



The Royal's
Institute of Mental Health Research
affiliated with the University of Ottawa

RESEARCH WITH IMPACT

MAKING DISCOVERIES,
IMPROVING CARE,
BRINGING HOPE

2017-2018

ANNUAL REPORT



TABLE OF CONTENTS

00_INTRODUCTION

Message From Our President & CEO and the Board Chair _____	02
Foundation President & CEO: Increasing Access Through Improved Care, Research, Technology and Partnerships ____	04
The Royal's President & CEO: Research Is the Engine Behind Innovation and Change _____	05
IMHR Strategic Priorities 2015-2020 _____	06
2017-2018: The Year In Numbers _____	07

01_MAKING DISCOVERIES

Understanding the Brain-Heart 'Dance' _____	08
Unlocking the Mysteries of the Brain _____	10
The Suicidal Brain _____	12

02_INTEGRATING RESEARCH INTO CARE

The AMIC Success Story _____	14
The Biological Link Between Sleep and Mental Health _____	16
Tackling Workplace Mental Health Through e-Technologies _____	18

03_LIVES CHANGED

Mr. Gord Garner: From a Person With an Active Substance Use Disorder to a Recovery Advocate _____	20
Mr. Bruce Faiers: Living With Hope for the First Time _____	22
Dr. Ian Manion: The Human Face Behind the Mental Health Professional _____	24

04_HOW PHILANTHROPY IS DRIVING RESEARCH

Deciphering the Puzzles of Mental Illness Through Science _____	26
Incubating New Ideas _____	28
2018's Graduate Student Research Award Recipients _____	30
Moving the Yardstick Forward: 2017's Winner of the Royal-Mach-Gaensslen Prize for Mental Health Research _____	31
Dr. Rébecca Robillard: Winner of the 2018 Young Researcher of Mental Health Award _____	32
University of Ottawa Institute of Mental Health Research Board of Directors (2017-2018) _____	33

MESSAGE FROM OUR PRESIDENT & CEO AND THE BOARD CHAIR

RESEARCH: THE ENGINE BEHIND INNOVATION AND CHANGE

Depression is the leading cause of ill health worldwide and its impact is felt across all sectors of society. While medical researchers have substantially reduced the rate of fatalities from heart disease, many cancers, AIDS and strokes, this is not the case for depression and other mental disorders. This is primarily because the human brain — with over 100 billion neurons and countless connections — is the most complicated system in existence.



In relative terms, translating research into understanding how the brain works is still in its infancy. With the establishment of a state-of-the-science brain imaging centre featuring multi-modal imaging technology (PET-fMRI), our researchers and scientists are engaged in exciting and groundbreaking research that will lead to a better understanding as to why symptoms of depression are so different between people and why our treatments don't always work. We want to personalize treatments based on the identification of specific rogue brain circuits.

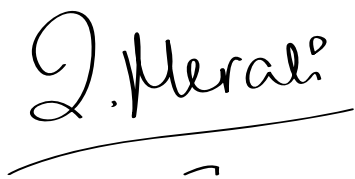
For the first time, brain imaging is making it possible for our researchers to look into the living human brain in a very detailed way — paving the way to identifying brain circuits that are malfunctioning, making accurate diagnoses, developing effective treatments that specifically target those circuits and tracking individual responses to specific treatments.

The Royal's Institute of Mental Health Research (IMHR), affiliated, with the University of Ottawa, is engaged in innovative research in the areas of mood and anxiety disorders, PTSD, youth psychiatry and sleep disorders. A new

research unit dedicated to work and mental health and the creation of the DIFD Mach-Gaensslen Chair in Suicide Prevention Research are focused on predictive analytics and the prevention of mental illness are recent examples of our innovative research approach. Not only do we want to develop effective treatments, but we want to prevent these illnesses from setting in altogether.

We are energized by the unprecedented growth in the number of younger scientists who have joined the IMHR's multidisciplinary research teams and by our new Emerging Research Innovators in Mental Health (eRIMh) program. This incubator ecosystem, fueled by a lead philanthropic investment of over \$6 million, is designed to engage, nurture and support the next generation of 'out-of-the-box' thinkers. The first of its kind in Canada, eRIMh will enable these creative researchers to hit the ground running.

Research is the engine behind innovation and change. These latest developments will help us build capacity, conduct practice-changing research, build partnerships and develop an innovation pipeline — helping us make a significant difference in forging discoveries with impact, improving care and bringing hope to those who suffer in silence.



Dr. Zul Merali, *President & CEO*



Ms. Lynn Pratt, *Board Chair*



Mr. Mitchell Bellman

FOUNDATION PRESIDENT & CEO: **INCREASING ACCESS THROUGH IMPROVED CARE, RESEARCH, TECHNOLOGY AND PARTNERSHIPS**

One year into his role as President and Chief Executive Officer of The Royal Ottawa Foundation for Mental Health, Mr. Mitchell Bellman is as excited and passionate about what The Royal has achieved as he is about the possibilities that lie ahead.

A successful five-year, \$25-million campaign that brought brain imaging to Ottawa and supported its priorities of research, care, education and advocacy has elevated The Royal's standing as a leading mental health care and research institution here in Canada and around the world. Campaigns such as the 'You Know Who I Am' and 'Do It For Daron' youth mental health initiative have also helped to inspire, motivate and engage people of all ages — and have effectively changed the discourse around mental health within the broader Ottawa community.

Building on this tremendous legacy is Mr. Bellman's priority. His focus is to lead the Foundation in formulating its next multi-million dollar fundraising campaign.

"Still in the planning stages, this new campaign, with a focus on the issue of access, will amplify The Royal's ability to serve the overall community and help people get access to the care they so desperately need. Our campaign will focus on four areas: access through improved patient care; access through research; access through technology; and access through partnerships with other organizations."

Improving access to care and treatment for such complex illnesses is a logical next step in The Royal's evolution as one of the leading mental health care and research centres. It also dovetails nicely with The Royal's vision to transform mental health care through partnerships, innovation and discovery.

"Looking ahead, I hope to see The Royal and its Institute of Mental Health Research change the way we deliver care, based on the success of our research," says Mr. Bellman. "Research holds the key to innovative treatments and therapies, just as with cancer, heart disease and diabetes."



When you have a health care institution that is also focused on producing great research, you attract the best physicians, clinicians, psychologists and scientists, and a by-product of that is that you create a culture that aims for excellence."

THE ROYAL'S PRESIDENT & CEO: RESEARCH IS THE ENGINE BEHIND INNOVATION AND CHANGE

Research is a driving force behind care. It builds understanding of the brain — “the last frontier in health” — and it advances discoveries that will have real and lasting impacts on the ability to diagnose, treat and care for people struggling with mental disorders.

As he looks back on his past 10 years as President and CEO of The Royal Ottawa Health Care Group, Mr. George Weber is proud of what has been accomplished as well as excited about the future. The Royal is a mental health care, research and teaching hospital, and scientists at the Institute of Mental Health Research (IMHR) work with the goal of research informing practice and care driving research. There's a crucial link between research and applied health system innovation — from bench to bedside.

A MASSIVE CULTURAL SHIFT

Ten years ago, at a business breakfast — shortly after becoming CEO — I asked attendees to raise their hand if they knew a colleague, family member or friend who has struggled with mental illness. Less than a quarter of the audience responded. Many were tentative, casting furtive glances around the room to make sure others were raising their hands, too. Earlier this year, at a similar event, I asked the same question. This time, every person in the room raised a hand.

