



## POSITION DESCRIPTION

Department of Electrical and Electronic Engineering  
Faculty of Engineering and Information Technology

### Research Fellow, Bioinformatics (Infectious Diseases)

<b>POSITION NO</b>	0064512
<b>CLASSIFICATION</b>	Level A
<b>SALARY</b>	\$\$105,518 - \$113,262 p.a.
<b>SUPERANNUATION</b>	Employer contribution of 17%
<b>WORKING HOURS</b>	Full-time (1.0 FTE)
<b>BASIS OF EMPLOYMENT</b>	Fixed term for 24 months
<b>OTHER BENEFITS</b>	<a href="https://about.unimelb.edu.au/careers/staff-benefits">https://about.unimelb.edu.au/careers/staff-benefits</a>
<b>HOW TO APPLY</b>	Online applications are preferred. Go to <a href="http://about.unimelb.edu.au/careers">http://about.unimelb.edu.au/careers</a> , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
<b>CONTACT FOR ENQUIRIES ONLY</b>	Prof. Matthew McKay Tel +61 3 8344 4000 Email <a href="mailto:matthew.mckay@unimelb.edu.au">matthew.mckay@unimelb.edu.au</a>  <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](http://about.unimelb.edu.au/careers)

## ***Acknowledgement Of Country***

The University of Melbourne acknowledges the Traditional Owners of the unceded land on which we work, learn and live: the Wurundjeri Woi Wurrung and Bunurong peoples (Burnley, Fishermans Bend, Parkville, Southbank and Werribee campuses), the Yorta Yorta Nation (Dookie and Shepparton campuses), and the Dja Dja Wurrung people (Creswick campus).

The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.

## ***Position Summary***

The Faculty of Engineering and Information Technology is seeking to appoint a Research Fellow to conduct computational research under the supervision of Prof. Matthew McKay. The fellow will contribute to a project aimed at developing innovative antiviral therapeutics for respiratory pathogens with pandemic potential, utilizing gene editing tools. This is a collaborative project with the labs of Prof. Sharon Lewin and Dr. Danielle Anderson (experts in infectious diseases and virology) from the Doherty Institute, and the group of Dr. Mohamed Fareh (an expert in RNA biology and CRISPR technology) from the Peter MacCallum Cancer Centre of the Royal Melbourne Hospital. The project is funded in part by the newly established Cumming Global Centre for Pandemic Therapeutics at the Doherty Institute.

The successful candidate will join a productive, multidisciplinary team dedicated to creating new therapeutics for RNA respiratory viruses using CRISPR-Cas13. The primary objective of the fellow's work will be to develop efficient bioinformatics and computational pipelines to analyze large volumes of viral sequence data and identify key drug targets based on molecular principles for use in the Cas13 system. Additionally, the fellow will package these pipelines into user-friendly, web-based platforms. The fellow will also apply similar skillsets to contribute to the McKay lab's on-going research program on developing platforms for identifying robust T cell vaccine targets for infectious diseases.

We 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.

## ***1. Key Dimensions and Responsibilities***

### **1.1 RESEARCH AND RESEARCH TRAINING**

- ▶ Independently plan and carry out research on the nominated research project and work towards completion of the aims of the project.
- ▶ Develop effective timelines and milestones based on goals of the research programme.
- ▶ Be responsible for qualitative and statistical analysis of research data.
- ▶ Regularly write technical reports on the outputs of the experiments conducted and maintain accurate and detailed records of all experiments conducted.
- ▶ Participate in preparation of manuscripts for publication in peer-reviewed journals.
- ▶ Liaise effectively with collaborators in the Doherty Institute and PeterMac Cancer Center.
- ▶ Assist other researchers in carrying out experiments in order to work as a team and achieve project aims efficiently.

### **1.2 SERVICE AND LEADERSHIP**

- ▶ Effective contribution to the quality and impact of research teams, projects and publications.
- ▶ Present results at local, national and international conferences when opportunities arise.
- ▶ Attend and actively participate in departmental and institute seminars, meetings and/or committees.
- ▶ Attend and provide regular updates at team/lab meetings and other relevant meetings with collaborators.
- ▶ Effective training of research support staff and post-graduate students in the appointee's area of expertise, as required.
- ▶ Participate in relevant community and professional activities within the Faculty of Engineering & Information Technology, the Cumming Global Centre for Pandemic Therapeutics, and the Doherty Institute.
- ▶ Undertake other duties as requested by the supervisor.

## **2. Selection Criteria**

### **2.1 ESSENTIAL**

- ▶ A PhD in computational biology, bioinformatics, electrical engineering, computer science, or in other relevant fields with computational and software expertise.
- ▶ Proficiency in bioinformatic data analysis, problem solving, and maintaining accurate research records.
- ▶ Proficiency in high-level programming languages, e.g., Python, R, and/or Matlab.
- ▶ Experience in using initiative, working with minimal supervision and ability to prioritise tasks to achieve project aims within timelines.
- ▶ Excellent written and verbal communication skills, demonstrated by presentation of research results at conferences, internal forums and through manuscript submissions.
- ▶ Demonstrated capacity to communicate research concepts to technical and non-technical audiences.
- ▶ Excellent interpersonal skills, including an ability to interact with internal and external stakeholders (academic, administrative and support staff) in a courteous and effective manner.
- ▶ Passion to perform interdisciplinary research and to solve challenging problems.

### **2.2 DESIRABLE**

- ▶ Experience in processing and analyzing sequence data, including pathogen genomic data.
- ▶ Experience in developing web-based software platforms.
- ▶ Experience with computational modelling and/or machine learning.
- ▶ Knowledge of viruses, immunology, infectious diseases.
- ▶ Experience in collaborating with research teams, including across disciplines.

### **2.3 OTHER JOB-RELATED INFORMATION**

- ▶ Any offer of employment will be conditional upon receipt and maintenance of a valid Working with Children Check;
- ▶ The University of Melbourne is dedicated to safeguarding the welfare of all community members, especially those most vulnerable.

As part of our commitment to child safety and in line with the Victorian Child Safe Standards, this position will be required to hold a valid Employee WWCC, regardless of where in the University an employee may work or what work they do.

### ***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 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 of Melbourne employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Find out more about the University's strategy, 'Advancing Melbourne', at <https://about.unimelb.edu.au/strategy/advancing-melbourne>

### 5.2 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.

### 5.3 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>