Tisya Dewan

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EDUCATION

University of Oxford **October 2025**
Masters Degree : MSc by Research in Biochemistry in Dr. 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 - Investigating the roles of ADNP nad 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, Tutored Dissertation- 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 Moulsari, 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 **August 2025- Present**
Supervisor: Dr. 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 role 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 remodeler 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.