“Having a research program tied in with a clinical care hospital makes a real difference to our ability to diagnose, treat and care for the people we serve. And the recent acquisition of a brain imaging machine is enhancing our research capabilities, where we can now begin to work on customizing treatments,” says Mr. Weber.



It is critical that we empower clinical research that will lead to better diagnosis and personalized treatment.”

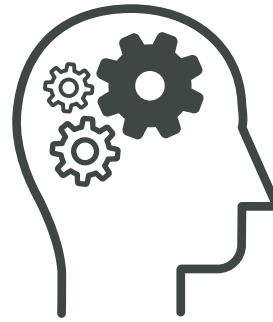
The Royal's Brain Imaging Centre is proving to be a magnet for top researchers. It's also making it possible to engage in around-the-world collaborations and to develop key partnerships, such as with University of Ottawa Heart Institute, where the brain-heart connection is being explored. “There are a lot of linkages between physical and mental conditions, and these collaborations and partnerships hold the key to improving patient care,” says Mr. Weber.



Mr. George Weber

IMHR STRATEGIC PRIORITIES 2015-2020

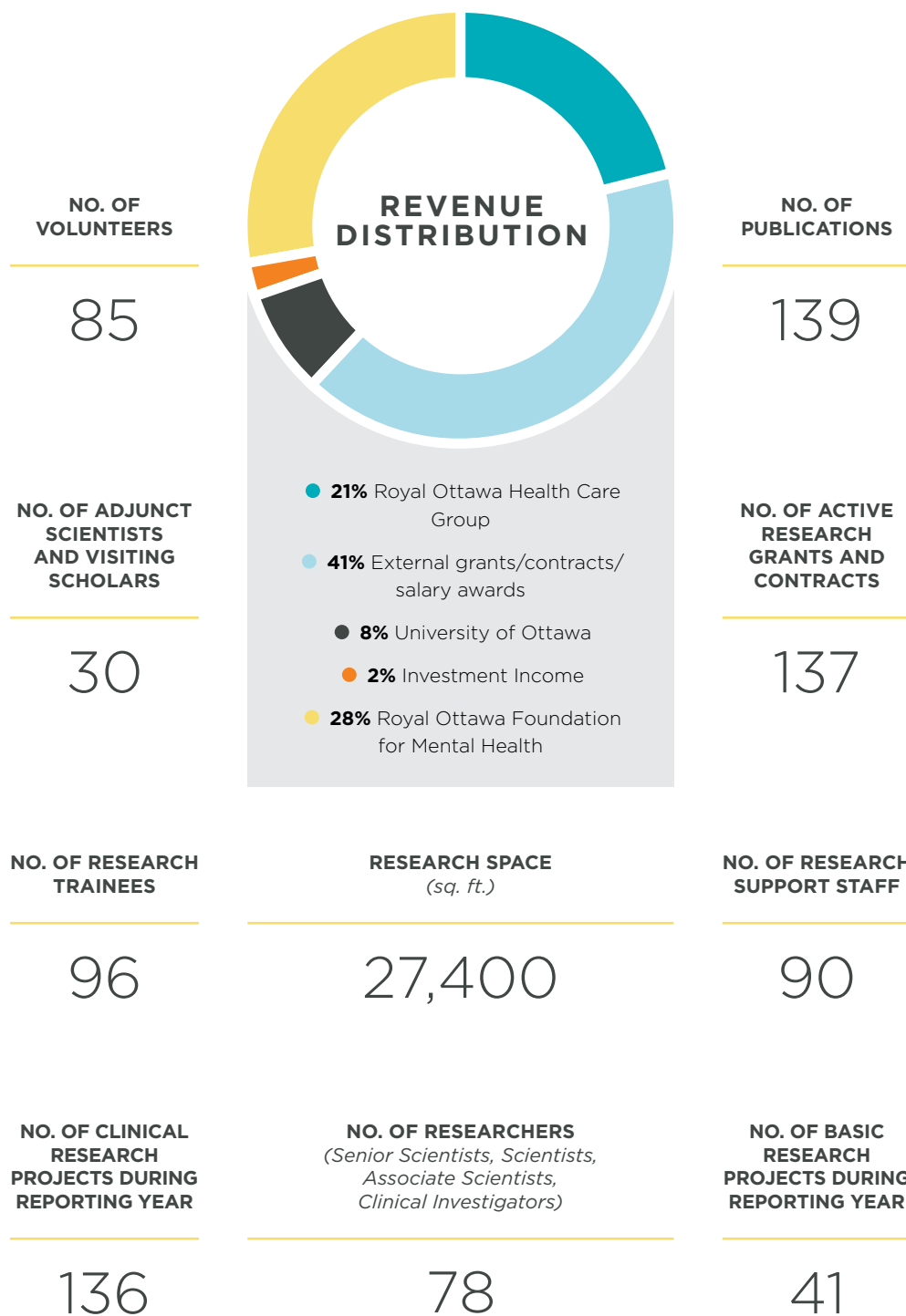
Driven by the goal to get people suffering from depression better faster, through tailored treatments



LEVERAGING TECHNOLOGY

	 ENHANCE OUR RESEARCH CAPACITY	 EXCEL IN PRACTICE-CHANGING RESEARCH	 EXPAND THE INNOVATION PIPELINE	 FOSTER COLLABORATIONS AND PARTNERSHIPS
OBJECTIVES	Double the number of scientists	Double the number of clinical research projects	Understand brain map/brain circuits	Expand translational collaborations
	Increase research revenue to \$10M	Establish clinical research infrastructure	Develop personalized medicine biomarkers	Increase national/international leadership
	Increase media hits and high-impact publications	Enhance electronic patient assessment and care	Develop new modalities of treatment	Establish WHO Collaborative Centre
	Enhance strategic alignment	Increase the number of research-informed interventions		Increase collaborations with uOttawa and CarletonU

2017-2018: THE YEAR IN NUMBERS





01_ MAKING DISCOVERIES

UNDERSTANDING THE BRAIN-HEART 'DANCE'

Traditional thought was that the heart is constantly responding to 'orders' sent by the brain in the form of neural signals, but recent research suggests that the heart sends more signals to the brain than the brain sends to the heart. Moreover, communication between the heart and brain is a dynamic, ongoing, two-way dialogue, with each organ continuously influencing the other's function.

"It's like two people dancing together," says Dr. Georg Northoff, Canada Research Chair in Mind, Brain Imaging and Neuroethics at The Royal's Institute of Mental Health Research (IMHR). "The better two people dancing the tango can adapt to each other, the better the dance; the better the heart and brain integrate with each other, the better they and the body can function."

When the heart or the mind is not functioning the way it should, the interconnection between these two vascular organs is compromised — which plays out in a number of ways, both physically and

mentally. For example, intense anger or grief can boost risk of a heart attack five-fold and stroke risk three-fold. Among people who have a heart attack, roughly one-third will become depressed afterwards, and those with both heart disease and depression or anxiety die about 17 years earlier compared to those who are mentally well. It's also well-known that people with post-traumatic stress syndrome have higher rates of cardiac problems than the general population.

Many of the patients with cardiovascular problems who are admitted to the University of Ottawa (Heart Institute)

have mental health issues, says Dr. Rob Beanlands, Vered Chair and Head, Division of Cardiology. “There is also evidence suggesting a link between stress and inflammation and disease of the blood vessels (atherosclerosis). Recent data suggest that patients who have increased activity in certain parts of the brain associated with stress also have increased activity in their bone marrow, where inflammatory cells originate; and we know that inflammation plays a key role in atherosclerosis, the most common cause of heart attacks and strokes.”

