



ACTIVITY REPORT
2015-2016

PERFORM
Centre



performcentre.concordia.ca

CONCORDIA

QUICK FACTS

9 PERFORM
RESEARCH MEMBERS
hold prestigious
research chairs

43 RESEARCH
PROJECTS
lead by internal and
external stakeholders

43 RESEARCH
MEMBERS

YEAR AT A GLANCE

RESEARCH

309 PUBLICATIONS
in some of the most
prestigious journals

151 PRESENTATIONS
oral/poster at a variety of
conferences and events

226 STUDENTS
SUPERVISED
(66 undergraduate;
68 masters; 58 PhD and
34 post doc/other)

279 INTERVIEWS
(broadcast and print)
and articles on studies
led by our research members

SHARING OUR KNOWLEDGE

18 didactic talks offered by
members of PERFORM's
Applied Biolumaging Committee

EDUCATION

78 INTERNSHIPS
in five disciplines including athletic therapy, exercise physiology,
nutrition, music therapy and leisure studies

20 APPRENTICESHIPS

SERVING THE COMMUNITY THROUGH EXPERIENTIAL LEARNING

767 individuals benefitted
from the Athletic
Therapy Clinic staffed
by interns

2,873
individuals benefitted
from the Conditioning Floor

3,701
visits to the Athletic
Therapy Clinic

429 individuals met with exercise
or nutrition professionals for
individual fitness or nutrition
appointments and group
training programs

7 research talks as part
of the colloquium series
presented by PERFORM's
Scientific Events and
Communications Committee

1 Annual Conference:
**Lifestyle Influences on
Health: Nutrition, Sleep
and Activity**

The PERFORM Centre was made possible through an investment from the Government of Canada and the Quebec Ministry of Economic Development, Innovation and Export Trade through the Knowledge Infrastructure Program.

MESSAGE FROM THE SCIENTIFIC DIRECTOR



“Twenty years from now you will be more disappointed by the things that you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbour. Catch the trade winds in your sails. Explore. Dream. Discover.”

Mark Twain

I am pleased to present the 2015-2016 PERFORM Activity Report. This year was an exceptional year for PERFORM. Having laid the foundation for our three-pillar mission of advancing research, education and community engagement, we were able to build on our strengths and further develop our scientific program in support of our overriding goal to offer unique opportunities for new discoveries in preventive health research and to support our University’s Strategic Research Plan.

This year we solidified our internal and external partnerships and worked with many of the departments and Faculties from our research member base to continue to generate and cultivate interdisciplinary research collaborations. We welcomed world renowned scientist and biomedical image processing expert, Dr. Habib Benali (CRC Tier 1 candidate), and a new Chair in Childhood Preventive Health and Data Science, Dr. Jennifer McGrath, to the PERFORM family. We also launched several new projects in our fully equipped imaging suite, which includes a 3-tesla MRI and PET-CT scanner, which is now fully operational and open for intra and inter-institutional research collaborations.

This was also the year that we expanded our horizons and looked outside the box to advance research in preventive health. Whether establishing research projects to facilitate early detection of lymphedema in women who have been treated for breast cancer, looking for ways to detect Alzheimer’s ten to fifteen years before it is clinically active, hosting an international conference or supporting student research through the

PERFORM Fellowships Programs and the Ed Whitlock Award, PERFORM continued to play a vital role in training highly qualified personnel, disseminating knowledge and advancing research. And, this is just the beginning.

I have every confidence that with the support and guidance of the exceptional team of researchers, students and staff we have established, PERFORM will continue to blossom in the years to come.

This past year’s achievements marked the concrete realisation of what was just a few years ago an incredibly innovative and ground-breaking vision of how academic research can significantly and positively impact health prevention and disease management for all members of our community.

