

Rewiring transcription in solid tumours by targeting transposable elements

HDR Project Description

Project Title	Rewiring transcription in solid tumours by targeting transposable elements
Project duration:	3 years with the option to extend to 3.5 years PhD
Availability	Available from January 2022
Description:	<p>Transposable elements are sequences of DNA derived from viruses and genetic parasites. At one stage, transposable elements were able to propagate throughout our genome. They now account for roughly half of our genetic material. Over evolutionary time, the vast majority of transposable elements have become immobile and no longer replicate. However, many remnant transposable element sequences have been co-opted into regulatory functions to fine-tune cellular gene expression. Because of their repetitive nature, co-option of transposable elements can serve as a means for coordinating expression from a network of genes involved in a given biological process.</p> <p>This project aims to identify transposable elements that drive transcriptional programs in preclinical models of solid tumours. We will identify and characterise the protein complexes that effect transposable element regulatory function. Further, we will modulate transposable element expression and investigate the effect on tumour progression and therapeutic outcomes.</p> <p>The PhD candidate will be supervised by Dr Natasha Jansz (Mater Research) and Professor Geoff Faulkner (Mater Research/QBI)</p>
Expected outcomes and deliverables:	<p>This project is supported by an Earmarked Scholarship.</p> <p>The candidate will be a part of a diverse team with a shared interest in transposable element biology. The student leading this project will have the opportunity to work with CRISPR-Cas9 systems, Oxford Nanopore sequencing technologies, and human cell culture models. There will be opportunities to gain a working knowledge in Unix command-line and basic bioinformatics. The candidate will be supported in career development, building a publication record, and applying for awards.</p> <p>We expect the candidate will work independently and collaboratively with the aim to discover novel transcriptional pathways for therapeutic targeting in preclinical tumour models.</p>

Suitable for:	<p>This project is available for HDR students.</p> <p>Applicants will be considered based on their interest and engagement with the project. Academic record and employment history will be assessed relative to opportunities. An academic background in genetics, genomics, bioinformatics and/or molecular biology would benefit someone working on this project.</p>
Primary Supervisor:	<p>Dr Natasha Jansz</p>
Further info:	<p>We welcome and encourage applicants from diverse backgrounds, with a commitment to mentoring under-represented groups within the sciences. Please reach out to Natasha at natasha.jansz@mater.uq.edu.au if you are considering submitting an application or have any questions with regards to this project.</p>