MOLECULAR BIOPHYSICS UNIT (MBU)
INDIAN INSTITUTE OF SCIENCE

MBU admissions – May 2021

Preference Form for the candidates selected for second interview in MBU

AREAS OF RESEARCH IN MOLECULAR BIOPHYSICS UNIT

- Spectroscopy and physico-chemical studies of biomolecules.
- Macromolecular structure determination by X-ray crystallography, Cryo-electron microscopy and NMR.
- Peptides-synthesis, design and conformational studies.
- Proteins-chemistry, conformational analysis, structure, design and folding.
- Neurophysiology – Patch-clamp electrophysiology, ion-channels, computational neuroscience.
- Peptide chemical biology.
- Biophysical & structural studies on protein-RNA complexes.
- Computational structural biology and Genome analysis.
- Membrane biophysics.

Information regarding ongoing research in each laboratory within the department can be found on the departmental webpage (`http://mbu.iisc.ac.in/people.htm`).

Vacancies exist in the following programmes of research for the academic year 2021-22. Names in brackets are those of faculty members with expertise in the respective areas of research. Please indicate your choice(s) by placing a tick mark (✓) or a star (*) mark in the appropriate boxes. Please tick one box in each row. However, if you are unable to decide upon an appropriate choice or aprropriate choices, you may leave the boxes blank and seek clarification by sending a mail to admission.mbu@iisc.ac.in or any of the faculty members (e-mail addresses are provided below).

After selecting your preference(s), kindly enter the information requested (your name, application no., telephone no., and e-mail address) at the end of the form. These details must match those provided in your application form.

Rename the file with your application number and your full name (ApplicationNumber-YourName.pdf) and email the file to admission.mbu@iisc.ac.in with subject of the mail same as the file name. For example if your application number is 23456789 and if your name is Max Perutz then the name of the pdf file and the subject of your email should be 23456789-Max-Perutz.pdf.

Sl. No.	Areas of Research	Area that I would like to work in	Area that I would not mind working in	Area that I would not like to work in
1.	Structure and function of bacterial nanotubes in bacterial-bacterial and bacterial-host interaction Electron microscopic analyses; protein complexes – interaction, function, regulation; antibiotic resistance and toxin delivery. **Amit Kr Baidya – amitb@iisc.ac.in** `https://amitbmbu.wixsite.com/website`			
2.	Studies of protein structure, dynamics, interactions, function and malfunction primarily using Nuclear Magnetic Resonance, biophysics of circadian rhythms, metamorphic and intrinsically disordered proteins. **Ashok Sekhar – ashoksekhar@iisc.ac.in** `https://mbubionmr.weebly.com/`			

3.	Biochemical and structural characterization of the bacterial secretion system, efflux pump, metabolic enzymes and pore forming toxin Cryo-EM.
	Somnath Dutta – somnath@iisc.ac.in
	`https://somnath92.wixsite.com/website`
	
	High resolution structural studies on viruses, their infection machinery and mechanisms of cellular entry using Cryo-EM & Cryo electron tomography methods.
	Vidya Mangala Prasad – vidyamangalaprasad@gmail.com
	`https://sites.google.com/view/vidyamprasad-viruses`			

4.	Multiscale Biomolecular Theory and Simulations: Statistical Mechanics and Molecular Dynamics based methods development, modeling membrane trafficking, membrane nanoscale organization, proteins and RNA folding and conformations, phase transition in biological systems
	Anand Srivastava – anand@iisc.ac.in
	`http://mbu.iisc.ac.in/AnandLab.htm/index.html`
	`http://mbu.iisc.ac.in/SrivastavaLab.pdf`			

5.	Structural biology of integral membrane proteins (X-ray crystallography, CryoEM, antibody chalerones biochemistry and biophysical analysis of ion-coupled transporters) **Aravind Penmatsa – penmatsa@iisc.ac.in** `http://aplabmbu.weebly.com/`			
6.	Biophysical & structural studies on protein-nucleic acid complexes. **Mahavir Singh – singh@iisc.ac.in** `http://singhmlab.weebly.com`			
7.	Design and engineering of therapeutic peptides **Jayanta Chatterjee – jayanta@iisc.ac.in** `https://sites.google.com/view/pe-lab/home`			

Sl. No.	Areas of Research	Area that I would like to work in	Area that I would not mind working in	Area that I would not like to work in
8.	Single neuron electrophysiology, information processing in neurons and their networks, activity-dependent plasticity of ion channels, computational neuroscience. **Rishikesh Narayanan – rishi@iisc.ac.in** `http://mbu.iisc.ac.in/~rngrp/`			
9.	Biophysics of environment sensing by microbes; synthetic microbiology. **B.Gopal – bgopal@iisc.ac.in** `http://mbu.iisc.ac.in/~bggrp/`			
10.	Protein stability, folding and immunogen design. **Raghavan Varadarajan – varadar@iisc.ac.in** `http://mbu.iisc.ac.in/~rvgrp/home.html`			

Name: Application No.:

Tel. No.: e-mail address: