Ranajit Chakraborty (1946–2018)

Ranajit Chakraborty, an internationally renowned population and human geneticist, passed away on 23 September 2018 in Texas, USA. He was 72. He was an illustrious alumnus of the Indian Statistical Institute (ISI). He did his Bachelor of Statistics (Hons), Master of Statistics (with specialization in advanced probability and mathematical genetics) and Ph D on statistical genetics (under C. R. Rao) from ISI. Then he served on the faculty of the Center for Demographic and Population Genetics, The University of Texas, Houston, USA for 28 years. He became the Allen King Professor of Population Genetics and Biological Sciences in the School of Public Health, The University of Texas. In 2001, he was recruited to establish the Center of Genome Information at the University of Cincinnati, USA, where he was the first recipient of the Robert A. Kehoe Professorship. He spent his final years in the Department of Molecular and Medical Genetics, University of North Texas Health Science Center at Fort Worth, USA.

Chakraborty's research contributions were in three well-defined areas. During the first phase of his professional career he contributed significantly to the development of population genetics, especially molecular population genetics. He wrote some seminal papers, jointly with Masatoshi Nei and members of his group, on quantifying and modelling intra- and inter-population variability using molecular genetic data and estimating important population genetic parameters from such data. The second area to which he made substantial contributions was human genetics. He worked on a variety of human traits and diseases and addressed questions pertaining to their modes of inheritance, mapping their genomic locations and estimating interactions between genetic and environmental factors. He devised novel statistical methods for estimating proportions of admixture among populations; these methods are still in wide use. He worked closely with William J. Schull, Kenneth M. Weiss, Robert E. Ferrell and members of their groups during his research on human genetics and genetic epidemiology. He also made many insightful contributions on the anthropological and genetic structures of Indian ethnic groups, jointly with Kailash C. Malhotra. The third area to which he made immense contributions was forensic genetics. He worked out new statistical methods of using crime-scene genetic evidence to bear upon the delivery of justice in criminal cases. His contributions to forensic genetics earned him considerable international reputation. The Federal Bureau of Investigation, USA, awarded him in 1998 for his excellence in 'research on DNA forensics during the Decade of DNA 1989–1998'.

Chakraborty served on the National Council on Radiation Protection and Measurements (NCRP), USA, as a member of its Scientific Committee. This Committee submitted a report on uncertainties in the estimation of radiation risks and probability of disease causation. The report included a comprehensive evaluation of heritable effects of radiation exposure. He published extensively on radiation genetics with K. Sankaranarayanan. Some of their papers were extensively used by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) in its 2001 report on heritable effects. At the time of his death, he was serving on a Committee on Radiation Effects of the International Commission on Radiological Protection (ICRP).

Chakraborty was full of energy. I have interacted with him closely for many years, both professionally and personally. He was sharp and quick in grasping a problem. He was superfast in modelling a problem statistically and working out a solution. He was also warm and gentle. Because of his broad interests, his quantitative skills, a problem-solving abilities and kind nature, Chakraborty had many collaborators in many countries of the world. He was a prolific writer and had the ability to write a manuscript within a short time. He wrote over 600 scientific papers. Three of his papers became citation classics[1–3].

Chakraborty was an excellent teacher and an outstanding mentor. Formally and informally, he provided mentorship to scores of students. He received multiple times the Teaching Excellence Award of the Graduate School of Biomedical Sciences, The University of Texas, Houston. Many of his graduate students and mentees now hold important academic positions in far-flung places, including USA, China, Japan, Poland, Mexico, Uruguay, Croatia and Chile.

Chakraborty was a Corresponding Fellow of the Chilean National Academy of Sciences, an elected Geneticist on the International Committee of Radiological Protection, an Honorary Fellow of the Indian Academy of Sciences and an Honorary Member of the Mediterranean Academy of Forensic Sciences.

He also served the Indian community in USA. He participated in various cultural activities. I have witnessed his popularity among members of the Bengali community in Houston to whom he rendered various cultural services. For his 'dynamic and constructive role in the Bengali and Indian community', he received the Man of the Year award in 1996 from the Cultural Association of Bengal, New York, and the Tagore Society of Houston. In 2016, Chakraborty was awarded *The Hind Rattan* (Jewel of India), one of the highest Indian diasporic awards granted annually to non-resident Indians by the NRI Welfare Society of India.

Chakraborty is survived by his wife Bandana, with whom he also wrote many scientific papers pertaining to length variation in the Y-chromosome and its implications in evolution, and genetic epidemiology of obesity.

1. Chakraborty, R., Shaw, M. W. and Schull, W. J., *Am. J. Hum. Genet.*, 1974, **26**, 477–488.
2. Nei, M., Maruyama, T. and Chakraborty, R., *Evolution*, 1975, **29**, 1–10.
3. Nei, M., Fuerst, P. A. and Chakraborty, R., *Nature*, 1976, **262**, 491–493.

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