There also seems to be a correlation between sleep problems and abnormalities in heart rate — an area of focus for Dr. Rébecca Robillard, head scientist at The Royal’s Clinical Sleep Research Platform: “If we try to fix sleep disorders in people with depression, then we might see positive outcomes both in their mood and in their physical health; specifically their cardiovascular health.”

Much of the new medical breakthroughs come from large data sets (“Big Data”). Understanding this complex brain-heart connection — and ultimately improving patient outcomes — is the focus of a five-year joint research study, called the Brain Heart Registry, between the IMHR and the Heart Institute.

“While our focus at the Heart Institute has been on our own namesake organ, the heart, many of our patients are affected by their mental state. Simply treating our patients with anti-depressants after a heart attack doesn’t work. We have to find new solutions,” says Dr. Peter Liu, Chief Scientific Officer and Vice-President of Research at the Heart Institute, who is excited about the potential this research holds for Canadians. “The close proximity of our two institutes places us in a unique position to begin to unravel the interaction between mental and cardiovascular health. Our joint research studies have the potential for us to better diagnose and treat our cardiovascular patients down the road.”



LEFT TO RIGHT: *Dr. Rob Beanlands, Dr. Rébecca Robillard, Dr. Zul Merali, Dr. Georg Northoff, Dr. Robert deKemp*

THE JOINT BRAIN HEART REGISTRY STUDY

The goal is to register a large number of patients at The Royal and the Heart Institute in the Brain Heart Registry study.

The study involves heart and brain imaging using The Royal’s PET-fMRI imaging machine, a hybrid imaging technology that incorporates magnetic resonance imaging (MRI) and positron emission tomography (PET). “There are technical challenges to performing accurate PET molecular imaging simultaneously with MRI imaging,” says Dr. Robert deKemp, Head Imaging Physicist, Cardiac Imaging at the Heart Institute (and a leading expert in the physics of cardiac PET imaging). “This is especially so in the case of the heart, which moves with the patterns of breathing and beating.” Dr. deKemp’s role is to ensure that the imaging protocols established for the study provide the most robust and accurate data.

Given that many psychiatric patients often suffer from sleep disorders, individuals who attend The Royal’s Sleep Lab and agree to participate will also be tracked. A parallel longitudinal study provides an opportunity to measure their heart rate during sleep. “We’re looking at sleep from a more holistic perspective — from the point of view of brain, heart and respiratory health.” says Dr. Robillard.

UNLOCKING THE MYSTERIES OF THE BRAIN

With 100 billion neurons — more than stars in the sky — and close to a quadrillion connections between these neurons, the brain is one of the most complex systems in the universe. Understanding how the brain functions, and what has gone awry for people who suffer from a mood disorder, is one of the most challenging questions in science.

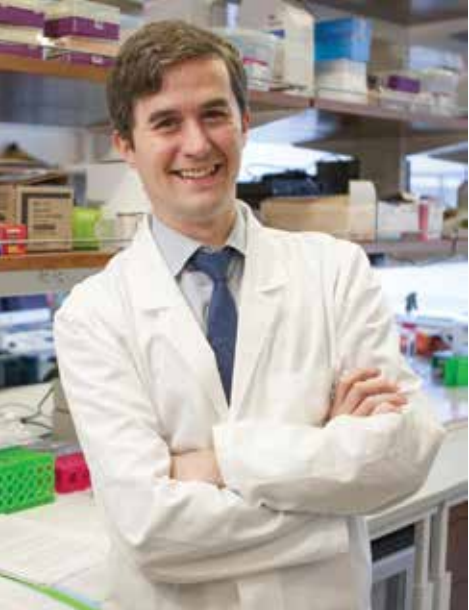


Dr. Zul Merali

The symptoms of depression and other mood disorders arise from disturbances in the functioning of specific neuronal circuits. Neuroscientists have gathered considerable evidence showing that “broken” circuits mediating mood are at the core of depression. But depression is a complex illness: “Depression is a heterogeneous diagnosis, with 256 unique combinations of symptoms that affect one’s emotional, cognitive and physical health,” explains Dr. Conor Liston, Principal Investigator with the Weill Cornell Medicine Feil Family Brain and

Mind Research Institute in New York. “Some of those symptoms contain opposites of themselves. For example, someone could be sleeping too much while another person could be sleeping too little, or have weight gain or weight loss, or physical agitation or lack of energy — and yet all these people receive the same diagnosis and same treatments. The problem is, a diagnostic label like ‘depression’ doesn’t have a strong correspondence to the underlying biology. This makes it harder to advance our understanding of the neurobiology of depression.”

Because of depression’s complexity, available treatments including medication, cognitive therapy and/or electroconvulsive therapy provide little relief to some sufferers. The use of deep brain stimulation (see sidebar), pioneered by Dr. Helen Mayberg, Director of the Center of Advanced Circuit Therapeutics at Mount Sinai’s Icahn School of Medicine in New York, is showing promise in some of the few hundred patients with depression whose disorder has been linked to abnormally functioning circuits. At The Royal, researchers have had positive impacts using a drug called ketamine, in people who have severe suicidal ideation. “Ketamine has opened a door to figuring out new ways of treating depression and averting suicidal acts” says Dr. Zul Merali, President & CEO



Dr. Conor Liston

of The Royal's Institute of Mental Health Research (IMHR), "but we're not at the point yet where we can diagnose and treat mental disorders more accurately using biomarkers."

Imaging tools such as PET-fMRI hold the key to proper diagnosis and treatment, as imaging helps us visualize the workings of the living brain.

Currently, more than 20 different studies using brain imaging technology are under way at the IMHR. One exciting new research project, which will kick off in late 2018, is a randomized treatment trial for the four discrete subtypes of depression recently categorized by Dr. Liston. By looking for patterns (biomarkers) in brain biology, Dr. Liston has been able to identify four discrete depression subtypes. "This is one way of identifying groups of patients that are more similar to one another than the catch-all, symptom-based diagnosis of depression. While there are probably better ways of subgrouping people with depression even further," adds Dr. Liston, "this approach holds promise for individualizing treatment-selection decisions in the future."

For the upcoming treatment trial to be conducted at The Royal's IMHR, individuals with depression will be separated into groups using brain imaging and will then be randomized to receive one of three therapeutic approaches — CBT (cognitive behavioural therapy), medication or rTMS (repetitive transcranial magnetic stimulation). It is hoped that based on an individual's subtype of depression, it will be possible to identify which treatment option

works the best for a particular imaging-based subtype.

Studies like this will eventually pave the way to helping the one in five people who suffer from depression. Depression has now become a global health concern, according to the World Health Organization. "Through this trial, we are laying the groundwork for identifying not only the diagnostics but also the most effective treatments for the different depression subtypes. These are very exciting times, when we're just at the forefront of breaking the code on how different activities in the brain give rise to specific thoughts, feelings and behaviours," says Dr. Merali.

DEEP BRAIN STIMULATION



Dr. Helen Mayberg

Deep brain stimulation (DBS) involves drilling holes in the skull and inserting tiny electrodes, attached to a battery implanted below the collarbone, to target areas deep inside the brain. Much like a heart pacemaker, the electrodes transmit high-frequency, continuous electrical impulses that can either inhibit or stimulate neural activity.

