POSITION DESCRIPTION

Position Title: Laboratory Assistant

Organisation Unit: Centre for Microscopy and Microanalysis (CMM)

Position Number: 3035263

Type of Employment: Continuing (40%)

Classification: HEW6

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks well within the top 100 universities worldwide, measured through a number of major independent university rankings: the Academic Ranking of World Universities, Times Higher Education World University Rankings, US News Best Global Universities Rankings, QS World University Rankings and Performance Ranking of Scientific Papers for World Universities, and is indeed in the top 50 in some of these rankings. Over the past 3 years for which audited data are available UQ has attracted the highest (2013) or second highest (2012, 2014) amount of research funding of any Australian university.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience –the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 230,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.7 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition
to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see http://uniquest.com.au/our-track-record).

UQ has a rapidly growing record of attracting philanthropic support for its activities and will have further success in this area as an important strategic aim going forward.

Organisational Environment

The CMM is the University of Queensland’s electron and X-ray microscopy and microanalysis, core facility and the Queensland node of the national microscopy and microanalysis network (AMMRF). The platforms goals are to facilitate and provide research excellence through a focus on providing world-class facilities matched with an equally high level of expertise thereby meeting the characterisation requirements of local and national researchers and industry. It does this via a concept of supporting discovery from user inception of experiments to publication/outcomes through excellence in consultation, training, measurement and finally analysis.

The CMM comprises 26 academic, research, technical and administrative staff supporting a diverse range of instrument platforms including electron microscopy and microanalysis, X-ray diffraction and spectroscopy and novel imaging modalities. The CMM operates on four main sites on the St Lucia campus of The University of Queensland.

Information about the CMM may be accessed on the Faculty’s web site at http://www.uq.edu.au/cmm.

DUTY STATEMENT

Primary Purpose of Position

The position is located at the CMM’s Cryo-EM Facility at the Queensland Bioscience Precinct where the facilities staff provides training and assistance for the centres clients in the preparation and electron microscopic analysis of mostly biological samples. The Cryo-EM facility specializes in advanced sample preparation and imaging methods like high-pressure freezing, freeze substitution, cryo-ultramicrotomy, electron tomography and low dose Cryo-TEM. The facility has 3 transmission electron microscopes, a Jeol 1011, a FEI Tecnai T12 with a lens coupled 4x4k CCD camera, a FEI Tecnai F30 with a Gatan K2 summit camera and a Jeol Neoscope as a bench-top scanning electron microscope.

You will support the existing staff in training clients in operating the microscopes and in sample preparation methods necessary to their projects. You will also help in organisational matters like restocking consumables, making new solutions used for sample preparation in electron microscopy and effectively help to buffer work overflow.
**Duties**

Duties and responsibilities include, but are not limited to:

**Technical:**
With your expertise you assist clients in their projects by providing training and support in the use of:
- Electron microscopes i.e. FEI Tecnai T12, JEOL JEM 1011 including cryo-TEM and electron tomography and scanning electron microscope JEOL Neoscope
- Sample preparation equipment like Baltec/Leica high pressure freezers, automated freeze substitution systems, plunge freezers.

With your expertise you assist clients in their sample preparation:
- Room temperature chemical fixation and embedding of mostly biological material in resin.
- Microwave assisted fixation of hard to infiltrate samples (Pelco Biowave)
- Cryo-fixation and freeze substitution
- Ultra-microtomy (room temperature & cryo)
- Microscopy (light - and electron microscopy)

Supporting staff with the laboratory upkeep and thereby ensuring a clean room environment.

Making stock-solutions and replenishing consumables used in sample preparation.

**Administration:**
- Maintaining up-to-date client and instrumentation risk assessments
- Be familiar with the UQ, CMM and IMB OH&S requirements and support staff in the necessary inductions of clients and visitors

**SELECTION CRITERIA**

**Essential**
- Previously demonstrated that you can work independently with limited supervision.
- Being familiar with the operation of both transmission electron microscopes and scanning electron microscopes.
- Being able to perform basic and advanced sample preparation techniques for TEM and SEM and operate the accompanying equipment.

**Transmission electron microscopy**
- Experience in operating a Jeol 1011 Transmission electron microscope.
- Experience in operating a Tecnai T12 with SerialEM as acquisition software.
- Experience in using the Ted Pella Biowave for microwave assisted fixation and infiltration.
- Being familiar with the concept of cryo fixation and experience in using high pressure freezing machines either one or both of them (Baltec HPF010 or the Leica EMpact).
- Experience in performing freeze substitution and resin embedding of frozen samples with the Leica AFS.
- Knowledge in TM Grid preparation (grid coating, glow discharge, carbon coating)
- Experience in Ultramicrotomy (making glass knives, mounting sections on slides)
- Trouble shooting and image interpretation with clients

**Scanning Electron Microscopy**
- Experience in SEM sample prep (microwave assisted fixation, Poly-I-lysine coating of coverslips, dehydration of samples with HMDS & CPD, sputter coating)
- Be able to operate a JEOL Neoscope and software
• Trouble shooting with clients e.g. charging problems, specimen mounting techniques.

Light Microscopy
• Experience in Phase contrast, bright field, Histology staining e.g toluidine blue stain

Special Requirements
Basic knowledge on image processing

Other
Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

• the University's Code of Conduct
• requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
• the adoption sustainable practices in all work activities and compliance with associated legislation and related University sustainability responsibilities and procedures
• requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University

Organisational Relationships

The position reports to Laboratory Manager

The University of Queensland values diversity and social inclusion.

Employment opportunities are not limited by race, ethnicity, religion, disability, age, sexuality, gender or other protected attributes. Applications are encouraged from Aboriginal and Torres Strait Islander peoples. For further information please contact our Indigenous Employment Coordinator at: atsi_recruitment@uq.edu.au