

2023 NEURO RETREAT

JUNE 2-4 | ESPACE 4 SAISONS, ORFORD



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MESSAGE FROM CO-CHAIRS

Welcome to The Neuro Retreat 2023.

The collegial and interactive environment characteristic of our Retreats provides an ideal forum for fostering interactions among members of the Neuro community, as well as with colleagues from across the McGill campus. Together, we strive to build an even stronger and more integrated network that will work together to accelerate the pace of scientific discovery and treatment of neurological diseases and disorders.

This year's program includes a combination of symposia, lectures and the traditional address from the director of The Neuro. We will learn about recent advances in the field of neurodevelopment and neurodevelopmental conditions during a full-day symposium organized together with the Azrieli Centre for Autism Research (ACAR). We will also hear presentations from some of the newest Neuro faculty members, who will introduce themselves and their work. We will learn about the activities of the Neuro Epilepsy Centre of Excellence as well as other key research and clinical programs at The Neuro. As in previous years, our program also includes extra-curricular activities aimed at further connecting our community and reinforcing our common goals.

Special thanks to Debbie Rashcovsky, Events Manager and Kenneth Dyson, ACAR Manager for coordinating the planning process as well as events during the Retreat.

We wish everyone an enjoyable and productive time during the next three days.

Stefano Stifani & Justine Cléry

Co-Chairs, The Neuro Retreat 2023

PROGRAM

THURSDAY, JUNE 1

19:00 **Cocktail** (Giroux Hall)

20:00 **Dinner** (Giroux room)

FRIDAY, JUNE 2

7:00 – 9:00 Breakfast (Bistro and Giroux room)

Orford Room

10:00 – 17:30 **Neurodevelopment and Neurodevelopmental Disorders Symposium**

10:00 – 10:05 **Welcome** – Guy Rouleau, Director, The Neuro

10:05 – 10:15 **Introduction** – Stefano Stifani, Associate Director (Research), The Neuro

Session 1: ASD/NDD Clinical Research and Care

Chair: Mayada Elsabbagh, PhD, Associate Professor, The Neuro

10:15 – 10:25 **Update on ASD/NDD Clinical Care**
Guy Rouleau, OC, OQ, MD, PhD, FRCP(C), FRSC
Director, The Neuro
Chair, Dept. Neurology and Neurosurgery, McGill University

10:35 – 10:50 **Neuroscience and Neurodiversity: Bridging the Gap**
Mayada Elsabbagh, PhD

10:50 – 11:05 **Equity in Health Care Access in Neurodevelopmental Conditions: Identifying Barriers and Solutions**
Julie Scolah, PhD, The Neuro

11:10 – 11:25 **CHILD-BRIGHT Moving Forward: Accelerating Impacts from Clinical Research to Care**
Annette Majnemer, OT, M.Sc., PhD
School of Physical and Occupational Therapy, McGill University

11:30 – 11:45 **Unraveling the Molecular Basis of Focal Cortical Dysplasias**
Myriam Srouf, MDCM, PhD, Montreal Children's Hospital,
McGill University Health Centre Research Institute

11:50 – 12:00 **Pause**

Session 2: Patient-Derived Experimental Model Systems for Studying ASD/NDDs

Chair: Carl Ernst, PhD, The Neuro

12:05 – 12:20 **Open Science in Evolution: from C-BIG to the NeuroVIP Platform**
Jason Karamchandani, MD, The Neuro

12:25 – 12:40 **New Approaches Towards the Generation of Human Microglia and Oligodendrocytes**
Thomas Durcan, PhD, Director EDDU, The Neuro

12:45 – 13:00 **Promoting Research into ASD/NDDs Through International Collaborations**
Stefano Stifani, PhD, Associate Director (Research), The Neuro

13:00 – 13:45 **Lunch**

Session 3: ASD/NDD Modelling Using Marmoset-Based Approaches

Chair: Yang Zhou, PhD, The Neuro

- 13:45 – 14:00 **Development of Advanced Genetic Models for Investigating Neurodevelopmental Disorders**
Keith Murai, PhD, Director
Centre for Research in Neuroscience, McGill University Health Centre-Research Institute
- 14:05 – 14:20 **A Marmoset Translational Platform for Studying Cognition and Behaviours Related to Autism**
Justine Cléry, PhD, The Neuro

Session 4: Neurodevelopmental Research at The Neuro

Chair: Wayne Sossin, PhD, The Neuro

- 14:25 – 14:40 **Modulation of Cortical Inhibition by NEO1: Choosing the Red Pill**
Jean-Francois Cloutier, PhD, The Neuro
- 14:45 – 15:00 **Glia Regulate Sensory Processing and Brain States**
Edward Ruthazer, PhD, The Neuro
- 15:05 – 15:20 **Neuronal RNA Granules are a Hub for Neurodevelopmental Disorders**
Wayne Sossin, PhD, The Neuro

15:25 – 15:40 Pause

Session 5: ASD/NDD Drug Development

Chair: Stefano Stifani, PhD, The Neuro

- 15:40 – 15:55 **Repurposing of Drugs as a Treatment for Autism Spectrum Disorder**
Ilse Gantois, PhD, Dept. of Biochemistry, McGill University
- 16:00 – 16:15 **Develop and Translate Gene Therapy for Haploinsufficiency in NDDs**
Yang Zhou, PhD, The Neuro
- 16:20 – 16:35 **From Cell Modeling to Pre-Clinical Therapeutics for the SETBP1 Disorders**
Carl Ernst, PhD, The Neuro

Session 6: Evolving Canadian Landscape for ASD/NDD Clinical Trials

Chair: Guy Rouleau, Director, The Neuro, Chair, Dept. Neurology and Neurosurgery, McGill University