Already being used to treat intractable Parkinson's disease, DBS has been trialed in about 200 people with difficult-to-treat depression worldwide, including at Toronto Western Hospital. The world's foremost leading researcher in the field is Dr. Helen Mayberg, who pioneered the procedure while at Emory University in Atlanta, Georgia. She carried out the first DBS procedure in 2005, following years of PET scanning research that involved mapping areas in the brain that showed a significant change in activity when a patient was feeling depressed. The result was the identification of Brodmann area 25, a small region in the middle of the brain — the site for DBS.

THE SUICIDAL BRAIN

The brain is the last frontier, with many mysteries still to be solved. One of those mysteries is whether and how the brain differs in people who have suicidal thoughts. Helping to chart new territory in the suicidal brain is the focus of Dr. Jennifer Phillips' work in the Mood Disorders Research Unit.

Dr. Phillips' current work builds on previous research, which showed that brain volume decreases with depression. While this loss reverses in patients who maintain remission, brain volume continued to decrease in those who did not respond to treatment.

The purpose of her current study is to further characterize the neural correlates of suicidal ideation — that is, the structural features and brain activity that are associated with suicidal thoughts — in people with treatment-resistant major depressive disorder.



We don't know a lot about the neurobiology of suicidal ideation. Identifying areas in the brain that are altered when someone has severe suicidal thoughts may lead us to targeted treatments that will hopefully stop people from acting on their suicidal thoughts."

In this latest study, Dr. Phillips is using magnetic resonance imaging — thanks to The Royal's recently acquired PET-fMRI machine — to advance current understanding of the brain mechanisms contributing to mental illnesses. "We aim to characterize brain structure and function in people who have major depressive disorder and suicidal ideation," she says.

Dr. Jennifer Phillips



The year-long study involves 40 participants (male and female) between the ages of 18 and 65, and comprises four parts:

- having participants complete clinical questionnaires to document risk factors for suicide, such as childhood trauma, feelings of hopelessness and a tendency toward impulsivity or aggression;
- using a clinical interview to rate the severity of an individual's suicidal thoughts and level of depression;
- measuring inflammation in the body through blood samples, as inflammatory markers have been associated with suicidal behaviour; and
- using MRI to acquire a 30-minute scan of the participants' brain anatomy and functional activity.

"Resting state brain activity — the general level of activity of the neurons when your brain is at rest — differs in people with a psychiatric illness. We know at a basic level that people who have suicidal ideation show differences in functional connectivity, the way various brain regions 'talk' with each other. This small 'proof of concept' study will help point to the biomarkers that may predispose an individual to have suicidal thoughts, taking us one step closer to identifying relevant treatment targets," says Dr. Phillips.

In addition to functional 'neuronal traffic patterns,' the brain scans will also provide structural information about the brain. From

STUDY PARTICIPANTS

Of those who have major depressive disorder, about 50% experience suicidal thoughts. However, of this group, "not everyone will act on those thoughts," says Dr. Phillips.

In Dr. Phillips's study, participants must be resistant to treatment, suffer from severe depression and have experienced some level of suicidal ideation in the past. The range of severity of suicidal ideation varies, from little suicidal ideation to very severe suicidal ideation. This range will enable Dr. Phillips to identify different patterns of neural activity that correlate with various levels of suicidal ideation.

these data, Dr. Phillips will also be able to measure the thickness of the gray matter and estimate the white matter tracts, or connections, between various regions of the brain.

Dr. Phillips is excited about the study's potential to identify brain circuits associated with suicidal ideation: "While it's by no means the only study that has examined these variables, its uniqueness lies in the fact that we're combining clinical and neurobiological risk factors — including inflammation and imaging — to give us a more complete picture of the suicidal brain."



02_ INTEGRATING RESEARCH INTO CARE

THE AMIC SUCCESS STORY

An 82% reduction in the number of repeat visits to local emergency departments by people with significant, life-threatening alcohol problems, plus a decrease in alcohol use and in symptoms of depression and anxiety: that's what happens when you look at system gaps and develop a new approach to address those gaps.

Such is the success of the Alcohol Medical Intervention Clinic (AMIC), which opened in May 2016 as a two-year pilot project. Not only has the Champlain Local Health Initiative agreed to fund the clinic on a permanent basis, but the rapid access model will now be applied to help address the opioid issue.

“We have shown that this model works, and now we’re expanding it to people with serious opioid use disorders. We will serve individuals with opioid use disorders in the same way in terms of rapid access

to care, treatment and connection to services,” says Dr. Kim Corace, Director of Clinical Programming and Research at The Royal’s Substance Use and Concurrent Disorders Program.

Prior to the opening of the AMIC, there was a fragmented approach to care and long wait times for medical withdrawal management of people with severe alcohol use. Access to services was limited and people were cycling through emergency departments. “We really needed a system-level solution,” says Dr. Corace.



Through cross-institutional, collaborative partnerships, we are increasing access to care, providing services to people who can't get services, improving substance use and mental health outcomes, and connecting patients to community services. This is really community-based care at its optimum.”

That solution started to materialize when Dr. Corace and her colleagues began to look at the patients and the system through a research lens, identifying the gaps, and then crafting a new care and treatment approach. The uniqueness of the AMIC lies in the seamless care pathway that has been forged between The Royal, The Ottawa Hospital and relevant community-based services, such as the Ottawa Withdrawal Management Centre and Ottawa Addictions Access and Referral Services.

Another important piece of the puzzle is the inclusion of the perspective of people with lived experience: what they thought, how satisfied they were with the clinic, how they are feeling. “Everything we do starts with



Dr. Kim Corace

our patients — that’s really what it has to be about,” says Dr. Corace.

The success of the AMIC for the people it serves is undeniable. In the words of one patient: “Although I am not completely well yet, it has eased my mind knowing how much support there is at The Royal and in the community. Being followed by doctors and nurses who specialize in alcohol-related mental health issues has helped me feel understood and hopeful.”

“The clinic is a wonderful example of research driving care and care driving research — how evaluation and research can improve care and services,” says Dr. Corace. “We have been able to develop an effective program and service with good outcomes that patients like.”

THE AMIC MODEL

When someone with a severe alcohol problem turns up at one of The Ottawa Hospital’s emergency departments or is hospitalized because of complications from alcohol, they are referred to the AMIC program.

Over 60% of the clients do follow-up, and those who don’t are contacted by a staff person at the clinic. “Those who come want to get help,” says Dr. Corace, “and if they don’t show up, we reach out to them, to encourage them to come and see us. Depending on the person’s goals, we either help them cut down or stop drinking altogether. We meet them where they are at.”

The person is assessed for the level of their alcohol problem as well as for any underlying mental health issues (36% have severe depressive symptoms and 48% have severe anxiety symptoms), treated with alcohol management or anti-craving medication, and then triaged to an appropriate level of care either within The Royal’s Substance Use and Concurrent Disorders program or in a community program.

THE BIOLOGICAL LINK BETWEEN SLEEP AND MENTAL HEALTH

Living with a mental illness can affect how well you sleep, and poor sleep can have a negative impact on your mental health.

“People with mental health issues often have sleep problems. If you’re too anxious or depressed, you don’t sleep well. Moreover, poor sleep can cause or aggravate a mental health problem,” says Dr. Elliott Lee, a sleep specialist in The Royal’s Sleep Disorders Clinic. The statistics bear this up, with one in five people with depression having

some form of sleep apnea, and one in five people with sleep apnea having some form of depression.

