

**Mac Robertson Scholarship Report**  
**Amy Campbell**  
**University College Dublin July 2025 - September 2025**

**About me**

My name is Amy Campbell; I come from a town in Inverclyde in Scotland. I am a first year PhD student at the University of Strathclyde within the lab of Dr Helina Marshall. My PhD focuses on understanding how the atypical *Salmonella* serovar, *Salmonella* Uganda adapts to and evades host immunity.



I am working with 17 Uganda isolates retrieved from commercial meat and exotic animals from Colombia as well as a *Salmonella* Typhimurium type strain to understand the potential severity of these isolates. I was awarded £4,498 from the Mac Robertson scholarship in 2025 for a 2-month research placement at University College Dublin (UCD). UCD is a globally renowned institution ranking in the top 1% of higher education institutes worldwide and is one of Europe's leading research-intensive universities. Dublin itself is the capital city of the Republic of Ireland and holds great historical and cultural relevance, resulting in an extremely exciting place to live and study.



Some images of UCD's stunning campus

## **Why did you apply for the Travel Scholarship?**

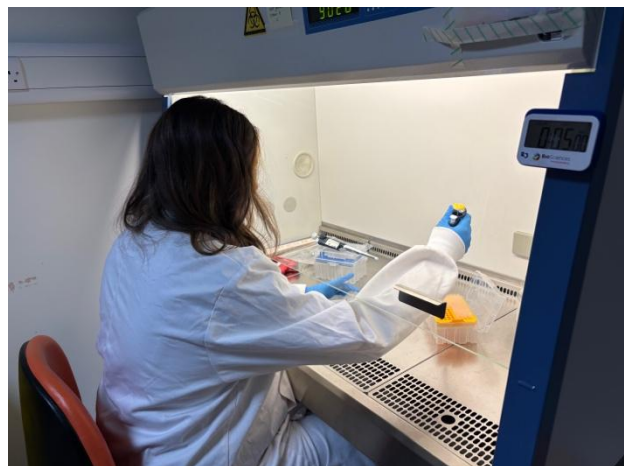
I applied for the scholarship as I had been offered to collaborate with Professor Séamus Fanning's lab, funding dependent. The Fanning lab holds the original Uganda isolates I have been investigating as part of a previous project in which no extensive work had been carried out. I was really eager to work with the Fanning lab as I wanted the opportunity to collaborate with Professor Fanning, he is the Chair of Food Safety and Zoonoses and leads the UCD Centre for Food Safety. He is an esteemed researcher and academic whose work has focused on food safety and control of zoonotic disease. Thus, the opportunity to get his expertise first hand regarding my PhD work was extremely exciting. Also, due to having an interest in staying in academia post PhD, I wanted to experience a different lab environment, particularly in a different country. Lastly, I have personally always wanted to visit Dublin due to its rich history and culture. I have family and friends with Irish heritage, and I was excited for the opportunity to experience it first-hand.

## **Details of your visit**

Here I worked with Professor Fanning and his lab group: Katie Wall, Caoimhe Doyle, Dr Maitiú Marmion and Dr Suriya Akter at the Institute of Food and Health within the Food Safety Centre at UCD. I was here from 15<sup>th</sup> July to 15<sup>th</sup> September 2025, with my trip being extended via another grant under Professor Fanning to work on a separate project. An opportunity which would not have been made available without the Mac Robertson committee getting me there in the first place. Professor Fanning also extended my collaboration beyond his lab group. Providing me the opportunity to work with Assoc. Prof. Dr. Alfonso Blanco who is the Scientific Director of the Core Technologies and the Director of the Flow Cytometry Core Technologies at the UCD Conway Institute as well as other international collaborators.

The research trip aimed to continue my current research on a select number of the Uganda isolates as well as assisting the lab in their current *Klebsiella* work. The proposed research project was adapted slightly due to lack of availability of equipment and materials. The project included 4 different work packages:

1. Minimum inhibitory concentration (MIC) determination of *Klebsiella* and *Salmonella*
2. Flow cytometer assays to assess the impacts of changes in bacterial environment
3. Creating evolutionary mutants to Fosfomycin and evaluating SNPs developed via long-read sequencing
4. Bioinformatics training using sequenced *Salmonella* genomes



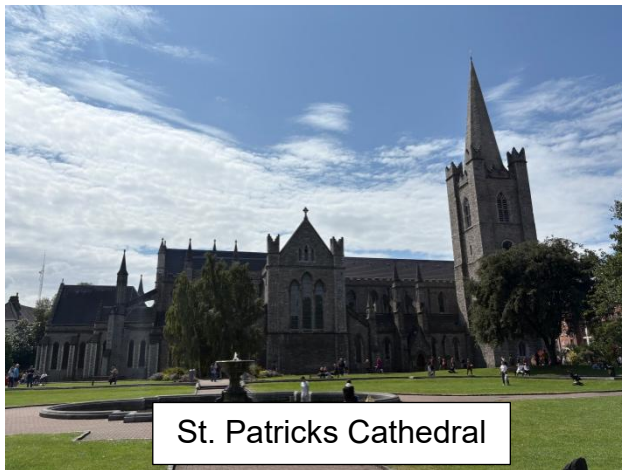
With the help of the scholarship, I was able to carry out the majority of the above work packages. This has allowed me to learn new skills in MIC techniques, flow cytometry as well as sequencing and bioinformatics. These are skills I can take and use at the



University of Strathclyde and beyond. Due to intellectual property and some discoveries intended for publication; I cannot go into great detail about the results. I was able to determine MICs of several isolates under different conditions against a panel of antibiotics via the use of both sensititre plates and microbroth dilution. These results expand upon my current antimicrobial resistance profiles I had already determined for my isolates. In addition, the sequencing of my isolates and subsequent bioinformatics and genomics training has allowed me to build a picture of their virulence and resistance profiles. All of this information enhances my understanding of my Uganda isolates.



