

Dr. Kurt J Smith, PhD

Assistant Professor

Integrative Physiology Laboratory

Department of Kinesiology and Nutrition,

The University of Illinois at Chicago

Office: 565 AHSB; 1919 W. Taylor ST, Chicago, IL 60612

Lab: IPL, 1640 W. Roosevelt R., 167 CMET, MC 517, Chicago, IL 60608

Email: k2jsmith@uic.edu Phone: (312)-996-1858

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RESEARCH INTEREST/TOPICS

My primary research interests are divided into three main themes. First, mechanistic research pertaining to quantifying the fundamental integration of vascular structure and function during exercise in normal and extreme environments. These investigations frequently utilize pharmacological or environmental physiological stimuli to target and compare specific in vivo cerebral and peripheral vascular regulatory factors in humans. Second, clinical investigations focused on early detection of vascular dysfunction and interventional approaches to improving vascular regulation in unique populations. Third, development of novel techniques and approaches aimed at improving the spatial and temporal resolution of integrative physiological cerebrovascular imaging in paediatric and aging populations. These projects have led to my current direction, and I will continue to develop and integrate these themes as an independent researcher, focusing on innovations that improve the identification and prevention of occult primary and secondary diseases.

PUBLISHED OR IN-PRESS REFEREED ARTICLES (46 MANUSCRIPTS, 2275 CITATIONS, H-INDEX – 28) [GOOGLE SCHOLAR CITATION REPORT](#)

- 1) **Smith KJ**, Neill M, Hoiland RL (2020) Scratching the surface of hypoxic cerebral vascular control: a potentially polarizing view of mechanistic research in humans. *J Physiol*. <https://doi.org/10.1113/JP280244>
- 2) **Smith, K. J.**, et al. (2020) Cerebral blood flow responses to exercise are enhanced in left ventricular assist device patients after an exercise rehabilitation program *J Appl Physiol* **128**(1): 108-116.
- 3) Thomas, H, Rana, U, Marsh, CE, Caddy, HT, Kelsey, LJ, **Smith KJ** et al., (2020) Assessment of cerebrovascular responses to physiological stimuli in identical twins using multimodal imaging and computational fluid dynamics, *J Appl Physiol*, 129:1024-1032.
- 4) Raden Argarini, **Kurt Smith**, Howard Carter, Louise Naylor, Robert McLaughlin, and Daniel Green (2019) Visualizing and quantifying the impact of reactive hyperemia on cutaneous microvessels in humans – *J Appl Physiol*.
- 5) **Smith KJ**, Saurez N, Scheer A, Thomas HJ, Chasland LM, Correria, M, Dembo L, Naylor L, Mairorana A., Green DJ. (2019) Cerebral blood flow in heart failure: Impact of ventricular assist devices and exercise. *Med Sci Sports and Ex*; **51**(7):1372-1379
- 6) **Smith KJ**, Argarini R, Carter HH, Quirk BC, Haynes A, Naylor LH, McKirdy H, Kirk RW, McLaughlin RA, Green DJ (2019) Novel non-invasive assessment of microvascular structure and function in humans. *Med Sci Sports and Ex*; **51**(7): 1558-1565.
- 7) Michael Wheeler, David Dunstan, Brianna Smith, **Kurt Smith**, Anna Scheer, Louise Naylor, Ilkka Heinonen, Kathryn Ellis, Ester Cerin, Philip Ainslie, and Daniel Green. (2019) Morning exercise mitigates the detrimental impact of prolonged sitting on the pattern of cerebral blood flow in older adults. *J Appl Physiol*; **126** (4): 1049-1055.
- 8) **Smith KJ**, Brassard P, (2019) Debating cerebral perfusion in patients with LVAD is great – but are we missing the pulse? Comment on Crosstalk 40: Blood flow Pulsatility in left ventricular assist device patients is/is not essential to maintain brain physiology. *J Physiol*.
- 9) Amolins, K.H., Newhouse, I., Smith K.J. (2019) Shear Stress Strains Cognition. *Undergraduate Journal of Exercise Science. In Press*
- 10) **Smith K.J.**, Hoiland, R.L., Grove, RB, McKirdy, H., Naylor, L., Ainslie, P.N., Green, D.J., (2019) Matched increases in cerebral artery shear stress, irrespective of stimulus, induce similar changes in extra-cranial arterial diameter in humans. *Journal of Cerebral Blood Flow and Metabolism*. **39**(5): 849-858.
- 11) Tymko, MM, Ainslie, PN, **Smith KJ** (2018) Evaluating the methods used for measuring cerebral blood flow at rest and during exercise in humans. *European Journal of Applied Physiology*. <https://doi.org/10.1007/s00421-018-3887-y>. *Invited Review
- 12) Burgess, K, Lucas, Samuel L, Burgess K, Sprecher K, Donnelly, J, Basnet, A, Tymko M, Day T, **Smith KJ**, Lewis, N, Ainslie, P, (2018) Increasing cerebral blood flow reduces the severity of central sleep apnea at high altitude. *Journal of Applied Physiology*. 10.1152/jappphysiol.00799.2017.
- 13) Kent GL, Dawson B, Cox GR, Abbis CR, **Smith KJ**, Croft KD, Lim ZX, Eastwood A, Burke LM, Peeling P. (2018) Effect of dietary nitrate supplementation on thermoregulatory and cardiovascular responses to submaximal cycling in the heat. *European Journal of Applied Physiology*. 10.1007/s00421-018-3809-z
- 14) **Smith K.J.**, Ainslie, P.N., (2017) Regulation of cerebral blood flow and metabolism during exercise. *Experimental Physiology*. DOI:10.113/EP086249. **F1000 Prime Recommendation of Significance**: <http://f1000.com/prime/728653209?bd=1>*Invited Review
- 15) **Smith KJ**, Saurez N, Mairorana A., Green DJ. (2017) Cerebral blood flow during exercise in patients with left ventricular assist devices. *Heart, Lung and Circulation* DOI:10.1016/j.hlc.2017.06.008
- 16) Marsh CE, Carter HH, Guelfi KL, **Smith KJ**, Pike KE, Naylor LH, Green DJ. (2017) Brachial and cerebrovascular functions are enhanced in postmenopausal women after ingestion of chocolate with a high concentration of cocoa. *Journal of Nutrition*

