



Canadian League Against Epilepsy



MESSAGE FROM THE PRESIDENT

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Dear members of the CLAE,

By the time this issue of CLAE Connections is released, we will be celebrating in Vancouver the 40-year anniversary of this great organization. The meeting will be unique in many different aspects. It will be the first meeting in which we will have sessions for all the different professionals involved in epilepsy care. We received a record number of submissions of abstracts and proposals for the different sessions of the meeting. I would like to congratulate the Education Committee led by Dr. Paolo Federico in doing such a fantastic job.

During the meeting, we will have the opportunity to meet and greet three of our founders: Drs. Warren Blume, Juhn Wada and Keith Meloff. They will honor us with their presence at the dinner on Saturday, so take this opportunity to talk with such amazing colleagues who have paved the way on how epilepsy is currently managed.

I would also like to take this opportunity to recognize the tremendous support we receive from our partners in the pharmaceutical industry. They have continuously sponsored our meetings and other educational initiatives. Their continuous presence in the Canadian epilepsy community will enhance our meeting.

On the international arena, the new ILAE Commission on North American Affairs has been selected for the 2017-2021 term. Dr. Nathalie Jetté, former CLAE President, will now chair it, with representatives from Canada sitting in that Commission, including Dr. Mary Lou Smith and myself. The results of the election can be found on the ILAE webpage.

On the same page, the North American Commission has decided to have a North American Regional Epilepsy meeting every two years. The first one will occur in Trinidad and Tobago in March of 2018 under the auspices of the Caribbean Chapter. The meetings will initially alternate between the Caribbean and Canada, hence the following one will be in 2020, on Canadian soil. More information will be released as we get closer to the date.

On the Canadian arena, progress has been made

with the Global Health Committee, which will be discussed during the presidential address and in the epilepsy fellowship.

We are living exciting times in the world of epilepsy treatment. I am happy to report that the initiative to improve epilepsy care in the province of Ontario has been successful. The Provincial Epilepsy Strategy Group led by Dr. O. Carter Snead III, and composed of most epileptologists and epilepsy surgeons in Ontario, has been able to establish four epilepsy district centres in Ottawa (adults and pediatric), Sudbury (adults), Hamilton (adults and pediatrics) and recently, Kingston (adults). Two comprehensive, regional epilepsy centres have been recognized in London (adults and pediatrics) and Toronto (adults and pediatrics). The number of EMU (Epilepsy Monitoring Unit) beds has increased in Ontario, and more professionals caring for those with epilepsy have been hired, including social workers, neuropsychologists, nurses and EEG technologists. In addition, a recent initiative in epilepsy education, also led by Dr. Snead, has been funded by the Ministry of Health of Ontario, and we will be hearing more about it during the meeting. It is time for all our epilepsy leaders, across the country, to start discussions with politicians and leaders in their own provinces to establish initiatives, like the one in Ontario, to improve and enhance the care to those living with epilepsy.

Finally, I urge you to support our organization by participating in the fun walk/run on Saturday morning and then joining us later that evening for the presidential dinner. Have a good meeting everyone and happy 40th anniversary!

Cheers,

Jorge





RISING STAR



Dr. Boris Bernhardt is a cognitive scientist with expertise in neuroimaging, neuroinformatics and brain network analysis. He carried out PhD studies with Andrea and Neda Bernasconi at the Montreal Neurological Institute and

postdoctoral research at the Max-Planck Institute for Human Cognitive and Brain Sciences with Tania Singer in Leipzig, Germany.

Dr. Bernhardt joined McGill as Assistant Professor of Neurology and Neurosurgery in 2016 and heads the Multimodal Imaging and Connectome Analysis Laboratory (mica-mni.github.io). His team develops neuroimaging and network analytics to study neuroanatomical variability and its relation to cognition and affect in healthy and diseased populations. These activities rely strongly on statistical modelling, connectome analysis and machine learning.

