

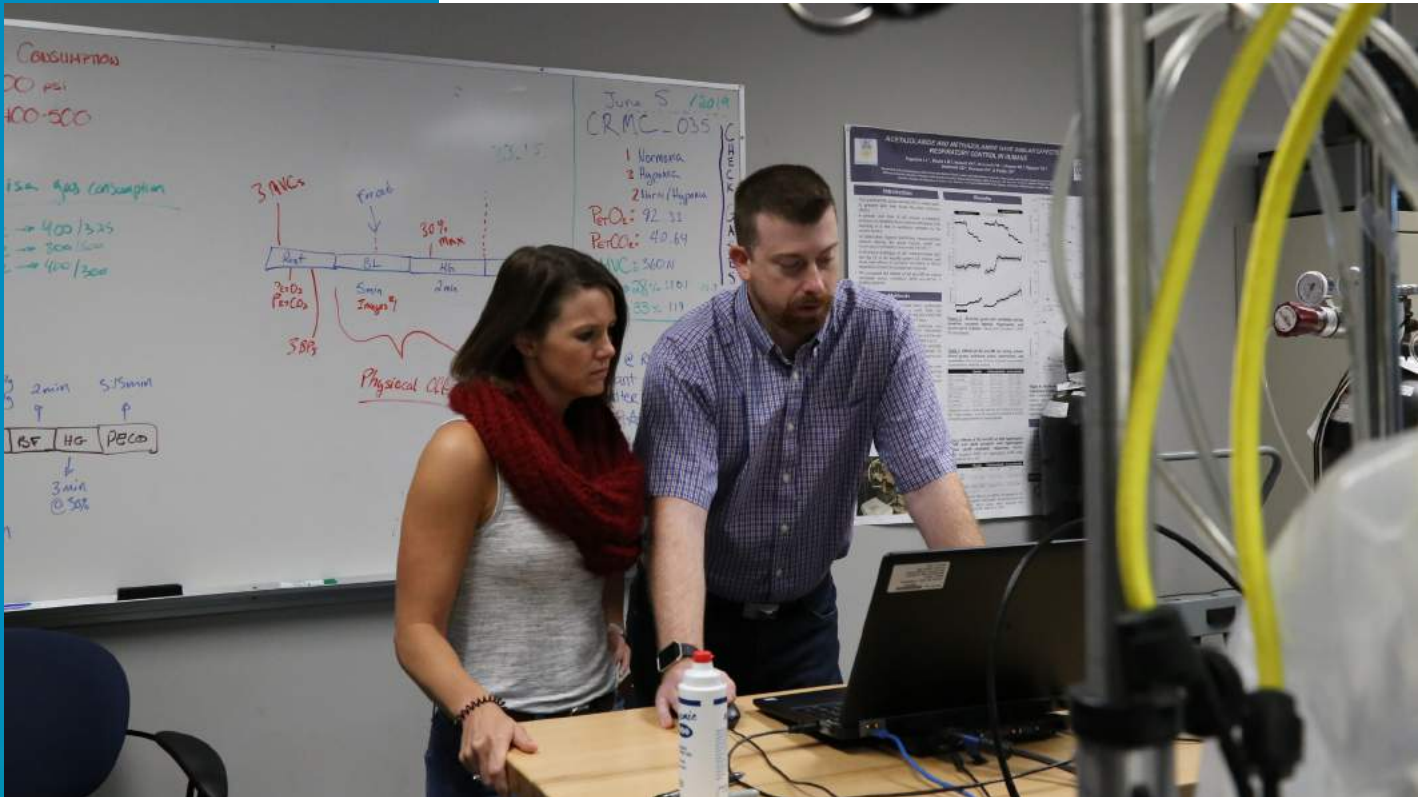


SCHOOL OF HEALTH AND EXERCISE SCIENCES

ANNUAL RESEARCH REPORT 2020



THE UNIVERSITY OF BRITISH COLUMBIA



ABOUT US

Our faculty members and graduate students are working on a variety of research projects that explore health and human movement in today's society with the goal to create positive changes in health.

The School of Health and Exercise Sciences encompasses a diverse research portfolio, ranging from systems physiology through to health behaviour change and population health services. Since inception, the School has enjoyed significant research productivity, as assessed through grant capture and publication of peer-reviewed outputs.

Currently, the School has 19 full-time academic staff members, of which there are 15 active researchers. In 2020, in combination with the School of Kinesiology at UBC Vancouver the School was globally ranked #4 and #4 respectively in the QS University Rankings and the Shanghai University Rankings for sports-related subjects.

