

Professor Brian D Sleeman FRSE

Colleagues will be sorry to learn of the death, on 19 July 2021, of Emeritus Professor Brian Sleeman, former Professor of Applied Mathematics. The following tribute to has been heavily drawn on from his Retirement Resolution presented to the Senate in 2004.

Brian Sleeman was born in London in August 1939. He obtained a first-class BSc in Mathematics from Battersea College of Advanced Technology (later the University of Surrey) in 1963, and went on to obtain his PhD in Mathematics from the University of London in 1966, being awarded his DSc degree in Mathematics at the University of Dundee in 1975.

Most of Brian's professional life was spent at the University of Dundee (from 1965 to 1995), where he started as Assistant Lecturer, moving quickly through the ranks to become Professor of Applied Analysis in 1978. At Dundee he occupied several leadership functions, as Head of Department from 1987 to 1990 and as Director of the Centre for Nonlinear Systems in Biology from 1993 to 1995. In 1993 he became Ivory Professor of Mathematics, a position which he kept until 1995, when he joined the University of Leeds as Professor of Applied Mathematics.

Brian Sleeman boasted a long and productive scientific career receiving a great number of honours and awards. He occupied several distinguished visiting positions, including Honorary Professorships at Wuhan University and Jiangnan University (China), an Erskine Fellowship at the University of Canterbury (Christchurch, New Zealand) and Visiting Professorships at The Courant Institute (New York University) and at the University of Tennessee, Knoxville. In 1976 he was elected Fellow of the Royal Society of Edinburgh.

Brian's scientific achievements were numerous: as an author of over 200 scientific papers, and of three monographs, his work in Mathematics ranged over the whole breadth of Applied Mathematics. He was able to combine deep theoretical work with the applications of the theory to concrete modelling problems. His earlier work dealt with spectral theory, special functions, and applications of inverse scattering theory and operator theory. Many deep and wide-reaching results emanated from this body of work, notably the discovery of a novel class of nonlinear integral equations for Heun functions and integral representations for Lamé functions. His pioneering work on developing the theory of multiparameter spectral theory was laid down in a seminal monograph of 1978. Later his attention shifted to dynamical systems theory, in particular the study of global properties of partial differential equations and the asymptotics of solutions. Gradually his interests in the applications of mathematics to the life sciences became increasingly prominent, triggered through his contributions to the theory of reaction-diffusion equations as well as in bifurcation theory.

When Brian came to Leeds in 1995, he took on the leadership of the Mathematical Biology group, and he further developed his line of research into the modelling of cancer growth, in particular the angiogenesis of tumours which influences their malignancy. He developed close collaborations with investigators and medical practitioners at St James's Hospital where he was involved in setting up a theoretical medicine group. As a leader in the field he was instrumental, nationally and internationally, in pushing mathematical research in the life sciences forward, by organising meetings and special events, through his work on national committees of the research councils and learned societies, and as co-founder and editor-in-chief of the *Journal of Theoretical Medicine*.

Brian retired in 2004 after nine years' service to the University, although he was re-engaged as a Research Professor within the School of Mathematics, at which time the status of Emeritus Professor was bestowed upon him.