

# 5<sup>th</sup> Annual **PERFORM** Centre

**RESEARCH CONFERENCE**

**HEALTH AND TECHNOLOGY**

**May 17, 2018**

Oscar Peterson Concert Hall  
Concordia University  
Montreal, Canada





## THE CHAIR OF THE PERFORM SCIENTIFIC EVENTS AND COMMUNICATIONS COMMITTEE

As Chair of the Scientific Events and Communications committee it is my great pleasure to welcome you to our annual PERFORM Centre Research Conference. The theme this year, of technology and health, is very broad but you will find that a common theme linking each of our three plenary sessions is *movement*.

Actigraphy in the sleep and awake states reveals different indices of health and predicts a variety of outcomes that are vital for healthy functioning. Mobile brain imaging provides a very different view of how individuals in good health or with neurodegenerative conditions function in real time while in motion. Finally, wearable sensors provide real-time information about physical functioning of the individual, in realistic, everyday settings.

In general, our talks this year reflect the growing interest in assessing health indicators in everyday, routine contexts. This approach also typifies the multidisciplinary approaches to health and prevention research that the PERFORM Centre values and supports.

On this note, I wish you a stimulating and enjoyable conference!

**Karen Li**

Chair, PERFORM Scientific Events and Communications



## THE INTERIM SCIENTIFIC DIRECTOR

Welcome to the 5<sup>th</sup> Annual PERFORM Centre Research Conference at Concordia University.

*Technology* is a broad term, and so is *health*. However, in the past two decades we have experienced major technological developments that have changed our conversation, including the advent of functional MRI (fMRI), which provides a tool for observing real-time representation of thoughts and behaviours in brain anatomy. The development of personal monitoring devices has also enabled more awareness and facilitated objective monitoring of lifestyle and behaviour.

Today, a combination of these methods are used to chart the wellness profile of an individual. This integrated approach serves as a roadmap to enabling research to predict “healthy life” at the individual level – which is the future of preventive health.

From exploring quickly-developing trends in the use of wearable devices to conduct health research, to capitalizing on movement to better understand sleep patterns as well as awake state activity patterns, it is my hope that today’s event will significantly open up avenues of inquiry into how we navigate and process multi-sensory information.

This research conference is made possible through the generous support of Concordia University, our valued partner organizations and the hard work of the PERFORM Centre’s dedicated staff. I would like to thank them for making this day a success.

I would also like to thank all the invited speakers for being with us today, and express my gratitude to Dr. Karen Li who chaired the scientific committee that brought to us this outstanding program.

All the best on this day of discovery!

**Habib Benali**

Interim Scientific Director, PERFORM Centre



# SCIENTIFIC PROGRAM

7:45-8:15 Registration and light breakfast  
Foyer of Oscar Peterson Hall

8:15-8:30 Opening of conference, Habib Benali, Interim Scientific Director,  
PERFORM Centre  
Welcome remarks, Christophe Guy, VP Research and  
Graduate Studies

## SESSION 1

8:30-8:35 Chair: Lisa Kakinami / Thanh Dang-Vu  
Oscar Peterson Concert Hall

8:35-9:20 Speaker #1 Rachel Colley  
"A decade of measuring physical activity using accelerometers in  
the Canadian Health Measures Survey – What have we learned?"

9:20-10:05 Speaker #2 Adam Spira  
"Disturbed sleep in later life: Links to cognitive, functional, and  
neuroimaging outcomes"

10:05-10:50 Coffee break for all registrants and Poster Viewing\*  
Loyola Chapel

## SESSION 2

10:50-10:55 Chair: Karen Li  
Oscar Peterson Concert Hall

10:55-11:40 Speaker #3 Daniel Ferris  
"How much do we use our brains during walking and running?"

11:40-12:25 Speaker #4 Anat Mirelman  
"The role of the prefrontal cortex in automaticity of movement  
in neurodegeneration - findings from fNIRS studies."

