

MACSYS POST-DOCTORAL RESEARCH FELLOW

DEPARTMENT/UNIT	School of Biological Sciences
FACULTY/DIVISION	Faculty of Science
CLASSIFICATION	Level A
DESIGNATED CAMPUS OR LOCATION	Clayton campus

ORGANISATIONAL CONTEXT

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You'll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you'll need to publish your work. We're a university full of energetic and enthusiastic minds, driven to challenge what's expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The **Centre to Impact AMR** is forging sustainable solutions to minimise and where possible reverse the awful consequences of antimicrobial resistance (AMR). We are motivated to mitigate the current AMR crisis exacerbated by antibiotic use, chemical pollution and climate change, and to stem the tide of the impending threat of AMR to vulnerable groups in Australia and the world. The Centre to Impact AMR has core interdisciplinary strengths in Environmental and Evolutionary Science, Sociology and Anthropology, Biomedical Sciences, Engineering and Nanoscience. The Centre will nurture strategic relationships across the Indo-Pacific region. The Centre to Impact AMR is an active partner in the Phage Australia network, striving to bring phage therapy to Australian hospitals in order to treat otherwise untreatable AMR infections.

To learn more about the Centre, please visit www.monash.edu.au/impact-amr

The School of Biological Sciences has an international reputation for the highest quality research and education programs. We aim to be a global leader in discovery and curiosity-driven research in the life sciences. Areas of particular strength include evolutionary biology, conservation biology and ecology, and genetics and genomics. To help us achieve our aims, we have a

collegiate and inclusive community of academic, research and professional staff and a large and high-achieving student population.

Further details about the department can be found at: <https://www.monash.edu/science/schools/biological-sciences>

Monash and the Faculty of Science 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 design experiments to assess the validity of whole cell models under realistic conditions, across a range of species. Your responsibilities will include conducting experimental evolution studies, sophisticated growth assays, performing multi-omics bioinformatic analyses, and employing high-throughput phenotyping techniques for microbial cells.

Reporting Line: The position reports to the Chief Investigator

Supervisory Responsibilities: Not applicable

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, Genetics, Evolutionary Biology 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 proficiency in the production of high level analyses such as genome assembly and analysis of large datasets using R and python.
9. Strong background in systems biology or experimental evolution with a focus on bacterial and fungal model systems including but not limited to *E. coli*, *S. cerevisiae* or *B. subtilis*
10. Experience in high-throughput phenotyping techniques for microbial cell analysis

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.