Sanghamitra Bandyopadhyay

Sanghamitra Bandyopadhyay was born in 1968 in Bally, Howrah, West Bengal. Her father is Satyendra Nath Banerjee and mother was Late Bandana Banerjee. She is married to Ujjwal Maulik and has a son named Utsav Bandyopadhyay Maulik. Sanghamitra lived in different cities and towns including Ramgarh, Nagpur, Jabalpur and Jhansi as her father had a transferable job. She then shifted to her maternal grandparents' home, spending her vacations with her parents in Darbhanga and Shillong. She had a culturally stimulating childhood.

She did her schooling in Nagpur; Jabalpur; Jhansi and and also studied at St. Agnes' School Howrah, West Bengal. She did her Class XII, Higher Secondary, West Bengal Board) from Bethune College, Kolkata, and B.Sc in Physics from Presidency College. She did her B.Tech in Computer Science and Engineering from Calcutta University with First Rank and M.Tech in Computer Science and Technology from IIT Kharagpur, Ranked first. She did PhD in Computer Science from Indian Statistical Institute, Kolkata in 1999.

After post-doc in the University of New South Wales, Sydney; Sanghamitra joined ISI as a lecturer, became Assistant Professor; Associate Professor, Professor and Professor (HAG) in 2014. In 2015, she was selected as the first woman Director of ISI and was re-selected for a second term in 2020. She has held short-term/visiting positions in Los Alamos National Laboratory; University of Texas at Arlington; University of Maryland Baltimore County; Fraunhofer Institute, Germany; University of Rome and Max Planck Institute for Informatics, Germany. Her specialization is in Computer Science and Engineering, Machine Learning, Artificial Intelligence, Computational Biology and Bioinformatics, Clustering, Multiobjective Optimization.

She was selected as the first woman Director of Indian Statistical Institute (ISI). She is internationally acclaimed for her clustering methods using genetic algorithms, with significantly improved convergence rates.

Sanghamitra's contributions lie in the intersection of machine learning, artifical intelligence, and bioinformatics. She is internationally acclaimed for her clustering methods using genetic algorithms, with significantly improved convergence rates while also detecting the appropriate number of clusters. Development of AMOSA, the first multiobjective simulated annealing with nongreedy selection and capability of handling many objectives, is another fundamental contribution. Over the past decade Sanghamitra designed techniques in computational biology, demonstrating the importance of innovative methods for making biological discoveries impacting therapeutic efforts. She designed algorithms for studying the role of microRNAs in cancer, HIV1 pathogenesis and Alzheimer's progression. She identified novel genetic markers for breast and colon cancer. Recently, she is focussing on developing methods for analyzing high dimensional single cell RNAseq data.

She was awarded Padma Shri in Science and engineering, 2022 and is a recipient of the Shanti Swarup Bhatnagar Prize, Infosys Award, TWAS Prize, JCBose Fellowship, Swarnajayanti Fellowship, ICTP Senior Associate (Italy), Humboldt Fellowship (Germany), INAE Silver Jubilee Young Engineers Award, INAE Woman Engineer of the Year Award, DBT National Women Bioscientist Award (Young), INAE Young Engineer Award, INSA Young Scientist Medal, Dr. Shanker Dayal Sharma Gold Medal and Institute Silver Medal IIT Kharagpur. She is a Fellow of TWAS, INSA, IEEE, INAE, NASI, IAPR. Sanghamitra serves on the Prime Minister's Science Technology and Innovation Advisory Council. She also served on the Education Commission of West Bengal. •