CURRENT RESEARCH

102

FUNDED PROJECTS

\$15.8M*

FUNDING

\$2.7M*

RESEARCH
INFRASTRUCTURE

* 5 year (2015-2020)

School Strategic Focus

The School's vision is to advance the discovery and application of health and exercise knowledge for a better world. To achieve this vision, the School strategically focuses on generating knowledge that improves our understanding of the environmental challenges and mechanisms that impact health, with the goal of informing and translating interventions that prevent, manage, and treat chronic disease across the lifespan.

The span of research activities within the School is broadly encapsulated across three thematic groupings, with a small number of faculty conducting research between, or across these areas. Each group has identified key aims to help the School achieve its overall research mission.



Behaviour change for people with chronic conditions

The behaviour change group aims to improve people's lives through research that applies the science of behaviour change. It has a specific focus on working with people at risk for, or living with diabetes, and people with physical disabilities, particularly individuals with a spinal cord injury (SCI). The group's three primary objectives are: 1) To design, implement, and evaluate exercise, diet, and smoking behaviour change interventions; 2) To develop evidence-based methods for community engaged, integrated knowledge translation research across populations; and, 3) To work with stakeholders to translate interventions, knowledge products and tools and evaluate their uptake and implementation into the real world.



Cardiovascular and respiratory physiology

The Centre for Heart Lung and Vascular Health has identified two overarching aims: 1) To investigate mechanisms and interventions that generate novel approaches to improve respiratory and cardiovascular health across the lifespan; and, 2) To understand the isolated, and combined impact of environmental stress on physiological function.



Sensorimotor neuroscience and neuromuscular physiology

This grouping of researchers is developing a strong collaborative program in the field of adult aging, focusing on the origins of neurological insults (e.g. Parkinson's disease, mild traumatic brain injury, and environmental stressors). This work specifically examines balance and falls, fatigue and overall motor behaviour/function across the adult lifespan.

Who we are

Philip Ainslie | Professor and Canada Research Chair

Research interests: Dr. Ainslie's research is directed to the integrated mechanisms, which regulate human cerebral (brain) blood flow in health and disease, including three interrelated areas: 1) Mechanisms of cerebral blood flow regulation in health and disease states; 2) Influence of environmental stress on integrative physiology and cerebrovascular function (with focus on hypoxia and temperature regulation); and, 3) Influence of acute and chronic exercise training on cerebrovascular function.

Gord Binsted | Professor

Research interests: Dr. Binsted's research program focuses on understanding how the human brain detects and uses sensory information to control movement. Even the simple act of picking up a cup of coffee requires the brain to rapidly perform a complex series of sensory to motor transformations. Binsted's research focuses on how these functions change with age, disease or environmental disruption.

Brian Dalton | Assistant Professor

Research interests: Dr. Dalton's research interests focus on understanding the sensorimotor control of human movement using various models of study (e.g., neuromuscular fatigue, healthy adult aging, hypoxia). His current research includes experiments related to understanding: 1) the vestibular contributions to reaching and arm-supported standing balance; 2) the vestibular control of balance during hypoxia; and 3) the neuromechanical control of the intrinsic foot muscles and their role in standing balance.

Neil Eves | Professor

Research interests: Dr. Eves' research interests are in the integrative aspects of pulmonary and cardiovascular physiology in health and disease. His current research focuses on how the pulmonary and cardiovascular systems interact and how these interactions mediate adverse symptoms, exercise intolerance and the accelerated progression of cardiovascular disease that occurs in patients with chronic respiratory conditions. Dr. Eves' program also explores the role of novel exercise therapies specifically tailored to alter and reverse the primary and secondary pathophysiology of respiratory diseases such as COPD and lung cancer.

Glen Foster | Associate Professor

Research interests: As an integrative physiologist, Dr. Foster's research program approaches complex physiological problems using integrative and applied experimental approaches that focus on the cardiopulmonary systems in vivo. Dr. Foster is interested in human adaptation to hypoxia and the pathological consequences of intermittent hypoxia similar to that experienced by sleep apnea patients. His research focuses on the reflexive control of breathing and blood flow. Laboratory infrastructure supports human investigation of pulmonary, peripheral, coronary and cerebral blood flow regulation, work of breathing, cardiac function, direct measurement of sympathetic nerve activity, and novel technology development to measure tissue perfusion using contrast enhanced ultrasound.

