Doctor of Philosophy Programme (DBS)

Ph.D. Advertisement for the Autumn 2026 semester

Applications are invited from eligible candidates for admission to the Ph.D. program of the Department of Biological Sciences, IISER Kolkata. The details of the admission process are given below. Applicants are advised to go through the research areas available at the following link on the Institute website (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/) as well as the department page (http://bio.iiserkol.ac.in/?page_id=5624).

The fields of research open to application in this round of Ph.D. selections are given below, along with names of faculty members working in the respective fields.

Faculty members whose names are given in the advertisement will accept students through this round of Ph.D. admissions. Therefore, before applying, students should check this list carefully to ensure that labs of their interest are available for admission in this round. PhD positions are NOT available in Dr. Radhika Venkatesan, Prof. Tapas Kumar Sengupta, Prof. Jayasri Das Sarma, Prof. Malancha Ta, Dr. Sumit Sen Santara and Dr. Partho Sarothy Ray's laboratory. Candidates are requested not to choose "No Specific Choice" in place of potential PhD supervisor.

Biophysics, Biochemistry, and Structural Biology: For students interested in Cellular Biophysics, Structural Biology, cryo-EM, Antimicrobial Resistance (AMR), Molecular Biophysics, Molecular Biology, Biochemistry/Chemical Biology, Structural Proteomics, Cell Signaling, Structure based Drug Designing, Drug Development, Drug Delivery, Molecular Medicine, Peptide based therapeutics against Cancer targeting oncogenic signalling pathways, Peptide-based Immuno- combination therapy, Targeted therapy for Cancer, Ischemic

Disease, Bleeding Disorder, Cancer Nanomedicine and Regenerative Nanomedicine, Clinical Proteomics of biological fluids and tissues from patient sample, Imaging of clinically important molecules in human tissues

- Amit Kumar Mandal (E-mail: amitkm@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/amitkm/)
- Bidisha Sinha (E-mail: bidisha.sinha@iiserkol.ac.in) (https://www.iiserkol.ac.in/%7Ebidisha.sinha/)
- Neelanjana Sengupta (E-mail: n.sengupta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/n-sengupta/)
- Partha Pratim Datta (E-mail: partha_datta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/partha_datta/)
- Rahul Das (E-mail: rahul.das@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rahul-das/)
- Rituparna Sinha Roy (E-mail: rituparna@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rituparna/)
- Babu Sudhamalla (Email: s.babu@iiserkol.ac.in) https://www.iiserkol.ac.in/old/en/people/faculty/dbs/s-babu/#gsc.tab=0

Theoretical biophysics, Mathematical Biology and Soft Matter Physics: For students from physics/mathematics background interested in biological physics, non-equilibrium phase transitions, and stochastic models in biology.

- Dipjyoti Das (E-mail: dipjyoti.das@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/dipjyoti-das/)
- Neelanjana Sengupta (E-mail: n.sengupta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/n-sengupta/)

Cell Biology and Protein Biochemistry: For students interested in Actin Binding protein in cell migration and diseases, membrane trafficking, channels and transporter biology, metal homeostasis and diseases

- Sankar Maiti (E-mail: spm@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/spm/)
- Subrata Pramanik (E-mail: subrata.pramanik@iiserkol.ac.in)
- (https://www.iiserkol.ac.in/web/faculty-details/subrata-pramanik)
- Arnab Gupta (E-mail: arnab.gupta@iiserkol.ac.in)

  ·https://www.iiserkol.ac.in/old/en/people/faculty/dbs/arnab-gupta/#gsc.tab=0

Developmental Biology: For students interested in Metazoan Morphogenesis.

- Mohit Prasad (E-mail: mohitprasad@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/mohitprasad/)

Plant Molecular Biology and Biotechnology: For students who are interested in Plant developmental and molecular biology. Genetic and epigenetic basis of plants' responses to climate change. Understanding the trade-off between plant growth and disease resistance using Arabidopsis and Rice as model systems. Plant biotechnological approaches to develop climate resilient crops.

