

Department of Biotechnology, IIT Madras
PhD admissions July 2023
List of available Ph.D Projects

1) CB- Computational Biology Stream

S.No	Faculty Name	Project title(s), Number of vacancies
1	Santhosh Sethuramanujam	Modeling the computations performed by direction selective neurons in the retina (1 student)
2	M. Hamsa Priya	Molecular Modeling of Protein Self-assembly and Aggregation (1 student)
3	Michael Gromiha	1. Integrating sequence and structural features of membrane proteins to understand and predict their stabilities and binding affinities (1 student). 2. Understanding the drug resistance of wild-type and insertion mutant of HIV protease type C with drugs and applications to design potential inhibitors (1 student)
4	Karthik Raman	Cancer genomics: ML approaches to identifying key mutations in cancer genomes responsible for radio-sensitivity Microbiome systems biology: ML and network science approaches to identify keystone species and network structure of environmental microbiomes Microbiome systems biology: Modelling the evolution of microbial communities (with applications to understand microbial succession and therapeutic strategies) (1 Student)
5	Srinivasa Chakravarthy	Developing an integral model of Deep Brain stimulation for Parkinson's disease; Developing a Cortiohippocampal model for Alzheimer's disease (2 students)
6	Vani Janakiraman	Understanding machinery in bacterial communication (2 students)

2) BS- Biological Sciences Stream

S.No	Faculty Name	Project title(s), Number of vacancies
1	A Gopala Krishna	Structure-function relationship of calcium-binding proteins (1 student)
2	Ninitha A.J	Impact of diabetes on neurodegeneration (1 student)
3	Arumugam Rajavelu	Functions of epigenetic reader complexes in malaria parasite virulence (1 student)
4	R. Baskar	1. Molecular mechanisms of tip organizer formation in Dictyostelium (1 student) 2. Study on chemotaxis towards bacterial volatiles (1 student)
5	Madhulika Dixit	Functional characterization of endothelial PTPN12 (1 student)
6	K.Subramaniam	Regulation of germline stem cells in C. elegans (1 student)
7	Nitish Mahapatra	Genetic and molecular bases of cardiometabolic disease (1 student)
8	Nathiya	Identification of novel therapeutic targets for Pancreatic neuroendocrine tumours (1 student)
9	Vani Janakiraman	Studies on host-pathogen interactions in respiratory bacterial infections (1 student)
10	Meiyappan Lakshmanan	1. Systematic design of next generation probiotics from unconventional bacterial strains 2. Establishment of cell culture process, media and cell expansion process for cultivated meat manufacturing.

3) BE- Biological Engineering Stream

S.No	Faculty Name	Project title(s), Number of vacancies
1	G.K Sureshkumar	Cultivation of high value biologicals under microgravity (experiments and modeling) (1 student)
2	Athi Narayanan N	Bacterial swarming through the lens of protein structure-function-folding relationship (1 student)
3	Richa Karmakar	1. Computational analysis of cell-cell interaction during chemotaxis (1 student) 2. Lab-on-chip technology for biomedical applications (1 student)
4	Smita Srivastava	Metabolic engineering in Cannabis sativa for enhanced Cannabinoids biosynthesis and reduced THC (1 student)
5	Greeshma Thrivikraman	Microfabrication approaches to design neuroimmune-cardiovascular interface on a chip (1 student)
6	Krithika Ravi	Microbial conversion of lignin to value-added products (1 student)
7	Meiyappan Lakshmanan	Mammalian systems biotechnology to accelerate biotherapeutic manufacturing (1 student)