
Brainnovations
Issue 19
ONTARIO BRAIN INSTITUTE
INSTITUT ONTARIEN DU CERVEAU

A Frame of Mind

Mental Health is Brain Health: A Paradigm Shift

By: Tom Mikkelsen, President & Scientific Director

When Britain appointed Tracey Crouch its first Minister of Loneliness, most people found it humorous. The apparent silliness of that appointment quickly subsided and provoked important questions about mental health, extending beyond Britain's borders. Is this issue true to Britain alone? And is loneliness no longer a personal matter? The Jo Cox Commission on Loneliness that urged Britain to act revealed more than 9 million people in Britain – around 14 percent of the population – often or always feel lonely, costing employers up to $3.5 billion annually, not to mention the personal costs in wellbeing.

CONTINUE READING...

Announcing OBI's 2020 ONtrepreneurs

OBI is proud to support the 2020 ONtrepreneurs – four early-stage neurotech ventures – to help accelerate their path to commercialization through access to funding, resources, and mentorship.

The OBI ONtrepreneurs Program has played a key role in advancing the province's standing as a leader in neurotechnology development with a total of $2.85M in funding given out since the inception of the program.

More details on the ONtrepreneurs Program here.

Christopher Ahuja

Inteligex

Inteligex is developing precision stem cell and drug-based therapies for the treatment of traumatic spinal cord injuries and other diseases of the central nervous system.

Iana Dogel

TeleMag Health Solutions

TeleMag Health Solutions is developing a portable repetitive transcranial magnetic stimulation (or rTMS) device – a non-invasive form of brain stimulation to treat depression.

Matthew Rosato

PROVA Innovations Ltd.

PROVA Innovations is developing a suite of smart wearables that aid in motor control and neurorehabilitation for children and adults with limited mobility due to a brain injury or neurological disorder.

Rozhin Yousefi

CerebTalk

CerebTalk is developing a brain-computer interface (BCI), specifically for people with severe motor impairments enabling its users to control electronic devices including laptops and smartphones.

