

**Centre of Behavioural and Cognitive Sciences  
University of Allahabad**

**Special Lecture**

**on**

**“Computational Advances in 3D Tractography Visualization for Neuroimaging with MR” by Dr. Sudhir Pathak, University of Pittsburgh, USA, 28<sup>th</sup> June, 2023**

The Centre of Behavioral and Cognitive Sciences (CBCS), University of Allahabad organized a special lecture on 28<sup>th</sup> June, 2023. The session was chaired by Prof. Sangita Srivastava, Honourable Vice Chancellor, University of Allahabad. The session began with warm welcome of the Vice Chancellor and the Guest speaker by Dr. Niharika Singh and Dr. JayPrakash, Faculty CBCS. This was followed by a brief introduction of the Centre and National Neuroimaging Facility by the Head of the Centre, Prof. Bhoomika R. Kar. Chair of the session, Prof. Sangita Srivastava, in her address emphasized the importance of brain research in India in fields like nutrition, health, aging, artificial intelligence, clinical applications of MR.

Dr. Amrendra Singh, Faculty CBCS, introduced the Guest Speaker, Dr. Sudhir Pathak, from Learning Research and Development Centre, University of Pittsburgh, USA. Dr. Pathak's primary research areas are Neuroimaging, Neurocognition and has worked in the domain for over 15 years. Dr. Pathak completed his BS and MSc (Integrated) in Mathematics and Scientific Computing from IIT Kanpur and pursued his PhD in Bioengineering at University of Pittsburgh in the field of diffusion-weighted MRI. His research interests include, validation of diffusion models in biological tissues, Biomarkers for Traumatic Brain Injury, Diffusion MRI, Microstructural Imaging, and Fiber tractography. Dr. Pathak is well-known in the field for proposing high definition fibre tractography and has developed many experimental computational methods to assist and guide pre-neurosurgery planning that has been used by surgeons at multiple institutions on an experimental basis. In his talk Dr. Pathak discussed about high definition fibre tractography with examples from clinical case studies on Traumatic brain injury and Stroke. He also emphasized upon the need for such innovative research in India and expressed his interest in exploring collaboration with CBCS. The talk also led to a very engaging discussion on brain research, fibre tracking and its clinical applications with some interesting areas of research suggested by Honorable Vice Chancellor Madam, Dr. Pathak and faculty present in the audience.

After the informative talk, Prof. Shiv Sharma, Faculty CBCS, presented a memento to the Chair of the session, Honorable Vice Chancellor and the guest speaker, Dr. Sudhir Pathak. The session ended with a vote of thanks proposed by Dr. Niharika Singh, Faculty CBCS. After the talk faculty and Honorable Vice Chancellor visited the National Neuroimaging Facility to see a demonstration of MR scan. The Centre looks forward to more interaction with Dr. Sudhir Pathak for his expertise in the field of neuroimaging.

