

**Michael J. Asmussen, PhD**  
*Curriculum Vitae*

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## CURRENT POSITION

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- 2015-Present      *Postdoctoral Fellow, University of Calgary, Calgary, Alberta, Canada*
- Supervisor: Dr. Benno Nigg, Professor Emeritus and Founder of the Human Performance Lab at University of Calgary

## EDUCATION

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- 2011-2015      *Doctor of Philosophy, McMaster University, Hamilton, Ontario*
- Dissertation: Task-specific modulation of corticospinal excitability, supervised by Dr. Aimee Nelson, Canadian Research Chair in Sensorimotor Control
- 2009-2011      *Master of Science, Lakehead University, Thunder Bay, Ontario*
- Thesis: Biomechanical constraints on intra-limb coordination in children with and without Developmental Coordination Disorder (DCD), supervised by Dr. Eryk Przysucha
- 2005-2009      *Honours Bachelor of Kinesiology, Lakehead University, Thunder Bay*
- Thesis: The effects of running specific isometric training exercises on running speed in children, supervised by Dr. Eryk Przysucha
  - Graduated with first class standing

**ACADEMIC HONOURS**

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2018 National Center for Simulation in Rehabilitation Research Visiting  
Scholar at Stanford University

*Amount: \$8000*

2017-2019 Killam Postdoctoral Fellowship (Honourary)

*Amount: \$106 000 over 2 years*

2017-2020 Alberta Innovates Health Solutions Postgraduate Fellowship

*Amount: \$165 000 over 3 years*

2017-2019 Natural Sciences and Engineering Research Council Postdoctoral  
Fellowship

*Amount: \$90 000 over 2 years*

2014-2015 Ontario Graduate Scholarship (OGS)

*Amount: \$15 000*

2013-2014 Ontario Graduate Scholarship (OGS)

*Amount: \$15 000*

2011-2012 Ontario Graduate Scholarship (OGS)

*Amount: \$15 000*

University of Waterloo President's Graduate Scholarship

*Amount: \$10 000*

2010-2011 Ontario Graduate Scholarship (OGS)

*Amount: \$15 000*

Ontario Graduate Scholarship in Science and Technology (OGSST)

*Amount: \$5 000*

2009-2010 Lakehead University Graduate Scholarship

*Amount: \$1000*

Lakehead University Special Graduate Award

*Amount: \$1500*

2008-2009

Dr. S Penny Petrone Career in Medicine Scholarship

*Amount: \$2500*

Dr. John L Remus Kinesiology Scholarship

*Amount: \$250*

The Baziuk Family Sports Medicine Scholarship

*Amount: \$400*

2009-2010

Academic All Canadian, Track & Field and Cross Country Running

2008-2009

Academic All Canadian, Track & Field and Cross Country Running

2007-2008

Academic All Canadian, Track & Field and Cross Country Running

2005-2006

Academic All Canadian, Track & Field and Cross Country Running

**PUBLICATIONS (20)**

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- 2018 **Asmussen MJ**, Kaltenbach C, Federico S, Nigg BM. (submitted) “The effect of different treadmills on impact forces.” *Journal of Biomechanics*
- Asmussen MJ**, Fletcher JR, Kosa N, Nigg BM (in preparation) “The effects of cycling and running shoes on joint moments and gross efficiency during cycling” *Journal of Applied Biomechanics*
- Mauracher ME, **Asmussen MJ**, Nigg SR, Omu O, Jarvis SE. (accepted) “Reliability and Validity of a novel Dynamometer to Objectively Quantify Force.” *Muscle & Nerve*.
- Fletcher JR, **Asmussen MJ**, Nigg SR, Nigg BM. (submitted) “Does a less torsionally stiff cycling shoe reduce knee moments and gross efficiency during cycling?” *Journal of Sport Sciences*
- Kaltenbach C, **Asmussen MJ**, Nigg SR, Nigg BM. (in preparation) “The effects of different treadmills on muscle activation of lower leg muscles” Submitting to *Gait & Posture*
- 2017 **Asmussen MJ**, von Tscharnner V, Nigg BM. (in press) “Motor Unit Action Potential Clustering –Theoretical Consideration for Muscle Activation during a Motor Task.” *Frontiers in Human Neuroscience*
- 2016 **Asmussen MJ**, Bergel T, Bailey AB, Keir PJ, Potvin JR, Nelson AJ. (2016). “Combining multiple data acquisition systems to study corticospinal output and multi-segment biomechanics”. *Journal of Visualized Experiments*, 107.
- Asmussen MJ**, Everett BJ, Armstrong DG (2016). “Assessing the potential of insoles and sensory substitution for patients with diabetes”. *Podiatry Today*, 29, Issue 3.
- Bailey AB, **Asmussen MJ**, Nelson AJ (2016). “Relationships between median nerve afferent volley and neural activity within sensory and motor cortices.” *Journal of Neurophysiology*, 116, 637-644.
- 2015 **Asmussen MJ**, Bailey AB, Nelson AJ (2015). “Cortical and corticospinal output modulations during reaching movements with varying directions and magnitudes of interaction torques”. *Neuroscience*, 311, 268-283.
- 2014 **Asmussen MJ**, Przysucha EP, Dounskaia N (2014). “Intersegmental dynamics shape catching in typically developing children but not children with developmental coordination disorder”. *Journal of Neurophysiology*, 111, 1417-1428.