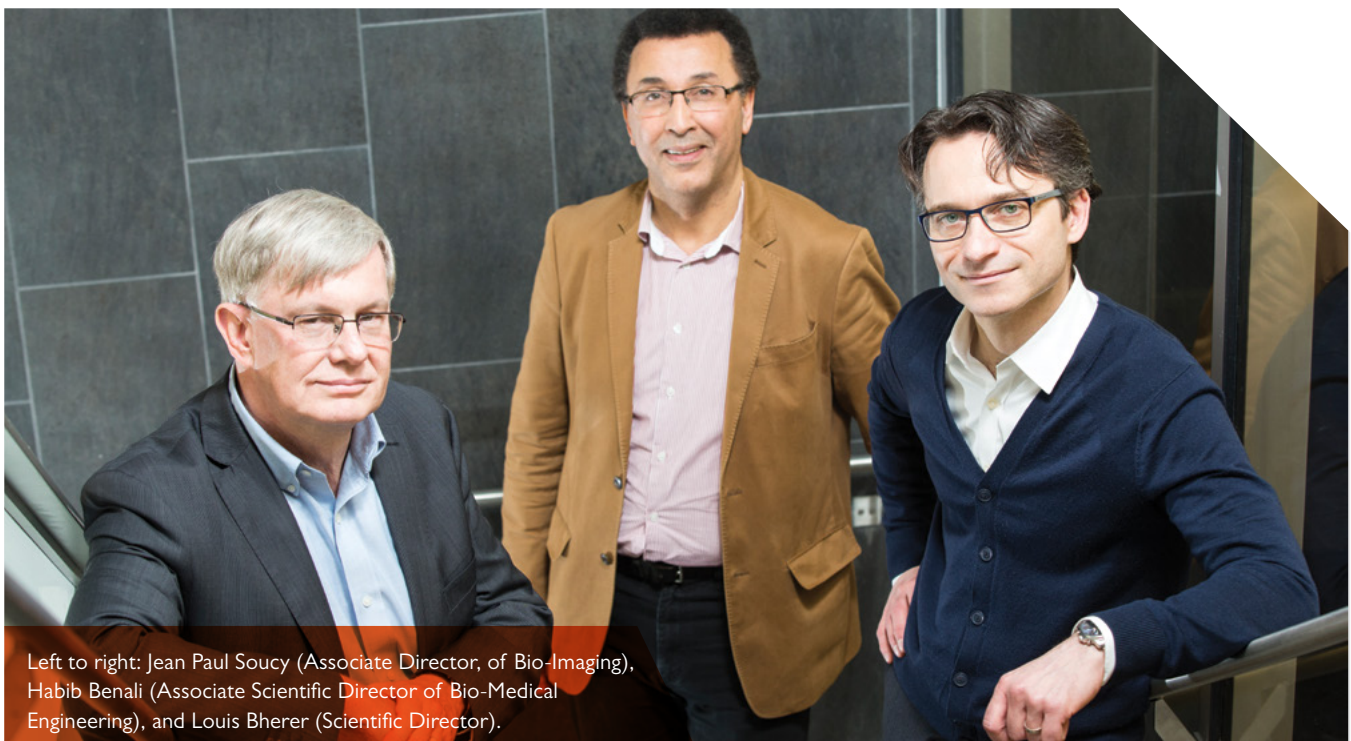
As I reflected on this past year, I was filled with a sense of pride at the level of dedication and commitment our researchers and educational programming and community engagement teams have demonstrated in our quest to improve health across the population.

It is my strong belief that PERFORM is now fully equipped and staffed to make giant leaps in this direction. Without a doubt, the best is yet to come.

Louis Bherer, Ph.D.
Scientific Director,
PERFORM Centre

PERFORM is home to 43 research members and specialists in health and disease prevention who play an important role in cultivating interdisciplinary and collaborative research that creates links between a variety of traditional and non-traditional disciplines in an effort to improve health across the population. As you will read on pages 10 and 11, our members come from a number of institutions (Concordia, Université de Montréal, McGill, Centre Epic, Institut universitaire de gériatrie de Montréal, to list but a few) and their knowledge and expertise is vast and varied ranging from Cardiology to Mathematics and Statistics, Political Science to Exercise Science and Engineering and Computer Science.

Since the initiation of our first research project in 2012, PERFORM has continued to grow at an impressive rate and the multidisciplinary vision of preventive health research is now coming to fruition. With it, we have experienced an increase in the volume and complexity of research projects that cross disciplines. This calls for more expertise at the leadership level. Our senior administration team has developed and grown to adapt to this change. As Scientific Director, I am pleased to present our senior administrative team, Dr. Jean Paul Soucy (Associate Director of Bio-Imaging) and Dr. Habib Benali (Associate Scientific Director of Bio-Medical Engineering) who bring with them a wealth of knowledge and expertise in imaging.



Left to right: Jean Paul Soucy (Associate Director, of Bio-Imaging), Habib Benali (Associate Scientific Director of Bio-Medical Engineering), and Louis Bherer (Scientific Director).

NEW RESEARCHERS



PERFORM WELCOMES INTERNATIONALLY RENOWNED SCIENTIST

The PERFORM Centre was pleased to welcome Dr. Habib Benali as Associate Scientific Director of Bio-Medical Engineering for the PERFORM Centre and Professor in the Department of Electrical and Computer Engineering. Dr. Benali joined Concordia University in February of 2016 bringing with him expertise in the areas of biomedical image processing and aging, multi-modal imaging, mathematical models and statistics, as well as signal and image processing and neurosciences. A natural collaborator with an extensive network world-wide, Dr. Benali will solidify PERFORM's role in fostering interdisciplinary research collaborations between numerous departments and faculties across Concordia University as well as with many inter-institutional research networks locally, nationally, and internationally.

