**Finlay Warsop Thomas**

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## Education

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| **2021 – Present:** | **PhD, Microbiology** | Arizona State University |
| **2017 – 2021:** | **BSc. (Hons), Biology with French Language**<br><br>First class degree with honours. | The University of Manchester |

## Research Experience

**2021 – Present: Arizona State University**

My research in the group of Ferran Garcia-Pichel focuses on the role of symbiotic interactions in biological soil crusts, particularly through the axis of nutrient exchange between cyanobacteria and nitrogen-fixing heterotrophs. My work combines both laboratory methods and fieldwork at an NSF-funded long term ecological research site.

**2021: Manchester Institute of Biotechnology**

I worked in the laboratory of Michael Buckley using mass spectrometry to identify ancient faunal remains from their collagen sequences. I completed my undergraduate thesis project using this technique, also known as ZooMS, on samples from Grotte Mandrin, France in the context of Neanderthal diet. I then collaborated with researchers from the University of Witwatersrand to use this same technique on samples from Grassridge Rockshelter, South Africa.

**2019 – 2020: INRAE**

I completed a laboratory placement at INRAE in France, Europe's leading institute for environmental and agricultural research. I worked to characterise the experimental evolution of the phytopathogen *Ralstonia solanacearum* into a rhizobial symbiote by evaluating the progression in symbiotic phenotypes using fitness assays and microscopy. I also began to investigate candidate mutations that were advantageous to symbiosis and created mutant libraries.

**2017: Operation Wallacea**

I participated in a research expedition to Honduras with Operation Wallacea, gaining practical ecology skills in tropical rainforest and coral reef environments. I worked as part of a team of students and professional researchers to carry out surveying methods such as transects, quadrats, species counts, mist netting, DNA swabbing, as well as qualifying as a PADI scuba diver.

## Technical Expertise

- RT-qPCR
- DNA and RNA extraction
- Microbial isolation from environmental samples
- Microbiome community analysis
- Genetic recombination
- BSL-3 Work

- Compressed gas usage including isotopic tracers
- Staining and fluorescence microscopy
- Diverse sample preparation including usage of ball mills, microbalances, and vibratomes
- MALDI-TOF and EA-IRMS

## Publications, Presentations, and Awards

Heredia-Velásquez, A., Sarkar, S., **Warsop Thomas, F.,** Cairó Baza**,** A., Garcia-Pichel., F. Urea-based mutualistic transfer of nitrogen in biological soil crusts, The ISME Journal, (**2024)**

**Warsop Thomas, F**., Drewes, J., Nelson., C., Garcia-Pichel, F. *M. vaginatus* exometabolome influences cyanosphere community assembly. (Manuscript in preparation)

Nelson, C., Giraldo-Silva, A., **Warsop Thomas, F**., and Garcia-Pichel, F. Spatial self-segregation of pioneer cyanobacterial species drives microbiome organization in biocrusts. ISME COMMUN. 2, 114 **(2022).** https://doi.org/10.1038/s43705-022-00199-0

**2024:** *"A urea-based mutualistic transfer of nitrogen in biological soil crusts".* BIOCRUST5 conference in Chihuahua, Mexico.

**2022:** "*Biocrust architects: cyanobacterial segregation shapes microbiomes*". Jornada LTER Desert Ecology short course in Las Cruces, USA.

**2024:** Recipient of SOLS travel grant.

**2022**: Recipient of Jornada LTER Summer Fellowship Award, administered by the NSF.

## Teaching Experience

**2023 – Present:** MIC 206 Microbiology Laboratory.

**2022:** MBB 343 Genetic Engineering and Society.

**2019:** Workshop for high school students at Manchester Museum teaching DNA extraction and genetic techniques used in conservation.

## Outreach and Committee Positions

**2024 – Present:** Letters to a Pre-Scientist: I correspond with K-12 students regarding STEM career pathways to encourage broader participation from underrepresented communities.

**2022 – Present:** Ask a Biologist: I participate in the ASU 'Ask a Biologist' programme and respond to questions asked by K-12 students.

**2022 – Present:** Jornada LTER DEI Committee: I am a member of the DEI committee at Jornada LTER, a group who aims to promote equitable policy and actionable strategies for this site.

**2021:** Student-staff liaison committee, University of Manchester: I served as the course representative for biosciences, acting as a mediator between the wider student body and faculty members. I collected comments and concerns and communicated them at committee meetings.