- 17) Ryan L Hoiland, **Kurt J Smith**, Howard H Carter, Nia C.S. Lewis, Michael M Tymko, Kevin W Wildfong, Anthony R Bain, Daniel J Green, Philip N Ainslie: Shear-mediated dilation of the internal carotid artery occurs independent of hypercapnia. *AJP Heart and Circulatory Physiology* 04/2017;; DOI:10.1152/ajpheart.00119.2017
- 18) **Smith, K.J.**, (2016). Fuelling cortical excitability during exercise: what's the matter with delivery? *Journal of Physiology*. (18):5047-8.
- 19) Carter, H., Atkinson, C., Heinonen, I., Haynes, A., Robey, E., **Smith, K.**, Ainslie, P., Hoiland., Green, D., Evidence for shear stress-mediated dilation of the internal carotid artery in humans. *Hypertension*; [epub; 116.07698]
- 20) **Smith K.J.** Wildfong, K.W., Hoiland, R.L., Harper, M., Lewis, NCS, Smith, S.L., **(2016)** Role of PaCO₂ in the cerebral hyperemic response to incremental normoxic and hyperoxic exercise. *Journal of Applied Physiology*. (8):843-54.
- 21) McManus Ali, Philip N. Ainslie, Daniel J. Green, Ryan G. Simard, **Kurt J. Smith**, Nia CS Lewis **(2015)** Impact of prolonged sitting on vascular function in young girls. *Experimental Physiology*. 100 (11); 1379-1387.
- 22) Nia CS Lewis, **Kurt J. Smith**, Anthony R Bain, Kevin W Wildfong, Tianne Numan, Philip N Ainslie **(2015)** Impact of Transient Hypotension on Regional Cerebral Blood Flow in Humans. *Clinical Science*. 129(2):169-78.
- 23) Hoiland, R., Foster, G., Donnelly, J., Stemberge, M., Willie, C.K., **Smith, K.J.**, Lewis, NCS., Lucas, S., Cotter, J., Yeoman, D., Day, T., Tymko, M., Burgess, K., Ainslie, P., **(2015)** Chemoreceptor responsiveness at sea level does not predict the pulmonary pressure response to high altitude. *Chest*. 148(1):219-25.
- 24) Hoiland, R., **Smith, K.J.**, Bain, A.R., Wildfong, K., Willie, C.K., Lewis, N., Foster, G., Ainslie, P.N., Day, T., **(2015)** Differential indomethacin-induced impairment of cerebrovascular CO₂ reactivity between anterior and posterior cerebral circulations: Implications for respiratory control. *Journal of Physiology*. 593(5):1291-306.
- 25) Willie, C.K., **Smith, K.J.**, Macleod, D.B., Macleod, N., Ikeda, K., Lewis, N., Ainslie, P.N., **(2015)** The contribution of arterial blood gases in cerebral blood flow regulation and fuel utilization in man at high altitude. *Journal of Cerebral Blood Flow and Metabolism*. 35(4):873-81.
- 26) **Smith, K.J.**, Macleod, D.B., Macleod, N., Willie, C.K., Ikeda, K., Lewis, N., Ainslie, P.N., **(2014)** High altitude cerebral blood flow metabolism during exercise and recovery following acclimatization at 5050m. *Journal of Physiology*. 592(24):5507-27.
- 27) Nia C.S Lewis, Anthony R Bain, David B MacLeod, Kevin W Wildfong, **Kurt J Smith**, Christopher K Willie, Marit L Sanders, Tianne Numan, Shawnda A Morrison, Glen E Foster, Julian M Stewart, and Phillip N Ainslie **(2014)** Impact of hypocapnia and cerebral perfusion on orthostatic tolerance. *Journal of Physiology*.
- 28) Smirl, J.D., Lewis, N.C.S, Lucas, S.J.E., duManoir, G., **Smith, K.J.** Sherpa, N., Basnet, A.S. and Ainslie, P.N. **(2014)** Cerebral Pressure-Flow Relationship in Lowlanders and Natives at High Altitude. *Journal of Cerebral Blood Flow and Metabolism*. 34(2):248–57
- 29) Ainslie, P.N., Shaw, A.D., **Smith, K.J.**, Willie, C.K., Ikeda, K., Graham, J., MacLeod, D.B. **(2013)** Stability of cerebral metabolism and substrate availability in humans during hypoxia and hyperoxia. *Clinical Science*. 126 (9), 661-670.
- 30) Willie, C.K, **Smith K.J.**, Day, T.D, Ray, L.A, Lewis, N.CS, Macleod, D.B, Ainslie, P.A **(2013)** Regional cerebral blood flow in humans at high altitude: Gradual ascent and two weeks at 5050m. *Journal of Applied Physiology*. 116(7):905–10
- 31) Bain, A.R, **Smith, K.J.**, Lewis, N.CS, Foster, G.E, Wildfong, K.W, Willie, C.K, Hartley, G.L, Cheung, S.S, Ainslie, P.N **(2013)** Regional changes in brain blood flow during severe passive hyperthermia; the effects of PaCO₂ and extra-cranial blood flow. *Journal of Applied Physiology*. 115; 653-659
- 32) Skow, R. J, Mackay, C.M, Tymko, M.M, Willie, C.K, **Smith, K.J.**, Ainslie, P.A, Day, T.D. **(2013)** Differential cerebrovascular CO₂ reactivity in anterior and posterior cerebral circulations. *Respiratory Physiology & Neurobiology*. 189: 76-86.
- 33) Gelinias, J.C., Marsden, K.R., Tzeng, Y.C., Smirl, J.D., **Smith, K.J.**, Willie, C.K., Lewis, N.C., Binsted, G., Bailey, D.M., Bakker, A., Day, T.A., Ainslie, P.N., **2012**. Influence of posture on the regulation of cerebral perfusion. *Aviation, Space Environmental Medicine*. 83, 751–757.
- 34) **Smith, K.**, Wong, L., Willie, C.K., Smirl, J., Koelwyn, G., Eves, N. **(2012)** Regional cerebral blood flow distribution during exercise: influence of oxygen, *Respiratory Physiology & Neurobiology*. 184 (1). 97-105.
- 35) Willie, C.K., Macleod, D.B., Shaw, A.D., **Smith, K.J.**, Tzeng, Y.C., Eves, N.D., Ikeda, K., Graham, J., Lewis, N.C., Day, T.A., Ainslie, P.N., **(2012)**. Regional brain blood flow in man during acute changes in arterial blood gases. *J Physiol* 590, 3261–3275.
- 36) **Smith, KJ & Billaut F. (2012)** Tissue oxygenation in men and women during repeated-sprint exercise. *International Journal of Sports Physiology and Performance*. 7(1) 59-67.
- 37) Marsden, K.R., Haykowsky, M.J., Smirl, J.D., Jones, H., Nelson, M.D. Haykowsky, **Smith, K.**, Ainslie, P.N. **(2012)**. Aging blunts hyperventilation-induced hypocapnia and reduction in cerebral blood flow velocity during maximal exercise. *Age*. 34 (3):725-735.