OUTPUTS

New or Improved Diagnostics, Interventions, and Treatments

Industry Partnerships

Portfolio Companies

OBI-GEEK 2021 Funding Opportunity

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

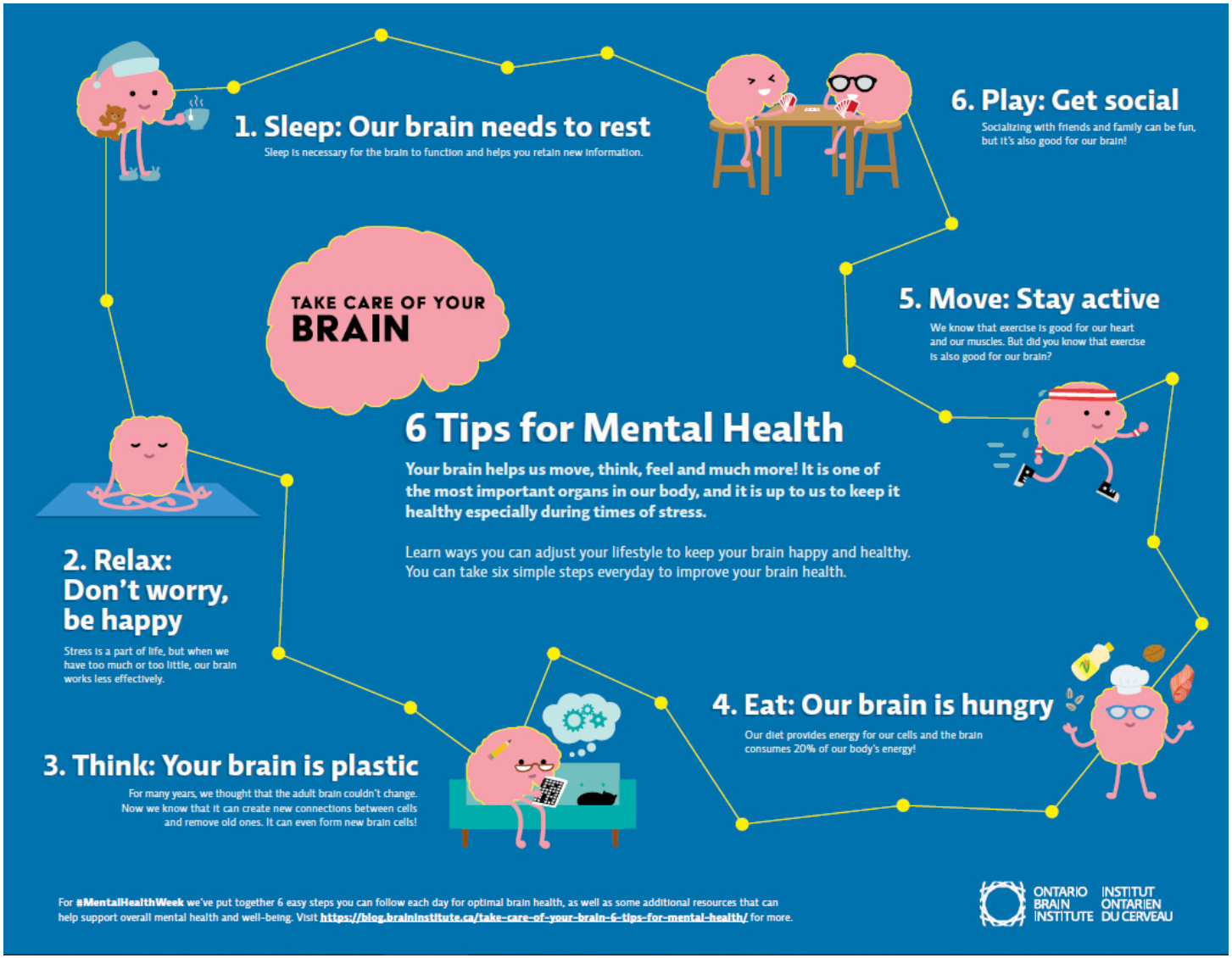
2021 Applications Now Open

Visit braininstitute.ca/geek for more details.

OBI's Six Tips for Mental Health

May 4–10 marked Mental Health Week, an awareness initiative led by the Canadian Mental Health Association. To draw attention to brain health and self-care, OBI shared six simple tips to care for your brain and compiled a list of resources in collaboration with our partners. The resources include blogs, videos, infographics, and podcasts that speak to each of the six tips.

Access the full blog here.



METRICS

170+ Views

757+ Social Media Engagements

OUTPUTS

- **Public Access to Research and Information**
- **Guidelines and Toolkits**
- **Advanced Knowledge**
- **Better Informed and Empowered Public**

Brain-CODE: Sharing Data With the World

Brain-CODE is OBI's secure neuroinformatics platform, designed to store, manage, share, and analyze the many different types of data collected by researchers across the six Integrated Discovery Programs and from around the world.

The platform was designed to enable collaboration and data sharing amongst scientists, clinicians, and industry and to speed up the pace of research and innovation with the ultimate goal of improving life quality.

The map below depicts worldwide interest and usage of Brain-CODE as the platform of choice enabling open-science.

More information about the platform and its development can be found here.

