



Position Description

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| College/Division: | ANU College of Science |
| Faculty/School/Centre: | Research School of Chemistry |
| Department/Unit: | |
| Position Title: | Postdoctoral Fellow |
| Classification: | Academic Level A |
| Position No: | |
| Responsible to: | Fellow |

PURPOSE STATEMENT:

The Postdoctoral Fellow will contribute to Dr Megan O'Mara's NHMRC funded projects examining ABC transporters and SLC6 transporter structure, function and modulation. The project aims to understand the basic function of these proteins and how they can be targeted for therapeutic benefit.

The Postdoctoral Fellow will contribute to the research by using computational techniques including molecular dynamics simulations to investigate the structure and function of biological membrane transport proteins, the mechanism of action of lipid modulators and the effect of membrane composition on transporter function.

The incumbent will provide support, advice and training to students and other staff members in the research group.

KEY ACCOUNTABILITY AREAS:

Position Dimension & Relationships:

The Postdoctoral Fellow reports to Dr Megan O'Mara, the Chief Investigator of the above NHMRC projects, and work closely and collaboratively with the members of her research group and stakeholders of the projects.

Role Statement:

Under broad direction of Dr O'Mara, specific duties required of a **Level A Academic** may include:

- the conduct of research under limited supervision either as a member of team, or where appropriate, independently, and the productions or contribution to the production of conference and seminar papers and publications from that research;
- Design, setup and undertake computational simulations, perform data analysis of simulations to examine membrane transporter function and the effect of membrane phospholipid and sterol composition. These include the use of free energy and advanced sampling methods.
- Develop and benchmark simulation parameters for a range of compounds of interest
- Interact with collaborators and co-supervisors within the ANU and other universities involved in the project
- Offer guidance and advice within the field of the staff member's research to undergraduate, postgraduate students and other staff of the University.
- involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise;
- some administrative functions primarily connected with the area of research of the academic;
- development of some research-related material for teaching or other purposes with appropriate guidance from other staff;
- occasional contributions to teaching in relation to his/her research project(s);
- experimental design, and operation of advanced laboratory and technical equipment or conduct of advanced research procedures;
- attendance at meetings and conferences associated with research or the work of the organisational unit to which the research is connected and/or at departmental and/or faculty meetings and/or membership of a limited number of committees;

- comply with all ANU policies and procedures, and in particular those relating to work health and safety and equal opportunity; and
- other duties as allocated by the supervisor or the Vice-Chancellor consistent with the classification of the position.

Other requirement:

The incumbent must be eligible to hold a permit to use the NCI Supercomputer facilities under the Defence Trade Control Act and Autonomous Sanctions Act.

A **Level A 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.

Skill Base


A **Level A Academic** will normally have completed four years of tertiary study in the relevant discipline and/or have equivalent qualifications and/or research experience.

In many cases a position at this level will require an honours degree or higher qualifications or equivalent research experience

Research experience may have contributed to or resulted in publications, conference papers, reports or professional or technical contributions that give evidence of research potential.

SELECTION CRITERIA:

1. A PhD, or progress towards the completion of a PhD, or equivalent qualification, with experience in molecular dynamics simulation techniques, computational chemistry, structural biology or a related discipline, with a track record of independent research evidenced by publications in peer-reviewed journals and conferences.
2. Research experience in molecular dynamics simulations, including free energy or advanced sampling methods, ideally involving membrane protein systems, phospholipids or divalent cations.
3. Knowledge of parameterization techniques for molecular dynamics simulations, and / or quantum chemical calculations.
4. Experience with scripting and analysis tools for molecular dynamics trajectories, and in using high performance computing facilities.
5. The ability to supervise undergraduate and graduate students working on research projects.
6. Well-developed verbal and written communication skills with the ability to work effectively in an independent role and collaboratively with others in a research environment with people from diverse backgrounds.
7. The ability to work as part of a collaborative, multidisciplinary team, to meet deadlines and be primarily responsible for delivery of the project in some areas.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a University context.

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| Supervisor Signature: |  | Date: | 23/03/2018 |
| Printed Name: | Dr Megan O'Mara | Uni ID: | U4022190 |

References:

[Academic Minimum Standards](#)