An internationally renowned scientist from Paris who has received multiple distinctions and research awards Dr. Benali has served as co-director of the International Laboratory of Neuroimaging and Modelling (LINeM), a collaboration of the French Institute of Health and Medical Research (INSERM), Université Pierre et Marie Curie (UPMC- part of the Sorbonne Universities) and l'Université de Montréal. He was also Deputy Director of the Biomedical Imaging Laboratory U1146 of the INSERM-CNRS-UPMC, a laboratory with 110 members.



NEW CHAIR IN CHILDHOOD PREVENTIVE HEALTH AND DATA SCIENCE

In 2015, PERFORM appointed Dr. Jennifer McGrath, Associate Professor of Psychology at Concordia University, as PERFORM Chair in Childhood Preventive Health and Data Science. Dr. McGrath brings to the research member team an innovative, interdisciplinary approach to untangling social determinants of child health inequalities that has led to new discoveries about the pathophysiology of cardiovascular disease precursors and their socioeconomic gradient during childhood and adolescence. Her research spans pathways-to-policy, as she investigates underlying cardiometabolic disease mechanisms to population-based public policy strategies aimed at promoting child health equity. Dr. McGrath has made compelling insights into pediatric sleep, autonomic and endocrine dysregulation, and, second-hand smoke and nicotine-dependence. She has also pioneered rigorous pediatric ambulatory measurement standards and advocates for reproducibility of science through open-source data science methods.

RESEARCH STUDIES AT PERFORM

While traditional medical research aims to find a cure, there is an important shift taking place now where prevention has become increasingly important. PERFORM is an important part of this HEALTH REVOLUTION. This year, our research members as well as Concordia researchers and external stakeholders including industry and health-care institutions have lead 43 research projects at PERFORM. These projects were funded by the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, Fonds de recherche du Québec – Nature et technologies, Quebec Bio-Imaging Network, Concordia University and industry. Research studies were also supported by the Richard and Edith Strauss Foundation, Dr. Louis G. Johnson Foundation, Drummond Foundation, Medavie Health Foundation, Heart and Stroke Foundation, Arthritis Society, Lawson Foundation and the Savoy Foundation.

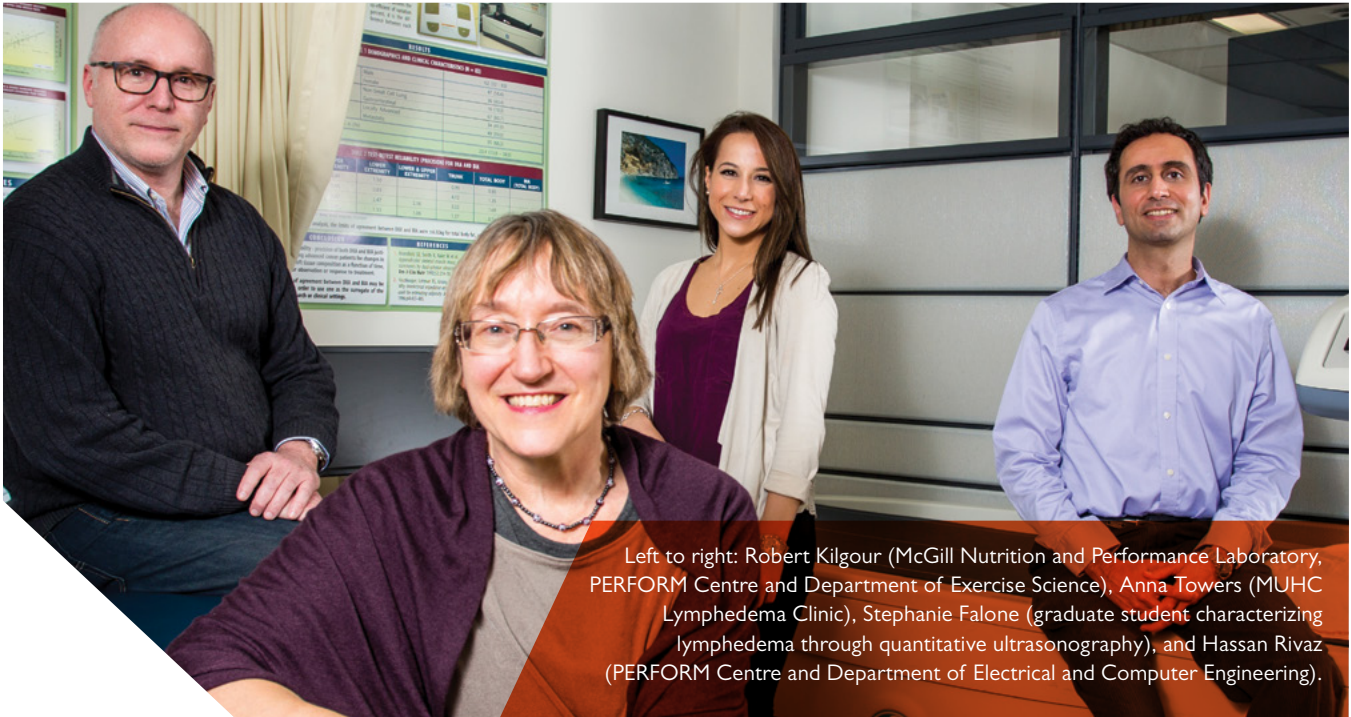


Left to right: Stéphane Frenette (Supervisor of Nuclear Medicine), Jean-Paul Soucy (Associate Director of Bio-Imaging) and Paul Gravel (PET Research Associate).