In the study of drug-resistant epilepsy, he has published several papers that pioneered surface-based MRI analysis to map structural changes in mesiotemporal, thalamic and neocortical regions. He tracked disease progression with longitudinal MRI studies and recently led a meta-analytical synthesis of the literature. Dr. Bernhardt published the first graph-theoretical study of structural network reorganization in the condition, contributing to the reconceptualization of focal epilepsy as a network disorder. To improve assessment of individual patients, he devised neuroimaging predictors of histopathology, focus laterality and surgical outcome.

Dr. Bernhardt's overall research interests also cover more general aspects of neurodevelopment, anatomical-functional brain organization, and the relation between brain networks and individual differences in cognition and affect. Using multimodal MRI, he showed links between structural networks and phenotypic variations in social cognition as well as self-generated thought and mental time travel.

He participated in studies demonstrating that maturation of specific brain areas underlies development of social decision making. In autism, his team combined hypothesis-based and data-driven approaches to show disruptions of networks mediating social understanding, identifying potential pathways for behavioural therapy.

Dr. Bernhardt has given invited talks and keynotes at the American Epilepsy Society Annual Meeting, MICCAI, the CLAE biannual meeting and the International Epilepsy Congress. He participates in several international consortia, contributed to the development of open access SurfStat software for statistical analysis of brain imaging data and is editor for PLoS One.

He received the Canadian League Against Epilepsy best fellow publication award (2016), the American Epilepsy Society New Investigator Award (2016) and the International League Against Epilepsy Michael Prize (2017).

Dr. Bernhardt's research is supported by PI funding (NSERC-Discovery, SickKids-New Investigator, CIHR- Foundation), salary support (FRQS Junior 1) and co-investigator grants (QBIN/RBIQ International Networking, European Research Council - Consolidator).

ILAE Training Course in Neuropsychology

The Neuropsychology Task Force of the International League Against Epilepsy (ILAE) is pleased to announce the second ILAE Training Course in Neuropsychology in Epilepsy, which will be held from April 15-20, 2018 in Provence, France. Participants will take part in lectures, case presentations and discussions designed to illustrate principles of differential diagnosis and case formulation in neuropsychological practice in epilepsy and epilepsy surgery. Course material will be presented by an international faculty made up of the clinicians who are at the forefront of evidence-based practice in this field.

The Canadian Epilepsy Alliance/Alliance Canadienne de L'Epilepsie has generously agreed to provide a bursary to fund a Canadian advanced trainee/early career neuropsychologist to attend the course. This opportunity will be contributing to expanding much needed expertise in the diagnosis and treatment of cognitive and behavioural comorbidities in epilepsy.

For further information on applying for the course and the bursary, please contact Mary Lou Smith at marylou.smith@utoronto.ca. The deadline for applications is October 30, 2017.



WHERE ARE THE STARS NOW? UPDATE ON PREVIOUS RISING STARS



Dr. Mark Ferro is the Canada Research Chair in Youth Mental Health and an Assistant Professor in the School of Public Health and Health Systems at the University of Waterloo. During his career, he has received several accolades including the New Faculty Award from the University of Waterloo, Early Career Award from Hamilton Health Sciences, Brain Star Award from the Institute of Neurosciences, Mental Health and Addiction at the Canadian Institute of Health Research (CIHR), and

Early Career Award from the Canadian Society of Epidemiology and Biostatistics. Dr. Ferro is currently funded by a \$1.2 million CIHR grant to study the mental health of children newly diagnosed with physical health problems and holds an Early Researcher Award from the Ministry of Research, Innovation and Science to understand the determinants and outcomes associated with re-admission among youth who experienced a first psychiatric hospitalization. He has received over \$20 million in research funding as a principal or co-investigator, published over 60 peer-reviewed papers, and delivered over 100 invited talks and conference presentations. Dr. Ferro reviews for CIHR and serves on the editorial board for the Canadian Journal of Psychiatry. His program of research takes a life-course approach using both clinical and epidemiological studies to understand the intersection between physical and mental health. Dr. Ferro's focus is on the determinants and mechanisms leading to the onset of mental disorder and physical-mental multimorbidity, psychiatric health service use among children with multimorbidity, and psychosocial outcomes in medically vulnerable children and young people.



