

14th Annual Muscle Health Awareness Day

Speaker Research Profiles



Dr. Tyler Churchward-Venne, McGill University

Dr. Churchward-Venne is an Assistant Professor in the Department of Kinesiology and Physical Education at McGill University. He received his PhD in Kinesiology from McMaster University.

Dr. Churchward-Venne's research focuses on skeletal muscle protein metabolism and how it is regulated in response to nutrition and physical (in)activity. He is particularly interested in the mechanisms of skeletal muscle loss in humans, which occurs with aging and muscle disuse, and identifying optimal lifestyle interventions focused on exercise and nutritional approaches to protect and restore skeletal muscle mass and strength across the lifespan. His research incorporates stable isotope tracer methods to obtain dynamic measures of muscle protein turnover (i.e., protein synthesis and breakdown) in-vivo in humans. Some of his more recent research has focused on the impact of different sources of dietary protein on myofibrillar and mitochondrial protein synthesis rates following a session of concurrent resistance- and endurance-type exercise. The ultimate aim of his research program is to contribute to improving the overall health, well-being, and physical functioning of our society.



Dr. Michaela Devries-Aboud, University of Waterloo

Dr. Micheala Devries-Aboud is an Associate Professor at the School of Kinesiology and Health Sciences at the University of Waterloo. She received her PhD in Medical Sciences (Cell Biology and Metabolism) from McMaster University.

Dr. Devries-Aboud's research focuses on intramyocellular lipids (IMCL) which are elevated in obese individuals and this has been related to insulin resistance; however, IMCL are also elevated in athletes who are highly insulin sensitive. In her basic research program Dr. Devries-Aboud is interested in examining whether differences in the localization of IMCL within the muscle fibre and/or co-location of IMCL with mitochondria are related to differences in insulin sensitivity and fat metabolism to better our understanding of the physiological and pathological role of IMCL. She also examines whether there are differences in these relationships between the sexes. In her clinical research program she tests the effects of exercise and nutrition strategies on muscle metabolism, insulin sensitivity and muscle mass, strength and function in pre-diabetic and older populations to help prevent the development of type II diabetes and sarcopenia.



Dr. Heather Edgell, York University

Dr. Heather Edgell is an Associate Professor at the School of Kinesiology and Health Science, Faculty of Health at York University. Dr. Edgell received her PhD in Kinesiology from the University of Waterloo. The Edgell lab investigates human cardiovascular and autonomic function and will determine mechanisms behind the prevalence and lethality of cardiovascular disease in women to use this information to find potential avenues of treatment. In particular, the lab focuses on 1) autonomic, cardiovascular, and respiratory responses to physiological stressors and the changes in those responses due to sex and/or female sex hormones, 2) the symptoms of postural orthostatic tachycardia syndrome (POTS) throughout the menstrual cycle, and 3) cardiovascular and autonomic function in ME/CFS and long COVID.

Dr. Edgell is also embarking on important research with the Toronto Rumsey Centre and Sunnybrook hospital investigating cardiac rehabilitation in male and female patients.



Dr. Ewan Goligher, University of Toronto

Dr. Goligher is an Assistant Professor in the Interdepartmental Division of Critical Care Medicine at the University of Toronto and he is a Clinician Scientist at the University Health Network. After studying biochemistry and medicine at the University of British Columbia, he completed his training in internal medicine and critical care medicine at the University of Toronto. He subsequently earned a doctoral degree in Physiology from the University of Toronto, focusing on mechanisms of diaphragmatic dysfunction during mechanical ventilation.

His research program is focused on characterizing the mechanisms and impact of injury in the lung and diaphragm during mechanical ventilation, and on employing innovative clinical trial designs to test lung and diaphragm-protective ventilation strategies.

Dr. Panagiota (Nota) Kentrou, Brock University



Dr. Panagiota (Nota) Kentrou is a Professor and Chair of the School of Kinesiology, Faculty of Applied Health Sciences, Brock University. Dr. Kentrou received her PhD from the Universite de Montreal.

Dr. Klentrou is an exercise physiologist who uses applied and basic science approaches to study human performance and health implications of sport training in children and youth.