Studying this bidirectional relationship is helping to inform the treatment and care of a wide range of patients, including teenagers dealing with changes in their biological clock, women who have trouble getting pregnant and people with fragile cardiovascular health, says Dr. Rébecca Robillard, head scientist of the Clinical Sleep Research Platform. “Because sleep is a multi-dimensional phenomenon, there are different types of sleep disturbances that emerge in the context of mental illness. By better understanding the nature of these distinct sleep problems, we hope to personalize and enhance treatments,” she says.

THE BIOLOGY OF SLEEP DISTURBANCES: A SAMPLE

Puberty: Many young people have problems with their internal biological rhythms — a by-product of puberty and excessive disruptions caused by mobile phones and technology — which gets worse with depression. Through the use of light therapy (using glasses that emit green light in the morning), Dr. Robillard is demonstrating that light has a positive impact on the biological clock and on mood. “Those with the most trouble falling asleep and the poorest sleep quality are showing the highest mood improvements,” says Dr. Robillard.

Heart: The Sleep Research Unit has identified abnormal patterns of heart rate during sleep in people with depression, which may serve as a novel biomarker of depression.

Fertility: Another research area involves the interplay between sleep and fertility. “We have some early data suggesting that women who have difficulty getting pregnant have breathing problems during sleep,” says Dr. Lee. “If we can treat their breathing problems, can we improve their chance of getting or staying pregnant?”



*My dream is to see that the research work we are doing is benefitting people who need help.”
— Dr. Robillard*

To build understanding between sleep and mental illness, patients who are referred to the Sleep Disorders Clinic are offered the opportunity to take part in a new research project(s) and will receive extended assessments, which are tracked over time.

This fosters a partnership between the research and clinical teams. Information from these additional assessments will be fed back to the Clinic, to help inform ongoing treatment and care. “Through the research being conducted by the team, we want to be able to identify people with sleep issues at the outset who are more vulnerable to developing mental health problems down the road — the loaded guns, if you will,” says Dr. Lee. “When people encounter a traumatic issue or event in their life, this can be like pulling the trigger to precipitate a mental health problem such as a mood episode, an anxiety episode or a post-traumatic stress disorder. However, if we’ve unloaded the gun by optimizing their sleep, the hope is that a mental health problem will be mitigated.”



If sleep is one area that we can fix for people, to improve their resilience to life events or to prevent mental illness from developing, that’s the dream that all of us share.”

— Dr. Lee

The potential for research to inform clinical care is huge and offers considerable hope for the 150 to 200 new patients who are referred to the Clinic every month.

Through the multidisciplinary team working with her and through the use of state-of-the-art technology, Dr. Robillard is excited not only about the research possibilities, but also about the ability to assist with clinical processes. “Having strong connections to the clinical side is vital to our ability, as researchers, to determine what lines of research are the most relevant and useful, and will have a positive impact on people’s lives,” says Dr. Robillard.



LEFT TO RIGHT: Dr. Rébecca Robillard and Dr. Elliott Lee

TACKLING WORKPLACE MENTAL HEALTH THROUGH E-TECHNOLOGIES

Humans are wired for social interaction and contact — and work helps to fulfill this strong psychological need. But in any given week, 500,000 Canadians are unable to work due to mental health problems, according to the Mental Health Commission of Canada. “Work is a part of life and stress is a natural response to events or changes in our environment. However, when stress is more intense, it becomes too much for some individuals to cope with,” explains Dr. Sanjay Rao, Clinical Lead in Cognitive Behavioural Therapy and a psychiatrist in the Mood and Anxiety Disorders Program at The Royal.

Medication isn't always enough to help someone with depression and/or anxiety return to work. This is where psychological interventions become valuable. Interventions such as cognitive behavioural therapy (CBT) can not only help people return to work, but can also help them cope before stress becomes unmanageable and they are forced to take a leave of absence. The key to making CBT available to employees in the workplace may lie with a comprehensive e-health program that encompasses a variety of tools, including videoconferencing, web-based therapy, text messages, virtual reality and computer games.

Given that women are more likely to have major depression than men, Dr. JianLi Wang, Director of the Work and Mental Health Research Unit at The Royal's Institute of Mental Health Research (IMHR), and Dr. Rao



Wide implementation of our Internet-based program may produce tangible health and economic benefits for Canadians and beyond.” — Dr. JianLi Wang



are undertaking a randomized controlled trial involving 400 high-risk working women from across the country. The aim of the year-long study is to gauge the short-and long-term impacts of a coach-guided e-health program on their mental health, their productivity/absenteeism/presenteeism and their quality of life.

“Through eight weekly sessions, participants will be offered work-focused problem-solving exercises and assignments as well as CBT training, with trained coaches providing guidance and support,” says Dr. Wang. “When someone comes into a clinical practice, you provide treatment and once their symptoms improve, you think they’re okay. But returning to work is not just about symptom reduction; it’s also about an employee’s ability to self-advocate and about integrating clinical services and problem-solving techniques in the workplace.”

The Royal’s Internet-based program has “the research/science behind it,” says Dr. Rao, who has devoted the last few years to its development — rendering it a far more effective tool from a clinical and scientific standpoint.



COGNITIVE BEHAVIOURAL THERAPY AND E-HEALTH

Given their accessibility, convenience and low cost, innovative technologies offer a new avenue for reaching millions of people in Canada’s workplaces, where depression costs the Canadian economy \$51 billion a year; \$16 billion due to absenteeism alone.

Given that cognitive behavioural therapy (CBT) focuses on reviewing behaviour to develop more flexible ways of responding to situations or events that create stress or anxiety, this therapeutic approach lends itself well to the workplace, says Dr. Rao, who has devoted the last few years to developing a robust, scientifically based e-health program that relies on the use of CBT and problem-solving.

“Many self-help apps in the marketplace claim to help people with depression, but they aren’t effective. And few e-health programs that are out there have been evaluated or validated using a randomized controlled trial. Our Internet-based program aims to do this,” says Dr. Rao.

Following the trial and its evidence, the program will be rolled out to workplaces and organizations, benefitting both men and women. Drs. Wang and Rao also have plans to offer the program to youth at universities and colleges, as campuses are “workplaces” for young people. “This would be a terrific resource for students while they’re waiting to see a mental health specialist,” says Dr. Wang.

With e-health a rapidly growing area of mental health research, the potential of the IMHR’s innovative program cannot be understated.

LEFT TO RIGHT: *Dr. JianLi Wang and Dr. Sanjay Rao*



03_ LIVES CHANGED

MR. GORD GARNER: FROM A PERSON WITH AN ACTIVE SUBSTANCE USE DISORDER TO A RECOVERY ADVOCATE

Marijuana, alcohol, magic mushrooms, cocaine — for most of his 63 years, Mr. Gord Garner's life had been consumed with substances. His substance use disorder catapulted him into a world of endless need, where he worked to buy his next 'fix.' Looking back now, he says he sees his life as one huge, endless attempt to be connected to something; to be happy and accepted.

The reality was, it didn't work. The endless, vicious cycle of getting high or drunk, sleeping it off in an abandoned house or on a friend's couch, often seeking help in the management of withdrawal symptoms and rehab cost several long-term relationships and even a marriage and stepchildren. These are just some of the losses Mr. Garner experienced while dealing with an active substance use disorder.

Fast forward to 2013, and the beginning of a new start, thanks to The Royal.

Mr. Garner's eureka moment came when he opened up a book his brother had bought for him, entitled *Healing the Addicted Brain*. "I saw pictures of brain scans of the frontal cortex — some scans looked like the cortex was on fire and others looked blue from lack of activity. I realized that, 'I never stood

a chance.' For the first time, I could see there was something wrong with my brain, not me."

