



Fondation
Brain Canada
Foundation

Annual Report 2021



**IT IS IN OUR NATURE
TO EXPLORE, TO
REACH OUT INTO THE
UNKNOWN.
THE ONLY TRUE
FAILURE WOULD BE
NOT TO EXPLORE
AT ALL.”**

Ernest Shackleton

Led three British expeditions to the Antarctic



**WE'RE LIKE EARLY
EXPLORERS IN
SEARCH OF A
BETTER LIFE.
YOU NEVER KNOW
WHAT WILL COME
NEXT."**

Dr. Nader Ghasemlou

Assistant Professor, Queen's University and Future Leader
in Canadian Brain Research Grant recipient

THE BRAIN. THE LAST GREAT FRONTIER.

History has taught us that preparing for an expedition into the unknown takes more than raw courage. It takes the right equipment, the right leadership, the right vision and a crew that believes in you. Especially when you're venturing into the wild uncharted territories of the human brain. We are Brain Canada, the national non-profit organization that supports Canada's most brilliant brain researchers. We fund their bold explorations. We believe in them.

Their discoveries are already expanding our knowledge of how the brain works. They are pushing the boundaries of prevention, diagnosis and treatment of brain disorders. They are improving the health outcomes of people in Canada. Their discoveries are many, but so many mysteries remain. This is our mission.

Join us, so we can boldly explore further than we ever thought possible.

OUR VISION: Bold science for brain health

OUR MISSION: Accelerating, amplifying and funding brain research across Canada



**YOU KNOW THE
MORE ONE DOES
THE MORE ONE
CAN DO.”**

Amelia Earhart
Aviation pioneer and author

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Year in Review

2021 Highlights

It is estimated that 1 in 3 of us will experience a brain disease, disorder, or injury in our lifetime. This urgent critical need is why Brain Canada is committed to funding the most promising and innovative brain research out there, and this year was no exception.

January 1, 2021 - December 31, 2021



86

clinicians & researchers
have taken part in Brain
Canada-led peer review
panels in 2021

17

open call competitions

147

active research projects

09

new programs launched

44

institutions supported

Message from the Chair

At Brain Canada, we are committed to supporting bold research for the benefit of people in Canada. Despite the pandemic challenges of 2021, this commitment to courageous ideas only intensified.

In fact, the disparities exacerbated by the pandemic, coupled with the evolving needs of high-impact research, truly underscored the importance of funding excellence – excellence that will generate positive impact and improve health outcomes for people in Canada and across the globe.

The new Research Committee will work to reinforce Brain Canada's invaluable role in the Canadian research ecosystem.

Among our many high-impact grants and programs, we proudly awarded five grants through the Bell Let's Talk-Brain Canada Mental Health Research Program, the first program under Brain Canada's new mental health research initiative. And we successfully launched the Brain Canada Youth Mental Health Platform, powered by RBC Future Launch.

We could not have done any of this without the support of our robust community of generous donors and valued partners, including Health Canada. Together, we supported some of the best and brightest minds in the country and strengthened the brain research landscape for years to come.

As Chair of Brain Canada, I want to acknowledge the remarkable community that helped us make a positive difference. Thank you for your resilience in helping us to transform brain health and your commitment to helping us change so many lives for the better.



IT WAS INSPIRING TO SEE THE NUMBER OF PEOPLE COMMITTED TO IMPROVING BRAIN HEALTH IN CANADA THIS PAST YEAR."



Naomi Azrieli, DPhil
Brain Canada Chair

This year, Brain Canada invested more than \$27.5 million in innovative research poised to contribute to major advancements in neuroscience, furthering basic knowledge and translating discoveries to enhance the health of our communities.

It was inspiring to see the number of people committed to improving brain health in Canada this past year. Brain Canada connected and convened the Canadian brain research community and its supporters at multiple engaging virtual events, including public talks, celebratory meetings, research workshops and industry panel discussions.

In 2021, our Board created a new committee to help advise us, support our work and meet the changing needs of the research community.

Message from the CEO



EXPLORING THE GREAT UNKNOWN THAT IS THE BRAIN CANNOT BE DONE ALONE – IT TAKES BOLD, COURAGEOUS PARTNERS TO SCALE THESE PEAKS.”

This year has been an opportune time to reflect on the work Brain Canada is doing to build a stronger future for people in Canada. More than ever, brain research is critical in helping us, as a community, recover from the COVID-19 pandemic and mitigate its effects on the brain. At Brain Canada, we envision a future where scientists across disciplines collaborate to drive innovation. A future where early-career researchers have the resources to explore their boldest ideas. And where people across the country have access to solutions that may hold the answers to mysteries like ALS, epilepsy, and brain injury.

This is the future Brain Canada envisions – the one we worked toward throughout 2021.

We are paving the way for better brain health for people in Canada by building capacity and supporting brilliant brain researchers as they explore new lines of research with enormous potential. Funding for trainees and early-career researchers through programs tailored to support the next generation of explorers is a core component of how we attract, retain, and diversify world-class talent in Canada. This year, we announced the second cohort of the Future Leaders in Canadian Brain Research Program, and, with the support of steadfast partners, we also launched the third edition of this signature program. We are already starting to see these talented early-career researchers make major contributions to neuroscience in Canada and abroad.

We believe that many brains are better than one. Open science – a movement to make research data, methods, and

tools readily available for others to contribute to or use – is how we truly enable progress. By building bridges between investigators and increasing access to high-impact resources, we are pursuing new ways of thinking and new approaches to research. Through programs like the Brain Canada Youth Mental Health Platform, powered by RBC Future Launch, we are enabling researchers to share data across disciplines, including people with lived experience, to create synergies between these groups and accelerate findings that will improve youth mental health services.

Finally, we believe it is critical to invest in research that is translated into results that have concrete impacts on brain health for people in Canada. In a world where change is the only constant, our goal to improve lives through better brain health has remained unwavering. And we want to bring solutions to people living with brain diseases and disorders faster.

As we look forward, we still have so many questions to answer. But with the support of our generous donors, dedicated Board of Directors, enthusiastic partners, and incredible staff, we are getting closer and closer to the future we have imagined.




Dr. Viviane Poupon
Brain Canada President & CEO

Success Stories

Here's a Look at 2021

Through science, we have the potential to unlock the answers to more accurate diagnosis, prevention, and treatment solutions. Eventually, science will uncover long-hoped for cures. In the coming pages, you will discover some of the brilliant work from Brain Canada-funded researchers.



“AN EXPLORER IS SOMEONE WHO SEEKS THE TRUTH, EVEN IF IT RISKS CHALLENGING CURRENT IDEAS AND PERCEPTIONS.”

Dr. Sue-Ann Mok
Assistant Professor, University of Alberta and Future Leader
in Canadian Brain Research Grant recipient

POWER TO THE PEOPLE

A new study gives Canadians the opportunity to test for Alzheimer's and provide their perspective on how the results impacted their lives.

Over half a million Canadians are currently living with Alzheimer's disease or a related form of dementia, and with a rapidly aging population, that number is projected to double by 2031. Now, a new test will help patients find the answers they are seeking and assist their families in planning in the face of an Alzheimer's diagnosis.

"THIS IS AN URGENT AND RAPIDLY GROWING HEALTH CARE ISSUE."

"This is an urgent and rapidly growing health care issue," says Dr. Mari DeMarco, a Clinical Chemist at St. Paul's Hospital and a Clinical Associate Professor at the University of British Columbia in Vancouver, Canada. Her team developed a key component of the Alzheimer's disease test and worked with individuals with lived experience with dementia, along with health care providers and other partners, to implement a comprehensive diagnostic testing strategy through the IMPACT-AD project, funded in part by Brain Canada. "The Alzheimer's disease biomarker test, which we have now made available to all Canadians, can help doctors accurately diagnose the disease even when only mild symptoms are present. Through the IMPACT-AD project, our aim was to gain a better understanding of how this testing impacts personal and medical decision making, and health care costs."

According to DeMarco, the goal of IMPACT-AD is to inform positive change in the Canadian health care system that improves care and support for individuals living with Alzheimer's disease and their families.

