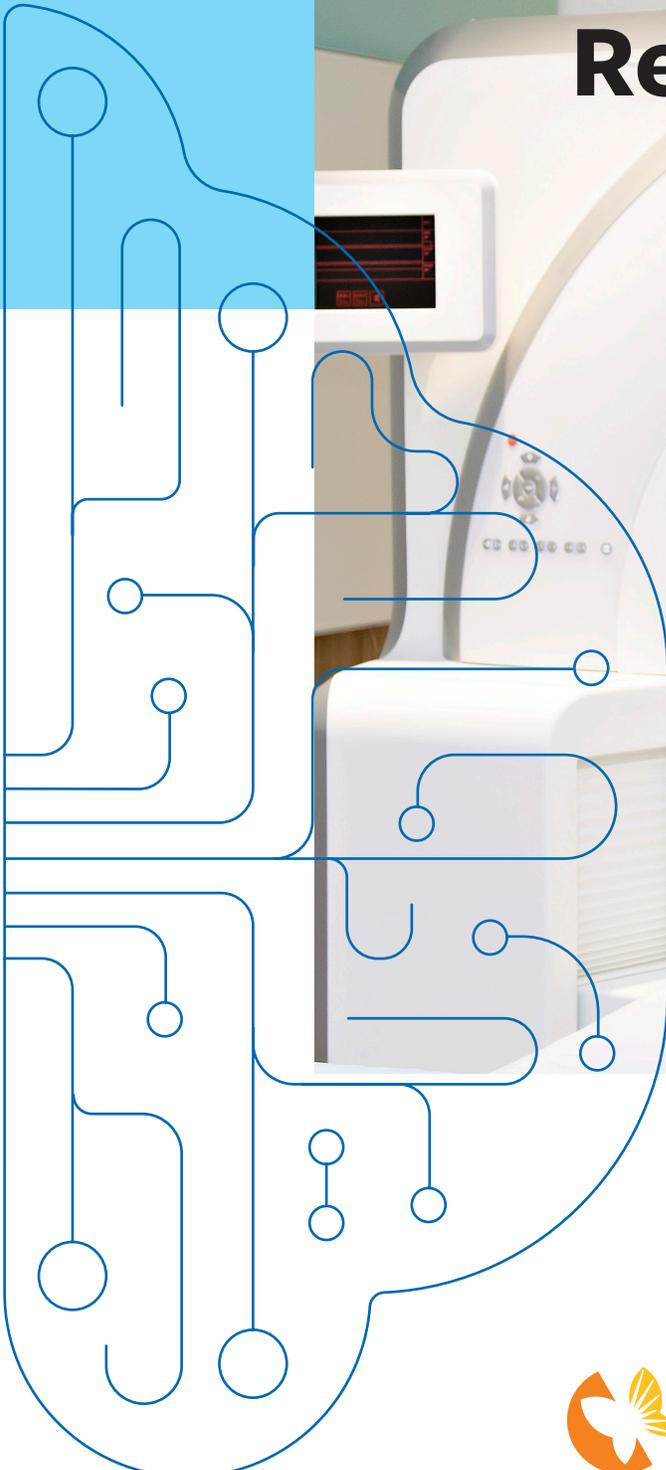
