

Brainnovations

Newsletter – Issue 15



ONTARIO
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A Frame of Mind



Team Science: The Key to Unlocking Scientific Advancement

By: Tom Mikkelsen, President & Scientific Director

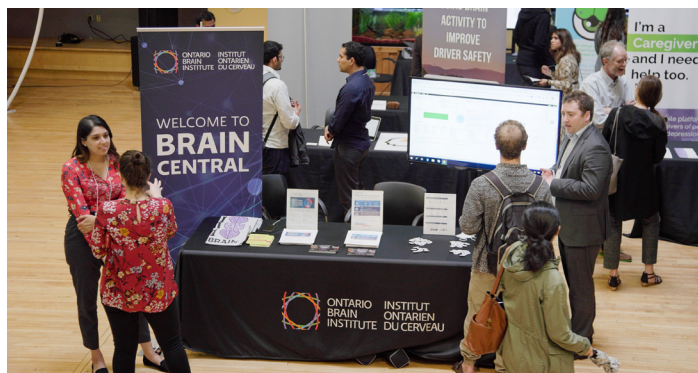
You know the phrase, “two heads are better than one”? Sometimes, many heads are needed to solve a problem; this is especially true for the problems we face in brain health. For this reason, OBI believes in a collaborative model to solve complex problems by forming sustainable partnerships in research, commercialisation and care. In this case, many *brains* that think differently are better than one.

CONTINUE READING...



NeuroTech Ontario Showcase

On June 20, OBI hosted its 4th annual NeuroTech Ontario Showcase at THEMUSEUM in Kitchener-Waterloo, in partnership with [Communitech's True North Festival](#). Companies from the region and beyond exhibited their prototypes and products to the public, investors and fellow entrepreneurs to get first-hand experience of the strength of Ontario's neurotech cluster.



The showcase included two key announcements as a platform to further build and promote the growing neurotech cluster in Ontario. First, OBI announced its partnership with [Pfizer Canada](#) to support internships for recent neuroscience graduates at Ontario-based neurotech start-ups. These internships will help young companies build capacity while offering key experiential

training to new graduates as they launch their careers in the industry. Read more about how this partnership is strengthening Ontario's neurotechnology ecosystem [here](#).

OBI also announced its 2019 cohort of ONtrepreneurs (Ontario Neurotech Entrepreneurs). The [ONtrepreneurs program](#) offers Canada's largest award for early-stage companies developing products to improve the diagnosis, care and



treatment for people living with brain disorders and overall brain health. The awardees of the program will receive a year of training and mentorship in addition to financial investment to accelerate their product development. Learn more about this year's cohort on the following page.

For more information on OBI's vision to improve brain health through neurotechnology, read Tom's editorial [in the Record](#).

OUTPUTS



Partnerships



Companies



Experienced HQPs



Media Coverage

METRICS

325
Attendees

OBI Announces its 2019 ONtrepreneurs

The ONtrepreneurs (Ontario Neurotech Entrepreneurs) Program is Canada's single largest award that catalyzes early stage entrepreneurs to commercialize brain-related technologies by accessing funding and support to launch or grow their neurotechnology ventures.

OBI is pleased to share this year's cohort of [ONtrepreneurs](#):



Maryam Nabavi of [Village Technologies](#) is developing an AI-powered speech recognition platform to monitor brain development in infants.

village
technologies



Israel Gasperin of [Zentrela](#) is developing an EEG-based test for cannabis impairment that will benefit employers to improve safety in the workplace.

Zentrela inc.



Joshua Lobo of [Stabilo Medical](#) is developing a smart vest that allows stroke patients to exercise safely and properly in the absence of a therapist, drastically improving the rate and level of stroke recovery.

STABILO



Michael Philips of [Vena Medical](#) is providing physicians with the world's smallest camera capable of going inside veins and arteries to help physicians treat stroke.

 **Vena Medical**



Zach McMahon of [LUCID](#) curates and creates therapeutic music using biometrics and AI for people looking to reduce stress and anxiety, increase focus, and unlock their full potential.

LUCID



Alex Theodorou of [Ocuthera](#) is connecting the dots in healthcare using virtual reality to bring together patient and practitioner to inspire, motivate, and personalize recovery.

Ocuthera 

Learn more about this year's ONtrepreneurs and their companies [here](#).