**Asmussen MJ**, Zapallow CM, Jacobs MF, Lee KGH, Tsang P, Nelson AJ (2014). “Modulation of short-latency afferent inhibition prior to movement depends on digit and task-relevance”. *PLOS ONE*, 9, e104807.

**Asmussen MJ**, Przysucha EP, Zerpa C (2014) “Intra-limb coordination in children with and without developmental coordination disorder during one-handed catching”. *Journal of Motor Behavior*, 46, 445-453.

Jacobs MF, Tsang P, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ (2014). “30 Hz theta-burst stimulation over primary somatosensory cortex modulates corticospinal output to the hand” *Brain Stimulation*, 7, 269-274.

Tsang P, Jacobs MF, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ (2014). “Continuous theta-burst stimulation over primary somatosensory cortex modulates short-latency afferent inhibition”. *Clinical Neurophysiology*.

2013 **Asmussen MJ**, Jacobs MF, Lee KGH, Zapallow CM, Nelson AJ (2013). “Short-latency afferent inhibition during finger movement”. *PLOS ONE*, 8, e60496.

Lee KGH, Jacobs MF, **Asmussen MJ**, Zapallow CM, Tommerdahl M, Nelson AJ (2013). “Continuous theta-burst stimulation modulates tactile synchronization”. *BMC Neuroscience*, 14, 89.

Zapallow CM, Jacobs MF, Lee KG, **Asmussen MJ**, Tsang P, Nelson AJ (2013). “Continuous theta-burst stimulation over the primary somatosensory cortex modulates inter-hemispheric inhibition” *Neuroreport*, 24, 394-398.

2012 Zapallow CM, **Asmussen MJ**, Bolton DA, Lee KG, Jacobs MF, Nelson AJ (2012). “Theta burst repetitive transcranial magnetic stimulation attenuates somatosensory evoked potential from the lower limb”. *BMC Neuroscience*, 13, 133.

Jacobs MF, Zapallow CM, Tsang P, Lee KG, **Asmussen MJ**, Nelson AJ (2012). “Somatosensory cortex influences corticospinal excitability in humans”. *Neuroreport*, 23, 927-931.