- Sreeramaiah N. Gangappa (E-mail: ngsreeram@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/ngsreeram/#gsc.tab=0)

Disease Biology: For students interested in Virology, Immunology, Vesicle Biology, Epigenetics and Chromatin Biology, Gene Regulation, Neural Cell Biology, Neuroscience, Lysosome Biology and related Diseases, Channelopathies and diseases of membrane transporter, Natural Killer cells, Immunotherapy, Cancer, Infectious Diseases, Peptide based therapeutics against Cancer targeting oncogenic signalling pathways, Peptide-based Immuno-combination therapy, Targeted therapy for Cancer, Ischemic Disease, Bleeding Disorder, Molecular Basis of Stress Response, Drug Development, Drug Delivery, Molecular Medicine, Cancer Nanomedicine and Regenerative Nanomedicine, Clinical Proteomics of biological fluids and tissues from patient sample, Imaging of clinically important molecules in human tissues

Amirul Islam Mallick (E-mail: amallick@iiserkol.ac.in) (https://www.iiserkol.ac.in/~amallick/)

. Amit Kumar Mandal (E-mail: amitkm@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/amitkm/)

- Partha Pratim Datta (E-mail: partha_datta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/partha_datta/)

- Rahul Das (E-mail: rahul.das@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rahul-das/)
- Rituparna Sinha Roy (E-mail: rituparna@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rituparna/)
- Rupak Datta (E-mail: rupakdatta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rupakdatta/)

- Arnab Gupta (E-mail: arnab.gupta@iiserkol.ac.in)

  (https://www.iiserkol.ac.in/old/en/people/faculty/dbs/arnab-gupta/)

. Babu Sudhamalla (Email: s.babu@iiserkol.ac.in) https://www.iiserkol.ac.in/old/en/people/faculty/dbs/s-babu/#gsc.tab=0

Microbiology and Marine Biology: For students interested in Marine Microbiology, Climate Change and Ocean Acidification, Blue Carbon and Marine Carbon-dioxide removal (mCDR), Microbial Ecology, Gut Microbiome, Community and Ecosystem Ecology, Restoration Ecology, Biodiversity Conservation, Wildlife Habitat Management, and Bioremediation.

- Amirul Islam Mallick (E-mail: amallick@iiserkol.ac.in) (https://www.iiserkol.ac.in/~amallick/)

.Partha Pratim Datta (E-mail: partha_datta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/partha_datta/)

- Punyasloke Bhadury (E-mail: pbhadury@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/pbhadury/)
- Robert John Chandran (E-mail: robert.john@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/robert-john/)

Synthetic Biology and Biotherapeutics: For students interested in synthetic biology-based approaches to biomanufacturing of enzymes for industrial biotechnology, metabolic engineering of microbes, synthetic biology method development, synthetic biology based biosensors and synthetic biology based therapeutics to combat AMR. ·

- Supratim Datta (E-mail: supratim@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/supratim)
- Subrata Pramanik (E-mail: subrata.pramanik@iiserkol.ac.in)

(https://www.iiserkol.ac.in/web/faculty-details/subrata-pramanik)

For students interested in biotherapeutics in the area of Cancer biology, Peptide based therapeutics against Cancer targeting oncogenic signalling pathways, Peptide-based Immuno- combination therapy, Targeted therapy for Cancer, Regenerative medicine, Diabetic Wound Healing, Bleeding Disorder, Therapeutic Peptide Engineering.

- Rituparna Sinha Roy (E-mail: rituparna@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rituparna/)

Theoretical and Computational Biology: For students interested in any branch of Theoretical Biology, including Computational Biophysics, Multiscale Molecular Simulations, AI/ML based model development, Bioinformatics, and Computational Cell Biology and cryo-EM Image Processing

- Dipjyoti Das (Email: dipjyoti.das@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/dipjyoti-das/)

- Neelanjana Sengupta (E-mail: n.sengupta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/n-sengupta/)
- Partha Pratim Datta (E-mail: partha_datta@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/partha_datta/)
- Rituparna Sinha Roy (E-mail: rituparna@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/rituparna/)
- Subrata Pramanik (E-mail: subrata.pramanik@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/faculty-details/subrata-pramanik)

Behavior, Ecology, and Evolution: For students interested in the board areas of Animal Behaviour, Cognition, Biodiversity and Conservation, Community Ecology, Microbial Ecology, Chemical Ecology, Plant- insect Interactions and Marine Microbiology.

