

Position Description

Position Title: PhD Scholarship, Multimodal Imaging in Epilepsy

Position number: TBC

Classification: PhD Scholarship

Organisational Unit: School of Health Sciences

Department: Centre of Mental Health and Brain Sciences

Position Purpose

PhD Scholarship

- Full-time scholarship position
- Scholarship amount is \$42,440 p/a for 3.5yrs

This PhD scholarship is established to support a doctoral candidate to conduct research in Multimodal Non-invasive Imaging for advancing epilepsy surgery eligibility and outcome, a core research focus of the successful NHMRC Ideas Grant. The scholarship will recruit an excellent student with appropriate academic preparation in neuroimaging, computational neuroscience, biomedical engineering, computer science, epilepsy research or related disciplines, to join the multidisciplinary research team at the Centre for Mental Health and Brain Sciences, Swinburne University of Technology.

The student will join a multidisciplinary team and receive training in advanced multimodal neuroimaging methods, including functional MRI (fMRI), high-density EEG (HDEEG), magnetoencephalography (MEG), and structural MRI (sMRI), with the aim of developing integrated acquisition, processing and analysis pipelines for epilepsy research.

The ultimate goal of the PhD project is to refine non-invasive epileptogenic region localization techniques, improve the identification of suitable epilepsy surgery candidates, and enhance surgical success rates for patients.

Reporting Line

Reports to: Prof Chris Plummer, A/Prof David White

Direct reports: [List roles or indicate "None"]

Location

This position is currently located at the Hawthorn campus, but the incumbent may be required to undertake duties at any of the University's campuses. Thus, the incumbent must be willing to travel between campuses and work at a range of locations. Subject to suitability, this position may be eligible for flexible working options such as working from home arrangements.

Key Responsibility Areas	
Research	The PhD Candidate will complete the requirements for the submission of a PhD thesis and expected to undertake a range of research activities, including: • Identifying an optimal pipeline for the acquisition and integration of key multimodal neuroimaging methods applied in this study, including: fMRI, HDEEG, MEG, sMRI. • Applying relevant signal and image processing techniques required for optimal multimodal data quality assurance. • Developing standardised analysis pipelines for extending scales of research applications. • Preparing research manuscripts for high-impact peer-reviewed journals.
Collaboration	• Collaborate with the research team to support the ongoing multimodal data collection. • Be prepared to participate in team development and research activities and contribute to other projects within the team where it is deemed appropriate. • Be prepared to collaborate with leading epilepsy clinicians and researchers across 4 major Australian epilepsy centres: St Vincent's Hospital Melbourne, Alfred Hospital, Royal Children's Hospital, Mater Hospital Brisbane.
Swinburne Values and Behaviours	Commitment to the Swinburne Values and Behaviours of: • One Swinburne - We work together, bringing our unique skills to achieve our common purpose and strategy. • Future – Focused - We commit to taking bold strides – ‘moon shots’ – and are constantly innovating, disrupting, renewing and changing to create tomorrow's technology and talent today. • Engaged - We strive to be the most industry-engaged university, to amplify our impact and support all students to be future-ready. • Empowered - We are trusted, and expected, to act and make decisions commensurate with our roles and skills, and to drive continuous improvement, to deliver our common goals.

	• Accountable - We are accountable for our contributions to Swinburne's success and sustainability, for the ways we work together, and for the outcomes that we deliver for students, partners and society.
Other	• Undertake Division-wide and/or university-wide responsibilities as required.

Key Selection Criteria		Essential/ preferable
Qualifications	• Undergraduate degree in science, psychology, neuroimaging, computational neuroscience or related disciplines.	Essential
Experience/ Knowledge/ Attributes	• Epilepsy research.	Preferable
	• Neuroimaging.	Preferable
	• Pipeline development.	Preferable
Other	• A valid working with children's check card (or ability to obtain prior to or upon commencement).	Essential