12:25-13:55 Lunch for all registrants and poster viewing\*  
Loyola Chapel

### SESSION 3

13:55-14:00	Chair: Najmeh Khalili-Mahani Oscar Peterson Concert Hall
14:00-14:45	Speaker #5 Martina Mancini "Wearable Devices to Characterize and Treat Gait Disturbances"
14:45-15:30	Speaker #6 Miriam Vollenbroek-Hutten "Health and Technology: Where we are and where to go"
15:30-15:35	Group stretch
15:35-16:00	Presentation of Ed Whitlock Award Axel Bergman, Associate Director, Research Development & Strategic Initiatives, PERFORM Centre  Presentation of Ali Ahmed Shams Award Gabriella Conte, Development Officer, Major Gifts, Advancement and Alumni Relations, Concordia University  Presentation of Scientific Poster Competition Awards Karen Li, Chair Scientific Events and Communications Committee, PERFORM Centre
16:00-16:15	Closing remarks, Justin Powlowski, Associate VP Strategy, Operations
16:15-17:15	Reception Foyer of Oscar Peterson Concert Hall

\*Optional tour of PERFORM available during the breaks.

Signup required the morning of the event in the foyer of Oscar Peterson Concert Hall.

# INVITED SPEAKERS



**Rachel Colley, PhD** is currently working as a researcher in the Health Analysis Division at Statistics Canada. Her research is focused on examining the associations between physical activity, sedentary behaviour

and sleep on health in children, youth, and adults. She has been working with the accelerometer-measured physical activity data of the Canadian Health Measures Survey at Statistics Canada since 2007. Colley has published over 50 peer-reviewed publications and has given 47 invited or academic conference presentations. She previously worked as a research scientist with the Healthy Active Living and Obesity Research Group (HALO) at the Children's Hospital of Eastern Ontario Research Institute and

held an assistant professor appointment at the University of Ottawa in the Faculty of Medicine, Department of Pediatrics. She also served as the scientific officer for the Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth (2009-2013). Colley completed her PhD at the Queensland University of Technology in Australia in 2007. Her thesis work examined compensatory response to exercise interventions in obese adults.



**Adam P. Spira, PhD** is an associate professor in the Department of Mental

Health at the Johns Hopkins Bloomberg School of Public Health. He has a joint appointment in the Department of Psychiatry and Behavioral Sciences at the Johns Hopkins School of Medicine and is a core faculty member of the Johns Hopkins Center on Aging and Health. His research focuses on the association of sleep disturbance with cognitive and functional

decline and neuroimaging outcomes, with a particular interest in Alzheimer's disease. He is principal investigator or co-principal investigator of several National Institute on Aging-funded grants in these domains.



**Anat Mirelman, PhD** is a senior researcher in the Neurological Institute at Tel Aviv Medical Center and a senior lecturer at the Sackler School of Medicine and Sagol School of Neuroscience at Tel Aviv University. She is also the director of the Laboratory for Early Markers of Neurodegeneration and the associate director of the Center for the study of Movement, Cognition and Mobility. In her roles, Mirelman

is privileged to address question relating to motor and cognitive function in ageing and disease, understanding mechanisms of neurodegeneration and exploring novel techniques to address them. In recent years her work focused on understanding motor-cognitive interactions and the consequences of the decline of these connections in ageing and neurodegenerative diseases. This work includes assessing motor-cognitive interactions during gait using wearable imaging techniques such as Functional near Infra-Red Spectroscopy (fNIRS). This work has led to the understanding of the role of the Dorso-Lateral Pre Frontal Cortex (DLPFC) in monitoring and enabling dual task performance, the impact of task difficulty

levels on neural activation and performance and the impact of age and disease on neural activation and neural plasticity. In the past 10 years, Mirelman has led the 'Genetics in Parkinson's Disease Project' at TASMC. The goal of this project is to identify early subtle clinical markers that could indicate disease processes. As such clinical and biological markers are evaluated in populations at risk. Using sensitive gait assessments, she and her team have been able to identify subtle gait alterations in the pre-clinical phase of Parkinson's. This work has led to the exploration of the role of genetics in gait and to the examination of potential phenotypic differences that could lead to early identification of disease.

# INVITED SPEAKERS



**Daniel P. Ferris, PhD** is the Robert W. Adenbaum Professor of Engineering Innovation at the University of Florida

J. Crayton Pruitt Family Department of Biomedical Engineering. He studies how to integrate machines and humans to improve human performance and mobility in health and disability. Specific research projects focus on robotic lower limb exoskeletons, bionic lower limb prostheses, and mobile brain imaging with high-density electroencephalography. Ferris completed his BS from the University of

Central Florida, his MS from the University of Miami, and his PhD from University of California, Berkeley. After earning his doctoral degree, he worked as a post-doctoral researcher in the UCLA Department of Neurology and the University of Washington Department of Electrical Engineering. Ferris spent 16 years at the University of Michigan until recently relocating to the University of Florida in summer 2017.



