

JAMES WRIGHTSON PhD

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To replace this text with your own, just click it and start typing. Briefly state your career objective, or summarize what makes you stand out. Use language from the job description as keywords.

EDUCATION

OCTOBER 2016

Doctor of philosophy, cognitive neuroscience, University of Brighton

Title: Investigating the contribution of the prefrontal cortex to the control of dual-task gait. University of Brighton.

Supervisors: Dr. Nicholas Smeeton (University of Brighton) Dr. Emma Ross (University of Brighton).

JULY 2010

Bachelor of science (hons) first class, exercise science, University of Brighton

TEACHING EXPERIENCE

2017 – 2021

University of Calgary

- *Role:* Postdoctoral fellow
 - HBI-REALISE (2019), Introduction to “R”, Course organizer, presenter.
 - KNES373 (2018), Neuromuscular physiology, Guest lecturer.
 - KNES373 (2017), Neuromuscular physiology, Guest lecturer

2015 – 2017

University of Brighton

- *Role:* Lecturer in Motor Control and Biomechanics
- *Courses as coordinator:*
 - SE400, SE500, SE600 Applied and integrated studies
- *Courses as lecturer:*
 - HB630 - Exercise and the brain. Topics: Brain anatomy, Cognition and Exercise, Motor neuroscience
 - HB500 – Biomechanics. Topics: Gait, Techniques in biomechanics (EMG, gait analysis)
 - HB400 - Musculoskeletal Anatomy and Fundamental Biomechanics. Topic: Musculoskeletal Anatomy
 - SM708 - Critical insights, Topics: Research Philosophy, Statistical Inference

- SR525 - Research methods and statistics. Topics: Statistical inference, test of difference.

RESEARCH EXPERIENCE

MAY 2021 – DECEMBER 2021

SENIOR CONSULTANT, CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

Research scientist for the non-invasive neurostimulation network (N3).

- Deployed self-developed web applications for data analysis.
- Provided statistical and science writing support to network members.
- Organized internal scientific meetings for network members.
- Collaborated on three peer-reviewed manuscripts under preparation or review.
- Advised and mentored PhD candidates.

FEBRUARY 2018 – MAY 2021

POSTDOCTORAL SCHOLAR, CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

Harley Hotchkiss-Samuel Wiess Postdoctoral Fellow in the Calgary Perinatal Stroke Program and the Pediatric Onset of Neuromotor Impairments laboratory.

- Wrote successful fellowship funding application (\$50,000).
- Championed industry-funded (\$10,000) innovation competition winner.
- Published five peer-reviewed manuscripts, two as first author.
- Presented research at scientific conferences.
- Developed and taught introductory statistics and programming courses.

FEBRUARY 2017 – FEBRUARY 2018

POSTDOCTORAL ASSOCIATE, FACULTY OF KINESIOLOGY, UNIVERSITY OF CALGARY

The project examined whether non-invasive brain stimulation could alleviate fatigue.

- Mentored MSc and undergraduate students.
- Demonstrated at “Open house for High schools” for the Faculty of Kinesiology.
- Published three peer-reviewed manuscripts, one as first author.
- Interviewed for Hutchinson, A. (2019) Is Brain Stimulation the Next Big Thing? Outside Online.

AWARDS AND FUNDING

- 2020: Health hack innovation award: Champion (Improving motor mapping in children with perinatal stroke, \$10,000)
- 2018: University of Calgary, Harley Hotchkiss – Samuel Weiss Postdoctoral Fellowship, (\$50,000)
- 2016: University of Brighton pilot research funding (\$9000): Action observation and gait rehabilitation in stroke.
- 2016: University of Brighton learning and teaching award (\$2000).
- 2015: University of Brighton Excellence in Facilitating and Empowering Learning award.
- 2013: British Pharmacological Society Training award (\$2000).
- 2013: Postgraduate prize winner, University of Brighton.
- 2010: Physiological Society Studentship (\$2000).
- 2010: Carol Russell memorial fund for academic excellence, University of Brighton
- 2010: Prize winner, British Association of Sport and Exercise Sciences Conference

RESEARCH TRAINING

- 2018: Canada Good Clinical Practice, University of Calgary.
- 2015: Magstim Summer School. University of Oxford.
- 2014: Magstim Summer School. University of Oxford.
- 2013: In-vivo Neuroscience Techniques, University of Glasgow.
- 2013: Home Office Animal Licensee Training, Imperial College.