OBI Partners with The Rick Hansen Institute

OBI and the [Rick Hansen Institute \(RHI\)](#) have [recently partnered](#) to accelerate investments in the treatment and care of brain disorders and spinal cord injury (SCI). Brain disorders and spinal cord injuries share many similarities in terms of impairments on mobility, quality of life, and burden on the healthcare system.

Working in collaboration with RHI will expand OBI's efforts to identify and develop the most promising discoveries for treatments of brain disorders and SCI. This partnership aims to deliver on three main objectives: advancing commercialization efforts for treatments and care; information exchange between OBI's and RHI's informatics platforms; and partnering in a joint fundraising campaign to support commercialization and data collection.

OUTPUTS



Partnerships



Recognition of
OBI Model

Impact AI Conference

Thought leaders across a number of industries came together at the [Impact AI Conference](#) on May 30, addressing how to build inclusivity and responsibility into advances in artificial intelligence (AI). Garth Smith, OBI's Vice-President, Business Development and Partnerships, spoke on the panel "AI for Good: Bringing Humanity to Machines" with Bilal Khan (Deloitte), Dr. Naomi Visanji (UHN) and Garth Thomas (Globe & Mail), discussing how developments in AI can be used to advance scientific discoveries in neuroscience and in healthcare.

Industries such as financial technology have driven current progress in AI. The panel covered how this progress can be translated to the research and healthcare sectors as advances in neuroscience require working with increasingly complex data. The field can look to the expertise and perspectives of other industries using AI to help mitigate the challenges these data present and drive new discoveries for the improved care of brain disorders.

OUTPUTS



Recognition of
OBI Model



Data-Driven
Approaches to Research

Neurotech spotlight: TremorTek

For people experiencing tremors, simple tasks such as writing can become frustrating endeavors. The dysfunction tremors cause for patients with Parkinson's disease (PD) and essential tremor (ET) can result in disability and decrease quality of life.

Tremor symptoms increase in incidence with age, with 4% of the population developing symptoms in their lifetime. As the population ages, the need for effective treatments will continue to rise. Several therapies exist for tremors – from pharmacological options to surgical interventions – however for many patients the side effects and invasive nature of these operations offer minimal benefit.

[Movement Disorders Diagnostic Technologies](#), an OBI portfolio company, has produced a more effective and less invasive treatment tool called TremorTek. Using wearable sensors and proprietary software algorithm, TremorTek can provide personalized treatment for patients by locating the specific muscles producing tremors and monitoring tremor severity. Clinicians then use this information to guide localized injections of botulinum toxin that reduce tremor intensity. By targeting the muscles resulting in a patient's tremors, subsequent doses, and side effects of treatment are all minimized.

In a recent [phase 2 placebo-controlled clinical study](#), sponsored by Merz Pharma, TremorTek was used with botulinum toxin (Brand names: Botox, Dysport, Xeomin) to treat Essential Tremor patients and the data showed significantly improved motor performance

after 4 weeks. Likewise, a [Canadian clinical study](#) using TremorTek published in PLoS ONE demonstrated the effectiveness of botulinum toxin in producing long-term reductions in tremor severity for PD and ET patients up to two years and improving functional ability. Published this year in Toxins, the latest clinical trial demonstrated that TremorTek was effective in guiding injection dosages to minimize side effects for treatment of ET patients in both arms at the same time, resulting in patients regaining arm functioning and improving quality of life after a single dose. Injections of botulinum toxin offers a less invasive, more cost-effective and easier option to treat tremor in any physician office. With TremorTek, clinicians can help patients with tremors restore limb functionality and regain quality of life by customizing injections to their unique tremor characteristics.

Movement Disorders Diagnostic Technologies is an example of how researcher-entrepreneur partnership can offer faster and personalized care that help improve the lives of people living with brain disorders.



Watch this [real patient video](#) to see the before and after results of tremors treated with botulinum toxin guided by Tremortek .

