2020, MEET 20 REASONS TO HAVE HOPE FOR 2021.
INTRODUCING 20 AMAZING CANADIANS TAKING US INTO THE GREAT UNKNOWN. THE BRAIN.

For more than two decades Brain Canada has championed paradigm-changing research. We play a unique and invaluable role as the national convener of the brain research community, driving innovation and connectivity by building a truly interdisciplinary commitment to brain health. We have to. Brain disorders are among the leading causes of disability in our country and a huge public health burden. We have to invest now. Brain Canada does that by funding high-potential ideas at a critical point in a scientist’s career: the beginning.

Meet the Azrieli Future Leaders in Canadian Brain Research. The next generation of brain researchers has enormous potential. They are embarking on their careers just as science and technology is unlocking the mysteries of the brain. To supercharge their efforts, the Azrieli Foundation is providing critical financial support to address the funding gap for our brightest early-career investigators. Together, we’re establishing Canada’s pipeline of future leaders and catalyzing innovation. Here, a small peek into the lives and minds of some of our highly accomplished researchers. They make us proud and give us hope going forward.

Join us as we help them discover the secrets of the brain. Because what we do today will mean a brighter future tomorrow. For all of us.

Laurent Chatel-Chaix, PhD
LOOKING FOR THE ‘EUREKA’ MOMENT THAT WILL STOP ZIKA.

Laurent was born in France and lives in Quebec. When he’s not in the lab or on the tennis courts, he’d like to be carving fresh tracks in the Alps. To unlock huge discoveries, molecular biology studies life at the smallest scale. How does Zika virus manage to attack the fetus brain specifically? That tiny, enormous answer is Laurent’s mission.

Caroline Ménard, PhD
EXPLORE THE MIND-GUT CONNECTION TO SEE HOW STRESS CAN PROMOTE INFLAMMATION AND LEAD TO DEPRESSION.

Stress is a modern-day reality. But how does stress physically affect the brain-body communication to trigger disorders like depression? Caroline aims to identify the mechanisms at work so we can find new ways to treat depression.
How can a song, picture or smell trigger powerful memories? Mark uses and develops new tools to study the wiring between cortical areas in hundreds of brain scans. These findings are cross-examined with behavioral and genetic data which may finally crack the code.

The subiculum is a poorly understood part of the brain implicated in epilepsy. With a PhD in Applied Mathematics, Mark combines Big Data techniques and the study of living brain tissue to see the biomechanisms behind seizures and how to treat them.

Jeehye Park, PhD
HOW DOES ALS WORK TO MAKE OUR NEURONS NOT WORK? THAT IS JEEHYE’S WORK.

Amyotrophic Lateral Sclerosis (ALS, also known as Lou Gehrig’s disease) is a motor neuron breakdown. How does the breakdown work at the molecular level? Jeehye combines biochemistry, molecular cell biology, mouse and fruit fly genetics to unlock answers that advance our understanding of ALS and other neurodegenerative diseases.

Mark Brandon, PhD
POWERFUL NEW TECHNOLOGIES TO UNDERSTAND OUR MOST POWERFUL MEMORIES.

How can a song, picture or smell trigger powerful memories? Mark uses and develops new tools to study the activity and wiring in the brain responsible for our vivid recollections. His work helps us better understand how the brain forms new memories and why these memories are disrupted by Alzheimer’s disease.

Mark Steven Cembrowski, PhD
BIG DATA SCIENCE. NUMBER CRUNCHING TO WIPE OUT EPILEPSY.

The subiculum is a poorly understood part of the brain implicated in epilepsy. With a PhD in Applied Mathematics, Mark combines Big Data techniques and the study of living brain tissue to see the biomechanisms behind seizures and how to treat them.

Boris Bernhardt, PhD
HELPING US SEE AUTISM SPECTRUM DISORDER LIKE NEVER BEFORE.

Autism remains a mystery: hard to detect and treat. Boris harnesses powerful computer models to study the wiring between cortical areas in hundreds of brain scans. These findings are cross-examined with behavioral and genetic data which may finally crack the code.

