



Obituaries

Charles Angas Hurst AM FAA

22 September 1923 – 19 October 2011



Professor Angas Hurst was a distinguished Australian mathematical physicist who was an international leader in research and a major contributor to the world scientific community. He was born in Unley Park, South Australia, but grew up in Hawthorn, Victoria, where he attended Scotch College and was dux of both the Preparatory and Senior Schools. His studies at The University of Melbourne were interrupted by the war years, when he saw active service as commander of a radar station on Manus Island, Papua New Guinea, with the rank of Flight Lieutenant, and in subsequent years rose to the rank of Wing Commander through The University of Adelaide Squadron of the RAAF. He completed his degrees at The University of Melbourne (BA(Hons) 1947, BSc 1948), and subsequently pursued postgraduate studies at the University of Cambridge (PhD 1952). Between 1952 and 1956 he was Senior Lecturer in the Mathematics Department at The University of Melbourne, and in 1957 accepted the position of Senior Lecturer in the Department of Mathematical Physics at The University of Adelaide. He held the position of Professor from 1964 until his retirement in 1988. He was appointed as a Fellow of the Australian Academy of Sciences in 1972, was awarded an honorary DSc by The University of Melbourne in 1991, and in the Australia Day Honours list 2003 was awarded Member (AM) in the General Division 'for service to science, particularly in the field of mathematical physics as an educator, researcher and administrator'.

Angas played an extensive and distinguished part in the management of The University of Adelaide and contributed actively to his local community. With his co-Professor of Mathematical Physics at The University of Adelaide (Professor H.S. Green) he was responsible for the establishment of mathematical physics within

Australia as a research field of international distinction. His research contributions were recognised by the international community through many visiting positions at leading institutions including the University of Toronto (1964), University of Miami (Centre for Theoretical Physics, 1966–1968), Indiana University (1977–1978), Centre de Physique Theorique Luminy, France (1981), and his selection as the Schrödinger lecturer at the University of Vienna in 1981. He was a fine ambassador for his country and for Australian science. During his research career he produced 90 publications, including two books.

Angas's PhD at Cambridge was a seminal work on quantum field theory showing the divergence of perturbation expansions for any value of the coupling constant. He introduced the notion that the series was an asymptotic expansion that was Borel summable, a fact not proved until decades later. His work pre-dated that of W. Thirring, who at that time (1951–1952) was a scientific assistant to W. Pauli at ETH Zurich, and also A. Petermann, both of whom were working on similar problems. With H.S. Green he developed the Pfaffian approach to the exact solution of the two dimensional Ising model. His best-known result is probably the Griffith, Hurst, Sherman (GHS) inequalities, which establish the concavity of magnetization for Ising ferromagnets. Their methods also applied to Euclidean field theory and became a fundamental tool in the area of constructive quantum field theory. Other research topics to which Angas made contributions include relativistic wave equations, operator algebra approaches to quantum field theory, infinite-dimensional Lie algebras and their representations, and in various topics in statistical mechanics.

Angas's commitment to academic life extended beyond the disciplines of physics and mathematical physics. He served the Australian scientific community generally as a Member of the Council of the Academy of Science (1983–1986) and as Vice-President in 1984 and 1985. He was always interested in fostering links across disciplines and did so particularly with mathematics as a founding member (1956) of the Australian Mathematical Society. Even before he completed his PhD he was the Australian representative at the inaugural International Mathematical Union general assembly which was held in the Palace of Farnesina (Rome) in March 1952. In addition to his role as a Professor and Head of Department within The University of Adelaide, he provided leadership in ways that went well beyond the demands of his position. He chaired the senior committee of the University, the Education Committee, from 1973 to 1976 and served as a member of the Council of the University from 1975 to 1978. The Council of the University appointed him Acting Vice Chancellor in 1985, an indication of the high esteem in which he was held within the University. He was then appointed Pro-Vice Chancellor (Research) from 1986 to 1988 and was responsible for a number of influential reports including the establishment of the University's animal ethics committee. He was a member of The University of Adelaide (student) Union House Committee from 1964 to 1967, a member of the Union Council from 1964 to 1973 and chaired the Union Planning Committee from 1965 to 1973. He was concerned with the welfare of postgraduate students and was one of the prime movers for establishing the first Graduate College of The University of Adelaide (Kathleen Lumley College); he served on the College Council from its inception in 1971 until 1974.

Angas was also involved in community service in both church and political life. He was treasurer of the Clayton-Wesley Uniting Church, and was greatly admired for his compassion and wisdom in the service of the church. He served as treasurer of the Norwood Branch of the Australian Labor Party, and was active in campaigning for the ALP at election times. His membership of the ALP was one way in which he tried to influence the world and express his concern for the society in which he lived. He was passionate in combating injustice at all levels, and there have been many who have been touched by his goodwill and compassion. He was an inspiration and role model to his students, colleagues and friends.

Angas is survived by his wife Barbara, and his children John, Elinor and Rachel. The mathematical physics community acknowledges and honours his substantial contribution as a leader in Australian academic life as well his role as a researcher and educator in mathematical physics.

A.L. Carey, P. Bouwknegt (The Australian National University) and M.A. Lohe (The University of Adelaide)