Heather Gainforth | Assistant Professor

Research interests: Dr. Gainforth and her lab aim to close the gap between health promotion research and practice by examining knowledge translation – the act of moving research evidence into the hands of research users. The research program aims to identify, develop and implement novel strategies for disseminating evidence-based health information and interventions to populations. The systems-based research is grounded in behaviour change theory and techniques and is guided by strong collaborations between researchers and communities.

Jennifer Jakobi | Professor

Research interests: Dr. Jakobi's research program focuses on maintaining functional independence in older adults. The lab applies a number of neuromuscular techniques to explore sex-specific physiological adaptations with aging. Dr. Jakobi is particularly interested in applying acute and chronic exercise interventions to understand neuromuscular plasticity for functional gain.

Mary Jung | Associate Professor

Research interests: Dr. Jung's research program examines dietary and physical activity behaviour change and maintenance, with a particular interest in diabetes prevention through the use of evidence-based interventions. Dr. Jung works with an interdisciplinary team of scientists and community-based organizations to test the implementation and sustainability of such interventions in the real world. She also evaluates programs that seek to assist individuals make dietary and exercise changes (e.g., national physical activity programs, mHealth apps, prediabetes and type 2 diabetes online platforms).

Jonathan Little | Associate Professor

Research interests: Dr. Little's Exercise Metabolism and Inflammation Laboratory (EMIL) employs a broad spectrum of techniques, from whole-body metabolic measurement in humans to advanced molecular analyses in isolated cells. Studies range from applied exercise interventions in clinical populations (e.g., patients with type 2 diabetes) to basic studies examining intracellular signaling pathways and gene expression in cultured cells. Human exercise intervention studies are focused on the health benefits of high-intensity interval training and nutrition research is centered around carbohydrate restriction for the treatment and prevention of type 2 diabetes.

Kathleen Martin Ginis | Professor

Research interests: Dr. Martin Ginis' research program focuses on the psychosocial mechanisms and consequences of physical activity behaviour change. She has a particular interest in physical activity among people with spinal cord injury and frequently works with multi-disciplinary teams to study various health-outcomes (e.g., cardiovascular disease risk, pain). Dr. Martin Ginis also works closely with numerous community-based organizations on research and knowledge translation projects to advance physical activity and other types of social participation among Canadians with disabilities.

Alison McManus | Professor

Research interests: Dr. McManus' research focuses on the physiological consequences of sedentary behavior in children. She uses experimental models of sitting in the laboratory, alongside community-based observational studies to: 1) examine the impact of too much sitting on the vascular system; 2) whether breaking-up prolonged sitting with exercise preserves vascular function and; 3) discovering the dose-response relationship between exercise and vascular benefit in children.

Chris McNeil | Associate Professor

Research interests: Dr. McNeil's program of research uses an integrative approach to investigate the performance and plasticity (adaptability) of the human neuromuscular system. Specifically, Dr. McNeil studies how the brain, spinal cord and muscles respond to acute interventions (e.g., muscle fatigue, hypoxia or conditioning stimuli) or chronic perturbations (e.g., aging, training or disease).

Colin Reid | Assistant Professor

Research interests: Dr. Reid is a health services researcher who focuses on care for persons living in residential long-term care. Working with many local and national collaborators, Dr. Reid uses an interdisciplinary approach, typically employing mixed methods, in his community-based research program.

Rob Shave | Professor

Research interests: Dr. Shave's research interests focus on understanding the acute and chronic effects of exercise and/or environmental stress upon cardiac structure and function. Using echocardiography and biomarkers, Dr. Shave combines comparative and experimental physiology approaches to further understand how the mammalian heart has evolved, and how the cardiovascular system remodels in response to exercise, or physical activity in a range of populations.

Paul van Donkelaar | Professor

Research interests: Dr. van Donkelaar's research focuses on gaining a better understanding of traumatic brain injury (TBI) due to sports concussion or intimate partner violence. van Donkelaar and his team are using an integrated knowledge translation approach with the goal of co-designing and creating TBI-informed tools and resources for front-line staff working at community organizations supporting survivors; and aims to improve safety of repetitive impacts on players' heads during contact and non-contact sports.

Research in the Community: A year of *COVID

ENGAGEMENT INSIDE & OUT OF DOORS

Dr. Jennifer Jakobi, lead of the Neuromuscular Healthy Exercise and Aging Lab, and her team found innovative ways to connect taking their lab activities from screen to snowy hills to connect and fulfill their commitment to taking research into action.



