



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	Comparing Movement Patterns Between Para-Athletes and Non-Impaired Participants Using Video-Based Movement Analysis
Hours & delivery	6 weeks of engagement with 36 hrs per week, between 12 January – 20 February 2027 using a hybrid model at St Lucia and Online.
About the project (150–250 words)	Para-athletes can demonstrate movement strategies that differ substantially from those observed in non-impaired populations. Understanding these differences is important for developing movement assessment tools that are appropriate for para-sport and for understanding how impairment and individual movement strategies influence movement performance. This project will investigate differences in movement patterns between para-athletes and non-impaired participants using video-based movement analysis.
What you'll do (100-150 words)	Students will be involved in collecting and processing movement data across a range of functional movement tasks and will investigate how movement patterns differ between populations. The project will consider both discrete measures of movement performance and continuous movement time-series data. Students will explore and evaluate approaches for analysing movement trajectories, which may include time-normalisation, waveform analysis, measures of waveform similarity, Statistical Parametric Mapping (SPM) and/or dimensionality-reduction approaches. The specific analytical approach will be tailored to the student's background and interests and the characteristics of the available data.
What you'll learn (100–150 words)	Students will gain experience in: · Planning and conducting human movement data collection with non-impaired participants and para-athletes. · Using video-based technology to collect and analyse human movement data. · Processing, cleaning and visualising biomechanical time-series data. · Comparing movement patterns between para-athletes and non-impaired participants. · Applying and evaluating statistical and analytical approaches for time-series movement data, such as Statistical Parametric Mapping (SPM), waveform analysis and measures of waveform similarity. · Interpreting continuous biomechanical data and identifying differences in movement strategies. · Developing and communicating biomechanical visualisations and research findings. · Critically evaluating the strengths and limitations of different approaches to analysing movement data. Students will be expected to contribute to participant recruitment and data collection, process and analyse movement data, complete a defined analysis comparing movement patterns between para-athletes and non-impaired participants, and produce a short research report and oral presentation at the conclusion of the Summer Research Program.
Project outcomes (75–125 words)	The project will contribute to understanding movement differences between para-athletes and non-impaired participants, while also developing robust approaches for analysing video-based movement data with potential applications in para-sport classification and movement assessment.



Who should apply?
(75–125 words)

This project would be suitable for students from the Faculty of Health, Medical and Behavioural Sciences, particularly those studying exercise and sport science, exercise physiology, or related disciplines. Students from programs with an interest in human movement, para-sport, biomechanics, data analysis or the use of technology to assess movement are encouraged to apply.

Team & supervision
(75–125 words)

Dr Thomas Wackwitz t.wackwitz@uq.edu.au

Additional opportunities
(optional)

Additional requirements
(if applicable)

Contact

Please contact Tom (above) or Dr Paige Treherne (p.treherne@uq.edu.au) if you would like further information.