- 16:40 – 16:55 **Lessons Learned from Spinal Muscular Atrophy**
Maryam Oskoui, MD, MSc
Montreal Children's Hospital, McGill University Health Centre
- 17:00 – 17:15 **Precision Health in Neurodevelopmental and Actioning Clinical Trials in Canada**
Evdokia Anagnostou, MD, Vice President of Research and Director
Bloorview Research Institute, University of Toronto
- 17:20 – 17:30 **Closing Remarks**
- 18:00** **Cocktail** (Terrace 'weather permitting' or Orford Hall)
- 19:00** **Dinner** (Orford Room)
- 21:00 Fun & Games: Poker and Pool Tournament (Entertainment room & Alfred room)
- 21:00 Open Science Trivia Night @Neuro Retreat (Orford Hall)
- 21:30 Campfire – Porto & chocolate (Terrace)

SATURDAY, JUNE 3

7:00 – 9:00 Breakfast (Bistro & Giroux room)

8:30 Yoga (Terrace)

Orford Room

9:15 **State of the Union Address**

Guy Rouleau, OC, OQ, MD, PhD, FRCP(C), FRSC
Director, The Neuro
Chair, Dept. Neurology and Neurosurgery, McGill University

10:00 - 11:30 **MINI-SYMPOSIUM #1 - MEET THE NEW NEURO FACULTY MEMBERS**

Chair: Stefano Stifani, Associate Director (Research), The Neuro

10:00 **Sensory Processing and Social Interaction**

Justine Clery, PhD, The Neuro

10:25 **Genetic Epidemiology of Multiple Sclerosis**

Adil Harroud, MD, The Neuro

10:50 **Towards Human-Level AI for Improved Precision Medicine**

Jean-Pierre Falet, M.D., C.M., The Neuro

11:15 **Pause**

11:30 **Plenary Lecture 1 - The Stroke Program at The Neuro**

Aimen Moussaddy, MD, The Neuro

11:55 **Plenary Lecture 2 – The DEMySTIFI Cohort: A Platform for Neuroimmunology Research at The Neuro**

Adil Harroud, MD, The Neuro

12:30 – 14:00 Lunch (BBQ on Terrace 'weather permitting' or Bistro & Giroux room)

13:00 – 18:00 Free time & organized extra-curricular
(Or [regional attractions and activities](#))

16:30 Refreshments available (Orford Hall)

18:00 Travel to Magog (bus) – boarding 'Le Grand Cru', McPherson Quay

19:00 – 22:30 **Dinner cruise** (cocktails, entertainment & dinner)

SUNDAY, JUNE 4

- 7:00 – 9:30 Breakfast (Bistro & Giroux room)
- 9:30 **Plenary Lecture 3 - Biomarkers for Early Diagnosis of Alzheimer's Disease**
Pedro Rosa-Neto, MD, PhD, The Neuro
- 10:15 12:15 **MINI-SYMPOSIUM #2 - NEW INITIATIVES OF THE NEURO'S EPILEPSY GROUP**
- 10:15 **Introduction** – Boris Bernhardt, PhD, The Neuro
- 10:20 **Facilitating Epilepsy Research at The Neuro**
Wendy Sculnick, Managing Director, Philanthropy, The Neuro
Sarah Stack, Associate Director, Major Gifts, Philanthropy, The Neuro
- 10:35 **New Epilepsy Research Initiatives and a New Centre of Excellence**
Boris Bernhardt, PhD, The Neuro
- 10:50 **Application of AI to Neuroimaging of Epilepsy**
Andrea Bernasconi, MD, The Neuro
- 11:05 **Pause**
- 11:20 **THE NEXT GENERATION: TRAINEE PRESENTATIONS**
- DWI Connectomics and Seizure Propagation**
Abdullah Azeem, PhD Candidate, McGill University
- Contrasting Influences of Sleep on Ictal and Interictal Activity: Insights from Intracranial EEG**
Sana Hannan, PhD, Analytical Neurophysiology (ANPHY) Lab, The Neuro
- Microstructural Gradients/Cognition**
Jessica Royer, Clinical Neuropsychologist
Integrated Program in Neuroscience, McGill University
- Atypical Functional Hierarchy in Temporal Lobe Epilepsy**
Fateme Fadaie, PhD Candidate, Neuroimaging of Epilepsy (NOEL) Lab, The Neuro
- 11:50 **Discussion and Summary**
- 12:20 **Plenary Lecture 4: New at the CRU: Emerging Treatments for Rare Diseases**
Massimo Pandolfo, MD
Professor (Clinical), McGill University
Co-Director, Clinical Research Unit (CRU), The Neuro
- 12:45 **Closing Remarks**
- 13:00 **Lunch** (BBQ on Terrace 'weather permitting' or Bistro & Giroux room)

BIOGRAPHIES

Guy Rouleau, OC, OQ, MD, PhD, FRCPC, FRSC

Director, The Neuro (Montreal Neurological Institute-Hospital)
Chair, Department of Neurology and Neurosurgery, McGill University
Chair, Department of Neuroscience, McGill University Health Centre



Dr. Guy Rouleau is Director of The Neuro (Montreal Neurological Institute-Hospital), Chair of the Department of Neurology and Neurosurgery of McGill University, Director of the Department of Neuroscience of McGill University Health Centre, and co-founder of the Tanenbaum Open Science Institute. He was recently elected Vice-President of the World Federation of Neurology.

For more than 30 years, Dr. Guy Rouleau and his team have focused on identifying the genes causing several neurological and psychiatric diseases, including autism, amyotrophic lateral sclerosis, hereditary neuropathies, epilepsy and schizophrenia, as well as providing a better understanding of the molecular mechanisms that lead to these disease symptoms. Among Dr. Rouleau's main achievements are his contribution to the identification of dozens of disease-causing genes and his discovery of new mutational mechanisms.

