



## **national centre for biological sciences tata institute of fundamental research**

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### **VISITING POST-DOCTORAL FELLOWSHIPS**

The National Centre for Biological Sciences (NCBS) has been established by the Tata Institute of Fundamental Research. It is located on the campus of University of Agricultural Sciences, Bangalore.

A small number of post-doctoral fellowships tenable at NCBS are available each year. Applications from those with a Ph.D. degree or equivalent (**in any branch of natural science/engineering**) and demonstrated research capabilities will be entertained throughout the year and will be considered in February and August. Applicants should summarize recent research experience and include names and addresses of three persons who can be contacted for a critical evaluation of the applicant's research. The fellowship is tenable at NCBS. Applicants should indicate the group(s) they are interested in working with.

The mandate of NCBS is basic research in the frontier areas of biology. **In addition a collaborative iBio: Interdisciplinary studies in biology (exploring the physics and chemistry of living matter) Program (with TIFR-Mumbai campus and Raman Research Institute) has been initiated to bridge the language & tools of physics, chemistry, engineering and biology.** Current research interests of the faculty are in the following:

#### **A. Biochemistry, Biophysics and Bioinformatics**

1. Structure and dynamics of nucleic acids (Yamuna Krishnan-Ghosh)
2. Exploring the architecture and function of transmembrane ion channels (M. K. Mathew)
3. Structure and dynamics of biomolecules (Mrinalini Puranik)
4. Mechanisms of damage by lasers pulses to single cells and tissue (Kaustubh Rau)
5. Understanding chromatin remodeling and transcription control at the nanoscale (G. V. Shivashankar)
6. Computational approaches to protein science (R. Sowdhamini)
7. Prokaryotic signaling and gene-regulatory networks (Mukund Thattai)
8. How do proteins fold, unfold and misfold? (Jayant Udgaonkar)

#### **B. Cellular Organization and Signaling**

1. Notch signaling in human epithelial cancers (Sudhir Krishna)
2. Cell biology of the synapse (K. S. Krishnan)
3. Mechanisms of endocytosis in metazoan cells (Satyajit Mayor)
4. Mechanisms of apoptosis (Aparna Sarin)
5. Mechanisms of mitochondrial remodeling (V. Sriram)

#### **C. Genetics and Development**

1. Inositol 1,4,5-triphosphate signaling: A molecular genetic approach (Gaiti Hasan)
2. Molecular genetic analysis of complex neuro-psychiatric disorders (Quasar Saleem Padiath)
3. Evolutionary history of human and animal populations: Understanding the past and predicting the future (Uma Ramakrishnan)
4. The development of functional neural networks in *Drosophila* (Veronica Rodrigues)
5. Nerve and muscle development (K. VijayRaghavan)

#### **D. Neurobiology**

1. Computational neuroscience (U. S. Bhalla)
2. Neural plasticity in the amygdala and hippocampus (S. Chattarji)
3. Motoring along the axonal highway to make and break synapses (Sandhya Koushika)
4. Gene expression in the mammalian nervous system (M. M. Panicker)
5. Genetic analysis of chemosensory perception (O. Siddiqi)

The NCBS web page at <http://www.ncbs.res.in> has brief accounts of the research projects being undertaken by these groups and **about the iBio Program. Applications may be sent to the Head (Academics), National Centre for Biological Sciences, GKVK Campus, Bellary Road, Bangalore 560 065.**