**Martina Mancini, PhD** is assistant professor of neurology

at Oregon Health & Science University and co-director of the Balance Disorders Laboratory. She is a bioengineer focusing on using technologies to characterize movement and brain activity to determine the role of the central nervous system in integrating sensory information in individuals with movement or cognitive impairments. These

novel, objective metrics of movement, combined with neurophysiological information, allows for the determination of optimal variable(s) to integrate with biofeedback, resulting in more effective rehabilitation interventions. This approach will bring new possibilities to monitor and condition functional mobility on a daily basis directly at home.





**Miriam Vollenbroek-Hutten, PhD** studied biomedical sciences at the University in Nijmegen in the Netherlands. She obtained her PhD at the University of Twente, titling her thesis “Lumbar dynamometry, useful in the treatment of patients with chronic low back pain”. Currently she is working at Ziekenhuis Groep Twente

as head of the research office, as professor at the University of Twente where she holds a chair in Technology Supported Coaching and Training, and as chairperson of the regional cooperation Vitaal Twente. Her ambition is to contribute significantly to the health and well-being of those with chronic diseases and older adults by using technology. As such, the goal of her research activities is to design tools for unobtrusive monitoring of everyday functioning, motivational strategies for coaching and training. She also develops new methods for proper evaluation of technology supported care concepts as well as research

into adoption, use and non-use of telemedicine system when implemented in everyday life. Vollenbroek-Hutten supervises a research staff of people with multidisciplinary backgrounds, of whom 14 have doctoral degrees. She has more than 15 years of experience with management of large projects in Europe, and is actively involved in the European Innovation Platform on Active and Healthy Ageing as coordinator of the A3 physical activity group and as representative for the reference site 'Twente'. She is (co)-author of over 100 peer-reviewed scientific papers. Her H-index is 29.

# PERFORM AWARDS AND FELLOWSHIPS

## Ed Whitlock PERFORM Graduate Student Scholarship Award



**The Ed Whitlock Award**, an annual \$5,000 scholarship, is given to a student enrolled in Concordia's MSc or PhD program whose research is related to improving the quality of life of seniors through physical activity. Whitlock, a multiple world-record breaking octogenarian marathoner who passes away in 2017 after a battle with prostate cancer, made a yearly donation to the award.

Ed Whitlock was a consummate competitive marathon runner until his passing at 86 years old in 2017. For the last 20 years of his life, he consistently broke every long distance record in his age group. His record of a sub-three hour marathon by someone over 70 years of age still stands, and is regarded as one of the great athletic achievements of our time. Ed continued to pursue record-breaking runs with his final record beating the 4-hour mark at 85 years old. He was an early adopter of PERFORM's mission and encouraged researchers to further investigate the benefits and risks of wellness programs for older adults.

The Ed Whitlock Award is an annual \$5,000 scholarship given to a student registered at Concordia University in either the MSc or PhD program whose research is related to helping seniors improve their quality of life through active living.

**Winner to be announced.**

## Ali Ahmed Shams Award



**This award is funded by Ali Ahmed Shams**, an inspiring 10 year-old young man living in Pakistan who wanted to give back to Concordia in honour of the education his father received during his time at the university. Owais Uddin Ahmed (BComm 79), Ali's father, overcame many hardships to obtain a university degree in order to provide for his family. When Ali

and his father visited Concordia in 2017, Ali was struck by the academic research mission of the PERFORM Centre, and being passionate about science, was motivated to create and fund this award in order to help lift the financial burden on students receiving an education today.

