IAN DOUGLAS COOPE

Associate Professor Ian Coope (Department of Mathematics and Statistics, University of Canterbury) has chosen to take early retirement from May 2010 and his departure will leave a big gap in our high level teaching and research in the field of computational matrix algebra.

Ian hails from the Manchester area and crossed the Pennines to attend Leeds University in 1968. At Leeds he was awarded an Akroyd Scholarship prize in 1969, and in 1971 he graduated with a B.Sc. Honours degree in Computational Science and Mathematics. Ian then went on to complete his doctorate in Unconstrained Optimization in 1976, and a Research Fellowship in the Department of Mathematics at The University of Dundee. At Dundee he joined an illustrious group of numerical mathematicians which included such names as A. R. Mitchell, D. F. Griffiths, J. D. Lambert, G. A. Watson, and Roger Fletcher. The list of Senior Visiting Fellows from that era reads like a Who's Who of the international field of Numerical Mathematics, and Dundee was recognised as a centre of excellence for Numerical Mathematics.

In 1979 Ian was among several candidates from Dundee applying for the post of Lecturer at the University of Canterbury. Obviously he got the job, but has since been joined in Christchurch by others from the "Dundee mafia" like David Wall at Canterbury, and Keith Unsworth at Lincoln.

Ian arrived in Christchurch in 1979 with his statistician wife, Pat, to join the ranks of the Department of Mathematics and Statistics under the larger than life headship of Professor Gordon Petersen.

Ian is one of those somewhat rare breed of person who is not only a talented mathematician but is also an excellent computer scientist who can grasp the essential aspects of algorithms and produce code that can fit on the back of an IBM 80 column card. He is also very good at tackling other peoples' problems which is evidenced by his collaborative research in electrical engineering, bioengineering, robotics, statistics, and with other mathematics colleagues. His main area of research has been in optimization where he has published extensively with Chris Price, now a colleague in the Department.

His standing in the world of optimization in particular, is such, that he has held invited positions in the NATO Advanced Research institute on Nonlinear Optimization at Cambridge, Australian National University, in Germany and Hong Kong

He has received University of Canterbury Erskine awards, and held visiting positions at AERE Harwell; University of Waterloo; Numerical Optimization Centre, University of Hertfordshire; Government Geotechnical Division, Hong Kong; Simon Fraser University, Vancouver; ANU and the School of Computing, Univerity of Leeds.

Ian has also been the catalyst for visits to Canterbury, often multiple, of leading figures in his field. It is an indication of his standing that people such as Alistair Watson from Dundee, John Dennis from Rice University, Mike Powell from Cambridge, Charles Broyden from Essex University, Peter Graves-Morris

from the University of Southampton, and Phillipe Toint from Namur in Belgium came to Canterbury as Erskine Fellows.

Ian has not neglected his administrative commitments and was a member of the University's Academic Board, and the Discipline Committee. He has been a stalwart of the University Staff Club, and was President 1996 to 1997. He has served on numerous Departmental and latterly, College of Engineering committees.

He has made a contribution to the New Zealand Mathematical Society, being first Associate and then Editor for the newsletter, a member of the Council and organiser of the NZMS pre-doctoral Thesis Competition (1983/84)

He also served as a Moderator for the New Zealand Education and Scholarship Trust (NZEST) for the Mathematics with Statistics paper from 1992 to 1997.

Ian has flirted with kayaking, and has had a few close calls here, and now plays tennis. He and Pat have opened their home to friends and colleagues over the years, and have ensured contact between current and retired staff of the University and with a wider circle of friends and colleagues. His wife Pat continues her work as a statistician and their son, Scott, currently works in the USA and daughter, Jenny, in England.

In his own words Ian's research interests lie mostly in the general areas of computational mathematics and optimization. He has published work and engaged in consultancy in: the theory, development and applications of numerical methods for constrained and unconstrained optimization, nonlinear equations, function approximation, semi-infinite programming, spectral methods, linear algebra, curve interpolation, nonlinear splines and statistical computing. Ian was involved with MATLAB from the very first FORTRAN code to the latest versions. Ian successfully managing to shoe horn the FORTRAN version, obtained from Cleve Moler, on to the first early PCs. He is in his element in producing very compact but efficient code.

In recent times he has taken up a keen interest in the mathematics of finance, and given several courses on this topic. He has an impressive list of graduate students and is currently supervising Rachael Tappenden in her work on applications of computational matrix algebra techniques, including optimization, to image and signal reconstruction. This work is part of a surge in world wide interest in applying matrix algebra techniques to algorithms for Magnetic Resonance Imaging and Computer aided Tomography.

Since retiring in May, Ian now holds an Adjunct Associate Professorship with the University of Canterbury.

Bob Broughton
David Wall