

UQ Summer Research Project Description – 2026

Project title:	DNA methylation in saliva for gum disease
Hours of engagement & delivery mode	6 weeks, 12 Jan – 20 Feb 2026 Hours of engagement: 36 hours Location: Herston, Oral Health Centre, School of Dentistry Delivery Mode: In-person/on site
Description:	Our study aims to investigate the role of DNA methylation patterns in saliva and evaluate their potential as non-invasive biomarkers for gum disease. By analysing saliva samples from patients with periodontitis and healthy controls, we will profile methylation changes associated with disease presence and progression. This approach offers a unique opportunity to link epigenetic regulation with oral health, while leveraging saliva as an accessible diagnostic medium.
Expected learning outcomes and deliverables:	We anticipate identifying specific salivary DNA methylation signatures that can reliably differentiate gum disease patients from healthy individuals. These findings are expected to support the development of saliva-based diagnostic tools for early detection, risk assessment, and monitoring of periodontitis. Ultimately, this work could advance precision dentistry by integrating epigenetic biomarkers into clinical practice.
Suitable for:	Final year students from Science and Biomedical Engineering
Primary Supervisor:	Dr Pingping Han p.han@uq.edu.au https://dentistry.uq.edu.au/research/cor3
Further info:	The supervisor CAN be contacted by students prior to submission of an application