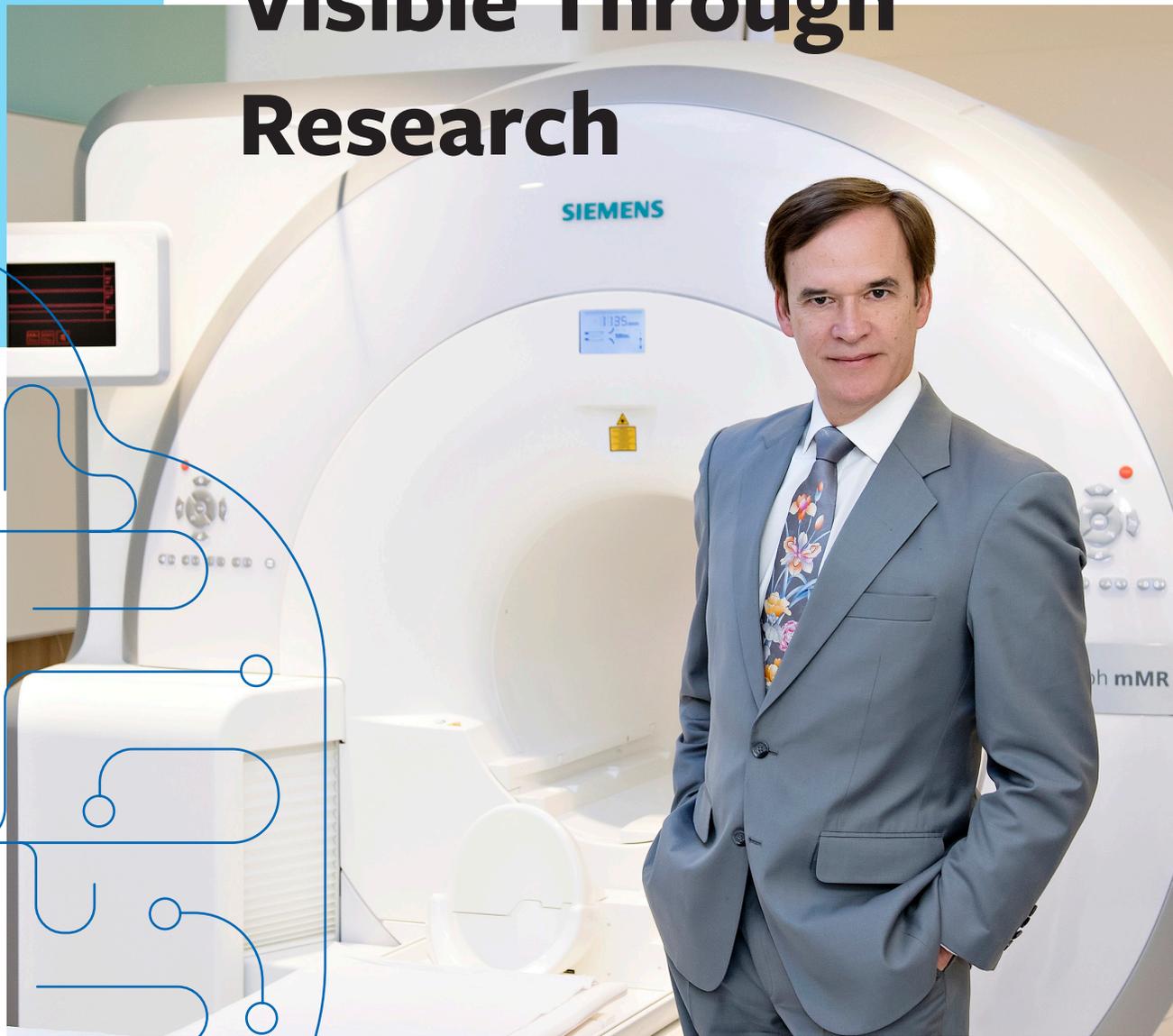

