

Indian Institute of Technology Delhi
Hauz Khas, New Delhi – 110016

ADVERTISEMENT NO. IITD/2022(II)/SIRE/IPDF/03

ADVERTISEMENT FOR THE POSITIONS OF POST DOCTORAL FELLOWS

IIT Delhi invites applications from qualified Indian Nationals, Persons of Indian Origin (PIOs) and Overseas Citizens of India (OCIs) for the Post-Doctoral Fellows (PDF) in the specialization mentioned. The appointment will be made exclusively for research purposes and can be for a maximum period of three years.

Qualified persons include:

- a) Institute specifically encourages applicants from SC/ST/OBC category as well as persons with disability to apply for these positions.
- b) Maximum age is 32 years for male and 35 years for female candidates (to be relaxed by 5 years in case of persons with physical disability, SC and ST and 3 years in case of OBC-NCL).
- c) Number of posts - 03

FELLOWSHIP:

The consolidated Fellowship amount is Rs. 75,000/- per month. House Rent Allowance (HRA), in lieu of on-campus housing, will be @ 24% of the fellowship amount.

Other Benefits etc.:

The post doctoral Fellow will also be supported by the Institute with a Professional Development Allowance of Rs.1.00 lakh per financial year (April-March) and any unspent amount of which cannot be carried forward to the next financial year. The PDF can avail the PDA for attending national/ international conferences and related expenditure, viz., air travel, visa fees, registration fee, boarding and lodging, local travel at the place of the conference, medical insurance for international travel etc. for presenting a paper or chairing a session in his/ her area of specialization. The PDF can also be availed for contingency that includes items like books, stationery, computer accessories, professional memberships, journal page charges, equipment such as Tablet, Laptop etc.

□ In addition to research work, a Post Doctoral Fellow is also expected to contribute to some teaching activities of the concerned academic unit to the extent of about 20% of his/ her time. This could involve spending time in teaching laboratories and / or tutorial delivery. This is consistent with the status of an academic staff as well as an overall responsibility of this institute to groom potential faculty for other institutions.

SPECIALIZATION:

Specialization in molecular mechanisms Molecular Biology, Genetics, Microbiology, Antimicrobial resistance, Next generation sequencing, Computational Genomics and Diagnostics. (Please see the specific expertise needed /desired for each post in the details below)

Project title: Rapid diagnostic solutions to combat antimicrobial resistance

Project summary:

Bacteria have acquired resistance to many of the antibiotics currently in use. We are edging towards a post-antibiotics era as the discovery of new classes of antibiotics is thinning and the rate of resistance acquisition is rampant. Most health-care related funding / policy making agencies across the world including WHO, Wellcome Trust, NIH, CDC, ICMR and Ministry of Health, India (cseindia.org/userfiles/inap_amr_20170420.pdf) etc. have recognized antimicrobial resistance (AMR) as one of the most important problems of this century. Due to limitations in the current microbiological methods it is estimated that more than two-thirds of antibiotic prescriptions are unnecessary and are empirical in nature. This practice is one of the root causes of emergence of AMR and its rapid spread in the last decade. Rapid diagnostics of bacterial infection and rapid susceptibility testing are need of the hour to guide clinical decision-making; this will greatly reduce the unnecessary use of antimicrobial and minimize the development of resistance. Currently there is a big knowledge gap in microbial resistance biology and the availability of biomarkers/ technology for rapid diagnostics. We believe the solution to these issues may be best provided by an interdisciplinary team of innovators and clinicians.

In the proposed research we integrate deep science-based technology innovation, validation in clinical settings, deployment and capacity building for long-term sustainability. Although the requirement of rapid pathogen identification and methods for antimicrobial susceptibility testing (AST) are well recognized, the major limitations include the knowledge gaps in understanding the genomic signatures and their correlation with AMR. In this proposal we focus on 4 major pathogens (*Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*) with a high incidence and prevalence of resistance to antibiotics in Indian clinical settings. We plan to collect isolates from two large tertiary care hospitals. Here, we propose to characterize AMR signatures for Indian isolates and use this information for the development of rapid tests for pathogen identification and AST.

MINIMUM QUALIFICATIONS AND EXPERIENCE:

Essential Qualifications:

PhD in Biological Sciences or Molecular Biology or Bioinformatics from a recognized University/Institute, with First division or equivalent in the last two degrees PLUS a minimum of two first author papers in standard international journals. The papers should be in the area of research relevant to the Project.

Desirable:

- a) Experience in Microbial Molecular Biology and Genetics (Post 1)
- b) Experience in NGS data analysis, computational genomics and software development (post 2)
- c) Experience in microbial diagnostics, clinical microbiology, AMR, molecular biology (post 3)

NOTES:

- a) The minimum requirement of qualifications and/or experience may be relaxed in respect of exceptional candidates.
- b) Mere fulfillment of the required minimum qualifications and experience does not entitle a candidate to be called for interview/discussion.
- c) The Institute reserves the right to fill or not to fill the posts advertised.
- d) The candidates called for presentation/discussion will be paid AC2-Tier fare by Train/Economy Class by Air or actual expenditure and AC Taxi by road (from Airport/Railway Station/ISBT and back) fare from their place of residence/work and back by the shortest route within India, subject to production of tickets/receipts.

ACCOMMODATION: Not eligible for residential accommodation on the Campus.

ABOUT THE CAMPUS: Extending into an area of 320 acres, the campus is imaginatively laid out with a picturesque landscape with clean and wide roads. The campus provides all essential amenities for community living including Staff Club, Hospital, Shopping Centre, Banks, ATMs, Post Office, Community Centre, etc.

It is a requirement that candidates visit the IIT Delhi website (<https://recruit.iitd.ac.in>), and submit the completed application for appointment against the above position. The website also contains useful information on various aspects of working and living at IIT Delhi and on the recruitment process. As a precaution, after submitting the application through the website, please retain a copy of the application with you. Candidates employed with Government/Semi-Government Organizations or with Autonomous Bodies must submit a printed version through proper channel at the address given below.

Only in those cases where Internet access is not available, an application form may be obtained from the Deputy Registrar (E-I) by sending a self-addressed envelope (26cm x 11cm) to the address given below. The completed application may be sent by postal mail to the address given below.

The last date for submission of applications is June 30, 2022.

Contact Address:

**Deputy Registrar (E-I)
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New Delhi-110016 (INDIA)**

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