Understanding the malignant cell niche – to improve anti-cancer treatment outcomes.

Project Title:	Understanding the malignant cell niche – to improve anti-cancer treatment outcomes.
Project duration:	This research project divides into two parts. PhD studies would encompass both, while an honours / MPhil would involve first part only. First part (1 to 2 years) – involves cancer cell culture studies. Second part (1 to 2 years)– confirm translational potential of findings in preclinical animal models of malignant disease.
Description:	Normal stem cells reside in specific microenvironments (niches) in the body which provide support and cell survival signaling. Malignant stem cells also manipulate their local environments in order to take advantage of these survival (therapy-resistance) and growth signals. The goal of this project is to identify pro-tumor survival factors in the malignant cell niche that are involved in promoting cancer cell survival and therapy resistance. In part 2, the importance of these factors in determining outcome of cancer progression and therapy response will be investigated in preclinical cancer models. Anticipated outcomes of this research project may include new strategies to improve anti-cancer therapy outcomes.
Expected outcomes and deliverables:	• New knowledge gain in the fields of cancer biology, immunology and inflammation, how micro-environments change during malignancy. • Acquisition of sought after skills in preclinical animal models of disease: including study of cancer therapy outcomes, niche-based therapy, stem cell biology and inflammation. • Building bridges between basic biological research discoveries and translational research.
Suitable for:	• Students with a passion for science and discovery. • Students comfortable with translational studies involving preclinical animal models of disease (which involve responsibility). • Student with good communication and organisational skills, plus an attention to detail and care.

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