Who can take the test?

The test for Alzheimer's disease biomarkers through this program can only be ordered by a doctor specializing in dementia care. The doctor may recommend testing in individuals experiencing mild to moderate symptoms associated with Alzheimer's disease. Measuring changes in these biomarkers in the cerebrospinal fluid, the fluid surrounding the brain and spinal cord, helps doctors identify whether the cause of the symptoms may be due to Alzheimer's disease, and if the symptoms are likely to worsen over time.

With input from patients, their families, and their doctors, DeMarco and her colleagues are working to address barriers in the Canadian health care system.

How can the test help people experiencing memory loss and declining brain health?

Early and accurate diagnosis of Alzheimer's disease is critical because timely access to health care and community services has the potential to lead to more effective treatment and improve quality of life. Current approaches for diagnosis rely on imaging tests and observation of the signs and symptoms of the disease. Adding the measure of proteins found in cerebrospinal fluid (biomarkers) has been shown to help correctly identify the disease and predict those with mild symptoms that are likely to progress to dementia.

PROFILE



Dr. Mari DeMarco

Dr. Mari DeMarco was awarded a 2017 Improving Health Outcomes and Quality of Life Team Grant of \$684,000 from Brain Canada with funding support from Women's Brain Health Initiative, Michael Smith Foundation for Health Research, St. Paul's Foundation, and UBC Faculty of Medicine.

“This is a large-scale national effort and Brain Canada took the ‘build it and they will come’ view.”

Dr. Alan Evans

UNDERSTANDING THE BASICS OF THE BRAIN

Open science, an approach to science where research data and methodologies are freely available for scientists to collaborate and contribute to, makes very large-scale and high-impact research possible. It allows more people to explore and analyze information, and ultimately it accelerates discoveries.

“The patients are the people who are most behind open science,” says Dr. Alan Evans, Scientific Director of the Canadian Open Neuroscience Platform (CONP). “They are willing to see their data put out there in the public domain. It means more people are exploring the data and coming up with solutions. It essentially means more science and faster access to cures.”

CONP provides a platform for researchers to upload data and download other available data to use in their own studies. Thanks to the rise of information technology, this notion of data sharing is becoming more and more common and is changing the research landscape dramatically.

“Dr. Farhan is a gene hunter: she identifies the genes that are important for ALS, along with mutations that can cause the disease.”

Dr. Martin Duennwald

DECODING ALS

While still a postdoctoral fellow, Dr. Sali Farhan led a collaborative effort that identified DNAJC7 as a causal factor in ALS; working from a large data set, she demonstrated that mutations in DNAJC7 disabled its protective function.

Now, as an Assistant Professor at The Neuro (Montreal Neurological Institute-Hospital), she is using a recent ALS Canada – Brain Canada Discovery Grant to build on this discovery in a joint project with Dr. Martin Duennwald of Western University.

In healthy people, certain safeguards prevent and fix protein misfolding. These include heat shock proteins like DNAJC7, first responders that get activated by cellular stress and can then step in and correct emerging problems to ensure that proteins fold properly.

For their joint project, Duennwald’s lab will study how misfolding resulting from the loss of DNAJC7 function leads to ALS specifically.

It is early days, but Farhan explains that in the longer term, the team aims to uncover not only how the DNAJC7 mutation operates, but also how functional DNAJC7 acts in ALS patients who do not carry the mutation.

“It takes a lot of wisdom to fund programs that may influence brains indirectly but in important ways.”

Dr. Teresa Bennett

COMING TOGETHER FOR EARLY INTERVENTION

Dr. Teresa Bennett, child and adolescent psychiatrist at McMaster Children’s Hospital and an Associate Professor in the Department of Psychiatry and Behavioural Neurosciences, noticed a pattern of teenagers who mentioned struggling with their emotions at a young age. Parents confirmed their children’s stories, noting their families encountered many challenges and that, in retrospect, they displayed early signs of emotional distress.

Thanks to funding from Brain Canada and the RBC Foundation, Dr. Bennett and her team are evaluating the use of an intervention program called the Family Check-Up™ (FCU). This is the first Canadian implementation and evaluation project of the FCU, which was first developed more than 20 years ago and evaluated extensively in the US and Europe.

By partnering with parents, the FCU helps families build on their unique strengths, achieve their own positive parenting goals, and find support from the community.

While Dr. Bennett’s results have yet to be published, they do indicate that families participating in the FCU are experiencing significant improvements in their child’s behaviour.

BRAIN CANADA PLATFORM GRANTS

Non-invasive treatment for people with depression

Dr. Fidel Vila-Rodriguez runs the NINET (Non-Invasive Neurostimulation Therapies) Laboratory at the University of British Columbia. His promising research looks at how Transcranial Magnetic Stimulation (TMS), a non-invasive therapy, can relieve symptoms of major depression, obsessive-compulsive disorder and other mental illnesses.

In 2014, still early in his career, Dr. Vila-Rodriguez received a Brain Canada Platform Support Grant to create the Integrated Neurostimulation Platform. This critical funding established the foundation for research that can profoundly impact patients with mental illness in Canada.

A portion of the grant funded the creation of a powerful machine that combined TMS with functional magnetic resonance imaging

“I CANNOT EMPHASIZE ENOUGH HOW IMPORTANT IT IS TO HAVE THIS KIND OF SUPPORT AT THE EARLY STAGES OF YOUR CAREER.”

(fMRI). Bringing the two together allows researchers to study the effects of TMS in real-time in a patient and identify new targets for stimulation.

Creating the platform was a major undertaking. Both technologies employ high-powered magnets, which have to run in delicate balance so they don't interfere with each other. It took years of work by engineers, physicists, and more to make it operational.

The grant also funded a pilot study to use the new platform to investigate the effects

of TMS when used to treat depression. The results of this study were published in the American Journal of Psychiatry in May 2022.

The study allowed Dr. Vila-Rodriguez to see what's happening in the brain during TMS. From the first treatment, the fMRI images can also give a clue as to how effective TMS will be for a patient. From a neuroscience perspective, the project gives more insights into the workings of the brain while being stimulated. This exploration is laying the groundwork for other non-invasive treatment pathways in the future.

“This project is very close to my heart,” Dr. Vila-Rodriguez said. “It's the first grant that I got as an early-career researcher. I put everything I had into it. Looking back, I can see how foundational it was.”

That initial investment of \$277,500 has led to additional funding for a follow-up study. In addition, Dr. Vila-Rodriguez is using his hard-won knowledge to help other Canadian researchers build their own TMS-fMRI machines, multiplying the impact of the grant exponentially.

“I cannot emphasize enough how important it is to have this kind of support at the early stages of your career,” said Dr. Vila-Rodriguez. “It was so encouraging for Brain Canada to be willing to invest in something that was high risk, but also high reward.” Research platforms are important enablers of capacity building and a cost-effective means of accessing cutting-edge equipment, technology, and services beyond what individual researchers can achieve on their own.

PROFILE



Dr. Fidel Vila-Rodriguez

Dr. Fidel Vila-Rodriguez runs the NINET (Non-Invasive Neurostimulation Therapies) Laboratory at the University of British Columbia. His promising research looks at how Transcranial Magnetic Stimulation (TMS), a non-invasive therapy, can relieve symptoms of major depression, obsessive-compulsive disorder and other mental illnesses.

THINKING DIFFERENTLY

Autism in First Nations Communities

Located in Central Alberta, the Plains Cree community of Maskwacis defines autism spectrum disorder (ASD), or *pítoteyihtam*, as "he/she thinks differently." According to Grant Bruno, a registered member of Samson Cree Nation, many people with lived experience of ASD prefer this definition over the more widely used definition from the *Diagnostic and Statistical Manual of Mental Disorders*.

When two of his four children were diagnosed with ASD, Grant quickly noticed that access to services within Maskwacis was very limited – ASD awareness is low, diagnosis is often delayed, and specialized support is frequently only available off reserve. Eager to learn more about the lived experience of autism in Indigenous communities, Grant turned to the literature and found that only a handful of studies had been done in Canada – even the prevalence of ASD is unknown. An MSc student at the time, Grant had not initially planned to further pursue academia but, as a member of the community himself, he felt that he was well placed to expand knowledge on ASD in First Nations communities and so the idea for his PhD project was born.