OBI at Collision

On May 21–23, OBI took part in the fifth annual [Collision](#) conference, one of the largest and fastest growing tech conferences in North America. This year marked the conference's first year in Toronto, attracting young and seasoned entrepreneurs, investors, partners, and people from a range of industries including AI, and healthcare. Collision provided an excellent avenue to showcase OBI's activities in fostering the development of Ontario neurotech companies and supporting the growth of the Ontario neurotech cluster through its ONtrepreneurs program. Attending the conference also allowed OBI to grow its network of investors, partners, and small-to-medium size enterprises (SMEs) interested in neurotechnology. Additionally, OBI sponsored seven of its portfolio companies to attend the conference, giving them the opportunity to showcase their work, boost their profiles and network with potential investors.

METRICS

325 Attendees

Bridging Communities at The 2019 PAC Workshop

OBI hosted its annual Patient and Community Advisory Committee (PAC) workshop June 18. The PACs bring together patients, caregivers, researchers and advocacy organization representatives to promote the patient voice in OBI's research programs.



This year's workshop focused on increasing dialogue between the PACs to strengthen patient engagement activities within the research programs such as increasing patient-researcher connections. Through group discussions, members learned about the achievements and challenges other PACs have faced, and also shared

ideas and solutions to strengthen their activities.

In order to highlight other avenues for patient participation in research, two OBI portfolio companies, [Awake Labs](#) and [Resili](#), presented their perspectives on understanding user experience in the product development process. This session provided a channel through which the patient community and entrepreneurs could connect, as well as poll interest among the patient community for future involvement in industry partnerships to develop user-friendly tools for community-based care.



METRICS

45 Attendees

OUTPUTS



Access to Information



Patient-informed

OBI's Brain-CODE and POND Make a Splash at INSAR

As part of this year's annual [International Society for Autism Research](#) conference May 1-4 in Montreal, QC, OBI co-sponsored a pre-conference workshop organized by Dr. Evdokia Anagnostou, principal investigator of [POND](#) (OBI's neurodevelopmental disorders research program). The day-long workshop highlighted work from both international and local researchers that was presented at the conference for an audience of not only clinicians, researchers and trainees but also people with autism and family members.

POND researchers Dr. Steven Scherer and Dr. Jason Lerch presented their work along with Dr. Elizabeth Berry-Kravis (Rush University) and Dr. Diana Robins (Drexel University) in the morning; Meng-Chaun Lai co-hosted one of the workshops in the afternoon portion led by local

researchers. OBI supported a [live-cast](#) of the morning talks for researchers, people with autism and their family members alike across Canada to access the latest in autism research. To increase inclusivity, the workshop welcomed people with autism and their caregivers to attend, including several artists with autism presenting their work.



[Brain-CODE](#), OBI's neuroinformatics platform, set up a demo of an upcoming POND data release at the INSAR conference. This demo, featuring an interactive dashboard on the Brain-CODE platform, allowed researchers to query the clinical data of 2000+ participants to provide first-hand experience of potential future analyses. The data release will allow external researchers to conduct additional investigations, expediting potential discoveries in our understanding of neurodevelopmental disorders.



Pré-INSAR : Une Conférence Destinée au Grand Public
Pre-INSAR Local Community Conference