**Winner to be announced.**

# POSTER PRESENTATIONS

- 1 Fragmentation of the Rest-Activity Cycle in Young, Sedentary Nappers**  
Abi-Jaoude, J.; Mograss, M.; Lim, A. ; Frolova, E.; Suliteanu, J.; Ricchiuti, J.; Dang-Vu, T.
- 2 An amyloid ligand-free optical retinal imaging method to predict cerebral amyloid PET status**  
Jean-Paul Soucy; Claudia Chevretil; Jean-Philippe Sylvestre; Jean Daniel; Marc-André Rhéaume; Sylvain Beaulieu; Alain Robillard; Céline Chayer; Pedro Rosa-Neto; Sulantha S. Mathotaarachchi; Ziad S. Nasreddine; Serge Gauthier; Frédéric Lesage
- 3 Associations between EEG cross-frequency-coupling during sleep and declarative learning in healthy older adults: A pilot study**  
Oren Weiner; Jordan O'Byrne, Julia Giraud, Despina Bolanis, Lukia Tarelli, Lea Homer; Victoria Yue, Katherine Walker; Rosette Tamaddon, Roxanne Carbone, Katherine Chhuon, Kenza Eddebarh, Julia Lumia, Dylan Smith, Nathan Cross, & Thien Thanh Dang-Vu
- 4 Maternal red blood cell 22:5 n-6 may not be a marker of low 22:6 n-3 status in young infants**  
Ye Maggie Yuan, Sherry Agellon, Catherine A. Vanstone, Hope A. Weiler.
- 5 Absolute Quantification of Cerebrovascular and Metabolic Effects of Aerobic Fitness: Cross-Sectional and Intervention Data**  
Catherine Foster, Jessica Steventon, Michael Germuska, Hannah Chandler, Kevin Murphy, Richard Wise
- 6 Inter-observer reliability of Street View feature in Google Earth for virtual assessment of environmental obesogenicity**  
Anna Smyrnova; Tracie A. Barnett; Andrea Van Hulst; Lisa Kakinami
- 7 How does total sleep deprivation affect brain activity and performance?**  
Florence B Pomares; Aude Jegou; Dylan Smith; Ümit Aydin; Christophe Grova; Thien Thanh Dang-Vu
- 8 Are "Serious Games" too stressful to be beneficial for older adults?**  
Kate Li; Atousa Asadi, Mahsa Mir Gholami, Najmeh Khalili-Mahani
- 9 Salivary immunoglobulin-A individual response patterns to cold pressor test**  
Ghazal Mohammadi; Nhat Phi Pham; Marylen Youssef; Azadeh Ghassemi; Tanya Babiuk-Henry; Catalina Marysol Carvajal Gonczi; Peter J. Darlington
- 10 Clothing in the Everyday Life of Persons with a Physical Disability: A Scoping Review**  
Alida Esmail; Frédérique Poncet; Annie Rochette; Claudine Auger; Christophe Billebaud; Éline de Guise; Isabelle Ducharme; Eva Kehayia; Delphine Labbé; Noëmi Dahan-Oliel; Isabelle Lessard; Olivier Vermeersch; Bonnie Swaine;
- 11 The effect of adulthood- versus childhood-onset obesity on cardiorespiratory fitness and skeletal muscle strength in adults**  
Abdulrahman Dera; Jessica Murphy; José A. Morais; Sylvia Santosa
- 12 Improving the Accuracy of Motor Imagery-Based Brain-Computer Interface for Locked-in Patients**  
Golnar Kalantar; Mahsa Mirgholami Mashhad; Arash Mohammadi; Amir Asif
- 13 Variables associated with detection and distraction by food on a clinical sample of people with obesity**  
Barbara Mello Barbosa; Yasmin Moreira Silva Souza; Camila Martins de Azambuja; Lisiane Bizarro

