

Tisya Dewan

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EDUCATION

Imperial College London

2022-25

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

- **3rd year**
Stem Cells, Regeneration and Ageing, Mechanisms of Gene Expression, Bioinformatics
- **2nd year (72%):**
Structural Biology (68%) , Genes and Genomics (74%), Bioinformatics, Statistics and Programming (75%), Protein Science (73%), Integrative Cell Biology (62%), Additional module - Climate Change (72%), Topics in Biotechnology (69%), Tutored Dissertation- Assessing the role of the members of the Rhomboid Superfamily in ER protein homeostasis (88%).
- **1st year (66%)**
Biological Chemistry (70%), Cell Biology (65%), Enzymes and Metabolism (61%), Molecular Biology (68%)

The Shri Ram School Moulisari, India

2015-22

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

CANCER RESEARCH EXPERIENCE

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.
- Assisted in MTT assays to evaluate cell viability and proliferation under various treatment conditions.
- Gained insights from lab meetings led by Professor Festenstein, enhancing my understanding of different experimental approaches and techniques.
- Maintained a comprehensive lab notebook to track experimental design, procedures, and findings, ensuring meticulous documentation and reproducibility.

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

Research Intern • Gatsby Sainsbury Undergraduate Studentship

Summer 2024

Supervisor: Dr. Nick Aldred and Dr. Pallavi Singh

- 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.

Work shadowing scheme • Imperial College London Spring 2023

- Selected to shadow Ms. Steph Pendlebury an Institute Manager at the Institute of Molecular Science and Engineering.
- Drafted a blog and podcast on the topic of composting.
- Interacted with various staff members to understand the workings of the institute.

Research Intern • Caring Mahajan Imaging June 2021

Supervisors: Dr. Shelly Mahajan and Dr. Shet Masih

- Drafted a report on how PCR plays an important role in Covid-19 pandemic.
- Explored the diverse applications and methodologies of PCR.

VOLUNTEERING AND RESPONSIBILITIES

Secretary of Communication, Imperial Environmental Committee 2023 - Present

- 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 - Present

- 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.

ONLINE COURSES

Molecule to Market Virtual Experience Programme Summer 2023

- Completed online Pfizer course; knowledge of health economics and marketing.
- Learned about the marketing strategies of the pharmaceutical company.

Biological Research Experience Spring 2023

- Completed Life Arc online course; gained an understanding on how to analyse data.
- Optimisation of experimental conditions and synthesis of evidence through case studies.

ADDITIONAL SKILLS

Computing and Statistical skills

- Python and R programming.

Languages

- Fluent in English and Hindi.