METRICS

469
Attendees

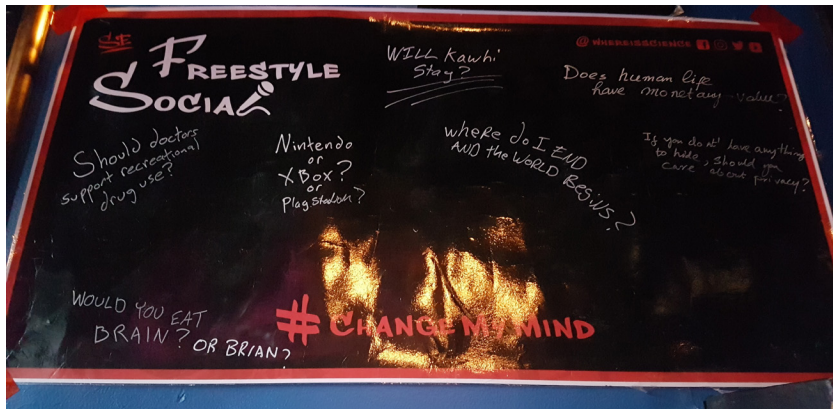
OUTPUTS



**Data and Public
Access**

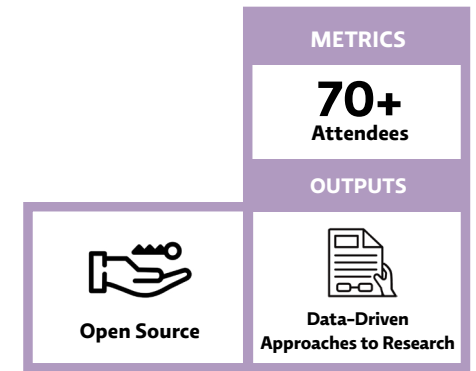
OBI Debates Mental Health

On July 4, OBI partnered with [Science Everywhere](#) to get people to think, share and move others to their perspectives on mental health at a Freestyle Social. This evening of debate both silly and serious covered questions from “would you fight a tiger or a gorilla?” to “are we addicted to our smartphones?” to “should everybody meditate?” Several experts from OBI IDPs participated incognito to infuse scientific evidence into the debate. The event gave attendees the chance to share and hear a variety of opinions and viewpoints as well as examine their own assumptions in a playful way, allowing for open engagement free of judgment. Attendees also had the opportunity to try out technologies from local creator Dave Braun, and from [Xsensa Labs](#) to challenge their perception and cognition.



First Annual CONP Conference

In partnership with the [Canadian Open Neuroscience Platform \(CONP\)](#) and [Baycrest](#), OBI co-hosted the CONP's [Annual 2019 Workshop](#) on April 29-30 at the Royal Canadian Military Institute. This workshop brought together neuroscientists, developers, and policy experts to share and discuss ideas and projects for promoting open neuroscience in Canada. Highlights from the workshop include the launch of the CONP platform to allow for secure open data storage and sharing, the launch of several major data sets such as Prevent-AD, and promoting best practices in open science initiatives to advance neuroscience research across the country.



Science 1st: Common Pathways and Mechanisms in Neurodegenerative Diseases Workshop

On May 30, OBI partnered with [JLabs](#) to host [Science 1st: Common Pathways and Mechanisms in Neurodegenerative Diseases](#). This workshop brought together researchers and industry working to develop more effective treatments for conditions such as ASL, Alzheimer's Disease, and Parkinson's Disease. Kirk Nysten, Vice President, Integrated Discovery and Informatics, provided opening remarks for the event. Researchers Sandra Black and Ekaterina Rogaeva of [ONDRI](#) (OBI's neurodegenerative diseases research program), along with Eric Schaeffer (Johnson and Johnson Innovation) and Graham Collingridge (University of Toronto) discussed the latest evidence suggesting neurodegenerative diseases may share similar rather than different pathways of development. This evidence can reform research into treatments, from how these diseases are diagnosed to how new treatments are tested. OBI portfolio companies [Kalgene Pharmaceuticals](#) and [Winterlight Labs](#) also presented their work alongside [ProMIS Neurosciences](#) and [Trevantis Corporation](#).

May 30, 2019
Science First: Common Pathways and Mechanisms in Neurodegenerative Diseases

DATE: Thursday May 30th
TIME: 3:30 – 8:00 PM
LOCATION: JLABS @ Toronto

Speakers: Eric Schaeffer, Sandra Black, Graham Collingridge, Ekaterina Rogaeva

Presenting Companies: Winterlight, ProMIS Neurosciences, Trevantis, Kalgene
Event Partner: OBI, ProMIS Neurosciences, Johnson & Johnson INNOVATION, JLabs

OUTPUTS

Advanced Knowledge

Recognition of OBI Model

The Importance of Patient Engagement at *In The Trenches*

At this year's [In The Trenches: Implementation to Impact Summit](#) organized by [Alberta Innovates](#) and [Oxford University](#), Jordan Antflick, OBI's Knowledge Translation Manager, participated in a panel with Jean Miller (patient representative from PACER, Alberta), Lauren Gerlach (Academy Health, USA) and Tim Murphy (Alberta Innovates) on June 7. The panel, entitled "Integrating Patients' Perspectives on What Matters" focused on meaningful patient participation and engagement for effective implementation of research into the healthcare system. Jordan spoke about OBI's approach to patient engagement, centering on the value and outcomes of establishing partnerships with the patient community in the development and spread of evidence-informed resources for care. The panel presented an opportunity to share the successes and merits of OBI's approach to other organizations working to increase their patient engagement.