Dr. Rouleau has published over 900 articles in peer-reviewed journals and has been quoted more than 85 000 times (Google Scholar). He has supervised more than a hundred students at the Masters, PhD and Post-doctoral levels in addition to receiving numerous awards for his contribution to science and society.

As co-founder of the Tanenbaum Open Science Institute, Dr. Rouleau is pioneering a new way of doing research by transforming The Neuro into the first academic institution to adopt Open Science principles in order to accelerate discovery and benefit patients and society.

Stefano Stifani, PhD

Associate Director (Research), The Neuro
Distinguished James McGill Professor, Department of Neurology and Neurosurgery McGill University
Associate Director (Fundamental Research), Azrieli Centre for Autism Research



Prof. Stefano Stifani is a Distinguished James McGill Professor in the Department of Neurology & Neurosurgery at McGill University. He obtained a Ph.D. degree in Biochemistry from the University of Alberta in Edmonton, AB, Canada. He also holds a doctorate in Chemistry from the University of Rome, Italy. He is a former Killam Scholar at the Montreal Neurological Institute-Hospital (The Neuro) and Chercheur National Research Scholar of the Fonds de recherche du Québec – Santé.

Prof. Stifani serves as The Neuro Associate Director (Research), and as Associate Director (Fundamental Research) of McGill's Azrieli Centre for Autism Research. He also serves as the Secretary-General of the International Society of Developmental Neuroscience and Editor-in-Chief of the International Journal of Developmental Neuroscience.

Research in Prof. Stifani's laboratory focuses on understanding the biology of neural stem/progenitor cells in the healthy and diseased nervous system, as well as harnessing the potential of human induced pluripotent stem cells to establish disease-relevant experimental model systems to study neurological diseases and disorders.

Justine Cléry, PhD

Assistant Professor, McGill University | Head, Sensory and Social Brain Mechanisms Lab, The Neuro



Justine Cléry is an Assistant Professor at the Department of Neurology and Neurosurgery, Faculty of Medicine and Health Sciences at McGill University, and the head of the Sensory and Social Brain Mechanisms Lab. She is a member of the Azrieli Centre for Autism Research. She completed her Ph.D. in Neurosciences in 2017 at the University of Claude Bernard Lyon 1, under the supervision of Dr. Suliann Ben Hamed, at the Institut des Sciences Cognitives, Lyon, France. From 2017-2021, she was a postdoctoral associate, working with Pr. Stefan Everling in the Laboratory for Neural Circuits and Cognitive Control, at Robarts Research Institute, University of Western Ontario, Canada. In her research, she is interested in how sensory information and social cognition are encoded in the brain and uses functional magnetic resonance imaging (fMRI) and behavioral data collection in non-human primate models to better understand these brain mechanisms across the lifespan in control and models of autism.

NEURO RETREAT BIOS

Evdokia Anagnostou, MD

Vice President of Research | Director, Bloorview Research Institute



Dr. Evdokia Anagnostou, MD, is the Vice President of Research and Director of the Bloorview Research Institute. She is a senior clinician scientist, co-lead of the Autism Research Centre, Canada Research Chair in translational therapeutics in autism spectrum disorder (ASD) and the inaugural Dr. Stuart D. Sims Chair in Autism.

Dr. Anagnostou has dedicated her career to challenging the field of neurodevelopmental disorders (NDDs) to rethink diagnostic categories and focus on underlying biology rather than labels.

With the goal of precision medicine to ensure the best care and treatment for all children and families, Dr. Anagnostou has revolutionized traditional ways of thinking by redefining individual patterns of disease, which will lead to individualized treatments and more meaningful and healthier futures for all.

Abdullah Azeem

PhD Candidate, McGill University



Abdullah received his BSc. (Hon.) Neuroscience at the University of Calgary. His honors Thesis was focused on developing predictability metrics for the early diagnosis of CSWS in pediatric stroke patients. Abdullah joined Dr. Gotman's lab in September 2018 and is currently a PhD Candidate in the Integrated Program in Neuroscience. His overarching goal is to improve localization of the epileptogenic zone in surgical candidates for epilepsy surgery. His specific research aim is to leverage SEEG and white matter tractography to build patient-specific epileptic networks that provide new insights during the presurgical evaluation phase.

Andrea Bernasconi, MD

Neuroimaging of Epilepsy Lab (NOEL), The Neuro



Dr Andrea Bernasconi, a Swiss-trained clinician, is Professor of Neurology in the Department of Neurology and Neurosurgery at McGill University in Canada. He is co-founder and co-director, with his wife Neda Bernasconi, of the Neuroimaging of Epilepsy Laboratory at the McConnell Brain Imaging Centre of the Montreal Neurological Institute.

His research is devoted to the investigation of causes and consequences of epilepsy using MRI and artificial intelligence. His group has pioneered a series of novel MR acquisition and image-processing methods that are applicable to clinical MRI data. One of the most significant achievements has been the design of biology-driven MRI models for automatic detection of cortical dysplasias, particularly those that elude standard radiology.

As a leading figure in neuroimaging of epilepsy, Dr. Andrea Bernasconi spearheaded the development of new guidelines aimed at standardizing MRI protocols for the investigation of people with epilepsy and leads several educational activities worldwide.

Boris Bernhardt, PhD

Assistant Professor of Neurology and Neurosurgery | Head, Multimodal Imaging and Connectome Analysis Lab, The Neuro



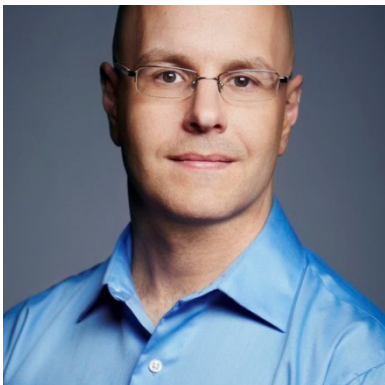
Boris Bernhardt, PhD, is Associate Professor at The Neuro and a Canada Research Chair in Cognitive Neuroinformatics. His lab (<http://mica-mni.github.io>) studies the role of structural and functional brain networks in higher-order human cognition in healthy and diseased populations, notably people with epilepsy and autism. To this end, they develop novel methods that integrate macroscale connectome models with multimodal neuroimaging at high and ultra-high fields, as well as 3D histology and transcriptomics.

