Université Concordia University

Centre PERFORM Centre

3rd Annual PERFORM Centre

Research Conference

BIOIMAGING FOR PREVENTION AND HEALTH RESEARCH

May 19, 2016
Oscar Peterson Concert Hall
Concordia University
Montreal, Canada

MESSAGE FROM

THE CHAIR OF THE PERFORM SCIENTIFIC EVENTS AND COMMUNICATIONS COMMITEE

As Chair of the PERFORM Scientific Events and Communications Committee (SECC) I am very pleased to welcome you to our 3rd Annual PERFORM Research Conference. I am particularly excited about the lineup of distinguished speakers we have this year, and am grateful for the assistance and input of our regular SECC members (Thanh Dang-Vu, Lisa Kakinami, Sylvia Santosa, Jason Steffener, Mathieu Roy, Dmitri Sitnikov, James Seale, Christian Durand, and Wendy Kunin). This year because of our theme, Bioimaging for Prevention and Health Research, we were fortunate to work together with Dr. Christophe Grova, Chair of the Applied Bioimaging Committee (ABC), and Dr. Jean-Paul Soucy, Associate Director for Bioimaging at PERFORM. We could not have put on this conference without their collaboration. Thanks also go to the entire PERFORM staff and community partners for their valuable contributions.

This year marks the first time we have devoted a second day to holding a methodological workshop on bioimaging. I hope that many of you will also attend that event and profit from the considerable expertise of the presenters.

For today, I encourage you to engage by asking questions, touring the PERFORM facilities, and speaking to the poster presenters about their current research findings. There will be opportunities to chat with the speakers and mingle over a glass of wine at the end of the day.

May you have an excellent and stimulating conference!

Karen Li
Chair, PERFORM Scientific Events and Communications Committee
Department of Psychology, Concordia University

MESSAGE FROM

SCIENTIFIC DIRECTOR

Welcome to the 3rd Annual PERFORM Centre Research Conference. As they say "an image is worth a thousand words" and this couldn't be truer than when talking about some of the most important images we take – images that can in effect advance ground-breaking research and even save lives. This is why we are very proud of this year's conference program, a full day of learning in Bioimaging for Prevention and Health Research.

This was without a doubt the year of bioimaging at PERFORM. Not only did we advance our research production in this ever- and rapidly-changing field, but we also solidified our bioimaging team and welcomed world renowned scientist, biomedical image processing expert and a candidate for a Tier I Canada Research Chair, Dr. Habib Benali, to the PERFORM family.

In light of the important technological advancements we have seen in the bioimaging field in recent years and the growing need to train future generations, the Scientific Events and Communications Committee opted to add a second day to this year's conference that will feature a full day workshop on the Methodology dedicated for Longitudinal Analysis with Neuroimaging Data.

As you will see in the program we are privileged to have distinguished speakers from around the world with us today. Conferences such as these are the cornerstone of research, training and knowledge translation. As such, it is my fervent hope that today's conference and tomorrow's workshop will serve as a catalyst to foster research collaborations and generate knowledge translation activities that will advance this important field.

I would also like to acknowledge the generous support of Concordia University, partner organizations and the hard work of the PERFORM Centre's research members and dedicated staff in making this conference a reality. None of this could have happened without them.

I wish you all the best on this day of discovery and look forward to the opportunity of meeting with you throughout the day.

Louis Bherer
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 Dr. Louis Bherer, Scientific Director PERFORM Centre Welcome remarks Dr. Graham Carr VP Research and Graduate Studies * Optional tour of PERFORM available during the breaks. Signup required the morning of the event.

Session 1

8:30-8:35	Chairs: Dr. Louis Bherer & Dr. Christophe Grova Oscar Peterson Concert Hall
8:35-9:20	Dr. Alan Evans, McGill University "Multimodal network modeling in neurodegeneration"
9:20-10:05	Dr. Pedro A. Valdes-Sosa, Cuban Neuroscience Centre "Multimodal quantitative neuroimaging databases and methods: the Cuban human brain mapping project"
10:05-10:50	Coffee break for all registrants and Poster Viewing * - Loyola Chapel