**CONFERENCE PROCEEDINGS (41)**

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- 2017                    **Asmussen MJ**, Fletcher JR, Nigg SR, Nigg BM. “Does a less torsionally stiff shoe reduce knee moments during cycling.”, Footwear Biomechanics Group, Gold Coast, Australia, July 2017 (oral presentation; winner of the Under Armour Award for Sport & Performance)
- Asmussen MJ**, von Tscharnner V, Nigg BM. “New Insights to Using the EMG Power Spectrum to Assess Firing Patterns During Muscle Fatigue.”, International Society of Biomechanics, Brisbane, Australia, July 2017 (oral presentation)
- Dounskaia N, **Asmussen MJ**. “Is Circle Drawing a Good Predictor of Hand Dominance?”, Society for Neuroscience, Washington, USA, November 2017 (poster presentation)
- 2016                    **Asmussen MJ**, von Tscharnner V, Nigg BM. “Motor Unit Action Potential Clustering.”, International Society of Electrophysiology and Kinesiology, Chicago, USA, July 2016 (oral presentation)
- Asmussen MJ**. “Super Humans: A Neural Strategy for High Performance”, Postdoctoral Fellow Association Research Day, University of Alberta, Edmonton, Canada
- 2014                    **Asmussen MJ**, Przysucha EP, Dounskaia N. “Inter-segmental dynamics shape joint coordination during catching in typically developing children but not in children with Developmental Coordination Disorder”, World Congress of Biomechanics, Boston, USA, July 2014 (poster presentation)
- 2013                    **Asmussen MJ**, Zapallow CM, Jacobs MF, Lee KGH, Tsang P, Nelson AJ. “Changes in short-latency afferent inhibition during movement preparation”, Canadian Association for Neuroscience, Toronto, Canada, May 2013 (poster presentation)
- Asmussen MJ**, Zapallow CM, Jacobs MF, Lee KGH, Tsang , Nelson AJ. “Non-selective change in short latency afferent inhibition during movement preparation”, Progress in Motor Control, Montreal, Canada, July 2013 (poster presentation)
- Asmussen MJ**, Przysucha EP, Dounskaia N. “The dominant role of arm’s dynamics in the solution of kinematic redundancy during catching provides insight into Developmental Coordination Disorder (DCD)”,



Progress in Motor Control, Montreal, Canada, July 2013 (poster presentation)

**Asmussen MJ**, Przysucha EP, Dounskaia N. “The role of inter-segmental dynamics during catching in typically developing children and children with Developmental Coordination Disorder”, Translational and Computational Motor Control Conference, San Diego, USA, November 2013 (poster presentation, peer-reviewed and selected as top 10 posters)

**Asmussen MJ**, Zapallow CM, Jacobs MF, Lee KGH, Tsang P, Nelson AJ. “Task and Muscle specific effects of short-latency afferent inhibition”, Society for Neuroscience, San Diego, USA, November 2013 (poster presentation)

Zapallow CM, **Asmussen MJ**, Tsang P, Jacobs MF, Lee KGH, Nelson AJ. “Influence of primary somatosensory cortex on interhemispheric inhibition”, Southern Ontario Neuroscience Association, Waterloo, Canada, May 2013 (poster presentation)

Zapallow CM, **Asmussen MJ**, Tsang P, Jacobs MF, Lee KGH, Nelson AJ. “Influence of primary somatosensory cortex on interhemispheric inhibition”, Canadian Association for Neuroscience, Toronto, Canada, May 2013 (poster presentation)

Dounskaia N, **Asmussen MJ**, Przysucha EP. “Intersegmental dynamics shape control of catching movement in typically developing children but not in children with Developmental Coordination Disorder”, Society for Neuroscience, San Diego, USA, November 2013 (poster presentation)

Jacobs MF, Tsang P, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ. “Effect of 30 Hz continuous theta-burst stimulation on hand motor circuitry when applied over the primary somatosensory cortex”, Southern Ontario Motor Behaviour Symposium, Toronto, Canada, May 2013 (oral presentation)

Jacobs MF, Tsang P, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ. “Effect of 30 Hz continuous theta-burst stimulation on intracortical circuitry of the primary motor cortex in humans”, Southern Ontario Neuroscience Association, Waterloo, Canada, May 2013 (poster presentation)

Jacobs MF, Tsang P, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ. “The effects of 30 Hz continuous theta-burst stimulation on human primary somatosensory cortex”, Canadian Association for Neuroscience, Toronto, Canada, May 2013 (poster presentation)

Jacobs MF, Tsang P, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ. “The influence of primary somatosensory cortex on hand motor circuitry”, Exercise and Neuroscience Group, Oshawa, Canada, June 2013 (oral presentation)

Tsang P, Jacobs MF, Lee KGH, **Asmussen MJ**, Zapallow CM, Nelson AJ. “Effects of 30 Hz continuous theta burst stimulation over primary somatosensory cortex on short latency afferent inhibition”, Society for Neuroscience, San Diego, USA, November 2013 (poster presentation)

Lee KGH, Tsang P, Jacobs MF, Zapallow CM, **Asmussen MJ**, Nelson AJ “The investigation of 30 Hz continuous theta-burst stimulation over the primary somatosensory cortex on tactile perception”, Canadian Association for Neuroscience, Toronto Canada, May 2013 (poster presentation)