Annual Report
2016 - 2017

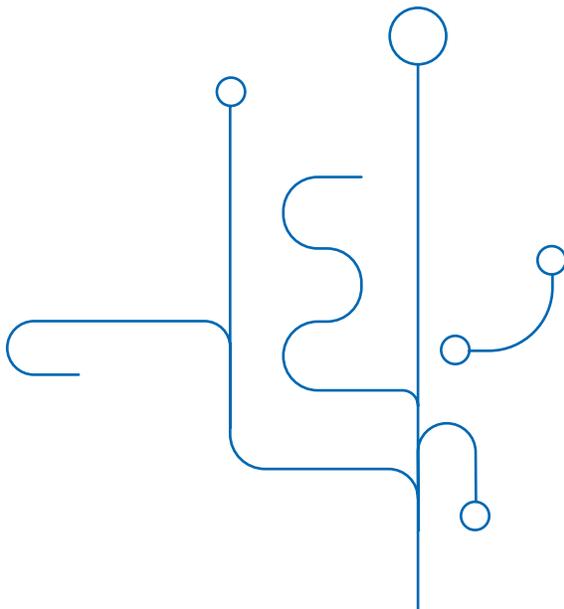
Making The Invisible Visible Through Research

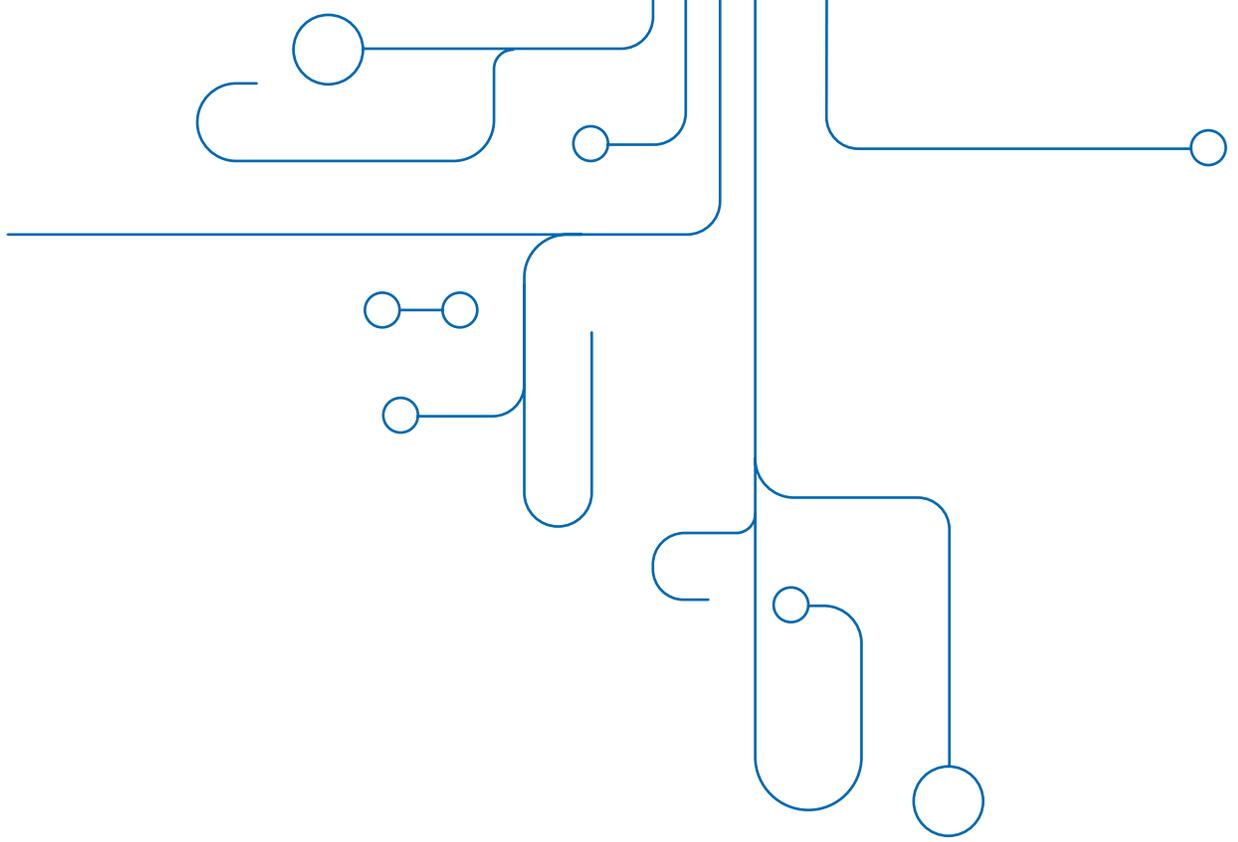


The Royal's
Institute of Mental Health Research
affiliated with the University of Ottawa