METRICS

Recognition of OBI Model

Patient-informed Research Activities

Promoting Science Management at CAN

METRICS

100
Attendees

As part of the [Canadian Association for Neuroscience](#) Conference held in Toronto, the [Rotman Research Institute](#) (RRI, Baycrest) with support by OBI hosted a panel discussion on science management on May 22. [The panel](#) discussion, moderated by Dr. Randy MacIntosh (RRI, Baycrest), featured OBI's Jordan Antflick (Manager of Knowledge Translation) and Christa Studzinski (Manager of Partnerships), along with Mojib Javadi (InDoc), Helena Ledmyr (INCF), and Tanya Brown (RRI, Baycrest).

The panel centered on the increasing need for scientists at any stage in their careers to incorporate project management practices into their work as the research landscape changes. From managing multidisciplinary teams, to managing and sharing large data sets, to implementing effective knowledge translation strategies, these changes are all becoming crucial to not only compete for funding, but improve the quality and efficiency of research that will benefit the lives of patients with brain disorders.



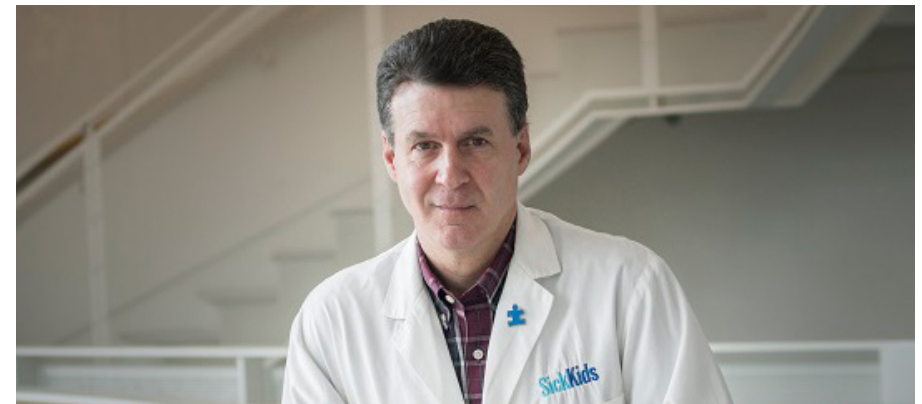
Photo Credit: Helena Ledmyr (INCF)

Dr. Stephen Scherer Wins the Killam Prize

Congratulations to Dr. Stephen Scherer on winning the [Killam Prize](#) in health sciences. The Killam Prize is awarded annually by the Canadian Council for the Arts to active Canadian scientists and scholars who have made exceptional contributions over the course of their career. The Killam Prize awards \$100,000 to one scholar each from the fields of humanities, social sciences, natural sciences, health sciences and engineering.

Dr. Scherer, a researcher in the POND network and Senior Scientist, Director of [The Centre for Applied Genomics](#) at the [Hospital for Sick Children \(SickKids\)](#) and Director of the McLaughlin Centre at the University of Toronto, has contributed work that has significantly advanced our understanding of genetic diversity through his team's discovery of copy number variation (CNV) in DNA. His team then identified the CNV of genes involved in the development of Autism Spectrum Disorder and other neurodevelopmental disorders. Dr. Scherer also founded the Database of Genomic Variants, used widely on a daily basis to facilitate clinical diagnoses.

Dr. Scherer is highly respected by his colleagues in the POND Network and at SickKids. We are grateful to have him as part of our network.



In the News

- Braze Mobility named TiE50 Winner
- Active Lives After School Dufferin stepping up to provide opportunities to people with developmental disabilities
- Forcen raises \$500,000 to give machines human-level sense of touch
- Ketamine: The illicit party psychedelic that promises to heal depression
- U of T pharmacy grad co-founded startup that promises to help detect and treat cancers
- Neurodevelopmental Disorders (Canada) PSP – Bringing community priorities to life
- Wearable Technology for Mental Health



OBI-GEEK Funding Opportunity

The **GEEK** (Growing Expertise in Evaluation and Knowledge Translation) program will provide funding, evaluation expertise, and support to community-led programs for people living with brain disorders.

Application Deadline:
September 27, 2019

Register for the Information Webinar:
September 12, 2019

braininstitute.ca/geek



Upcoming Opportunities:

[GEEK funding call for community organizations supporting people living with brain disorders](#)