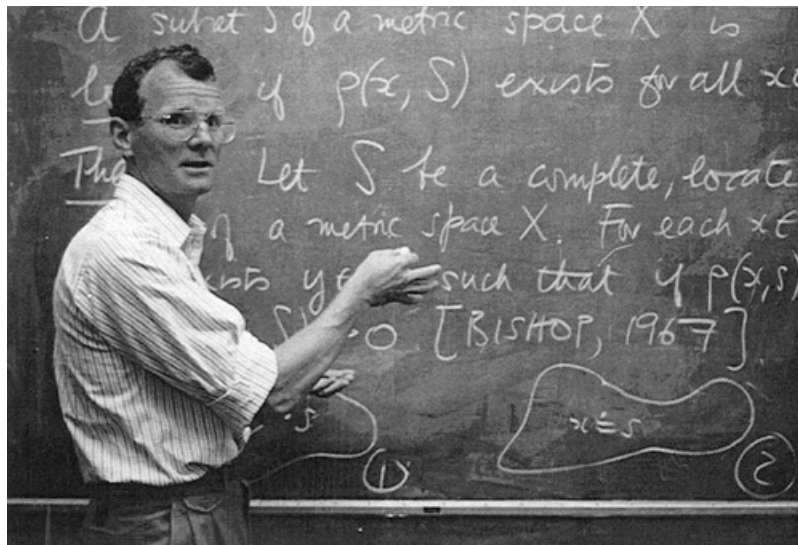**Centrefold**

Douglas Bridges

Douglas Bridges has been an active member of the mathematics community in New Zealand since he took up the Chair of Mathematics at the University of Waikato in 1989. Since this time he has figured significantly in the affairs of this community and has made people aware of the presence of mathematics from the constructive point of view. Douglas was already known to some of us before he came in 1989 as he had been a Sabbatical Visitor at Massey University during the last three months of 1976 and 1981.

Born in Edinburgh in December 1945, Douglas was educated at George Watson's College and was joint Dux of the College in his final year in 1963. He did his undergraduate studies at the University of Edinburgh (1963-67) where he majored in mathematics. This resulted in a B.Sc. degree with First Class Honours. From Edinburgh he went to the University of Newcastle-upon-Tyne (1967-68) where he completed his M.Sc with a thesis titled "Algebraic and spatial *-isomorphisms between von Neumann algebras". Returning to the University of Edinburgh (1968-69), he undertook studies for a DipEd. This was immediately put to use at Clifton College in Bristol (1969-71) where he was mathematics master and House Tutor. He then went to Oxford University in 1972 to undertake DPhil studies. He obtained his doctorate in 1975 with a thesis titled "Constructive mathematics - its set theory and practice".

After completing his doctorate, he worked for a short while as a mathematician at GCHQ in Cheltenham (1975). He then started his academic career at the University of Buckingham where he began as a lecturer in 1975. He quickly rose through the ranks becoming Senior Lecturer in 1979, and was promoted to a Personal Chair in Mathematics in 1982. It was from the University of Buckingham that he came to the University of Waikato in 1989 to take up the Chair of Mathematics. He was Chairperson of the (then) Department of Mathematics and Statistics from 1989 to 1996.

Vivien (from Palmerston North) and Douglas were married in Oxford in 1979 and they have three children; two sons and a daughter. His hobbies are classical music (especially Schubert and Beethoven), singing, and various sports including running, golf, cricket, tennis, and soccer. He holds New Zealand Level 1 Coaching Certificates in soccer and cricket, and a Waikato Soccer Referees Badge. His weekends are seldom spent quietly: on winter Saturdays he can be seen refereeing senior soccer matches; on summer ones he will be umpiring high school cricket; and on many Sundays he leads the 8.00 am service at St Francis Church in Hillcrest.

For nearly thirty years Douglas has been an active researcher in constructive mathematics. This field originated in controversy, in 1907, when Brouwer first put forward the intuitionistic thesis that in mathematics "existence" should be interpreted strictly and uniquely as "constructibility", so that the only admissible objects in mathematics were those constructed by the human intelligence. Such a view of mathematics led Brouwer and other constructivists to reject certain laws of classical logic, and eventually to the formulation of a logic, known as intuitionistic logic, whose laws reflect constructive practice. Nowadays Douglas and several other leading researchers in constructive mathematics tend to view their

activity as mathematics carried out with whatever mathematical objects are at hand, but using only intuitionistic logic. The advantage of using this logic is that the theorems and their proofs have more interpretations; in particular, they can be interpreted in recursive mathematics, classical (traditional) mathematics, and any of the several formal systems designed to model computable analysis. The disadvantage (if it is one) is that certain principles of classical logic - most famously, the law of excluded middle - cannot be used.

Douglas has carried out constructive research in a number of areas of analysis, with particular emphasis on operator theory and measure theory. In addition, he has research papers on mathematical economics, computability theory, and formal set theory.

While at Waikato he has supervised a number of graduate students. One of his PhD students recently completed a thesis on constructive PDE theory; his current student, supported by a grant from the Marsden Fund, is studying constructive aspects of operator algebras; and another two will shortly start on constructive operator theory and Banach algebra theory, respectively.

Douglas has over 70 publications in refereed international journals. He is on the editorial boards of the New Zealand Journal of Mathematics, Philisophica Mathematica, and the Journal of Universal Computer Science. He has written a total of six books in topics such as constructive mathematics, computability, and real analysis. A reception was recently held to mark the publication of his latest book titled "Foundations of Real and Abstract Analysis".

He has held Visiting positions at institutions all over the world. These institutions include New Mexico State University, Oxford University, University of Queensland, Japan Advanced Institute for Science and Technology, Technische Universität in Vienna, and Fern Universität in Hagen, Germany. More recently, he was the Rani and Asutosh Ganguli Visiting Professor at the University of Calcutta. He has been an invited speaker at numerous conferences, the most recent being at conferences in Padova (Italy), and Essen (Germany).

At the national level, Douglas was President of the New Zealand Mathematical Society from 1995 to 1997. He is also on the Royal Society Standing Committee on Mathematical and Information Sciences. He was an Invited Member on the International Advisory Panel for the Faculty of Information Technology at the University of Malaysia, Sarawak.

He was instrumental with Professor C. S. Calude (Department of Computer Science, University of Auckland) in setting up CDMTCS, the Centre for Discrete Mathematics and Theoretical Computer Science. This Centre was founded in 1995 to support basic research on the interface between mathematics and computing.

The contribution of Douglas to the mathematics community has been significant and we expect this to continue.

Ernie Kalnins and Stephen Joe