Emeritus Professor John Makepeace Bennett

31 July 1921 – 9 December 2010

Emeritus Professor John Bennett AO was an internationally recognised Australian computing pioneer and numerical analyst. Starting at the University of Sydney in 1956, in 1961 he became Australia's first Professor of Computing with an initial title of Professor of Physics (Electronic Computing) though in 1982 this was changed to Professor of Computer Science and Head of the Basser Department of Computer Science, a position he held until his formal retirement in 1986. Born in Warwick Queensland, he attended the Southport School. This was followed by a BE (Civil). During World War II he used his technical bent to serve in the RAAF in radar units. Following the war, he returned to the University of Queensland to study Electrical and Mechanical Engineering and Mathematics.

John joined the Brisbane City Electric Light Company where, inspired by a radio talk about the Automatic Computing Engine (ACE) being developed at the National Physical Laboratory in Teddington, he saw a possible solution to the repetitive calculations of his employer. In 1947 he set sail for Cambridge, where he became the first PhD student of Sir Maurice Wilkes (who predeceased him by just two weeks). Here he was responsible for the design, construction and testing of part of the Electronic Delay Storage Automatic Calculator (EDSAC), one of the world's first computers. He then carried out the first structural engineering calculations by computer as part of his PhD. In Cambridge he also pioneered the use of digital computers for X-ray crystallography in collaboration with John Kendrew (later a Nobel prize winner). From Cambridge he moved in 1950 to Ferranti in Manchester to work on the Mark 1*. In 1952, he married Mary Elkington, an economist working

at Ferranti, and in 1953 John moved to Ferranti's London Computer Laboratory, where he worked alongside Charles Owen who went on to design the IBM 360/30.

In January 1956, John started as Numerical Analyst in the Adolph Basser Laboratory at the University of Sydney to head operations on SILLIAC (Sydney ILLInois Automatic Computer), having been recruited by Professor Harry Messel, then head of Physics at the University. The computer, generously funded by Dr Basser, was needed for the calculations for theoretical and experimental physics. Through the connections of Dr John Blatt in Physics, the University was able to obtain all that was necessary to build the Sydney version of ILLIAC and the first calculations were performed in July 1956. Short courses on computing were run in 1957 and 1958 but in 1959 a Postgraduate Diploma in Numerical Analysis and Automatic Computing was instituted. The Laboratories became an ever-expanding centre for teaching computer science and for computing services for the University though the latter were split off in 1972 to become the University Computing Centre.

A further generous donation by Dr and Mrs Cecil Green of Texas assisted with the purchase of an English Electric KDF9 in 1964. In time, this was followed by the purchase of many further computers, linked by a revolutionary home-grown network and partially distributed operating system, Bassernet. This was one of the world's first local area networks. John set up a link from this to ARPANET (the forerunner of the Internet) in Hawaii in the early 1970s. It is perhaps fitting that his son Chris works in streaming media via broadband over the internet. Colleague Professor Arthur Sale (now at Tasmania) has similarly had a long-time interest in cheap access to broadband for the masses.

From the time he arrived at Basser, with which his name became synonymous, John's enduring vision was to educate students, industry and government in the powers of computers — using whatever computers were available. In particular, he expended considerable energy in demonstrating the use of computers for business and running courses for their staff. He established the Australian Computing Society and was its first President. He co-edited the history, *Computing in Australia* (1994). John's AO in 1983 was for his visionary contributions towards the development of computing in Australia.

John was gregarious and he invited many eminent visitors to Australia to educate staff, students and industry. They included Sir Maurice Wilkes and Professor Sandy Douglas, both English computing pioneers, numerical analysts such as Professor Leslie Fox from Oxford and Professor Ailsa Land of London School of Economics (LSE) and Professor Frank Land also of LSE, an early information systems expert. John had an insatiable curiosity and used his keen intellect to see approaches and solutions to a wide variety of computational problems often inspired by his many visitors. A chance question from one led to his colleague, Dr Don Herbison-Evans, spending many years computerising dance notation and another colleague, Dr Ian Parkin, writing more theoretical graphics papers.

At the time of his retirement, John had over 100 research articles, many written with collaborators. Though knowledgeable about many things, his abiding passion was matrices. He encouraged colleague Professor Jennie Seberry (now

at the University of Wollongong) in her work on Hadamard matrices and other combinatoric research. His friend Ailsa Land's pioneering work in integer programming inspired John's first PhD student, Dr Bob Dakin, to spend many years researching the Travelling Salesman Problem. His second PhD student, Professor Jenny Edwards (UTS), furthered the integer programming work on large sparse matrices especially in the early days of parallel programming. Another early PhD student, Professor Chung Yuen (Singapore), followed John's hardware interests, becoming an expert on scalable computing. John encouraged colleague Professor Allan Bromley in his research into hardware, especially historical computing devices and the work of the 19th century computing pioneer Charles Babbage. John took great delight in the subsequent influence of the many descendants of Babbage on aspects of Australian life.

Though formally retired for some 25 years, John remained on top of the latest developments such as quantum computing. For many years he continued to attend conferences and seminars, asking his trademark penetrating questions. He was always an educator and visionary and an inspiration to all who came into contact with him.

John is survived by his wife Mary, son Christopher, daughters Ann, Sally and Jane and their families.

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