

Mechanisms of neurogenic heterotopic ossification after spinal cord injury

Project Description

Project duration:	PhD 3-4 years
Description:	<p>A PhD project opportunity is available on an NHMRC Ideas grant for a student with an honours/master's degree in immunology, molecular biology, neuroscience or a related field to join the Stem Cell Biology group at Mater Research, based at the Translational Research Institute, Woolloongabba, Brisbane. The successful candidate will be enrolled in a higher degree (PhD) by research at The University of Queensland and carry out a research project focused on identifying new mechanisms of neurogenic heterotopic ossification.</p> <p>Neurogenic heterotopic ossifications (NHOs) are extra-skeletal bones that develop around joints after severe central nervous system injury. NHOs are incapacitating as they impair flexing of the affected joint and without intervention or surgical excision they can lead to major motor incapacitation. As the pathogenesis of NHOs is poorly understood, there are no diagnostic tools to predict NHO development in patients. To address these challenges, our NHMRC funded project will investigate mechanisms of NHO development in a pre-clinical model of NHO after spinal cord injury to discover new therapeutics and predictive biomarkers.</p>
Expected outcomes and deliverables:	<p>Students can expect to gain</p> <ul style="list-style-type: none"> • Expertise in a pre-clinical model of neurogenic heterotopic ossification after spinal cord injury • Skills in a broad range of techniques including small animal handling and surgery, multicolour flow cytometry, histology and histochemistry, molecular and cellular biology techniques. • Mentorship and a supportive lab team environment <p>Students will be expected to complete annual progress reports as required by UQ.</p>

Suitable for:

We are seeking a highly motivated PhD candidate with an interest in bone and spinal cord research with some background knowledge in bone biology, neuroscience and/or molecular biology.

Selection criteria:

- Bachelor's degree with first class honours and/or Masters with an outstanding academic achievement in the field(s) of physiology, neurobiology, bone biology, molecular biology or an equivalent field and the potential for scholastic success.
- Academic prizes and awards.
- High quality research outputs, including publications in international peer reviewed journals and conference presentations.
- A background or knowledge of molecular biology, bone biology is highly desirable.
- A background or knowledge of working with experimental animals is highly desirable
- This project will involve significant work with a preclinical animal model, so prospective students should be willing to undertake this type of research and be able to commit to animal care which may fall outside of standard working hours.
- High degree of motivation and organisation, and an ability to work both independently and as part of a team.
- Excellent written and oral communications skills in English

Primary Supervisor:

Dr Kylie Alexander and Prof Jean-Pierre Levesque

Remuneration:

The scholarship includes:

- Living stipend of \$35,000 per annum tax free (2024 rate), indexed annually
- Single overseas student health cover (OSHC)

Further info:

Please contact Dr Kylie Alexander: kylie.alexander@mater.uq.edu.au to express your interest, attaching your CV, academic transcript, and details of at least two referees.