TEAM UP FOR HEALTH

A new training course developed by Dr. Paul van Donkelaar and Karen Mason aims to provide critical education for frontline workers to recognize signs and symptoms of brain injury in survivors of intimate partner violence. Through a collaboration with Shelina Babul, clinical associate professor in the department of pediatrics at UBC, SOAR has launched a novel version of the Concussion Awareness Training Tool (CATT)—an online training system developed to standardize concussion recognition, diagnosis, treatment and management.



COMMUNITY

The Stober Foundation gifted \$1M to UBC, including \$500,000 to the establish the UBC Stober Health Fund. The fund will help recruit the next generation of health scientists and serve as a catalyst for excellence in health-related research and student training.





RECOGNITION
 The Canadian Society for Exercise Physiology (CSEP) Young Investigator Award is presented annually to an outstanding CSEP member who received the PhD or MD degree within the past 10 years. In 2020, Dr. Jonathan Little was recognized by CSEP as the 2020 Young Investigator Award winner.

COLLABORATION
 Dr. Glen Foster's team joined collaborators from near and far to conduct research at the only civilian research hyper/hypobaric facility in Canada. Located at Simon Fraser University, the chamber is capable of pressurizing or, "diving," to 305 meters.



CONNECTION
 Dr. Kathleen Martin Ginis and her team from the SCI Action Canada Lab are committed to ensuring that the results of our research are put in the hands of people who can use them. As a community-engaged lab, it is very important for the lab to work closely with stakeholders, and the lab regularly conducted out-of-doors connections to facilitate their work.

SOCIAL-DISTANCED TEAMWORK
 Dr. Heather Gainforth and her team at the Applied Behaviour Change (ABC) Laboratory found socially-distanced ways of connecting to continue their focus on promotion and maintenance of health behaviours, knowledge translation, special populations, and behaviour change theory.



Remarkable Students & Fellows

2020 Post-Doctoral Fellows in Training

Shambhu Adhikari, with Paul van Donkelaar
Femke Hoekstra, with Kathleen Martin Ginis
Hashim Islam, with Jonathan Little
Changki Kim, with Jennifer Jakobi
Barbara Oliveira, with Jonathan Little
Matthew Stork, with Mary Jung
Joshua Tremblay, with Rob Shave and Phil Ainslie
Colin Wallace, with Paul van Donkelaar
Stephen Wright, with Neil Eves

26

MASTER'S OF
SCIENCE
STUDENTS

NEW STUDENTS ADMITTED

6 Master of Science
11 Doctor of Philosophy

40

DOCTOR OF
PHILOSOPHY
STUDENTS

DEGREE CONFERRALS

8 Master of Science
2 Doctor of Philosophy

9

POSTDOCTORAL
FELLOWS

2020 Student Awards and Recognition

Naomi Maldonado-Rodriguez, CIHR
Gabriel Dix, CIHR, Michael Smith Foreign Study Supplement
Connor Howe, NSERC
Justine Magnuson, NSERC
Helena Neudorf, NSERC
Tyler Vermeulen, NSERC
Tineke Dineen, SSHRC
Sarah Lawrason, SSHRC



KILLAM POSTDOCTORAL FELLOW
RESEARCH PRIZE

Corliss Bean

The Killam Postdoctoral Fellowship is awarded annually for excellence in research. Bean's research focused on prevention programs for type 2 diabetes in the Small Steps for Big Changes program.



UBC OKANAGAN 2020
GOVERNOR GENERAL'S GOLD MEDAL

Mike Tymko

The Governor General's award is presented to the university's most accomplished doctoral graduate each spring. Mike Tymko, who has published more than 60 research papers, joined the School in 2012 as a Masters student, before completing his PhD.

Research Centre & Laboratories

As the foundation to our research efforts, our labs and the Centre for Heart, Lung and Vascular Health serve as a training ground for our students and postdoctoral fellows studying health and exercise sciences.

1. Cerebrovascular Physiology Lab (PI: Phil Ainslie)
2. Sensorimotor Neuroscience Lab (Co-PI's: Gordon Binsted & Paul van Donkelaar)
3. Sensorimotor Physiology and Integrative Neuromechanics Laboratory (PI: Brian Dalton)
4. Integrative Clinical Cardiopulmonary Physiology Lab (PI: Neil Eves)
5. Cardiopulmonary Laboratory for Experimental and Applied Physiology (PI: Glen Foster)
6. Applied Behaviour Change Lab (PI: Heather Gainforth)
7. Healthy Exercise and Aging Lab (PI: Jennifer Jakobi)
8. Diabetes Prevention Research Group (PI: Mary Jung)
9. Exercise, Metabolism and Inflammation Lab (PI: Jonathan Little)
10. SCI Action Canada Lab (PI: Kathleen Martin Ginis)
11. Pediatric Exercise & Inactivity Research Laboratory (PI: Alison McManus)
12. Integrative Neuromuscular Physiology Lab (PI: Chris McNeil)
13. Comparative and Functional Cardiac Imaging Lab (PI: Rob Shave)
14. Concussion Research Lab (PI: Paul van Donkelaar)

