



Communications

Winner of the 2012 ANZIAM Medal

The ANZIAM Medal is the premier award offered by ANZIAM. It is presented biennially. The ANZIAM medal is awarded on the basis of a combination of research achievements, activities enhancing applied or industrial mathematics or both, and contributions to ANZIAM. This year, it was bestowed upon Robert McKibbin, Professor of Applied Mathematics at the Institute of Information and Mathematical Sciences, Massey University, on the Auckland campus in New Zealand.

Citation for the 2012 ANZIAM Medal



Robert was born in New Zealand and did his first degrees in mathematics, up to the Masters degree, at the University of Canterbury. After some teaching in Papua New Guinea, he then completed his PhD in 1982 in the area of geothermal modelling in the Department of Theoretical and Applied Mechanics (now the Department of Engineering Science) at the University of Auckland, where he subsequently became Senior Lecturer. Robert moved to Massey University in 1991, first to Palmerston North, and later transferring to Massey University's expanding Auckland campus in 2001. He was appointed Professor of Applied Mathematics in 1996.

Over the past two decades, Robert has been one of the pre-eminent applied mathematicians in New Zealand, with a particular focus on geophysical, geothermal and industrial applications. His mathematical work ranges from geothermal fluid dynamics and hydrothermal eruptions, to the modelling of ground subsidence and aluminium smelting cells. He is highly regarded for his early work in the 1980s in hydrothermal eruptions which appeared in the *Journal of Geophysical Research* and was presented in a way that made his research accessible to practitioners. His work has attracted significant funding, and national and international recognition through numerous invitations to speak at international applied mathematics conferences.

He has made significant impact in the modelling of the distribution of volcanic dust from eruptions, and has several Japanese research collaborators. He has visited Japan on many occasions including in 2007 as part of the New Zealand–Japanese Scientist Exchange Program. His work in this area is based on accurately modelling the fundamental physical processes with novel and original uses of the advection-diffusion equation. The same modelling arises from other industrially-based problems, such as pollen distribution and spray drift and its capture by

shelter belts. The practical impact of his research can be seen in many of the reports from the Mathematics-in-Industry Study Group meetings. He has also been extremely active in extending the Mathematics-in-Industry Study Group activities to other countries in South East Asia, notably Indonesia and Thailand.

Robert has supervised more than 20 PhD and MSc students, in many diverse areas of applied mathematics, all with a strong industrial applied mathematics focus. He has also supervised a large number of undergraduate industrial projects to inspire a whole generation of New Zealand applied mathematics students. He is an extremely supportive mentor, and very much a team player in collaborative activities. Throughout Australia and New Zealand, there are many active applied mathematicians who attest to have been strongly influenced by Robert.

He has been a leader in ANZIAM for many years and was Chair from 2004 until 2006, and his commitment to both ANZIAM and the Royal Society of New Zealand is seen through the large amount of his time that he devotes to these organisations. His participation in the Mathematics-in-Industry Study Group meetings is one of the central reasons that they have been so successful. He has been the Director of the Centre for Mathematical Modelling and the Centre for Mathematics in Industry at Massey University for a total of 12 years and one of the major forces that have steered New Zealand applied mathematics towards industrial applications.

There are few other applied mathematicians in New Zealand who have shown more devotion and service to the field than has Robert. Through his enthusiasm, energy and sustained achievement, he has demonstrated a lifelong commitment to the applied and industrial mathematics profession, to the extent that he well and truly meets the criteria for this award. The selection panel unanimously recommends that Professor Robert McKibbin be awarded the ANZIAM Medal for 2012.

The 2012 ANZIAM Medal Selection Committee consisted of James Hill, Graeme Wake and Bob Anderssen.