

Report of special invited lecture by Dr Subrata Sinha

The School of Biosciences, Swami Rama Himalayan University, Dehradun hosted a special invited lecture on 22nd November 2025, delivered by Prof. Subrata Sinha, Former-President AIIMS Patna, Former Professor and Head, Department of Biochemistry, AIIMS, New Delhi, a distinguished neuroscientist and expert in neurogenetics and biochemistry. The lecture, titled “*From Behaviour to Genes in Dyslexia, through a Window of Epigenetics*”, explored the complex neurobiological foundations of developmental dyslexia, highlighting the interplay between cognitive behaviour, genetic predispositions, and epigenetic regulatory mechanisms. The session was attended by faculty members, researchers, and students from School of Biosciences, Yoga Sciences.

Dr Sinha began by contextualizing dyslexia as a neurodevelopmental learning disorder that primarily affects reading, phonological processing, and language acquisition. He emphasized that dyslexia is not a result of intellectual impairment, but rather arises from subtle differences in brain structure and function. Dr Sinha presented an overview of major genes implicated in dyslexia, such as: DCDC2, KIAA0319, ROBO1, DYX1C1. These genes are involved in neuronal migration, axon guidance, and cortical organization, processes crucial for language network development. He highlighted that dyslexia is polygenic, with multiple genes contributing modestly to overall risk. He explained how variants in these genes may influence neuronal migration, axonal growth, and synaptic plasticity during brain development. Genome-wide association studies (GWAS) and linkage analyses were presented as major tools in delineating the genetic landscape. One of the most insightful segments of the lecture was Dr Sinha’s discussion on epigenetics—heritable, reversible biochemical modifications that regulate gene expression without altering DNA sequence and role of lnc RNA.





The lecture by Prof. Sinha provided a comprehensive and insightful overview of dyslexia, spanning the spectrum from behavioural presentation to underlying genetic and epigenetic mechanisms. It offered participants a deeper understanding of how modern biology is reshaping our approach to learning disorders.

The School of Biosciences expressed gratitude to Dr Sinha for his illuminating talk and for inspiring young researchers to explore this interdisciplinary frontier.

Prof Sinha also shared the research done by his group with the faculty of Neurosciences, HIMS, SRHU. It emerged that a few collaborative projects could be undertaken between NBRC and SRHU including student's exchange activities for furtherance of clinical oriented researchable problems as also exposure to newer techniques.

