

## **PhD Opportunity: Integration of Positional Biomechanics with Drag Measurements to Optimise Cycling Performance**

Trinity College Dublin (TCD), in partnership with the Sport Ireland Institute and Cycling Ireland, is continuing its collaborative work on cycling position optimisation and is seeking expressions of interest from motivated candidates for a PhD project under the Irish Research Council's Enterprise Partnership Scheme (EPS). The next funding call is expected in Autumn 2025.

This scheme supports high-quality research in collaboration with an enterprise partner, offering candidates the opportunity to conduct impactful research while gaining industry experience.

### **Programme of Research**

The proposed research aims to automate and consolidate a novel marker-based method for measuring 2D cycling position kinematics on moving bikes. This data will be integrated with robust drag assessment techniques to develop a new coaching tool that optimises biomechanical positioning, comfort, and aerodynamic drag.

This project builds on prior work conducted by the research partners and has strong applied implications for performance sport.

Ideal candidates should demonstrate:

- A strong background in computer coding (e.g. Python, MATLAB)
- A working knowledge of biomechanics
- An understanding of competitive sport

### **Enterprise Partnership Role**

In addition to academic research, the role will be integrated into the existing performance analysis (PA) provision as part of the wider multi-disciplinary support team working with Cycling Ireland's High Performance Track Cycling Program.

Key responsibilities will include:

- Capturing, processing, and analysing data from training sessions and competitions
- Maintaining databases of athlete and team performances
- Delivering real-time analysis and post-race debriefs, including performance reports
- Travelling extensively to international UCI track cycling competitions

While prior experience in performance analysis is beneficial, it is not essential. More importantly, candidates should be:

- Self-motivated and capable of working independently
- Organised, adaptable, and responsive to changing demands in a high-performance environment

### Location

The PhD candidate will be jointly based at Trinity College Dublin and the Sport Ireland Institute, both located in the Dublin region.

### How to Apply

Interested candidates should submit a CV and cover letter to [csimms@tcd.ie](mailto:csimms@tcd.ie) by 30th September 2025.



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