Tsang P, Jacobs MF, Lee KGH, Zapallow CM, **Asmussen MJ**, Nelson AJ “Investigating the effects of modified 30Hz cTBS applied over primary somatosensory cortex (SI)”, Southern Ontario Neuroscience Association, Waterloo, Canada, May 2013 (poster presentation)

Tsang P, Jacobs MF, Lee KGH, Zapallow CM, **Asmussen MJ**, Nelson AJ “Investigating the effects of modified 30Hz cTBS applied over primary somatosensory cortex (SI)”, Exercise and Neuroscience Group, Oshawa, Canada, June 2013 (oral presentation)

2012

**Asmussen MJ**, Jacobs MJ, Lee GHL, Zapallow CM, Nelson AJ. “Short-afferent inhibition during finger movement”, Applied Health Science Graduate Student Research Conference, Waterloo, Canada, April 2012 (oral presentation)

**Asmussen MJ**, Jacobs MF, Lee KGH, Zapallow CM, Nelson AJ. “Short-afferent inhibition during different phases of index finger movement”, Southern Ontario Neuroscience Association, Toronto, Canada, April 2012 (poster presentation)

**Asmussen MJ**, Jacobs MF, Lee KGH, Zapallow CM, Nelson AJ. “Short-afferent inhibition during different phases of finger flexion”, Translational and Computational Motor Control Conference, New Orleans, USA, October 2012 (poster presentation)

**Asmussen MJ**, Jacobs MF, Lee KGH, Zapallow CM, Nelson AJ. “Short-afferent inhibition during movement preparation during an index finger flexion task”, Society for Neuroscience, New Orleans, USA, October 2012 (poster presentation)

Jacobs MF, **Asmussen MJ**, Lee KGH, Zapallow CM, Nelson AJ. “Investigation of intensity-dependent changes in continuous theta-burst stimulation over left primary motor cortex in humans.” Applied Health Sciences Graduate Student Research Conference, Waterloo, Canada, April 2012 (oral presentation)

Jacobs MF, **Asmussen MJ**, Lee KGH, Zapallow CM, Nelson AJ. “Influence of theta-burst stimulation intensity on the human primary motor cortex.” Southern Ontario Neuroscience Association. Toronto, Canada, April 2012 (poster presentation)

Dounskaia N, **Asmussen MJ**, Przysucha EP. “Arm’s inter-segmental dynamics organizes catching movement in children”, Society for Neuroscience, New Orleans, USA, October 2012 (poster presentation)

Jacobs MF, **Asmussen MJ**, Lee KGH, Zapallow CM, Staines RW, Nelson AJ. “Investigation of intensity dependent changes following continuous theta-burst stimulation to the human primary motor cortex.” Society for Neuroscience. New Orleans, USA, October 2012 (poster presentation)

Lee KGH, Jacobs MF, **Asmussen MJ**, Zapallow CM, Nelson AJ. “Modulation of tactile perception by continuous theta-burst stimulation over primary somatosensory cortex.” Applied Health Sciences Graduate Student Research Conference, Waterloo, Canada, April 2012 (oral presentation)

Lee KGH, Jacobs MF, **Asmussen MJ**, Zapallow CM, Tommerdahl M, Nelson AJ. “Theta-burst stimulation over primary somatosensory cortex modulates tactile perception.” Southern Ontario Neuroscience Association, Toronto, Canada, April 2012 (poster presentation)

Lee KGH, Jacobs MF, **Asmussen MJ**, Zapallow CM, Tommerdahl M, Nelson AJ. “The influence of continuous theta-burst stimulation over the primary somatosensory cortex on temporal order judgment perception.” Society for Neuroscience, New Orleans, USA, October 2012 (poster presentation)

Zapallow CM, Bolton DA, **Asmussen MJ**, Jacobs MF, Lee KGH, Nelson AJ. “Theta burst repetitive transcranial magnetic stimulation to modify somatosensory evoked potentials and spinal reflexes in healthy humans”. Applied Health Sciences Graduate Research Conference, Waterloo, Canada, April 2012 (oral presentation)

