



POSITION DESCRIPTION

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

Research Fellow in Epidemiology and Intervention Simulation Modelling

| | |
|----------------------------|---|
| POSITION NO | 0051345 |
| CLASSIFICATION | Research Fellow Grade 1, Level A Or: 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 \$73,669 - \$99,964 p.a. Level B \$105,232 - \$124,958 p.a. |
| SUPERANNUATION | Employer contribution of 9.5% |
| WORKING HOURS | Full-time (1.0 FTE) |
| BASIS OF EMPLOYMENT | Fixed-term position available for 12 months. |
| 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 | Name: Prof Tony Blakely Tel: +61 466 850095 Email: ablakely@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

What does Population Interventions do?

We know much about many exposure-outcome associations in health, but we seldom systematically answer questions like: “when applied to the population, how much health gain will intervention X achieve compared to intervention Y? Over what time period? At what cost and what cost-effectiveness?”

The Populations Intervention Unit (<http://go.unimelb.edu.au/h2jr>) is building and implementing next-generation simulation modelling to scale up our capacity, in Australasia and globally, to answer these types of questions. One way to think about it is that burden of disease studies (e.g. the Global Burden of Disease, the AIHW Australian Burden of Disease study) quantify two things: 1) the health loss or DALYs for all diseases and conditions, and 2) the attribution of this health loss to risk factors like tobacco as though the world had never had tobacco.

The Population Interventions Unit is taking this data and process to the third step – quantifying the avoidable health loss (or health gain) for actual interventions (e.g. a tobacco tax, an elimination strategy for COVID-19, reducing salt in bread, reducing mould in homes) allowing for time lags, intervention attenuation, competing mortality and morbidity, and such like. This is a hugely interesting and challenging blending of epidemiology, economics, big data and computer science, simulation modelling, and active knowledge dissemination and translation. Put bluntly, this is how we believe public health research should be fed into policy in the future. One senior policy maker we interviewed on this vision in 2020 called this “the holy grail” of evidence for policy making.

To achieve this platform and vision, we are building on Australasia’s world leading role in this area (e.g. ACE-Prevention) and working with the Institute of Health Metrics and Evaluation (IHME, University of Washington; home of the Global Burden of Disease Study (GBD)) to build next-generation Python-based intervention simulation modelling. We are also collaborating with other Australasian research groups in agent-based modelling (to generate effect sizes for complex interventions such as COVID-19 policy responses and food systems) and groups with interests in domains of prevention (e.g. diet).

During 2021 our areas of focus are:

- **Tobacco control** (endgame strategies, alternative nicotine delivery systems, tax, inequality and Indigenous Australian impacts etc) in Australia, NZ and the East Asia and Pacific region. Collaborations include:
 - o The just funded NHMRC Centre of Research Excellence on Achieving the Tobacco Endgame (CREATE; led by Assoc Prof Gartner, Uni Queensland)
 - o Institute of Health Metrics and Collaboration – next-generation methods of quantifying tobacco harm
 - o Burden of Disease Epidemiology, Equity and Cost-Effectiveness Programme (BODE³), University of Otago (led by Professor Nick Wilson and Tony Blakely)
- **Health housing** interventions (mould, indoor temperature, etc), in collaboration with:
 - o The just funded NHMRC Healthy Housing Centre of Research Excellence (<https://www.healthyhousing-cre.org/>, hosted by Uni of Melbourne; led by Professor Rebecca Bentley)
- **COVID-19** policy responses, in collaboration with:
 - o Transport, Health and Urban Design Research Laboratory, University of Melbourne (led by Professor Mark Stevenson and Dr Jason Thompson)
 - o Colleagues nationally and globally

And with funding from the Asia Development Bank and philanthropy.

- Strategic extensions into diet and obesity, urban design and public transport, health inequalities, and cross-national comparisons.

What role will this position have?