- 38) Nelson, M. D., Haykowsky, M. J., Stickland, M. K., AHammltamirano-Diaz, L. A., Willie, C. K., **Smith, K. J.**, Petersen, S. R., Ainslie, P.N. **(2011)**. Reductions in cerebral blood flow during passive heat stress in humans: partitioning the mechanisms. *The Journal of Physiology*, 589(Pt 16), 4053–4064.
- 39) Ainslie, P.N., **Smith KJ (2011)**. Integrated Human Physiology: Breathing, blood pressure and blood flow to the brain. *The Journal of Physiology*, 589(12): 2917–2917.
- 40) Willie, C.K, **Smith, K.J, (2011)** Fueling the exercising brain: a regulatory quagmire for lactate metabolism. *The Journal of Physiology*. 589(4): 779–780.
- 41) Willie, C. K., Colino, F. L., Bailey, D. M., Tzeng, Y. C., Binsted, G., Jones, L. W., Haykowsky, M. J., Bellapart, J., Ogoh, S., **Smith, K.J.**, Smirl, J.D., Day, T., Lucas, S.J., Eller, L.K, Ainslie, P.N. **(2011)**. Utility of transcranial Doppler ultrasound for the integrative assessment of cerebrovascular function. *Journal of Neuroscience Methods*. 196(2): 221–237.
- 42) Willie, C. K., Cowan, E. C., Ainslie, P. N., Taylor, C. E., **Smith, K. J.**, Sin, P. Y. W., & Tzeng, Y. C. **(2011)**. Neurovascular coupling and distribution of cerebral blood flow during exercise. *Journal of Neuroscience Methods*, 198(2): 270–273.
- 43) **Smith KJ & Billaut F. (2010)** Influence of cerebral and muscle oxygenation on repeated sprint ability. *European Journal of Applied Physiology*. 109(5):989-999.
- 44) Billaut F. & **Smith KJ (2010)** Prolonged repeated-sprint ability is related to arterial O₂ desaturation in man. *Int Journal of Sports Physiology and Performance*. 5(2):197-209.
- 45) Billaut F, Davis J, **Smith KJ**, Marino FE, Noakes TD **(2010)** Cerebral oxygenation decreases but does not impair self-paced, strenuous performance. *Acta Physiologica*, 198 (4):477-486.
- 46) Billaut F & **Smith K (2009)** Sex alters impact of repeated bouts of sprint exercise on neuromuscular activity in trained athletes. *Applied Physiology Nutrition and Metabolism*. **34**(4): 689–699

BOOK CHAPTERS

- 1) Green DJ, **Smith KJ**. Effects of Exercise on Vascular Function, Structure and Health in Humans. In *Biology of Exercise*. Juleen Zierath, John Hawley, Michael J Joyner (eds). Cold Stream Harbour Perspectives, 04/2017 DOI:10.1101/cshperspect.a029819.
- 2) Bakker, A., Smith, B., Ainslie, P, **Smith K.J., (2012)**, Utility of Near-Infrared Spectroscopy as a Vascular Imaging Tool. IN: Applied Aspect of Ultrasonography in Humans (ISBN:978-953-307-652-2) ED: Ainslie PN. Intech New York.

CONFERENCE PROCEEDINGS OR PEER REVIEWED ABSTRACTS

- 1) **Smith, KJ**, Suarez, IM, Maiorana, A, Green, DJ (2020) Cerebrovascular function in left ventricular assist device patients after an exercise rehabilitation program. **2020 Cerebral Blood Flow Virtual Seminar Series – Cerebral Autoregulation Research Network**.
- 2) Amolins KH, Newhouse I, **Smith K.J.** (2019) Shear Stress strains cognition: linking cerebral blood flow and cognitive function. School of Kinesiology at the University of Toronto Undergraduate Research Conference. Toronto, CAN.
- 3) R.L. Hoiland, H.G. Caldwell, B.S. Stacey, T.G. Dawkins, C.A. Howe, J. Carr, L.M. Boulet, D.A. Shkredova, **K.J Smith**, D.J. Green, D.M. Bailey, D.B. MacLeod, M.S. Sekhon, P.N. Ainslie (2019) Shear-mediated dilation of the internal carotid artery is nitric oxide dependent. Canadian Society of Exercise Physiology. – Kelowna, CAN.
- 4) HJ Thomas, **KJ Smith**, CE Marsh, A Haynes, MA Correria, D Shkredova, LH Naylor, DJ Green. (2018) Cerebrovascular responses to resistance and endurance training in mono-zygotic twins. European College of Sport Science – Dublin, Ireland. ***Young investigator Award Nomination***
- 5) Raden, A, **Smith KJ**, Joseph SZ, Jansen SJ, Green DJ (2018) Microvascular hemodynamics during European College of Sport Science – Dublin, Ireland.
- 6) Ryan L. Hoiland, Joshua C. Tremblay, Daniela Flück, Chris K. Willie, **Kurt J Smith**, Michael M. Tymko, Connor A. Howe, Joseph Donnelly, Mike Stembridge, Alexander Patrician, Matt G. Rieger, Alex B. Hansen, Geoff Coombs, Antoinette Santoro, David B. MacLeod, Philip N. Ainslie (2018) Hemodilution improves shear-mediated transduction of vasodilatory signals in human cerebral and systemic circulation. Okanagan Cardiorespiratory Symposium. Silver Star Mountain Resort, Vernon B.C. ***CK Willie Memorial Research Award Winner***
- 7) Simon Z. Joseph, Raden Argarini, **Kurt Smith**, Daniel J. Green, Shirley J. Jansen (2018) Novel methods of dynamic microvascular assessment in the diabetic foot: early experience with optical coherence tomography and laser doppler flowmetry in healthy controls. *The European Society for Vascular Surgery - ESVS-687 “Vascular Imaging”* – Valencia, Spain