He has published more than 190 peer-reviewed articles, including papers in top tier journals such as Nature Methods, Nature Communications, Science Advances, TICs and PNAS. His team made numerous analytics and resources for multiscale neuroscience openly available, including <http://micapipe.readthedocs.io>, <http://brainstat.readthedocs.io>, <http://brainspace.readthedocs.io>, <http://enigma-toolbox.readthedocs.io>, <http://bigbrainwarp.readthedocs.io>.

Dr Bernhardt is work package leader of the Hiball project (<https://bigbrainproject.org/hiball.html>) and associate leader of the neuroinformatics and computational modelling theme of HBHL (<https://www.mcgill.ca/hbhl>). For his contributions to studying brain organization in health and disease, he received multiple career awards. His research is supported by national and international funders, including CIHR, NSERC, BrainCanada, Helmholtz/HBHL, and NIH.

Jean-François Cloutier, PhD

Professor, Dept Neurology and Neurosurgery, McGill University



Jean Francois Cloutier, PhD is a Professor in the Department of Neurology and Neurosurgery at McGill University and at The Neuro – Montreal Neurological Hospital and Institute. His research program focuses on the molecular mechanisms that regulate the formation and function of brain circuitry in neurotypical brains and in neurodevelopmental disorders. He uses genetically-modified mouse models to understand how alterations in brain circuitry during development can lead to changes in social behaviors.

Thomas Durcan, PhD

Associate Professor, Dept of Neurology and Neurosurgery, McGill University | Director, EDDU The Neuro



Originally from Dublin, Ireland, Thomas Durcan has been at the Montreal Neurological Institute and Hospital (The Neuro) for over 15 years. As an Associate Professor at The Neuro and McGill University, his research focus is on applying patient-derived stem cells towards the development of phenotypic discovery assays and 3D mini-brain models for both neurodegenerative and neurodevelopmental disorders. As director of the Early Drug Discovery Unit (EDDU) at The Neuro, Thomas oversees a team of over 40+ research staff and students, committed to applying novel stem cell technology, combined with CRISPR genome editing, 3D brain models and single cell phenotyping towards elucidating the underlying causes of these complex disorders, towards identifying novel therapies.

Mayada Elsabbagh, PhD

Assistant Professor, Dept of Neurology and Neurosurgery, McGill University



Mayada Elsabbagh, PhD, is Associate Professor in Neurology and Neurosurgery at McGill University. She is also a Research Scientist at MUHC where her program is integrated with diagnosis and support services for autism and related neurodevelopmental conditions. Her research focuses on understanding the root causes of autism and tracing its developmental pathways, with the mission of accelerating translation of scientific discoveries into community impact. Mayada Elsabbagh's contributions include the discovery of very early brain markers for autism prior to the onset of behavioural signs. She is the Director of the Transforming Autism Care Consortium (TACC) and the Associate Director of Clinical Research at Azrieli Centre for Autism Research (ACAR). She is also active in local and international efforts to improve evidence-based practice and capacity building in the community. The public value and social relevance of Dr. Elsabbagh's research has been recognized through various awards.

Carl Ernst, PhD

Assistant Professor, Dept, of Psychiatry, The Neuro, McGill University



Carl Ernst received his doctorate at McGill and completed his fellowship at Harvard Medical School. He joined the McGill Group for Suicide Studies at the Douglas Mental Health University Institute in 2011 and specializes in genomics, stem cell biology, advanced DNA sequencing, and epigenetics. He is also an enthusiastic associate professor in the Department of Psychiatry and is the head of the Psychiatric Genetics Group (www.mcgill.ca/psychiatricgenetics). The Ernst lab expertise is in stem cell modelling of neurological disease and genetic engineering

Fatemeh Fadie

PhD Candidate, Neuroimaging of Epilepsy (NOEL) Lab, The Neuro



Fatemeh Fadie is a PhD candidate under the supervision of Dr. Neda Bernasconi at the Neuroimaging of Epilepsy lab at The Neuro. Fatemeh's research has provided novel insight for the occurrence of broad spectrum of cognitive impairments in temporal lobe epilepsy (TLE) and it could be of high interest to the epilepsy research community. We showed that TLE is characterized by atypical functional integration between paralimbic/transmodal and sensory/unimodal systems. Notably, dysconnectivity of limbic cortices at the top of the hierarchy was associated with abnormal myelin content and hippocampal atrophy, and connectional derangements at the bottom scaled with thinning of sensorimotor cortices. Multivariate techniques revealed that cognitive dysfunction across multiple domains were tightly related to altered connectivity, corroborating our hypothesis that the typical hierarchical flow of information from sensation-to-cognition is compromised in this condition.

Jean-Pierre Falet, MD, CM

Clinician Scientist, McGill University



Dr. Falet is a clinician-scientist with expertise in developing deep learning frameworks for precision medicine, particularly for multiple sclerosis (MS). He received his M.D.,C.M. from McGill University in 2017, and completed his neurology residency there in 2022. Through McGill University's Clinician Investigator Program, he specialized in the care of patients with MS, and obtained an M.Sc. in neuroscience in May 2023. During his master's, he developed deep learning methods for predicting treatment response and discovering biomarkers of progression in MS, under the guidance of Dr. Douglas Arnold and Dr. Tal Arbel. In September 2023, he will begin doctoral studies in computer science at Mila - Quebec AI Institute/University of Montreal, under the supervision of Dr. Yoshua Bengio and Dr. Guillaume Lajoie. His research focuses on developing robust deep learning methods for precision medicine and scientific discovery, and on designing brain-inspired AI systems to achieve human-level performance on clinical tasks.

Ilse Gantois, PhD

Research Associate, Dept of Biochemistry, McGill University



Ilse Gantois' career started at the University of Antwerp, Belgium, where she received her PhD in the laboratory of Dr. Frank Kooy at the Center of Medical Genetics, studying gene expression changes in the brain of Fragile X KO mice. They were the first ones to show downregulation of the GABAA receptor in Fragile X syndrome. Afterwards, she joined the group of Dr. John Drago at the Howard Florey Institute in Melbourne, Australia, where she studied Parkinson's and Huntington's disease using conditional KO mouse models. Following, she returned to Belgium and joined the Laboratory of Biological Psychology at Leuven University, studying the importance of dopaminergic pathways in spatial and non-spatial learning. At present, . Gantois is in the Sonenberg laboratory at McGill University in Montreal, and is studying the importance of translational control in diseases such as ASD. The main aim is to preclinical test drugs that work on specific protein synthesis pathways in several ASD mouse models. Ilse showed that metformin, an anti-diabetic drug and translational inhibitor, can rescue autistiform features in a mouse model of Fragile X syndrome.

Sana Hannan, PhD

Analytical Neurophysiology (ANPHY) Lab, The Neuro



Dr. Sana Hannan is a neuroscientist with an interest in using neurophysiological methods to understand brain function in physiology and disease states. She joined the Analytical Neurophysiology Lab at the MNI in 2021 as a Postdoctoral Fellow. Her current research is aimed at investigating fundamental interactions between epilepsy and sleep in patients with drug-resistant epilepsy who are undergoing presurgical monitoring. Specifically, she is using intracranial EEG and sleep recordings to directly analyze the effects of sleep structure on epileptic activity and improve understanding of this complex relationship.

Dr. Hannan received her PhD from UCL, UK in 2019 under the supervision of Professor David Holder and Professor Matthew C. Walker. Her PhD thesis focused on developing a functional neuroimaging modality, electrical impedance tomography, to image the propagation of neural activity during epileptic spikes in the neocortex and hippocampus with high spatiotemporal resolution. During her subsequent role as a Research Fellow at UCL, she worked towards translating this technique to clinical settings for aiding the presurgical localization of seizure foci in patients with drug-resistant epilepsy. Dr. Hannan has received numerous awards and prizes during her academic career, including the prestigious Jeanne Timmins Costello Fellowship and the FRQS Postdoctoral Fellowship, the latter of which supports her current research.

Adil Harroud, MD

Neurologist, The Neuro



Adil Harroud is a staff neurologist and researcher at the Montreal Neurological Institute-Hospital, McGill University, and specializes in the care of people with multiple sclerosis (MS). He completed a research fellowship in genetics at the University of California San Francisco with Professor Sergio Baranzini, where his work helped establish a genetic basis for MS severity and identified the first genetic modifier of disease course. His current research centers on understanding genetic determinants of disease risk and progression in MS.

Jason Karamchandani, MD

Associate Professor, Dept of Pathology, McGill University | Neuropathologist, The Neuro



Dr. Jason Karamchandani is an Associate Professor in the Department of Pathology, and is a neuropathologist at The Neuro. His clinical specialty is neuropathology and anatomic pathology. His research employs bio-informatic data to identify and to characterize biomarkers relevant to classification and prognosis of brain tumours and neuromuscular disorders. His laboratory at the Neuro will examine pathologies of both the central nervous system as well as neuromuscular disease.

Dr. Karamchandani also serves as the director of immunohistochemistry and special stains for the MUHC, program director for the McGill Anatomic Pathology residency program, and on the tissue and bio-banking committee of the MUHC research ethics board. Among his scientific achievements, Dr. Karamchandani has authored or co-authored 40 publications in peer-reviewed journals.

Annette Majnemer, OT, M.Sc, PhD

School of Physical and Occupational Therapy, McGill University



Annette Majnemer OT, PhD, FCAHS is an occupational therapist with doctoral training in the neurosciences. She is Professor at the School of Physical & Occupational Therapy and was the inaugural Vice-Dean Education (2016-2022) for the Faculty of Medicine and Health Sciences, McGill University. She is a Senior Scientist at the Research Institute - McGill University Health Centre (Montreal Children's Hospital), and a member of Montreal's Centre for Interdisciplinary Research in Rehabilitation (CRIR). Her research focuses on early identification strategies for children at high-risk for developmental disability, and intrinsic and extrinsic factors that influence outcomes. She also studies knowledge mobilization and implementation strategies that promote evidence-based rehabilitation practices. She is the nominated principal investigator of CHILD-BRIGHT, a CIHR SPOR Network with patient-oriented research focused on children with brain-based disabilities and their families.

Aimen Moussaddy, MD

Neurologist, The Neuro

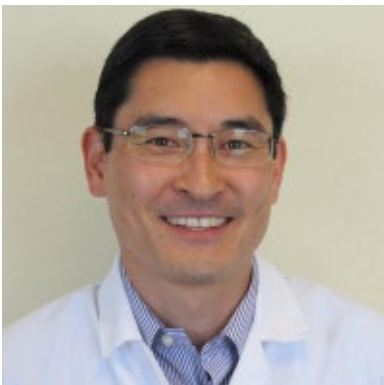


Dr. Moussaddy is a neurologist who specializes in vascular neurology. After completing a neurology residency at Université de Montréal, he received a postdoctoral fellowship diploma in Stroke Medicine at the Calgary Stroke Program of Foothills Hospital in Calgary, Canada. He is an attending physician at The Neuro and at the McGill University Health Centre. He is a McGill University associate professor in the Department of Neurology and Neurosurgery, and is involved in neurology teaching at all levels of medical education. In 2018, he became the fellowship director of the McGill Neurovascular Program.

Dr. Moussaddy's research interest is in hyperacute stroke therapy: thrombolytics, thrombectomy and acute-stroke imaging and analysis. He serves as site principal investigator in several ongoing international multi-centre clinical trials in vascular neurology.

Ketih Murai, PhD

Professor, Dept. of Neurology and Neurosurgery, McGill University | Director, Centre for Research in Neuroscience



My research has two main areas of focus: understanding how neurons and glial cells cooperate to regulate brain development and homeostasis, and discovering mechanisms that regulate the plasticity of synapses underlying memory formation, neurodevelopmental disorders and neurodegenerative diseases. My research uses advanced approaches, including neuronal/astrocyte-specific and time-controlled gene deletion in mice, manipulations including in utero electroporation (IUE) and viral gene delivery, confocal/2-photon imaging, and behavioural analysis. It also incorporates human postmortem tissue analysis (Alzheimer's disease and Down syndrome) and human-induced pluripotent stem cell (hiPSC) technologies (Down syndrome) to advance the understanding of neuronal and astrocytic alterations in brain disorders and diseases. These approaches are complemented with cellular and tissue mRNA profiling and bioinformatics methods to understand how specific genetic manipulations impact the molecular features of neurons and astrocytes in the brain.

Maryam Oskoui, MD, MSc

Montreal Children's Hospital, McGill University Health Centre



Dr. Maryam Oskoui is a pediatric neurologist, neurophysiologist and epidemiologist. She is a Clinician Scientist and Director of Pediatric Neurology at the Montreal Children's Hospital. She is a Senior Clinical Research Scholar of the FRQ-S with a focus in clinical research and clinical trials in pediatric neuromuscular disorders. She is a Principal investigator and SMA lead for INFORM RARE, a Strategy for Patient Oriented Research innovative clinical trial initiative supported by CIHR. Dr. Oskoui serves as an evidence-based methodologist for the American Academy of Neurology and has contributed to numerous clinical care guidelines.

Massimo Pandolfo, MD

Professor (Clinical), Dept of Neurology and Neurosurgery, McGill University
Co-Director, Clinical Research Unit (CRU), The Neuro



Before coming to the Department of Neurology and Neurosurgery at McGill University in 2021, Dr. Massimo Pandolfo was Chief of Neurology at Erasme Hospital and Professor of Neurology at the Université Libre de Bruxelles (ULB), where he was also Director of the Laboratory of Experimental Neurology. His research interests focus on neurogenetics. An international collaboration led by Dr. Pandolfo was the first to identify the Friedreich's ataxia (FRDA) gene in 1996. He has since contributed to the study of the molecular pathogenesis of the disease, to the development of therapeutics, and to its clinical characterization.

He has been the coordinator of the European Friedreich's Ataxia Consortium for Translational Studies (EFACTS) and is currently on the Board of Directors of the Ataxia Charlevoix-Saguenay Foundation. In addition, he has contributed to the study of several monogenic epilepsies and participated in genetic studies on common epilepsies and on epilepsy pharmacogenetics. He was also involved in genetic studies on brain degeneration with iron accumulation, paroxysmal non-kinesogenic dyskinesia, aceruloplasminemia, and on the predisposition to stroke.

Jessica Royer, PsyD

Clinical Neuropsychologist
Integrated Program in Neuroscience, McGill University



Jessica Royer, Psy.D., is a clinical neuropsychologist currently pursuing her Ph.D. studies in the Integrated Program in Neuroscience at McGill University in the groups of Dr. Boris Bernhardt and Dr. Birgit Frauscher. Her PhD research integrates multiple brain imaging modalities, notably magnetic resonance imaging (MRI) as well as intracranial and scalp-electroencephalography (EEG), to better understand structural and functional brain organization in healthy individuals and patients with drug-resistant focal epilepsy. A core objective of Dr. Royer's research is the development of openly available datasets and tools to facilitate future studies on brain organization in health and disease.

Pedro Rosa-Neto, MD, PhD

Director, McGill University Research Centre for Studies in Aging



Prof. Pedro Rosa-Neto MD (Federal University Rio Grande do Sul, Brazil), PhD (Aarhus University, Denmark) is a neurologist specialized in Alzheimer's disease. He is full professor of Neurology and professor of Neurosurgery and Psychiatry at McGill University and Director of the McGill University Research Centre for Studies in Aging. His research focuses on imaging and fluid biomarkers of dementias. He authored more than 280 peer review publications on the topic. Prof. Rosa-Neto is a Fonds de Recherche Santé - Québec Merit Scholar and the 2022 recipient of the Irma M. Parhad Award for excellence in dementia research. He is a and vice chair of the CCNA team 2 'Inflammation and Trophic Factor deregulation in Alzheimer's disease. Dr. Rosa-Neto's research is funded by Alzheimer's Association, Canadian Foundation for innovation (CFI), Fonds de Recherche Santé - Québec (FRQ-S), Canadian Institutes of Health Research (CIHR) and the Weston Brain Institute.

Edward Ruthazer, PhD

James McGill Professor, Dept of Neurology and Neurosurgery, McGill University



Ed Ruthazer is James McGill Professor in the Department of Neurology and Neurosurgery and the Director of the Integrated Program in Neuroscience graduate program. His lab studies activity-dependent plasticity of developing neural circuits using a range of techniques, ranging from in vivo calcium imaging, dynamic structural imaging, whole-cell electrophysiology, behavioural assays and CRISPR transgenesis. A recent research focus is neuron-glia interactions in circuit refinement.

