

RESEARCH FELLOW – PROTECTIVE AND ABERRANT IMMUNITY

DEPARTMENT/UNIT	Department of Biochemistry and Molecular Biology
FACULTY/DIVISION	Faculty of Medicine, Nursing & 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 **Rossjohn Laboratory**, as part of a broad collaborative network that includes lead national and international researchers, has provided profound insight into T-cell immunology, specifically defining the basis of key immune recognition events by T-cells. The laboratory has notably pioneered our understanding of lipid-based immunity by the innate Natural Killer T-cells (NKT) and the role of MAIT cells in recognizing vitamin B metabolites. The laboratory is also now exploring opportunities with industry, specifically Janssen, for the development of new therapies to treat rheumatoid arthritis.

To learn more about the Rossjohn laboratory, please visit http://research.med.monash.edu.au/rossjohn/.

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 research-only academic shall work with support, guidance and/or direction from staff classified at Level B and above and with an increasing degree of autonomy as the research academic gains in skill and experience.

As part of a broad collaborative network that includes lead national and international researchers, has provided profound insight into T-cell immunology, specifically defining the basis of key immune recognition events by T-cells. The laboratory has pioneered the areas of lipid- and metabolite- based antigen recognition and fundamentally advanced our understanding of T cell development and different facets of T cell mediated immunity including MHC restriction, self-tolerance, alloreactivity, autoimmunity, and aberrant and protective T cell responses. The laboratory seeks to build upon current findings and ongoing research aimed at understanding the molecular interactions and mechanisms that shape T cell responses directed against viral infections (e.g. HIV, CMV, EBV).

Reporting Line: The position reports to the Head of the Infection & Immunity Laboratory

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Yes, in line with Key Responsibilities

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 to more junior lab members, commensurate with the staff member's expertise and experience students
9. Exercise strong budget management for the project(s) managed to a value of $50,000

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
    - A doctoral qualification in biochemistry, molecular biology, structural immunology or a related discipline from a recognised university; or
    - equivalent qualifications and research experience in the area

Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills; including a track record of refereed research publications {may not apply to all areas of the University}
3. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise
4. Ability to work independently in a research environment (with limited supervision)
5. Well-developed computer literacy (i.e. word processing and use of databases)
6. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
7. A desire to build an independent research profile
8. A strong research track record including papers (in the field of protein biochemistry) published as first author in internationally well-regarded journals
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. Proven ability to mentor and advise research graduate students

13. 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

14. Knowledge and experience in Molecular biology techniques, Protein expression and purification techniques, Mammalian cell culture, baculovirus and E. coli expression systems, X-ray Crystallography, Fluorescence Spectrometry and Circular Dichroism, and/or Structural biology techniques

OTHER JOB RELATED INFORMATION

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

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.