- 8) Simon Z. Joseph, Raden Argarini, **Kurt Smith**, Daniel J. Green, Shirley J. Jansen (2018) Near Infrared Spectroscopy and toe flexion in the dynamic assessment of diabetic foot perfusion. *The European Society for Vascular Surgery - ESVS-636 "Chronic Wound Management"* – Valencia, Spain
- 9) N. McArdle, J. Walsh, E. Robey, K. Maddison, **K. Smith**, A. Singh, K. Sansom, D. Hillman, T. Fiocco-Walton, B. Jagadish-Shenoy, D. Green, P. Eastwood. (2018). Effect of acute CPAP withdrawal on overnight blood pressure in OSA: A randomised controlled trial. *J Sleep Res.* 10.1111/jsr.123_12766
- 10) Green DJ, Ainslie PN, Smith KJ. Arteries, Brains and Exercise Symposium (2017) *Journal of Science and Medicine in Sport*
- 11) **Smith, KJ.**, Hoiland, RL., McKirdy, H., Grove., R., Ainslie., PN., Green, DG., (2017) Shear mediated dilation of the internal carotid artery during exercise and hypercapnia in humans. 2017 ASICS Australian Sports Medicine Conference, Langkawi, Malaysia.
- 12) Thomas H., **Smith, K.**, Marsh., C., Naylor, L., Green, G., (2017) Brain blood flow response to exercise and hypercapnia: Is it genetically determined? 2017 ASICS Australian Sports Medicine Conference, Langkawi, Malaysia. ***Young investigator Research Award***
- 13) Chasland L, Naylor L, Clark A, **Smith KJ**, Haynes A, Maiorana A, Nosaka K, Dembo L, Green DJ (2017) Response to eccentric and concentric cycling in patients with chronic heart failure: comparison to age-matched healthy controls.
- 14) **Smith, KJ.**, Suarez, N., Mairana, A., Green, DG., (2017) Cerebral blood flow during exercise in patients with left ventricular assist devices. #657, The Cardiac Society of Australia and New Zealand. Perth, Aus. ***CSANZ Allied Health Research Award – Runner Up***
- 15) **Smith, K.J.**, Wildfong, K.W., Hoiland R.L., Harper, M., Lewis, NCS., Pool A., Smith, S.L., Ainslie, P.N., (2016) Isocapnia does not attenuate the rise in global, but alters regional cerebral blood flow distribution during submaximal exercise. Research To Practice Conference; Exercise and Sports Science of Australia, Melbourne, VIC, AUS.
- 16) Wildfong KW, Bain AR, **Smith KJ**, Hoiland RL, Lewis NCS, Tymko MM, Monteleone B, ASinslie PN (2016). Alpha-1 adrenergic blockade does not influence cerebral blood flow regulation during transient hypertension. Okanagan Cardiovascular & Respiratory Symposium, Silver Star Resort, Vernon, BC, Canada.
- 17) **Smith, K.J.**, Macleod, D.B., Macleod, N., Willie, C.K., Ikeda, K., Lewis, N., Tymko, M., Day, T., Hoiland, R., Ainslie, P.N. (2014). Cerebral oxidative metabolism during exhaustive exercise and recovery at sea-level and high altitude. Federation of American Societies for Experimental Biology, SanDiego, CA, USA.
- 18) Hoiland, RL., Day, TA., Wildfong, K., **Smith, KJ.**, Bain, AR., Willie, CK., Foster, GE., Monteleone, B., Ainslie, PN. Hypercapnia induces dilation of large cerebral arteries and is mediated via a non-selective cyclooxygenase pathway (LB704). (2014) *The FASEB Journal.* 28: LB704
- 19) **Wildfong KW**, Ainslie PN, Hoiland, RL, Smith KJ, Bain AR, Willie CK, Foster GE, Monteleone BJ, Day TA. (2014). Indomethacin does not affect regional blood flow or ventilatory responses to hypoxia. Exercise Physiologists of Western Canada, UBC Okanagan, Kelowna, BC, Canada.
- 20) **Wildfong KW**, Ainslie PN, Hoiland, RL, Smith KJ, Bain AR, Willie CK, Foster GE, Monteleone BJ, Day TA. (2014). Indomethacin does not affect regional blood flow or ventilatory responses to hypoxia. Okanagan Cardiovascular & Respiratory Symposium, Silver Star Resort, Vernon, BC, Canada.
- 21) **Smith, K.J.**, Macleod, D.B., Macleod, N., Willie, C.K., Ikeda, K., Lewis, N., Ainslie, P.N. (2013) Alterations in cerebral blood flow and metabolism during exercise at high altitude. 2013 Hypoxia Hot Topic Presentation. Lake Louise, Ab, Canada. **(Runner up for best 'Hot Topic' presentation)**
- 22) Beasley K.M., Day TA, Foster GE, Stembridge M, Willie CK, **Smith KJ**, Lucas SJ, Ainslie PN, Lovering AT (2013) Patent Foramen Ovale does not increase AMS susceptibility during ascent to or after arrival at 5050 m. 2013 Hypoxia Symposia, Lake Louise, Ab, Canada.
- 23) Anthony R. Bain, **Kurt J. Smith**, Nia C.S. Lewis, Glen E. Foster, Philip N. Ainslie. (2013) Regional Brain Blood Flow during Passive Hyperthermia. 15th International Conference on Environmental Ergonomics, 2013. Queenstown, New Zealand. **(Best Student Presentation)**
- 24) **Smith, K.**, Macleod, D., Willie, C, Lewis, N., Ikeda, K., Ainslie, P., (2012). Alterations in cerebral blood flow during exercise at high altitude. Integrative Biology of Exercise Conference, American Physiological Society.
- 25) **Smith, K.**, MacLeod, D., Willie, C, Ray, L., Lewis, N., Ikeda, K., Macleod, N., Tymko, M., Day, T., Foster, G., Ainslie, P., (2012). Alterations in cerebral blood flow during exercise at high altitude. Exercise Physiologist of Western Canada Conference, Lethbridge, Ab, Canada. **(Best Student Presentation)**