Canada
- Ontario
- British Columbia
- Alberta
- Quebec

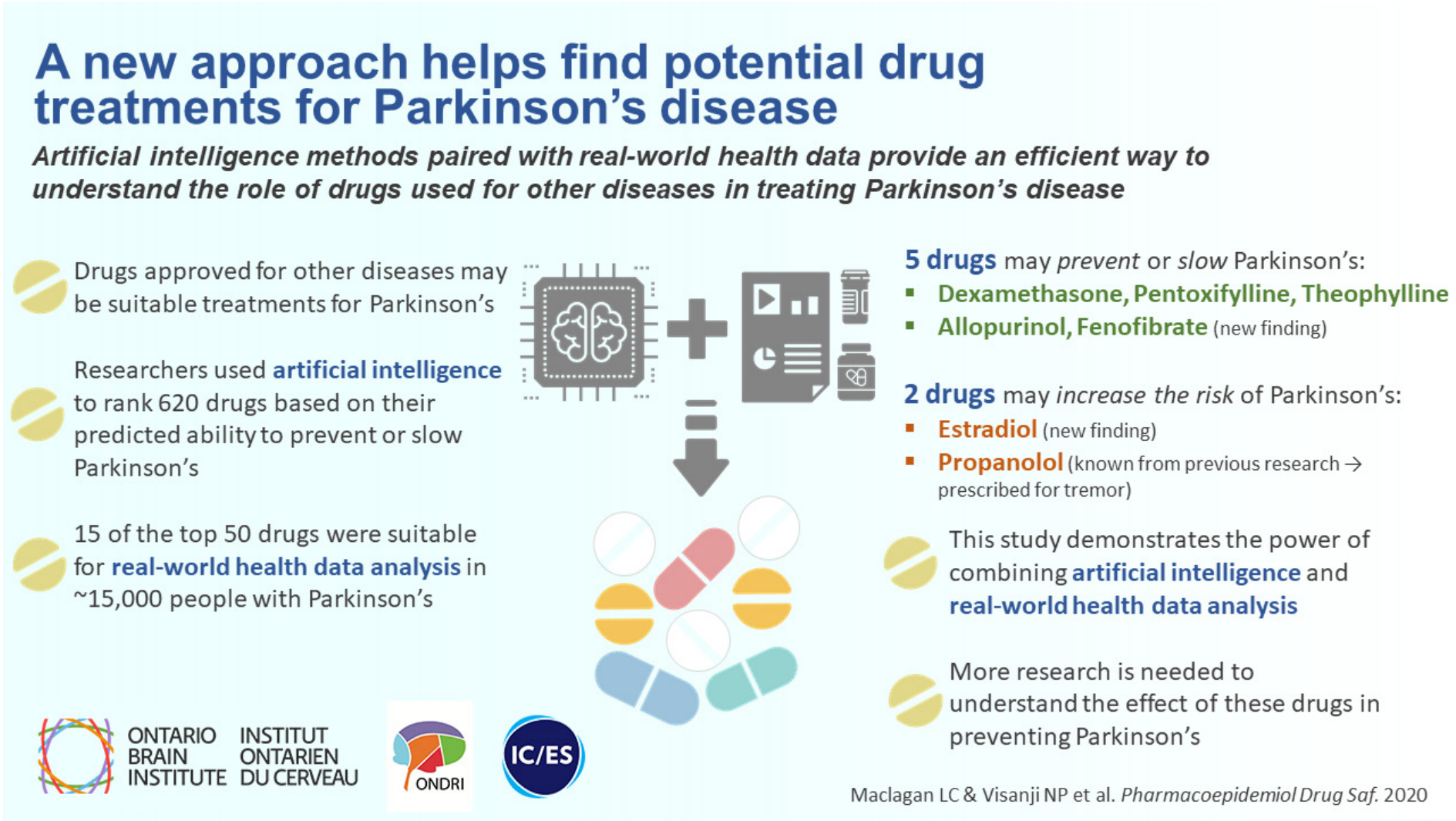
World
- USA
- Australia
- China
- Germany
- India
- Pakistan
- Taiwan
- Mexico
- South Korea

METRICS			OUTPUTS			
128 Requests	**27** – Canada, **14** – USA, **21** – Rest of the World	**35** Academic Institutions **8** Healthcare Facilities **6** Companies		Improved Data Access and Use	Recognition of OBI Model	Data-Driven Approaches to Research

A New Approach Helps Find Potential Drug Treatments for Parkinson's Disease

A new study by ONDRI researchers, published this May in Pharmacoepidemiology and Drug Safety, highlights the power of artificial intelligence paired with real-world health data analysis as a novel approach to identify potential drug treatments for Parkinson's disease. Read the full paper here.

OUTPUTS **Advanced Knowledge**



Epilepsy Priority Setting Partnership with the James Lind Alliance

Since the close of the first survey at the end of February, the Epilepsy Priority Setting Partnership (PSP) has been diligently working behind the scenes. The over 500 responses received from the first survey have been reviewed, summarized, and checked against existing research evidence by a team of information specialists, closely guided by the PSP Steering Group. This evidence checking phase aims to identify which questions have not yet been answered by research.

The unanswered questions will be brought forward in a second survey. Members from Canada's epilepsy community – including people who have epilepsy or experience seizures, their caregivers and healthcare providers – will have the opportunity to choose which questions they think are most important for research to address. For more information, please visit the PSP webpage.

