

# Sahra Ali

Bristol, UK • sahrali24@hotmail.co.uk • [linkedin.com/in/sahra-a-25a843199](https://www.linkedin.com/in/sahra-a-25a843199)

## EDUCATION

---

### University of Bristol

Sep 2022 – Jul 2026

*BSc Cellular and Molecular Medicine*

**Key Modules:** Medical Microbiology and Infectious Diseases (73%); Disease and Defence (72%): covering bacterial disease, opportunistic infections, antimicrobial resistance, infection control and host-pathogen interactions.

**Projects & Coursework:** Fundamentals of Molecular Microbiology lab report (78%).

## RESEARCH PROJECTS

---

### ChronosWound — Independent Gene Expression Project

- Built a reproducible Python workflow to test whether wound age could be estimated from public human burn RNA-seq data: 49 samples from 39 patients spanning 3-27 days after injury.
- Used patient-grouped repeated nested cross-validation to prevent samples from the same patient crossing training and test folds; ridge regression achieved a median MAE of 2.80 days versus 4.26 days for the median-prediction baseline.
- Stress-tested the result using permutation testing, bootstrap confidence intervals and an exploratory cross-species transfer; documented data provenance, risk of bias and reproducibility checks.

### Dengue Host-Response Dissertation — University of Bristol

- Used R to analyse transcriptomic data from 112 dengue patients, testing whether the relationship between interferon response and disease severity differed by age.
- Reproduced the cohort's interferon signal, evaluated the non-significant age-by-severity interaction and investigated whether gene set choice and cohort age structure altered its interpretation.

## LABORATORY & TECHNICAL SKILLS

---

**Programming and data analysis:** Python and R for statistical analysis, visualisation, modelling and reproducible workflows; Excel for data handling and presentation.

**Microbiology and antimicrobial testing:** aseptic technique; bacterial culture handling; streak and spread plating; antimicrobial susceptibility testing; antibiotic-containing media; biofilm formation; MacConkey agar interpretation; microbial growth analysis.

**Molecular biology and assays:** PCR/qRT-PCR; gel electrophoresis; nucleic-acid analysis; serial dilution; bacteriophage plaque assays and viral-titre calculation; E. coli lac-operon analysis using  $\beta$ -galactosidase activity and lactose fermentation.

**Immunological and cell-based methods:** ELISA; Western blotting; immunofluorescence and microscopy; haemagglutination/HI; immuno dot blotting; flow cytometry; haemocytometer use.

**Laboratory practice:** laboratory notebooks; scientific reporting; infection-control procedures; accurate recording and interpretation of experimental results.

## RELEVANT EXPERIENCE

---

### Pathology Placement — Fulham Public Mortuary

Jun – Jul 2023

- Followed infection-control, PPE, confidentiality and record handling procedures in a regulated environment involving sensitive biological material.
- Observed post-mortem examinations and the identification and documentation procedures used to maintain traceability through each case.

### Course Representative — University of Bristol

Sep 2024 – Jul 2025

- Elected to consolidate competing student views, present evidence to academic staff and follow agreed actions through to reported outcomes.

### Judicial Shadowing — Royal Courts of Justice & Upper Tribunal

Jun – Aug 2024

- Observed how technical and documentary evidence was tested, recorded and used to support decisions under uncertainty.

## LEADERSHIP & ACHIEVEMENT

---

### UK Top 150 Future Leader — Future Leaders Magazine

2023/24

- Selected among 150 Black students and graduates for work making health information more accessible to underserved communities.
- **Mathematics competitions:** UKMT Gold and Junior Mathematical Olympiad Distinction.

## **ADDITIONAL SKILLS & INTERESTS**

---

**Communication:** competitive mootng and negotiation; presenting technical and evidence based arguments under pressure.

**Digital:** Microsoft Office, web development and scientific data presentation.