MENTORSHIP AND STUDENT SUPERVISION

Postgraduate supervision

- Tucknott, A. (2018-present). Neuro-economic decision-making during exercise (Advisor - PhD) University of Brighton. Two manuscripts published in *Psychophysiology, Cognitive, Affective and Behavioral Neuroscience*, one under revision at *PLOSone* one under review at *Psychonomic Bulletin*.
- Cowan, R. (2016) Effect of tDCS on exercise performance (Supervisor - MSc), University of Brighton. Manuscript in preparation.

Postgraduate mentorship

- Kahl, C. (2019-2020) Exploring the Neurophysiology of Motor Pathways in pediatric Neurodevelopmental Populations using Maps and Neurochemistry (PhD). One manuscript published in *Developmental Medicine and Child Neurology*, one under review *Biological Psychiatry*, and two in preparation

Undergraduate supervision (Honors projects)

- Hiam, A. (2016) Effect of neuromuscular electrical stimulation on exercise performance
- Henry, C. (2016) Prefrontal tDCS improves isometric exercise performance.
- Cowan, R. (2015) Perceptions of cold, but not core temperature, modify cognitive performance.

Undergraduate mentorship

- Hussain, S. (2020) PURE summer studentship walking and fatigue in youth with cerebral palsy, University of Calgary, Manuscript under review in *Developmental Neurorehabilitation*
- Yeung, S. (2017) PURE summer studentship, Effect of tDCS on fatigue, University of Calgary, Manuscript published in *European Journal of Neuroscience*.

SERVICE AND OUTREACH

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- Coordinating the non-invasive brain stimulation network meeting, 2020-2022
- Invited speaker: Alberta Children's Hospital, Neuromotor Impairment rounds 2018
- Internal reviewer: Scholarship Internal Review Service, University of Calgary
- Interviewee: Hutchinson, A. (2019) Is Brain Stimulation the Next Big Thing? Outside Online
- Adhoc reviewer: Stroke, *PLOSone*, *European Journal of Neuroscience*, *Neuroscience*, *Neuroscience Letters*, *Frontiers in Human neuroscience*, *Journal of motor behaviour*, *Experimental Brain Research*, *European Journal of Sport Science*
- Presenter: "Open house for High schools", Faculty of Kinesiology, University of Calgary

