



2027 Summer Research Project Template

Help us present your project in a way that connects with the right students. Thoughtful, engaging descriptions tend to attract stronger and more suitable applications. Thank you for putting a project forward - these programs rely on your contribution, and we couldn't do it without you.

Section	Description
Project title	KICKSTART: Accelerating clinical trials for the treatment of youth concussion through an innovative standardised soccer heading model
Hours & delivery	The student will be involved in the project for 30-36 hours per week, Monday to Friday. Research activities will be conducted onsite at the Child Health Research Centre at Level 6 of Centre for Children's Health Research, South Brisbane.
About the project	<i>Background:</i> Youth aged 14–24 years experience more concussions than any age group in Australia, coinciding with a critical neurodevelopmental period. The debilitating signs and symptoms interfere with school, sport, and daily activities. In 30% of cases, patients have persistent and intractable effects lasting months to years, affecting mental health and impairing quality of life. <i>Problem:</i> There is a scarcity of effective treatments to mitigate and prevent the effects of a concussion. Australians, The Australian Senate, and international research groups are urging scientific investigations into clinical solutions. <i>Solution:</i> This project seeks to accelerate clinical trials in novel neuroprotective strategies. It will assess the potential and feasibility of an innovative and safe standardised soccer heading model to establish proof-of-concept for neuroprotective strategies in up to 80 male and female youth. <i>Impact:</i> The clinical research model will facilitate rapid determination of proof-of-concept neuroprotective strategies in future trials, which our team of neurologists, physicians, dietitians, exercise physiologists, physiotherapists, biomedical engineers and statisticians are expertly positioned to conduct. <i>Connectivity Project:</i> The student will also get a chance to be involved in another related project, which is Connectivity. This project aims to investigate the fundamental relationships between brain connectivity and common symptoms and behaviours that arise following acquired brain injury (ABI) in children and youth during recovery. Using brain connectivity techniques, the relationship between brain connectivity and symptom/behaviour changes (i.e. brain-behaviour correlations) present in childhood ABI will be examined and identifiable brain-based markers of ABI recovery will be established.
What you'll do	The student will be involved in data collection including soccer heading task and electroencephalogram (EEG) and functional near-infrared spectroscopy (fNIRS) acquisition. The student will also be involved in preprocessing of the EEG data acquired from both KICKSTART and Connectivity projects, and processing of phlebotomy samples.
What you'll learn	The students will gain knowledge and practical skills in the conduction of EEG and fNIRS, as well as collection, preprocessing and analysis of data. The student will also gain understanding and valuable experience on how clinical research is conducted within a tertiary education and hospital environment. Students may also be asked to present their learnings via oral presentation to the ABiC/CHRC group at the end of their project.
Project outcomes	Complete data collection with ~10 participants (primary/most important outcome).



	Complete preprocessing of available EEG data from KICKSTART and Connectivity project, when the student is not completing data collection (secondary outcome; as time permits). Complete processing of phlebotomy samples from ~10 participants.
Who should apply?	This project is open to applications from students with a background in health, particularly those interested in neuroscience and with skills in processing phlebotomy samples.
Team & supervision	<i>Team:</i> Acquired Brain Injury in Children (ABiC) Research Program <i>Team Leader:</i> Professor Karen Barlow <i>Primary Supervisor:</i> Dr Nathan Delang, Postdoctoral Research Fellow
Additional opportunities (optional)	Observe other clinical trials occurring within our team.
Additional requirements (if applicable)	Blue Card is required. Additional onboarding requirements specific to our centre will be completed in the first week of the Summer Project.
	Yes , students may contact the supervisor before applying.
Contact	Direct enquiries to: Dr Nathan Delang - n.delang@uq.edu.au ABiC general email: uq_ABiC@uq.edu.au