THE EYE: A WINDOW TO THE BRAIN

To date, Alzheimer's disease remains incurable and can only be diagnosed with conventional means once symptoms begin to manifest. Dr. Jean-Paul Soucy, a PERFORM research member and Associate Director of Bio-Imaging, is collaborating with partners from industry (Optina Diagnostics), to develop a new retinal imaging platform using fluorescence combined with advanced imaging instruments to detect A β plaques (abnormal proteins aggregates seen in those suffering from Alzheimer's) in the retina of patients. This portable device will scan, in about one second,

the retina of patients with Alzheimer's as well as those with mild cognitive impairments, a condition that may be the precursor of full blown Alzheimer's. This will allow Dr. Soucy's team to compare results with those of other more complex imaging techniques looking at A β plaques in the brain, and identify potential indicators of dementia before it evolves. The end goal is to detect Alzheimer's 10 to 15 years before it is clinically active so that high-risk patients can start using medication.



Left to right: Robert Kilgour (McGill Nutrition and Performance Laboratory, PERFORM Centre and Department of Exercise Science), Anna Towers (MUHC Lymphedema Clinic), Stephanie Falone (graduate student characterizing lymphedema through quantitative ultrasonography), and Hassan Rivaz (PERFORM Centre and Department of Electrical and Computer Engineering).

IS ULTRASOUND THE WAVE OF THE FUTURE IN DIAGNOSING LYMPHEDEMA?

Researchers from the PERFORM Centre and the McGill University Health Centre Lymphedema Clinic have joined forces to advance technological innovation in assessing lymphedema. Through a generous donation from The Dr. Louis G. Johnson Foundation and capital funding support from the PERFORM Centre, the newly formed interdisciplinary team consisting of Hassan Rivaz, medical imaging expert (PERFORM Centre); Robert Kilgour, cancer researcher (McGill Nutrition and Performance Laboratory and PERFORM Centre); and Anna Towers, physician and lymphedema researcher (MUHC Lymphedema Clinic), will acquire a portable ultrasound unit and launch a study to advance the detection of arm composition and muscle changes in lymphedema patients.

The findings from this study will serve as the basis for a larger randomized clinical trial where the team will test the accuracy, precision, and reliability of their findings with larger groups of women and research teams across Canada. Findings from the data obtained from the study will be translated and disseminated to health care providers so they can decide the proper and most effective course of treatment and intervention based upon the most accurate assessment of lymphedema staging possible.



GOOD NEWS FOR YOUR SORE BACK

PERFORM postdoctoral associate in preventive health research, Maryse Fortin, is studying the spine in order to find methods of easing chronic back pain. Through her research, Dr. Fortin is developing methods to quantify changes in muscle composition due to atrophy (wasting of the muscle) in those suffering using MRI and ultrasound imaging and comparing them between people with different spine conditions. It is expected that understanding changes to muscle composition will help prevent atrophy from occurring in the first place, as well as inform better rehabilitation programs



HOW DOES CARDIOVASCULAR DISEASE AFFECT OUR BRAINS?

Canadians live with heart disease for decades. But, the impact of this disease on other organs such as the brain becomes an integral component of heart disease itself. Furthermore, it is this damage to the brain, brought on by an unhealthy heart and arteries, that increases the likelihood of developing a stroke. While exercise can help prevent and treat these conditions, we do not know what the biological impact of exercise on the brain is, and how it interacts with disease. Claudine Gauthier, a PERFORM research member and Assistant Professor of Physics at Concordia University, was awarded the national Heart and Stroke Foundation New Investigator Award for 2015-16, as well as the foundation's Henry J.M. Barnett Scholarship to tackle this question. Over the next four years, Dr. Gauthier will conduct research that will contribute to the technical development necessary to measure the changes that precede and surround this irreversible damage in an effort to understand the link between cardiovascular health and disease, and brain health, at the level of both blood vessels and tissue.

Understanding the changes that precede damage will allow us to better understand the disease itself, but more importantly, will allow us to devise better strategies for prevention and treatment of brain vascular lesions.



WANT A YOUNGER BRAIN? STAY IN SCHOOL — AND TAKE THE STAIRS

Taking the stairs is normally associated with keeping your body strong and healthy. New research led by Jason Steffener, a scientist at Concordia's PERFORM Centre, and published in the journal *Neurobiology of Aging*, shows that stair climbing and education improves your brain's health too. The more flights of stairs a person climbs, and the more years of school a person completes, the "younger" their brain physically appears. The researchers found that brain age is 0.95 years younger for each year of education, and 0.58 years for every daily flight of stairs climbed.