Table of contents

2016-2017: An Overview	1
Message from our President & CEO and Board Chair	2
2016 - 2017: The year in numbers	4
Strategic priorities 2015-2020	5
Research Inspired By People	6
Exploring the next generation of treatment for PTSD	8
Life after PTSD: A story of survival	9
A breakthrough treatment for suicide prevention	10
Alexandra's story	11
A work in progress: Improving workplace mental health	12
Shifting the culture around mental health: Celina's story	13
HYPE: Increasing access to youth mental health care	14
A voice for integrated care: Mackenzie's story	15
The Next Generation Of Researchers	16
Big ideas to change the future of mental health research	18
Living with mental illness: Rachel's story	19
Sharon Johnston's dedication to mental health	20
IMHR Graduate Student Research Awards	22
The Royal-Mach-Gaensslen Prize for Mental Health Research	24
Young Researcher Inspiration Award	25
Our Board Members	26
Board of Directors	28
Scientific Advisory Board	29





2016-2017: An overview

Messages from our President & CEO and Board Chair

Fiscal 2016-17 was an incredible year of milestones and firsts for The Royal's Institute of Mental Health Research (IMHR). Our growth has been guided by our strategic priorities - to enhance our research capacity, excel in practice-changing research, expand the innovation pipeline, and foster collaborations and partnerships.

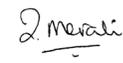
The IMHR, affiliated with the University of Ottawa, now leads the country in multimodal brain imaging technology (simultaneous PET-fMRI) dedicated to mental illness and neuroscience research. We've recruited world-renowned scientists in exciting new areas of mental health research - all with a focus on major depression and related conditions such as PTSD, anxiety, and work and mental health. As our scientists use our exciting new brain imaging technology to conduct their research, we hope to make the 'invisible' visible - and develop new methods of detecting mental health issues early and treating them more effectively. Through philanthropic and stakeholder partnerships, we are also investing in the next generation of researchers to help change the game. We are exceptionally proud of our researchers and trainees for their passion, energy and intellect. Research is the engine behind innovation and change and will help us make a significant difference in many people's lives.

When the polio epidemic paralyzed North America at the turn of the 20th century, the answer was not to build more wards housing 'iron lungs' but to defeat the disease through research into vaccines.

New and effective treatments can only come through research, but we need to do something differently. According to Albert Einstein, the definition of insanity is "doing the same thing over and over again and expecting different results." We need to conduct ground-breaking research and discover new treatments if we are going to defeat depression and other mental illnesses.

Depression and other mental illnesses are now responsible for the largest burden of illness - surpassing that of heart disease or even cancer, according to the World Health Organization. It is encouraging to see stigma associated with mental illness gradually dissipating and more people opting to seek help instead of suffering silently. This is a double-edged sword, however, as more people are seeking treatment and wait times are increasing. As a result, people are facing major barriers in the health care system, including inadequate clinical capacity and lack of access to integrated and effective treatment. We have to find solutions. Research is the answer.


Lynn Pratt
Board Chair

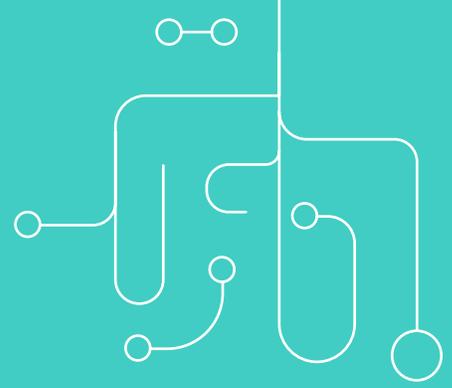

Zul Merali
President & CEO





Lynn Pratt, Board Chair and Zulf Meraji, President & CEO

2016-2017: The year in numbers



64

Researchers (Senior Scientists, Scientists, Associate Scientists, Clinical Investigators)



38

Adjunct Scientists and Visiting Scholars

92

Research trainees

79

Volunteers

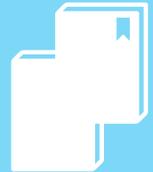


75

Research support staff

141

Publications



27,400
sq.ft.