Keep an eye out for this second survey in autumn!

METRICS

500+
Survey Respondents Across Canada

198
Summary Questions Being Checked Against Existing Evidence

OUTPUTS

Partnerships

Advanced Knowledge

PCAC Committee Advises on Patient Engagement Practices in Research and Sharing Knowledge within the Community

On June 16, OBI hosted its seventh annual workshop bringing together the Patient and Community Advisory Committees (PCAC), from each of its six Integrated Discovery Programs (IDPs). Though typically held as a day-long, in-person event, due to the COVID-19 pandemic, this year's workshop was conducted virtually, with great success.

Each Committee was given the opportunity to share their experiences in patient engagement within research activities over the past year. This was followed by the attendees participating in breakout sessions, in which they shared learnings across the IDPs and collaborated to improve knowledge in the community by engaging patients. The workshop closed with a presentation by Christa Studzinski, Manager of Partnerships at OBI, during which she explored the committee's interest in community-based testing of neurotechnology.

The committee advised to 1) Engage patient partners as early in the process as possible when planning activities and when designing studies; 2) Purpose and objectives for why patients are being consulted should be communicated clearly in order to ground understanding of activity and so to better align with PAC member goals and program/project goals; 3) Maintain consistent engagement with committee by keeping them informed on how their input was used in the decision-making process, and/or considered even if it was not acted upon. The PCAC Committee includes individuals living with brain disorders, care givers, community organizations and representatives, researchers, and support staff from each of the IDPs.

Visit the website for further information about the Patient and Community Advisory Committees.

METRICS

67
Attendees

OUTPUTS

Partnerships

Patient-Informed Research Activities

ONDRI Examining Long-Term Impact of COVID-19

A recent publication from ONDRI investigators, Drs. Fernanda De Felice and Douglas Munoz co-authored a paper published in Trends in Neuroscience, examining the possible long-term impact of COVID-19 on the central nervous system.

"Given the global dimension of the current pandemic, we highlight the need to further consider possible long-term impacts of COVID-19 in the brain", Doug Munoz, Centre for Neuroscience Studies, Queen's University.

OUTPUTS

Advanced Knowledge

Public Access to Research and Information

CAN-BIND Launches New Podcast

The CAN-BIND Depression Network, one of OBI's six research programs, has launched an informative podcast series, available on their website, with accompanying transcripts. The series was created to engage experts in deep discussion about depression research to help people better understand depression and make informed choices about their care. There is always something new being discovered about depression, and this podcast will help the public understand the innovative and exciting developments taking place.

The first episode features Dr. Gregor Hasler, Professor and Chair of Psychiatry at the University of Freiburg in Switzerland, speaking about neuroplasticity and the use of psychedelics in depression research.

The second episode explores CAN-BIND's study on ketamine versus electroconvulsive therapy for treatment-resistant depression, featuring Sophie, one of the study participants, and Dr. Jennifer Phillips, Associate Scientist at The Royal Mental Health Centre in Ottawa.

The podcast series is hosted by Dr. Wegdan Rashad, Knowledge Translation Coordinator at CAN-BIND.

CAN-BIND

METRICS

90+ Listeners

OUTPUTS

Advanced Knowledge

Public Access to Research and Information

OBI x OSC – Great Conversations: The Mind Series – Mindfulness in Stressful Times

On April 25, OBI in partnership with the Ontario Science Centre hosted its first virtual public talk as part of the Great Conversations: The Mind Series. The talk featured an array of panelists, speaking to the power of being present and the valuable role of mindfulness in coping with the stresses of everyday life, particularly during the COVID-19 pandemic.

Representing the Centre for Addiction and Mental Health, Dr. Yona Lunsky, Dr. Brianne Redquest and Sue Hutton each shared their expertise in teaching mindfulness to autistic adults and their caregivers. We also heard valuable insights from autism self-advocates Daniel Share-Strom and his mother Maxine Share, both co-founders of Autism Goggles, an organization committed to raising awareness about the needs of those with high-functioning autism.

The talk was moderated by Dan Riskin, an evolutionary biologist, former TV co-host of Daily Planet and CTV News' Science and Technology Specialist.