Session 2

10:50-10:55	Chair: Dr. Sylvia Santosa Oscar Peterson Concert Hall
10:55-11:40	Dr. Wei Shen, Columbia University "Body composition imaging method in obesity research"
11:40-12:25	Dr. Kirsi Virtanen, University of Turku "Brown adipose tissue, a potential therapeutical target - what we have learned from imaging"
12:25-12:40	Presentation of PERFORM Awards and Fellowships Dr. Karen Li
12:40-1:55	Lunch for all registrants and Posters Viewing * - Loyola Chapel

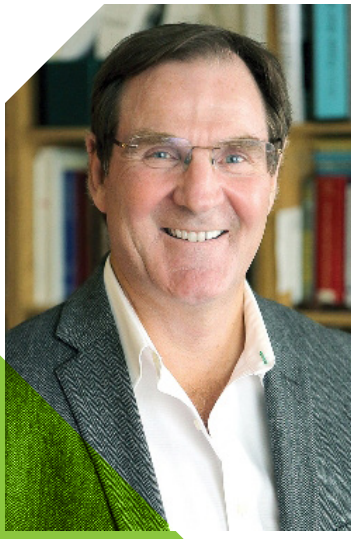
Session 3

1:55-2:00	**Chairs: Dr. Hassan Rivaz & Dr. Maryse Fortin** Oscar Peterson Concert Hall
2:00-2:45	Dr. Julie Hides, Australian Catholic University "What do elite athletes, astronauts and LBP sufferers have in common"
2:45-3:30	Dr. Timothy J. Hall, University of Wisconsin "Quantitative imaging and image-based biomarkers in medicine"
3:30-4:00	Dr. Jean-Paul Soucy and Dr. Habib Benali PERFORM highlights
4:00-4:30	Presentation of Scientific Poster Competition Awards Dr. Karen Li Closing remarks Dr. Louis Bherer, Scientific Director PERFORM Centre
4:30-5:30	**Reception** Foyer of Oscar Peterson Concert Hall

Professional Development Credits

- Canadian Society of Exercise Physiology (CSEP) members can obtain up to 7.5 credits.
- Fédération des kinésiologues du Québec Federation members can obtain up to 8 credits.

INVITED SPEAKERS



Dr. Alan Evans is James McGill Professor of Neurology, Psychiatry and Biomedical Engineering at McGill University. Initially trained as a biophysicist (PhD 1978), studying the 3D folding patterns of protein structure and the binding of co-factors and substrates to enzymes, he joined Montreal Neurological Institute (MNI) in 1984 and helped MNI become a leader in the field of PET research. As a founding member of the International Consortium for Brain Mapping (ICBM) and the director of the McConnell Brain Imaging Centre (BIC) during the 1990s, he has made numerous pioneering contributions to the world of population-neuroimaging. These contributions include the first stereotaxic atlas (MNI152); the first cytoarchitectural atlas of the human brain (BigBrain); the first multidimensional medical imaging data format, and analysis and visualization toolsets for population-based brain imaging (MINC); the first web-based data management system for longitudinal studies of brain and behavior (LORIS); the first automated pipeline system for processing and quality control of clinical neuroimaging data (CIVET), and the first web-based platform for high-performance neuroinformatic computations (CBRAIN). His recent research focuses on integrating large cohorts of multimodal neuroimaging data to develop predictive models of neurodegenrative and neurodevelopment diseases.

Currently, he is the Director of the McGill Centre for Integrative Neuroscience (MCIN) and the co-Director of the Ludmer Centre for Neuroinformatics and Mental Health, using high-performance computing to integrate imaging, behavior, genetics and epigenetics in brain research. He sits on numerous NIH and CIHR advisory boards and maintains several national and international collaborations in national and global research initiatives such as the European Human Brain Project, ADNI, NIHPD, CCNA, IBIS, Prevent-AD, NeuroDevNet and many more.

Professor Evans is a global leader in computational neuroscience of neurodegenerative disease and neurodevelopment, and has mentored several leading neuroimaging scientists in Canada and around the world. He is the recipient of numerous awards and recognitions. Most recently, he received the Vezina Prize for Quebec Neuroradiology and the national Margolese Human Brain Disorders Prize and recognition as a Highly Cited Scientist (top 1%) for Neuroscience and Behavior (2014). In 2015, he became the Chair-Elect of the Organization for Human Brain Mapping (OHBM) and was inducted in to the Royal Society of Canada in recognition of outstanding achievement in his fields.

