

INFORMATION FOR CANDIDATES

for appointment as

Postdoctoral Fellow

DEPARTMENT OF MICROBIOLOGY & IMMUNOLGY FACULTY OF BIOMEDICAL SCIENCES

1. SUMMARY OF THE RESEARCH PROJECT:

As a Postdoctoral Fellow within the Department of Microbiology and Immunology, you will carry out experimental microbiology and infection-model research within the Wellcome Leap Focused Antibiotics programme. The project aims to develop antibiotic strategies that are activated preferentially at the site of infection, retaining antibacterial efficacy while minimising exposure of the gut microbiome. The Otago work will focus on preclinical evaluation against clinically relevant bacterial pathogens of common infections.

2. MAIN OBJECTIVES:

- To plan and execute experiments relating to the overall objectives of the project.
- To analyse data and present it at scientific meetings and write up results for publications.
- To assist with supervision and training of postgraduate students.

3. KEY TASKS:

- Lead experimental microbiology work for the project, including culture and quantitative analysis of clinically relevant bacterial pathogens.
- Establish and perform antimicrobial efficacy assays, including MIC/MBC testing, time-kill studies, biofilm assays and infection-relevant in vitro conditions as required by the programme.
- Design, optimise and perform in vivo bacterial murine infection studies.
- Conduct therapeutic efficacy studies, including optimisation of inoculum, treatment timing, dose and route; quantitative bacterial burden measurements and longitudinal bioluminescent imaging where appropriate.
- Evaluate antibiotics and analogues against agreed performance criteria and generate rigorous, reproducible datasets to support progression decisions.
- Analyse, visualise and interpret microbiological and in vivo datasets and maintain high-quality experimental records.
- Work closely with medicinal chemists, microbiologists and other collaborators at Otago and with international partners participating in the Wellcome Leap programme.
- Contribute to programme milestone reports, presentations, manuscripts and other research outputs.
- Contribute new ideas, procedures and technologies that improve project delivery.
- Assist with supervision and training of postgraduate and undergraduate researchers and contribute to general laboratory activities.

4. RELATIONSHIPS:

Directly responsible to: Associate Professor Daniel Pletzer.
Supervision of: Assistance with the supervision of students and technical staff associated with the projects.
Functional relationships with: Associate Professor Allan Gamble.
Professor Sarah Hook.

5. BUDGETARY RESPONSIBILITY:

Supervise ordering of materials associated with the research.

6. PERSON SPECIFICATION:

- A PhD in Microbiology, Infection Biology, Antimicrobial Research, Molecular Microbiology or a closely related discipline.
- Strong hands-on experience in experimental bacteriology/microbiology, including bacterial culture, quantitative microbiology and antimicrobial susceptibility testing.
- Demonstrated ability to design, optimise and independently execute microbiological experiments and troubleshoot experimental workflows.
- Experience with small-animal bacterial infection models and therapeutic intervention studies is strongly preferred.
- Experience with live-animal or bioluminescence imaging, antimicrobial time-kill assays, biofilm models, bacterial genetics or molecular microbiology would be advantageous.
- Ability to analyse and communicate complex experimental datasets; experience with R or equivalent analytical software is advantageous but not essential.
- Ability to work independently in a fast-moving, milestone-driven research programme, with excellent organisational skills and attention to detail.
- Creative thinking, problem-solving and analytical skills, together with the ability to work effectively in multidisciplinary teams.
- Excellent written and verbal communication skills.
- Evidence of research productivity, including peer-reviewed publications relevant to microbiology, infection biology or antimicrobial research.

7. MĀORI STRATEGIC FRAMEWORK:

Act in a manner consistent with the principles and implications, and the University's commitment to te Tiriti o Waitangi as articulated in the Māori Strategic Framework.

8. PACIFIC STRATEGIC FRAMEWORK:

Act in a manner consistent with the strategies and goals contained in the University's Pacific Strategic Framework.

9. SUSTAINABILITY:

Act in a manner consistent with the University's sustainability commitments; role-modelling sustainable practices.

10. EQUITY AND DIVERSITY:

Act in a manner consistent with the University's commitment to anti-racism and the co-creation of accessible, safe, respectful, and welcoming environments where all students and staff are supported to achieve their full potential.

11. HEALTH & SAFETY:

Act and work in a manner compliant with current health and safety at work legislation and University procedures, frameworks and guidelines. Role model safe behaviour and practices, share the responsibility to prevent harm and contribute to a safe campus and work environment, including raising workplace health and safety concerns for self, students, visitors and other staff.