For the study, Dr. Steffener and his co-authors used magnetic resonance imaging (MRI) to non-invasively examine the brains of 331 healthy adults who ranged in age from 19 to 79. They measured the grey matter volume of the brain. Its decline, caused by neural shrinkage and neuronal loss, is a visible part of the chronological aging process. Then, they compared brain volume to the participants' reported amounts of various physical activities and years of schooling completed. Results were clear: the more flights of stairs climbed, and the more years of schooling completed, the younger the brain.

Partners in research: This research was supported by grants from the National Institute on Aging. The study's co-authors are Christian Habeck, Qolamreza Razlighi and Yaakov Stern (Columbia University); Deirdre O'Shea (Columbia and the University of Florida); and Louis Bherer (PERFORM Centre, Concordia University and Institut universitaire de gériatrie de Montréal).

OUR FACILITIES

PERFORM offers eight inter-related research platforms devoted to prevention that allow researchers to execute complex and comprehensive study designs – all under one roof. Our facilities are continuously updated with state-of-the-art equipment and infrastructure to ensure our research members and students have access to the highest quality equipment and facilities to foster innovation in research.

PLATFORMS

Athletic Therapy Clinic • Cardio-Pulmonary Suite • Clinical Analysis Suite • Conditioning Floor
• Functional Assessment Lab • Imaging Suite • Nutrition Suite • Sleep Laboratory



Athletic Therapy Clinic



Clinical Analysis Suite



Conditioning Floor



UNLOCKING THE SECRETS OF SLEEP

Most humans can survive up to two months without eating, but can only go up to 11 days without a nap. This is what makes investigating the causes, consequences and treatments of sleep disorders so important.

Concordia researcher and neurologist Thien Thanh Dang-Vu has dedicated his professional life to this topic and has spearheaded the refurbishment of the PERFORM Centre Sleep Laboratory. Through a grant of \$250,000 from the Canadian Foundation for Innovation and support from the Québec ministère de

l'Enseignement supérieur, de la Recherche, de la Science et de la Technologie (MESRST) and Concordia University, the sleep lab will be completely renovated to further Dr. Dang-Vu's research in such areas as the neuroscience of sleep, and the brain mechanisms and treatment interventions of sleep disorders.



Standing: Thien Thanh Dang Vu (PERFORM Research Member and Professor, Department of Exercise Science) and Jordan O'Byrne (graduate student, Department of Exercise Science).

PERFORM RESEARCH MEMBERS



Louis Bherer – Scientific Director

Effect of cognitive stimulation and physical activity on cognitive decline associated with aging and chronic disease.



Tracie Barnett

Understanding the natural history of obesity in youth, focusing on the physical and social environments that influence overweight/obesity and their behavioural precursors.



Habib Benali

Modelling of normal and pathological dynamics of the brain's anatomo-functional circuits observed by neuroimaging tools to better understand brain activity in healthy aging and disease.



Linda Booij

The impact of early trauma on human brain development and underlying molecular mechanisms.



Richard Courtemanche

Brain synchrony and behaviour.



Thien Thanh Dang Vu

Understanding the causes of sleep disorders to better inform treatment.



Peter Darlington

Studying the Environmental factors that contribute to the risk of developing autoimmunity.



Kaberi Dasgupta

Developing and testing strategies and programs to reduce vascular disease and its risk factors by addressing physical activity, eating habits, and social determinants of health.



Richard DeMont

Understanding the neuromuscular system as it relates to prevention and rehabilitation of orthopaedic injury.



Geoff Dover

Correlating psychological factors to tissue pathology in chronic pain patients and athletes.



Ann English

Examining chemical reactions that control redox signaling in cells.



Tiago Falk

Developing signal processing methods that enable innovative automated medical diagnostic and human performance monitoring tools.



Caroline Fitzpatrick

Identifying modifiable risk factors, such as cognitive control, that can be targeted in early childhood to positively shape later well-being and health-related behavior.



Claudine Gauthier

Looking at the impact of lifestyle on the brain in healthy aging.



Jean-Philippe Guoin

How depression, worry, rumination, and sleep disturbances can amplify stress-induced immune dysregulation.



Christophe Grova

Characterizing normal and pathological brain activity through different neuroimaging modalities.



Lisa Kakinami

Understanding how our behaviours, lifestyles, and life circumstances relate to obesity and heart disease.



Robert Kilgour

Assessing and evaluating rehabilitation and supportive care programs for advanced cancer patients with cachexia.



Jordan LeBel

Which factors influence consumer food choices at home and away?



Gabriel Leonard

Complex bimanual coordination as a marker for cognitive and motor rehabilitation in neurological patients.