Dr. Pedro Valdes received his medical PhD degree from Havana University in 1971; three years later in 1974, he received his philosophical PhD degree from Cuban Neuroscience Center; in 2011 Cuban National Science Degree Council granted him Doctor in Science as a Lifetime Achievement Award (one out of every 300 PhD.) for his pioneering contribution to Quantitative electrophysiology.

Professor Pedro has long been dedicated to research in EEG and fMRI both in theory as well as methodology. His contributions, such as the inverse solutions of LORETA and VARETA, have been recognized worldwide and he continues to make major advances in the field of multi-modal date integration with EEG, MEG, MRI and fMRI. His papers (more than 180 with H index of 42) have appeared in all of the major electrophysiological and neuroimaging journals. In addition, he is on the advisory board of numerous prestigious institutions around the world. He is an active council member within the Organization for Human Brian Mapping (OHBM) and he was an elected member of the Program Committee (2012-2014). He presided the XX Conference of the OHBM in Hamburg as Program Chair, with more than 4,000 delegates. In 2015, he was awarded the title of "1000 talent foreign professor" by the Ministry of Education of the People's Republic of China. At present he is a full professor at the University of Electronic Science and Technology of China and is also the director of the Joint China-Cuba Laboratory for Frontier Research in Translational Neurotechnology.

Dr. Wei Shen is an Assistant Professor of Nutritional Medicine, Department of Medicine and Institute of Human Nutrition, Columbia University, USA. She is the Director of the Image Analysis Lab and the Associate Director of the Body Composition Unit of the New York Obesity Research Center of Columbia University. She has been an NIH funded investigator since 2006 with a focus on MRI and CT imaging in the obesity field, with current R01 on the role of MRI measured organ size in adaptive thermogenesis. Her recent research interest is body composition and obesity in disease conditions. She has co-authored over 70 peer-reviewed papers and has collaborated with many investigators in applying imaging body composition methods in areas including obesity, diabetes, acromegaly, anorexia nervosa, cancer, Cushing's disease, non-steatosis hepatitis, premature adrenarche, idiopathic osteoporosis, HIV infection, polycystic ovary syndrome, spinal muscular atrophy, sarcopenia, and motor vehicle collision. As one of the leading central body composition analysis laboratories in the world, the Image Analysis Laboratory has completed national and international multi-center studies (i.e., funded by NIH or industry), consisting of the analysis of over 100,000 MRI, MRS, CT, and DXA scans.

Dr. Shen is a member of IEEE, Engineering in Medicine and Biology Society, the Obesity Society, the International Society for Magnetic Resonance in Medicine, and the International Society of Clinical Densitometry. She has served on the Scientific Advisory Board of the UK Biobank Advisory Group (steering sub-committee) for body-fat imaging of ~100,000 subjects. Dr. Shen has received the Obesity Society 2012 Best Reviewer award for the journal Obesity and the Science Unbound Foundation 2005 Best Paper Award.

Dr. Kirsi A. Virtanen

(born 1965 in Lahti, Finland) currently holds a 5-yr Academy Research Fellowship from the Academy of Finland in Turku PET Centre, in Turku University Hospital. She graduated medical doctor studies from University of Turku, Faculty of Medicine in 1994 and finished her PhD on "Insulin-Stimulated Glucose Uptake in Adipose Tissue. Positron Emission Tomography Studies in Obesity and Type 2 Diabetes" in 2003. Her main research interests are in adipose tissue including brown adipose tissue, and its role in obesity and type 2 diabetes. Her clinical trial experience includes more than 30 short- and long-term clinical trials and her teaching experience consists of a number of invited presentations in scientific congresses (e.g. ADA, ECO), symposia, workshops and postgraduate courses, as well as supervision of PhD thesis. Publication list consists of more than 40 original research papers, reviews and book chapters with > 2000 citations.

