# International Journal of Applied Mathematics & Statistics

Special Issue Dedicated to Founder Editor-in-Chief: Professor Jagannath Mazumdar



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#### Professor Jagannath Mazumdar

Professor Jagannath Mazumdar has been a part of the University of Adelaide for nearly 40 years. His career and as a teacher and researcher has been nothing short of outstanding.

As a teacher, Professor Mazumdar has covered practically the whole spectrum of academic inquiry in his chosen field of Applied Mathematics, as well as branching out into other disciplines, having taught courses in continuum mechanics, plasticity, viscoelasticity, the theory of vibrations, plates and shells, mathematical biology, signal processing and biomedical engineering. He is also a fine and respected researcher, and his research in biomechanics, biomedical engineering and solid mechanics is held in international regard, and continues the University of Adelaide's long tradition of inquiry into these important fields.

It is in the nature of a successful academic to have a substantial and respected publishing career, and in this area, Professor Mazumdar has made a remarkable contribution. The author of two seminal texts, and contributor to numerous others, his contribution to journal literature has been nothing short of outstanding. In 40 years, he has published more than 160 refereed articles in major journals across a wide disciplinary range. He has also held positions on a number of editorial boards, giving generously of his time and talents to his colleagues and to the next generation of researchers.

I am delighted that the *International Journal of Applied Mathematics and Statistics* is to dedicate a special issue to Professor Mazumdar. This is a deserving tribute to one whom the University of Adelaide is proud to call one of its own.

PROFESSOR JAMES A. McWHA Vice-Chancellor and President

December 2005

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#### Preface about Professor J. Mazumdar

Professor Jagannath Mazumdar is presently Emeritus Director of the Centre for Biomedical Engineering, University of Adelaide. After receiving Bachelors and Masters Degrees in Applied Mathematics from Patna University, India, he proceeded to Moscow State University to complete his Ph.D. in Solid Mechanics. He was also conferred an honorary Ph.D. degree by the University of Adelaide, Australia. In 1966 Professor Mazumdar took up an appointment of Lecturership in Applied Mathematics at the University of Adelaide. Subsequently he held positions of Reader, A/Professor then an Adjunct Professor jointly with the School of Applied Mathematics and School of Electrical and Electronic Engineering. He was also appointed an Adjunct Professor within the School of Electrical and Information Engineering, University of South Australia, Mawson Lakes Campus, Adelaide . Professor Mazumdar has also been a Visiting Professor at the State University of New York, Stony Brook; Michigan State University, East Lansing; Mc Master University, Canada; University of Waterloo, Canada; Indian Institute of Science, Bangalore; Indian Institute of Technology, Delhi, and Nanyang Technological University, Singapore.

In his long professional career, Professor Mazumdar has received a number of prestigious awards. In 1989,1991 and 1994, he won prestigious Ken Clarke Prize for the best paper published in the APESM Journal. He was declared as a Successful Indian in Australia by the Indo-Australian Information Services. Professor Mazumdar received EMG National Award of Austalian Mathematical Society- Applied Maths Division in 1998 and Engineering Mathematics Award in 2000 by the Institution of Engineers, Australia. He is an Editor of the Journal of Mechanics in Medicine and Biology, and on the Editorial Board of the Journal of Australasian Physical & Engineering Sciences in Medicine (APESM). He was the Founding Chief Editor of the International Journal of Applied Mathematics and Statistics (IJAMAS). After his retirement in 2002, the University of Adelaide instituted a Prize in his honour called "The Mazumdar Prize" in the Faculty of Engineering, Computer and Mathematical Sciences.

Professor Mazumdar has published about 200 research papers in various journals and conference proceedings. He has written two books, "An Introduction to Mathematical Physiology and Biology" and "Biofluid Mechanics" and contributed chapters in four books, viz. "Advances in Cardiovascular Physics", "Applied

Physiological Mechanics", "Handbook of Applicable Mathematics" and "Handbook of Computational Methods in Biomaterials, Biotechnology and Biomedical Systems'.

Professor Mazumdar has done some interesting research for the non-invasive study of heart valves tissue pathology by spectral analysis of heart sounds as well as by two-dimensional sector-scan echocardiography. This study gave us precise indication of the normality or abnormality of the stiffness property and hence, of the pathology of the valve leaflet material. He has also done some interesting study of vibrations of tympanic membrane (ear drum) by time-averaged holography which has been published in the Journal of Otolaryngological Society of Australia. Professor Mazumdar is now working in the field of Tissue Engineering and NanoBioscience. In acknowledgement of his contributions, Professor Mazumdar was elected a Fellow of the Institution of Engineering, Australia. He is a Fellow of Australian Mathematical Society and a Fellow of Australian College of Physical Scientists and Engineers in Medicine. He has been cited in the Who's Who of the world, India's Who's Who, and in Men of Achievement, International Biography Centre, Cambridge as well as in Australian Men and Women of Science, Engineering and Technology. Professor Mazumdar was awarded 2002 Noble Prize by the United Cultural Convention of the USA.