POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

Department of Microbiology and Immunology
Faculty of Medicine, Dentistry and Health Sciences

Research Officer

POSITION NO	0052412
CLASSIFICATION	Research Officer Grade 1, Level A
SALARY	$73,669 - $99,964 (pro rata)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed-term for 2 years
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers, under 'Job Search and Job Alerts', select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Professor Benjamin Howden Tel +61 3834 45701 Email bhowden@unimelb.edu.au *Please do not send your application to this contact*

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Position Summary

The successful applicant will conduct bioinformatics analyses, with a focus on antimicrobial resistance detection and transmission, on pathogen genomics data generated by the Microbiological Diagnostic Unit Public Health Laboratory (MDU PHL) and research laboratories in The Department of Microbiology and Immunology. This will incorporate work on state-wide genomic data for resistant bacterial pathogens, contributions to nationally integrated pathogen genomic data, and support for regional activities in South Asia and the Pacific on the use of genomics data to better understand antimicrobial resistance in the region. In particular, phylogenetic methods that integrate with epidemiology will be used to infer transmission within outbreak clusters and in the broader community.

The MDU Public Health Laboratory and affiliated research groups work locally, nationally and regionally in the field of AMR surveillance and AMR genomics. This project will take advantage of these data, including those generated on a regular basis for ongoing surveillance. The results will contribute to understanding AMR prevalence and spread, resulting in scientific outputs, and will contribute to reports to relevant public health authorities, such as the Department of Health (DH), Victoria, Commonwealth Government, Australia and regional partners including the World Health Organisation. These outcomes will inform future strategies utilising pathogen genomics for enhancing detection and response to antimicrobial resistance.

The applicant will benefit from being embedded in a renowned pathogen genomics research team at The Doherty Institute that has ample expertise with genomic surveillance, bioinformatics, epidemiology, and public health. The MDU PHL is located within the Peter Doherty Institute for Infection and Immunity, where antimicrobial resistance is one of the major themes of the Institute. Partners within the Doherty Institute are responsible for a range of antimicrobial resistance activities within Australia and regionally, including programs for laboratory and surveillance capacity building in a number of countries. The successful applicant will report to Prof. Benjamin Howden as part of the broader supervisory team.

The School of Biomedical Sciences and its Departments foster a values-based culture of innovation and creativity to enhance the research performance of the University and to achieve excellence in teaching and research outcomes.

We invest in developing the careers and wellbeing of our students and staff and expect all to live by our Faculty Values of:

- Collaboration
- Compassion
- Respect
- Integrity
- Accountability

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

- Work collaboratively with research, public health and clinical partners to design research projects to understand the prevalence, transmission and impact of antimicrobial resistant pathogens in a range of settings.
- Prepare and assess quality of genome data and associated metadata.

- Conduct genomics/bioinformatics studies, including the use of emerging approaches, to understand the prevalence and transmission of antimicrobial resistant pathogens.
- Work collaboratively with public health laboratory staff to ensure research outcomes inform enhanced public health laboratory activities
- Prepare written and oral reports for reporting to public health, clinical and regional partners, and for peer-reviewed research publications.

1.2 ENGAGEMENT

- Attend, contribute to, and lead research group meetings.
- Communicate results with research team, and public health partners.
- Engage with clinical partners, such as hospital clinicians and infection control staff, and public health officials in a range of settings to ensure effective communication of AMR genomics data, and training to enhance clinician literacy in AMR genomics.
- Contribute to training of other staff in the group.

1.3 SERVICE AND LEADERSHIP

- Contribute to student supervision, and prepare and contribute to genomics training courses.
- Contribute to and coordinate genomic data management approaches within the research group.
- Keep a data and code repository to ensure reproducibility of results.
- Undertake other duties as requested by the supervisor and the Head of the Department
- Undertake Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in Section 4 and take responsibility for routine reviews of laboratory practices.

2. Selection Criteria

2.1 ESSENTIAL

- Completion of a Masters degree.
- Experience working with microbial genome data, particularly phylogenetics, molecular evolution, integrated genomic and epidemiological data, and data visualisation.
- Demonstrated experience programming in at least one scripting language (R or Python).
- Experience on the command line
- Excellent ability in problem solving, time allocation and maintaining accurate records.
- Demonstrated ability to work as a member of a research team and interact in a courteous and effective manner with academic, administrative and support staff.
- Excellent oral and written communication skills, and demonstrated capacity to communicate results with non-experts.

2.2 DESIRABLE

- PhD degree or equivalent in computational biology, bioinformatics, or biology.
- Programming in Java.
- Demonstrated experience with Bayesian phylogenetic methods and familiarity with the BEAST or BEAST2 platform.

2.3 SPECIAL REQUIREMENTS

- N/A

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy 2015-2020 and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous deserve to service for excellence and reach the targets of Growing Esteem.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

http://safety.unimelb.edu.au/topics/responsibilities/

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY

The Department of Microbiology & Immunology is one of the departments within the School of Biomedical Sciences in the Faculty of Medicine, Dentistry and Health Sciences. Further information is available at http://www.microbiol.unimelb.edu.au/ and http://bsac.unimelb.edu.au/.

5.2 THE PETER DOHERTY INSTITUTE FOR INFECTION AND IMMUNITY

The Doherty Institute is a world-class institute combining research in infectious disease and immunity with teaching excellence, reference laboratory diagnostic services, epidemiology and clinical services. It is a joint venture between the University of Melbourne and Melbourne Health.