Dr. Elysa Widjaja was previously featured as a rising star in CLAE Connections issue from September 2013. She is a pediatric neuroradiologist who is an integral part of the epilepsy surgery team at the Hospital for Sick Children. Her role includes reviewing all epilepsy imaging prior to surgery and participating in epilepsy surgery planning. She holds an associate scientist position at the research institute at the Hospital for

Sick Children and a cross-appointment to the division of neurology. Her team used a time-series design to assess whether improvement in pre-surgical diagnostic evaluation could improve epilepsy surgery outcome and showed that the use of high-resolution epilepsy protocol on 3T MRI, along with combined FDG-PET and magnetoencephalography, was associated with an improvement in a seizure-free outcome. She led the working group to develop the neuroimaging section of the provincial guideline

"Regional Epilepsy Surgery Centres – Program Model and Technical Guide". In addition to pediatric epilepsy, she is also interested in outcomes research. She received a CIHR operating grant to conduct a multi-centre study on the impact of pediatric epilepsy surgery on health-related quality of life, which is currently in progress. Her enthusiasm for outcomes research has led her to undertake a PhD degree, majoring in health technology assessment, which is a branch of health economics. She plans to use the skill set to expand her research program to include economic evaluations of new technology and health resource use, and generate research that could influence health policy.



Dr. Colin Josephson was the CLAE Rising Star in March 2014. Since then, he has completed his fellowship in EEG and epilepsy at the University of Calgary. He is now an Assistant Professor of Neurology and Community Health Sciences at the University of Calgary and a full member of the O'Brien Institute for Public Health and Hotchkiss Brain Institute. He is actively involved in clinical activities that include clinical and pre-surgical evaluations of patients referred to the Calgary Comprehensive Epilepsy

Program (CEP).

His major academic interest is in the application of 'big data' and advanced analytics to epilepsy. To this end, he collaborates extensively with University College London's Farr Institute of Health Informatics Research (using databases of over 10 million patients) and is the Director of the CEP Clinical Registry that currently contains over 5,500 patients. His research program primarily focuses on the causes and outcomes of the postictal state, the impact of comorbidities on health outcomes in epilepsy, and the elderly with epilepsy. He has co-supervised four undergraduate students since his appointment as Assistant Professor.

He has maintained a keen interest in education and is now the University of Calgary's Epilepsy Fellowship Director, Co-Director of Education for the Division of Epilepsy and Evaluation Chair for the Applied Evidence-Based Medicine undergraduate medicine course. He has also been appointed to multiple positions at the International League Against Epilepsy, including their Big Data-Open Data Committee, Driving Task Force and Epilepsy Leadership Program.





WHERE ARE THE STARS NOW? UPDATE ON PREVIOUS RISING STARS



Dr. George Ibrahim is a newly recruited Assistant Professor in the Division of Neurosurgery at the University of Toronto and a Pediatric Neurosurgeon at the Hospital for Sick Children. He completed his neurosurgery training at the University of Toronto in 2016 followed by a one-year fellowship in pediatric neurosurgery at the University of Miami with an emphasis on the surgical treatment of epilepsy in children using stereo-EEG and laser interstitial thermal ablation. He has an active research interest, having published over 100 peer-reviewed articles and book chapters. His PhD work focusing on oscillatory functional connectivity in childhood epilepsy received several high-profile awards, including the Governor General of Canada's academic gold medal, the CIHR Vanier Canada Scholarship and the Bisby Award for highest-ranked CIHR application. His work was recognized on the international level as the recipient of the American Association of Neurological Surgeons and the Congress of Neurological Surgeons Kenneth Shulman and Chorafas Foundation Awards and nationally as recipient of the K.G. McKenzie Prize for Clinical Neuroscience from the Canadian Neurosurgical Society. He is also currently an Associate Scientist at the SickKids Research Institute, where he hopes to foster multi-institutional collaborations and continue translational research in brain imaging and neurophysiology applied to epilepsy and pediatric functional neurosurgery.