Under the supervision of Dr. Lonnie Zwaigenbaum, Professor at the University of Alberta and Brain Canada-funded researcher, and Dr. David Nicholas, a Social Work Professor at the University of Calgary, Grant aims to gather viewpoints that will improve our understanding of ASD in First Nations communities. To fully capture the reality of living or caring for someone with autism in Maskwacis, Grant will engage with the community at all levels, namely community leaders and members, Elders,

knowledge keepers, as well as health care and education providers and children and their families.

Though historically research was done on Indigenous communities rather than with them, which led to it not being representative, Grant will be using a strengths-based decolonizing approach rooted in community-based participatory research methods to

"RESEARCH HAS BEEN VERY HEALING FOR ME. I'VE BEEN ABLE TO REALLY IMMERSE MYSELF IN THE RICH CULTURE OF MASKWACIS."

make sure that the research is done through the community, by the community, and for the community. To Grant, allowing the community to guide the research is crucial. "I am from there and I am mindful of how I'm representing the community," he said. "I need my research to really allow the community to tell their stories."

By engaging with and collecting data from individuals, families and professionals associated with ASD in the First Nations context, this work will provide unique and informative perspectives on the strengths and challenges of what it means to experience autism within these communities. Armed with this knowledge, Grant aims to influence policy within and outside Maskwacis, and to provide evidence for the kinds of services that are needed by the community.

PROFILE



Grant Bruno

This study aims to gather viewpoints that will give a better understanding of Autism Spectrum Disorder (ASD) in the First Nations communities of Maskwacis.

The goal is to move from research that is community-based to research that is community-led.

“You can make history happen when enough people with like-minded interests and goals come together.”

Dr. Jiwon Oh

UNITING EXPERTS TO MAKE HISTORY

The Canadian Prospective Cohort Study to Understand Progression in Multiple Sclerosis (CanProCo) is a very large national cohort study, designed in Canada, that has been in the works for many years. Launched in 2019, CanProCo is one of a kind as it is the only study in the multiple sclerosis (MS) field that has been specifically designed to evaluate the spectrum of factors and how they influence progression in MS.

“This is a cohort where we can improve the efficiency of scientific discovery in the field by making data accessible to qualified investigators over time,” explains Dr. Jiwon Oh, CanProCo lead.

Involving nearly 50 clinicians and scientists across Canada, one of the platform’s greatest strengths is that it unites experts who typically would not be working together.

The ultimate goal is to develop a better understanding of what causes progression so as to improve the lives of people living with MS. CanProCo is looking to understand what causes MS in individual patients in order to establish optimal treatment strategies and provide tailored care.

“It’s what separates innovative platforms from regular core facilities.”

Dr. Ravi Menon

INNOVATIVE PLATFORMS FOR INNOVATIVE SOLUTIONS

Since 1996, the Centre for Functional and Metabolic Mapping (CFMM) has been Canada’s staple ultra-high field magnetic resonance imaging (MRI) centre. CFMM currently houses Canada’s only collection of high-field (3T human) and ultra-high field (7T human and 9.4T animal) MR systems. Allowing researchers to look at the brain with unparalleled spatial, temporal and functional resolution, ultra-high field magnets illuminate areas of the brain that are inaccessible through conventional scanning.

Innovative platforms like CFMM support the development of new, creative solutions to using the equipment.

Experts in various fields from across the country, and some 150 collaborators worldwide, rely on CFMM and its full-service platform and specialized MRI equipment.

“I’m amazed every day with the progress this program has made. It has a real solid footing in the community, which isn’t always easy.”

Dr. Melissa Tremblay

THE EARLY YEARS

The things we learn and experience during early childhood set the stage for later success. In Indigenous communities today, damaging past and present colonial realities have given way to disruptions in parenting and traditional child-rearing practices.

Brain Canada is proud to support the Martin Family Initiative’s (MFI) The Early Years program at Ermineskin Cree Nation in Alberta. Together, MFI with Ermineskin, Maskwacis Health Services and Maskwacis Education Schools Commission co-developed this prenatal-to-early-childhood intervention program.

The Early Years program was founded on the premise that life-long well-being begins at the earliest stages of infancy, with the bond formed between a parent and their infant.

Currently in its fourth year, the pilot program integrates Indigenous-led community innovation with breakthrough scientific research on early childhood development. Building upon the success of The Early Years at Ermineskin Cree Nation, the program has been expanded to serve the three other nations that make up Maskwacis.

“We want to prove that the drug is doing what we think it’s doing for patients, which is to boost microRNA levels.”

Dr. Angela Genge

COLLABORATION FOR A BETTER FUTURE

An international Canada-Israel research collaboration is taking important steps to determine whether a known drug has the potential to become a viable treatment for people with ALS.

Recently, using a mouse model, Dr. Eran Hornstein of the Weizmann Institute of Science in Israel showed that the antibiotic enoxacin holds promise at correcting a malfunctioning pathway known to contribute to the development of ALS. Now, thanks to funding from Brain Canada and ALS Canada, his team is partnering with Dr. Angela Genge at The Neuro (Montreal Neurological Institute-Hospital) on the next step to examine how the therapy behaves in human patients.

In the clinical trial, patients are being treated with enoxacin and assessed for safety, while the movement and mechanisms of the drug in the body are measured in blood and cerebrospinal fluid samples. The researchers hope to see that the drug is distributed properly in their patients’ bodies, and that it is properly engaging with the targeted pathway.

In addition to examining the safety and efficacy of enoxacin in human subjects, they will now have the ability to assess how the drug interacts with other therapies that patients may be taking.

“We need better and more accessible treatment for people with mental health difficulties.”

Dr. Catherine Lebel

EMERGING SOLUTIONS TO SUPPORT MENTAL HEALTH

In 2021, Bell Let’s Talk and Brain Canada joined forces to launch the Bell Let’s Talk – Brain Canada Mental Health Research Program – a unique initiative to support the development of innovative solutions that will provide effective, sustainable, and accessible mental health care.

Dr. Manuela Ferrari and her team are working on a clinical trial to help accelerate the trial-and-error process many patients with depression are subjected to when it comes to finding a treatment option that works.

Drs. Tarek Rajji, Graham Collingridge, Evelyn Lambe, and Sanjeev Sockalingam are collaborating with a variety of stakeholders to enhance theta burst stimulation.

Drs. Catherine Lebel and Lianne Tomfohr are testing an app-based and peer-supported 10-week intervention to improve mental health and parenting.

Alongside his multidisciplinary team, Dr. Blumberger is working to offer better options for those experiencing treatment-resistant depression.

Dr. Austen Milnerwood and his team are working to improve our understanding of bipolar disorder in order to identify treatment options and accelerate recovery.

“We’re very grateful for this funding. It will help us build a foundation of science based on the whole of the human population.”

Dr. Mark Bayley

SEX, GENDER AND THE BRAIN

Women’s Brain Health Initiative’s (WBHI) signature event – the StandAhead Challenge – raises funds to support research that considers sex and gender differences. This year, Brain Canada and WBHI collaborated to give a funding boost to six researchers, allowing them to build on their work and dig deeper into the role of sex and gender when it comes to aging, neurodegenerative disorders, and stroke.

Through a new initiative, the Brain Canada – WBHI Expansion Grants: Considering Sex and Gender Program, Drs. Mark Bayley, Janelle Drouin-Ouellet, Jodi Edwards, Gillian Einstein, Jonathan Epp, and Christian Ethier can each implement sex- and gender-based analysis (SGBA)-driven research hypotheses into their respective research.

In addition, WBHI and Brain Canada joined forces with the Canadian Institutes of Health Research (CIHR) to fund a project led by Dr. Mario Masellis that is exploring a way to disentangle the complexity underlying the risk of dementia with the hope of improving its management and prevention in the future.

CLEARING THE FoG

Illuminating the unique “signature” of freezing of gait for Canadians with Parkinson’s disease.