A new, purpose-built building for the Doherty Institute was completed in early 2014. The members of the Doherty include the Department of Microbiology and Immunology and the Microbiological Diagnostic Unit Public Health Laboratory of the University of Melbourne, the Victorian Nosocomial Infection Surveillance System, The Victorian Infectious Diseases Reference Laboratory, The Victorian Infectious Diseases Service, and The World Health Organisation Collaborating Centre for Reference and Research on Influenza.

Further information about the Doherty Institute is available at: http://www.doherty.unimelb.edu.au

5.3 SCHOOL OF BIOMEDICAL SCIENCES

https://biomedicalsciences.unimelb.edu.au/

The School of Biomedical Sciences is one of the most prominent and diverse Schools in the Faculty of Medicine, Dentistry & Health Sciences and is comprised of three Departments - Anatomy and Physiology, Biochemistry and Pharmacology, and Microbiology and Immunology.

The School is situated on the University's Parkville Campus and is part of the largest biomedical precinct in the southern hemisphere, providing access to world class research facilities for staff and students.

The School fosters a values-based culture of innovation and creativity to achieve research and teaching excellence.

5.4 FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

www.mdhs.unimelb.edu.au

The Faculty of Medicine, Dentistry & Health Sciences has an enviable research record and is the University of Melbourne's largest faculty in terms of management of financial resources, employment of academic and professional staff, teaching of undergraduate and postgraduate (including research higher degree) students and the conduct of basic and applied research. The Faculty's annual revenue is $628m with approximately 55% of this income related to research activities.

The Faculty has a student teaching load in excess of 8,500 equivalent full-time students including more than 1,300 research higher degree students. The Faculty has approximately 2,195 staff comprising 642 professional staff and 1,553 research and teaching staff.

The Faculty has appointed Australia's first Associate Dean (Indigenous Development) to lead the development and implementation of the Faculty's Reconciliation Action Plan (RAP), which will be aligned with the broader University – wide plan. To enable the

Faculty to improve its Indigenous expertise knowledge base, the Faculty's RAP will address Indigenous employment, Indigenous student recruitment and retention, Indigenous cultural recognition and building partnerships with the Indigenous community as key areas of development.

5.5 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at http://about.unimelb.edu.au/careers.

5.6 GROWING ESTEEM, THE MELBOURNE CURRICULUM AND RESEARCH AT MELBOURNE: ENSURING EXCELLENCE AND IMPACT TO 2025

Growing Esteem describes Melbourne's strategy to achieve its aspiration to be a public-spirited and internationally-engaged institution, highly regarded for making distinctive contributions to society in research and research training, learning and teaching, and engagement. http://about.unimelb.edu.au/strategy-and-leadership

The University is at the forefront of Australia's changing higher education system and offers a distinctive model of education known collectively as the Melbourne Curriculum. The new educational model, designed for an outstanding experience for all students, is based on six broad undergraduate programs followed by a graduate professional degree, research higher degree or entry directly into employment. The emphasis on academic breadth as well as disciplinary depth in the new degrees ensures that graduates will have the capacity to succeed in a world where knowledge boundaries are shifting and reforming to create new frontiers and challenges. In moving to the new model, the University is also aligning itself with the best of emerging European and Asian practice and well-established North American traditions.

The University's global aspirations seek to make significant contributions to major social, economic and environmental challenges. Accordingly, the University's research strategy *Research at Melbourne: Ensuring Excellence and Impact to 2025* aspires to a significant advancement in the excellence and impact of its research outputs. http://research.unimelb.edu.au/our-research/research-at-melbourne

The strategy recognises that as a public-spirited, research-intensive institution of the future, the University must strive to make a tangible impact in Australia and the world, working across disciplinary and sectoral boundaries and building deeper and more substantive engagement with industry, collaborators and partners. While cultivating the fundamental enabling disciplines through investigator-driven research, the University has adopted three grand challenges aspiring to solve some of the most difficult problems facing our world in the next century. These Grand Challenges include:

- Understanding our place and purpose – The place and purpose grand challenge centres on understanding all aspects of our national identity, with a focus on Australia's 'place' in the Asia-Pacific region and the world, and on our 'purpose' or mission to improve all dimensions of the human condition through our research.
- Fostering health and wellbeing – The health and wellbeing grand challenge focuses on building the scale and breadth of our capabilities in population and global health; on harnessing our contribution to the 'convergence revolution' of biomedical and health research, bringing together the life sciences, engineering and the physical sciences; and on addressing the physical, mental and social aspects of wellbeing by looking beyond the traditional boundaries of biomedicine.
- Supporting sustainability and resilience – The sustainability and resilience grand challenge addresses the critical issues of climate change, water and food security, sustainable energy and designing resilient cities and regions. In addition to the technical aspects, this grand challenge considers the physical and social functioning of cities, connecting physical phenomena with lessons from our past, and the implications of the technical solutions for economies, living patterns and behaviours.

Essential to tackling these challenges, an outstanding faculty, high performing students, wide collaboration including internationally and deep partnerships with external parties form central components of Research at Melbourne: Ensuring Excellence and Impact to 2025.

5.7 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at http://www.unimelb.edu.au/governance