As a preamble to the Public Talk, TVO published an interview with one of our panelists, Dr. Lunsky, Director of the Azrieli Adult Neurodevelopmental Centre at CAMH.

Watch the full public talk here.

METRICS			OUTPUTS	
5 Speakers	**539** Attendees	**307** Post-Event Views	Media Coverage	Public Access to Research and Information

New Biomarker Might Play a Role in Antidepressant Response and the Biology of Depression

A recent study funded by CAN-BIND, OBI's depression research program, was published in Nature Communications. The paper brings to light a promising advancement in depression research, with its critical finding that a particular protein, GPR56, might play a role in antidepressant response and the biology of depression.

"GPR56 is an excellent target for the development of new treatments of depression," said Dr. Gustavo Turecki, CAN-BIND researcher and one of the study's authors, in a news release from McGill University. Notably, levels of GPR56 can be readily identified through a simple blood test. With the study finding that GPR56 levels are changed in depression following the administration of antidepressants, both in the blood and the brain, the protein presents a compelling therapeutic avenue for researchers to further explore.

Dr. Bill McIlroy on David Suzuki's "Nature of Things"

Congratulations to Dr. Bill McIlroy, ONDRI researcher and professor at the University of Waterloo, who had the honour of appearing on the popular CBC documentary series, "The Nature of Things," with David Suzuki. In the episode titled, "Aging Well Suzuki Style," we follow David Suzuki on a journey to understand aging, a natural part of life that we all experience. David meets with Dr. McIlroy to undergo a stress test to assess his balance control and discuss preventative measures against falling as we age.

View the full episode here, and catch Dr. McIlroy and his lab at minutes 9:50 – 12:20.

METRICS		OUTPUTS	
	12,000+ Views on YouTube		**Media Coverage**

Collaboration Techniques in the Workplace – Insights from OBI

In an article published by the Society for Neuroscience, OBI's very own Christa Studzinski (Manager, Partnerships) and Jordan Antflick (Director, Integrated Discovery) share valuable insights that can help foster a more collaborative – as opposed to competitive – work environment.

Since OBI's inception in 2012, the team has continuously risen to the challenge of bringing together the wide range of stakeholders involved in brain health.

Christa and Jordan speak to the importance of setting principles, sharing ideas, building trust and other practical advice to consider within an organization striving towards the realization of an ambitious vision.

OUTPUTS

- **Media Coverage**
- **Advanced Knowledge**
- **Recognition of OBI Model**

Roche Canada x OBI – COVID-19 – Planning for the Future – Webinar

On May 28, Roche Canada presented a webinar in partnership with OBI, featuring Dr. Charles Alessi, Senior Advisor at Public Health England and Chief Clinical Officer for HIMSS International. Dr. Alessi discussed how the COVID-19 pandemic has accelerated the development and the use of digital biomarkers in neuroscience. He also touched upon Canada's well-positioned role towards precision medicine in the treatment of brain disorders.

As stated by Dr. Tom Mikkelsen, President & Scientific Director, OBI, and one of the co-moderators of the webinar, this session epitomizes one of OBI's objectives —the harmonization of science in the real world with commercialization opportunities. The discussion was also co-moderated by Dr. Alonso Montoya, Director, Medical Strategy Neuroscience at Roche Canada.

The webinar is available for viewing here.

METRICS

50+
Attendees

OUTPUTS

- **Partnerships**
- **Public Access to Research and Information about Brain Health**

In Memory of Dr. Ronald J. Heslegrave

OBI pays tribute to Dr. Ronald J. Heslegrave, who passed on June 30, 2020.

As one of his many roles, Dr. Heslegrave was Research Ethics Consultant and a great friend to OBI. He was instrumental in establishing governance structures for Brain–CODE at the very outset and continued to provide his expertise to the organization on a number of challenges over the years.

Dr. Heslegrave will always be remembered for the legacy he has left at OBI, and for his wisdom, generosity, and invaluable mentorship.

Spiderwort, an OBI ONtrepreneur Closes $3.4M in Seed Capital

OBI ONtrepreneur, Charles M. Cuerrier, CEO of Spiderwort has raised $3.4 million in seed capital this year. This is in addition to the $500,000 already raised in the friends and family funding round. Horizon Ventures, a venture capital firm, led the financing, supported by various groups across Canada and the United States.