Undergraduate Honour's Research Projects

Blessing Adeagbo, with Mary Jung: Receptiveness to Workplace Exercise

Delaney Collins, with Kathleen Martin Ginis: Understanding the Delivery and Receipt of a Physical Activity Behavioural Intervention for People with Spinal Cord Injury Before and During the COVID-19 Pandemic

Sydney Davis, with Jonathan Little: Effectiveness of an ICU grade HVAC System on Preventing Aerosol Spread in a Dental Setting

Alexa Durand, with Mary Jung: Digital Diabetes Prevention Programs: A Scoping Review

Brendan Abrahamson-Durant, with Glen Foster: The Coronary Vascular Response to the Metaboreflex at Low Altitude and During Acute and Prolonged High Altitude Exposure

Owen Harris, with Jennifer Jakobi: Effects of Contraction Duration on Frequency and Amplitude-based Components of Submaximal Force Steadiness Analysis

Amanda Holyk, with Neil Eves: The Impact of COVID-19 on the Delivery of Pulmonary Rehabilitation

Nicholas Reitsma, with Jonathan Little: The Relationship Between Breath Acetone Biofeedback During a Ketogenic Diet and Weight Loss in Men and Women with Overweight and Obesity

Jenna Sim, with Mary Jung: Saying Goodbye to Biases: Examining Whether a 20-minute Online Module Can Reduce Human Kinetic Students' Explicit Biases on Weight and Race

Annual Reporting

Beginning in 2018, the School established metrics by which we will measure our performance.

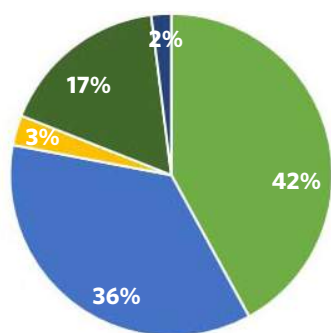
As a School we recognize that there is a growing need to improve how scientific research is evaluated and it is acknowledged that some of the traditional journal-based metrics (i.e. journal impact factor) have significant deficiencies for accurately evaluating the quality of research outputs. In the last decade, initiatives like the San Francisco Declaration on Research Assessment (DORA) have been initiated to advance and promote novel, practical and robust ways of evaluating scientific outputs of all kinds to more accurately assess the value and societal impact of research. The metrics used in the School's annual report were originally selected to allow us to track progression of traditional indicators as a record of research contributions. While better quantitative and qualitative ways to evaluate research quality and impact are starting to be implemented, there is currently no consensus on the most effective approaches to utilize for the long-term evaluation of all scientific outputs. As such, we have decided to keep a similar format for this year's report to allow us to compare with previous years. However, we will continue to monitor the recommendations of DORA and adopt novel criteria, associated metrics or narrative approaches as they become established and more formally recognized.

New Funding Success

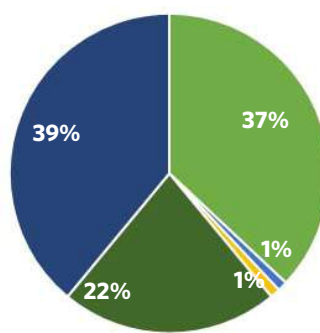
Research funding received by the School of Health and Exercise Sciences

Source	2018		2019		2020	
	Amount	Percent of total	Amount	Percent of total	Amount	Percent of total
Tri-council grants	\$999,354	42%	\$1,250,359	37%	\$1,137,450	63%
Other external	\$866,544	36%	\$20,000	1%	\$210,000	12%
Internal funding	\$61,995	3%	\$26,000	1%	\$349,570	19%
Contracts	\$415,000	17%	\$733,400	22%	\$268,045	6%
Federal/Provincial government	\$53,020	2%	\$1,317,404	39%	\$0	0%
Total	\$ 2,395,913		\$3,347,163		\$1,755,065	
Co-I funding (PI outside of School)	+\$5,059,993		+\$4,586,607		+\$7,608,776	