The successful applicant will be working with a team of epidemiologists, computer scientists, and economists. The candidate will not be expected to have all the skills needed in Population Interventions, but rather to make important and unique contributions to the team depending on the successful applicant's skills and experience, and integration with wider team and timelines. The candidate will have a substantive focus in housing research, leading the Population Interventions Unit contribution to the Healthy Housing Centre of Research Excellence at MSPGH, University of Melbourne.

The successful applicant should anticipate co-authorship on several publications.

The position will report to Professor Tony Blakely (epidemiologist; Director of Population Interventions Unit, Centre for Epidemiology and Biostatistics (CEB), University of Melbourne (UoM)).

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

- ▶ Conceptualization and specification of interventions (tobacco, housing, COVID-19, urban design, diet etc).
- ▶ Literature reviews and synthesis to inform conceptualization and specification of models.
- ▶ Analyses of data external to the core simulation model to generate model inputs (e.g. smoothing survey data estimates, forecasting trends)
- ▶ Estimation of health system costs (e.g. of the intervention itself, of disease related to the intervention)
- ▶ Build, calibrate and validate Python modules, either (depending on skills):
 - Assisting existing team members
 - Taking a leadership role on specific modules if skills and experience appropriate
- ▶ Run simulation models in Python, logic check and secondary processing of outputs.
- ▶ Contribution to, and leadership of, journal publication(s).
- ▶ Contribution to research funding applications.

1.2 LEADERSHIP AND SERVICE

- ▶ Actively participate at School and/or Faculty meetings and with guidance, contribute to planning activities or committee work to support capacity-building in the School/discipline.
- ▶ Participate in community and professional activities related to the relevant disciplinary area
- ▶ Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity
- ▶ 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.

2. Selection Criteria

2.1 ESSENTIAL

- ▶ A PhD or near completion of PhD in epidemiology, computer science, economics, demography or closely related discipline (e.g. biostatistics)
- ▶ A demonstrated publication track record and strong writing skills.
- ▶ Experience using at least one statistical and/or programming language (e.g. R, STATA, Python).
- ▶ Experience using Microsoft Excel.
- ▶ Strong interpersonal and communication skills, with an ability to build and maintain relationships with key stakeholders (internal and external) and work collaboratively
- ▶ Ability to work as a member of a team based at the University of Melbourne, collaborating internationally with colleagues at IHME and Otago University.
- ▶ Ethical scholar who values diversity and works effectively with individual differences

2.2 DESIRABLE

- ▶ Experience in one or more topic areas of focus: tobacco control, housing, diet and obesity, urban design, COVID-19).
- ▶ Experience with Python code (highly desirable).
- ▶ Experience in working with and analysing large datasets and linked datasets.
- ▶ Experience in data visualization and user dashboards.
- ▶ Experience in knowledge dissemination and translation.

2.3 SPECIAL REQUIREMENTS

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

- ▶ A strong publication track record
- ▶ A developing national and/or international profile as evidenced by research publications, conference and seminar papers, and/or research funding.

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

- ▶ Experience in the supervision or co-supervision of postgraduate students and more junior research staff.
- ▶ Demonstrated success in obtaining research funding.
- ▶ Substantial experience with simulation modelling

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 desire to strive 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 CENTRE FOR EPIDEMIOLOGY AND BIOSTATISTICS

The Centre for Epidemiology and Biostatistics (CEB), Melbourne School of Population and Global Health. <https://mspgh.unimelb.edu.au/centres-institutes/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) Indigenous Health and Epidemiology
- viii) Population Interventions

- ix) Modelling and Simulation
- 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.

5.2 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 (CHP)
- ▶ Centre for Epidemiology and Biostatistics (CEB)
- ▶ Centre for Mental Health (CMH)

INSTITUTES

The Nossal Institute for Global Health (NIGH)

PARTNERSHIP UNIT

► Global Burden of Disease Group

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

5.3 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.

5.4 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>.

5.5 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.

5.6 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>