"We believe that our biomaterial has the potential to significantly change lives and fundamentally transform multiple industries," said Charles M. Cuerrier, CEO of Spiderwort, in the BetaKit article.

Spiderwort's novel biomaterials are based upon plant-derived cellulose to create scaffold architectures that promise to revolutionize 3D in vitro research and regenerative medicine.

With the newfound funding, Spiderwort seeks to bring their product towards clinical trials, regulatory approval and obtain further financing. Congratulations to the team!

SPIDERWORT™

METRICS

$3.4M
in Leveraged Funds

OUTPUTS

Money Leveraged

New or Improved Diagnostics, Interventions, and Treatments

Follow-On Investments

MINT Memory Clinic and Supports Health Inc. are Recipients of The Change Foundation Future Innovator Award

Two of OBI's partners—the MINT Memory Clinic and Resili (Supports Health Inc.)—are recipients of the Future Innovator Award, awarded by The Change Foundation, an independent health policy think-tank working to encourage positive change in Ontario's healthcare system.

In celebration of their 25th anniversary, The Change Foundation is honouring those who have a strong vision to create and lead transformative change, and the potential to make notable impacts within the lives of patients and caregivers in Ontario.

The MINT Memory Clinic, an OBI partner, has designed a one-of-a-kind model to deliver patients with dementia and their caregivers high-quality care directly within their own communities. There are now more than 100 clinics across Ontario.

Resili is an application developed by the team at Supports Health Inc., an OBI ONtrepreneur, to make basic mental health knowledge and resilience-building skills readily available to Canadians experiencing depression and their caregivers.

MINT MEMORY CLINIC
Collaborative primary care

Supports Health

Taking Care of Body, Mind and Soul in the COVID–19 Pandemic

On April 29, OBI's neurodegenerative diseases research program, ONDRI, hosted a virtual webinar, "Taking Care of Body, Mind and Soul in the COVID–19 Pandemic" in partnership with Parkinson Canada, Alzheimer Society of Ontario and others.

The webinar was led by neurologist Dr. Mario Masellis, Sunnybrook Research Institute; geriatrician Dr. Nathan Stall, Sinai Health; Dr. Kathy McGilton, UHN, and ONDRI PCAC member Jull Czuczman, who is also a care partner for her husband living with frontotemporal dementia.

The four experts and advocates shared their knowledge on how to care for individuals living with cognitive or motor problems because of neurological conditions, especially during the COVID–19 pandemic with limited help and support from external caregivers.

The webinar recording, presentation slides, and further valuable resources are available here.

METRICS

179
Attendees

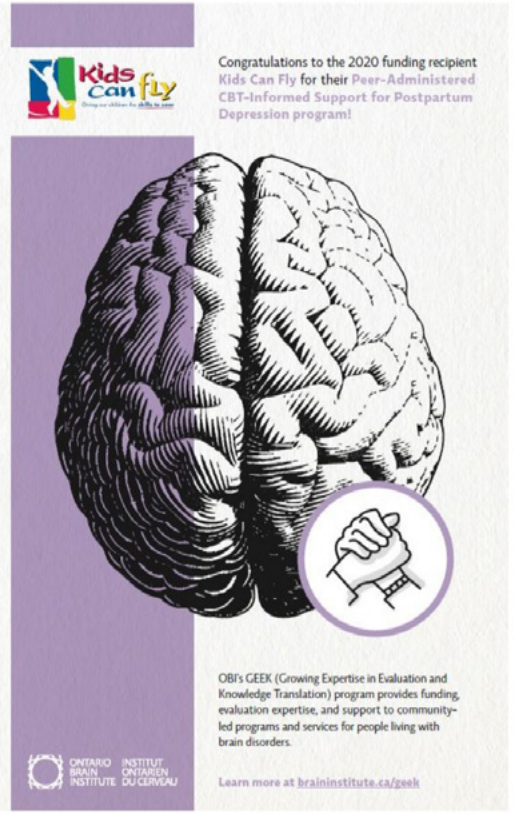
OUTPUTS

Public Access to Research and Information

2020 OBI–GEEK Winners

OBI announced the 2020 GEEK winners earlier this year. The cohort this year addresses a diverse range of needs within the domain of brain health: Kids Can Fly (Brantford) provides support for women experiencing postpartum depression; Alzheimer Society of Ontario's U–First! program (across Ontario) offers family members and friends the essential skills and resources needed to care for persons with dementia; and Surrey Place (Northwest Ontario) leads the Mashkikiiwininiwag Mazinaatesijigan Wichiiwewin Clinical Videoconferencing Program to support adults with intellectual and developmental disabilities living in rural communities.