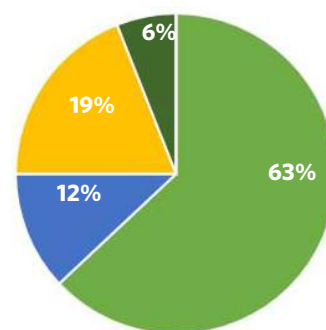
2018



2019



2020



New Publications

School of Health and Exercise Publications	2018	2019	2020
Total number peer-reviewed papers	143	102	109
Average per active research faculty member	9.5	6.9	7.7
Median per active research faculty member	9	5	6
Total peer review (co-authorship removed)	125	97	107
Publications in journals with an impact factor <2.5 *	37% (n=47)	38% (n=37)	15% (n=16)
Publications in journals with an impact factor 2.5-5.0	55% (n=70)	43% (n=42)	69% (n=73)
Publications in journals with an impact factor 5+	8% (n=11)	19% (n=18)	16% (n=18)
Publications in Q1 journals **	66% (n=85)	67% (n=60)	57% (n=61)
Publications in Q2 journals	20% (n=25)	20% (n=19)	28% (n=30)
Total 2020 citations ***	8,410	8,974	11,181

* Data obtained from journal citation reports
 ** Data obtained from Scimago
 *** Data obtained from Google Scholar



FEATURED ALUMNUS

Jeremy Walsh

Jeremy Walsh joined the Department Of Kinesiology within the Faculty of Science at McMaster University in 2020. Walsh completed his Honours BA from Wilfrid Laurier University in Kinesiology and Physical Education before completing his MSc and Ph.D. at Queen's University in Exercise Physiology. Following graduate school, Walsh completed a post-doctoral fellowship at the Children's Hospital of Eastern Ontario focus on pediatric brain health before joining UBC Okanagan in 2018 to work alongside Jonathan Little. Walsh's interest in human physiology was progressively built by deep curiosity to understand how the body works, and to use this knowledge to improve health. Walsh's overarching research interest is to investigate how behaviours that span the entire day (physical activity, sedentary behaviours, diet, and sleep) impact cognition and brain health. Walsh in turn uses this work to develop interventions for the improvement of brain health across the lifespan in health and disease. When not in the lab or classroom, Walsh can be found pursuing his love of the outdoors.