Zapallow CM, Bolton DA, **Asmussen MJ**, Jacobs MF, Lee KGH, Nelson AJ. “Theta burst transcranial magnetic stimulation to modify somatosensory evoked potentials and spinal reflexes in healthy humans”. Society for Neuroscience, New Orleans, USA, October 2012 (poster presentation)

2011

**Asmussen MJ**, Przysucha EP. “Intra-limb Coordination in children with and without Developmental Coordination Disorder”, Canadian Society for Psychomotor Behaviour and Sport Psychology, Winnipeg, Canada, October 2011 (oral presentation)

**Asmussen MJ**, Przysucha EP. “Biomechanical constraints on intra-limb coordination in children with and without Developmental Coordination Disorder”, International Symposium for Adapted Physical Activity, Paris, France, July 2011 (oral presentation)

**Asmussen MJ**, Przysucha EP. “Biomechanical constraints in children and adults”, Lakehead University Graduate Student Conference, Thunder Bay, February 2011 (oral presentation)

2010

**Asmussen MJ**, Przysucha EP. “Biomechanical constraints on coordination in children with and without DCD”, Bodies of Knowledge Conference, University of Toronto, May 2010 (oral presentation)

**Asmussen MJ**, Przysucha EP. “The retention of running speed in children as a result of running specific isometric training exercises”, Lakehead University Graduate Student Conference, Thunder Bay, February 2010 (oral presentation)

2009

**Asmussen MJ**, Przysucha EP. “The effects of running specific isometric training exercises on running speed in children”, National Undergraduate Research Conference in Kinesiology and Physical Activity, University of Toronto, March 2009 (oral presentation)

## INDUSTRY REPORTS (8)

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\* Denotes that the authors contributed equally to the work

- 2017                    **Asmussen MJ**, Manz S, Vienneau J, Cigoja S, Nigg SR, Nigg BM. “Comparison of the Myotest, P3A, and Motion Analysis Systems for Athlete Assessment.” Industry report submitted to adidas.
- 2016                    **Asmussen MJ**, Lam CK, Nigg SR, Nigg BM. “Effects of high variability surfaces on biomechanics, injury, and performance: A review of literature.” Industry report submitted to Mondo.
- Asmussen MJ**, Merklein S, Von Tscharnner V, Nigg SR, Nigg BM. “Development of a virtual coaching system using inertial sensors.” Industry report submitted to adidas research group.
- Asmussen MJ**, Jones A, Nigg SR, Nigg BM. “A comparison between the Orpyx activity tracker and commercial activity trackers.” Industry report submitted to Orpyx Medical Technologies.
- Fletcher JR\*, **Asmussen MJ\***, Nigg SR, Nigg BM. “Biomechanical and physiological evaluation of a new cycling shoe concept.” Industry report submitted to Giant Manufacturing Co. Ltd.
- Von Tscharnner V\*, **Asmussen MJ\***, Lam CK, Nigg SR. “Initial assessment to classify various movements from accelerometer and gyroscope data worn on the wrist.” Industry report for adidas Digital Sports.
- Merklein S, **Asmussen MJ**, Von Tscharnner V, Nigg SR, Nigg BM. “Virtual Coaching System: Proof of Concept.” Industry report submitted to adidas research group.
- 2015                    Manz S, Kaltenbach C, Smith A, **Asmussen MJ**, Nigg SR, Nigg BM. “A validation on the efficacy of the adidas Smart Ball training app.” Industry report submitted to the adidas research group.