Each year, OBI provides funding, evaluation expertise, and support to community–led programs and services especially designed for people living with brain disorders, through OBI's GEEK program. Learn more about the GEEK program and meet OBI's 2020 GEEKs here.



METRICS			OUTPUTS		
3 New Programs	**$520,000** Funding Over Next Three Years		**Partnerships**	**Evidence–Informed Community–Based Interventions**	**Improved Access to Treatment**

Sharing Knowledge with Young Adults with Cerebral Palsy

CP–NET, OBI's cerebral palsy research program, hosted a workshop on May 21, with Dr. Jan Willem Gorter, Scotiabank Chair in Child Health Research at McMaster University. Dr. Gorter presented on mental health in adolescents and young adults with cerebral palsy and offered updates on the MyStory Project.

The MyStory Project will study physical health (fatigue and pain), mental health (anxiety and depression), chronic stress, and overall well–being in Adolescents and Young Adults (AYA) with Cerebral Palsy (CP) between the ages of 13–30.

Young people with cerebral palsy face heightened challenges with their mental well–being, particularly given the uncertainties posed by the COVID–19 pandemic. Dr. Gorter shared valuable insights into the management of mental health during the pandemic, and provided useful resources for individuals with cerebral palsy, their families, and caregivers. Find the workshop and accompanying material here.

CP–NET and CanChild, based at McMaster University, held a webinar on March 30, on the benefits of putting together a "Microboard"—a committed group comprised of family and friends—to support young people with disabilities.

The webinar featured Danny Steeves, CP NET Patient Advisory Committee member, a talk show host and adult with cerebral palsy, members of his own Microboard, and Judith McGill, Provincial Consultant of Microboards Ontario.

View the webinar here to learn how Microboards can positively contribute to a person's security and well–being.

CP-NET
Childhood Cerebral Palsy
Neuroscience Discovery Network

METRICS		OUTPUTS
230+ Combined Views	**90+** Attendees	**Improved Access to Treatment**

NeuroQore Receives Investment from OBI to Fast-Track its Novel First Dawn Technology to Market

NeuroQore, Inc., an OBI portfolio company and member of our ONtrepreneur and NERD programs, is poised to fast-track its novel First Dawn technology—an repetitive Transcranial Magnetic Stimulation (rTMS) device for treatment of major depressive disorder—to market within the next two to three years.

This is made possible by an investment from OBI and multi-stage venture capital investor, SOSV, with funds being directed towards product development and clinical validation.

NeuroQore's efforts are in response to the mental health crisis that is expected to arise post-pandemic, as highlighted in a recent report conducted in part by the Well Being Trust.

The company's First Dawn technology is designed to combat this expected crisis, using its novel rTMS therapy system as a faster and more effective treatment of depression and suicidal ideation.

Learn more about the company and the recent investment here.

Epineuron Technologies Inc. Completes Funding Round to Support Production Development and Clinical Validation

Toronto-based OBI ONtrepreneur, Mike Willand, Epineuron Technologies has completed a round of financing to develop and clinically validate his company's neurotechnology to accelerate nerve regeneration following peripheral nerve injuries.

Designated a breakthrough device by the FDA, Epineuron's technology could dramatically improve the standard of care for severe nerve injuries, which are currently treated with conventional surgical repair that can leave patients with long-term nerve damage. Financing was supported by OBI and the Ontario Centers for Excellence and led by prominent medical technology investors.

Read more about the team's achievement here.

