



POSITION DESCRIPTION

Department of Clinical Pathology
Faculty of Medicine, Dentistry and Health Sciences

Research Assistant in Bioinformatics

POSITION NO	0045258
CLASSIFICATION	Research Assistant, Level A
WORK FOCUS CATEGORY	Research Focused
SALARY	\$69,148 - \$93,830 p.a.
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed-term for 3 years Fixed term Contract Type: Externally funded
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	Luciano Martelotto Tel +61 429729628 Email luciano.martelotto@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 websites:
about.unimelb.edu.au/careers

Position Summary

Recent developments in molecular biology, microfluidics, and computational biology have transformed the field of single cell genomics. The Single Cell Genomics Innovation Team within the University of Melbourne Centre for Cancer Research (UMCCR) is dedicated to advance genome research of single cells and aims to enable the adoption of single cell technologies in the onco-diagnostic setting. We are looking for a highly motivated bioinformatician or computational biologist for data analysis, methods development and implementation in the area of single cell DNA and RNA sequencing. Applicants should have a Master or PhD in fields such as molecular biology, computer science, bioinformatics, computational biology (or similar) and a strong interest in biological and biomedical questions.

1. Key Responsibilities

1.1 RESEARCH AND RESEARCH TRAINING

- ▶ Lead the single cell genomics bioinformatics efforts within the Single Cell Genomics Innovation Team involving analysis of DNA/RNA single cell analysis data and integration with other “omics” disciplines.
- ▶ Statistical modelling of genomics data.
- ▶ Development of computational tools for analysis of single cell DNA/RNA-Seq and other sequencing methods.
- ▶ Design and analysis of loss and gain of function experiments to validate model predictions.
- ▶ Use demonstrated scientific creativity, collaboration with others, and independent thought to expand technical capabilities and identify new research opportunities.
- ▶ Under limited supervision, participate in research independently and as a member of research teams both within the UMCCR and external collaborators.
- ▶ Contribute to data collection and analysis, using specialised programs for qualitative/quantitative data assessment.
- ▶ The co-production of conference and seminar papers and publication and attendance and presentations at conferences and seminars where appropriate.
- ▶ Steady development of an academic research profile in the area of Cancer genomics and Bioinformatics.
- ▶ The incumbent will also have the opportunity to develop bespoke bioinformatics tools to ask novel questions of genomic data.
- ▶ Contribute to publications arising from scholarship and research, such as publication of books and in peer reviewed journals.
- ▶ Active participation in the communication and dissemination of research where appropriate.
- ▶ Occasional contributions to teaching within the research field where appropriate.

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.
- ▶ Identify sources of funding to support individual or collaborative projects, relating to teaching, research and engagement practice in the discipline
- ▶ Effective training of research support staff where required
- ▶ 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 5

2. Selection Criteria

2.1 ESSENTIAL

- ▶ PhD, substantial progress towards PhD or Masters degree in relevant area such as bioinformatics, genetics, statistics, mathematical, physical or computer science, or comparable research experience, together with significant experience in computer programming and computational biological applications.
- ▶ Previous experience in whole genome copy number, whole exome and whole transcriptome analyses of single cells and data integration.
- ▶ High proficiency in the use tools for variant calling and annotation from various types of datasets such as genomics and transcriptomics.
- ▶ Excellent computational background, especially in the management of large data sets in Unix/Linux environment, accompanied with high proficiency in R and in one or more scripting languages such as Perl, Python, etc.
- ▶ Demonstrated ability to contribute to independent and team-based research in Cancer (or related areas) Genomics
- ▶ Demonstrated excellent verbal and written communication skills for effective research collaboration and engagement and at public presentations
- ▶ Have a good publication record (including at least one paper as a first author) in a peer-reviewed international journal, with an emphasis on quality rather than quantity of publications.
- ▶ Experience and expertise analysing data from Illumina and 10X sequencing platforms.
- ▶ Strong evidence of ability and desire to build an academic career trajectory.

2.2 DESIRABLE

- ▶ Demonstrated potential to supervise or co-supervise and mentor undergraduate, honours and graduate diploma stage postgraduate students where appropriate.
- ▶ Comfortable in manipulating and analysing complex and high-dimensional data from varying sources.
- ▶ Ability to meet deadlines and efficiently multitask.

- ▶ Experience with machine learning techniques.
- ▶ Sound understanding of DNA and RNA biology.

2.3 SPECIAL REQUIREMENTS

- ▶ The incumbent may be required to contribute to Centre activities out-of-hours. 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.

3. 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/people/community/responsibilities-of-personnel>

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

4. Other Information

4.1 THE UNIVERSITY OF MELBOURNE CENTRE FOR CANCER RESEARCH

The newly formed UMCCR will be responsible for supporting a program of cancer research and education activities across the University of Melbourne in addition to managing University of Melbourne cancer research located in the VCCC facility. The UMCCR will bring together leading researchers, strengthening research capacity and

enabling the interdisciplinary collaboration required to understand the complex and intersecting factors that underpin cancer research.

4.2 FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

www.mdhs.unimelb.edu.au

The Faculty of Medicine, Dentistry and Health Sciences (MDHS) plays a vital role in the delivery of the University of Melbourne's Strategic Plan 2015-2020: Growing Esteem by providing current and future generations with education and research equal to the best in the world. It is Australia's largest and leading biomedical research faculty. It employs more than 1,700 members of staff, has more than 8,000 students, and total revenue of \$630 million for 2015. Reflecting the complexity of today's global health landscape, the Faculty is made up of six different Schools and four Strategic Research Initiatives, and draws together all areas of human health, ranging from the most basic to the most applied areas of research. The Faculty contributes close to 50 per cent of research conducted at the University.

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.

4.3 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>.

4.4 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.

4.5 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>