For more than two decades, doctors have been able to reduce many symptoms of Parkinson’s disease through deep brain stimulation (DBS). DBS uses implanted electrodes to deliver electrical stimulation deep within the brain. But one symptom continues to elude treatment: “freezing of gait” (FoG), which makes it hard to walk and can lead to dangerous falls.

In order to clear the FoG, Luka Milosevic, a researcher with University Health Network in Toronto, is deploying a new kind of electric stimulation, better attuned to FoG’s distinctive signature. This could result in advancements in taming a disease that robs more than 100,000 Canadians of many aspects of their normal life and dignity.

In the past two years, advancements in the medical device industry are allowing DBS implants to not only deliver stimulation, but to perform wireless readings of brain activity in real time. Previously, wires or bulky machines would impede a patient’s ability to freely walk around while recording brain activity, making the causes of FoG notoriously difficult to pinpoint – and treat.

“THIS GRANT GAVE ME THE OPPORTUNITY TO DO SOMETHING THAT IS TRULY EXCITING FOR ME, AND THAT I KNOW IS A HEALTH CARE PRIORITY.”

The new technology will help illuminate the unique “signature” of FoG in the brain and highlight potential areas and strategies for targeted stimulation.

“FoG is a very stubborn feature of the disease, which made me interested in trying to understand the neural underpinnings of these gait difficulties,” explained Dr. Milosevic. “Perhaps once we understand more about the physiological features, then we can develop targeted therapies to ameliorate the symptom.”

Beyond the implications for FoG, Dr. Milosevic said the study could lead to a more sophisticated application of DBS for all Parkinson’s symptoms.

Currently, DBS indiscriminately delivers stimulation 24 hours a day. However, if researchers can learn more about which brain activity is tied to particular symptoms, they can deliver targeted stimulation only when necessary.

This shift could help preserve a device’s battery life – a critical need, as changing a device’s batteries requires surgery – and help reduce the already minimal side effects of DBS.

“The number one priority is to improve a patient’s gait, to give them their mobile independence back and enhance their quality of life,” said Dr. Milosevic. “But this study also signals a strategic shift in DBS delivery methods. We want to advance the technology as a whole. This will have implications on any symptom and any brain disorder in which DBS is a potential therapeutic option.”

“By providing this support, we are giving promising researchers the jump-start they need to explore daring, innovative and high-potential lines of research,” said Dr. Viviane Poupon, Brain Canada President and CEO.

PROFILE



Dr. Luka Milosevic

Dr. Milosevic is a recipient of a 2020 Future Leaders in Canadian Brain Research Grant from Brain Canada. Thanks to an anchor gift from The Azrieli Foundation, Brain Canada’s signature grant program will support up to 100 early-career researchers in five years.

“It helps reawaken neurons in the spinal cord and improve function.”

Dr. Aaron Phillips

REACTIVATING SPINAL CORD NEURONS

Brain Canada, with the support of the Azrieli Foundation, awarded Dr. Aaron Phillips at the University of Calgary a 2019 Future Leaders in Canadian Brain Research Grant to support a deeper understanding of the neural circuits that cause blood pressure dysregulation in spinal cord injury (SCI) patients, as well as test a cutting-edge therapy to treat it.

Because of the nature of a spinal cord injury, the neurons that normally control blood pressure can't communicate with the vascular system, potentially leading to loss of consciousness, stroke, or heart attack, making blood pressure stability very important for those affected by SCI.

Dr. Phillips and his team developed an electrical stimulation device that acts as a sort of pacemaker for the spinal cord by stabilizing blood pressure and improving neurological and cardiovascular health after injury.

“This technology democratizes access to care and really evens the playing field.”

Dr. Shannon Kolind

BRINGING HEALTH CARE TO PATIENTS WITH MULTIPLE SCLEROSIS

Imaging tests, like MRIs, can be costly, have long wait times, and be inaccessible for patients living in remote areas.

Future Leader in Canadian Brain Research, Dr. Shannon Kolind at the University of British Columbia recently received one of Canada's first portable MRI systems and will be investigating possible uses in research and clinical settings, specifically for patients living with multiple sclerosis (MS). Developed by Hyperfine, the MRI scanner is the first of its kind in the world.

MRI is essential in MS care for diagnosis, detection of new brain lesions, monitoring disease progression, informing treatment decisions and for use in clinical trials of new drugs.

Dr. Kolind and her team hope the new easy-to-use scanner will make imaging tests more accessible to MS patients living in rural and remote communities and democratize access to health care.

Supporting Tomorrow's Brain Science Leaders

Brain Canada's Future Leaders in Canadian Brain Research Program is designed to fund the boldest and brightest ideas at the most critical juncture of a researcher's career – the beginning. With the support of donors including the Azrieli Foundation, The Arrell Family Foundation, the Alvin Segal Family Foundation, and the Government of Canada, through the Canada Brain Research Fund (CBRF), this program allows researchers in need of seed funding to pursue novel ideas while establishing sustainable resources to maintain independent and career-long research positions.

2019 Future Leaders in Canadian Brain Research Grant Recipients:

Boris Bernhardt McGill University
 Mark Brandon McGill University
 Mark Cembrowski University of British Columbia
 Allen W. Chan University of Alberta
 Laurent Chatel-Chaix INRS-Centre Armand-Frappier Santé Biotechnologie
 Janelle Drouin-Ouellet Université de Montréal
 Christian Ethier Université Laval
 Marco Gallo University of Calgary
 Yasser Iturria Medina Montreal Neurological Institute; McGill University
 Robert Laprairie University of Saskatchewan
 Michael Mack University of Toronto
 Caroline Ménard Université Laval/CERVO
 Jeehye Park SickKids Research Institute; University of Toronto
 Aaron Phillips University of Calgary
 Jean-Francois Poulin McGill University
 Masha Prager-Khoutorsky McGill University
 Ravi Rungta Université de Montréal
 Jo Anne Stratton Montreal Neurological Institute; McGill University
 Sara Tremblay University of Ottawa
 Ryan Yuen SickKids Research Institute; University of Toronto

2020 Future Leaders in Canadian Brain Research Grant Recipients:

Simon Chen University of Ottawa
 Nader Ghasemlou Queen's University
 George Ibrahim The Hospital for Sick Children
 Julia Kam University of Calgary
 Shannon Kolind University of British Columbia
 Jasmin Lalonde University of Guelph
 Benoit Laurent Université de Sherbrooke
 Yun Li The Hospital for Sick Children
 Luka Milosevic University Health Network
 Bratislav Mistic McGill University
 Sue-Ann Mok University of Alberta
 Wilten Nicola University of Calgary
 Vijay Ramaswamy The Hospital for Sick Children
 Derya Sargin University of Calgary
 Chantelle Sephton Université Laval
 Greg Silasi University of Ottawa
 Trevor Steve University of Alberta
 Tamara Vanderwal University of British Columbia
 Anne Wheeler The Hospital for Sick Children
 Galen Wright University of Manitoba



**DON'T LET ANYONE
ROB YOU OF YOUR
IMAGINATION, YOUR
CREATIVITY, OR
YOUR CURIOSITY."**

Mae Jemison

First African-American woman to travel in space

Funds, Grants and Programs

Getting with the Program

Brain Canada develops and implements transformative, original, and outstanding research programs that address areas critical to advancing brain research. Brain Canada is also committed to working with strategic funding partners with interests across the entire range of neurological diseases, disorders, and injuries, mental illnesses, and addictions.

Canada Brain Research Fund Overview

The Canada Brain Research Fund (CBRF) is an innovative arrangement between the Government of Canada (through Health Canada) and Brain Canada Foundation. To date, Health Canada has invested over \$130 million through CBRF, which has been matched by Brain Canada Foundation and its donors and partners. CBRF is designed to increase Canadians' support of brain research and maximize the impact and efficiency of those investments. This visionary commitment by the federal government has ensured that Canada has been and will continue to be among the leaders in the global challenge to understand brain function and brain diseases.