- 26) Wong, L.E., **Smith, K.J.**, Koelwyn, G., Smirl, J., Ainslie, P.N., Eves, N.D. (2012) Altering oxygen tension during exercise does not affect flow mediated dilation in healthy young males. *Physiology* 2012, Edinburgh, UK.
- 27) M.D. Nelson, M.J. Haykowsky, M.K. Stickland, **K. Smith**, C.K. Willie, M. Rieger, S.R. Petersen, P.N. Ainslie, (2011) *Cerebral blood flow velocity during passive heat stress in man: Is stroke volume the missing link?* Federation of American Societies for Experimental Biology, Washington, DC.
- 28) J.L. Copeland, F. Billaut, M.S. Verzosa, and **K. Smith (2010)** *The Impact of Ultra-endurance Exercise on Estradiol and Neuromuscular Function in Women. Annual meeting of the Canadian Society for Exercise Physiology, Toronto, Ont, Canada.*
- 29) Billaut F., **Smith KJ., (2010)** Effect of fatigue on hamstring co-activation during repeated sprint exercise in males and females. *Journal of Science and Medicine in Sport.* 13(1)80. Asics Conference of Science and Medicine in Sport, Port Douglas, Aus.
- 30) Billaut F., **Smith, K.J. (2010)** Sex differences in tissue oxygenation during repeated-sprint exercise, Annual meeting of the Australian Association of Exercise and Sport Science, Brisbane, Aus.
- 31) **Smith KJ**, Davis J, and Billaut F (2009) *Sex differences and pacing strategies during 5 km time trial. Annual meeting of the Canadian Society for Exercise Physiology*, Vancouver, BC. Canada.
- 32) Billaut F, Davis J, **Smith KJ**, Marino FE, Noakes TD (2009) *Prefrontal cortex oxygenation during self-paced, strenuous exercise in healthy humans. Annual meeting of the Canadian Society for Exercise Physiology*, Vancouver, BC, Canada.
- 33) **Smith K & Billaut F (2009)** *Acute hypoxia impairs cerebral oxygenation and repeated-sprint ability.* Exercise Physiology of Western Canada Conference, Winnipeg, Man, Canada.
- 34) **Smith K. (2009)** *Functional cerebral activation during repeated bouts of sprint activity in male and female athletes.* Graduate Students Association Conference, Lethbridge, Alberta, Canada.
- 35) **Smith K & Billaut F (2009)** Influences of sex on neuromuscular activity during repeated bouts of sprints. Prairie Universities Biological Symposium. Lethbridge, Alberta, Canada.
- 36) Billaut F & **Smith K (2008)** *Absolute mechanical work explains sex-related neural response to repeated sprints.* Annual meeting of the Canadian Society for Exercise Physiology, Banff, AB, Canada.

KEY NOTE AND INVITED SPEAKING ENGAGEMENTS

- 1) The regulation of Cerebral Blood Flow in Hypoxia: From Mountainside to Bedside, and Everything in Between – **2020 Cerebral Blood Flow Virtual Seminar Series.** Organizing Chair - Cerebral Autoregulation Research Network. <http://www.car-net.org/content/resources#tabSeminars>
- 2) Cerebrovascular shear stress and its implication in health and disease - **2020 Cerebral Blood Flow Virtual Seminar Series.** Organizing Chair - Cerebral Autoregulation Research Network. <http://www.car-net.org/content/resources#tabSeminars>
- 3) In vivo assessments and modelling of cerebrovascular shear mediated vasodilation - **2017 ASICS Sports Medicine of Australia Conference** – Langkawi, Malaysia.
- 4) Classic Experiments in measuring cerebral blood flow and metabolism - **2017 Cardiovascular Research Group Speaker Series** - John Moores Liverpool University - Liverpool, UK
- 5) Navigating early academia “The Serendipitous Academic: Getting Lucky is Hard Work” – **2017 meeting of Exercise Physiologist in Collegium (EPIC) group**, School of Human Sciences (Sports Science and Exercise Health), University of Western Australia – Perth, Australia.
- 6) Transcranial assessment and analysis of cerebral artery diameter in vivo – **2015 Cardiovascular Ultrasound Techniques in Exercise and Health** – Centre for Heart Lung and Vascular Health, University of British Columbia –Kelowna, Canada.

EDUCATION

2010-15 **University of British Columbia Okanagan, School of Health and Exercise Sciences, Faculty of Health and Social Development, Kelowna, B.C**
 PhD: The influence of arterial blood gases on cerebral blood flow response to exercise; **Professor Philip Ainslie** – Canadian Research Chair

- 2013** **Integrative Cardiovascular Control, Copenhagen, University of Copenhagen, Denmark, Copenhagen** - (Lecture Series by Professors' Neils Secher, Jerome Dempsey, Gerald DiBona, Peter Raven, Russell Richardson, Wouter Weiling, Johannes Van Lieshout, Craig Crandall, Scott Smith)
International graduate course focusing on integrative cardiovascular control in human and animal physiology. Special Topics in: Cerebrovascular control in hyperthermia, Baroreceptor Regulation and Function, Hypoxia and Central Sleep Apnea, Cerebral Autoregulation, Exercise Pressor Reflex, Cardiovascular control during exercise, Oxygen Cascade: Atmosphere to Skeletal Muscle.
- 2010** **International Graduate Course in Exercise & Clinical Physiology, Concordia University, Montreal, Quebec, Canada** - (Lectures Series by Professors' Bengt Saltin, Flemming Dela, Ylva Hellsten, Robert Bushel, William Sheel)
Immersive graduate course focusing on special topics in clinical and exercise physiology: metabolism, respiratory, cardiovascular, and cerebrovascular physiology.
- 2010** **Research Methods and Techniques in Cardiovascular Ultrasound, University of British Columbia Okanagan, Kelowna, British Columbia, Canada**
Technical and theoretical training in peripheral, cerebral and cardiovascular ultrasound imaging for research practices.
- 2005 -10** **University of Lethbridge, Department of Physical Education and Kinesiology, Lethbridge Alberta**
Masters of Exercise Science (2009 -2010), **Dr. Francois Billaut** (*University of Laval*)

Bachelors of Science in Kinesiology (2005-2008)

RESEARCH FUNDING (TOTAL FUNDED: \$775,780)