Dr. Julie Hides attended the University of Queensland, Australia, graduating from the School of Rehabilitation and Health Sciences (Bachelor of Physiotherapy) in 1986, Master of Physiotherapy studies in 1990 and PhD in 1996. She was a recipient of the prestigious Sir Robert Menzies Scholarship in Allied Health Sciences. She has worked at the Mater Hospital, Brisbane, Australia, as a physiotherapist and currently is the Clinical Director of the Mater/ ACU Back Stability Research Clinic and Director of the Centre for Musculoskeletal Research, Australian Catholic University. She is a titled musculoskeletal physiotherapist, became a fellow of Australian College of Physiotherapists in 2008, has held an academic position at the University of Queensland, and was Head of School, School of Physiotherapy, Australian Catholic University 2009-2014. Professor Hides' research interests focus on clinical topics that are of direct use and impact on the community as a whole. Having predominantly studied those with low back pain, she has developed a method of treating people with this condition and has published this work extensively in international orthopaedic journals. She conducted and published a RCT which demonstrated the efficacy of the approach, and this research has been cited extensively and adopted worldwide. More recently, she and her team have adapted these novel assessment and treatment approaches to elite athletes, sports including Football, Cricket and Track and Field. Prof Hides is currently a member of a European Space Agency Topical Team, studying rehabilitation of astronauts post space flight.

Dr. Timothy J. Hall received his B.A. degree in physics from the University of Michigan–Flint in 1983. He received his M.S. and Ph.D. degrees in medical physics from the University of Wisconsin–Madison in 1985 and 1988, respectively. From 1988 to 2002, he served in the Radiology Department at the University of Kansas Medical Center, where he worked on measurements of acoustic scattering in tissues and metrics of observer performance in ultrasound imaging, and developed elasticity imaging methods and phantoms for elasticity imaging. In 2003, he returned to the University of Wisconsin–Madison where he is a Professor in the Medical Physics Department. His research interests continue to center on developing new image formation strategies based on acoustic wave propagation and tissue viscoelasticity, the development of methods for system performance evaluation, and quantitative biomarker development.

PERFORM
POSTDOCTORAL FELLOW

Yiming Xiao earned his Bachelor of Engineering degree from the Electrical Engineering Honours program at McGill University in 2009. He gained his first research experience in neuro-imaging under the guidance of Dr. Tal Arbel on the topic of MRI intensity normalization for Multiple-Sclerosis patients during his time at McGill. In 2011, Dr. Xiao completed his Master of Engineering degree in Biomedical Engineering with Dr. Louis Collins at the Montreal Neurological Institute. His thesis proposed a new multi-contrast MRI sequence to improve the visualization of the basal ganglia for the surgical treatment of Parkinson's disease. Later, he pursued his doctoral studies also under the supervision of Dr. Louis Collins with a focus on image-guided surgery and medical imaging analysis. His research interests lie in combining neuroscience, computer science, and signal processing to improve the understanding and treatment of neurological diseases. In his free time, he is a photographer and visual artist.

PERFORM
DOCTORAL AWARDS

Jessica Murphy received a BSc and MSc in nutritional science from McGill University, and is currently a PhD student in Concordia's Individualized Program. She is conducting her research under the supervision of Dr. Sylvia Santosa and Dr. José Morais within the Department of Exercise Science and PERFORM's Clinical Analysis Suite. Her graduate work is investigating whether the period of obesity development (childhood-onset versus adult-onset) influences the way adipose tissue and skeletal muscle respond to a lifestyle weight loss protocol.

Julian Chiarella obtained his B.Sc degree in 2013 from Queen's University in Kingston (Ontario) with a major in Psychology and Life Sciences. He is presently finalizing his M.Sc. studies at the same institution and I will be starting his PhD in Clinical Psychology at Concordia University this September. HIs research interests lie in neuroimaging in the context of mental health and underlying epigenetic processes. For his Master's thesis, he is studying the neural and epigenetic correlates of depression and trauma in adolescents. He is extremely grateful to have received the PERFORM doctoral award, which he will use to support his PhD studies in which he will be further trained in PET and fMRI imaging as well as in lifestyle measures. Specifically, at PERFORM, he will be studying the role of the serotonin 1A receptor in the neural processing of negative emotions, attentional control and physical fitness.