Peer Review Process and Types of Grants

Brain Canada's rigorous scientific review process gives donors and partners a trusted mechanism to ensure projects are chosen based on merit, innovation, and potential for impact. We are committed to an open, fair, and transparent process, and evaluate these procedures on an ongoing basis to ensure they continue to follow best practices.

Capacity Building Grants

The next generation of scientists have the talent and ingenuity to move the needle on Canadian brain research – as long as they have support. Capacity Building Grants invest directly in trainees and early-career researchers to catalyze their potential through salary support, training, and mentorship.

Team Grants

Groundbreaking discoveries in brain health research never happen alone – they take bright minds working across disciplines and institutions. Our Team Grants bring together scientists from across Canada to advance collaborative research on the brain and brain health.

Platform Support Grants

Research platforms – what we call centralized shared research resources – are a cost-effective way for scientists to access cutting-edge equipment, technology, and services beyond what they can achieve on their own. Platform Support Grants help develop and/or enhance the capabilities and accessibility of platforms essential for brain research, benefiting researchers across Canada.

Knowledge Translation, Exchange and Mobilization Grants and Activities

support the mobilization of knowledge: to inform future programs/competitions; to use the findings from research to inform the development of evidence-based tools, resources, programs and solutions with the potential to benefit all people in Canada; and to convene the Canadian brain research community and key stakeholders, including people with lived experience.

Equity, Diversity and Inclusion

Evidence shows that increasing equity, diversity, and inclusion (EDI) in research environments enhances excellence, innovation and creativity. By incorporating EDI principles in research design and execution, Brain Canada has ensured research outcomes better serve the health of all people in Canada.

In recent years, Brain Canada has redoubled its efforts to promote EDI in both research design and through the application process: where applicable grant applicants are now asked to consider a diverse range of differences including sex, gender, age, ethnicity, and education in their research questions.

To promote the expression of diverse perspectives and approaches, we encourage applicants of diverse backgrounds to apply to our funding opportunities.

As a convenor and catalyst, Brain Canada brings together philanthropy and science to fund all stages of the research process – with a strong focus on basic science but also up to the translation of discoveries and their applications.

2021 Programs

EU Joint Programme – Neurodegenerative Disease Research (JPND)

Bell Let's Talk – Brain Canada Mental Health Research Program

Heart & Stroke – Brain Canada Heart-Brain Connection IMPACT Award

2020-2021 Shireen and Edna Marcus Excellence Award

Alzheimer's Association Advancing Research on Care and Outcome Measurement Program (ARCOM)

2021 ALS Canada – Brain Canada Discovery Grant Program

CQDM's Quantum Leap pharma-led funding program for drug discovery research

Brain Canada – Women's Brain Health Initiative Expansion Grants: Considering Sex and Gender

2021 Dr. Hubert van Tol Travel Fellowship

JDRF Canada – Brain Canada: Addressing Mental Health in Type 1 Diabetes Team Grants

Kids Brain Health Network 2021 Early Career Investigator and Mentorship Awards

Kids Brain Health Network Strategic Investment Fund 2021

Alzheimer's Association International Research Grant Program (IRGP)

2021 Future Leaders in Canadian Brain Research

Turnbull-Tator Award in Spinal Cord Injury and Concussion Research

Brain Canada Youth Mental Health Platform, powered by RBC Future Launch

2021 Platform Support Grants

Disease Areas

Addiction
 ADHD
 Alzheimer's
 Amblyopia
 Amyotrophic Lateral Sclerosis
 Aniridia
 Autism
 Bipolar Disorder
 Blindness
 Brain Cancer
 Brain Injury
 Cerebral Amyloid Angiopathy (CAA)
 Cerebral Palsy
 Concussion
 Depression
 Epilepsy
 Fetal Alcohol Spectrum Disorder
 Fragile X
 Gender Dysphoria
 Glioblastomas
 Huntington's Disease
 Melanoma
 Mental Health
 Metabolic Syndrome
 Multiple Sclerosis
 Parkinson's Disease
 Rett Syndrome
 Schizophrenia
 Seizure
 Spinal Cord Injury
 Stress
 Stroke
 Suicide
 Traumatic Brain Injury
 Youth Mental Health
 Zika Virus

“It's very meaningful for our entire team – from our students, technicians, and research assistants to our collaborators from various disciplines – to work together on this project and keep in mind the patients and their families first.”

Dr. Yeni Yucel
 Professor, University of Toronto and 2021 ALS Canada – Brain Canada Discovery Grant recipient





**I LIKE TO EXPLORE
ASPECTS OF
SCIENCE THAT
COULD LEAD
TO NEW
DISCOVERIES.”**

Dr. Chantelle Sephton

Associate Professor, Université Laval and Future Leader
in Canadian Brain Research Grant recipient

Fundraising and Outreach

Top 10 Community Impact Highlights

Canada is among the world's five most active countries in neuroscience. Canadian researchers have contributed to major scientific advancements in brain research that have furthered the field both nationally and internationally. Brain Canada plays an invaluable, critical role in this success. As a national convenor and enabler of innovative and bold neuroscience, Brain Canada has established a transformative research funding model with the support of the federal government and other dedicated partners and donors – a model with a proven track record of accelerating brain research. We have our dedicated and inspiring community to thank for helping us achieve better health outcomes for all people in Canada.



I AM COMPELLED TO ASK QUESTIONS AND FIND THE ANSWERS. MOST OF ALL, TO NEVER GIVE UP.”

Dr. Benoit Laurent

Assistant Professor, Université de Sherbrooke and Future Leader in Canadian Brain Research Grant recipient

No.

1

A THRIVING RESEARCH LANDSCAPE

In fall 2021, Brain Canada united its valued community to reflect on the organization's growth, learn about some of the innovative projects that were enabled throughout the year, and look ahead to the future. Featuring a live conversation with Dr. Sheena Josselyn, Dr. Ryan Yuen, and moderated by Dr. Yves De Koninck, the event explored what it means to be a neuroscientist in Canada and how we can collectively empower the next generation of researchers.

As a national convenor, Brain Canada brings together a variety of partners to fund the brightest and best research. During the Celebrate Your Impact event, Chloe Ferguson, Director of the **Early Years Martin Family Initiative**, as well as Chris Maksylewicz, Executive Director of **The Erika Legacy Foundation**, were featured as esteemed partners who are working with Brain Canada toward achieving a shared goal – better brain health for all.

The Celebrate Your Impact event also served as an opportunity to premiere *The Story of Bea*, a two-minute animation produced in collaboration with Canadian screenwriter and filmmaker, Andrea Dorfman. The film follows Bea and the different ways brain health has impacted her life.

No.
2

WHAT'S NEXT FOR OPEN SCIENCE?

To better understand the mysteries of the brain, we must eliminate knowledge silos and embrace open, collaborative and data-driven science. Making cutting-edge equipment, technologies and services accessible to a wider community is an essential component for addressing the evolving needs of researchers and achieving impact.

In October, Brain Canada hosted its inaugural Open Science Knowledge Exchange Workshop: What's next for open science? The event placed a spotlight on open science and included three expert panels on topics around neuroimaging and data sharing, registries and biobanks, and the relationship between funders and researchers.

Featuring researchers from across Canada, as well as leaders in the research landscape, the knowledge exchange explored the success and challenges of open science, as well as future opportunities in this space.

"Brain Canada strongly supports open science in research – it creates efficiencies and improves the quality and integrity of data."

Dr. Viviane Poupon
Brain Canada President & CEO

No.
3

LEADING MEANINGFUL DIALOGUE

As rates of mental illness, especially among younger generations, continue to be exacerbated by the pandemic, it is important to look at the next steps in building a better system of support.

In November, Brain Canada, with RBC Future Launch, presented The Walrus Talks at Home: Youth Mental Health, a discussion on the importance of prevention, identification, and treatment of mental illness to help improve youth well-being.

The one-hour conversation featured speakers Dr. Teresa Bennett from McMaster Children's Hospital, Fae Johnstone, Executive Director at Wisdom2Action, Dr. Myrna Lashley, Psychologist and Consultant in Equity, Diversity, and Inclusion, and Lee Thomas, MSW, from Lee Thomas Therapy Services.

