



POSITION DESCRIPTION

Melbourne School of Population and Global Health
Faculty of Medicine, Dentistry and Health Sciences

Research Fellow in Global Influenza Dynamics

POSITION NO	0057620
CLASSIFICATION	Academic Research
SALARY	Level A: \$77,171 - \$104,717 p.a
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-time (1.0 FTE)
BASIS OF EMPLOYMENT	Fixed-term for 12 months with an extension possible
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Professor James McCaw Tel +61 3 8344 9145 Email jamesm@unimelb.edu.au <i>Please do not send your application to this contact</i>

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

Acknowledgement of Country

The University of Melbourne would like to acknowledge and pay respect to the Traditional Owners of the lands upon which our campuses are situated, the Wurundjeri and Boon Wurrung peoples, the Yorta Yorta Nation, the Dja Dja Wurrung people. We acknowledge that the land on which we meet and learn was the place of age-old ceremonies, of celebration, initiation and renewal, and that the local Aboriginal peoples have had and continue to have a unique role in the life of these lands.

Position Summary

The Research Fellow in Global Influenza Dynamics will undertake an integrated program of research in the mathematical sciences to study the global circulation of influenza viruses, with the aim to understand the emergence and impact of different strains in time and space. The role of antigenic drift, multi-strain dynamics, immune development and cross-protection will be considered and their potential roles in shaping global influenza dynamics will be investigated.

Data sources, including but not limited to serological data, infection data and genomic data, will be drawn upon to inform model parametrisation. Applications in terms of improved epidemic forecasting for seasonal epidemics and/or strategies for enhancing annual vaccination strain selection processes may be considered.

The successful applicant(s) will have completed (or be nearing completion) a PhD in infectious disease dynamics, applied mathematics, or a closely related field of research, with a developing or established profile in research as a member of a team. They will have demonstrated an ability to develop mathematical models of infection and transmission that are designed to address applied problems in infectious diseases research. They will have a track-record in publishing scientific findings in a timely manner and have shown an aptitude for engagement with external parties outside of academia.

The appointee(s) will report to Professor James McCaw (Infectious Disease Dynamics Unit) and work closely with Dr Freya Shearer and Dr Robert Moss. As a member of the Melbourne School of Population and Global Health's academic team the appointee will be expected to support the broad ethos of the School and the School's compliance with University policies and procedures, including environmental health and safety.

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

- ▶ Lead the development of a novel mathematical or computational model of global influenza dynamics, accounting for antigenic drift and how past exposure and/or vaccination shapes immunity and protection from infection
- ▶ Establish a statistical inference methodology to enable application of the influenza dynamics model to available data.
- ▶ Contribute to ongoing research on how to better prepare for and respond to seasonal influenza epidemics, through contributions to the fundamental understanding of global influenza transmission dynamics, improved epidemic forecasting capabilities and scientific support for annual vaccine strain selection.
- ▶ Report on research findings at regular meetings, and through formal presentations at Centre, School and Faculty seminars, national and international conferences and partner organisations.

- ▶ Draft manuscripts for publication in peer-reviewed journals reporting study findings.
- ▶ Contribute to day-to-day training and support of graduate research students and research assistants associated with this research programme.
- ▶ Contribute to and participate in teaching and learning activities (e.g. occasional lectures) in the school as requested.

1.2 LEADERSHIP AND SERVICE

- ▶ Provide service to the University and actively participate in meetings and committees as requested.
- ▶ Other research duties commensurate with the position as directed by the supervisor.

1.3 RESPONSIBILITY AND COMPLIANCE

- ▶ Maintain a sound knowledge of current University Policy and Procedures, and reliably follow these or provide compliant advice to others;
- ▶ Reliably follow communications protocols and/or policies as appropriate.
- ▶ Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in Section 5.
- ▶ Behavioural Expectations - All staff are expected to maintain the following behaviours:
 - ▶ Treat everyone equitably; act fairly with staff and demonstrate respect for diversity
 - ▶ Be an effective team player who is cooperative and gains the trust and support of staff, peers and clients through collaboration.

2. Selection Criteria

In order to be considered for interview by the Selection Panel, applicants must address the following Criteria in their application. Please visit the University website how to address [Essential Selection Criteria](#)

2.1 ESSENTIAL

- ▶ Completion of a PhD in infectious diseases dynamics, modelling, data analytics or a related area.
- ▶ Demonstrated ability to use modelling and statistical computing programs and languages such as R, python, MATLAB or C/C++.
- ▶ A developing profile in research as a member of a team, as evidenced by the production of research publications, including literature searchers, and drafting manuscripts and presentations at conferences.
- ▶ Demonstrated potential for a career in multi-disciplinary research as evidenced by active contribution to research projects or other professional activities with multiple and diverse stakeholders.
- ▶ Sound written and verbal communication skills, including the ability to communicate technical material to a range of less or non-technical stakeholders from both a research and policy environment.