PERFORM
DOCTORAL MERIT AWARD

Oren Weiner received his B.A. in Psychology from Ryerson University in 2011. He then worked full-time during the subsequent year as an overnight polysomnographic technician in a diagnostic sleep medicine clinic. Mr. Weiner began his graduate training at Concordia in 2012. He is currently completing a Ph.D. in Clinical Psychology under the supervision of Dr. Thanh Dang-Vu. His research program uses EEG to examine the cross-frequency coupling (CFC) of distinct brain oscillations during sleep in relation to cognition and overnight memory consolidation between healthy and cognitively impaired older adults. Mr. Weiner's research will also incorporate multi-modal neuro-imaging data obtained using MRI, PET, and MEG scanning. An overarching aim of his research is to provide evidence for using measures of brain activity during sleep as non-invasive bio-markers of cognitive decline and Alzheimer's disease, with the goal of advancing both the diagnosis and longitudinal monitoring of neurodegeneration in the elderly.

PERFORM
MASTERS AWARD

Aude Jegou received her Biomedical Engineering degree from ESIR (Ecole Supérieur d'ingénieur de Rennes) University of Rennes in France in 2015. She is currently a Masters student in Concordia's Department of Physics. Ms. Jegou is conducting her research under the supervision of Dr. Christophe Grova and Dr. Thanh Dang-Vu. For her Masters project she will study the effect of sleep deprivation on brain function during sleep recovery using simultaneous EEG-fMRI acquisitions.

Ed Whitlock **PERFORM**

Graduate Student Scholarship Award

Ed Whitlock is passionate about long distance running and for the last 20 years has consistently broken many world middle to long distance record in his age group. He is still the only living person who at 70 was able to run a marathon in under three hours, and has repeated the feat twice. As recently as this April, he broke a world record for his age group, running a half-marathon in just over 1 hour 50 minutes. Now at 85 years old, every time Ed registers for a race there is a pretty good chance that he will be breaking yet another record. As a recognized master athlete, Ed would like to contribute to research efforts that explore better strategies to extend the quality of life of seniors. Ed is keen on supporting preventive health research by helping promising students. This award is granted to either a masters or doctoral student at Concordia University whose research interest is primarily in preventive health.

Winner of the Ed Whitlock **PERFORM** Graduate Student Scholarship Award

Vi Dam completed her BSc in nursing at the Université de Montréal and is a registered nurse in Quebec and Ontario. She is currently enrolled in the INDI PhD program, Pure Science at Concordia University where she graduated with an MSc (2015) from the Department of Exercise Science. Her past nursing experience includes working in the cardiology unit at Ottawa's Hôpital Montfort. More recently, she has worked as a research nurse for studies conducted at the McGill University Nutrition and Performance Laboratory. Ms. Dam has had the opportunity to train under experts in the areas of age and obesity-related dysfunction, chronic diseases, and diabetes research at the Mayo Clinic in Minnesota. Under the supervision of Dr. Sylvia Santosa at PERFORM's Clinical Analysis Suite, she is now investigating how obesity-related immune function in fat tissue affects metabolism and future disease risk such as insulin resistance and cardiovascular disease.

POSTER PRESENTATIONS

1. **Exergamers' preferences and intentions**
   Erin O'Loughlin, Tanya Scarrapachia, Lisa Kakinami, Tracie Barnett, Catherine Sabiston

2. **Smart Treadmill for athletic training**
   Abbas Meamarbashi; Marefat Siahkouhian

3. **Expectations and Non-Invasive Brain Stimulation: Do They Influence Cognition?**
   Sheida Rabipour; Allan D. Wu, Marco Iacoboni, Patrick S. R. Davidson

4. **BDNF serum levels increased by motor and coordination exercises but not by combined strength-aerobic training intervention in older adults**
   St-Onge, Florence, Berryman, Nicolas, Thien Tuong Minh Vu, Arbour Nathalie, Bherer, Louis

5. **Altered brain perfusion patterns in idiopathic hypersomnia**
   Soufiane Boucetta, Jacques Montplaisir, Francis Lachapelle, Paul Gravel, and Thien Thanh Dang-Vu

6. **The Impact of Age-Related Hearing Loss on Cognition and Posture in a Dual-Task Paradigm**
   Bruce, H.; Asare, G., Aponte, D., St-Onge, N., & Li, K. Z. H

7. **Cardiac pulsatility in the brain before and after exercise assessed using BOLD fMRI**
   Athena Theyers, Benjamin Goldstein, Arron Metcalfe, Bradley MacIntosh

8. **Dealing with interference control at the response level: functional networks reveal higher efficiency in the bilingual brain**
   Pierre Berroir, Ladan Ghazi-Saidi, Tanya Dash, Daniel Adrover-Roig, Habib Benali & Ana Inés Ansaldo

9. **The effects of physical activity on the depression-smoking relationship in Asthmatic Adults**
   Jojich-White Una, Béland Mélanie, Briand Samantha, Lavoie Kim L, Bacon Simon L.

