University of Leicester
AIM studentship project 2026

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Section 2 – *Project Information*

Project Title	Targeting Copper Efflux ATPases in Methicillin-resistant *Staphylococcus aureus* (MRSA) as a strategy to overcome persistence in macrophages

Project Summary

We invite applications for a fully-funded PhD project to study how methicillin resistant *Staphylococcus aureus* (MRSA) manages copper toxicity. The human immune-system uses copper toxicity to kill bacteria during infections. However, *S. aureus* has evolved mechanisms to survive this by using copper-transporting proteins called CopA, CopB and CopX. This project will focus on understanding structure and function of these proteins and how they help MRSA survive copper-rich environments. Using molecular biology, membrane-protein biochemistry, and cryo-electron microscopy (cryo-EM), you will investigate how these pumps work to export copper from bacterial cells. This project provides a unique opportunity to be at the cutting edge of antimicrobial-resistance research, working with an interdisciplinary supervisory team involving research groups from University of Leicester (UoL) and University of Birmingham (UoB). The knowledge gained could lead to new ways of targeting these pumps to weaken MRSA and improve infection control. You will be based within UoL which offers a vibrant multicultural interdisciplinary research environment and access to world-class research facilities for structural-biology including the state-of-the art 300 kEV Titan Krios and all sample-vitrification facilities. We welcome candidates with a background in microbiology, biochemistry, or structural biology who are interested in addressing the global challenge of AMR.

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