Appendix

PUBLICATIONS

1. Tymko MM, Hoiland RL, Vermeulen T, Howe CA, Tymko C, Stone R, Steinback CD, Steele A, Villafuerte F, Vizcardo G, Mujica RJF, Ainslie PN (2020). Global REACH 2018: The carotid artery diameter response to the cold pressor test is governed by arterial blood pressure during normoxic but not hypoxic conditions in healthy lowlanders and Andean highlanders. *Exp Physiol*, 105(10):1742-1757
2. Wright AD, Smirl JD, Bryk K, Jakovac M, van Donkelaar P, *Clinical journal of sport medicine* 30, A prospective transcranial Doppler ultrasound-based evaluation of the effects of repetitive subconcussive head trauma on neurovascular coupling dynamics, S53-S60
3. Drane AL, Atencia R, Cooper S, Feltrer Y, Calvi T, Strike T, Palmer C, Simcox S, Rodriguez P, Sanchez C, van Bolhuis H, Peck B, Eng J, Moittie S, Unwin S, Howatson G, Oxborough D, Stemberge MR, and Shave RE (2020) *American Journal of Veterinary Research* 2020, Evaluation of relationships between results of electrocardiography and echocardiography in 341 chimpanzees (*Pan troglodytes*); 81:6, 488-498
4. Arbour-Nicitopoulos KP, Bassett-Gunter RL, Leo J, Sharma R, Olds T, Latimer-Cheung AE, & Martin Ginis, KA (2020) *Disability and Health Journal*, A cross-sectional examination of the 24-hour movement behaviours in Canadian youth with physical and sensory disabilities. Epub ahead of print. doi:10.1016/j.dhjo.2020.100980.
5. Bain AR, Hoiland RL, Donnelly J, Fluck D, Sekhon M, Greiner J, DeSouza CA, Ainslie PN (2020) Cerebral metabolism, pro-oxidation, and pro-inflammation in severe passive heat stress; influence of arterial pH. *J Physiol*, 598 (5):943-954
6. Bean C, Dineen T, Jung ME (2020). Lessons Learned in Supporting Women with Prediabetes through Maintaining Diet and Exercise Behavior Changes Beyond a Diabetes Prevention Counselling Program. *Case Studies in Sport and Exercise Psychology*, 4(1), 21-31. DOI: doi:10.1123/cssep.2019-0028.
7. Bean C, Dineen T, Jung ME (2020). "It's a life thing, not a few months thing": Profiling Patterns of the Physical Activity Change Process and Associated Strategies of Women with Prediabetes Over 1-Year. *Canadian Journal of Diabetes*. 44(8), 701-710. DOI: doi:10.1016/j.jcjd.2020.09.001
8. Bean C, Dineen T, Locke S, Bouvier B, Jung ME (2020). An Evaluation of Reach and Effectiveness of a Diabetes Prevention Behaviour Change Program Situated in a Community Site. *Canadian Journal of Diabetes*. doi:10.1016/j.jcjd.2020.10.006
9. Berthelsen L, Fraser GM, Simpson LL, Vanden Berg ER, Busch SA, Steele AR, Meah VL, Vizcardo-Galindro GA, Villafuerte V, Gasho C, Willie CK, Tymko MM, Ainslie PN, Stemberge M, Moore JP, Steinback CD (2020) Highs and Lows of Sympathetic Neurocardiovascular Transduction: Influence of Altitude Acclimatization and Adaptation. *Am J Physiol*. 319(6):H1240-H1252
10. Bird J, Leacy J, Foster GE, Rickards C, Wilson R, O'Halloran K, Jendzjowsky N, Pentz B, Byman B, Thrall S, Skalk A, Hewitt S, Steinback C, Burns D, Ondrus P, Day T. Time course and magnitude of ventilatory and renal acid-base acclimatization. *Journal of Applied Physiology*. Doi: 10.1152/jappphysiol.00973.2020
11. Boulet LM, Vermeulen TD, Cotton P, Foster GE (2020) Influence of blood PO₂ on the stability of agitated saline contrast. *Journal of Applied Physiology*. 129: 1341-1347
12. Bremer E, Martin Ginis KA, Bassett-Gunter RL, & Arbour-Nicitopoulos KP (2020). Factors associated with participation in physical activity among Canadian school-aged children with Autism Spectrum Disorder: An application of the International Classification of Functioning, Disability and Health. *International Journal of Environmental Research and Public Health*, 17, 5925. doi:10.3390/ijerph17165925
13. Brown CV, Boulet LM, Vermeulen TD, Sands SA, Wilson RJA, Ayas NT, Floras JS, Foster GE. (2020) Angiotensin II-type-I receptor antagonism does not influence the chemoreceptor reflex or hypoxia-induced central sleep apnea in men. *Frontiers in Neuroscience*. 14:382. Doi: 10.3389/fnins.2020.00382
14. Brown DM, Arbour-Nicitopoulos KP, Martin Ginis KA, Latimer-Cheung AE, & Bassett-Gunter RL (2020). Examining the relationship between parent physical activity support behaviour and physical activity among children and youth with autism spectrum disorder. *Autism*. Epub ahead of print. doi.org/10.1177/1362361320922658
15. Busch SA, Moore JP, Simpson LL, Sobierajski F, Riske L, Stemberge S, Ainslie PN, Willie CK, Steinback CD (2020) Global REACH: Assessment of brady-arrhythmias in Andeans and Lowlanders during apnea at 4330m. *Frontiers Physiol*, 10:1603. Epub.
16. Busch SA, Simpson LL, Sobierajski F, Riske L, Willie CK, Ainslie PN, Stemberge S, Moore JP, Steinback CD (2020) Muscle Sympathetic Reactivity to Apneic and Exercise Stress in High-Altitude Sherpa. *Am J Physiol*, 318 (3):R493-R502
17. Caldwell HG, Hoiland RL, Barak OF, Mijacika T, Burma JS, Dujic Z, Ainslie PN (2020) Alterations in resting cerebrovascular regulation do not affect reactivity to hypoxia, hyperoxia or neurovascular coupling following a SCUBA Dive. *Exp Physiol*, 105(9):1540-1549
18. Caldwell HG, Coombs GB, Howe CA, Hoiland RL, Patrician P, Lucas SJE, Ainslie PN (2020) Evidence for Temperature-Mediated Regional Increases in Cerebral Blood Flow during Exercise. *J Physiol*, 598 (8):1459-1473
19. Caldwell HG, Coombs GB, Rafiei H, Ainslie PN, Little JP (2020) Hourly staircase sprinting exercise "snacks" improve femoral artery shear patterns but not flow-mediated dilation or cerebrovascular regulation: A pilot study. *Appl Physiol Nutr Metab*. doi: 10.1139/apnm-2020-0562.
20. Calverley TA, Ogoh S, Marley C, Steggall M, Marchi N, Brassard P, Lucas SJE, Cotter JD, Roig M, Ainslie PN, Wisloff U,