**INVITED LECTURES (16)**

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- 2018 Faculty of Kinesiology's Postdoctoral Fellow Mock Interview. Selected amongst a number of Faculty of Kinesiology Postdoctoral Fellows to participate in a Mock Academic Interview.
- “Barefoot versus Shod Running Debate” Faculty of Kinesiology Postdoctoral Fellow Seminar.
- 2017 “Dystonia – When Sensory-Motor integration goes wrong” Guest Lecture for KNES 351: Cognition and Learning in Human Movement, University of Calgary, Calgary, Canada
- “The Effects of Disrupted Sensory Processing on Motor Function” Guest Lecture for KNES 351: Cognition and Learning in Human Movement, University of Calgary, Calgary, Canada
- 2016 “Motor Unit Action Potential Clustering: A Neural Strategy during Fatigue?”, Human Performance Lab Musculoskeletal Seminar, University of Calgary, Canada
- “Broken Telephone: The role of sensory input on motor output”, Kinesiology Postdoctoral Fellow Seminar, University of Calgary, Calgary, Canada
- 2015 “The Role of Inhibition in Finger and Upper Arm Movements”, Human Performance Lab Musculoskeletal Seminar, University of Calgary, Calgary, Canada
- “A Primer on Transcranial Magnetic Stimulation”, Guest Lecture for Biomechanics Graduate course KIN 708, McMaster University, Hamilton, Canada
- “Transcranial Magnetic Stimulation Techniques for Clinical Neurophysiology”, Guest Lecture for KIN 4CN3: Clinical Neurophysiology, McMaster University, Hamilton, Canada
- 2012 “Short-afferent inhibition during movement- current research and future directions”, Kinesiology Departmental Seminar, McMaster University, Hamilton, Canada
- “Short-afferent inhibition during index finger movement and pre-movement”, Toronto Western Research Institute, Toronto, Canada

- 2011 “Coordination and Torque modulation in children and adults”, Guest Lecture, KINE-4035: Advanced Motor Control, Lakehead University, Thunder Bay, Canada
- 2010 “Research Processes and Design in Motor Control”, Guest Lecture, KINE-3230: Research Processes, Lakehead University, Thunder Bay, Canada,  
“Application of Theories in Motor Learning”, Guest Lecture, KINE-2035: Motor Control and Learning, Lakehead University, Thunder Bay, Canada,
- 2009 “Sprint Technique”, Guest Lecture, KINE-3710: Skill Acquisition, Lakehead University, Thunder Bay, Canada
- 2008 “Sprint Technique”, Guest Lecture, KINE-3710: Skill Acquisition, Lakehead University, Thunder Bay, Canada



**PRESENTATIONS TO INDUSTRY PARTNERS (9)**

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- 2018 “Biomechanics of an Olympic Athlete Cycling in an Aero versus Road Cycling Position”, Presentation to Cycling Canada and CSI-Ontario, Calgary, Canada
- 2017 “Validation of Myotest and P3A against gold standard measurements”, Presentation to adidas research group, Calgary, Canada
- 2016 “Preliminary findings of 3D knee moment differences in Giant MES cycling shoe technology”, Presentation to Founder of i-Generator, Calgary, Canada
- “Proof of concept of a virtual coaching system for a basketball free throw and applications to a soccer kick and sprint start”, Presentation to adidas research group, Calgary, Canada
- “Using inertial magnetic measurement units to quantify foot motion in high heel shoes”, Presentation to research associate of UNISA shoes & accessories, Calgary, Canada
- “Disease progression and pressure insole variables”, Presentation to owners of Xsensor, Calgary, Canada
- “Calibration of an instrumented pressure insole”, Presentation to VP Engineering and staff of Orpyx Medical Technologies, Calgary, Canada
- 2015 “The Development of a Virtual Coaching System”, Presentation to adidas research group, Calgary, Canada
- “The Design and Logistics of a Randomized Control Trial using the SurroGait Rx”, Presentation to CEO, President, and Vice-President Engineering of Orpyx Medical Technologies, Calgary, Canada

## **OTHER RESEARCH EXPERIENCE**

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- 2011-2012                      Research Assistant, Dr. Aimee Nelson, University of Waterloo
- Independent work on movement-related effects on sensorimotor integration
- 2011                              Research Assistant, Dr. William Montelpare and Dr. Susan Forbes, Lakehead University
- Developed an online teaching module for minor hockey coaches in relation to traumatic brain injuries in sport
- 2010                              Research Assistant, Dr. William Montelpare and Dr. Susan Forbes, Lakehead University
- Provided data analysis for a study on concussions in hockey in addition to gathering literature for upcoming research on the prevalence of neurotrauma injuries in sport
- 2009                              Research Assistant, Dr. Eryk Przysucha, Lakehead University
- Collected literature for upcoming research on the effects of a neurotrauma on muscular synergies during balance control
- 2008                              Research Assistant, Dr. Eryk Przysucha, Lakehead University
- Assisted with data and statistical analyses for projects related to inter-limb coordination and control in children with and without DCD

