Title: Research Assistant - Microinjectionist
HEW Level: HEW 5

Faculty/Office: Faculty of Medicine, Health and Human Sciences
Position Number:

Department/Team: Department of Biomedical Sciences
Date: May 2020

Position Purpose: Provide support for novel transgenic or gene-edited technologies within the Dementia Research Centre.

ORGANISATIONAL CONTEXT

Macquarie University is developing the nation’s first fully integrated academic health sciences centre under a university’s leadership. With a focus on patients and an ultimate goal of improving lives, the Macquarie University Health Sciences Centre will see true convergence of the learning and research endeavours of Macquarie’s Faculty of Medicine, Health and Human Sciences with the clinical care provided at Macquarie University Hospital and Clinics. It brings together the excellent work of medical and allied health researchers across the University and around the country, with unparalleled access to the world-leading clinical resources and research facilities found only on our campus.

The Faculty of Medicine, Health and Human Sciences has active research programs in biomedical, translational and health services domains, with current areas of strength including neurosciences (especially motor neuron disease, neurological rehabilitation, and the clinical neuroscience of pain), cancer medicine, and vascular science, amongst others. The Faculty hosts the Australian Institute of Health Innovation, an internationally acclaimed powerhouse researching health systems, e-health, and patient safety. In learning and teaching, the Faculty offers a unique suite of capability-based medical education programs including a unique three-year extended masters-level, professional-entry Doctor of Physiotherapy degree, a Graduate Diploma of Anatomy program, a Master of Public Health, an accelerated 2 year Bachelor of Clinical Science program and the Macquarie MD (Doctor of Medicine).

The Dementia Research Centre will provide an environment for innovative, interdisciplinary research for dementia, using and developing state-of-the-art technologies to advance basic discoveries towards translation into clinical treatments. The Dementia Research Centre is committed to providing a unique and supportive mentoring program to allow the growth of future leaders for dementia research. Furthermore, the multidisciplinary approach of the Centre to study Alzheimer’s disease will create an excellent opportunity for the training of PhD students.

ORGANISATION CHART

Professor, Biomedical Sciences

Group Leader, Disease mechanisms
Postdoctoral Research Fellow
Research Assistant

Group Leader, Peptide Chemistry
Research Assistant

Group Leader, Gene Therapy
Postdoctoral Researchers x2

Group Leader, Molecular Signalling
Postdoctoral Research Fellow

Group Leader, Transgenesis
Research Assistant - Microinjectionist

Group Leader, Neuronal Cell Biology
Postdoctoral Researchers (x2)

Centre Coordinator

Animal Care Technician

Centre Administrator
**KEY ACCOUNTABILITIES**

- Under the direction of the Group Leader:
  - Perform genome editing (CRISPR) protocols in rodents for research.
  - Synthesise CRISPR guides for mice within the research group.
  - Perform genotyping and sequencing for the identification of CRISPR modified lines.
  - Conduct microinjections and/or electroporation of plasmid-based transgenes, bacterial artificial chromosomes or endonucleases reagents into the pronucleus or cytoplasm of rodent embryos to generate new lines.
  - Perform in-vitro fertilisation, embryo transfers and vasectomy surgeries and rederivation of lines.

- Prepare reagents for injection of zygotes in accordance with molecular biology protocols.
- Provide support to daily animal husbandry activities including anaesthesia and specific pre and post-surgery monitoring and support in accordance with the University’s animal ethics guidelines.
- Perform cryopreservation and recovery of lines from frozen sperms and embryos.
- Order mice, injections, reagents and relevant equipment and ensure that the laboratory and equipment are cleaned and maintained.
- Contribute to the training of laboratory users, on the use and care of laboratory equipment.
- As part of a team, ensure the efficient day-to-day operation of the laboratory, including meeting regulatory and compliance needs.
- Contribute to compliance monitoring and reporting for various ethics committees.
- Contribute to the development of and implement Standard Operating Procedures (SOPs) for equipment and laboratory processes.
- Comply with relevant EEO and WHS regulations.
- Perform any other duties as required and appropriate for this classification.

<table>
<thead>
<tr>
<th><strong>POSITION CONTEXT</strong></th>
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<tbody>
<tr>
<td><strong>Reports to:</strong></td>
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<tr>
<td><strong>Positions Reporting to:</strong></td>
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<tr>
<td><strong>Key Direct Clients:</strong></td>
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<td><strong>Role-specific Conditions:</strong></td>
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<td><strong>Scope and autonomy</strong></td>
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<td><strong>Problem solving</strong></td>
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### CAPABILITY FRAMEWORK

Capability Frameworks describe the behaviours, skills, attributes and experience required to successfully perform a position or group of similar positions.

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<thead>
<tr>
<th>COMPETENCIES</th>
<th>ATTRIBUTES</th>
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<tbody>
<tr>
<td><strong>Planning and Execution</strong>: Managing time and resources to complete tasks and achieve objectives.</td>
<td><strong>Perseverance</strong>: Persevering despite obstacles to ensure tasks are completed.</td>
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<td><strong>Quality Focus</strong>: Ensuring accuracy and quality when completing tasks.</td>
<td><strong>Flexibility</strong>: Responding effectively to unexpected or changing circumstances.</td>
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<td><strong>Communication</strong>: Effectively articulates key messages, both verbally and in writing, adapting to suit context and audience.</td>
<td><strong>Reliability</strong>: Meeting commitments and responsibilities.</td>
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<td><strong>Teamwork</strong>: Working in collaboration with others to achieve shared goals.</td>
<td><strong>Resilience</strong>: Dealing effectively with and recovering quickly from setbacks or pressure.</td>
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<td><strong>Analysis and Judgement</strong>: Evaluating information and data to solve problems and make decisions.</td>
<td><strong>Accountability</strong>: Assuming responsibility for making decisions and delivering agreed outcomes.</td>
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## REQUIRED KNOWLEDGE
Qualifications, technical and/or professional skills and information needed from day one for successful performance.

- Bachelor of Medical Science, Biomedical Sciences, Veterinary Sciences, Applied Science or a related field.
- Knowledge of mouse reproductive engineering techniques.
- Knowledge of Animal Ethics legislation and welfare requirements in accordance with the NHMRC Code of Practice, the NSW Animal Research Act, relevant Occupational Health and Safety regulations and the Animal Ethics Committee.
- Knowledge of workplace health and safety legislation, principles and practices applicable to laboratories and relevant research areas.

## ACQUIRED KNOWLEDGE
Organisational and/or professional skills and information to be developed within the first 3 to 6 months in the role for successful performance.

- Knowledge of how to work safely in the Faculty of Medicine, Health and Human Sciences’ Research Laboratories.
- Knowledge of the Faculty of Medicine and Health and Human Sciences’ functions and structure.
- Knowledge of the Faculty of Medicine, Health and Human Sciences’ policies, systems, processes and procedures.
- Knowledge of other areas of the university and how they interact with Faculty.

## KEY EXPERIENCES
Practical experiences and exposure to specific environments or activities related to successful performance.

- Experience working in a transgenic and/or animal facility.
- Experience in animal handling and care in a laboratory setting.
- Strong organisational skills with an ability to prioritise workloads and meet deadlines.
- Ability to work effectively within a research team environment.