POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

Centre for Epidemiology and Biostatistics
Melbourne School of Population and Global Health
Faculty of Medicine, Dentistry and Health Sciences

RESEARCH FELLOW – COMPUTATIONAL BIOLOGY

POSITION NO	0042770
CLASSIFICATION	Research Assistant Grade 2/Research Fellow Grade 1, Level A Research Fellow Grade 2, Level B Level of appointment will be commensurate with the qualifications and relevant experience of the successful appointee.
SALARY	Level A $66,809 – $90,657 p.a. or Level B $95,434 – $113,323 p.a
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed term position available for 2 years Fixed term contract type: Externally Funded Work focus category: Academic Research
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	Prof. Julie A Simpson Telephone: +61 3 8344 0732 Email: julieas@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 Research Fellow will be working on an externally funded research programme that has the overarching aim of improving the treatment and control of malaria.

In particular they will be primarily working on:-

1. Mathematical models which describe the interplay between antimalarial drug concentration and effect on clearing the malaria infection. This will involve model development and validation, and programming of an open access web-based software tool that allows users to simulate patient outcomes following antimalarial dosing schemes.

2. Statistical analysis of malaria epidemiology and impact of policy change in Papua, Indonesia. This will use data from a comprehensive malariometric surveillance program with data from hospital records, cross sectional surveys, entomology and meteorology.

The successful applicant will have completed a PhD in computational biology or a closely related area of research, with a developing profile in research as a member of a team. They will have demonstrated an ability to publish scientific findings in a timely manner and have shown the potential for leadership in research with the ability to use a range of statistical and computing programs. They will be required to work within the strict time and organisational constraints of this short term project, assisting in delivery of scientific publications and other relevant outputs and meet relevant reporting timelines.

The appointee will report to Professor Julie Simpson (Head of Biostatistics Unit) and work closely with A/Prof James McCaw (Modelling and Simulation Unit). 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 - ADVANCEMENT OF THE DISCIPLINE

- Work collaboratively with the investigator team to contribute to the development of models and associated statistical inference techniques to explain antimalarial drug action, including development of an open access web-based software tool for simulating malaria treatment outcomes.
- Working with the investigator team, contribute to the analysis and interpretation of routinely collected hospital data of patients with malaria, including drafting of statistical analysis plans and manuscripts.
- Report on model findings at regular meetings, and through formal presentations at Centre, School and Faculty seminars and national and international conferences.
- Draft manuscripts for publication in peer-reviewed journals reporting study findings.

- Contribute to day-to-day training and support of PhD students and research assistants associated with this research programme.

1.2 TEACHING & LEARNING

- Contribute to and participate in teaching and learning activities (e.g. occasional lectures) in the School as requested.

1.3 ENGAGEMENT

- Communicate key, policy-relevant insight from model outputs to:
    - Colleagues and collaborators who are engaged in informing antimalarial treatment policy to the World Health Organization.
    - Clinicians and policy makers in the national and international arena, through presentations at workshops and conferences.

1.4 LEADERSHIP & 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.
- Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 4.

In addition to the above, the Research Fellow, Level B appointee will be required to:

- Provide research leadership and high quality, autonomous management of the research project working.
- Explore opportunities to attract additional research funding through grants and consultancies as well as contribute to the preparation of funding applications.

2. Selection Criteria

2.1 ESSENTIAL

- Completion of a PhD in computational biology or a related area.
- A developing profile in research as a member of a team, as evidenced by the production of research publications, including literature searches, and drafting manuscripts, presentations at conferences and contributing to grant applications.
- Demonstrated potential for leadership in multi-disciplinary research as evidenced by active contribution to research projects with multiple stakeholders.
- Demonstrated ability to use statistical and computing programs such as MATLAB, C, R.
- Sound written and verbal communication skills, including the ability to communicate with a range of stakeholders from policy and research environments.
- Demonstrated ability to work independently and collaboratively in a team to achieve project goals and meet agreed deadlines.

- Experience in or willingness to participate in the supervision or co-supervision of postgraduate students.

2.2 DESIRABLE

- Experience in statistical modelling of biomedical data

In addition to the above, the following are essential for a Research Fellow, Level B Appointment.

- A developing national and/or international profile as evidenced by research publications, conference and seminar papers, and/or research funding.
- Experience in the supervision or co-supervision of postgraduate students and more junior research staff.

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 BIOSTATISTICS UNIT, CENTRE FOR EPIDEMIOLOGY AND BIOSTATISTICS

The Biostatistics Unit at the Centre for Epidemiology and Biostatistics currently employs 3 senior biostatisticians and 9 postdoctoral biostatisticians, and has 4 higher degree research students. We have developed an integrated program of methodological and collaborative research, as well as providing statistical training to build a skilled research workforce. Our group delivers the Master of Biostatistics (an affiliated partner of the Biostatistics Collaboration of Australia, BCA), as well as leading biostatistics teaching within the Master of Public Health and Master of Science (Epidemiology). We collaborate on numerous clinical and epidemiological studies, in particular, studies with complex longitudinal or spatial data structures. We lead research in the development, application and interpretation of sophisticated statistical methods, including modelling of longitudinal and correlated data from cohort studies and twin/family studies, and methods for handling missing or incomplete data within such studies.

Since 2012, our unit has co-led — along with units at the Murdoch Childrens Research Institute and Monash University — the Victorian Centre for Biostatistics (ViCBiostat), a Centre of Research Excellence in Biostatistics funded by the NHMRC.

5.2 MODELLING AND SIMULATION UNIT, CENTRE FOR EPIDEMIOLOGY AND BIOSTATISTICS

The Modelling and Simulation Unit at the Centre for Epidemiology and Biostatistics brings together three research groups in infectious diseases research based across the University of Melbourne campus, from the Peter Doherty Institute for Infection and Immunity, the School of Mathematics and Statistics, and the School of Computing and Information Systems. The Unit is led by 3 senior infectious diseases modellers, and directly employs 2 postdoctoral scientists and has 1 higher degree research student. A further 3 postdoctoral scientists, and 6 higher degree research students are associated with the Unit. We collaborate on numerous infectious diseases studies covering problems from public health, epidemiology and basic biology. We lead research on the development of novel mathematical approaches to the study of infectious diseases, and their application to emerging and re-emerging health threats.

In 2015 our unit was established as the lead hub for PRISM^2, a Centre of Research Excellence in Infectious Diseases Modelling funded by the NHMRC..

5.3 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) Australian Twin Registry

iii) Biostatistics

iv) Breast Cancer

v) Colorectal Cancer

vi) High Dimensional Analytics

vii) Male Health

viii) Modelling and Simulation

ix) Sexual Health

x) Neuroepidemiology

xi) Teaching and Learning

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

5.4 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, one Institute and two partnership units:

CENTRES

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

INSTITUTES

The Nossal Institute for Global Health (NIGH)

PARTNERSHIP UNITS

- Vaccine and Immunisation Research Group (VIRGo)
- Global Burden of Disease Group

Further information about the School is available at http://mspgh.unimelb.edu.au/

6.5 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.

6.6 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.

6.7 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.

6.8 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