- Bailey DM (2020). HIITing the brain with exercise; mechanisms, consequences and practical recommendations. *J Physiol*, 598(13):2513-2530
21. Carr MJR, Ainslie PN (2020) Shearing the brain. *JAP*, 129(3):599-602
 22. Carr MJR, Hoiland RL, Caldwell HG, Coombs GB, Howe CA, Tremblay JC, Green DJ, Ainslie PN (2020) Internal carotid and brachial artery shear-dependent vasodilator function in young healthy humans. *J Physiol*, 598(23):5333-5350
 23. Cheyne WS, Harper MI, Gelinas JC, Sasso JP, Eves ND (2020) Mechanical Cardiopulmonary Interactions During Exercise in Health and Disease. Invited review for the Highlighted Topic: Mechanisms of Respiratory Modulation of Cardiovascular Control. *Journal of Applied Physiology* 128(5):1271-1279.
 24. Coombs GB, Tremblay JC, Shkredova DA, Carr JMR, Wakeham DJ, Patrician A, Ainslie PN (2020) Distinct contributions of skin and core temperatures to flow-mediated dilation of the brachial artery following passive heating. *JAP*, 130(1):149-159
 25. Eather N, Beauchamp MR, Rhodes RE, Diallo TMO, Smith JJ, Jung ME, Plotnikoff RC, Noetel M, Harris N, Graham E, Lubans DR (2020). Development and Evaluation of the High Intensity Interval Training Self-efficacy Questionnaire (HIIT-SQ). *Journal of Sport and Exercise Psychology*. 42(2), 114-122. doi:10.1123/jsep.2019-0166
 26. Eather N, Harris N, Jung ME, Lubans D (2020) Integrating high intensity interval training into the workplace: Work-HIIT pilot RCT. *Scandinavian Journal of Medicine and Science in Sports*. 30(12):2445-2455. doi:10.1111/sms.13811
 27. Milnes EL, Calvi T, Feltrer Y, Drane AL, Howatson G, Shave RE, Curry BA, Tremblay JC, Williams DL (2020) "FACTORS AFFECTING TEAR PRODUCTION AND INTRAOCULAR PRESSURE IN ANESTHETIZED CHIMPANZEES (PAN TROGLODYTES)," *Journal of Zoo and Wildlife Medicine*, 51(3), 687-690
 28. Colino FL, Williams CC, Hassall CD, Binsted G, Krigolson OE (2020) The impact of wellness on neural learning systems, *Neuroscience letters*
 29. Gainforth HL, Hoekstra F, McKay R, McBride CB, Sweet SN, Martin Ginis KA, Anderson K, Chernesky J, Clarke T, Forwell S, Maffin J, McPhail L, Mortenson WB, Scarrow G, Schaefer L, Sibley KM, Athanasopoulos P, & Willms R (2020) Integrated Knowledge Translation (IKT) guiding principles for conducting and disseminating spinal cord injury (SCI) research in partnership. *Archives of Physical Medicine and Rehabilitation*. Epub ahead of print. doi:10.1016/j.apmr.2020.09.393
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2020 SUCCESSFUL PRINCIPAL INVESTIGATOR GRANTS

Researcher	Amount	Funding Agency
Ali McManus	\$50,625	Industry
Brian Dalton	\$125,000	UBC Internal
Brian Dalton	\$21,570	UBC Internal
Neil Eves	\$50,000	Canadian Lung Association
Chris McNeil	\$20,000	SHES Internal
Chris McNeil	\$20,000	Alberta Sport Science Society
Glen Foster	\$35,000	UBC Internal
Glen Foster	\$15,000	Mitacs
Jennifer Jakobi	\$20,000	SHES Internal
Jennifer Jakobi	\$145,000	CIHR
Jennifer Jakobi	\$110,000	Egg Farmers of Canada
Jennifer Jakobi	\$150,000	MRC-CIHR Diabetes Team Grant
Jennifer Jakobi	\$8,000	UBC internal
Jonathan Little	\$25,000	SSHRC
Jonathan Little	\$120,000	UBC Internal
Jonathan Little	\$5,000	NSERC
Jonathan Little	\$20,000	Private-Telus
Mary Jung	\$22,420	Donor
Mary Jung	\$240,000	NSERC
Neil Eves	\$120,000	NSERC
Paul van Donkelaar	\$30,000	Djavid Mawafahian Centre for Brain Health
Paul van Donkelaar	\$252,450	CIHR
Phil Ainslie	\$200,000	NSERC



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