

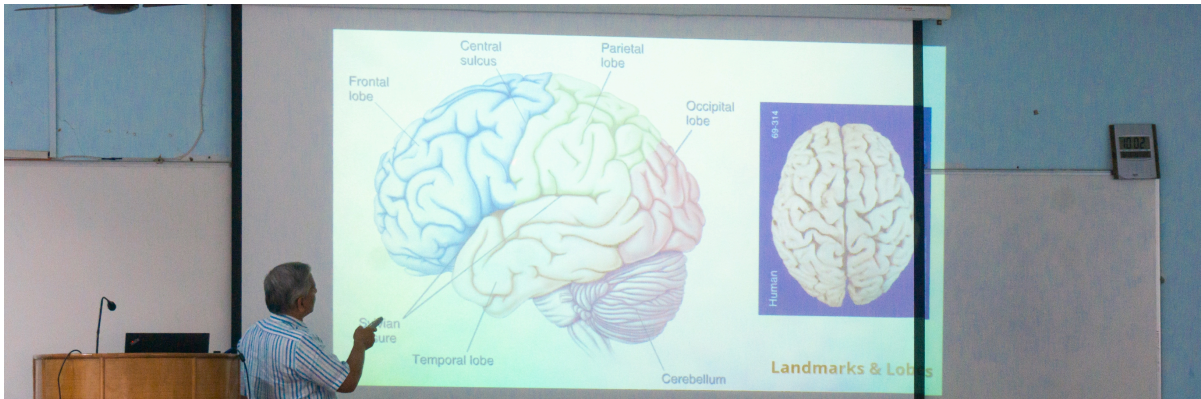
National Neuroimaging Facility Centre of Behavioural and Cognitive Sciences University of Allahabad

Workshop on Cognitive Neuroimaging: Experimental Design and Analysis March 16-19, 2023

The Centre of Behavioural and Cognitive Sciences (CBCS), University of Allahabad Conducted a four-day Workshop on Cognitive Neuroimaging: Experimental Design and Analysis on March 16-19, 2022 with intensive training in data acquisition, design and analysis using functional MRI.

Prof. Bapi Raju, IIIT Hyderabad and Dr. Srikanth Padmala, Centre for Neuroscience, Indian Institute of Science-Bangalore and Mr. Sahithyan S, Project Associate, Centre for Neuroscience, Indian Institute of Science, Bangalore were the resource persons for the workshop.

A total of 9 faculty and 12 senior doctoral and Postdoctoral scholars from various institutions like IIT Roorkee, IIT Kanpur, IIIT Hyderabad, IIT Madras, IIT BHU, NIMHANS Bangalore, Thapar University, Symbiosis Institute of Operations Management, Dept of Zoology and CBCS, UoA, participated in the workshop.



The workshop provided the participants with a comprehensive and valuable insight into the fMRI Experimental Data Acquisition, Design and Analysis. The sessions included talks on fMRI basics, Design of sample fMRI experiments, data collection procedures, MR safety protocols, Theoretical understanding of how to acquire fMRI data, Practical sessions on Preprocessing of the data, application of the statistical analysis on the data. The sessions were conducted at the Centre's National Neuroimaging Facility established in 2019 with a large-scale grant from the Department of Science and Technology, Government of India, dedicated to research and accessible to scholars from institutions across the country. The facility has a 3 Tesla fMRI scanner to conduct neuroimaging research.

The outcome of the workshop is that faculty and PhD scholars from IIT BHU, IIT Hyderabad, IIIT Hyderabad, Thapar University and Symbiosis University will access the facility and conduct their research at NNF, CBCS, UoA. This workshop helped in facilitating potential collaborations on research studies like effects of aging and blood glucose levels on brain function, Stroke, Autism, consumer neuroscience of buying-shopping disorders, language comprehension, Motor-Memory consolidation using TMS and fMRI.

The workshop concluded with networking and collaboration sessions with CBCS faculty, Prof. Bhoomika Kar, Dr. Amrendra Singh, Dr. Shiv K. Sharma and Dr. Jayprakash who discussed the ongoing studies at the National Neuroimaging Facility investigating the effect of various conditions such as aging, bilingualism, socioeconomic status, literacy, obesity, neuroaesthetics, on brain structure and function. Possibilities collaborations with cognitive neuroscience expertise at CBCS with Machine learning and computational neuroscience expertise with faculty from technical institutions were also discussed.

The workshop certainly acted as a milestone to improve conceptual and technical skills for cognitive neuroscience research and emphasized the importance of having a National Neuroimaging Facility in a University setup. The participants appreciated the academic environment and the keen efforts by the faculty and students for conducting such workshops which help in capacity building and upgrade analytical skills for Cognitive Science research in India. This workshop was supported by the DST funded neuroimaging grant of the Centre.