Together, the speakers took an insightful look at the clinical side of mental health and what work needs to be done to create a brighter future for all.

As part of Brain Canada's partnership with *The Walrus*, two sponsored content stories were published in *The Walrus* magazine. Mind the Gap discussed the gaps in mental health research funding, while Seeding Innovation in Brain Research explored how Brain Canada is offering early-career scientists an opportunity to think outside the box.

Read more about Dr. Bennett's work on page 12.

No.
4

20 BRILLIANT CANADIANS

Anchored by a lead gift from the **Azrieli Foundation**, with support from **The Arrell Family Foundation** and the **Alvin Segal Family Foundation**, Brain Canada's Future Leaders in Canadian Brain Research Program is providing early-career researchers with the jump start they need.

Canada's emerging brain researchers are starting their careers just as technology is giving them the tools to explore the deepest secrets of the brain. Their work could unlock cures for anything from depression to Alzheimer's disease to brain injury.

This year, a video was produced to highlight the bold explorations of the latest cohort of Future Leaders. In the collection of interviews, the researchers detail what this funding means for their respective projects. By enabling radically ambitious new ideas with significant potential benefits to society and the economy, we are kickstarting the next generation of Canadian brain scientists. Awardees will be using these funds to not only pursue research questions, but also to hire graduate students and give them the training and mentorship they need to grow, further establishing Canada's pipeline of neuroscientists.

Visit braincanada.ca/videos to watch the video.

No.
5

SUPPORT FOR FUTURE CANADIAN NEUROSCIENTISTS

The late Dr. Hubert van Tol, Professor and Canada Research Chair in Neurobiology at the University of Toronto, spent his career developing a profound appreciation and love for collaborating with colleagues from all over the world and welcoming students from other countries into his lab. That is why, following his death in 2006, his family decided to commemorate his legacy with Brain Canada through the **Dr. Hubert van Tol Travel Fellowship**, a longstanding grant established with Dr. Monica Seger, Dr. van Tol's wife, and supported by Mrs. Marianne Seger.

The purpose of the Dr. Hubert van Tol Travel Fellowship is to provide funding to graduate students (MSc, PhD) and postdoctoral fellows conducting research in the field of neuroscience at a Canadian institution to attend major international conferences and symposiums or training courses. The funding provides researchers with the opportunity to present their work to their peers, access world-class education, participate in scientific discussions with leading experts in the field, and collect valuable feedback on their research.

Since the first Dr. Hubert van Tol Travel Fellowship, 23 travel awards have been granted to recipients across the country, in support of brilliant brain research.

No.
6

HOPE FOR AUTISM RESEARCH

The **Shireen and Edna Marcus Excellence Award** is a research award for promising graduate students and postdoctoral fellows conducting research in autism spectrum disorder (ASD). Since 2019, with the support of the Shireen and Edna Marcus Fund, a charity focused on supporting Canadian institutions and registered charities conducting or advancing autism research, four awards have been granted to promising young researchers.

This year, PhD candidates Grant Bruno, from the University of Alberta, and Hong Lu, from the University of British Columbia, were selected on a competitive basis by a review committee established by Brain Canada.

Read more about Grant Bruno's research on page 14.

No.
7

CHANGING OUR BRAINS FOR THE BETTER

Brain Canada identified a gap in research funding for traumatic brain injury (TBI) and recognizes that more needs to be done to better understand the nature, diagnosis, and treatment of TBI. Both brain and spinal cord injuries have a significant impact on the productivity, health, and quality of life of affected individuals.

With a generous gift from the **Galati Family** and by collaborating closely with Brain Changes Initiative and leveraging the organization's knowledge of people with lived experience of TBI, Brain Canada is working to create meaningful change in how we share evidence that can lead to breakthroughs and support the implementation of effective health care services in Canada. Brain Canada will be convening thought leaders and expert stakeholders to inform and construct a transformative and original new research project set to launch in the fall of 2022.

"The goal is to increase research and then translate that research to clinicians so survivors can receive the best treatment possible."

Dr. Matthew Galati

Traumatic brain injury survivor and
Founder of Brain Changes Initiative

No.
8

A HEALTHIER AND STRONGER CANADA

It is currently estimated that one in five Canadians will experience some type of mental health issue or illness in any given year. While some individuals benefit greatly, for many living with a mental health issue or illness, the mental health care options that are currently available are not always adequate. The pandemic has only highlighted the need for enhanced mental health research and care initiatives that address these gaps.

Thanks to a new \$2.2 million gift from **Bell Let's Talk**, collaborative and multi-disciplinary research teams across Canada received a funding boost to support emerging scientific knowledge that will meet the rising demand for evidence-based mental health treatment options. Funding from the Bell Let's Talk - Brain Canada Mental Health Research Program will help generate long-term benefits by ensuring our health care system is equipped with more accessible and timely solutions.

Read more about the Bell Let's Talk - Brain Canada Mental Health Research Program Grant recipients on page 16.

"Together, we are supporting innovative projects that will meet the rising demand for improved, more accessible and more effective mental health care."

Mary Deacon
Chair of Bell Let's Talk

No.
9

THE TIME TO ACT IS NOW

The Brain Canada Youth Mental Health Platform program, powered by RBC Future Launch, was established this year thanks to a new \$2 million anchor gift from the **RBC Foundation**, in support of RBC Future Launch. **Power Corporation** recently joined in partnership to further fuel this initiative toward greater impact with a \$1 million gift. The program will support a pioneering national project to be announced in 2022 that will make meaningful advances in the field of youth mental health possible by enhancing existing technical and research capabilities of Canadian neuroscientists.

The RBC Foundation is a long-standing supporter of Brain Canada and its mission to fund research aimed at unlocking the complexities of the brain to develop diagnostics, treatments, and cures for brain disorders.

"To address the barriers to care, RBC Future Launch is committed to partnering with Brain Canada to invest in infrastructure to build and share youth mental health knowledge across teams and disciplines."

Mark Beckles
Vice President, Social Impact and Innovation, RBC

No.
10

MEANINGFUL CUTTING-EDGE RESEARCH FOR CANADIAN YOUTH

The Erika Legacy Foundation, an influential charity dedicated to providing financial support for the enhancement of suicide prevention programming, made a generous donation to Brain Canada's Mental Health Research Initiative. Under a common goal and vision, Brain Canada and The Erika Legacy Foundation are joining forces for the first time to leverage each other's strengths and deepen Canadians' understanding of mental illness.

This support will enable high-impact research collaborations in a variety of complementary fields to provide insight into the neuroscience of suicidal behaviour and ideation, and overall youth mental well-being.

"Our donation to Brain Canada supports translating knowledge into practice by filling gaps in the existing brain research landscape, and by supporting research in high-risk populations such as children, women, the LGBTQ+ community, Indigenous peoples, and racialized communities."

Chris Maksylewicz
Executive Director of
The Erika Legacy Foundation



THE GREATEST DISCOVERIES ALL START WITH THE QUESTION WHY?"

Robert Ballard

Explorer, retired Navy Officer & Professor of Oceanography
University of Rhode Island

Governance

Leading With Purpose

To ensure adherence to all policies and guidelines, members of the Board and its committees are determined to remain effective in their overall governance of Brain Canada and conduct a thorough self-evaluation on an annual basis. Brain Canada requires any Board member who has a potential conflict of interest to disclose the conflict publicly and abstain from voting on any matter where there is a conflict or potential conflict of interest.

Brain Canada's Board of Directors volunteers its time and expertise to provide strategic advice and oversight to the Foundation. The Board is committed to ensuring Brain Canada's success as a leading brain research convenor and in supporting its engagement with the brain research community, stakeholders and the broader public.

Composed of leaders from the business, academic, scientific, philanthropic and Indigenous communities, the Board adheres to Brain Canada's Code of Conduct. Its members uphold the highest standards of honesty, integrity, ethics and professional management.

In addition to meeting four times a year for standing Board meetings, Directors also sit on various committees:

The Governance, Nominating and Ethics Committee (GNEC)

A committee that assists the Board on all matters relating to governance and leadership, as well as ensuring the highest ethical standards.