10. **Factors associated with adipocyte size reduction after weight loss interventions for overweight and obesity: a meta-regression analysis**
    Jessica Murphy; Grégory Moullec; Sylvia Santosa

11. **Development of segmentation protocols using Magnetic Resonance Imaging to study the morphology of the hypothalamic-pituitary-gonadal axis: Applications to Project Ice Storm**
    Jones, SL; Near, J; Mailly, K; Newbold-Fox, H; Laplante, DP; King, S; Pruessner, J

12. **Modulation of Helper T Cells by ß2-Adrenergic Receptor Ligands**
    Carvajal Gonczi,Catalina M; Tabatabaei Shafiei; Mahdieh2 ; Darlington, Peter J.

13. **Association between paraspinal muscle morphology, clinical symptoms and functional status in patients with degenerative cervical myelopathy**
Maryse Fortin; Octavian Dobrescu, Matthew Courtemanche; Carolyn J. Sparrey; Carlo Santaguida; Michael G. Fehlings; Michael H. Weber

14. **Brain Glucose and Keytone Metabolism in Adults During Moderate Nutritional Ketosis: A Dua Tracer Quantitative PET-MRI study**
Courchesne-Loyer A, Croteau E, Castellano CA, St-Pierre V, Hennebelle M, Cunnane SC

15. **Altered Functional Connectivity of the Sensorimotor Network Post-Stroke: a Resting-State fMRI Study**
Ilse Frias; Dorelle C. Hinton; Faryn Starrs; Alexander Thiel; and Caroline Paquette

16. **Registration of Pre- and Post-resection Ultrasound Volumes with Non-corresponding Regions in Neurosurgery**
Hang Zhou; Hassan Rivaz

17. **The Effect of Immune Cell Activation on Glycogen Storage in the Context of a Nutrient Rich Microenvironment**
Tabatabaei Shafiei, Mahdieh, Carvajal Gonczi, Catalina M., Darlington,Peter J.

18. **Can a 3-month walking program enhance brain energy metabolism in mild Alzheimer's disease? Results from neuroimaging pilot study**
CA Castellano; N Paquet, I Dionne, H Imbeault, M Fortier, C Bocti and SC Cunnane

19. **School-Aged Children Born with Low and High Birth Weight: Investigation of Obesogenic Behaviors**
Dubé, Laurette; Dalle Molle, Roberta; Portella, André; Bischoff, Adriane; Silveira, Patricia

20. **Remembering what but not where: Age-related deficits in autobiographical memory are specific to recall of spatial context**
Carina L. Fan; Sarah L. Peters, Sign

21. **Dynamic Programming on a Tree for Ultrasound Elastography**
Roozbeh Shams; Mathieu Boily; Paul A. Martineau; Hassan Rivaz

22. **Influence of the alteration of flow topology on the abdominal aortic aneurysm local growth**
Florian Joly; Gilles Soulez; Claude Kauffmann

23. **Physical fitness training and task-set cost in older adults**
Tudor Vrinceanu, Melanie Renaud, Louis Bherer

POSTER PRESENTATIONS

24. **Comparison of abdominal computed tomography (CT) scan skeletal muscle and fat cross sectional area versus dual energy x-ray absorptiometry (DXA) appendicular lean (skeletal muscle mass) and fat masses using novel imaging software in advanced cancer patients**
Noor Mady, Melanie Lessard, Elizabeth Nolin, Leonard Rosenthall MD, Jonathan Afilalo MD, Louis Antoine Mullie MD, Antonio Vigano MD, Robert D. Kilgour PhD

25. **Investigating age-related differences in task-set inhibition from the Dual Mechanisms of Control theory**
Steve Desbiens; Kiran Vadaga; Karen Li

