2002, named Professor of Mathematics Education. In 2009 was awarded the prestigious FRF Chair of Mathematics Education. From 2007 to 2014, Jill Adler also held a part-time joint appointment as Chair of Mathematics Education at Kings College in London.

Jill Adler was the first and is now one of two South African educational researchers to be awarded an ‘A’ rating from the *National Research Foundation* of South Africa indicating “researchers who are unequivocally recognized by their peers as leading international scholars in their field for the high quality and impact of their research outputs”. Her work epitomizes what Wits University has called the “engaged scholar”, that is, doing rigorous and theoretically rich research at the cutting edge of international work in the field which at the same time contributes to critical areas of local and regional need in education. In addition to this international research excellence, she has played an outstanding leadership role in growing mathematics education research in South Africa, Africa, and beyond. Her development of research teams involving graduate students and

post-doctoral fellows, along with the mentoring of numerous Ph.D. and Master's students, have all added to the human research capacity she has been instrumental in creating in Southern Africa.

Jill Adler's contributions to the development of research and practice have earned her leadership positions in renowned international and national professional associations. For example, between 2003 and 2009 she was Vice President of the *International Commission for Mathematical Instruction*, and during this period launched the first African ICMI regional congress, contributing significantly to participation from African countries in ICMI, and enabling development of mathematics education research in the region. Between 1994 and 1998, she was a member of the International Committee for the *Psychology of Mathematics Education* and served as Program Chair for the 1998 PME conference in Stellenbosch. In addition to having played key leadership roles in several national committees, she is a member of the prestigious *Academy of Science* of South Africa. An indication of her exceptional standing in the international community is the number of invitations she has received to deliver keynote lectures on her research, as for example, at the *International Congress of Mathematicians* in 2010 in India. For the 2004 ICME conference, she was invited to serve as Team Chair for the *International Survey Panel of research on mathematics teacher education*. Since entering academia in 1989, Jill Adler has produced more than 125 publications, all of which attest to the high quality and dedicated focus of her research activity.

In summary, Jill Adler is an eminently worthy recipient of the Hans Freudenthal Medal for 2015.