2.2 DESIRABLE

- ▶ Experience in modelling the transmission dynamics of influenza or SARS-CoV-2.
- ▶ Undergraduate and/or graduate teaching and/or tutoring experience.

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 Advancing Melbourne strategy that addresses 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 desire to strive for excellence and reach the targets of Advancing Melbourne.

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:

<https://safety.unimelb.edu.au/people/community/responsibilities-of-personnel>

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

5. *Other Information*

5.1 INFECTIOUS DISEASE DYNAMICS UNIT, CENTRE FOR EPIDEMIOLOGY AND BIOSTATISTICS

The Infectious Disease Dynamics Unit at the Centre for Epidemiology and Biostatistics conducts research in mathematical epidemiology and Bayesian statistical methods for infectious disease analytics, infectious disease surveillance, decision-science and pandemic planning and response. The unit is a key node in the Parkville precinct-wide infectious disease modelling and analytics network. Staff and students work closely with colleagues in the School of Mathematics and Statistics, School of Computing and

Information Systems and the Peter Doherty Institute for Infection and Immunity. The unit is led by Professor James McCaw and Dr Freya Shearer, and supports 5 research staff based in the unit, and additional post-doctoral staff and graduate research students primarily based in the School of Mathematics and Statistics. The unit has a national leadership role in viral respiratory disease surveillance, influenza and COVID-19 forecasting and pandemic planning and response. It has led Australia's national COVID-19 situational assessment consortium, providing expert advice to peak national committees such as the Australian Health Protection Principal Committee and Communicable Disease Network of Australia since January 2020.

5.2 CENTRE FOR EPIDEMIOLOGY AND BIOSTATISTICS

The Centre for Epidemiology and Biostatistics is one of 4 Centres and an Institute that comprise the Melbourne School of Population and Global Health.

Our Centre's units include:

- i) Allergy and Lung Health
- ii) Twins Research Australia
- iii) Biostatistics
- iv) Breast Cancer
- v) Colorectal Cancer
- vi) High Dimensional Analytics
- vii) Indigenous Health and Epidemiology
- viii) Population Interventions
- ix) Infectious Disease Dynamics Unit
- x) Sexual Health
- xi) Neuroepidemiology
- xii) Teaching and Learning
- xiii) Causal Inference in Epidemiology

The Centre for Epidemiology and Biostatistics is at the forefront of a preventative health revolution. Big data, changing infectious diseases patterns and multi-disciplinary collaborations are transforming the ways public health disciplines are researched and taught. Our Centre aims to be a leader in this evolving environment.

Epidemiology and biostatistics provide solutions to global public health challenges that demand multi-disciplinary responses. Our Centre's approach to research, teaching, and research training reflects this reality. We combine deep expertise with a broad range and reach – through our nine units, and our active links to other renowned institutions. This ensures our researchers and graduates are ready to contribute to preventing and alleviating the world's common, debilitating and burdensome health issues.

Further information about the Centre is available at

<http://mspgh.unimelb.edu.au/centres-institutes/centre-for-epidemiology-and-biostatistics>

5.3 THE MELBOURNE SCHOOL OF POPULATION AND GLOBAL HEALTH

The Melbourne School of Population Health was established in the Faculty of Medicine, Dentistry and Health Sciences in 2001. It became the Melbourne School of Population and Global Health in 2013. Approximately 300 academic and professional staff work across the School and its partner agencies. The School's total budget is in excess of \$50m. There are approximately 120 higher degree research students (predominantly PhD).

The School aims to strengthen the understanding, capacity and services of society to meet population health needs and to improve the quality and equity of health care. It employs a population health framework that incorporates public health and preventative medicine, health promotion, clinical medicine and allied healthcare disciplines and an equity and evidence-based approach to health care and health policy. Its research programs aim to elucidate the genetic, environmental, social and economic determinants of health, and to focus on the evaluation of the health systems, programs and services that seek to prevent disease and injury and to promote health. The School provides research and professional development opportunities for medical undergraduates, postgraduates in a wide range of disciplines, clinicians in all sectors of the health care industry, scientists, professionals and leaders in population health.

The School is currently composed of four Centres and one Institute:

CENTRES

- ▶ Centre for Health Equity (CHE)
- ▶ Centre for Health Policy (CHP)
- ▶ Centre for Epidemiology and Biostatistics (CEB)
- ▶ Centre for Mental Health (CMH)

INSTITUTES

- ▶ The Nossal Institute for Global Health (NIGH)

Further information about the School is available at <https://mspgh.unimelb.edu.au/>

5.4 BUDGET DIVISION

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 \$630m 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 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

- ▶ We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.
- ▶ We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.
- ▶ We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.
- ▶ We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes; place, community, education, discovery and global.

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 <https://about.unimelb.edu.au/strategy/governance>