

JYOTIRMOYEE DAS

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Education

PhD in Biology University of Alabama at Birmingham, USA 2023-Present

Relevant Modules: Advanced Genetics, Molecular Genetics, Biostatistics, Gene Editing.

Thesis: *Epigenetic modifications for the prevention of Breast cancer* under the guidance of **Prof. Dr. Trygve Tollefsbol**

MSc in Molecular Medicine University of Sheffield, Sheffield, UK 2022-2023

Successful completion with Merit

Relevant Modules: Genome to Gene Function, Human Gene Bioinformatics, Modulating Immunity, Human Diseases Genetics, Statistics and Laboratory Mathematics, Cancer Pathway- Molecular Basis of Tumorigenesis and Metastasis, Molecular Techniques in Cancer Research, Molecular Approaches to Cancer Diagnosis and Treatment, Laboratory Projects.

Thesis: *Investigating the role of DUBs in driving cancer metastasis using zebrafish xenotransplantation model* under the guidance of **Dr. Heba Ismail**.

Master of Technology in Biomedical Engineering Vellore Institute of Technology, Vellore 2019-2021

First class with Honor's- 7.93 CGPA

Relevant Modules: Engineering Mathematics, Rehabilitation Engineering, Basic electronics for engineers, Software for Embedded Systems, Bio signal Processing & Analysis, Physiological Control Systems, Advanced Statistical Methods, MEMS & NEMS for Biomedical Applications, Medical Image Processing, Medical Robotics, Biomaterials and Artificial Neural Networks.

Thesis: *Hemostasis time reduction by functionalizing bio-compatible Nano-materials* under the guidance of **Dr. Sujoy K. Das (CSIR- IICB, Kolkata) and Dr. Debashis Maji (VIT, Vellore)**

Bachelor of Technology in Biotechnology Amity University Uttar Pradesh 2015-2019

Upper Second Class- 6.41 CGPA

Relevant Modules: Biostatistics, Genetics, Biochemistry, Cell Biology, Microbiology, Molecular Biology, Enzymology, Recombinant DNA Technology, Immunology, Stem cells and tissue engineering, Computational Biology, Bioprocess Technology, Downstream Processing, Biophysics, Chemical biology and Engineering, Biomaterial Science, and Bioanalytical Techniques

Thesis: *Sterilization, Pasteurization and Processing of Raw Milk* under the guidance of **Mrs. Sushma Rani Singh**

Technical skills and Projects

IT Skills

- Proficient in the use of Microsoft Office, including Word, Excel and PowerPoint.
- Bioinformatics tools and databases-BLAST, NCBI, GenBank, USCG-Browser etc., R programming, Operating systems- Linux and Windows.

UAB Project

Jan'24-Present

Department of Biology, University of Alabama at Birmingham, United States

- Cell Culture (Secondary human cells)
- Western Blot, Immunocytochemistry, DNA/RNA Extraction, Gel Electrophoresis and PCR
- *In vitro* work on transgenic mouse model: Basic handling including surgery and injection.

Investigating the role of DUBs in driving cancer metastasis using zebrafish xenotransplantation model.

Department of Infection, Immunity and cardiovascular Diseases at University of Sheffield, Sheffield, UK

Jan'23-Sep'23

- Primary and stable breast cancer cell line culture.
- CRSPR/CAS9 gene editing techniques
- In vitro and in vivo metastatic assays including Zebrafish xenotransplantation models and cell migration assays
- Advanced live imaging and confocal microscopy techniques
- DUB activity assays
- Zebrafish embryos handling
- Data analysis and visualization

Hemostasis time reduction by functionalizing bio-compatible Nanomaterials

Department of IICD at CSIR-Indian Institute of Chemical Biology, Kolkata (CSIR-IICB)

Dec'20-May'21

- To functionalize the biocompatible material with another compound for developing the scaffold.
- Perform microbiological work to determine the antimicrobial property of the scaffold.
- Synthesis of various nanoparticles: Silver, gold, copper and chitosan

Morphological Changes in Erythrocytes under diseased conditions using various features of MATLAB.

Department of Sensor and Biomedical Technology, Vellore Institute of Technology (VIT)

Aug'19-Feb'20

- Understood the image processing pipeline approach is implemented in MATLAB which detects the parasites within a micrograph of a blood smear slide.
- Color based segmentation, Dilation and Erosion

Detection of Foot ulcers in Diabetic patients.

Department of Sensor and Biomedical Technology, Vellore Institute of Technology (VIT)

Oct'19-Dec'19

- Understanding the DAQ system
- The study of various pressure points in diabetic patients and normal subjects

A regulatory study of medical devices for countries including European Union, the UK, USA and Asian countries.

