

## Faculty of Engineering

### Summer Research Program 2022-2023

Project Title: Application of small-scale roughness to change the aerodynamic performance of a cyclist.

Supervisor(s): David Burton

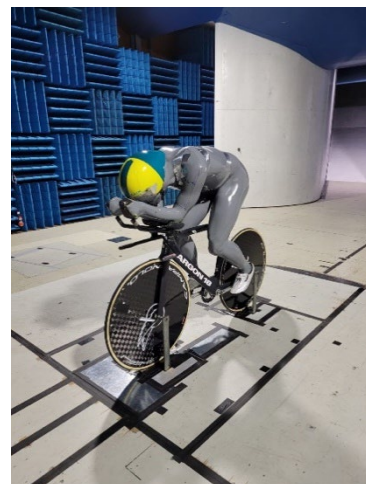
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#### Objective

At the elite level of cycling, races are often determined by the smallest of margins with seconds, sometimes milliseconds, separating 1<sup>st</sup> and 2<sup>nd</sup>. This difference can often be put down to the aerodynamic performance of equipment used by the cyclist when competing. The aim of this project is to build an understanding of how to improve aerodynamic performance through manipulation of flow through small scale roughness. The project will aim to characterize the key transitions within the boundary layer for small scale roughness on simplified geometries associated with a cyclist.



#### Project Details

You will be working directly with Monash and Cycling Australia staff to improve athlete performance in the upcoming Olympics.

The successful applicant will undertake a 3-month program that will incorporate planning and design of a wind tunnel experiment, implementation and processing with the opportunity to publish work upon completion of the project. The applicant will have between 3 and 5 weeks of wind tunnel testing time within the Monash 450kW wind tunnel using a range of measurement tools including cobra probes, force balances and hotwire.

#### Prerequisites

Aerodynamics 1 (MAE2404) and Aerodynamics 2 (MAE3401) or equivalent.

#### Additional Information

Applicants may be required to attend an interview.