

George Alistair Watson, BSc, MSc(Edin), PhD(AusNatUni). FIMA
30 September 1942 – 11 August 2019

Alistair Watson grew up in Perthshire, attending Grandtully Primary School and later Breadalbane Academy in Aberfeldy, where he was School Captain and Joint Dux. With an aptitude for Maths and Science, he set his sights on studying Engineering at University, intending to become an aeronautical engineer, only to be told by his science teacher, “engineers are ten a penny; do pure science”. He followed this advice, “describing it as the only piece of career advice I ever got” by applying to Edinburgh and Glasgow to study Physics. He was drawn to Edinburgh University (partly because of his support for Hibernian FC) and accepted that offer, commencing his degree in 1960. After two years, he decided he preferred Maths to Physics and switched to a degree in Mathematical Sciences. During his third year, he had a choice between Numerical Analysis and Statistics. Having tried both for a while, he opted to continue with the numerical analysis option, covering topics including rounding errors, interpolation, orthogonal expansions, Fourier and Chebyshev series, finite differences, various difference operators, numerical integration, initial value problems for ordinary differential equations, iterative methods for solving equations, the power method for eigenvalue problems, and Gaussian elimination. He graduated in 1964 with a first-class Honours degree in Mathematical Sciences.

Then along came one of those opportunities that changes lives. He was about to take up a job with ICI when he was invited to visit the University Computer Unit. He observed later that “there was no computer there at the time, so what there was to see was not immediately obvious, but I was introduced to Mike Osborne and at some point he said there was a vacancy for a Demonstrator and indicated that if I was interested, I could likely get it, with the opportunity to do an MSc”. He applied and was hired for the princely salary of £900. Although there was no computer at the time, there was a landline link to the University of Manchester Atlas Computer and part of his job included examining output when it arrived back from Manchester, and helping users to identify programming errors. Unfortunately the link was somewhat unreliable, and for a time ordinary mail was used to send programs. He also embarked on research with Osborne who had widened his interests to include Chebyshev approximation, with Alastair, as part of his MSc project, looking into linear Chebyshev approximation problems, and the way in which linear programming could be used. He wrote programmes in Atlas Autocode to run on the Manchester Atlas, but also on one occasion travelled to Glasgow to run some programmes on the KDF9 there, for which an Atlas Autocode compiler had been written.

After a year, Osborne returned to Australia, but encouraged Alistair to apply for a scholarship to join him in Canberra to study for a PhD at the Australian National University and in June 1966 after 32 days at sea he arrived on the distant shores. He always spoke fondly of his time there, managing to fit in some mathematics around sport—squash and football (he captained the University team) and, of course music, where he was a member of Canberra Philharmonic Society performing Gilbert and Sullivan and other musicals. He returned to the UK in 1969, to take up a Research Fellowship at the University of Dundee. Mike continued to be a major influence on the direction of Alistair’s research interests and they collaborated over the years. This was usually by mail or email but Mike had a sabbatical in Dundee in 1971 and a shorter visit in 1997, while Alistair had a sabbatical in Australia and New Zealand in 1983.

Alistair joined a very strong Numerical Analysis Group at Dundee led by Ron Mitchell. It was probably the leading centre in the UK at this time. Indeed the academic year 1970-71 was a special one for numerical analysis in Dundee, and really put Dundee (and Scotland) on the numerical analysis map. Mitchell obtained funding from the UK Science Research Council for a Numerical Analysis Year in Dundee. The aim was to promote the theory of numerical methods and to upgrade the study of numerical analysis in British universities and technical colleges. This was done by arranging lecture courses, seminars and conferences in Dundee so that workers in the field would have the opportunity to hear about and to discuss recent research. Some 34 of the world’s leading numerical analysts visited Dundee during this period, some for short periods and others for longer periods up to the full year, while those holding Research Fellowships by 1970, included Sean McKee, John Morris and Nancy Nichols.

Alistair's speciality was Approximation Theory which is a cornerstone of Numerical Analysis, a branch of mathematics concerned with the theoretical foundations of algorithms for solving scientific problems. Of course algorithms had been in use long before the days of Newton but the change that came in the 50s & 60s was the analysis - proofs that distinguished those that would always work from those that worked only under favourable circumstances. The subject grew exponentially with the power of computers.