The Audit, Finance, Investment and Risk Management Committee (AFIRM)

A committee that provides support to the Board to ensure financial and organizational viability by overseeing the annual audit, budgets, treasuries, policies, key financial controls, key role succession and risk management. The Committee reports to the Board of Directors and recommends the appointment of auditors to review the annual financial statements.

The Research Committee (RC)

The Research Committee provides support to the Board in fulfilling its responsibilities on the broad perspective of research at Brain Canada. The RC makes recommendations to the Board on matters of research policy as well as provides oversight on the value and impact of Brain Canada funded research. It also supports the board by providing advice regarding new and emerging themes and directions in brain research, as well as opportunities for differentiation within the Canadian research landscape.

Brain Canada Privacy Policy

Brain Canada understands the responsibility that comes with collecting, using and sharing personal information, and we are committed to protecting the privacy of all. The privacy policy applies to information we collect, use or disclose whenever you interact with us, including through our website.

To read the full privacy policy, please visit braincanada.ca/privacy-policy

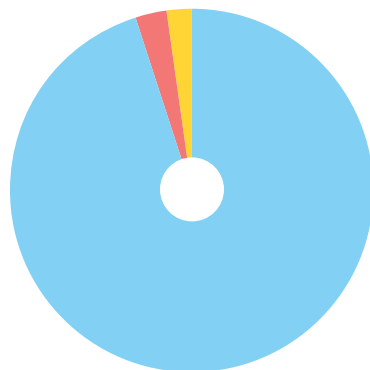
Financials

Brain Canada Foundation
Statement of Financial Position
 As of December 31, 2021

	2021 \$	2020 \$
Assets		
Current		
Cash and Cash Equivalents	8,010,971	5,554,149
Short-Term Investments	2,600,000	3,455,000
Accrued Interest Receivable	2,369	15,089
Other Receivables	70,238	226,563
Grants and Awards Reimbursement Receivable	-	1,875
Prepays and Deposits	70,155	48,278
	10,753,733	9,300,954
Tangible Capital Assets	105,928	104,052
	10,859,661	9,405,006
Liabilities And Net Assets		
Current		
Accounts Payable and Accrued Liabilities	299,153	49,905
Salaries and Benefits Payable	403,309	561,296
Current Portion of Deferred Contributions	5,957,165	4,899,332
	6,659,627	5,510,533
Deferred Contributions	1,758,896	974,412
	8,418,523	6,484,945
Net Assets:		
Unrestricted Net Assets	2,335,210	2,816,009
Invested in Capital Assets	105,928	104,052
	2,441,138	2,920,061
	10,859,661	9,405,006

Brain Canada Foundation
Statement of Operations
 Year ended December 31, 2021

	2021 \$	2020 \$
Revenues:		
Restricted Contributions	23,634,829	13,510,723
Unrestricted Contributions from Donors	315,899	690,528
Government Wage Subsidy	112,047	257,746
Interest Income	33,920	67,492
	24,096,695	14,526,489
Fundraising Events:		
Revenues	-	35,634
Direct Costs	-	13,710
	-	21,924
	24,096,695	14,548,413
Expenditures:		
Grants and Awards	21,167,198	10,496,563
Operating Expenses	3,390,825	3,519,297
Amortization of Tangible Capital Assets	17,595	17,594
	24,575,618	14,033,454
Excess (Deficiency) of Revenues Over Expenditures	(478,923)	514,959



95% of funds go to Research Programs

- 95% Research Programs
- 3% Fundraising
- 2% Administration

Our Donors

Change Starts Here

Thanks to steady support from donors, Brain Canada has continued its quest to better understand the brain in illness and health. Our donors empower Brain Canada to invest in next-generation investigators, capacity building initiatives, innovative research teams and unique partnerships that drive brain research forward. With your support, we make strides that will ultimately improve health outcomes for Canadians.

Lead Donors

Cumulative giving 2011 - December 31, 2021

We gratefully acknowledge the cumulative contributions of our lead donors, who have supported Brain Canada over the years.

The Azrieli Foundation \$12,575,000	Bell Canada / Bell Let's Talk \$2,800,000 (includes \$2.2M gift in 2021)	CIBC \$525,000
The Chagnon Family \$5,000,000	Anonymous (2) \$1,931,000	Rosy Foundation \$505,000
Krembil Foundation \$4,110,000	Power Corporation \$1,150,000	Arrell Family Foundation \$320,000
W. Garfield Weston Foundation \$3,000,000	The Estate of Donna Canary \$1,078,000	
RBC Foundation \$2,795,500 (includes \$2M gift in 2021)	The Galati Family \$848,000	

January 1st, 2021 - December 31, 2021

<p>\$100,000 + Anonymous (1) Erika Legacy Foundation</p> <p>\$25,000 - \$99,999 The Estate of John Thomas Borrowman The Alvin Segal Family Foundation The Barbara Turnbull Foundation Wheeler Family Foundation</p> <p>\$10,000 - \$24,999 Mario Bottero through CVA Realty Holdings Ltd. Marcus Mo Karimifar through Orbis Investment Management Ltd. United Way East Ontario</p> <p>\$1,000 - \$9,999 Anonymous (2) Barrett Family Foundation The Benevity Community Impact Fund Alexandra & Cameron Bossert Wayne E. Bossert Ann Braden Grant Burchnell Lloyd Calupig Conam Charitable Foundation Frank Falcone Hilary Forge Toby Fouks</p>	<p>Kim Girtel Guenther Golchert Norm & Liliane Goldman Jack & Shyla Goldstein Anthony Gornik Tim Hayman Laura Hawthorn Richard Henseleit Helene Lieberman Daphne McCulloch Nicole McGinn Nazanin Majidi Shireen and Edna Marcus Foundation Ravi Menon Provincial Employees Community Services Fund Meir J. Rotenberg The Hon. Nancy Ruth Graham DP Scott Marianne Seger & Monica Seger-van Tol Katelyn & Nathanael Sieb The Mireille and Murray Steinberg Family Foundation The Estate of Ruth Style Riccardo Teoli United Way Greater Toronto</p> <p>\$500 - \$999 Anonymous (1) Jean Besz</p>	<p>Ronald Blackmore Heather Munroe-Blum Robert Bodnar Krista Breithaupt Canadian Parents for French BC-Yukon Vincent Castellucci Charities Aid Foundation of Canada Alix Roy-Couvillon Glen Crisp Jacqueline Czender Rob Evans Carol Fryer Ursula Leissner Jake McGrory Sheila Paolozzi Anne-Marie Papineau Joseph Pekelsky Annemarie & Robert Powell Zeshan Raja Ajayveer S. Randhawa Richard Shanahan Michael Shapiro Natalie Tardif Sue Williams Daniel Zaki</p> <p>\$250 - \$499 Anonymous (2) Michelle Atrache</p>	<p>Janet Bowins Sandra Buckingham Stéphanie Constance Julia Dalla Rosa Patricia K. Davidson Keegan Dillabaugh The Jeremy and Judith Freedman Family Foundation Louis-François Hogue Susan Ianni Nicholas Grant Molly Gruman Raymond James Canada Foundation Ryan Katofsky Mary Beth McMahon Roberto Marrocco Mary Martin Scott Martin My Tribute Gift Foundation Mary Pattullo Vinoj Rajendran Sandi Sahota Karlee Snetsinger Salina Yong United Way Calgary and Area University of Toronto Scarborough - Soccer Family Peter Verlinden Anonymous (2) XI Beta Alpha</p>
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Under \$250

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Marjan Sadat Alavi
Manuel Amorim
Debbie Anderson
Caitlyn Angelo
Anonymous (10)
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Judith Appleton
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Sadhana Valia
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Herbert Yang
Jenna Zhang
Dvora Zhalkovskiy
Lily Zhu
Joe Zumpetta



**TECHNIQUE AND ABILITY
ALONE DO NOT GET YOU
TO THE TOP; IT IS
WILLPOWER THAT IS
THE MOST IMPORTANT.”**

Junko Tabei

First woman to climb Mount Everest

Our People

It Takes a Village

With more than 100 dedicated partners, our work contributes to a better understanding of the brain and improved lives for people in Canada. Together we are investing in big, bold ideas that will revolutionize brain research and keep our loved ones healthy.