- 2020-22** **Centre for Clinical Translational Science – Pilot Grant** (\$60,000) – “Weathering the Storm: Heart, Brain, and Lung Rehabilitation for COVID-19” – Principal Investigator: Kurt Smith - Funded
- 2020-24** **National Engineering and Research Council – Discovery Enhancement** (\$156,780) – “Sex, Structure and Function: Machine Learning the human cerebral vasculature” - Principal Investigator: Kurt Smith – Funded
- 2018** **Harley N. Hothckiss Post-Doctoral Award** (\$50,000) – Funded (*Declined*)
- 2018** **Sir Charles Gairdner and Osborne Park Health Care Group Research Advisory Committee** – Effect of acute continuous positive airway pressure on measures of vascular function in patients with obstructive sleep apnoea (\$40,000) Chief Investigator: Dr. Jennifer Walsh – Associate investigator: Kurt Smith - Funded
- 2017** **Clinical Exercise Physiology Research Grant** - Impact of Distinct Exercise Modalities Cerebrovascular Function in Mono- and Dizygotic Twins – Exercise & Sports Australia (ESSA) – Student investigator: Hannah Thomas; Associate Investigator/Supervisor: **Kurt Smith** (\$17,000) – Funded.
- 2017 - 18** **Australian Research Council - Discovery Project** - “Visualizing vascular adaptation at the micro-scale in humans” – CI: Daniel J. Green, Co-investigator (\$120,000) – Post Doctoral Funding: **Kurt Smith** - *Accepted*
- 2015 – 16** **National Health and Medical Research Council** - Project Grant – “Does Manipulation of Arterial Shear Stress Enhance Cerebrovascular Function and Cognition in the Aging Brain” Chief Investigator: Winthrop Professor Daniel J. Green, Associate investigator: **Kurt Smith** (\$120,000) – *Completed*
- 2015 -17** **Natural Sciences and Engineering Research Council** - Canadian Post-Doctoral Fellowship “Shear mediated dilation of cerebral arteries and regulation of cerebral blood flow”. Chief Investigator: Kurt Smith (\$90,000) – *Completed*
- 2016** **Friedman Scholarship** – “Sustained intracranial shear stress and its impact on cerebrovascular function in healthy individuals” - Applicant: Ryan Hoiland, MSc; Supervisor: **Kurt Smith** University of Western Australia (\$24,000) – *Completed*
- 2014-15** **Heart and Stroke – Focus on Stroke Graduate Research Award** (\$21,000) - *Completed*
- 2012-14** **Alexander Graham Bell Canadian Graduate Scholarship** - Natural Sciences and Engineering Research Council – Chief Investigator: **Kurt Smith** (\$70,000) – *Completed*

2013 Canadian Stroke Network Summer Internship supervision – Applicant: Brandon Evtushevski; Supervisor: **Kurt Smith**
(\$7000) - *Completed*

TEACHING EXPERIENCE

Assistant Professor – Cardiac Rehabilitation Apprenticeship (KINE 4610) Lakehead University, Thunderbay, Ont, CAN (Oct - Dec 2018)

- **Developed course content, evaluation methods, and clinical placements for 20 3rd and 4th year Advanced Kinesiology Students**
 - 3 Credit hours of in-class lecture and seminar based content with 25-hours of Clinical Work Experience

Lectures, readings, observation, and apprenticeship in all phases of a cardiac rehabilitation program enhance students' understanding of exercise prescription, cardiovascular physiology, cardiovascular disease risk factors, cardiac stress testing, relevant community services and common drug treatments for cardiovascular disease.

Assistant Professor – Advanced Topics in Nutrition (KINE 4610) Lakehead University, Thunderbay, Ont, CAN (Oct - Dec 2018)

- **Developed course content, and evaluation methods for 20 4th year Kinesiology Students**
 - 3 Credit hours of in-class lecture and seminar based content

An introduction and analysis of current research and guidelines in medical nutrition therapy for the prevention and management of chronic diseases including diabetes and dementia, as well as controversy surrounding ergogenic and supplementation in health and sports. Specific references to the roles of macro- and micro-nutrients and of non-nutrients in disease prevention are discussed. Analysis of research articles, individual assignments and a major group term project will be used to explore the impacts of nutrition in health and disease.

Assistant Professor – Nutrition, Physical Activity, and Health (KINE 3610) - Lakehead University, Thunder bay, Ont, CAN (Jan - Apr 2019)

- **Developed course content, and evaluation methods for 60 3rd year Kinesiology Students**
 - 3 Credit hours of in-class lecture material

An introduction to the science of nutrition in everyday life and sport. Topics include component of nutrition, as well as basic nutritional principles and their application. Emerging topics and controversies regarding nutritional practices in life and sport as well a review of the biological foundations of nutrition in health are explored

Assistant Professor – Introduction to Kinesiology (KINE 1010) Lakehead University, Thunder bay, Ont, CAN (Oct - Dec 2018)

- **Developed course content, and evaluation methods for 90 1st year Kinesiology Students**
 - 3 Credit hours of in-class lecture material

An overview of the multidisciplinary field of kinesiology is presented by describing and integrating academic, scientific, and professional perspectives based on a Canadian context. The multiple sub-disciplines (Biomechanics, Physiology, Sociology, Motor Control, History, Psychology) of kinesiology are used to examine current, relevant, and meaningful topics. Through this process, students develop an increased awareness of the depth to which human physical activity can be examined and the breadth to which such an examination spawns career opportunities.

International Cardiovascular Ultrasound Research Methodology - John Moores Liverpool University (Oct 2015-2017)

Lecture on the fundamentals and principles of cerebral and cardiovascular ultrasound imaging in exercise science during international meetings and conferences: School of Health and Exercise Science, *University of British Columbia Okanagan, Kelowna, Canada– 2015; Australian Catholic University, Exercise & Sport Science Australia Conference, Melbourne, Australia- 2016; School of Sports and Exercise Science John Moores Liverpool University, Liverpool, UK - 2017*

Principal instructor focusing on cerebrovascular ultrasound imaging – Lecture international graduate students and researchers on the principles of dynamic ultrasound imaging at the annual International course in ultrasound imaging as a member of the John Moores Liverpool University Cardiovascular Research Group

Laboratory Techniques in Exercise Science Instructor (HMKN 312) - School of Health and Exercise Sciences, University of British Columbia, Kelowna, B.C (September 2010-2012)

- **Developed course content, practical learning experiences and evaluation methods for 100 2nd year Exercise science students**
 - *3 credit hours of in-class lecture material*
 - Exercise science statistics, principles, limitations and normative values in exercise, neuromuscular and cardiorespiratory physiology.
 - Experimental Design in Exercise Science – Discuss traditional and contemporary approaches to fitness and health assessment
 - Critique controversial human physiology topics (i.e., Lactate Paradox; Respiratory Sinus Arrhythmia, Exercise Hyperemia)
 - *3 credit hours of laboratory lecture material*
 - Deliver practical training in data acquisition software used in Exercise Science (Lab Chart- ADInstruments)
 - Practical training in traditional and contemporary tests used in exercise (VO₂ max, Wingate), neuromuscular (Central activation, Cortical Silent Period, H-reflex) and cardiorespiratory (Functional Respiratory Capacity, Maximal Ventilation, Heart rate Variability) physiology
 - Familiarize students with Statistical and data presentation software packages (SPSS, Microsoft Office, Graph Pad)
 - Design, conduct and interpret the results an exercise science experiment