ACADEMIC PUBLICATIONS

Published and accepted manuscripts

- Greenhouse-Tucknott, A. Butterworth, J. **Wrightson, J.G.** Smeeton, N.J. and Dekerle, J. (2021) Towards the unity of pathological and exertional fatigue: A predictive coding model, *Cognitive, Affective and Behavioral Neuroscience*, Accepted.
- Kirton A, Metzler M, Craig B, Hilderley A, Dunbar M, Giuffre A, **Wrightson J.G.**, Zewdie E and Carlson H. (2021), Perinatal stroke: Mapping and modulating developmental plasticity to optimize outcomes. *Nature Reviews Neurology* (In Press).
- Smeeton, N.J. **Wrightson, J.** Varga, M, Cowan, R. and Schafer, L. (2021), Coordination between motor and cognitive tasks in dual task gait, *Gait & Posture* 85, 138-144.
- Kahl, C. K. Kirton, A. Pringsheim, T. Croarkin, P., Zewdie, E. Swansburg, R. **Wrightson, J.G.** Langevin, L. M. and MacMaster, F. P. (2021), Open label trial of bilateral transcranial magnetic stimulation of the supplementary motor area in children with Tourette's syndrome, *Developmental Medicine and Child Neurology* (In Press).
- Brownstein, C.G. Twomey, R. Temesi, J. **Wrightson, J.G.** Martin, T. Medsky, M. Culos-Reed, S.N. and Millet, G.Y. (2021) Physiological and psychosocial correlates of cancer related fatigue, *Journal of Cancer Survivorship* (In Press)
- Greenhouse-Tucknott, A. Pickering, S. Butterworth, J. Smeeton, N.J. **Wrightson, JG**, and Dekerle, J. Prolonged cognitive activity increases perception of fatigue but does not influence perception of effort, affect or performance during subsequent isometric endurance exercise. *Sport, Exercise and Performance Psychology* (In Press)
- Giuffre, A. Kahl, C.K. Zewdie, E. **Wrightson, J.G.** Bourgeois, A. Condliffe, E.G. and Kirton, A. (2021), Reliability of robotic transcranial magnetic stimulation motor mapping, *Journal of Neurophysiology*, 125,1, 74-85.
- Giuffre, A. Zewdie, E. Carlson, H.L. **Wrightson J.G.** Kuo H-C, Cole. L and Kirton, A. (2021), Robotic transcranial magnetic stimulation motor maps and hand function in adolescents, *Physiological Reports* 9 (7) e14801.
- **Wrightson, J.G.** Twomey, R. Yeung, S.T and Millet, G.Y. (2020), No effect of tDCS of the primary motor cortex on isometric exercise performance or perceived fatigue, *European Journal of Neuroscience*, 52, 2, 205-2914.
- Twomey, R. Yeung, S.T. **Wrightson, J.G.** Millet, G.Y. and Culos-Reed, S.N. (2020), Post-Exertional Malaise in People with Chronic Cancer-Related Fatigue, *Journal of Pain and Symptom Management*, 60,2,407-416.
- Greenhouse-Tucknott, A. **Wrightson, J.G.** Raynsford, M. Harrison, N.A. and Dekerle, J. (2020), Interactions between perceptions of fatigue, effort, and affect decrease knee extensor endurance performance following upper body motor activity, independent of changes in neuromuscular function, *Psychophysiology*, 57, 9, e13602.
- **Wrightson, J.G.** Schäfer, L. Smeeton, N.J. (2020) Dual-task prioritization during overground and treadmill walking in healthy adults, *Gait & Posture*, 75, 109-114.
- Koral, J. Oranchuk, D.J. **Wrightson, J.G.** Twomey, R. and Millet, G.Y. (2020), Mechanisms of neuromuscular fatigue and recovery in unilateral versus bilateral maximal voluntary contractions, *Journal of Applied Physiology*, 128 (4), 785-794.

- **Wrightson, J.G.** Zewdie, E. Kuo, C.H. Millet, G. Y. and Kirton, A. (2020), Fatigue in children with perinatal stroke: clinical and neurophysiological associations, *Developmental Medicine and Child Neurology*, 62 (2), 234-240.
- Dekerle, J. Ansdell, A. Tucknott, A.J. Schaefer, L. and **Wrightson, J.G.** (2018), Methodological issues with the assessment of voluntary activation using transcranial magnetic stimulation in the knee extensors. *European Journal of Applied Physiology*, 119 (4), 991-1005.
- Dekerle, J. Tucknott, A. **Wrightson, J.G.** A.J. Schaefer, L. and Ansdell, A. (2018), Improving the measurement of TMS-assessed voluntary activation in the knee extensors, *PLOSone*, 14 (6), e0216981.
- Gibson, O.G. **Wrightson, J.G.** and Hayes, M. (2018), Intermittent sprint performance in the heat is not altered by augmenting thermal perception via L-Menthol or Capsaicin mouth rinses. *European Journal of Applied Physiology*, 119 (3), 653-664.
- Twomey, R. **Wrightson J.G.** Fletcher, H. Avraam, S. Ross, E.Z. and Dekerle, J. (2017), Exercise induced fatigue following an intermittent hypoxic protocol, *Medicine & Science in Sports & Exercise*, 49, (12), 2422-2432
- **Wrightson, J.G.** and Smeeton, N.J. (2017), Walking modality, but not task difficulty, influences the control of dual-task walking, *Gait and Posture*, 58, 136-138.
- **Wrightson, J.G.** Ross, E.Z. and Smeeton, N.J. (2016), The effect of cognitive task type and walking speed on dual-task gait in healthy adults, *Motor Control*, 20 (1), 109-121.
- **Wrightson, J.G.** Twomey, R. and Smeeton, N.J. (2016), Exercise performance and corticospinal excitability during action observation, *Frontiers in Human Neuroscience*, 10, 106.
- **Wrightson, J.G.** Ross, E.Z. Twomey, R. and Smeeton, N.J. (2015), The effect of transcranial direct current stimulation on task processing and prioritisation during dual-task gait. *Experimental Brain Research*, 233 (5), 1575-1583.