Research space

130

Active research grants and contracts

114

Clinical research projects during reporting year

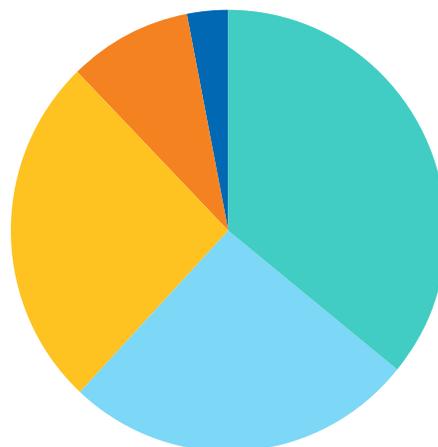


32

Pre-clinical projects during reporting year

Revenue distribution

- **36%** External Grants / Contracts / Salary Awards
- **26%** Royal Ottawa Health Care Group
- **26%** Royal Ottawa Foundation for Mental Health
- **9%** University of Ottawa
- **3%** Investment Income

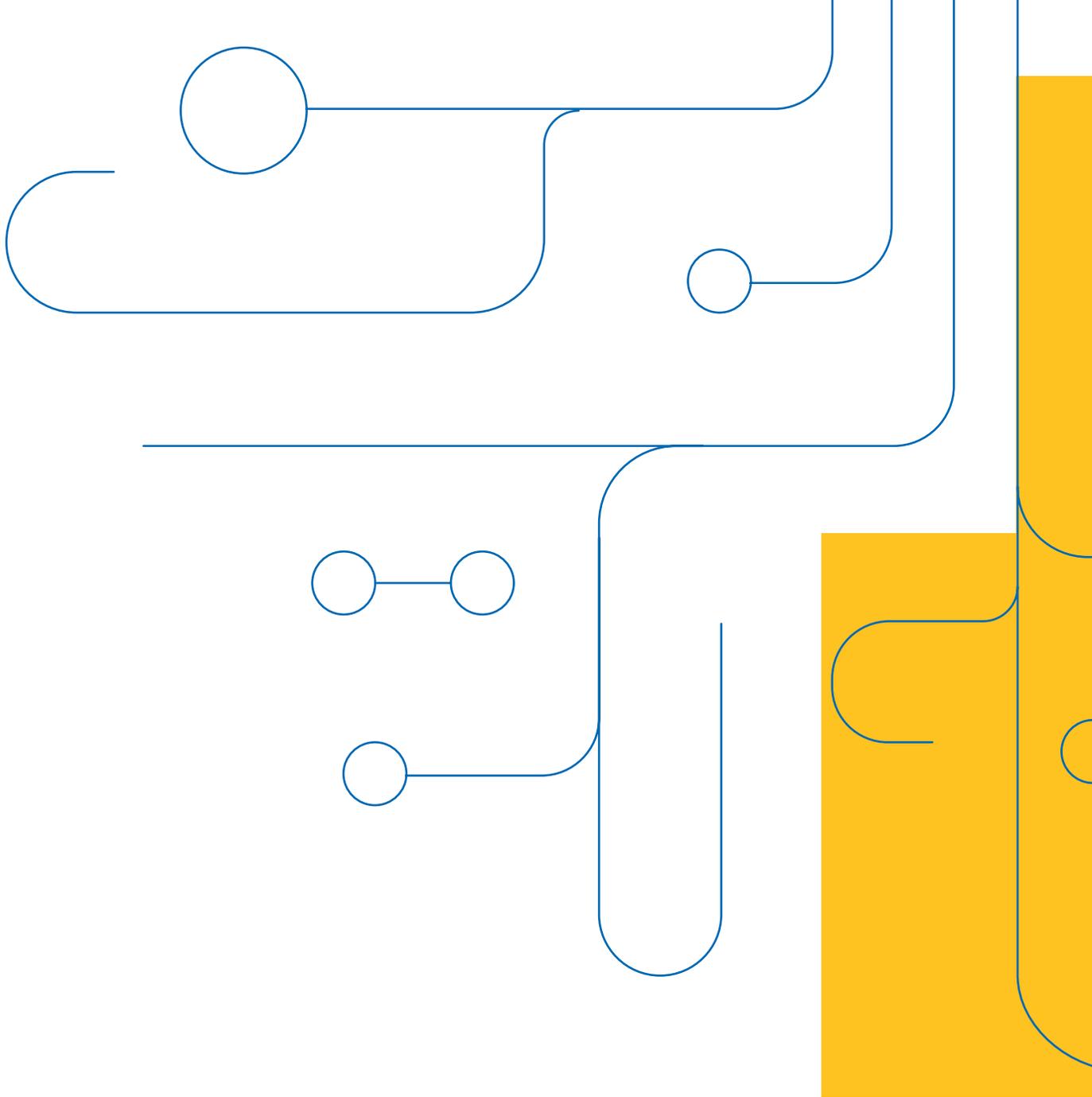


Strategic priorities 2015-2020



◀ LEVERAGING TECHNOLOGY ▶

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





Research inspired by people

Our Mission

To create scientific knowledge to improve mental health and well-being locally and globally.

Our Vision

To be a premier research institute with national and international centre of excellence status that continuously improves mental health and well-being through leadership, collaborative discoveries and innovation in research, patient care and education.

Our Values

Excellence, collaboration, integrity, respect, compassion, wellness and equity.

Exploring the next generation of treatment for PTSD

For many years, the typical approach to military research in Canada has focused on population health issues, looking at numbers and trends of mental illness, including post-traumatic stress disorder (PTSD).

Colonel Rakesh Jetly, Dr. Alex Neumeister, Dr. Clifford Cassidy



Recent epidemiological research has focused on PTSD in civilian populations and suggests some common features, but also some differences in PTSD for military populations as their experiences are quite different.