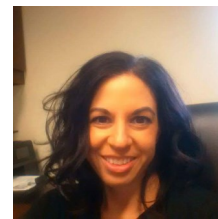
He was recently awarded a \$487K CIHR Project Grant on "Probing hippocampal integrity at ultra-high resolution in temporal lobe epilepsy".

Dr. Khan and co-investigator Dr. Stefan Köhler will study structure and function of the hippocampus at a fine scale, to determine whether MRI-negative hippocampal abnormalities can be identified and whether specific patterns of atrophy can predict surgical outcomes. Dr. Khan also continues to work with the Ontario Brain Institute Epilepsy Program, EpLink, and is playing a leading role in planning the next phase of province-wide imaging studies.



Dr. Ali Khan is an Assistant Professor (tenure-track) in the Department of Medical Biophysics at Western University, appointed July 2017, and leads the Khan Computational Neuroimaging Lab in Robarts Research Institute. From 2015-2017, Dr. Khan has published 17 journal articles, and he currently supervises and co-supervises 9 graduate students in his lab at the Robarts Research Institute. After completing his post-doctoral fellowship with Dr. Terry Peters in 2014, he completed a three-year appointment as

Assistant Professor with external funding from Synaptive Medical, a local and fast-growing medical technologies company in the neurosurgical domain. During this time, he worked with Synaptive to research and develop advanced image-guided technologies for diffusion MRI, which has led to multiple patents and an upcoming product release. Dr. Khan has also been successful attaining research funds to support his independent research program in image-guided surgery, receiving a \$105K NSERC Discovery Grant on "Imaging Informatics in Surgery" in 2015. A burgeoning research focus of his lab is on ultra-high field 7T imaging, which provides unprecedented resolution of brain structure, and has the potential to transform how lesions in epilepsy patients are detected and characterized.



Dr. Aylin Reid joined the epilepsy group at the Toronto Western Hospital/University Health Network as a Clinician-Scientist in September 2015. She also holds a position as Assistant Professor at the University of Toronto. Dr. Reid spends 75 percent of her time doing research and has been busy building an independent research program studying basic mechanisms of

epileptogenesis, with a particular focus on post-traumatic epilepsy. She is working on a variety of projects, including investigations of the role of inflammation in the development of post-traumatic epilepsy, for which she has received funding as Principal Investigator from CIHR and the Savoy Foundation. She is also working with collaborators in Toronto to develop new animal models of post-traumatic epilepsy. Since starting her lab, she has been steadily building her team and is now supervising her first graduate students, with two international post-doctoral fellows joining the lab later this year. Her first summer student was the recipient of this year's Undergraduate Summer Student Award from the CLAE. In her clinical practice, Dr. Reid is focused on the care of adult patients with epilepsy. In addition to outpatient epilepsy clinics, she also participates in the pre-surgical work-up of refractory patients in the





OUR COMMUNITY PARTNER: EPILEPSY TORONTO



Epilepsy Toronto is one of the largest community epilepsy agencies in Canada and, with its goal to 'See the Person', brings a constantly evolving approach to supporting the city's epilepsy community.

As a support agency, Epilepsy Toronto offers a wide range of services to fulfill client needs. With staff and programs focusing on children and youth, employment and adults, a combination of counselling and support groups allows for a targeted approach to serving people wherever they are on their epilepsy journey.

When I was told surgery was an option, it felt like a big decision. Being able to talk to others who had been in similar situations helped me to take necessary steps in deciding that surgery was the right choice. -Emma S.

Epilepsy Toronto's support groups cover a range of needs, from ongoing groups for youth and professionals, to shorter-term groups that focus on a specific need. Epilepsy Toronto partners with staff from Toronto Western Hospital to offer a Surgery Support Group four times a year. Bringing together hospital staff with post-operative patients and those considering surgery, this innovative group allows for a dialogue between patients at different stages of the surgery process. Creating a space where personal and medical questions can be answered, and experiences and concerns shared, helps patients make the best decision possible.

This personal approach to client support also drives its newest employment program. The Epilepsy Employment Group (EEG) meets weekly, for seven weeks, several times throughout the year. With no fixed agenda or syllabus for the seven-week program, the first session focuses on the employment and support objectives of the participants and crafting a program that meets their needs.

Epilepsy Toronto's Children and Youth program is frequently called upon to support students by educating school staff and developing appropriate classroom accommodations. Epilepsy Toronto staff have worked with the Toronto District School Board to develop procedures for creating individual seizure response plans, as well as developing an online resource with York University to provide post-secondary instructors training to respond to seizures and epilepsy-specific learning needs of students.

As with many epilepsy agencies, Epilepsy Toronto needs to be creative in how it raises funds and engages with the public. This has led to the Toronto International BuskerFest, Canada's largest busking festival, and the Holiday Fair in Nathan Phillips Square, a three-week holiday market at Toronto's City Hall, both fundraisers for Epilepsy Toronto.

I walk to not be invisible, to show others I am proud of who I am. I walk with those who have supported me and to celebrate how far I have come in my own journey. -Isabelle S.

Epilepsy Toronto's most engaging event is its annual Purple Walk. More than just a fundraiser, the Purple Walk brings hundreds of people living with epilepsy, along with their friends and family, to the streets of downtown Toronto for a 5km walk. It puts what is often a hidden and isolating condition aside and brings people with shared experiences together, giving them the chance to turn downtown Toronto purple.



By Drew Woodley, Director of Communications, Epilepsy Toronto





The Canadian League Against Epilepsy is an organization of medical and basic sciences professionals, including physicians, basic scientists, nurses, neuropsychologists, neuroradiologists, students and other health care professionals.

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NOTE FROM YOUR EDITOR

The next issue of the CLAE Newsletter (February 15, 2018) will include meaningful and relevant information to CLAE members, including, but not limited, to the following:

1. CLAE Stars: A member who has received local, national or international recognition for his/her research, teaching, innovation or advocacy.
2. Innovative new programs and services (clinical, research or advocacy). These include but are not restricted to: new major regional/institutional or provincial clinical programs, new research themes, platforms, consortium and networks, outreach programs in vulnerable/marginalized communities, innovative educational programs and advocacy initiatives/projects.
3. Major publications by Canadians in the field of epilepsy during the last six months.
4. Information on epilepsy meetings and epilepsy-related social events.
5. Information on recruitment of patients for research studies and opportunities for research, educational and clinical collaboration.
6. Success and success stories in major grant competitions.
7. Colleagues we recently lost /an In Memorium section.

If you are interested in contributing and providing content to the CLAE Newsletter, please contact Rajesh Ramachandran Nair (rnair@mcmaster.ca) before January 31, 2018.

Thank you.

Rajesh RamachandranNair, MD, FRCPC

Editor-in-Chief, CLAE Connections

EDITOR'S PICK

NOTABLE PUBLICATIONS FROM CANADA IN 2017

Cuello-Oderiz C, von Ellenrieder N, Dubeau F, Gotman J. Influence of the location and type of epileptogenic lesion on scalp interictal epileptiform discharges and high-frequency oscillations. *Epilepsia*. 2017 Oct. 6. doi: 10.1111/epi.13922.

Camfield PR, Camfield CS. Intractable seizures after a lengthy remission in childhood-onset epilepsy. *Epilepsia*. 2017 Oct. 6. doi: 10.1111/epi.13916.

Josephson CB, Gonzalez-Izquierdo A, Denaxas S, Fitzpatrick NK, Sajobi TT, Engbers JDT, Patten S, Jette N, Wiebe S. Serotonin reuptake inhibitors and mortality in epilepsy: A linked primary-care cohort study. *Epilepsia*. 2017 Sep. 24. doi: 10.1111/epi.13904.

Borlot F, Regan BM, Bassett AS, Stavropoulos DJ, Andrade DM. Prevalence of Pathogenic Copy Number Variation in Adults With Pediatric-Onset Epilepsy and Intellectual Disability. *JAMA Neurol*. 2017 Aug. 28. doi: 10.1001/jamaneurol.2017.1775.