- 14 Momentary assessment of 'stress' using a wearable physiological monitoring system**  
Atousa Asadi; Kate Li; Habib Benali; Najmeh Khalili-Mahani
- 15 Mobile augmented reality for neurosurgical navigation**  
Étienne Léger; Simon Drouin; D. Louis Collins; Marta Kersten-Oertel
- 16 Auditory discourse processing in bilinguals: an ERP analysis**  
Maude Brisson-McKenna; Natalie Phillips; Angela Grant
- 17 Weight bias internalization: Sex differences and relationships with mental health**  
Erica Szwimer; Stefanie Marchione; Lisa Kakinami; Angela Alberga
- 18 High resolution atlas of the venous brain vasculature from 7T quantitative susceptibility**  
Yvonne Wanner; Audrey P. Fan; Anna-Thekla Schmidt; Sophia Grahl; Uta Schneider; Arno Villringer; Christopher J. Steele; Christine L. Tardif; Pierre-Louis Bazin; Claudine J. Gauthier;
- 19 Grannies Prefer to play for fun not for the brain**  
Mahsa Mirgholami Mashhad; Kate Li; Anna Smyrnova; Atousa Assadi; Najmeh Khalili-Mahani
- 20 Locomotor skills proficiency in second-grade children: Evaluation of a two-year fundamental movement skills intervention.**  
Matthew Miller; Chang Ki Hong; Richard DeMont
- 21 Cook to support elderly in meal preparation: Clinicians perspective**  
Yaddaden, A.; Gagnon-Roy, M.; Couture, M.; Lussier, M.; Belchior, P.; Bottari, C.; Pigot, H.; Giroux, S.; Bier, N.
- 22 Facilitating factors and barriers to community living for elderly at risk of self-neglect: Perception of the implicated actors**  
Andrée-Anne Phan; Bandaly, Soela; Couture, Mélanie; Giroux, Sylvain; Lussier, Maxime; Bottari, Carolina; Pigot, Hélène; Belchior, Patricia; Bier, Nathalie
- 23 Analyzing male and female hockey players during a stop-and-go transition skating task**  
Aiden Hallihan; Philippe Renaud; Shawn Robbins; David Pearsall
- 24 Impact of availability of context on speech perception under noisy conditions**  
Jean-Louis Rene; Alexandre Chauvin; Natalie Phillips
- 25 Association between psychiatric disorders and vulnerability to stress-related asthma attacks**  
Claudia Gemme; Simon L. Bacon; Anda Dragomir; Kim L. Lavoie
- 26 Do body composition phenotypes improve cardiometabolic risk prediction above weight status alone?**  
Martha Zaverdinos; Jessica Murphy; Sylvia Santosa; Lisa Kakinami
- 27 Accelerating Reproducibility Estimations with Collaborative Filtering**  
Soudabeh Barghi; Tristan Glatard
- 28 Oxygen metabolism within hubs of resting-state brain functional connectivity**  
Fatemeh Razavipour; Kangjoo Lee; Claudine Joëlle Gauthier; Christophe Grova
- 29 Resting state patterns measured with Magnetoencephalography: Biomarkers for surgical outcome in epilepsy?**  
Ümit Aydın; Giovanni Pellegrino; Obai Bin Ka'b Ali; Jean-Marc Lina; Eliane Kobayashi; Christophe Grova
- 30 A multimodal prehabilitation program in hepato-pancreato-biliary cancer patients awaiting surgery: Preliminary results**  
Popi Kasvis; Tram Bui; Robert D. Kilgour; Franco Carli; Antonio Viganò

# POSTER PRESENTATIONS

- 31 Incorporating Temporal Priors in Time-Delay Estimation in Ultrasound Elastography**  
Md Ashikuzzaman; Claudine Gauthier; Hassan Rivaz
- 32 Dynamic functional brain connectivity differences between schizophrenia and healthy control subjects using resting-state fMRI**  
Fatemeh Mohammadi; M.O. Ahmad; M.N.S Swamy
- 33 Associations Between Leisure Time Physical Activity And Depressive Symptoms In Patients With Asthma**  
Béland Mélanie; Lavoie, Kim L.; Bacon, Simon L
- 34 Effect of an orthopedic insole on ankle stability in ice skating**  
Étienne Marquis; Stéphanie Bergeron; Félix Chénier
- 35 A Postural Paradigm for the Dual Mechanisms of Control Model**  
Laurence Lai; Kesaan Kandasamy; Nancy St-Onge, Karen Li
- 36 Regional Adipose Tissue Immune Cell Profiles in Childhood-Onset and Adult-Onset Obesity**  
Jessica Murphy; Vi Dam; Kerri Delaney; José A. Morais; Michael Tsoukas; Sylvia Santosa
- 37 Are Headforms A Poor Surrogate for Helmet Fit?**  
Kristie Liu; Daniel I. Aponte; David J. Greencorn; Shawn M. Robbins; David J. Pearsall
- 38 Mind over medication: Using placebo machines and positive suggestion to treat behavioural disorders**  
Jay Olson; Samuel Veissière; Michael Lifshitz; Michael Stevens; Amir Raz
- 39 Spatial and Temporal Cross-Correlation for Time-delay Estimation in Ultrasound Elastography**  
Morteza Mirzaei; Amir Asif; Maryse Fortin; Hassan Rivaz
- 40 What are the relationships among cerebrovascular reactivity, grey matter volume and markers of successful aging?**  
Brittany Intzandt; Dalia Sabra; Laurence Desjardins-Crepeau; Saïd Mekary; Louis Bherer; Richard D. Hoge; Chris J. Steele; Claudine J. Gauthier
- 41 Balance Improvements in Second Grade Children after 2-year Fundamental Movement Skills-Development Program**  
Chang Ki Hong; Matthew Miller; John Alexander Jimenez Garcia; Richard DeMont
- 42 Prevalence of Inadequate Nutritional Intake Among Adults Living with Arthritis**  
Prince Kevin Danieles; Lisa Kakinami; Matthew Parrott; Kim Arrey; Hugues Plourde; Beth Armour; Guylaine Ferland; Théa A. Demmers
- 43 Hierarchical Sparse Autoencoders for Alzheimer's Disease Classification in Amyloid PET Imaging Biomarker**  
Emimal Jabason; M. Omair Ahmad; M.N.S Swamy
- 44 Ego Network Exploration with Heatmaps: A Case Study on Social Networks and Pediatric Obesity**  
Philippe Boileau; Lea Popovic; Tracie A. Barnett; Melanie Henderson; Lisa Kakinami

