

Dr. Partha Pratim Majumder

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Dr. Partha Pratim Majumder obtained his Bachelor's, Master's and Doctoral degrees from the Indian Statistical Institute, Kolkata. He did his post-doctoral research at the Center for Demographic & Population Genetics, University of Texas Medical Center, Houston. He has served on the faculty of the Department of Biostatistics and Human Genetics of the University of Pittsburgh. His major scientific interests and contributions have been in the field of human population genetics and genetics of complex human disorders. He is an elected Fellow of all the three science academies of India. He has served on the Board of Directors of the International Genetic Epidemiology Society (IGES) and was the founding Chair of the ELSI Committee of IGES. He is a member of the Human Genome Organisation. He is a recipient of many awards and medals, including the TWAS (The Academy of Sciences for the Developing World) Biology Prize (2009), G.D. Birla Award for Scientific Research (2002), Sri Om Prakash Bhasin Award in Biotechnology (2001), and the New Millennium Science Medal, Government of India (2000).

He delivered two lectures - Our Footprints on the Sands of Time (12th April) and Genes that make Vaccines tick (13th April).

Our Footprints on the Sands of Time

12th April 2010

With the advent of Human Evolutionary Genetics scientists have been trying to answer questions that have intrigued mankind for long. When did life begin on earth? Who are we? Where did we come from? Are we all related to each other? There are several historic and religious interpretations to these questions but whether these interpretations are scientifically accurate remains to be seen. Dr. Partha Pratim Majumder provided a scientific insight into these mysteries.

His first lecture titled "**Our Footprints on the Sands of Time**" was on 12th April, 2010. The first part of the lecture traced the evolution of life from 5 million years ago (mya) till 150, 000 years ago, while the second part covered the evolutionary changes in life that took place 150,000 years ago and are continuing till date.

Evolution began about 5-6 mya when a population of African apes split into two distinct species - one leading to the emergence of modern humans and the other to modern chimpanzees. The genus Homo is said to have evolved 2 mya in Africa (fossil remains dated to about 1.9 mya have been traced in Africa).

Modern humans who are less heavily built and more mobile appear to have emerged around 130,000 yrs ago and fall under the category of Homo sapiens sapiens. Dr. Majumder shared different models of human evolution and later provided genetic evidence in support of the Out-of-Africa model (the model that suggests that humans evolved in Africa and from Africa they spread across different continents). The two probable routes via which modern humans may have moved out of Africa were the northern exit route and the southern exit route. However, the genetic evidence supports migration through the northern exit route.

Dr. Majumder also showed slides which contained data regarding the ethnic composition of India. There are about 450 tribes, 4000 caste based communities and about 150 religious groups. India is a country with enormous genetic and cultural diversity and human geneticists and anthropologists have tried to establish the evolution of Indians using the information stored in the human genome. As per the genetic evidence, a major expansion of modern humans took place within India. How fascinating that a small DNA thread should contain links to human evolution, genetic diversity and ethnic complexities!

Based on the study and analysis of DNA and mtDNA Dr. Mazumder inferred that there was a relatively small number of founding females in India. Ethnic diffusion took place gradually due to cultural or demic diffusions. He spoke in detail about the two diffusion types and their implications. He ended his talk by quoting a few lines from Maya Angelou's book "Wouldn't Take Nothing from My Journey Now" which read that everyone should respect diversity as in diversity there is beauty and there is strength.