MIC Determination via  
Microbroth Dilution

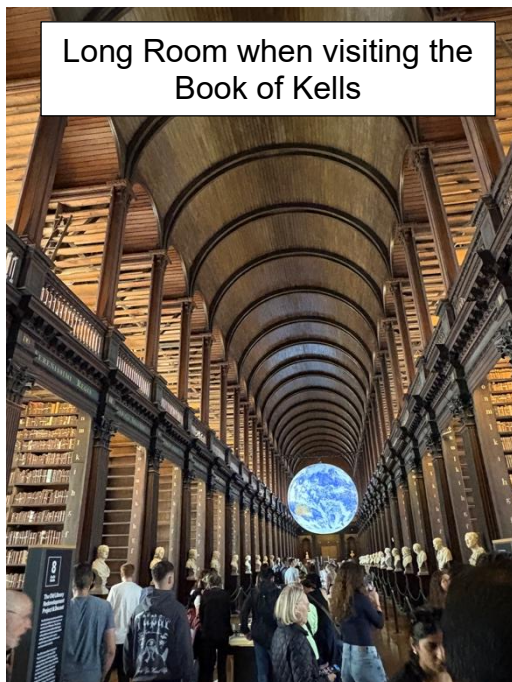


St. Patrick's Cathedral

Aside from my time in the lab, I had the opportunity to explore Dublin in my free time. I have included some photos to show where I have visited thanks to the grant. I was extremely lucky to have had the weather I had which is evident from the photos!



General Post Office (GPO)



Long Room when visiting the  
Book of Kells



National Leprechaun Museum





Kilmainham Gaol



DNA structure sculpture  
at the Botanic Gardens



Fleet Street



Dublin Castle



Temple Bar



Temple Bar





Molly Malone statue



Dublin from Seán O'Casey Bridge



EPIC: The Irish Emigration Museum



Bushy Park parkrun



Iveagh gardens waterfall

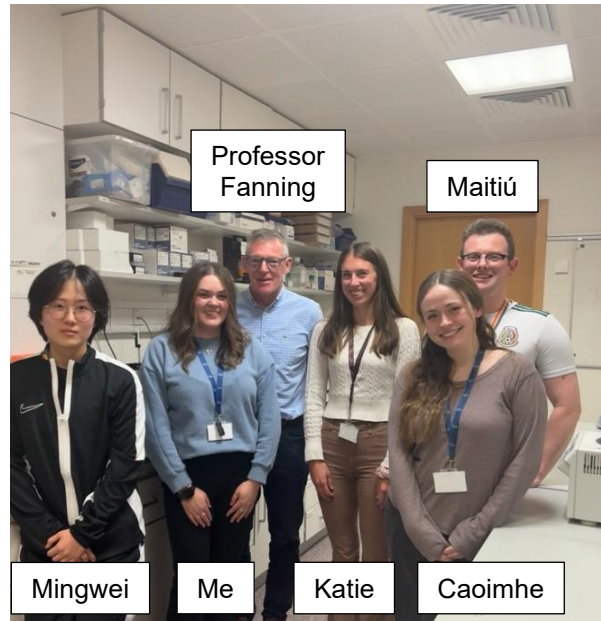
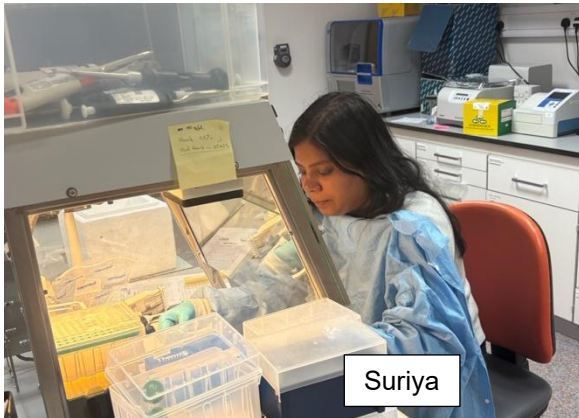


Guinness Storehouse



### **Impact of the Travel Scholarship**

This scholarship has provided an incredible opportunity not only for the continuation in areas of my research which were not possible at the University of Strathclyde but has also had an impact on my confidence in both my research capabilities and living independently in another country. It has allowed me to see my potential in adapting to different lab environments which will have lasting effects throughout my academic journey.



What I discovered during this trip regarding my isolates has changed the trajectory of my PhD in a new and exciting way and has opened a new and lasting collaboration with Professor Fanning and his lab.

### **Acknowledgements**

First and foremost, I would like to thank my supervisor Dr Helina Marshall for her encouragement and support in my application for the grant and all my research efforts both at the University of Strathclyde and at UCD. I would like to pass on my sincere thanks and gratitude to Professor Fanning and his lab group for all their help, encouragement, wisdom and guidance whilst navigating my way through a new city and lab. Lastly, sincerest thanks would like to be passed to the Mac Robertson scholarship committee without whom I would not have had this opportunity.