**SUPERVISION (3 Master's, 3 undergraduate)**

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- 2018 Erica Casto, PhD ISB Visiting Internship, University of Massachusetts Amherst
- 2016-2017 Marita Mauracher, Master's Internship Project, "Reliability and Validation of the Rapid Objective Quantification of the Tibialis Anterior Test", ETH Zurich, Zurich, Switzerland
- Nicholas Kosa (co-supervision with Dr. Jared Fletcher), Honours Thesis, "The effects of cycling shoe stiffness on ankle moments", University of Calgary, Calgary, Canada
- 2015-2016 Sascha Merklein, Master's Thesis, "Toward Virtual Coaching – Development of a Feedback System, University of Erlangen-Nuremberg, Erlangen, Germany, Defended March 2016
- Christina Kaltenbach, Master's Thesis, "An electromyography and kinetics comparison of treadmill and over ground running", Albert Ludwigs University of Freiburg, Freiburg, Germany, Defended November 2016
- Alexis Jones, Honours thesis, "Evaluation of Activity Tracking Mechanisms", University of Calgary, Calgary, Canada, Defended April 2016
- 2012-2013 Eric Jeong, Honours Thesis, "Task-dependency of short-latency afferent inhibition", McMaster University, Hamilton, Canada.
- \*Eric Jeong won best presentation at the National Undergraduate Research Conference for his Honours thesis research*

## TEACHING EXPERIENCE/SCHOLARSHIP

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- 2014-2015                      University Teaching Program, McMaster University (completed)
- A comprehensive independent two-year program that exposes PhD students and junior faculty members to all levels of teaching scholarship with an emphasis on training to become an university instructor
- Head Teaching Assistant, McMaster University
- Organized and trained eight other teaching assistants for the Neural Control of Movement course (KIN 3E03). I was also responsible for organizing deferred exams, proctoring exams, and assignment and exam marking
- Teaching Assistant, McMaster University
- Teaching assistant for two biomechanics undergraduate courses – Biomechanics I (KIN 2A03) and Biomechanics II (KIN 3AA3). My responsibilities included designing and implementing lab activities, instructing students in tutorials, and grading assignments
- Completion of Education 750 *Principles and Practices of University Teaching*, McMaster University
- A course based on theories, methods, and issues related to higher education teaching that prepares PhD students for teaching at the university level
- 2013-2014                      Graduate Teaching Assistant, McMaster University
- Graded and provided feedback on group presentation and paper for Physical Activity for Challenged Populations (KIN 3B03) and helped organize the practical component of the Sport Injuries course (KIN 3K03)
- 2012-2013                      Graduate Teaching Assistant, McMaster University
- Developed undergraduate lab activities for courses in Motor Control and Behaviour and assisted with marking and helped organize the practical component of the Sport Injuries (KIN 3K03) and Functional Anatomy course (KIN 4J03)

- 2011-2012 Graduate Teaching Assistant, University of Waterloo
- Responsible for marking year end Co-op reports for undergraduate students in the Kinesiology Department
- 2010-2011 Graduate Teaching Assistant, Lakehead University
- Duties include facilitating tutorials and marking papers/exams for graduate level statistics (KINE 5011), advanced motor control, adapted physical activity (KINE 3070), motor control and learning (KINE 2035), and skill acquisition (KINE 3710) classes
- 2009-2010 Graduate Teaching Assistant , Lakehead University
- Duties included facilitating tutorials and marking papers and/exams for adapted physical activity (KINE 3070), introductory statistics (KINE 3030), motor control and learning (KINE 2035), and skill acquisition (KINE 3710) classes