Julie Scolah, PhD

Neuropsychologist, The Neuro



Julie Scolah is a licensed neuropsychologist specializing in neurodevelopmental conditions, including Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), and Fetal Alcohol Spectrum Disorder (FASD). In 2019, she joined McGill University as an Assistant Professor (Professional) in the Department of Neurology and Neurosurgery of the Faculty of Medicine and Health Sciences.

Scolah has 17 years of experience working in clinics specializing in the assessment and diagnosis of neurodevelopmental conditions in various tertiary centres including the McMaster Children's Hospital, the Alberta Children's Hospital, the Montreal Children's Hospital, and The Neuro (Montreal Neurological Institute-Hospital). She also has experience leading multi-disciplinary teams in home, school, and centre-based intervention for autism. Scolah has clinical research experience in the design and implementation of clinical assessment protocols, project development, and as a clinical site leader in multi-site research protocols.

Wendy Sculnick

Managing Director, Philanthropy, The Neuro



Wendy recently returned to The Neuro as Managing Director Philanthropy after gaining experience as an AVP Philanthropy at an International nonprofit organization. Prior to that, Wendy was part of the philanthropy team at The Neuro for six years where she contributed to the conceptualization and implementation of the fundraising strategy for Brains Need Open Minds major campaign, created awareness and raised funds for brain cancer research, and secured major gifts for programs such as MS and epilepsy. Her first introduction to The Neuro was as a volunteer and co-founder of the long-running fundraiser, A Brilliant Night.

Wendy's experience prior to The Neuro includes years as a successful business owner and much time spent in various roles in advertising and marketing in the retail fashion industry. Wendy's varied experience has led to her expertise in creating impactful strategies, developing meaningful relationships and successfully raising funds.

Wayne Sossin, PhD

Distinguished James McGill Professor, Dept of Neurology and Neurosurgery, McGill University



Wayne Sossin received undergraduate degrees in Biology and Computer Science from MIT in 1984, a PhD at Stanford in Biological Sciences (Dr. Richard Scheller) and did post-doctoral studies (Dr. James Schwartz) at Columbia University in the Center for Neurobiology and Behavior before being appointed Assistant Professor at the Montreal Neurological Institute at McGill University in 1993 where he is now a Distinguished James McGill Professor. Dr. Sossin has published over 130 papers on the molecular and cellular processes underlying memory maintenance and neuronal development with a particular interest in the role of persistent protein kinases and the regulation of local translation in this process. He has proposed that much of local translation is mediated by the reactivation of stalled polysomes stored in neuronal RNA granules and that this is a critical hub for neurodevelopment, often dysregulated in neurodevelopmental disorders.

Myriam Srour, MD, FRCP (C), PhD

Montreal Children's Hospital, McGill University Health Centre Research Institute



After completing her medical studies and Pediatric neurology residency at Mc Gill University, Dr Srour pursued a fellowship in Neurogenetics and a PhD in molecular biology at the Université de Montreal. Dr. Srour has discovered multiple genes responsible for various neurodevelopmental disorders such as DCC (mirror movements), C5ORF42, TMEM231, CEP104 (Joubert Syndrome), RARB (PDAC syndrome), SLC45A1 (Intellectual disabilities and epilepsy) and CDH2 (Neurodevelopmental disorder with corpus callosum, axonal, cardiac, ocular and genital defects). My research focuses on congenital brain malformations, which are usually the result of disruption during fetal development.

Sarah Stack

Associate Director, Major Gifts, Philanthropy, The Neuro



Sarah joined The Neuro's philanthropy office as development officer in 2020, coming from the Office of Communications in the Faculty of Medicine and Health Sciences at McGill University. She has worked on a wide range of philanthropic gifts for The Neuro, including the \$1M gift from the McConnell Foundation to support Open Science, gifts for rare diseases like ataxia and OPMD, and a number of significant donations for the epilepsy centre. In 2022, she was promoted to Associate Director of Major Gifts.

Sarah graduated from McGill's Faculty of Music and played full time in the Orchestre symphonique du Québec for many years before making a career change. She finds philanthropy fulfilling, connecting The Neuro's world-class work with donors who want to give back, especially patients and their families.

Yang Zhou, PhD

Assistant Professor, Dept. of Neurology and Neurosurgery, McGill University



Yang Zhou is a Tier II Canada Research Chair and an Assistant Professor at The Neuro, McGill University. He obtained a bachelor's degree in medicine and a Ph.D. in neurobiology from China. He immigrated to Canada and joined The Neuro in 2019 after completing post-doctoral training in genetic engineering at the McGovern Institute for Brain Research, Massachusetts Institute of Technology. His group applies experimental models to characterize gene mutations associated with Autism and NDDs, aims to deepen the understanding of neurobiology underlying NDDs, and tests disease-modifying strategies that may accelerate the development of therapies for affected individuals. His research program receives support from The Neuro, ACAR, TACC, IPN, SickKids Foundation, Brain & Behavior Research Foundation, and federal funding agencies.

2023 NEURO Challenges & Fun



Trivia Fun!

Do you want to win some great Neuro swag? All you have to do is successfully answer 5 trivia questions. You have a time limit of 5 minutes per question. Your brain is your tool. The Trivia game is found at the Events desk in the lobby.



The Neuro Physical Challenge, are you up for it?

Prizes galore for winners of the physical challenge. Go to the gym to execute the challenge. The challenge may take up to 15 minutes to complete.



Poker Tournament (Friday, June 2, 9 p.m. – 11 p.m.)

Takes place on the rez de jardin level close to the Entertainment room. Poker chips and cards supplied

Pool Tournament (Friday, June 2, 9 – 11 p.m.)

Takes place on the rez de jardin level in the Entertainment room. Equipment is supplied, bring your expertise and sense of fun.

SOCIAL & EXTRA-CURRICULAR ACTIVITIES

Registration (sign-up) is required for some of the following activities



Hike on Mont Giroux (Saturday, June 3, 2 - 4:30 p.m.)

