



# Optimising Athletic Performance: Integrating Biomechanical Analysis with Constraints-Based and Movement Principles

A lecture by Richard Collins

Senior Lecturer at Buckinghamshire New University (BNU)

**Wednesday 23rd October 2024, 6.00pm–7.00pm**

The topic of biomechanical analysis often leaves students and practitioners feeling somewhat intimidated due to the perceived complexities. However, the concepts of “movement analysis” are central to optimising athletic performance both from a technical and physical perspective. When conducting a biomechanical analysis in sport, the analyst must consider the primary objectives of the movement and subsequently devise a strategy to better achieve these objectives based on the fundamental principles of physics and geometry. This talk is designed to introduce the basic branches of biomechanics to the audience, while considering different analysis methods and tools available to practitioners. The talk will then focus on reviewing the constraints-based, and movement principles approaches to analysis, considering how these can be applied to our own athletes and practices.

Rich Collins is a Senior Lecturer in Sport and Exercise Biomechanics and programme leader for the BSc (Hons) Sport and Exercise Science course at Buckinghamshire New University (BNU). Outside of his teaching, Rich is the Group Lead for the Sports Coaching and Performance research group at BNU, with over 12 years of experience working with professional sports clubs including PSV Eindhoven and Wycombe Wanderers football clubs, conducting biomechanical and performance assessments. Rich’s research interests revolve around the technical aspects of golf and racket sport movements. Professionally, Rich is also a member of the British Association for Sport and Exercise Sciences (BASES), and the International Society for Biomechanics in Sport (ISBS).

**Lillingstone Trust Mind & Body Zone,  
ek robotics Sports Campus, Royal  
Latin School.**

(Tea and coffee served from 5.45pm)

**Entry to these lectures is free to all  
members of the local community. For  
further details, or to book a seat, contact  
Lucy Beckett at [lbeckett@royallatin.org](mailto:lbeckett@royallatin.org) or  
on 01280 827306**