This was a critical turning point for Mr. Garner. It wasn't easy to overcome his disorder, but he was determined and hopeful for the first time in his life. Mr. Garner was first admitted to The Royal's day program on a short-term basis, but it took him another seven months of full-blown relapse before he went back to The Royal.



If you're filled with shame and self-condemnation, you can't imagine ever getting better. Being treated with optimism made all the difference — that, plus the knowledge, research, best practices and peer involvement. These changed the outcome of my life."

"Each step took me to the next level — withdrawal management, trauma therapy, individual counselling, peer counselling," says Mr. Garner.

Since his recovery, Mr. Garner has graduated from college as a certified addictions counsellor. He is also Executive Director of Community Addictions Peer Support, festival producer of Recovery Day Ottawa and a sought-after speaker. He has also teamed up as a collaborator with Dr. Kim Corace on a Canadian Institutes of Health Research grant project looking at the efficacy of psychosocial interventions for the treatment of opioid addiction.

Passionate about research and about the work under way at The Royal, Mr. Garner is

working with researchers on a number of initiatives to help integrate research into care. His perspective is invaluable, says Dr. Corace: "Bringing that peer and lived experience perspective is so necessary to ensure our research is relevant, helpful and meaningful."



Mr. Gord Garner

THE LIVED EXPERIENCE PERSPECTIVE

Mr. Garner and others with lived experience are invaluable to the research and care undertaken at The Royal. Their recovery is also proof-positive that integrating the two dimensions is necessary if treatment is to be successful.

"Science and research are critical for recovery," says Mr. Garner. "Over the last five years, researchers, policy-makers, agencies and professionals have reached out to people with lived experience as partners and collaborators. This has effectively turned things upside down. We are now beginning to see something positive come from taking down the glass walls between the academics and the recovery community — with people with lived experience being collaborating partners on research projects."

MR. BRUCE FAIERS: LIVING WITH HOPE FOR THE FIRST TIME

Unfortunately, 60% to 70% of Canadians who live with depression (or major depressive disorders) do not respond adequately to the currently available treatments. They are what we call ‘treatment-resistant.’ In these individuals, antidepressants and other types of therapy or interventions fail to lift the black cloud of despair that engulfs their lives.

“I have felt miserable most of my life. As a teenager, I believed the reason I was feeling so miserable was because I was hiding a secret — I was gay. But I discovered after coming out of the closet in my 30s that being gay had nothing to do with feeling down about everything” says Mr. Bruce Faiers, 53.



I have been so close to giving up so many times. But ketamine has proven to be such a life-saver for me. When I’ve been close to ending it all, it has given me hope that someday the right combination of medications will be found that works for me on an enduring basis.”

Living with such a crippling depression means struggling every single day. While he has managed to have, and keep, a career,

this complex illness has virtually controlled his every waking moment. Forever searching for that magical medication that will lift his perpetual dark cloud, Mr. Faiers has learned to somewhat mask his mental illness from others even when he’s not “firing on all eight cylinders.”

His days are often filled with confusion, an inability to focus — “reading the same thing over and over and realizing that what you’re reading is not sinking in” — a constant dazed feeling. When the crash comes — and it always does — it’s because the medication he’s been taking has lost its effectiveness.

The first crash came about 20 years ago, when Mr. Faiers was in his mid-30s. Wanting to end his life, he had the mental fortitude to go to a walk-in clinic. However, the antidepressant prescribed to him failed to alleviate his depressive symptoms and suicidal thoughts. Months later, barely able to cope, Mr. Faiers was referred to a psychiatrist, who ordered him off work and, through trial and error, found a combination of antidepressants that appeared to work. “Poof! It was like night and day. I went to bed one night and woke up the next day to a world that was bright and sunny; it had some brilliance to it. And, for once, I was able to think clearly,” says Mr. Faiers.

But the 'poof' moment didn't last. When the medication stopped working, once again the world became lacklustre, dull, and devoid of brilliance and clarity.

A few years ago, suicidal, unresponsive to yet another round of antidepressants and feeling incredibly dysfunctional, Mr. Faiers was referred to The Royal, where he was accepted into an experimental treatment trial. That trial, which involved infusing difficult-to-treat patients with ketamine, probably saved his life. Administered intravenously, its effects were immediate: "My suicidal thoughts vaporized with one treatment."

While the effects last for only a few days or weeks depending on the individual, for Mr. Faiers, ketamine represents much more than an immediate life-saver. It represents hope and time — when understanding of the brain will finally pinpoint what is responsible for his crippling depression and lead to antidepressant treatment that will work for him for the long term.

"I hang on, knowing that people like Dr. [Pierre] Blier are hard at work trying to find the answers for people like me," he says.



Mr. Bruce Faiers

KETAMINE RESEARCH

Ketamine, introduced in the 1960s as an anesthetic, is most often used by veterinarians. But Dr. Pierre Blier, a psychiatrist and Director of the Mood Disorders Research Unit at The Royal's Institute of Mental Health Research, has been testing intravenous ketamine on patients with treatment-resistant depression since 2011. Through clinical studies, Dr. Blier has found that ketamine starts to work almost immediately in the 50% to 60% of the treatment-resistant patients who respond to it. Unlike electro-convulsive therapy (ECT), it doesn't cause the same potential side effects, such as memory loss and other cognitive dysfunction.

The downside to ketamine is that its benefits don't last. For some people, the effects last a few days; others can go weeks without needing another infusion. A major hurdle is determining how frequently and how long people need to take it to maintain the benefits.

Through ground-breaking pre-clinical experiments, Dr. Blier is also investigating which transmitters in the brain respond positively to an infusion of ketamine. Now that we have a class of medications that work within hours or days — unlike classical antidepressants that can take weeks or months to kick in. The hope is that through understanding how ketamine works, similar drugs will be developed that not only work just as fast, but also work for longer periods of time.

DR. IAN MANION: THE HUMAN FACE BEHIND THE MENTAL HEALTH PROFESSIONAL

When patients say to Dr. Ian Manion that he couldn't possibly understand how they are feeling, chances are, his reply is "well, yes, I can." Behind the Director of Youth Mental Health Research at The Royal's Institute of Mental Health Research (IMHR) and a clinical professor at the University of Ottawa is a man who has lived with depression and anxiety for virtually his entire life.

"When I was a little kid, I had anxiety and found it difficult to modulate my emotions. I would burst out into tears for no reason, hide in a closet when people were visiting, even hold my breath while thinking, 'If I stop breathing, will the feelings I have go away?' This was probably an early suicidal thought," says Dr. Manion.

The thoughts didn't go away though. Forever feeling different from his peers, Dr. Manion was in the act of "doing something

that would have ended my life" at the age of 17. He was sitting in the family car, motor running with the garage door down and hoping the feelings would stop. But he stopped mid-act when he realized that he couldn't do this to his family.

A father of five children — the eldest was born with Down syndrome — Dr. Manion coped by working harder and harder, juggling multiple balls in the air. Masking

LINKING LIVED EXPERIENCES WITH RESEARCH

Talking openly about his experiences with depression lends credibility to Dr. Manion's clinical work. He's also become a powerful force in youth mental health across the country, according to Dr. Zul Merali, CEO of The Royal's IMHR, who says, "He speaks the language, he lives that life and he brings his expertise to change things."