Board of Directors

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Member, Audit, Finance, Investment and Risk Management Committee
Member, Governance, Nominating and Ethics Committee
Member, Research Committee
Chair and Chief Executive Officer
The Azrieli Foundation (Toronto)

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Founding member and Executive President of Precinomics Health Solutions Canada Inc., France Chrétien-Desmarais currently sits on numerous Boards in the health, research and social development sectors. (Montreal)

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Member, Research Committee
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Scientist, Robarts Research Institute
Principal Investigator, The Brain and Mind Institute
Co-Scientific Director, BrainsCAN, Western University (London, Ontario)

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Lead – University of Calgary Brain and Mental Health Research Strategy
Professor, Departments of Clinical Neurosciences, and Cell Biology and Anatomy
Cumming School of Medicine, University of Calgary (Calgary)

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Melissa Arauz

Senior Digital Communications and Stewardship Officer

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Director of Philanthropy

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Chief Research and Programs Officer
Member, Research Committee

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to the Director of Philanthropy

Angelina Marchetta

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Mia-Kate Messer

Research and Programs Officer

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President and CEO
Member, Research Committee
Member, Governance, Nominating and Ethics Committee
Member, Audit, Finance, Investment and Risk Management Committee

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Program Manager

Julia Segal, PhD

Program Manager

Kate Shingler

Director, Marketing and Communications

Line Trudeau, MBA, CPA

Chief Finance and Strategy Officer
Member, Audit, Finance, Investment and Risk Management Committee

Jose Angel Vasquez

Senior Accountant



**BE BOLD.
LIFE IS SHORT AND
THERE'S NO TIME
TO BE TIMID."**

Dr. Wilten Nicola

Assistant Professor, University of Calgary and Future Leader
in Canadian Brain Research Grant recipient

Our Partners

Bringing It All Together

Making a significant difference in the lives of Canadians doesn't happen in a vacuum. It takes a network of visionary partners committed to investing in change. As a national convener and facilitator, Brain Canada worked with partners from coast to coast to drive innovative brain research in 2021. Partners are critical in enabling our mission to bring together the brightest minds and best ideas to help us better understand how to prevent, diagnose, treat and cure brain diseases and disorders.

Health Charities

Alberta Paraplegic Foundation
 ALS Society of Canada
 Alzheimer Society - Alberta & Northwest Territories
 Alzheimer Society of Canada
 Alzheimer's Association US
 Brain Tumour Foundation of Canada
 Canadian Cancer Society
 Capitalize for Kids
 CHU Sainte-Justine Foundation
 Douglas Mental Health University Institute
 Foundation
 Fondation CERVO
 Heart and Stroke Foundation of Canada
 Huntington Society of Canada
 Jewish General Hospital Foundation
 The Marigold Foundation
 Mount Sinai Hospital Foundation of Toronto
 MS Society of Canada
 Parkinson Association of Alberta
 Parkinson Society of Canada
 SickKids Foundation
 Sunnybrook Foundation
 UHN Toronto General & Western Hospital Foundation
 University Hospital Foundation
 Vitae Foundation
 Women's Brain Health Initiative (WBHI)

Provincial Agencies

Alberta Health Services
 Alberta Innovates Health Solutions
 Fédération québécoise de l'autisme
 Fonds de recherche du Québec - Santé (FRQS)
 Genome BC
 Manitoba Health Research Council
 Michael Smith Foundation for Health Research (MSFHR)
 Network of Applied Medical Genetics (RMGA)
 Nova Scotia Health Authority
 Ontario Brain Institute (OBI)
 Ontario Neurotrauma Foundation (ONF)
 Pacific Alzheimer Research Foundation (PARF)
 Vancouver Coastal Health Authority (VCHA)

Corporations

Alnylam Pharmaceuticals Inc.
 Atuka Inc.
 Biogen
 Corbin Therapeutics
 Eli Lilly & Company
 Life Chemicals Inc.
 Magventure
 Merck
 Regeneron Pharmaceuticals Inc.
 Roche Canada
 Treventis

Research Networks

Age Well
 Campus Alberta Neuroscience
 Canadian Partnership for Stroke Recovery
 Canadian Stroke Consortium
 Canadian Stroke Network
 Consortium Québécois sur la Découverte du Médicament (CQDM)
 Kids Brain Health Network
 Le Réseau québécois sur le suicide, les troubles de l'humeur et les troubles associés (RQSHA)
 Quebec Pain Research Network

Other Organizations

Canadian Institute for Advanced Research (CIFAR)
 Canadian Institutes of Health Research (CIHR)
 Government of Alberta
 Healthy Brains, Healthy Lives
 Les Grands Ballets Canadiens
 Martin Family Initiative
 Medavie Health Foundation
 Mental Health Commission of Canada
 National Institutes of Health (NIH)

Institutions

Alberta

Alberta Children's Hospital Research Institute (ACHRI)
 Hotchkiss Brain Institute
 University of Alberta
 University of Calgary
 Women & Children's Health Research Institute

British Columbia

BC Children's Hospital Research Institute
 BC Women's Hospital & Health Centre
 Centre for Heart Lung Innovation (UBC and St. Paul's Hospital)
 Djavad Mowafaghian Centre for Brain Health
 Institute of Mental Health
 International Collaboration On Repair Discoveries (ICORD)
 Providence Health Care Society
 Simon Fraser University
 St Paul's Foundation
 University of British Columbia

Manitoba

Health Sciences Centre
 University of Manitoba

Nova Scotia

Dalhousie University
 Izaak Walton Killam (IWK) Health Centre

Ontario

Baycrest Centre for Geriatric Care/Baycrest Hospital
 Brock University
 Centre for Addiction and Mental Health (CAMH)
 Children's Hospital of Eastern Ontario
 Holland Bloorview Kids Rehabilitation Hospital
 McMaster University
 Ottawa Hospital Research Institute
 Queen's University
 Sunnybrook Health Sciences Centre
 St. Michael's Hospital
 The Hospital for Sick Children
 Unity Health Toronto
 University Health Network
 University of Ottawa
 University of Ottawa Brain and Mind Research Institute (uOBMRI)
 University of Ottawa Heart Institute
 University of Toronto
 University of Western Ontario
 York University

Québec

Centre de Recherche Institut universitaire de gériatrie de Montréal (CRIUGM)
 Centre for Interdisciplinary Research in Rehabilitation of Greater Montréal (CRIR)
 Centre hospitalier de l'Université de Montréal (CHUM)
 CERVO Brain Research Centre
 CIUSSS de la Capitale-Nationale
 CHU Sainte-Justine Research Centre
 CIUSSS du Centre hospitalier universitaire de Sherbrooke
 CIUSSS de l'Ouest-de-l'Île-de-Montréal
 CIUSSS du Nord-de-l'Île-de-Montréal
 Douglas Hospital Research Centre
 École polytechnique de Montréal
 Institut de Cardiologie de Montréal
 Institut de recherches cliniques de Montréal (IRCM)
 Institut universitaire en santé mentale du Québec (IUSMQ)
 Jewish Rehabilitation Hospital
 Montreal Neurological Institute
 The Royal Institution for the Advancement of Learning/McGill University
 Université de Montréal
 Université Laval





Saskatchewan

University of Saskatchewan

Thank You.

We would like to offer our gratitude to the many individuals who have made donations in honour of a loved one and to those who have steadily supported Brain Canada throughout the years.

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The views expressed herein do not necessarily represent the views of the Minister of Health or the Government of Canada.

Brain Canada is a national registered charity that enables and supports excellent, innovative, paradigm-changing brain research in Canada.

Registration number: 89105 2094 RR0001.

This Annual Report is also available in French. An online version can be viewed and downloaded at braincanada.ca

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**THIS MAY LOOK
LIKE A SUNSET,
BUT IT'S A NEW
DAWN."**

Chris Hadfield
Retired Canadian astronaut, engineer
and fighter pilot



Fondation
Brain Canada
Foundation

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