

Ross D. Wilkinson

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Education

- 2016 – Curr. 📌 **Ph.D. Candidate, The University of Queensland** in Biomechanics.
Thesis title: *Effect of Lateral Bicycle Sway and Riding Posture on Mechanical Effectiveness and Efficiency in Cycling.*
Advisors: Prof. Andrew G. Cresswell and Assoc. Prof. Glen A. Lichtwark
- 2009 – 2012 📌 **Ba. Exercise and Sports Science (Hons), The University of Queensland**
First Class Honours. GPA = 6.125/7.
Dean's Commendation for High Achievement.

Research Experience

- 2018 📌 **Industry Consultation, Specialized Bicycle Components Inc., Boulder, CO**
Project Title: *Effect of Chamois Design on Rider Comfort and Saddle Pressure during Submaximal Cycling.*
Project Lead: Todd Carver, M.S. (Head of Human Performance)
- 📌 **Summer Research Collaboration, Locomotion Laboratory, University of Colorado Boulder**
Project 1 Title: *The Energetic Cost of Non-Seated Cycling.*
Project 2 Title: *The Accuracy of On-Board Power Meters.*
Collaborators: Assoc. Prof. Emeritus Rodger Kram (Director) and Wouter Hoogkamer, Ph.D. (Post-Doctoral Researcher)
- 2012 📌 **Research Assistant, UQ Sports Academy, The University of Queensland**
Project 1 Title: *The Correlation Between the 30-15 Intermittent Fitness Test and a Novel Test of Running Performance.*
Project 2 Title: *Hamstring Strains: Towards Optimal Rehabilitation Guidelines for Team Sport Athletes.*
Advisor: Dr Vincent Kelly

Publications and Presentations

Conference Posters

- 1 **Wilkinson, R. D., Lichtwark, G. A., & Cresswell, A. G.** (May 2018). *Stand and deliver: muscle activity and mechanical energetics of the lower limb during cycling.* American College of Sports Medicine's 65th Annual Meeting. doi:10.1249/01.mss.0000536536.37611.4c
- 2 **Wilkinson, R. D., Lichtwark, G. A., & Cresswell, A. G.** (Aug 2018). *Mechanical energetics relating to rider centre of mass motion during non-seated cycling.* American Society of Biomechanics 42nd Annual Meeting.
doi:<https://doi.org/10.7490/f1000research.1116348.1>

Conference Presentations

- 1 **Wilkinson, R. D., Marcus, M., Williams, J., & Carver, T.** (2018). Effect of chamois design on rider comfort and saddle pressure during submaximal cycling. UQ HMNS Postgraduate Conference.

- 2 **Wilkinson, R. D., Lichtwark, G. A., & Cresswell, A. G. (2017).** The effect of non-seated posture on cycling performance. UQ HMNS Postgraduate Conference.
- 3 **Wilkinson, R. D., Lichtwark, G. A., & Cresswell, A. G. (2016).** The effect of body posture and cadence on lower limb muscle activity during sprint cycling. UQ HMNS Postgraduate Conference.

Symposium Presentations

- 1 **Wilkinson, R. D. (Dec 2018).** *Sit, stand, rock and roll: towards optimal pedalling posture.* Cycling Science Symposium, hosted by The University of Queensland.

Grants and Scholarships

- 2018  **ACSM Biomechanics Interest Group Student Travel Award, American College of Sports Medicine (ACSM)**
US\$400
-  **HMNS Research Student Travel Award, The University of Queensland**
AU\$250
- 2017  **Candidate Development Award, The University of Queensland Graduate School**
AU\$5000

University Teaching Experience

Teaching Assistant

- 2016 – Curr.  **NEUR3733 – Neuromechanical Basis of Human Movement, The University of Queensland**
Facilitation of laboratory sessions and proctoring of in-class examinations.
Tutor Survey Results (Scale 1-5) - Overall Rating: Mean = 4.89, n = 18
Course Coordinator: Assoc. Prof. Glen A. Lichtwark
-  **NEUR2530 – Motor Control and Learning, The University of Queensland**
Facilitation of laboratory sessions and proctoring of in-class examinations.
Tutor Survey Results (Scale 1-5) - Overall Rating: Mean = 4.8, n = 5
Course Coordinator: Prof. Timothy Carroll
-  **BIOL2630 – Biomechanics, The University of Queensland**
Facilitation of laboratory sessions and proctoring of in-class examinations.
Tutor Survey Results (Scale 1-5) - Overall Rating: Mean = 4.69, n = 13
Course Coordinator: Assoc. Prof. Glen A. Lichtwark

Honours Supervision Experience

- 2018  **Co-Supervisor, The University of Queensland**
Thesis title: *Effect of Individual Factors on Coordination and Force Production during Cycling.* Student: Patrick Newman
- Thesis title: *Effect of Lateral Bicycle Sway on Lower Limb Muscle Activity during Non-Seated Cycling.* Student: Eric Su
- Thesis title: *Effect of Lateral Bicycle Sway on Joint Kinematics and Kinetics during Non-Seated Cycling.* Student: Jonathon Hoffmann
- Thesis title: *Validity of Inertial Measurement Units for Measuring Vertical Centre of Mass Displacement During Non-Seated Cycling.* Student: Jessica Heiner

Honours Supervision Experience (continued)

- 2017 **Co-Supervisor, The University of Queensland**
Thesis title: *The Effect of Cadence and Power Output on Vertical Centre of Mass Motion during Non-Seated Cycling*. Student: Madushi Wijesuriya
- Thesis title: *Non-Seated Cycling Posture Alters Duty Cycle and Joint-Specific Power Within the Lower Limb*. Student: Thomas Helleman
- 2016 **Co-Supervisor, The University of Queensland**
Thesis title: *The Effect of Riding Posture on Lower Limb Muscles Activity during Sprint Cycling*. Student: Angus Anderson
- Co-Supervisor for all projects: Assoc. Prof. Glen A. Lichtwark

Certifications

- 2017 **Higher Education Academy (HEA) Associate Fellow, The University of Queensland.**
Gained through the completion of the Graduate Teaching Associates (GTA) Program run by the University's Institute for Teaching and Learning Innovation
- 2012 **Level 1 Strength and Conditioning Coach, The Australian Strength and Conditioning Association (ASCA).**
- 2007 **BSB50215 Diploma of Business, Technical and Further Education (TAFE) Queensland.**
- BSB51915 Diploma of Leadership and Management, Technical and Further Education (TAFE) Queensland.**

Skills

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| Data Acquisition | ■ Three-Dimensional Motion Capture, Electromyography, Inertial Measurement Units, Force Transducers, UltraSound Imaging, A/D Instrument Connections. |
| Data Processing | ■ Signal Processing and Filtering, Image Processing, Inverse Dynamics, Musculoskeletal Modelling. |
| Statistics | ■ Descriptive, Frequentist and Bayesian Inference, Machine Learning (Cost Functions, Linear, Polynomial and Logistic Regression, Neural Networks), Multivariate Analysis. |
| Communication | ■ Excellent ability to explain concepts clearly as well as present and visualise data. |
| Coding and Software | ■ MATLAB (Advanced), Simulink (basic), R (Statistics and Markdown), XML, $\text{\LaTeX}$, Python(Raspberry Pi Integration), OpenSim Modelling, GraphPad Prism, GitHub Integration, Hugo Web Development. |

References

Available on Request