



THE INSTITUTE OF
MATHEMATICS AND
ITS APPLICATIONS

The David Crighton Medal

Professor Keith Moffatt

Keith Moffatt is one of the world's pre-eminent applied mathematicians, who has, over a research career spanning 50 years, made land-mark contributions to an extraordinarily wide range of problems in fluid mechanics. Seminal works include his creation of the new sub-discipline of topological fluid mechanics, in which he used fundamental notions from topology to shed light on the dynamics of turbulent flow; his discovery of unsteady circulatory motion in low-Reynolds number corner flow (the so-called Moffatt eddies); and in magnetohydrodynamics, in which he elucidated the interaction between fluid turbulence and magnetic fields.

Keith's work is characterised by his ability to translate complex physical processes into tractable mathematical models, which he solves with great elegance to yield an extraordinary level of new physical insight and understanding. His ability to communicate this insight to an audience, and to inspire them with his fascination for the subject, is one of the hallmarks of his presentations.

Keith has made an immense contribution to the mathematics community. His highly successful tenure as Director of the Isaac Newton Institute (INI) in Cambridge has had a major impact on both UK and international mathematics. Under his leadership the INI was able to cement its position as a key asset for the whole UK community. The breadth of exceptional programmes that Keith was able to attract from across the full mathematical spectrum was a key element during his period as Director. INI participants speak with great affection of his constant interest in their programmes and his attention to detail. Keith has also given many years of outstanding service to the International Union of Theoretical and Applied Mechanics (IUTAM), including a period as President, 2000-2004. Beyond these contributions he is particularly active in helping to build capacity for mathematical research in developing nations, and has been a long-term champion of the African Institute of Mathematical Sciences in Cape Town.