



Centre for Management of Health Services (IIMA - CMHS Seminar Series)



Topic : **Is Statistics everywhere? Some far-reaching case studies in Health and Medical Science.**

Speaker : **Prof. Kanti Mardia**
Senior Research Professor,
University of Oxford and University of Leeds
Fellow of Kellogg College, Oxford, United Kingdom

Venue : Wing- 11 Faculty Lounge, IIMA

Day & Date : Monday, January 19, 2015

Time : 11.00 A.M. (After an informal interaction over tea, the Seminar will begin at 11.15 a.m.)

Abstract

The aim of this talk is to provide various case studies in health and medical science which have come through my international, industrial and interdisciplinary collaborations. The first case study is concerned with saving lives by analysing the shape of the brain. Specifically, the methods have been used on brain images to assess the extent of brain damage in people suffering from fetal alcohol spectrum disorders (FASD) and in turn our assessments have been used in court cases related to the death penalty for murderers, as well as to eligibility for state social benefits for babies. This work is having a very high societal impact. (Mardia, K.V. et al. (2013) Alcohol, babies and the death penalty: Saving lives by analysing the shape of the brain. Significance, Vol 10.) The talk will also briefly describe other case studies related to skull implants, hemifacial microsomia, scoliosis and antibodies.

One of the aims of these case studies is to highlight that statistics has really no boundaries, and that interdisciplinary research could be like planting a mango tree which takes a long time to fruit. Such research of high impact has a much broader vision. (Mardia, K.V. and Gilks, W. (2005) Meeting the Statistical Needs of 21st-century Science. Significance, Vol 2). Einstein once gave a warning about a fairly well-known physicist engaged in incremental research: 'He strikes me as a man who looks for the thinnest spot in a board and then bores as many holes as possible through it'.

Speaker's Profile



Professor Mardia is a Senior Research Professor in the University of Leeds, and is a long-term Visiting Professor in the Department of Statistics, Oxford, and Fellow of Kellogg College, Oxford. He was appointed to the Leeds Chair of Applied Statistics in 1973 and was subsequently the Head of the Department of Statistics during 1976-1994, 1997-2000, and Director (Joint Founder) of Centre of Medical Imaging during 1993-2000. He has been awarded the prestigious Wilks Memorial Medal by the American Statistical Association (2013) and the prestigious Guy Medal in Silver (2003) of the Royal Statistical Society, mainly for his cutting edge interdisciplinary research.

Professor Mardia's three research monographs: *Multivariate Analysis* (1979), *Statistical Shape Analysis* (1998), *Statistics of Directional Data* (1972, 2000) are classics in the statistical world. He formally established the Leeds Annual Statistical Research (LASR) Workshops in 1981, and the resulting international collaboration has led to interdisciplinary research in the fields of Geosciences (1979-1989), Image Analysis (1990-2000) and Bioinformatics (2000-current). Professor Mardia's H-score is 56 which indicates a very high dissemination level of his research work.

More details are in the academic interview by Mukhopadhyay, "A Conversation with Kanti Mardia" (2002, *Statistical Science* 17, 113-148) and on his Home Page: <http://www1.maths.leeds.ac.uk/~sta6kvm/index.html>

