

MACSYS RESEARCH FELLOW

DEPARTMENT/UNIT	Department of Microbiology, Biomedicine Discovery Institute
FACULTY/DIVISION	Faculty of Medicine, Nursing and Health Sciences
CLASSIFICATION	Level A
DESIGNATED CAMPUS OR LOCATION	Clayton campus

ORGANISATIONAL CONTEXT

At [Monash](#), work feels different. There's a sense of belonging, from contributing to something groundbreaking – a place where great things happen. You know you're part of something special and purposeful because, like Monash, your ambitions drive you to make change.

We have a clear purpose to deliver ground-breaking intensive research; a world-class education; a global ecosystem of enterprise – and we activate these to address some of the [challenges](#) of the age, Climate Change, Thriving Communities and Geopolitical Security.

We welcome and value difference and [diversity](#). When you come to work, you can be yourself, be a change-maker and develop your career in exciting ways with curious, energetic, inspiring and committed people and teams driven to make an impact – just like you.

Together with our [commitment to academic freedom](#), you will have access to quality research facilities, infrastructure, world class teaching spaces, and international collaboration opportunities.

We champion an [inclusive workplace culture](#) for our staff regardless of ethnicity or cultural background. We have also worked to improve [gender equality](#) for more than 30 years. Join the pursuit of our purpose to build a better future for ourselves and our communities – [#ChangeIt](#) with us.

The Faculty of **Medicine, Nursing and Health Sciences** is the largest faculty at Monash University, a global university with campuses across Victoria and international locations in Indonesia, Malaysia, China, India and Italy.

Our Faculty offers the most comprehensive suite of professional health training in Victoria, consistently ranked 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. By educating the current and future healthcare workforce, and undertaking medical research, both discovery and clinical, our students, staff and alumni all work to directly improve people's quality of life, reduce health inequality and promote greater health and social outcomes.

We're globally recognised for our quality education of over 63,000 doctors, nurses, and allied health professionals and health researchers. The future health of our communities is underpinned by the sustained excellence of our education and research capabilities.

We are ambitious and committed to maintaining our position as a leading international medical research and teaching university. We're recognised for the quality of our graduates, the scale and depth of our research, our commitment to translational research, and as a thriving biotechnology hub. To learn more about the Faculty, please visit www.monash.edu/medicine.

Our Faculty includes four Sub-Faculties: Health Sciences, Clinical and Molecular Medicine, Biomedical Medicines, and Translational Medicine and Public Health.

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; and will be closely aligned with the Victorian Heart Hospital (VHH), which is being built on the Clayton Campus. For more information about the BDI please visit our website at www.monash.edu.au/discovery-institute.

The **Department of Microbiology** is one of five departments in the School of Biomedical Sciences. The department teaches undergraduate students at a variety of levels in a broad range of courses, but most of our students are undertaking degrees in Biomedical Science, Science or Medicine. A vigorous postgraduate program is supported, with more than 50 PhD students currently enrolled.

Research within the department aims to understand how various microbes interact with their human or animal hosts at the molecular level, how that interaction can result in disease, and how this can be prevented. The department is well equipped for broad genomic, transcriptomic and proteomic investigations. These are applied to projects designed to increase our understanding of microbial pathogenesis, the development of antibiotic resistance, the immune response to infection, and in vaccine development. Further details about the department can be found at: www.med.monash.edu.au/microbiology/

Monash and the Faculty of Medicine, Nursing and Health Sciences values staff diversity and champions inclusive practices. We are committed to equitable decision making and apply the principles of [achievement relative to opportunity](#) in our selection processes.

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.

We are looking to recruit a highly motivated post-doctoral fellow to join the Australian Research Council Centre of Excellence for the Mathematical Analysis of Cellular Systems (MACSYS); the world's largest focused research initiative in mathematical biology. MACSYS brings together mathematical, computational, and biological scientists to generate the mathematics and computational technologies required to make biology predictive; establish mathematical whole cell models (WCMs) for in silico biology as a powerful complement to traditional in vivo and in vitro approaches; tackle fundamental biological problems; and establish a world-leading research and biotechnology translation environment. MACSYS will have a strong emphasis on equity and diversity in research, training, and outreach.

In this role, you will be responsible for conducting in-depth biochemical and molecular biology analysis of microbial physiology and dynamics. Your opportunities will include genetic engineering of bacteria, designing and conducting biochemical assays, employing high-throughput phenotyping techniques for bacterial cells and performing transcriptomic, proteomic and metabolomic analyses.

Reporting Line: The position reports to Professor in Microbiology

Supervisory Responsibilities: Not applicable, but there will be opportunities to supervise research students

Financial Delegation: Not applicable

Budgetary 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
9. Other duties as directed from time to time

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
 - a doctoral qualification in Microbiology, Biochemistry or a closely related field

Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills; including a track record of refereed research publications
3. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise
4. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
5. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents
6. A demonstrated awareness of the principles of confidentiality, privacy and information handling
7. A demonstrated capacity to work in a collegiate manner with other staff in the workplace
8. 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
9. Strong background in molecular biology with a focus on microbial physiology and/or gene regulation and/or membrane biology
10. Familiarity with a range of 'omics' 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

GOVERNANCE

Monash University expects staff to appropriately balance risk and reward in a manner that is sustainable to its long-term future, contribute to a culture of honesty and integrity, and provide an environment that is safe, secure and inclusive. Ensure you are aware of and adhere to University policies relevant to the duties undertaken and the values of the University. This is a standard which the University sees as the benchmark for all of its activities in Australia and internationally.