

# Namrata

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## Education

### Institut de génomique fonctionnelle de Lyon (IGFL), ENS de Lyon

*Doctoral Student*

2024 - 2027

Thesis: Does regeneration re-use developmental gene regulatory networks (GRNs)?

### Katholieke Universiteit (KU), Leuven

*Master of Bioinformatics*

2022 - 2024

Thesis: Exploring The Dark Proteome: Microprotein

Result : 74.29% (Cum Laude)

### Kirorimal College, University of Delhi

*Master of Science, Zoology*

2015 - 2017

Thesis: Metabolic reprogramming and epigenetic regulation in cancer

Result: First Division (79.8%) (awarded Gold Medal for best academic record)

GPA: 4.00/4.00 (World Education Services iGPA Calculator)

### Deshbandhu College, University of Delhi

*Bachelor of Science (Honours), Zoology*

2012 - 2015

Result: First Division (90.02%) (awarded Gold Medal for best academic record)

GPA: 4.00/4.00 (World Education Services iGPA Calculator)

## Experience

### Integrated Bioinformatics Project

*Team member*

Oct - Dec, 2023

Project: Analysis of matrix deformation from cortical laser ablation images

### Center for Sustainable Agriculture

*Bio Lab Manager*

2020 - 2021

Projects:

1. Building resilient farm livelihoods of 20,000 farmers to adapt to climate change. (Funding from Azim Premji Philanthropy Initiative), 2020 - 2021
  - Establishment of CSA Biolab for production and maintenance of biofertilizer mother-cultures and quality testing of biofertilizers.
  - Microbial profiling of *Jeevamrutham* and *SMJ* (Simple Microbial preparation using *Jeevamrutham* as Inoculum) by Shotgun metagenome sequencing
2. COVID Livelihood Grant (Funded by Azim Premji Philanthropy Initiative), June 2020 - March 2021.
  - Training farmers to become bio-entrepreneurs by self-producing and marketing of biofertilizers across 3 districts of Andhra Pradesh, India.

### CSIR - IGIB (Institute of Genomics and Integrative Biology)

*Project Assistant*

2017 - 2019

Project: Sick Cell Anemia Mission

Advisor: Dr. Debojyoti Chakraborty (Senior Scientist)

### Department of Zoology, Deshbandhu College

*Project Student*

2013-2015

Project: Influence of plant extracts on reproductive physiology and behavior of *Aedes*

*aegypti*

Advisors: Dr. Ranjana Seth (Associate Professor), Dr. Meenakshi Prajneshu (Associate Professor), Dr. Varsha Baweja (Associate Professor)

**Publications,  
Patents, and  
Presentations**

**Note:** Also publishes as “Namrata Sharma”

Mohd Azhar *et al.* **Rapid and accurate nucleobase detection using FnCas9 and its application in COVID-19 diagnosis**, DOI: 10.1016/j.bios.2021.113207, **Biosensors and Bioelectronics**, 2021. [Impact Factor: 10.257]

Sundaram Acharya *et al.* **Francisella novicida Cas9 interrogates genomic DNA with very high specificity and can be used for mammalian genome editing**, DOI: 10.1073/pnas.1818461116, **Proceedings of National Academy of Sciences of the USA (PNAS)**, 2019. [Impact Factor: 9.412]

Chakraborty *et al.* **CRISPR Effector System Mediated Detection of Nucleic Acid Variants in DNA** US Patent (in process – Prov. No. 201911049432)

Namrata Sharma, **Influence of plant extracts on reproductive physiology and behavior of *Aedes aegypti***, Oral Presentation at INSCR International Conference (IIC), 2017.

**Conferences and  
Workshops**

- Organized **CRISPR-Cas9 based precision genome editing workshop**, CSIR-IGIB, 2018
- Participated in **INSCR International Conference on Role of Microbe-Plant-Animal Interactions in Human Health**, University of Delhi, 2017
- Attended workshop on **Microbial Genomics and Metagenomics**, Department of Zoology, University of Delhi, 2016
- Attended **National Symposium on Vector Biology and Vector Management**, Deshbandhu College, University of Delhi, 2015
- Attended **National Symposium on Vector Biology and Vector Management**, Deshbandhu College, University of Delhi, 2013
- Attended **National Seminar on Natural Products: Application in Human Welfare**, Ramjas College, University of Delhi, 2013
- Participated in the **INSPIRE Internship Program** organized by Deshbandhu College, University of Delhi, 2012