Exercise Physiology (HMKN 310) – Laboratory Instructor - School of Health and Exercise Sciences, University of British Columbia, Kelowna, B.C (September 2010-2012)

- **Lectured and Instructed Exercise Physiology Lab course to ~100 3rd and 4th year human kinetic students**
 - *1.5 credit hours of in-class lecture materials*
 - *Resting, moderate and maximal aerobic exercise capacity*
 - *Cardiorespiratory responses to exercise (ventilatory and lactate threshold; OBLA)*
 - *Anaerobic Threshold*
 - *Hypoxic attenuation of maximal exercise output*

Motor Learning and Control (HKIN 230) Guest Lecturer – Department of Human Kinetics, Okanagan College, Penticton B.C. (2013)

- * Deliver lectures for Dr. Gregory duManoir on special topics
 - * Motor recruitment strategies during exercise; Henneman principle; neuromuscular pathologies: central pattern motor programs
 - * Assessment of neuromuscular function – Maximum voluntary contraction, H-Reflex, central activation ratio

Exercise Physiology (HKIN 275) Motor Learning and Control (HKIN 230) Guest Lecturer – Department of Human Kinetics, Okanagan College, Penticton B.C. (2012)

- * Deliver lectures for Dr. Gregory duManoir on special topics
 - * Oxygen transport in humans; Oxygen delivery during exercise and extreme environments; Exercise Metabolism

Environmental Physiology (HKIN 275) - Lecturer – School of Health and Exercise Science, University of British Columbia, Kelowna, B.C (2011-'15)

- * Deliver lectures for Professor Philip Ainslie on special topics
 - * High Altitude Acclimatization
 - * Principles of Altitude Training
 - * Heat Acclimatization

Advanced Exercise Conditioning (PED 271) – Sessional Instructor - Lethbridge College, Lethbridge, AB (2010)

- * Lecture on the principles of strength training periodization
- * Facilitate weight training tutorials – special focus on functional movements and Olympic weight lifting techniques

Teaching Assistant – Motor skill learning (KNES 3670) - Dept. of Physical Education and Kinesiology, University of Lethbridge, Lethbridge, Ab (2010)

- * Lecture on the principles of motor skill learning (motor skill acquisition; motor skill planning, programming and execution)

PROFESSIONAL EXPERIENCE – ORDERED BY RELEVANCE

Assistant Professor – Integrative Physiology Laboratory, Department of Kinesiology and Nutrition, The University of Illinois at Chicago, Chicago, IL, USA (Aug 2020 – Pres)

Research: Focused on revealing the mechanistic relationships integrative cerebrovascular environmental exercise physiology by innovating the quantification of cerebrovascular structure and function in aging and clinical populations.

Teaching: Lecturing undergraduate and graduate courses in exercise and environmental physiology.

Assistant Professor – School of Kinesiology, Faculty of Health and Behavioural Science, Lakehead University, Thunderbay, ONT, CAN (Aug 2018 –Jul 2020)

Research: The facilitation of graduate and undergraduate research through supervision of research projects and financial support. This is largely accomplished via technical, theoretical and scholastic training, as well as through acquiring funding from the Tri-Councils (NSERC, CIHR) and other external funding sources (Heart and Stroke Foundation of Canada, Canadian Foundation for Innovation).

Teaching: Lecturing undergraduate course (KINE 1010 – Introduction to Kinesiology; KINE 4610 – Advanced Topics in Nutrition; KINE 3610 – Nutrition in Sport and Health; KINE 4712 – Cardiac Rehabilitation)

Research Associate - Cardiovascular Research Group, The University of Western Australia, Perth, WA, AUS (Oct 2015 –Jun 2018)

Coordinate laboratory and technical operations for the 8 graduate and ~ 4-5 Honours students working in Prof' Greens research program

- * Peripheral Vascular Function Testing: Flow mediated vasodilation (Ischemic occlusion, GTN, Exercise), intima-Media Thickness, central and peripheral arterial stiffness, and pulse-wave velocity analysis.
- * Cerebrovascular Function Testing: Cerebral: Arterial perfusion pressure manipulation (lower body negative pressure, squat-stand manoeuvre), neurovascular coupling, cerebral flow mediated vasodilation, cerebrovascular reactivity to arterial carbon dioxide and oxygen.
- * Development of a new battery of assessments to assess micro and macro vascular function using ultrasound, magnetic resonance imaging and optical coherence tomography
- * Project Manager for three randomized clinical trials investigating how improvements in peripheral and cerebrovascular function following exercise training influence cognitive function.
- * Clinical Cardiovascular Research:
 - * **Fiona Stanley Cardiac Transplant Ward**
 - Cerebral and peripheral vascular function during exercise in heart disease following surgical intervention
 - * **Perkins Medical Research Institute:**
 - Cerebrovascular and cognitive function in carotid stenosis, endarterectomy and stenting
 - Peripheral vascular function in diabetes and peripheral artery disease

Research Coordinator - Centre for Heart Lung and Vascular Health, University of British Columbia, Kelowna, B.C (May 2012-2014)

- * Coordinate laboratory and technical operations for the 12 graduate and 4-5 undergraduate students working for Dr(s). Philip Ainslie and Neil Eves.
- * Organize and structure training for graduate and undergraduate students
- * 2014 Okanagan Respiratory Cardiovascular Symposium Organizing Committee
- * Data analysis, data collection and equipment maintenance
- * Ensure adequate laboratory inventory and all laboratory safety guidelines are in place and followed

Certified Personal Trainer and Kinesiologist - Dynamic Physiotherapy/ LifeMark Sports Medicine and Health Ltd. Lethbridge, Alberta (Apr 2008-Jan2010)

- * Functional Movement Assessment Analysis
- * Post-Surgical Rehabilitation
- * Return to Work Case Worker – Workers Compensation Board of Alberta

Research consultant - Mild Traumatic Brain Injury and Vascular Health Research Group, University of British Columbia, Kelowna, B.C. (Sept 2011 – Jan 2012)

In Collaboration with Dr. Bradley Monteleone

- * Editor and co-author for research grants and peer reviewed journal articles
- * Research assistant and technician
- * University and sports centre liaison

University of British Columbia, Kelowna, B.C. (Sept 2011-2014)

School of Health and Exercise Sciences (SHES) – Research Council Graduate Student Representative

- * Acted on behalf of the SHES graduate students with regards to student funding opportunities and fellowship selection criteria.