Anindita Bhadra (E-mail: abhadra@iiserkol.ac.in) (https://sites.google.com/view/doglabiiserkolkata/)

- Annagiri Sumana (E-mail: sumana@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/sumana/)
- Anuradha Bhat (E-mail: anuradhabhat@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/anuradhabhat/)
- Punyasloke Bhadury (E-mail: pbhadury@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/pbhadury/)
- Robert John Chandran (E-mail: robert.john@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/en/people/faculty/dbs/robert-john/)

Neurobiology and Regenerative Medicine: Degeneration is characterized by a decline in tissue and cellular functions and a significant rise in aging-related conditions such as neurodegenerative disorders, spinal cord injuries, stroke, cardiovascular diseases, metabolic disorders, musculoskeletal conditions, and immune system dysfunctions. However, in nature, while aging is regarded as a natural aspect of human life, certain organisms exhibit traits of biological immortality, effectively bypassing the aging process. Essentially, understanding the general principles of the cellular and genetic mechanisms governing regeneration, development, and degeneration across various species remains one of nature's profound mysteries in the natural sciences. Using unique model organisms, our team aims to uncover/reveal the genetic and molecular bases of these processes and translate this fundamental knowledge into therapeutic development for various diseases, such as neurodegenerative and cardiovascular diseases.

- Subrata Pramanik (E-mail: subrata.pramanik@iiserkol.ac.in) (https://www.iiserkol.ac.in/web/faculty-details/subrata-pramanik)

Note: Only those faculty members whose names are given above will accept students through this round of Ph.D. admissions. Therefore, before applying, students should check this list carefully to ensure that labs of their interest are available for admission in this round.

Institute-funded PhD Fellows

Institute-funded PhD positions are available in the following laboratories:

A. **Neurobiology and Regenerative Medicine**:

Faculty: Subrata Pramanik (E-mail: subrata.pramanik@iiserkol.ac.in)

- **Lab Web address**

(https://www.iiserkol.ac.in/web/faculty-details/subrata-pramanik)

Study Field: Degeneration is characterized by a decline in tissue and cellular functions and a significant rise in aging-related conditions such as neurodegenerative disorders, spinal cord injuries, stroke, cardiovascular diseases, metabolic disorders, musculoskeletal conditions, and immune system dysfunctions. However, in nature, while aging is regarded as a natural aspect of human life, certain organisms exhibit traits of biological immortality, effectively bypassing the aging process. Essentially, understanding the general principles of the cellular and genetic mechanisms governing regeneration, development, and degeneration across various species remains one of nature's profound mysteries in the natural sciences. Using unique model organisms, our team aims to uncover/reveal the genetic and molecular bases of these processes and translate this fundamental knowledge into therapeutic development for various diseases, such as neurodegenerative and cardiovascular diseases.

B. **Cell Biophysics**:

Faculty's name: Prof. Bidisha Sinha (E-mail: bidisha.sinha@iiserkol.ac.in) Lab web address: (https://www.iiserkol.ac.in/%7Ebidisha.sinha/)

Study Field: You will study how cells achieve a homeostatic mechanical state of their membrane during various processes/perturbations. Strong background knowledge of biophysics/physics/chemistry and programming will be useful in the project.

C. **Host-pathogen interactions:**

Faculty's name: Amirul Islam Mallick (Email: amallick@iiserkol.ac.in)

Lab web address: (https://www.iiserkol.ac.in/~amallick/

Study Field: We are seeking a highly motivated candidate for a PhD position focused on host-pathogen interactions. This collaborative project with an international partner aims to understand the molecular mechanisms underlying host-microbe interactions, with particular emphasis on mucosal pathogens**.** The successful candidate will investigate how pathogens manipulate host cellular pathways and immune responses using an interdisciplinary approach that integrates molecular biology, gut metagenomics, disease biology, and mucosal immunology**.**

Eligibility: Master's degree (or equivalent) in Microbiology, Immunology, Molecular Biology, or a closely related field. Strong academic record with a solid background in host-pathogen interactions, infectious diseases, or mucosal biology. Hands-on experience in laboratory techniques such as molecular cloning, PCR/qPCR, cell culture, microbiology, or sequencing approaches. Familiarity with gut microbiome analysis, metagenomics, or bioinformatics will be an advantage.

