



POST-DOCTORAL RESEARCH FELLOW

DEPARTMENT/UNIT	Biochemistry and Molecular Biology
FACULTY/DIVISION	Faculty of Medicine Nursing and Health Sciences
CLASSIFICATION	Level A
WORK LOCATION	Clayton campus

ORGANISATIONAL CONTEXT

Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit www.monash.edu.

The **Faculty of Medicine, Nursing and Health Sciences**, is the largest faculty at Monash University, and offers the most comprehensive suite of professional health training in Victoria. We consistently rank in the top 40 universities worldwide for clinical, pre-clinical and health sciences.

We want to improve the human condition. That is our vision - it has no expiration date. Through academic health centres, other translational models and by educating the healthcare workforce of the future, our staff, students and alumni directly improve quality of life.

Setting the global health care agenda, the Faculty aspires to lead in all areas of research activity and influence local, national and international policy to improve health and social outcomes and health inequalities. We've made a major impact in the world of medical research and become globally recognised for our quality education of over 41,000 doctors, nurses, and allied health professionals.

We are ambitious and aim to maintain our position as a leading international medical research university. We're recognised for the breadth and depth of our research, for our commitment to translational research, for the quality and scale of our research capability, and as a thriving biotechnology hub.

To learn more about the faculty, please visit monash.edu/medicine.

The **Monash Biomedicine Discovery Institute (BDI)** is one of the largest and most dynamic biomedical research and teaching environments in Australia. The Institute and its cognate Departments of Anatomy and Developmental Biology, Biochemistry and Molecular Biology, Microbiology, Pharmacology and Physiology comprise over 120 research groups and deliver discipline-focused teaching into our flagship Bachelor of Biomedical Science Degree, the Bachelor of Science Degree, as well as the Medical School and various Health-related Degree Programs. We pride ourselves on an excellent and evolving teaching curriculum and provide world-class teaching and learning space for Biomedical Sciences.

The BDI comprises six inter-disciplinary health-focused research Programs, each led by a renowned leader in the field. The BDI programs include Infection and Immunity, Cancer, Cardiovascular Disease, Development and Stem Cells, Metabolism, Diabetes and Obesity and Neuroscience. The BDI works closely with clinical and drug development precincts at Monash and has a number of major industry partnerships to facilitate the translation of our research. For more information about the BDI please visit our website at www.monash.edu.au/discovery-institute.

The **Department of Biochemistry & Molecular Biology** is the largest of the five departments in the School of Biomedical Sciences. Biochemistry and molecular biology are closely-related disciplines which study the chemical components of living cells, including the genetic material, in order to understand biological processes and how these are altered in disease.

Research and teaching in the department encompasses six broad themes: cell biology, signal transduction, host/pathogen interaction, structural biology, immunology and developmental biology. Our research is highly relevant to major human diseases and pathological processes, including infection, inflammation, diabetes and obesity, developmental and degenerative disorders, cardiovascular disease, and cancer. The Department has been ranked as the premier Department in its discipline since the inception of ARC benchmarking of Australian Departments in 1998.

Further details about the department can be found at www.med.monash.edu.au/biochem/.

The position is within the **Davidovich Lab** (www.davidovich-lab.com). The Davidovich laboratory wishes to understand how repressed genes are maintained transcriptionally inactive during development. At the molecular level, the lab is focused on the recruitment and regulation of chromatin-modifying complexes.

POSITION PURPOSE

A Level A research-only academic is expected to contribute towards the research effort of the university and to develop their research expertise through the pursuit of defined projects relevant to the particular field of research.

The incumbent will lead a project aiming to determine how histone modifiers maintain genes in an off-state during development — a process often referred to as 'epigenetic repression'.

While developing the project, the incumbent will be encouraged to utilise and develop cutting-edge technology, including single-cell RNA sequencing, forward genetic screens (including CRISPR screens), mass spectrometry-based proteomics, electron cryotomography and tools for genome editing combined with functional assays and standard genomic applications as ChIP-seq, HiC, ATAC-seq and RNA-seq. The incumbent will have access to world-class research platforms at Monash University and High-Performance Computing (HPC) server for data analysis.

Reporting Line: The position reports to the Associate Professor within the Department of Biochemistry and Molecular Biology

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

KEY RESPONSIBILITIES

Specific duties required of a Level A research-only academic may include:

1. The conduct of research under limited supervision either as a member of a team or, where appropriate, independently and the production or contribution to the production of conference and seminar papers and publications from that research
2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise

3. Limited administrative functions primarily connected with the area of research of the academic
4. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
5. Occasional contributions to teaching in relation to their research project(s)
6. Experimental design and operation of advanced laboratory and technical equipment or conduct of advanced research procedures
7. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees
8. Advice within the field of the staff member's research to postgraduate students

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
 - A doctoral qualification in the relevant discipline or a closely related field

Knowledge and Skills

2. Sound knowledge of cell or molecular biology with an outstanding publication track record, relative to opportunity, in studying transcriptional regulation
3. An ability to develop their own research program within the lab, and ideally should be able to demonstrate that they have already developed a research project elsewhere, from idea to maturation
4. Prior experience with methods that study transcription and/or epigenetic regulation using mammalian cell cultures, including the implementation of next-generation sequencing techniques
5. Experience in the generation of constructs and stable cell lines for the study of transcription regulation or epigenetics in cells. Ideally, these would include the utilization of genome-editing techniques using CRISPR-Cas9 for a knock-out, knock-in and rescue experiments
6. Demonstrated analytical and manuscript preparation skills
7. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise
8. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
9. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents
10. A demonstrated awareness of the principles of confidentiality, privacy and information handling
11. A demonstrated capacity to work in a collegiate manner with other staff in the workplace
12. Demonstrated computer literacy and proficiency in the production of high-level work using software such as Microsoft Office applications and specified University software programs, with the capability and willingness to learn new packages as appropriate

OTHER JOB RELATED INFORMATION

- Travel to other campuses of the University may be required
- There may be peak periods of work during which taking of leave may be restricted
- There may be a requirement to work additional hours from time to time

LEGAL COMPLIANCE

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.