- 45 **Sex Differences in a Process-Based Assessment of Physical Literacy**  
Matthew Miller; John Alex Jimenez Garcia; Chang Ki Hong; Richard DeMont;
- 46 **Reciprocal Modulation of Helper Th1 and Th17 Cells by the  $\beta$ 2-Adrenergic Receptor Agonist**  
Tabatabaei Shafiei, Mahdieh; Burchell-Reyes, Kelly; Darlington, Peter J;
- 47 **Relationship of pure-tone and speech-in-noise measures of hearing to scores on the Montreal Cognitive Assessment Scale (MoCA): Sex differences and relation to other neuropsychological tests**  
Faisal Al-Yawer; Halina Bruce; Karen Z. Li; M. Kathleen Pichora-Fuller; Natalie Phillips
- 48 **Debugging the Numerical error propagation in the HCP structural pre-processing pipelines**  
Ali Salari; Lalet Scaria; Gregory Kiar; Tristan Glatard
- 49 **Analysis of female university soccer players' performance in games using GPS and heart rate measures**  
Stephanie Di Lemme; Geoffrey Dover
- 50 **The influence of high plasma lipid on cardiac function and hypertrophy**  
Chelsea D'Abreau; Andreas Bergdahl
- 51 **Hemodynamic correlates of transient and stable changes in neuronal excitability: a simultaneous Transcranial Magnetic Stimulation (TMS) / functional Near Infra Red Spectroscopy (fNIRS) study**  
Zhengchen Cai; Giovanni Pellegrino; Amanda Spilkin; Thomas Vincent; Jean-marc Lina; Shirley Fecteau; Christophe Grova
- 52 **Childhood BMI trajectories in a longitudinal community cohort and the risk for eating disorder symptoms in adolescence**  
Jessica Di Sante; Sylvana Côté; Stéphane Paquin; Frank Vitaro; Michel Boivin; Richard E. Tremblay; Linda Booij
- 53 **Variations in oxygenation levels at birth interact with the dopamine transporter gene network influencing internalizing problems and cognition in children**  
Miguel PM; Pereira LO; Nguyen TT; Garg E; O'Donnell KJ; Meaney MJ; Silveira PP
- 54 **The effect of whole body and regional adiposity on substrate utilization during incremental exercise in tanner stage 1 and 2 children: A QUALITY study**  
Kerri Delaney; Melanie Henderson; Marie-Eve Mathieu; Sylvia Santosa
- 55 **Illuminating the prefrontal cortex while manipulating cognitive demand: an fNIRS dual task walk study in younger adults**  
Tabassum Rahman; Nadia Polskaia; Gabrielle St-Amant; Yves Lajoie; Sarah Fraser
- 56 **The relationship between metabolic syndrome, eating behaviors and psychosocial factors: a HEARTY Study**  
Iyoma Edache; Ronald J. Sigal; Glen P. Kenny; Gary S. Goldfield; Denis Prud'homme; Stasia Hadjiyannakis; Steve Doucette; Angela S. Alberga
- 57 **Do cannabinoids improve appetite and weight in patients with chronic diseases?**  
Marialuisa Viganò; M.F. Arboleda; E. Prosk MSc; Y. Drozd; L.Xuecheng PhD; M. Dworkind MD
- 58 **Computing a meaningful change index on the Montreal Cognitive Assessment (MoCA) in healthy older adults**  
Chelsea Pozzebon; Faisal Al-Yawer; Karen Li; Natalie Phillips
- 59 **Sex difference in physical activity changes to an e-health behaviour change intervention.**  
Purna Deshpande; Paul Oh; Kim Lavoie; Geneviève Szczepanik; Simon L. Bacon

# THANK YOU! MERCI!

Special appreciation and our sincerest gratitude is extended to our generous Awards Sponsors for their recognition of students exhibiting excellence in the **PERFORM** Scientific Poster Competition.



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SGS FITNESS

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Our thanks to the members of the  
Scientific Events and Communication Committee.

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Lynn Roy

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