CREATE – Health Science Laboratory Leader

- * Introduce undergrad students to the Integrative Cardiovascular and Respiratory Physiology Lab's
- * Demonstrated advanced and basic cardiovascular, cerebrovascular and respiratory interactions currently implemented within integrative physiology research.

University of British Columbia, Kelowna, B.C. (Sept 2010 – Apr 2012)

Research Assistant and PhD student - Integrative Cardiovascular and Respiratory Physiology Unit

- * Performed subject screening and recruitment in exercise physiology laboratory
- * Collaborated with national and international research groups
 - * Duke University, Durham, North Carolina, US; University of Oregon, Eugene, Oregon, US; Harvard University, Boston, Massachusetts, US; University of Wellington, Wellington, NZ; University of Otago, Dunedin, NZ; Birmingham University, Birmingham, UK; Mount Royal University, Calgary, Ab, CAN.
- * Collected and Analysed Research Data

MENTORSHIP (PHD: N = 6; MSc: N = 8; HNR: N = 6; BSc: N = 4)

2019-20	Neurogenic control of metabolism and cerebrovascular function in male and female athletes – Mathew Neil – MSc – School of Kinesiology, Faculty of Health and Behavioral Development, Lakehead University – Supervisor
2019-20	Autonomic regulation of peripheral and cerebrovascular function in open pit mine shift work – Andrea Zapcic - MSc – School of Kinesiology, Faculty of Health and Behavioral Development, Lakehead University – Supervisor
2018-19	Impact of acute blood flow pattern shifts on cognition and neurovascular coupling – Kalle Amolins – UG KINE 4220 Thesis Project – School of Kinesiology, Faculty of Health and Behavioral Development, Lakehead University – Supervisor
2018-19	The Effect of Acute Beetroot Juice Consumption on Brachial Artery Flow-Mediated Dilation and Performance of a 1-Mile Run Time Trial in Active Individuals – Andrea Zapcic, UG 4220 Thesis Project - School of Kinesiology, Faculty of Health and Behavioral Development, Lakehead University – Supervisor
2017 -18	Microvascular adaptation to exercise and hyperthermia in peripheral artery disease populations– Raden Argarini – PhD student - School of Sports Science, Exercise and Health, University of Western Australia – Co-Supervisor
2017-18	Functional versus Structural adaptation in the microvasculature following eight weeks of high intensity exercise training - Hamish McCurdy, Honors, School of Sports Science, Exercise and Health, University of Western Australia – Primary Supervisor
2017	Modelling cerebrovascular function in 4-dimensions – Ava Kazemi, MSc, School of Mechanical and Chemical Engineering, University of Western Australia, - Co-Supervisor
2017-18	Cerebrovascular and cognitive function following multiple modes of exercise training – Hannah Thomas, PhD candidate, School of Sports Science, Exercise and Health, University of Western Australia – Primary Supervisor
2016-18	Role of testosterone replacement therapy in ameliorating vascular dysfunction during a 3 month exercise training program

in testosterone deficient men - Lauren Chassland, PhD Candidate, School of Sports Science, Exercise and Health, University of Western Australia– **Co-supervisor**

- 2016-18** Peripheral and Cerebrovascular function in twins: does heritability determine the response to exercise training adaptation - Channa Marsh. PhD Candidate. School of Sports Science, Exercise and Health, University of Western Australia, Perth, WA, AUS – **Co-supervisor**
- 2016-18** Manipulation of anxiety through autonomic and respiratory mechanisms in terrestrial versus aquatic environments - Chiara DiCredico, PhD and Endeavour Scholar, School of Sports Science, Exercise and Health, University of Western Australia, Perth, WA, Aus – **Co-Supervisor**
- 2016** Cerebral flow mediated vasodilation following increases in intra-arterial shear-stress following exercise and hypercapnia – Ryan Hoiland, **UBC PhD Student of the Year and Friedman Scholar**, School of Health and Exercise Sciences, University of British Columbia, Kelowna, B.C., CAN – **Co-Supervisor**
- 2016** Peripheral Vascular Function following treatment versus sham treatment patients with obstructive sleep apnea – Avinash Singh, Honors Researcher, School of Sports Science, Exercise and Health, University of Western Australia, Perth, WA, AUS – **Primary Supervisor**
- 2016** Cerebrovascular function following prolonged intra-arterial shear stress stimulation – Ryan Grove, Honors Researcher, School of Sports Science, Exercise and Health, University of Western Australia, Perth, WA, AUS - **Primary Supervisor**
- 2015** The influence of cacao on vascular function and satiety in post-menopausal women – Channa Marsh, Honors Researcher, School of Sports Science, Exercise and Health, University of Western Australia, Perth, WA, AUS – **Co-supervisor**
- 2014** Middle cerebral artery diameter during normoxic and hyperoxic exercise – Sarah L. Smith, BSc, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN - **Primary Supervisor**
- 2014** Role of acid base balance in hypoxic cerebral reactivity – Andrew Pool, BSc, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN - **Primary Supervisor**
- 2014** Adenosine mediated hypoxic cerebral vascular vasodilation - Ryan Hoiland, MSc, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN – **Co-supervisor**
- 2013** Influence of prostaglandins and cerebral oxygen delivery on hypoxic and normoxic exercise performance – Brandon Evtushevski, UG, University of Guelph–Canadian Stroke Network Summer Internship, CAN – **Co-supervisor**
- 2012-13** Neurovascular coupling in mild traumatic brain injury – Tanis Burnett, MSc, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN – **Co-supervisor**
- 2012** Cerebral Blood flow regulation in mild traumatic brain injury – Kaitlyn Marsden, MSc, Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN – **Co-supervisor**
- 2010-11** Cerebral auto-regulation during spontaneous and controlled breathing during head up and head down tilt – Jinelle Gelinas, MSc, School of Health and Exercise Sciences, Faculty of Health and Social Development, University of British Columbia, Kelowna B.C., CAN – **Co-supervisor**

2009 Changes in cerebral cortex oxygenation during a 5-km time trial – Jennifer Davis, BSc (Hons) Dept. of Physical Education and Kinesiology, University of Lethbridge, Lethbridge, Ab., CAN – **Co-supervisor**

2009 Cerebral oxygenation and repeated-sprint ability – Sean Turner, BSc (Hons), Dept. of Physical Education and Kinesiology, University of Lethbridge, Lethbridge, Ab., CAN – **Co-supervisor**