OUTPUTS

- Industry Partnerships
- Money Leveraged
- New or Improved Diagnostics, Interventions, and Treatments
- Follow-On Investments

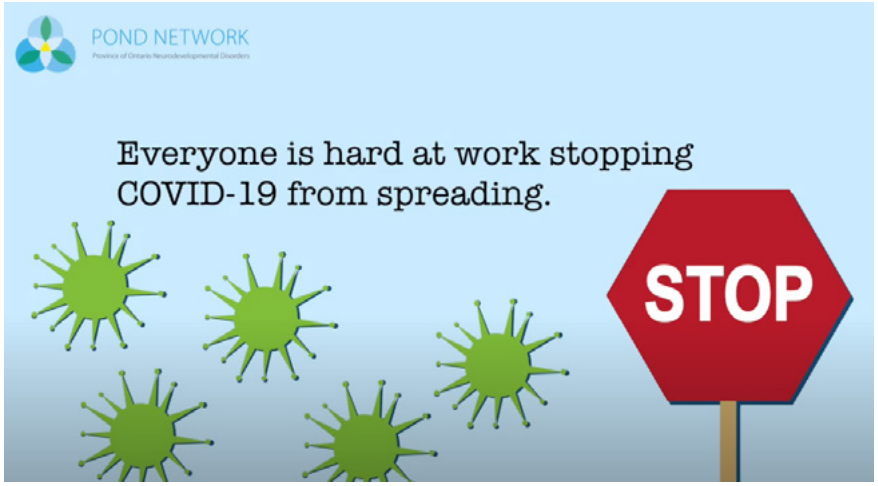
#KidVsCovid – Young People Create Video to Stop the Spread

In an immediate response to the pandemic, the POND Network, OBI's neurodevelopmental research program, launched #KidsVSCovid campaign, a fun and simple resource to inform young people with neurodevelopmental disorders about what they can do to help stop the spread of COVID-19. The best part is that they are taught about COVID-19 directly from their own peers!

Check out the full video here.

Other Resources to Help Cope During COVID-19

1. ONDRI blog – Social Distancing Yes, Social Isolation No
2. Autism Ontario Releases List of Resources to Help During the Pandemic
3. Ontario Caregiver Organization Releases Tip Sheet for COVID-19
4. Dancing with Parkinson's Offers Free Classes to Foster Connection through Dance
5. CAN-BIND's COVID-19 Coping Resource Centre
6. CP-NET in Partnership with Ontario Federation for Cerebral Palsy puts on Workshop Discussing Mental Health in Adolescents and Young Adults
7. Chiefs of Ontario Provide Latest Updates and Resources on COVID-19
8. Impact of COVID-19 on People with Parkinson's featuring Dr. David Grimes



METRICS

2600+ Views EN and FR

OUTPUTS

Public Access to Research and Information

In the News

- Dementia patients, caregivers face unique challenges during pandemic: Alzheimer Society
- DNAStack selected by Digital Technology Supercluster to develop national network supporting COVID-19 genomic data sharing
- Promising advance in depression research: Identification of key protein may lead to more effect anti-depressants
- Cultivating mindfulness during a pandemic (TVO)
- Epineuron Technologies closes financing for its breakthrough nerve regeneration device
- Exercise keeps our brains healthy – but does cognitive decline lead to physical decline? (The Globe and Mail)
- Ontario Brain Institute Announces $520,000 in Funding to Promote Care Within Communities
- DNAstack creates genomics software that makes it easier to share data
- Ottawa start-up poised to tackle a post COVID019 crisis – depression and suicide
- Spiderwort closes $3.4 million CAD in seed financing
- Epineuron Technologies secures financing (Private Capital Journal)
- Finalists announced in AGE-WELL National Impact Challenge
- Medical Innovation Xchange partners with Ontario government to assist companies in retooling for COVID-19

ONTARIO BRAIN INSTITUTE | INSTITUT ONTARIEN DU CERVEAU

The Ontario Brain Institute is a not-for-profit organization that accelerates discovery and innovation, benefiting both patients and the economy. Our collaborative 'team science' approach promotes brain research, commercialization and care by connecting researchers, clinicians, industry, patients, and their advocates to improve the lives of those living with brain disorders. Welcome to Brain Central. Visit www.braininstitute.ca for more information. Follow us on Twitter (@OntarioBrain). Funding provided, in part by, the Government of Ontario.