Supported by NSERC, CIHR and various sports agencies, her current research is identifying the cellular mechanisms that explain how exercise and diet affect bone development and lifelong bone health. With more than 120 publications, Dr. Klentrou is a leader in exercise physiology in Canada. She is involved with many health and sport organizations including the Canadian Society for Exercise Physiology (CSEP), Osteoporosis Canada, and the International Gymnastics Federation.

Dr. Amy Kirkham, University of Toronto



Dr. Amy Kirkham is an Assistant Professor of Clinical Cardiovascular Health, at the Faculty of Kinesiology and Clinical Health Sciences, University of Toronto. Dr. Kirkham received her PhD in Rehabilitation Sciences from the University of British Columbia.

The overarching goal of her research program is to use a multi-disciplinary approach that leverages cutting edge, non-invasive, imaging techniques to study precisely prescribed, mechanistically targeted, lifestyle interventions to prevent and ameliorate cardiovascular dysfunction and disease, with an emphasis on women. A primary focus is on cardiovascular disease in breast cancer survivors, the top causes of death of women in Canada.

While exercise is a key diagnostic and therapeutic tool, she takes a multi-disciplinary approach in her lab to characterize and treat individuals with cardiac and/or oncologic disease. Established and novel magnetic resonance and echocardiographic imaging techniques, cardiopulmonary exercise testing and venipuncture are used to investigate cardiac, vascular and skeletal muscle mechanisms of exercise intolerance and to quantify the therapeutic benefits of targeted clinical exercise and dietary interventions on these systems. Intervention approaches of interest include acute and chronic exercise, calorie restriction, intermittent fasting, and ketogenic nutrition approaches, and multi-dimensional cardiac rehabilitation.

Dr. David MacLean, Northern Ontario School of Medicine



Dr. David MacLean is a Professor of Physiology at the Northern Ontario School of Medicine University with a cross appointment in Biology at Laurentian University. Dr. MacLean received his PhD in Biophysics from the University of Guelph and did post-doctoral training at the Copenhagen Muscle Research Centre and The Penn State College of Medicine.

His research is focused on the better understanding of cardiovascular and skeletal muscle physiology as it pertains to the regulation of blood flow under conditions of hypoxia, vascular insufficiency and end stage disease states such as heart disease and cancer. Dr. MacLean employs both human and animal models to examine these questions and utilizes a unique procedure, the microdialysis technique, to directly sample and quantitate compounds in the interstitial space, hence investigating physiological parameters directly at the tissue level. He is also actively investigating the role that cancer and chemotherapy play in the development of muscle cachexia as well as possible countermeasures to mitigate these effects. An associated area of research, Dr. MacLean recently initiated a project examining the effects that microgravity has on the development muscle wasting. These studies will hopefully provide new insights into the regulation and potential countermeasures associated with health and disease. Dr. MacLean has received funding from NSERC, CIHR, Ontario Institute for Cancer Research, Northern Cancer Foundation and the Canadian Space Agency.

Dr. Jamie Melling, Western University



Dr. Jamie Melling is an Associate Professor in the School of Kinesiology at Western University. Dr. Melling received his PhD from Western University.

The aim of his research program is to determine which mode of chronic exercise (aerobic and/or resistance) and accompanying insulin treatment regime, leads to the lowest risk of hypoglycemia development and largest improvement in overall cardiovascular health in patients with Type 1 Diabetes. His laboratory has demonstrated the protective effects of combined forms of exercise on cardiovascular health using a preclinical model of Type 1 diabetes. Dr. Melling's research shows that this type of combined exercise (resistance/aerobic) is more beneficial than intensive insulin therapy alone, the current standard for prescribed treatment to patients with T1DM. The therapeutic value of intensive insulin therapy is a very controversial topic in diabetes care, a concern that is highlighted by clinical findings that intensively insulin treated T1DM patients often develops insulin resistance. Dr. Melling is confident that his work will establish that insulin resistance is the key determinant to cardiovascular disease onset, and combined exercise is the most effective means to alleviate the development of insulin resistance and cardiovascular disease in T1DM.