In webcast presentations to high school students, through a Bell Let's Talk video interview, at conferences and in mentoring younger colleagues, Dr. Manion is using his own story to broaden the horizons of students and to advocate for the lived experience perspective to be included in the training programs of mental health professionals. His goal through YouthNet is that schools, doctors and communities help youth develop mental strength and resilience — "to fill their toolboxes with so many things that they can use to get well."

Applied research — the practical application of research, or the toolbox if you will — can help improve the experience of care and the care system. "Policy should be evidence-informed and engage young people and families with lived experience in meaningful ways. Through knowledge translation, we can take what we know and make it accessible to people," says Dr. Manion.

his depression, he suffered in silence, appearing quite together to those who wouldn't have known otherwise. Over the course of 30-plus years, he has carved out a successful career as a clinical psychologist working with children, youth and families. He served for 12 years as the founding Executive Director of the Ontario Centre of Excellence for Child and Youth Mental Health; co-founded Youth Net/Réseau Ado, a bilingual community-based mental health promotion program with satellites across Canada as well as in Europe; and is currently the co-scientific director for Frayme, an international network of centres of excellence platform for sharing knowledge on integrated youth mental health care.

But while advancing his career, Dr. Manion's family life and marriage were crumbling: "We were not a healthy family."



My story is not unique. Many people have ups and downs; have overcome things and at other times struggled. In a room filled with people, there are going to be many stories like mine. We need to be humble enough to listen to those stories."

The wake-up call that Dr. Manion needed came when one of his daughters began losing weight dramatically at the age of 11. Diagnosed with anorexia nervosa, she was hospitalized and put on suicide watch. Although she refused to talk to her family, she did open up to a psychiatrist — one of Dr. Manion's colleagues — telling him that making daddy less sad would help her get better.



Dr. Ian Manion

"I had a daughter who was keenly aware of the fact that I was suffering in silence, and that my problem wasn't just about me, it was about the entire family," Dr. Manion says. "My daughter recovered, but she has had relapses, and her illness, unfortunately, tends to run parallel with mine. We end up having depressive episodes around the same time, and I'm not sure why that is."

Dr. Manion sought treatment himself, and began opening up about his own experiences with mental illness over a decade ago. It's an opportunity for him to put a human face to his profession: "By explaining that doctors can have mental illness too, I am showing that people can recover and have fulfilling lives."



04_ HOW PHILANTHROPY IS DRIVING RESEARCH

DECIPHERING THE PUZZLES OF MENTAL ILLNESS THROUGH SCIENCE

We regularly predict the risk of heart disease by measuring blood cholesterol or diabetes through blood glucose. Imagine someday being able to predict if a person is at risk of suicide by simply testing their blood or saliva? And being able to prevent suicide by using biomarkers?

That time will come, thanks to exciting research work being undertaken by molecular biologists like Dr. Zachary Kaminsky.

As the inaugural holder of the DIFD Mach-Gaensslen Chair in Suicide Prevention Research, Dr. Kaminsky brings to this new position a significant pedigree in the area of

epigenetics — where ‘nature’ and ‘nurture’ intersect. He has devoted his career to studying the chemical modifications to DNA that act like little light switches activating or shutting off certain segments of the DNA. “Epigenetics refers to the chemical modifications that are written on top of the DNA. I like to think of these modifications

as light switches for the genes,” explains Dr. Kaminsky. “Genes can get turned on and off by epigenetic factors, and their regulation helps determine intricate functions, like gene expression and our behaviour.”

Interestingly, it has been shown that experiencing a wartime trauma can flip some of these ‘switches’ in soldiers, such that life circumstances can either build resiliency later in life or prime someone to be more reactive to stress. Through such mechanisms, life circumstances like violence in the home or even a non-nurturing environment in early life can program future gene expression and behaviour.

Dr. Kaminsky’s research has led to the discovery of the chemical alterations in two genes, one in a gene that indicates a high risk of postpartum depression and another in the gene called SKA2 (linked to stress response) that indicates a high risk of suicide.

But SKA2 is only one piece of the puzzle. Dr. Kaminsky suspects other biological factors are likely at play besides this stress response gene.

Moreover, given that “people don’t just develop suicidal behaviour out of nowhere,” he is also exploring the interplay between biology and the environment, or the interaction between predisposition/vulnerability and stress. For example, why does one person become depressed while another person does not, even when exposed to the same stressors?

“It’s important to go at the problem of suicide, which is very complex, from other angles that complement the biology,” says Dr. Kaminsky. “DNA is what makes us, but if the environment is affecting us, then it’s changing our biology. We need to understand this connection in order to be able to not only predict who is at risk but also how to prevent the possibility of suicide,” says Dr. Kaminsky.

THE SKA2 FACTOR

SKA2’s function seems to lie in helping the stress hormone receptor get into the nucleus of a cell during a period of stress. Dr. Kaminsky likens its function to that of a brake pad for stress response: “If you have a thinning brake pad and your car is parked in the driveway, you might not realize you are at risk. When you’re driving that car — when you become stressed — you need an ability to slow down the car — to shut down the stress,” explains Dr. Kaminsky. “At that point in time, a low amount of SKA2 could be deleterious.”

In other words, if the brake pad is thinner, because lower amounts of the gene are being expressed, one’s ability to respond to stress diminishes. Measuring the biological marker (biomarker) is like getting a safety inspection on your car. If we can measure this ahead of time, it might warn us not to jump onto the highway at rush hour.

The successes Dr. Kaminsky has achieved so far in the area of epigenetics raises hope in the ability to change lives. “Epigenetics has the potential to change the way we are practising psychiatry.”

A special thank you to DIFD and the Mach-Gaensslen Foundation for making possible this Chair in Suicide Prevention Research.

Dr. Zachary Kaminsky



INCUBATING NEW IDEAS

In the past few decades, science has significantly changed how we detect and treat medical conditions such as cancer, diabetes and heart disease. Today, people get cured or survive these illnesses for much longer than ever before.

But when it comes to treating mental illness, diagnosis and treatment is still very much a guessing game. “We are where we were with heart disease and diabetes more than 100 years ago,” says Dr. Zul Merali, President & CEO of The Royal’s Institute of Mental Health Research (IMHR). “We still diagnose mental illness based on how a person feels, because we do not yet have blood tests or brain scans to aid in diagnosis. In terms of treatment, even though there are glimmers of hope, more than 60% of people seeking help do not respond adequately to the treatments we have to offer.”

To change this reality, the IMHR is charting a new course to predict better outcomes — to quote the American-Austrian educator Peter Drucker, the best way to predict the future is to create it. That course involves research, including the encouragement of out-of-the-box thinking by young scientists.



Our goal is to put young leaders in the driver’s seat — to drive innovation, to dream big; and to make the seemingly impossible, possible.” — Dr. Zul Merali

EMERGING RESEARCH INNOVATORS IN MENTAL HEALTH (eRIMh)

The eRIMh initiative provides five years of salary and research support, as well as mentorship, to young and early-career mental health researchers who are within five years of completing a PhD or MD degree. The successful candidates were selected following a rigorous selection process that involved both internal and external evaluation phases.

The researchers will receive:

- salary and research support, each up to \$100,000/year
- infrastructure and training support
- a two-year scientific appointment renewable for an additional three years
- mentorship from senior scientists and clinicians and access to a network of researchers

The initiative was made possible by a \$6 million donation from an anonymous donor who wanted to fund the innovative work of young mental health researchers.

