

Centre for Brain Research
An Autonomous Centre of Indian Institute of Science
Bangalore -560012
Admission for Ph.D. Program-2020

Centre for Brain Research (CBR) invites applications from eligible and highly motivated applicants for admission to **full time Ph.D. Program** beginning on **1st October, 2020**. It is a recognized research centre for Ph.D. program with Manipal Academy of Higher Education (MAHE), Karnataka. The PhD degree will be awarded by MAHE.

CBR promotes interdisciplinary research in basic and clinical neuroscience to understand disorders of the aging brain through advanced genetic, biochemical, neuroimaging and neurocognitive investigations. These studies are dovetailed with research on model systems to identify the molecular underpinnings of age-related brain disorders. Genome wide association studies (GWAS), whole genome sequencing (WGS) and advanced computational approaches are being employed to identify common, low frequency, rare, single nucleotide polymorphisms, and structural genetic variations that could contribute to healthy aging and/or neurological disorders. Brain imaging investigations are being conducted to identify structural, vascular, and metabolic alterations in aging brain using advanced brain imaging methods at 3 Tesla state-of-the-art human MRI scanner.

The above objectives are being implemented through large population studies, namely **Srinivaspura Aging, Neuro Senescence and COGNition (SANSCOG)** study, **Tata Longitudinal Study on Aging (TLSA)**, and **GenomeIndia**. SANSCOG & TLISA are envisioned as parallel and harmonized, prospective, community-based cohort studies in India – rural and urban, respectively – with long term follow-up, for comprehensive evaluation of risk and protective factors associated with cognitive changes due to normal ageing, dementia and other related disorders. Participants in the SANSCOG study are recruited from the villages of Srinivaspur Taluk in Kolar District in southern India, whereas those in TLISA are recruited from urban Bangalore.

GenomeIndia is a pan-Indian initiative led by CBR to identify the genetic variations present in Indian population through whole genome sequencing of tens of thousands of representative individuals across the country. This will lead to the development of a genome wide association chip specific for Indian population and facilitate large scale genetic studies in the future.

In addition to human aging studies, researchers at CBR are also investigating the early functional and structural changes at the synapse, dynamics of filamentous actin and its modulators at the dendritic spine, oxidative stress, synaptic dysfunction, sex specific differences using mouse model of Alzheimer's disease. Extensive studies are being performed to study molecular underpinnings of synaptic dysfunction during transient as well as repeated vasoconstriction in an animal model of vascular dementia. Research groups are engaged in neurobehavioral investigations to delineate the early cognitive and behavioral deficits, and their underlying neural circuit mechanisms.

The PhD program accepts students from master's degree in any branch of science or four-year bachelor's degree in any branch of Medicine/ Engineering/ Technology/ Veterinary Science/ Pharmacy/ Biostatistics. Students willing to work in the areas of neurobiology of disease, human genetics, computational biology, magnetic resonance imaging and spectroscopy are encouraged to apply.

Preference would be given to those who have qualified national level fellowship tests (CSIR-UGC NET for JRF/ UGC NET for JRF/ DBT-JRF/ ICMR-JRF/ JEST / NBHM Screening Test / INSPIRE fellows (for Ph.D.) / GATE). Candidates in the final year of their respective courses are also eligible to apply.

Candidates should submit their applications online by **04/09/2020**. The Online applications will be screened, and the shortlisted candidates will be called for **online** interview. Candidates will be selected for Ph.D. program based on their academic record and performance in the interview process.

Candidates with valid National fellowships will avail the fellowships from their respective agencies. But students who qualify the interview process and does not have national fellowships will be supported by CBR.

For further detailed information on area of research, admission process and other information, please refer the webpage www.cbr.iisc.ac.in

Director