From 1975 Alastair was a key player in the biennial series of Dundee Numerical Analysis conferences. In 1965 Ron Mitchell (then at St Andrews), Mike Osborne and a few others decided it would be a good idea to have a conference on Numerical Analysis - the first of its kind in the UK - to bring like-minded people together. It attracted 25 participants. A follow-up two years later attracted 85 participants. After that Ron moved to Dundee, bringing the conference with him and it continued there until 2007. Alistair ran it singlehanded from 77–81. This was an onerous task since it had become a truly international meeting attracting well over 200 people, from post-docs to super-stars. This involved substantial paperwork, not to mention the timetabling headache of arranging about 100 talks in 4 days without too many conflicts of interest. This was long before the days of e-mail and word-processors. David Griffiths took over the reins in 1983 while Alistair was on sabbatical and from 1985 until 2007 Alistair and David joined forces. After the 2007 meeting, the 22nd, retirement was looming. Colleagues at the University of Strathclyde took over the organization of the series, which continues to thrive.

More widely, Alistair's contributions to the department, the university and the maths community at large can't be overstated.

He wrote or co-wrote about 140 papers and two text books, and edited or co-edited 15 books, mainly conference proceedings. In 1988 he was promoted by Dundee to a Personal Chair in Approximation Theory and in 1993, following the retiral of Ron Mitchell, to the Chair of Numerical Analysis. He was co-editor of the UK Numerical Analysis Journal from 1989 to 2004. This was a considerable task organizing up to 20 peer-reviewed papers to be published every 4 months. He was also on the Editorial Boards of 9 or 10 other journals.

His election to the Royal Society of Edinburgh came in 1996.

On the Admin side: he had two spells as Head of Department: from 1992–1998 (which included a tricky time when the computer scientists split off & formed their own department) and also 2004–2006. During this time he showed his flair for organisation and people-skills – preparing meticulously, ensuring that meetings went smoothly and was not above using his ability to tell bad jokes well to defuse situations.

He sat on most of the important University committees, also those of the Edinburgh Mathematical Society & many others too numerous to list.

He retired in 2007 with the title of Emeritus Professor, often telling people that "Emeritus" comes from Latin, "e" meaning "out" and "meritus" meaning "deserves to be"

Alistair met his wife Hilary in 1970 at a party in Dundee and they married quietly in Skye in 1971. Their daughter Kirsty was born in 1989.

His keen interest in sport continued during his Dundee years. For a while he played football and also squash. After a sabbatical in New Zealand in 1983, he took up running and in 1984 he ran the Dundee Marathon finishing in a time of 3 hours 20 minutes.

In his biographical notes, Alistair says that in retirement he was happy pottering in the garden, researching his family tree, and continuing his love of football and other sports by watching them on TV, doing (attempting) the Times crossword and tough Sudokos. He enjoyed musical and theatrical events in the local area, particularly opera live from the Met in New York at Dundee Contemporary Arts Centre and continued his long love of the work of Gilbert and Sullivan for a while with visits to the Buxton and Harrogate Festivals.

Alastair had a few brushes with ill-health post-retirement: skin cancer in 2008 - serendipitously diagnosed after a swim in the Amazon with colleagues attending an international conference in Brazil (including Jose Cuminato, now a Corresponding FRSE) who expressed concern about a mole on his back; a bulging disc in 2011, treated by surgery in 2012; nerve damage after a fall in 2015 and finally, in 2019, mesothelioma (apparently caused by exposure to asbestos a long time ago).

Reflecting on his life Alastair noted “we moved in 2013 to a bungalow overlooking the Tay. The house (and garden) had many defects and needed a lot of work, but we set about getting it as we wanted. Maybe this is still incomplete. There is a certain pleasing symmetry that I grew up in a house overlooking the Tay and may end my days in another house overlooking another stretch of the Tay. As I look back, I have been incredibly fortunate in so many ways.”

David Griffiths, Sean McKee, Hilary Watson

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