Thanks to a \$6 million philanthropic investment (see sidebar), the IMHR has established a unique incubator initiative called Emerging Research Innovators in Mental Health (eRIMh). The first of its kind in Canada, eRIMh is designed to provide financial and infrastructure support along with mentoring opportunities, to encourage curiosity-driven, innovative and hard-driving young researchers. “By bringing new energy, fresh new ideas and new concepts to mental health research,” says Dr. Merali, “these young researchers will hopefully help thrust us forward in a quantum way — to help bring mental health research and care into the 21st century.”

Not constrained by the conventional working hypotheses, these emerging researchers



LEFT TO RIGHT:
Dr. Rébecca Robillard, Dr. Natalia Jaworska, Dr. Robyn McQuaid

will be exploring highly novel questions that could have a substantial impact on mental health prevention or treatment.

The incubator initiative supports up to seven emerging researchers, who were selected for 'out-of-the-box' research that falls within one of the IMHR's four primary research priorities of depression: the brain-heart connection, stress and trauma, brain stimulation, and multimodal brain imaging. The first three of the successful early-career researchers include:

- Dr. Natalia Jaworska — Exploring the effects of various treatment approaches on neural profiles in mood disorders to optimize treatment, with a focus on young people with depression;
- Dr. Robyn McQuaid — Exploring a First Nations-led multidisciplinary program of research, with a view to advancing the field of depression, suicide and addiction in First Nations people affected by mental disorders; and
- Dr. Rébecca Robillard — Using multi-modal sleep profiling to build an evidence-based personalized program for people with depression who have sleep issues.

Four more of the eRIMh award winners are expected to join IMHR in the summer of 2018.



Curiosity is a driver of innovation, and mental health needs more of it. By fueling the careers of bright young minds willing to defy convention and explore new approaches, curiosity can lead to new ways to prevent, diagnose and treat mental illness.”

— Anonymous Donor

Through the eRIMh initiative, these emerging researchers — with their novel ideas, concepts and constructs — will have a substantial impact on current thinking. “Change is what the field of mental health research needs, and we need curiosity-driven, innovative researchers — the best and brightest young minds — eager to advance the field of mental health research,” says Dr. Merali.

2018'S GRADUATE STUDENT RESEARCH AWARD RECIPIENTS

The annual Institute of Mental Health Research Graduate Student Research Award aims to inspire young researchers to impact the lives of people suffering from mental illness through research. Thanks to this funding, the 2018 recipients — Ms. Kari-Ann Clow, Ms. Ashley Nixon and Ms. Carley Richards — will be able to move their research ideas forward and take advantage of educational opportunities.



LEFT TO RIGHT:
Ms. Kari-Ann Clow, Ms. Carley Richards, Ms. Ashley Nixon

Ms. Clow's research interest — born from working on the frontlines with at-risk youth who were involved with the justice system — involves exploring the relation between aggression and suicide in youth. She is interested in developing strategies to meaningfully engage and treat this population group. A PhD student in clinical psychology at the University of Ottawa, Ms. Clow is using funds from the grant to help her collaborate with researchers focusing on similar research at McMaster University, and to share preliminary results from her work at this year's Canadian Psychological Association conference.

Ms. Nixon is interested in using light therapy to shift sleep patterns for people suffering from depression. By measuring physiological changes (biomarkers), this PhD student in the School of Psychology at the University

of Ottawa hopes to contribute to better understanding of why phototherapy works for some people with depression but not others. She is using her award to attend the European Sleep Research Society Conference in September 2018, where she will have an opportunity to share her data and ideas.

Ms. Richards, who personally struggles with depression and attention deficit hyperactivity disorder, is excited to explore whether changes in gut bacteria are associated with depressive symptoms. She is hoping to link trauma in a person's life to changes in gut bacteria and to explore whether such changes are associated with depressive symptoms. A Master's student in neuroscience at Carleton University, Ms. Richards is using the grant to purchase a lab kit that measures a specific marker that is associated with stress chemicals and the bacteria in the gut.

Funding to support graduate student research comes from The Jennie James Depression Research Fund, The Allison Lees Depression Research Fund and The Louise Helen Waddington Research Fund.

MOVING THE YARDSTICK FORWARD: 2017'S WINNER OF THE ROYAL-MACH-GAENSSLEN PRIZE FOR MENTAL HEALTH RESEARCH

Dr. Benjamin Goldstein's research explores the links between bipolar disorder and cardiovascular health in teenagers. His work aims to better understand the link between the heart and the brain — it has also earned him recognition through a \$100,000 Royal-Mach-Gaensslen Prize for Mental Health Research.



LEFT TO RIGHT: Mr. George Weber, Dr. Benjamin Goldstein, Dr. Zul Merali, Mr. Scott McLean

A clinical scientist at the Sunnybrook Health Sciences Centre, Dr. Goldstein's research has shown there is a higher prevalence and earlier onset of heart disease in people with bipolar disorder. For a young person with this mental illness, the effects of being sedentary or having untreated risk factors for heart disease are multiplied. Moreover, diabetes and obesity — two cardiovascular risk factors — can negatively affect mental health and the ability to treat bipolar disorder.

Spurred on by the knowledge that this research will help young people lead a full and productive life if their symptoms are properly controlled, Dr. Goldstein hopes to show that treatments typically used to help people with heart disease, such as diet and exercise, can also reduce or even eliminate symptoms of bipolar disorder. He is optimistic that this research, which shows a direct connection between mental and physical health, will also go a long way to reducing the stigma associated with mental illness.

"This research reinforces the fact that mental illness is a multi-system disease that affects both brain and body," says Dr. Goldstein.

The Royal-Mach-Gaensslen Prize for Mental Health Research, established in 2015, celebrates early career mental health researchers and encourages them to continue their research in Canada. Award winners are recognized for excellence in clinical research, innovative thinking, collaboration, imagination and originality.

DR. RÉBECCA ROBILLARD: WINNER OF THE 2018 YOUNG RESEARCHER OF MENTAL HEALTH AWARD

Dr. Rébecca Robillard is bubbling with intellectual curiosity, and what drives her the most is the potential for her sleep research to improve people's lives. This curiosity and her innovative research into an aspect of life that affects everyone have garnered Dr. Robillard a Young Researcher of Mental Health Inspiration Award at the 15th annual Inspiration Awards Gala, held on March 2, 2018.



LEFT TO RIGHT:
*Dr. Zul Merali,
Dr. Rébecca
Robillard and
Mr. Ernie Laporte
(Great West
Life Assurance
Company)*

While disruptions of sleep have long been considered a simple by-product of mental disorders, the research Dr. Robillard is conducting may turn this notion upside down. She is testing the idea that by addressing sleep problems, we can have a major impact on mental and physical health.

Dr. Robillard's quest to understand the interplay between mental disorders and sleep disruptions is taking her into uncharted territory. Could using light therapy in the morning align the disrupted biological clock and treat depression in young people? Could mental illness be better diagnosed by monitoring one's heart rate while they are asleep?

By connecting and collaborating with clinicians and clients — including external collaborations with the Children's Hospital of Eastern Ontario and the University of Ottawa Heart Institute — Dr. Robillard is helping to advance sleep research.



There's so much to learn in the field of mental health, and with new technology advancing, we have new tools to address new questions."

The Royal's Inspiration Awards honour and celebrate the incredible contributions being made by individuals to the mental health cause. Through their stories, people motivate others to take action, young people engage their peers in discussions about the importance of mental health, business leaders galvanize colleagues to support further advances in mental health care, and researchers pursue more knowledge about the complex workings of the brain.

The Great West Life Assurance Company is the presenting sponsor for the Young Researcher of Mental Health Inspiration Award.

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