26. **Edge-Preserving Ultrasonic Strain Imaging with Uniform Precision**
Hossein Khodadadi, Amir G. Aghdam and Hassan Rivaz

27. **Brain glucose and ketone metabolism in mild cognitive impairment and Alzheimer's disease: A cross-sectional study**
Etienne Croteau; Castellano CA; Bocti C; Fulop T; Paquet N; Cunnane S

28. **Distinct brain activations during straight walking and steering of gait: an [18F]-FDG-PET study**
Faryn Starrs; Ilse Frias, Jean-Paul Soucy and Caroline Paquette

29. **Non-causal Gauss Markov based Signal Processing Approaches for Motion Tracking in Shear-Wave Elastography**
Mahmoud Derakhshan Horeh, Amir Asif, and Hassan Rivaz

30. **The Effect of Exercise and Training Cessation on Cognitive Performance Measures of Inhibition and Working Memory in Older Adults**
Lynden Rodrigues; Tudor Vricineau; Nicolas Berryman; Louis Bherer

31. **Learning-induced plasticity in vascular properties in the human brain**
Avner Fitterman; Sophia Grahl; Uta Schneider; Christine Tardif; Chris Steele; Pierre-Louis Bazin; Claudine Gauthier

32. **Associations between pulsatile hemodynamics in the middle cerebral arteries and cardiac-related fluctuations in functional magnetic resonance imaging**
Sarah Atwi, Ms; Andrew D. Robertson, PhD; Arron W.S. Metcalfe, PhD; Bradley J. MacIntosh, PhD

33. **The Effect of Combined Activities on Cognitive Functions in Older Adults**
Louiza Kahina Harkouk, Laurence Lai, & Karen Z. H. Li

34. **Characterization of body composition, strength and performance in advanced lung cancer patients using dual energy x-ray absorptiometry: subanalysis of an essential amino acid clinical trial**
Jonathan di Tomasso; Leonard Rosenthall MD; Robert Kilgour PhD; Antonio Vigano MD

35. **Accuracy Assessment of Time-Delay Estimation in Ultrasound Elastography**
Mohamad Ghasemi Amidabadi; Dr. Omair Ahmad; Dr. Hassan Rivaz

36. **Direct Analytical Estimation of Strain Elastography from Ultrasound Radio-Frequency Data**
Mona Omidyeganeh, M. Omair Ahmad, Hassan Rivaz

37. **A Low-Cost Camera-based Transducer Tracking System for Freehand Three-Dimensional Ultrasound Imaging**
Mohammad M. Baba; Otmane Ait Mohamed; Falah Awwad; Mohammad I. Daoud

38. **No evidence of neurodegeneration in areas of decreased cerebral grey matter in chronic pain patients**
FB Pomares; T Funck; N Feier; S Roy; A Daigle-Martel; M Ceko; S Narayanan,; D Araujo; A Thiel; N Stikov; MA Fitzcharles; P Schweinhardt

39. **How do assessments of activities of daily living address executive functions: A scoping review**
Frédérique Poncet, Bonnie Swaine, Elisabeth Dutil, Mathilde Chevignard

40. **Effects of combined physical exercise and cognitive training on executive functions and dual-task performance in older adults**
Laurence Desjardins-Crépeau, Maxime Lussier, Sarah Fraser, Karen Z. H. Li, Nicolas Berryman, Laurent Bosquet, David Predovan, Marie-Jeanne Kergoat, Thien T. M. Vu, Louis Bherer

41. **Longitudinal impact of cardiovascular training on cerebral activity of older people measured by fNIRS during concurrent walk and working memory tasks**
Thomas Vincent, Elisabeth Charlebois-Cloutier, Frédéric Lesage, Anil Nigam, Louis Bherer , Sarah A. Fraser

42. **Changes in MEG scale free dynamics in patients with temporal lobe epilepsy**
Aydin Ü.; Pellegrino G.; Hedrich T.; Kobayashi E.; Lina J.-M.; Grova C.

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.

RÉSEAU DE RECHERCHE EN SANTÉ CARDIOMÉTABOLIQUE, DIABÈTE ET OBÉSITÉ

BIOSPECTIVE

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

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Ms. Wendy Kunin
Mr. James Seale

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Dr. Lisa Kakinami
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