D. **Cell biology of membrane trafficking**:

Faculty: Arnab Gupta (E-mail: arnab.gupta@iiserkol.ac.in

Lab web address:

·https://www.iiserkol.ac.in/old/en/people/faculty/dbs/arnab-gupta/#gsc.tab=0

Study Field: Selected candidates will explore the role of membrane trafficking in transition metal homeostasis. A strong background in biochemistry and physiology is essential. Programming and light microscopy will be useful in the project.

E. Cryo-Electron Microscopy and related computation and structural biology:

Faculty's name: Prof. Partha Pratim Datta (E-mail: partha_datta@iiserkol.ac.in)

Lab web address: https://sites.google.com/view/ppd-lab/home

Study Field: An Institute Funded PhD fellowship is available in the PPD lab, specifically for the study field of Cryo-Electron Microscopy and related computation and structural biology.

In addition to the above, molecular biology, biochemistry, and microbiology will be an integral part of the overall study field for solving the 3D structures of protein-protein/nucleic acid- protein/ macromolecular complexes like ribosome, virus, etc., to understand their action mechanisms.

Desirable qualifications:

Strong knowledge of Linux-based computation is necessary. The candidate should be able to install different programs in the GPU workstation, manage it and run different software in it for cryo-EM image processing and related 3D data analysis. Also necessary is strong knowledge of computer programming languages, such as Python, C, C++, R, etc.

An excellent academic background from the research-minded and motivated candidates with an MSc/MS or equivalent degree in biophysics/physics/chemistry/biology is required over the minimum essential criterion mentioned below.

F. Structural basis of molecular signaling

Faculty's name: Rahul Das (Email: rahul.das@iiserkol.ac.in)

Lab web address: https://molecularsignalinglab513922014.wordpress.com/

Study Field: We are seeking a highly motivated candidate for a PhD position focused on studying the regulation of receptor or non-receptor tyrosine kinases in immune cells. This collaborative project aims to develop ligands that will generate predictable signaling at the membrane**.**

Desirable qualifications: A strong background in biochemistry/chemistry and molecular biology is essential. Acquaintance with programming and image analysis will be useful in the project.

PhD positions are NOT available in Dr. Radhika Venkatesan, Prof. Tapas Kumar Sengupta, Prof. Jayasri Das Sarma, Prof. Malancha Ta, Dr. Sumit Sen Santara and Dr. Partho Sarothy Ray's laboratory. Candidates are requested not to choose "No Specific Choice" in place of a potential PhD supervisor.

Minimum Eligibility Criteria

Masters' (or B.E., B.Tech., M.Tech., MBBS, MVSc, MD) degree holders or equivalent (with **minimum 55% marks**) in any branch of science, including Physics, Chemistry, Mathematics, Biological Sciences, Agricultural Sciences,

Veterinary Sciences, Ecology and Environmental Sciences, Pharmaceutical Sciences, Chemical Engineering or equivalent.

A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non- creamy layer)/Differently-Abled, Economically Weaker Section (EWS) and other categories of candidates.

Students whose final results in Master's or equivalent are yet to be declared can also apply. However, if selected, the offer for these students will be provisional, subject to fulfilling the above criteria **at the time of admission**.

AND

Applicants must have any one of the following qualifications.

· Qualified a National Level Eligibility Examination that provides a 5-year PhD fellowship such as CSIR–JRF (Category I) / UGC–JRF (Category I) / DBT–JRF– A / ICMR–JRF / DBT–BINC–JRF / Rajiv Gandhi National Fellowship/ National Fellowship for Scheduled Caste Students by CSIR-UGC / National Fellowship for Higher Education of ST Students / National Fellowship for OBC Candidates / National Fellowship for persons with disabilities (NFPWD) or Equivalent

· The aforementioned fellowships must be valid till December 31, 2026.

