2027 Summer Research Project_Dr Padmanabhan

Section	Description
Project title	Pathomechanisms in Alzheimer's disease
Hours & delivery	20–36 hours per week School of Biomedical Sciences, Sir William Macgregor Building (64), St Lucia campus
About the project (150–250 words)	Alzheimer's disease (AD) is characterised by the loss of synaptic connections, neuronal death, and neuroinflammation. However, the precise molecular and cellular mechanisms driving these pathological changes remain poorly understood. The summer student will be involved in the ongoing imaging, cell culture and related experimental work in the laboratory to understand the pathomechanisms underlying AD.
What you'll do (100-150 words)	You will work with a highly interdisciplinary team of neuroscientists, biochemists, and mathematical biologists to help determine the molecular and systems-level mechanisms driving neurodegenerative disease.
What you'll learn (100–150 words)	You will gain experience in imaging, cell biology and data analysis.
Project outcomes (75–125 words)	By the end of the project, the student will have initial insight into cell culture, microscopy, and image analysis while contributing to research on cellular changes associated with Alzheimer's disease.
Who should apply? (75–125 words)	Students with experience in cell culture techniques. Data analysis experience is desirable. Ideal for students considering an Honours or PhD in the lab.
Team & supervision (75–125 words)	Dr Pranesh Padmanabhan Padmanabhan Group – Molecular and systems medicine
Additional opportunities (optional)	Students will have opportunities to engage with the broader research community through participation in laboratory meetings, where they may present their work and discuss scientific findings.
Additional requirements (if applicable)	Before commencing laboratory work, students will be required to complete laboratory onboarding and compliance processes. This includes a range of mandatory online training modules relevant to working in a PC2 research environment, such as biosafety, occupational health and safety (OHS) responsibilities, manual handling, chemical safety, and laboratory risk management. Students must follow all laboratory safety procedures and maintain accurate experimental records.
Contact	Yes, students should contact the supervisor before applying. Direct enquiries to: p.padmanabhan@uq.edu.au