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Young people learn differently because every brain works differently. Michael’s research combines learning experiments with neuroimaging. He dreams of customized learning that makes the most of every student’s brain.

Many cannabis devotees claim it can reduce nausea during pregnancy with no side-effects to the fetus. Robert’s work with pregnant rats studies how cannabis alters brain development, so parents-to-be can make informed choices.

Childhood gliomas are unusual brain tumors. When you look at their genes, they often don’t even have the expected cancer mutations. Marco is on the hunt for hidden gene switches that trigger these pediatric cancers.

Treatment of depression often involves medication and/or other therapeutic supports. Sara pioneers drug-free, non-invasive treatments using Theta Burst Stimulation. This brain-boosting technique shows a lot of promise.

Sara Tremblay, PhD
THE NEXT WAVE IN DEPRESSION TREATMENT IS LITERALLY WAVES.

Michael Laprairie, PhD
CANNABIS IS LEGAL, BUT WE NEED BETTER INFORMATION ON ITS IMPACT.

Marco Gallo, PhD
IMAGINE FINDING A SWITCH THAT TURNS OFF PEDIATRIC BRAIN CANCER ONCE AND FOR ALL.

Sara has a secret love of spicy foods.

Growing up, Michael didn’t even know neuroscience was a thing until university.

This Calgarian may look like a branded cowboy, but he was born in Northern Italy.

Robert is a Doctor of Pharmacology, but his early schooling was in the fine arts, including ballet.

Growing up, Michael didn’t even know neuroscience was a thing until university.

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The brain weighs just three pounds, yet burns 20% of our energy. Ravi’s next-generation imaging techniques can see this blood-brain interaction in real time. It holds huge promise for our understanding of many brain health issues.

Is the mind a huge and complex system of switches and wires? Or is the mind all of the behaviours travelling through it? Allen says yes and yes, in his search for the next generation of treatments for Autism Spectrum Disorder (ASD).

In people with Multiple Sclerosis, immune cells cross the brain barrier, triggering inflammation and damaging brain tissue. Jo Anne’s work looks at these inflammation-causing molecules to learn how they get into the brain and cause damage.

Jo Anne is a triple citizen of Canada, Australia and the UK.

When Allen gets up from his lab desk, or from reading the latest sci-fi book, he is surprisingly tall.

Jo Anne Stratton, PhD

THIS CELLULAR DETECTIVE IS HUNTING DOWN THE MS MOLECULE.

When Allen gets up from his lab desk, or from reading the latest sci-fi book, he is surprisingly tall.

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This cellular detective is hunting down the MS molecule.

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Jo Anne Stratton, PhD
Janelle Drouin-Ouellet, PhD

**THE INNOVATIVE RESEARCH TECHNIQUE THAT COULD MAKE PARKINSON’S HISTORY.**

Janelle uses an exciting technique to take skin cells from seniors with Parkinson’s and turns them into brain cells. Then she studies the effects of aging to see how the brain cells break down. She is thinking out-of-the-box to expand our knowledge and test new therapies.

Aaron Phillips, PhD

**MEET THE BLOOD PRESSURE-PIONEER OF SPINAL CORD INJURY.**

A common side effect of spinal cord injury is blood pressure instability that can lead to heart attack, stroke, and loss of consciousness. Aaron pioneers an electrical stimulation approach that stabilizes blood pressure and improves neurological and cardiovascular health after spinal cord injury.

Jean-Francois Poulin, PhD

**IT TAKES THE BEST OF HUMAN AND COMPUTER BRAINS TO MAP THE HUMAN BRAIN.**

With billions of neurons, our brains are extremely complicated to map. Jean-Francois has innovated a way to sort all those synaptic corridors to produce a map that shows us how the brain works.
This project has been made possible with the financial support of Health Canada, through the Canada Brain Research Fund, an innovative partnership between the Government of Canada (through Health Canada) and Brain Canada, and the Azrieli Foundation. The views expressed herein do not necessarily represent the views of Health Canada.