The trail and hike will begin from the hotel. There is a fair amount of ascent, hiking or sturdy shoes are recommended.



Yoga (Saturday, June 3, 8:45 - 9:30 a.m.)

Yoga for all levels. No experience needed. Sign up in advance or with the Neuro Event team at the retreat. The class will take place Saturday morning and be led by Allison Jacobson. Bring your towel or yoga mat, comfortable clothing is recommended. This will take place on the Terrace.



Open Science Trivia Night @Neuro Retreat

Friday, June 2 - 9pm to 9:45pm, Orford Hall

Presenter/Host: Gabriel Pelletier – Open Science Data Manager, TOSI

You think you know all about Open Science and how it is implemented at The Neuro and worldwide? You wish you would know more? Come test your knowledge of Open Science in a relaxed and fun casual setting and learn a thing or two along the way!

A drink will be offered to all participants, and the winner will leave with a unique prize.



A warm fire, porto & chocolate

Friday, June 2, 9:30 p.m. – Terrace

Not to be missed and if the sky is clear, the constellations await you!

RETREAT VENUE & REGIONAL ATTRACTIONS

This year's Retreat at Espace4Saison, situated at the base of Mount Orford will be nothing short of an amazing early summer experience. A unique jewel in the beautiful valleys of the Eastern Townships, Espace4Saison is close to Magog and Lake Memphremagog, with many local activities to enjoy such as hiking, biking, an outdoor swimming pool, an onsite Spa, great food and more. We hope you enjoy the experience!

For those of you wanting to explore the region, here are some additional activities to do near the hotel: Le CEP D'Argent Winery, Espace Bleu Lavande, Mount Orford Golf Club, Owl's Head Golf Club, Dôme de Morphée, Spa Nordic Station and kayaking on the Marais de la Riviere au Cerise to name a few.



Le CEP d'Argent

One of the first in the province of Quebec, the Cep d'Argent vineyard offers an effervescent experience like nowhere else the country. The 114-acres where more than 60,000 individual vines grow offers an exceptional view of Lake Magog. Besides the sparkling wines which have made the vineyard a household name, le Cep d'Argent also offers a selection of red, white, rosé, fortified and sweet wines.



Espace Bleu Lavande

Espace Bleu Lavande offers an immersion in the cultivation of lavender in Quebec. In addition to lavender fields and floral gardens, the facility features an interpretation center, an immersive Moment Factory experience and a beautiful boutique. They offer seasonal ephemeral programming, including workshops and musical performances. Their relaxation area offers massages and various wellness experiences. Rates for entrance are \$5 per person, and free for children under 12.



Mont Orford Golf Club

Located in the heart of the National Park, the Club de Golf du Mont-Orford is one of the most beautiful panoramic courses in Quebec. Characterised by its valleys and natural streams, the par 72 course offers typical mountain golf challenges. It will require a lot more effort, but the panoramic views of the surrounding mountains will make it worthwhile. Rates depend on the time of the day and time of the year. For more information, see their [website](#).



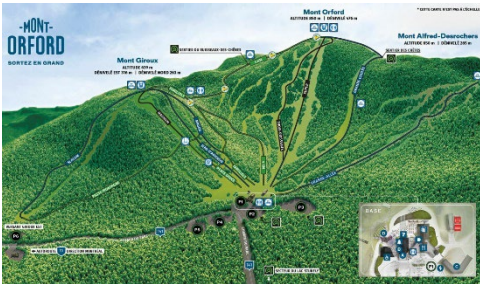
Owl's Head Golf Club

Overlooked by a magnificent fieldstone chalet in the heart of nature, the Owl's Head championship-calibre golf course lies at the mountain's base. It offers an unforgettable experience to golfers of all levels, from novices to long-time enthusiasts. For more information, see their [website here](#).



A stroll through the Eastern Townships

Discover the Eastern Townships by walking the 5.8 km of trails crossing various ecosystems. Minutes from downtown Magog, Marais de la Rivière aux Cerises Marais de la Rivière aux Cerises in addition to the trails, an observation tower, a large picnic area and a long bridge on stilts in this marsh environment. The trails are easily accessible and free via Roy Road or the Du Moulin parking lot. To look through the opportunities, follow the [link here](#).



Parc national du Mont-Orford

The park is located immediately north of Magog in the Eastern Townships tourist region of the province. It encompasses several mountain peaks, among which are Mont Orford, Mont Giroux (Pic aux Corbeaux), Mont Alfred Desrochers, Mont Chauve, and the Massif des Chênes. There are multiple hiking trails, with the opportunity to buy a daily pass. Mount Giroux is accessible within minutes of Espace4Saisons. See their website for more information [link](#).



Marais de la Riviere aux Cerise

The nautical courses of the Marais are ideal for an immersive experience. It is in this aquatic serenity that you can see the grandiose beauty of the natural scenery of the Rivière aux Cerises. For [guided tours](#) or to rent kayaks [rent kayaks](#).



Dôme de Morphée (on-site)

A beauty center, an oasis of relaxation, the Dôme de Morphée is committed to delivering the highest quality care and treatments and is an in-house spa at Espace4Saisons. The centre offers a complete array of aesthetic, massage, and relaxation treatments tailored to the interests of visitors and loyal customers alike. More information can be found [here](#).

Additional information

- Supervised Child Care (sign up required)
(Alfred Room, rez de jardin, near the entertainment room)
Saturday, June 3, 2023 – 9 – 12
Sunday, June 4, 2023 – 9 -12
- Early dinner for children (Friday night). You must have signed your children up for this in advance.
Where? Alfred room, rez de jardin leve
When? 5:30 – 6:00. Very young children must be supervised by their parents. A staff member will be onsite to assist older children. Children must be picked up at 6 p.m.
- The onsite Burger Pub is available every evening for snacks and beverages.