Manuscripts under review

- Twomey R, DeMars J, Franklin K, Culos-Reed SN, Weatherald J, **Wrightson JG.** Chronic fatigue and post-exertional malaise in people living with long COVID. *The BMJ*. Preprint: <https://osf.io/dxu63/>
- **Wrightson, J.G.** Carlson, H. Condliffe E.G. and Kirton, A. (2021), Fatigue in perinatal stroke is associated with the functional connectivity of the sensorimotor network, *Brain Imaging and Behavior*, preprint: <https://www.medrxiv.org/content/10.1101/2020.04.14.20065326v1>
- Greenhouse-Tucknott, A. **Wrightson, J.G.** Berens, S., Dekerle, J and Harrison N.A. (2021), Perceived fatigue does not alter effort-based decision making, but does undermine confidence in the ability to perform physical actions, *Psychonomic Bulletin*, preprint: <https://psyarxiv.com/pf2jy/>
- Greenhouse-Tucknott, A. **Wrightson, J.G.** Butterworth, J. Harrison, N.A. and Dekerle, J. (2021), Effect of the subjective intensity of fatigue and interoceptive awareness on perceptual regulation and performance during sustained physical activity, *PLOSone*, preprint: <https://osf.io/preprints/sportrxiv/6k29j/>
- Husain, S. **Wrightson, J.G.** Johnson, E. Brunton, L.K. and Condliffe, E.G (2021) Walking and Fatigue in People with Cerebral Palsy, *Developmental Neurorehabilitation*

- Kahl, C. K. Swansburg, R. Hai, T. **Wrightson, J.G.** Bell, T. Lemay, J. F. Kirton, A. and MacMaster, F. P. (2021), Differences in neurometabolites and transcranial magnetic stimulation motor maps in children with attention-deficit/hyperactivity disorder, *Brain Stimulation*
- Twomey, R. Yeung, S. **Wrightson, J.G.** Sung, L. Robinson, P.D. Millet, G.Y. and Culos-Reed, S.N. (2021) Including people with fatigue: a systematic review and meta-analysis of physical activity after cancer treatment, *Psycho-Oncology*, preprint: <https://osf.io/preprints/sportrxiv/snhya/>

Selected Conference Presentations

- **Wrightson, J.G.** Zewdie, E. Kuo H.C. Millet, G.Y. and Kirton, A. (2019), Fatigue in Hemiparetic Children with Perinatal Stroke is Associated with Altered Cortical Excitability, 3rd International Brain Stimulation Conference, Vancouver, *Brain Stimulation*, 12 (2), 578.
- **Wrightson, J.G.** Twomey R, Ross E.Z. & Smeeton N.J. (2015), Transcranial direct current stimulation (tDCS) of the prefrontal cortex influences task allocation of attention during dual-task gait. 1st International Brain Stimulation Conference, Singapore, *Brain Stimulation*, 8(2), 343-359.
- **Wrightson, J. G.** Ross, E.Z. and Smeeton, N.J. (2014), Observation of a fast action increases arm crank exercise performance, 19th Annual Congress of the European College of Sport Science, Amsterdam.
- **Wrightson, J.G.** Smeeton, N.J. (2013), Slow walking Increases the cognitive control of gait in healthy adults, Research in Imagery and Observation Group annual meeting, Dublin.
- **Wrightson, J.G.** Sansom, J. Twomey, R. Ross, E.Z. & Smeeton, N.J. (2013) Motor cortex excitability during the observation of cyclical actions, British Association of Neuroscience: Festival of Neuroscience, London.

Book Chapters

- **Wrightson J.G.** & Twomey R. Exercise and chronic fatigue. *Essentials of Exercise and Sport Psychology: An Open Access Textbook*. Edited by Zenko Z & Jones L. (In press, publication scheduled for May 2021).