Karen Li

Understanding the cognitive and motor processes involved in multiple-task performance in adulthood and healthy aging.

**Najmeh Khalili-Mahani**

Screen addiction, biofeedback and public health: studying physiological and neurological responses that are necessary for physical and mental adaptation.

**Patrik Marier**

Policy implications of changing demographic structures in comparative contexts.

**Paul Martineau**

Research program oriented on sport medicine and musculoskeletal trauma focused towards the development of novel treatment and diagnostic strategies.

**Jennifer McGrath**

Untangling how greater stress and poorer sleep may get under the skin to adversely impact children's health.

**Anil Nigam**

Understanding how diet and exercise impact on cardiovascular and brain function in high-risk patients.

**David J. Pearsall**

Understanding the Biomechanics of Human Locomotion and Injury Prevention.

**Virginia Penhune**

Understanding the plastic changes that occur in the human brain during motor learning and performance.

**Véronique Pépin**

Optimizing exercise testing and training approaches in individuals with chronic cardiopulmonary diseases.

**Alain Ptito**

Neuroimaging and cognitive markers for the diagnosis, prognosis and rehabilitation of mTBI/concussion.

**Natalie Phillips**

How cognitive abilities (language, attention) change and interact as we age.

**Tiberiu Popa**

Research includes geometric modeling, animation, 3D and 4D surface reconstruction with applications in medical, CAD and entertainment industry.

**Hassan Rivaz**

Developing novel image processing algorithms to improve detection and diagnosis capabilities of medical imaging.

**Shawn Robbins**

Utilizing biomechanical and clinical measures to assess orthopaedic health conditions in both clinical and laboratory settings.

**Mathieu Roy**

Understanding how psychological factors can affect pain.

**Sylvia Santosa**

Studying the skinny on fat in disease development and progression.

**Peter Shizgal**

Neural basis of decision-making, reward, and motivation.

**Jean-Paul Soucy**

Understanding the pathophysiology of neurodegenerative conditions using nuclear medicine techniques and developing new approaches for diagnosis and for follow-up tests to assess response to therapy.

**Nancy St-Onge**

Posture, balance, and movement control in healthy and impaired populations.

**Jason Steffener**

Understanding the healthy aging process using brain imaging to identify lifetime exposures and behaviours providing protection from cognitive decline.

**Truong Vo Van**

Study of thin films and nanostructures and their applications, and the prototyping of optical metrology instruments.

**Dajana Vuckovic**

Developing mass spectrometry methods for targeted and untargeted metabolomics and biomarker quantitation in biofluids and tissues.

**Carsten Wrosch**

Psycho-social pathways to well-being and health.

EDUCATING AND TRAINING FUTURE GENERATIONS OF PROFESSIONALS

As a Concordia University research platform, the PERFORM Centre strives to advance the University's academic plan. In addition to fostering multidisciplinary research collaborations, we also teach for tomorrow and generate opportunities to train the next generation of health-care professionals and practitioners. This year, to generate and foster knowledge, dialogue and exchange we:

- organized and hosted **7 research talks** on a broad range of topics related to preventative health research
- held a series of **18 didactic talks** on a variety of imaging modalities
- hosted one international research conference: **Lifestyle Influences on Health: Nutrition, Sleep and Activity**
- gave **151 talks or presentations** in a variety of settings
- published **309 articles**, book chapters, conference abstracts
- were cited in **279 media outlets** including print, television and radio

COLLOQUIUM SERIES

Falls and Fractures in Advanced Aging: The need for Canadian evidence-based multidisciplinary prevention strategies for long term care

Hope Weiler, PhD, Associate Professor, School of Dietetics and Human Nutrition, McGill University

Exercise intensity and cardiometabolic risk: towards more precision in exercise medicine

Robert Ross, PhD, Professor, Queen's University

Adipocentric view of the cardiometabolic alterations related to abdominal obesity

Andre Tchernof, PhD, Professor, Laval University School of Nutrition, Quebec Heart and Lung Institute

Multimodal neuroimaging of Alzheimer's disease

Sylvia Villeneuve, PhD, Assistant Professor, Department of Psychiatry and Medicine, McGill University, Canada Research Chair in Neuroimaging and Alzheimer's Disease

When a calorie is not a calorie: Mechanisms and implications of variable mitochondrial oxidative phosphorylation efficiency in obesity

Mary-Ellen Harper, PhD, Professor, University of Ottawa Department of Biochemistry, Microbiology and Immunology Faculty of Medicine

Aging, cellular senescence, and Senolytics:

The path to translation

James Kirkland, MD, PhD, Director, Robert and Arlene Kogod Center on Aging, Mayo Clinic