Global Product Compliance (GPC) Group (a Sweden-based global regulatory compliance company)

Dec'20-June'21

- Investigated and complied regulations of medical devices in EU, UK, USA, Australia, India, China and Japan.
- Product case study of Catheters produced by B. Braun to analyze the Safety data sheet, manufacturing and human health hazard.

Internships

1. **Antibiotic production, Purification and characterization from recombinant *E. coli*** under the facility of MRD Life Sciences Ltd., Lucknow, India.

May-Jun'18

- Purification of bacterial isolation has been done by primary and secondary screening of antibiotics producing bacteria.
- Microbial cell culture to study the antimicrobial compounds which can lead to good source of herbal drug.
- Plasmid DNA extraction from *Pseudomonas aeruginosa* with the help of molecular cloning. Extraction of antimicrobial compound by solvent extraction method, Antibioqram analysis, Phytochemical Analysis and Thin Layer chromatography (TLC).

2. **Study of surface Topography on Biomedical Implants in the Department of Sensors and Biomedical Technology**

Sep-Dec'19

- Enhancement of osseointegration of bone implants (bio-medical).
- Learning the process of Plasma spraying to coat Hydroxyapatite and titanium dioxide on a metal alloy

Publications

1. Mangalam Bajpai, **Jyotirmoyee Das** and Pragya Tiwari (2022). **Molecular and Biochemical Methods for Isolation and Characterization of Endophytes**. In the book 'Endophyte-Types, Potential uses and Mechanisms of action' Nova Publishers, New York. <https://doi.org/10.52305/JETR3242>
2. Subir Kumar Bose, **Jyotirmoyee Das**, Mangalam Bajpai, Ashutosh Gautam and Pragya Tiwari (2022). **Endophytic Actinomycetes: Overview, Distribution, and Multi-Faceted Applications**. In the book 'Endophyte Types, Potential uses and Mechanisms of action' Nova Publishers, New York. <https://doi.org/10.52305/JETR3242>

Relevant Work Experience

1. **Regulatory Affairs Executive** at *Global Product Compliance (GPC), Pune, India*

Aug'21- Aug'22

- Compiling and summarizing regulatory document for Medical Devices, Chemicals, Cosmetics and Nanomaterials.
- Research mentoring and providing guidance to research Interns
- Working with international clients and teams has improved my teamwork abilities.
- Managed work with research and regulatory team.
- Preparation of various written communications, reports and documents has enhanced verbal and written communication skills and used critical thinking to break down problems, evaluate solutions and make decisions to help interns.

2. **Research Trainee** at *Council of Scientific and Industrial research- Indian Institute of Chemical Biology, Kolkata, India*

Nov'20- Jun'21

- Conjugating various hydrogels that would be biocompatible and harmless for human body by incorporating various other constraints into it.
- Synthesis of various nanoparticles which had antimicrobial properties and could be used in forming the patch and increase its quality.

3. **Regulatory Research Intern** at *Global Product Compliance (GPC), Pune, India*

Dec'20-June'21

Skills and Achievements

- Awarded Blazer Fellowship at University of Alabama at Birmingham
- **Interpersonal skills:** Strong verbal and written communication skills, presentation skills, leadership quality, multitasking, and time management.
- **Scientific communication skills:** Scientific writing, oral and poster presentations delivered.
- Internship with **fellowship** at CSIR- Indian Institute of Chemical Biology, Kolkata, on an interview basis.
- A **reward money and a certificate of appreciation** for research project work at the Global Product Compliance (GPC), Sweden group.
- Proficient in English (International Language)- **IELTS** 8.5 overall
- Paper Presentation at Various Conferences:
 1. International Conference on Advances on Science, Engineering, and Technology on the topic "Production of recombinant protein in mammalian cell culture: process monitoring and media optimization".
 2. International Conference on Effect of Environment on Women's Health
 3. 1st Oral Presentation at the International Conference on Environment and Society (ICES 2019) Theme: The Effect of Global Warming on Climate.

Other Work Experiences

1. **Graduate Teaching Assistantship** at Department of Mechanical Engineering, University of Sheffield, UK. **Nov'22-Feb'23**
Documented records of the students attending the course- **Introduction to Medical device regulation** and assessed the reports prepared by the students for their evaluation.

2. **University Support Worker** at The University of Sheffield, Sheffield, UK **Sep'22**
Giving appropriate support and information when called upon & handling disabled students as a personal assistant, supporting them by attending classes on their behalf for notetaking during live class using Microsoft Office, exam writing and script reading.