·Students with 4 Years bachelor's degree with 75% marks and having their own fellowship (CSIR, UGC etc.) now are eligible for the PhD Programme of IISER Kolkata

For institute-funded PhD positions, applicants must possess at least one of the following qualifications: NEET-PG, INI-CET, CSIR-UGC NET JRF (Category II), CSIR-UGC NET JRF (Category III), DBT-JRF (Category B), JGEEBILS, GATE, or an equivalent qualification.

Shortlisting and Interview Process

Please note that fulfilling the minimum essential criteria does not ensure shortlisting for interviews. The PIs in DBS may set additional shortlisting criteria based on the candidates' academic records, experience, and research experience.

Only those candidates who have been shortlisted for the interview stages will be informed of further details. Therefore, all candidates are requested to check this page (https://apply.iiserkol.ac.in/phd/) regularly for updates.

Few important points:

1. **PhD Candidates can select only those faculty members as potential supervisors whose names are given in the advertisement.**

2. Candidates are requested to provide their **personal cell no. and personal e-mail address** while filling up the PhD application form. It cannot be your guardian's cell no. or e-mail address.

3. Candidates are requested to send their queries to "PhD Helpdesk for DBS <dbs.phd.application@iiserkol.ac.in>" with a copy to **potential supervisor.**

4. Though the Department prefers in-person PhD interviews, online interview requests from the candidates may be considered only on a case-by-case basis, subject to the potential supervisor's discretion. Such requests should be sent to the **potential supervisor** with a copy to **"PhD Helpdesk for DBS <dbs.phd.application@iiserkol.ac.in>"**. **Candidates appearing for online PhD interviews can request their referees to e-mail the recommendation letters to the potential supervisor.**

5. Candidates are requested to go through “Frequently Asked Questions” using this link: https://apply.iiserkol.ac.in/phd/faq.html

6. **Candidates are requested not to choose “No Specific Choice” in place of potential PhD supervisor. You need to choose your potential PhD supervisor’s name among the faculty members’ names given in the advertisement.**

7. You can download the recommendation letter format using this link: https://apply.iiserkol.ac.in/phd/reco-format.pdf

8. If you are not able to submit your application, you are requested to send your queries to **“PhD Helpdesk for DBS <dbs.phd.application@iiserkol.ac.in>"** with a copy to **potential supervisor** and mention this phrase in the subject line **“Facing problem in submitting the PhD application form”.**

9. If you are not able to download the application form, in that case you need to ensure that you have completed the application form along with payment of the application fee, then only the **"Print Application Form"** link will become available.

10. Sometimes, the application fees are deducted from the online banking channel, but it fails and applicant may face problem in submitting application fees. **In that case, please visit the section "Fees" --> "Application Fee" and click on the "Refresh" link. Still, if it fails, wait for 2-3 days, money will be reverted back into the online banking channel. Then the applicants should go to Try Again under the "Fees" tab.**

11. Before the deadline, the applicant can edit both potential supervisor’s name and Statement of Purpose (SOP). The candidate could change the name of the supervisor from the drop-down menu (Potential supervisor) under the tab - Statement of Purpose and edit other information in this page.

DBS Autumn 2026 Ph.D. Timeline:

- **Advertisement (including Part-time) to be sent to the Acad cell by 2nd March**
- **Application webpage update by 02.03.2026**
- **PhD application portal opens: 08.03.2026, with an advertisement published in the newspapers, common and department-specific flyers circulated on social media**
- **Application portal closes: 7.05.2026**
- **Publication of shortlist for the Interview: 14-22.05.26**

DBS PhD Interview Dates: 2nd June (Tuesday) and 3rd June (Wednesday) and 9th June (Tuesday)

- **Selection Interview window: 29.05.26 - 19.06.26**
- **Departments send the list of selected candidates to the Director for approval marking the acadoff@iiserkol.ac.in in the copy.**
- **Publication of PhD interview results latest by: 25.06.2026**
- **Pre-registration portal opens: 29.06.2026 (Fees to be decided by DoSA section)**
- **Registration for Autumn Semester 2026-All new students- 29.07.2026**