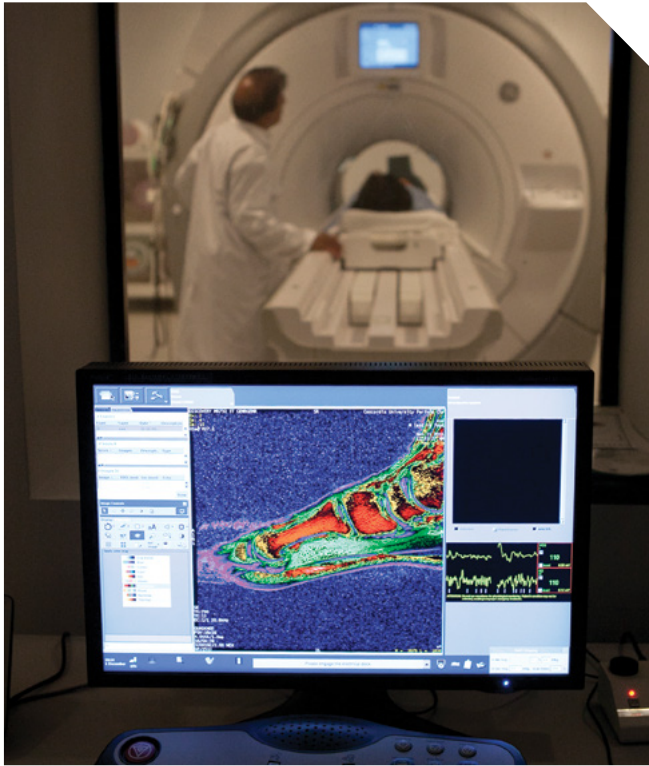
Unhealthy sleep, unhealthy brain. Neuroanatomical, neuropathological, and cognitive correlates of sleep and circadian disruption in older community-dwelling adults

Andrew S. Lim, MD, MMSc, FRCPC, DABPN, Assistant Professor and Clinician Scientist, Division of Neurology, Department of Medicine, Sunnybrook Health Sciences Centre, University of Toronto



APPLIED BIOMAGING SEMINAR SERIES

The Applied Biomaging Committee offered 18 academic seminars to the community at large. Sessions included topics such as: Ultrasound Imaging and Image Registration, Illuminating the brain: Basis of functional Near Infra-Red Spectroscopy (fNIRS), Pharmacological Probing in fMRI: The chemical 'calibration' of the regional fMRI signals, and Paraspinal muscle imaging: Diagnostic and clinical applications. Sessions on Basic and Applied PET, MRI, Structural MRI, Functional MRI, and NIRS imaging were also offered throughout the year.





Left to right: Karen Li, Louis Bherer, Eus J. W. van Someren, Deborah Gustafson, Kristen Knutson, Michael D. Jensen, Michelle Carlson and Jean-Paul Soucy.

ANNUAL PERFORM CENTRE RESEARCH CONFERENCE: LIFESTYLE INFLUENCES ON HEALTH: NUTRITION, SLEEP, AND ACTIVITY

PERFORM took to the stage on May 15th and welcomed six internationally renowned scientists for a one day conference on Lifestyle Influences on Health: Nutrition, Sleep and Activity. The conference was heavily attended as some 350 researchers, academics, students, health-care professionals and stakeholders from multiple disciplines filled the Oscar Peterson Concert Hall. Participants also had the opportunity to review more than 50 poster presentations on a variety of related themes.

Brain and Cognitive Reserve

Yaakov Stern, Columbia University

Older adult volunteering as a path toward healthy aging: Findings from Baltimore Experience Corps Trial

Michelle Carlson, Johns Hopkins University

Causes and consequences of fragmented sleep in chronic insomnia

Eus van Someren, Netherlands Institute for Neuroscience

Impact of inadequate sleep on metabolism: a review of experimental and observational evidence

Kristen Knutson, University of Chicago

Adiposity, Metabolic Factors and Brain Health

Deborah Gustafson, University of Gothenburg

The Pathophysiology of Obesity and its Related Disorders

Michael Jensen, Mayo Clinic



EMPOWERING THE NEXT GENERATION

The PERFORM Centre is proud to cultivate the next generation of scientists. In 2015, PERFORM awarded a Postdoctoral Fellowship Award and the Ed Whitlock Award to two highly deserving individuals.

POSTDOCTORAL FELLOWSHIP

Maryse Fortin is a certified athletic therapist who received her PhD in Rehabilitation Science at the University of Alberta in 2013. Her research is primarily focused on the development of new MRI measures of spine degeneration in order to improve the diagnostic value of medical imaging and advance current knowledge in the epidemiology, prognosis, and treatment of cervical and low back pain.

WINNERS OF THE 2015 POSTER COMPETITION



Left to right: Ali Salimi, Tanya Babiuk-Henry, Kangjoo Lee, Maryse Fortin (PERFORM Postdoctoral Fellow), Selin Neseliler, and Husein Mohammed.