**Awards,  
Fellowships, and  
Honours**

- Received **certificate of appreciation** from **Telangana Social Impact Group, Government of Telangana** for my volunteer work during Covid-19 pandemic.
  - Secured **All India Rank 66 in CSIR-UGC NET (Life Sciences) exam and qualified for Junior Research Fellowship**, 2017
  - Secured **3<sup>rd</sup> rank in University and 1<sup>st</sup> rank (Gold Medal)** in Kirorimal College in M.Sc. Zoology, University of Delhi, 2017
  - Received **merit grant from Faculty of Science, University of Delhi** for securing 3<sup>rd</sup> rank in University in M.Sc. Zoology, 1st year, 2016
  - Secured **3<sup>rd</sup> rank in University and 1<sup>st</sup> rank (Gold Medal)** in Deshbandhu College in B.Sc. (Hons.) Zoology, University of Delhi, 2015
  - Received **merit grant from Faculty of Science, University of Delhi** for securing 3<sup>rd</sup> rank in University in B.Sc. (Hons.) Zoology, 2015
  - Received **Shri P.M. Kaul Memorial Award for Outstanding Academic Performance** in B.Sc. (Hons.) Zoology, 2015
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<b>Students Advised</b>	<ul style="list-style-type: none"> <li>– Katharina Kirchhof (co-advised by Dr. Debojyoti Chakraborty, CSIR-IGIB) Project: Purification and quantity estimation of Cas9 proteins.</li> <li>– Abhinav Pujar (co-advised by Dr. Debojyoti Chakraborty, CSIR-IGIB) Project: Purification and characterization of CRISPR-Cas9 components and demonstration of <i>In Vitro</i> Cleavage assay.</li> </ul>
<b>Skills and Techniques</b>	<ul style="list-style-type: none"> <li>– Electrophoretic Techniques (Agarose, SDS-PAGE, etc.)</li> <li>– Protein Purification (Cas9 variants) by Affinity &amp; Size-Exclusion Chromatography (HPLC)</li> <li>– Genomic &amp; Plasmid DNA Isolation</li> <li>– RNA Extraction</li> <li>– PCR (Polymerase Chain Reaction) and Cloning</li> <li>– Transformation by Heat Shock Method &amp; Electroporation</li> <li>– CRISPR based <i>In Vitro</i> techniques like <i>In Vitro</i> Transcription (IVT) and <i>In Vitro</i> Cleavage Assay (IVC)</li> <li>– Protein Quantity Estimation by BCA (Bicinchoninic Acid Assay) and Bradford Assay</li> <li>– Mammalian Cell Culture (Passaging, Transfection, Genomic DNA Isolation)</li> <li>– Primer &amp; Single guide RNA (sgRNA) designing</li> <li>– Quality Testing of Bio-fertilizers using Colony Count Method</li> <li>– R, Python, SQL, Bash, High performance computing, Git</li> <li>– Next-generation Sequencing Data Analysis (Bulk RNA seq, TF-ChIP seq, sc-ATAC seq, etc.)</li> <li>– Cortical Laser Ablation Image Analysis Using Optical Flow Technique</li> <li>– 10x Genomics Library Preparation, Cell Ranger ARC, ScanPy, Muon, SCENIC+</li> </ul>
<b>Extra Curricular Activities</b>	<ul style="list-style-type: none"> <li>– Trained in <i>Kathak Dance</i> (Indian Classical Dance form) for 4 years</li> <li>– Trained in Indian Classical Music (Vocal) for 2 years</li> <li>– Trained in <i>Hip Hop</i> (Western Dance) for 4 months</li> <li>– Member of NGO “Umeed - A Drop of Hope”</li> </ul>
<b>Referee’s Details</b>	<ol style="list-style-type: none"> <li>1. Joost Schymkowitz (Principal Investigator) <ul style="list-style-type: none"> <li>– Switch Laboratory (VIB-KU Leuven), ON1-bis Herestraat 49, room - 08.1235, 3000, Leuven, Belgium</li> <li>– Email : joost.schymkowitz@kuleuven.be</li> <li>– Tel no. +3216372573</li> <li>– Website : <a href="https://switchlab.org">https://switchlab.org</a></li> </ul> </li> <li>2. Neha Niharika (Assistant Professor) <ul style="list-style-type: none"> <li>– Department of Zoology, Daulat Ram College, Patel Marg, University of Delhi, 110007, New-Delhi, India</li> <li>– Email : nehaniharika@dr.du.ac.in</li> <li>– Tel no. +919810547222</li> </ul> </li> </ol>