



Prof. Dr. Batmanathan Dayanand Reddy Emeritus Professor of Applied Mathematics



Born on 10 March 1953 in Port Elizabeth (South Africa), he completed a bachelor's degree in civil engineering at the University of Cape Town in 1973, followed by a doctorate from the University of Cambridge in 1977. After a postdoctoral year at University College London, he joined the University of Cape Town as a lecturer in 1979 and was appointed professor in the department of applied mathematics at the University of Cape Town in 1989. He served as dean of the faculty of science over the period 1999-2005. His research activities are concerned with mathematical modelling and analysis, and the development of computational approaches to problems in mechanics of deformable media, with applications to elastic-plastic media, biomedical mechanics, and the development of stable finite element methods of approximation. He is actively involved in bodies that work at the science-society-policy nexus and served as inaugural President of the International Science Council. Daya Reddy is a recipient of the Order of Mapungubwe, awarded by the President of South Africa for distinguished contributions to science, and of the Georg Forster Research Award from the Alexander von Humboldt Foundation of Germany.

Daya Reddy's primary research interests lie in applied mathematics, more particularly the the mechanics of deformable media, and associated mathematical and numerical analysis.

Reddy and collaborators have carried out foundational work on variational frameworks and

development of numerical solutions, for problems of elastic-plastic solids. The framework has since been widely adopted and extended as the basis for studies of well-posedness and the development and implementation of numerical approximations. In a second area of research activity Reddy has undertaken systematic analyses and numerical studies of a range of mixed and related finite element methods, the major approach to determining approximate solutions computationally. The impact of this work on finite elements has been largely through its rigorous underpinnings widely used methods of engineering significance. Reddy has also collaborated with medical colleagues on problems in biomedical mechanics, such as the design of vascular stents, prosthetic vein grafts, and aortic valve leaflets, and the mechanics of obstructive sleep apnoea.