THE ED WHITLOCK AWARD

Jessica Murphy received a BSc and MSc in nutritional science from McGill University, and is currently a graduate student in Concordia's Department of Exercise Science. She is conducting her research under the supervision of Dr. Sylvia Santosa within PERFORM's Clinical Analysis Suite. Her graduate work will investigate whether the period of obesity development (childhood-onset versus adult-onset) influences the metabolic and cellular responses to a lifestyle weight loss protocol.



Left to right: Jessica Murphy and Ed Whitlock

WHO IS ED WHITLOCK?

Ed Whitlock is passionate about long distance running and for the last 20 years has consistently broken every long distance record in his age group. He is the only living person who at 70 was able to run a marathon in under three hours, and has repeated the feat a few times since. 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.

Imbedded at Concordia University, the PERFORM Centre has embraced and cultivated the University's academic plan offering university-level students with the support and opportunities needed to achieve academic success and become scientific leaders in preventive health research.

This year, 98 students benefitted from 78 internships and 20 apprenticeships offered in five disciplines including exercise physiology, athletic therapy, nutrition, music therapy and leisure studies.

PERFORM CENTRE WORKS WITH CANADA'S NEXT SOCCER STARS

A new injury-prevention program is uniting the PERFORM Centre and the Canadian school of famed French soccer club Paris Saint-Germain (PSG), an academy that provides promising young soccer players between the ages of 8 and 14 with the opportunity to develop their skills under the tutelage of PSG's master trainers. This unique program offers Concordia students enrolled in PERFORM's Athletic Therapy Clinic an opportunity to give the young soccer players from the academy a one-hour, individualized musculoskeletal evaluation. Under the supervision of certified athletic therapists, the students assess the players for range of motion, strength and other soccer-specific indicators to determine if they have a low, medium or high risk of injury. The evaluations identify areas of weakness or imbalance that need to be corrected in order to reduce the chance of serious damage down the road. The long-term goal is to follow these athletes until the age of 18 or so and have an idea if some of the interventions have actually kept them from being injured.



Photo credit: Thinkstock

Supporting the Community while Training Future Generations of Preventive Health Scientists and Professionals

Our internship students and apprentices welcomed and worked with 767 individuals in the Athletic Therapy (AT) Clinic and 2,873 individuals on the Conditioning Floor. This totalled 3,701 visits in the AT Clinic alone. Additionally, 429 individuals met with exercise or nutrition professionals for individual fitness or nutrition appointments and group training programs.

PROGRAMS OFFERED

- Baseline Concussion and Post Injury Testing
- Youth Injury Prevention Program
- Post Injury Re-Test

ENGAGING IN OUR COMMUNITY



Concordia University has a long tradition of community engagement, and the PERFORM Centre is no exception. Our community engagement team plays a leadership role in developing, organizing and offering activities and programs that provide opportunities for exchange, dialogue and participation on topics related to health prevention and chronic disease management.

PHYSICAL ACTIVITY PROGRAMS

INDIVIDUAL CONDITIONING PROGRAMS

- Personal Training
- Comprehensive Fitness Package
- Basic Fitness Assessment and Program
- Initial/Follow-up Fitness Assessment
- Functional Movement Screen
- Revised Program Design
- Smartkey Introduction/Renewal

GROUP CLASSES:

- Zumba
- Core of Excellence
- Boot Camp
- Yoga

NUTRITION PROGRAMS

- Healthy Weight 10-week program, combining nutrition and physical activity session
- Individual nutrition assessments and counselling incorporating the eaTracker an online food journal created by the Dietitians of Canada
- Healthy Cooking Classes – varied themes from the widely recognized DASH Diet for blood pressure management to the Mediterranean Diet that has repeatedly demonstrated an effect on cardiovascular health

“We work out together three mornings a week. It can be challenging but, without a doubt, doing it as a couple makes it easier. It also helps for relationship-building.”

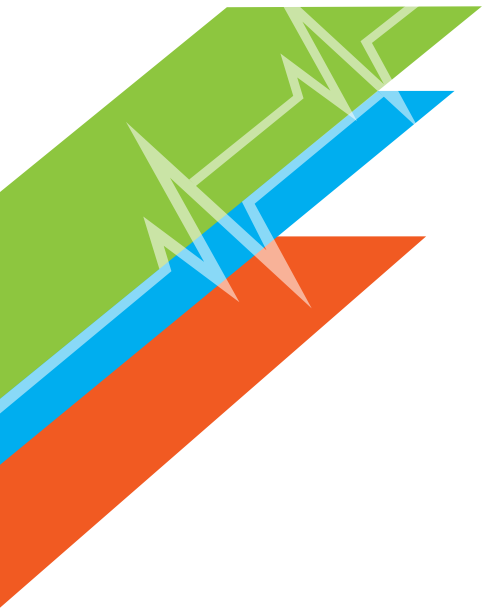
— Frank and Gerry Le Grove, aged 87 and 84





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