

Tisya Dewan

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EDUCATION

University of Oxford

October 2025

Masters Degree : MSc by Research in Biochemistry in Professor Matthew Whitby's group

Imperial College London

2022-25

Undergraduate Degree : BSc (Hons) Biochemistry, Life Science Degree, 3 years - First Class

- **3rd year**
Stem Cells, Regeneration and Ageing, Mechanisms of Gene Expression, Bioinformatics, Final year thesis (80%) - Investigating the roles of ADNP and CHD4 within the ChAHP complex in mouse embryonic stem cells
- **2nd year**
Structural Biology, Genes and Genomics, Bioinformatics, Statistics and Programming, Protein Science, Integrative Cell Biology, Additional module - Climate Change, Topics in Biotechnology, Tutorials
Dissertation (88%) - Assessing the role of the members of the Rhomboid Superfamily in ER protein homeostasis.
- **1st year**
Biological Chemistry, Cell Biology, Enzymes and Metabolism, Molecular Biology

The Shri Ram School Mousari, India

2015-22

- **Indian School Certificate • Grade 12 • 2022:**
Mathematics-100%, English-98%, Physics-92%, Chemistry-93%, Biology-94%

CANCER RESEARCH EXPERIENCE

Research Intern • University of Oxford

Summer 2025

Supervisor: Professor Matthew Whitby

- Investigating the molecular mechanisms regulating recombination-dependent replication restart in eukaryotes, processes that are essential for genome stability and have important implications in cancer biology.
- Establishing a tetracycline-inducible expression system in fission yeast to promote Cas9 production for genome editing applications.
- Applying molecular cloning and yeast genetics to generate and validate constructs for functional studies.
- Developing skills in microscopy, forward genetic screening, and next-generation sequencing to probe mechanisms of fork collapse and restart.

Research Intern • MRC Laboratory of Medical Sciences

Summer 2024

Supervisor: Professor Richard Festenstein

- Fully funded position supporting a master's project in investigating the Damage Suppressor (Dsup) protein as a potential therapeutic investigation and preventive for multi-drug resistance (MDR) in cancer treatment.
- Conducted COMET assays and FACS sorting to assess the DNA damage response.
- Participated in cell line preparations by performing transformations, minipreps, and restriction enzyme analysis ensuring accurate and efficient incorporation of Dsup protein.
- Gained insights from lab meetings led by Professor Festenstein, enhancing my understanding of different experimental approaches and techniques.

Tutor Dissertation • Imperial College London

Summer 2024

Supervisor: Dr. Maruf Ali

- Assessed the roles of the members of the Rhomboid Superfamily in ER protein homeostasis.
- Conducted comparative analysis of Derlin and RHBDL4 to elucidate distinct functions and roles in ER protein homeostasis.
- Utilized bioinformatics tools including AlphaFold2 for structural predictions and Python for sequence alignment, enhancing skills in molecular biology and computational techniques.
- Investigated the implications of these proteins in cancer, as their expression and activity can influence tumor growth and offer potential therapeutic targets for protein-misfolding diseases.

ADDITIONAL RESEARCH EXPERIENCE AND INTERNSHIPS

Final Year Thesis • Imperial College London

Summer 2025

Supervisor: Dr. Marco Trizzino

- Bioinformatics-focused investigation of the zinc finger transcription factor ADNP and chromatin remodeller CHD4 within the ChAHP complex in mouse embryonic stem cells.
- Developed R scripts and analysis pipelines to process RNA-seq and CUT&RUN data following inducible protein depletion.
- Identified co-localization of CHD4 and ADNP at repetitive elements, promoters, and enhancers, and demonstrated CHD4's role in facilitating ADNP recruitment to chromatin.
- Integrated computational analyses with biological interpretation to provide a functional perspective on ChAHP-mediated chromatin regulation and genome stability.

Research Intern • Gatsby Sainsbury Undergraduate Studentship

Summer 2024-Present

Supervisor: Dr. Nick Aldred and Dr. Pallavi Singh

- Currently preparing a review manuscript for publication: *European mistletoe (Viscum album): A case study in hemiparasitism, genomic expansion, and biotechnological potential*.
- Engaging in fully funded research focused on developing novel bioadhesives inspired by the unique adhesive properties of mistletoe berries, aiming to address critical capability gaps in current commercial adhesives.
- Acquired proficiency in advanced lab techniques, including plant tissue culturing, protein extraction, plant physiology experiments, and bioinformatics.
- Presented research findings at the Gatsby Network Meeting through a poster presentation, attended by over 80 leading professors, PhD students, and postdoctoral researchers.

Research Intern • Institute of Molecular Science and Engineering, Imperial College London

Summer 2023

Supervisor: Professor Nicholas M Harrison

- Literature review - Evaluated the different recycling methods of nappies and their environmental impact.
- Created a set of criteria to determine which method is sustainable and discussed the areas of improvement in the production of nappies.

Gatsby Plant Science Education Programme

Summer 2023

- Selected for a 3 day fully funded plant science course at the Sainsbury Laboratory at the University of Cambridge.
- Interacted with various scientists working in the field of plant science.
- Science communication - giving insight into topical research aimed at the general public through the production of videos.

VOLUNTEERING AND RESPONSIBILITIES

Secretary of Communication, Imperial Environmental Committee

2023 - 25

- Elected member of Imperial College London's Environmental Committee, responsible for managing social media and outreach efforts to promote environmental sustainability.
- Actively foster awareness, engagement, and advocacy for environmental initiatives.

Natural History Museum Volunteer, Urban Nature Project

2023 - 25

- Conduct workshops at the Natural History Museum in London to educate children about urban nature.
- Developed interactive activities to engage young participants and foster a connection with nature.

Student Mentor, Imperial College London

2023 - 24

- Employed to facilitate Peer Assisted Study Skills sessions for first year biochemistry undergraduates.
- Led student-centered interactive discussion sessions focused on study skills.

Dama Health Ambassador

Winter 2022

- Dama health is using precision science to help females find their contraceptive fit.
- Contributed by recruiting participants for the research study.
- Science communication - wrote a blog on the use of menstrual cups with IUD/IUS.

ADDITIONAL SKILLS

Computing and Statistical skills

- Python and R programming.

Languages

- Fluent in English and Hindi.