**PROFESSIONAL SERVICE (23)**

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- 2017 Faculty Representative, Presentation on Electromyography and its applications to Shad Valley students, University of Calgary, Calgary, Canada
- Faculty Representative, Presentation on Inertial Magnetic Measurement Units to Connect Charter Schools, University of Calgary, Calgary, Canada
- 2016 Poster Judge, Postdoctoral Fellow Association Research Day, University of Alberta, Edmonton, Canada
- Faculty Representative, Presentation on a novel virtual coaching system for basketball, Human Performance Lab Open House, University of Calgary, Calgary, Canada
- Faculty Representative, Motion capture presentation to Biomedical Engineering students, University of Calgary, Calgary, Canada
- Faculty Representative, Presentation on Electromyography and its applications to Shad Valley students, University of Calgary, Calgary, Canada
- Co-organizer, 3-minutes 3-slides postdoc seminar, University of Calgary, Calgary, Canada
- Faculty Representative, Motion capture presentation to children of Mini University, University of Calgary, Calgary, Canada
- Faculty Representative, Motion capture presentation to HYRS summer students, University of Calgary, Calgary, Canada
- 2015 Faculty Representative, Motion capture presentation to children of Mini University, University of Calgary, Calgary, Canada
- Faculty Representative, Presentation on electromyography to MITACS summer students, University of Calgary, Calgary, Canada
- Faculty Representative, Presentation on motion capture to Shad Valley students, University of Calgary, Calgary, Canada
- Session Chair, Kinesiology Graduate Student Conference, McMaster University, Hamilton, Canada

- President, “Stay Sharp Initiative”, McMaster University and City of Hamilton, Hamilton, Canada
- Volunteer, Demonstration of Experimental Techniques in Motor Behaviour and Control at McMaster University, Hamilton, Canada
- Guest Speaker and Departmental Representative, Graduate School Information Session for Undergraduate Students, McMaster University, Hamilton, Canada
- 2014 Co-Organizer and Vice Chair, “Stay Sharp Initiative”, McMaster University and City of Hamilton, Hamilton, Canada
- Kinesiology Graduate Body, Motor Behaviour Representative, McMaster University, Hamilton, Canada
- Canadian Union of Public Employees LOCAL 3906, Departmental Steward, McMaster University, Hamilton, Canada
- 2013 Departmental Representative and Research Demonstrator, “May at Mac” High School Open House, McMaster University, Hamilton, Canada
- Laboratory manager for Dr. Aimee Nelson, McMaster University, Hamilton, Canada
- Organizer and leader, Motor Control and Behaviour Journal Club, McMaster University, Hamilton, Canada
- 2012 Set-up and organizer of University of Waterloo Annual Brain Bee, Waterloo, Canada
- 2011 Departmental Representative and Presenter, Lakehead University Prospective Student Days, Thunder Bay, Canada
- Departmental Representative and Presenter, Lakehead University Open House for students from Pic Mobert First Nation, Thunder Bay, Canada
- 2010 Graduate Student Representative, Kinesiology Faculty Committee, Lakehead University, Thunder Bay, Canada

## GRANTS

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- 2016 NSERC Discovery Grant awarded to Dr. Benno Nigg, Co-applicant, lead writing of grant, Duration: 5 years, Value: \$140 000
- Hotchkiss Brain Institute/Department of Clinical Neurosciences Pilot Research Fund Program, Awarded to Dr. Scott Jarvis, Co-applicant, assisted with writing of grant, Duration: 1 year, Value: \$20 000

## MANUSCRIPT REVIEWER

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*Gait & Posture* (2)

*Footwear Science* (2)

## MEDIA

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- 2017 “Understanding your ankles – Building support for an injury-prone joint”. Apple Magazine, Summer 2017, Issue 26. [http://www.applemag-digital.com/applemag/summer\\_2017?pg=32#pg32](http://www.applemag-digital.com/applemag/summer_2017?pg=32#pg32)
- 2016 Biomechanical testing of Raven Hockey Sticks. Research conducted at the University of Calgary featured on the Discovery Channel’s Daily Planet
- Evaluation of Giant Motion Efficiency System. Advertising video for Giant Cycling’s new cycling shoe technology
- Development of a new system to provide feedback to athletes during training: A free throw example. Research highlighted on CTV Calgary evening news. <http://calgary.ctvnews.ca/video?clipId=858085>
- Interview with Dr. Benno Nigg. Documentary by CBC Montreal on Canadian athlete readiness for the Rio Olympics.
- 2015 Training with the adidas micoach Smartball app. Advertising video for the Digital Sports group of adidas (Portland, Oregon)



**MEMBERSHIPS**

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International Society of Electrophysiology and Kinesiology (2016-present)

World Congress for Biomechanics (2014-Present)

Canadian Society for the Study of Higher Education (2014-2016)

Society for Neuroscience (2012-2014)

Canadian Association for Neuroscience (2013-2015)

International Society for Motor Control (2013-2015)

Canadian Society of Psychomotor Learning and Sport Psychology (2009-2012)