“While it’s important to understand the numbers, it’s even more important to understand the individual so we can provide the patient-centered care they need,” says Colonel Rakesh Jetly, who holds the inaugural Canadian Forces Brigadier Jonathan C. Meakins, CBE, RCAMC Chair in Military Mental Health, in partnership with The Royal’s IMHR.

“Looking at the landscape, it was time for us to do more clinical research that focuses on improving patient outcomes on an individual basis,” he says. Colonel Jetly is working with a powerful team of researchers who bring strong expertise in PTSD to The Royal’s IMHR.

“Patients with PTSD usually have a very wide range of symptoms,” says Dr. Alex Neumeister, the Director of the newly established Stress and Trauma Research Unit at the IMHR. “If we can better understand the symptoms of an individual, and how their symptoms are linked to changes in brain function, we’ll be able to develop

more targeted, individualized treatment for patients with PTSD. This next generation of PTSD treatment will be evidence based, and brain imaging will play a very important role in this process because it allows us to see specific brain processes linked to an individual’s symptoms.”

Dr. Clifford Cassidy, an expert in translational neuroscience, psychiatry, and brain imaging came to the IMHR from Columbia University in New York. Dr. Cassidy is leading a research study that uses functional magnetic resonance imaging (fMRI) scanning at The Royal’s Brain Imaging Centre, a state of the art research facility that features a PET (positron emission tomography) and fMRI machine and is dedicated to mental health and neuroscience research.

“We want to see if there’s a brain marker that shows if someone is beginning to respond to treatment before symptoms start improving. This could be useful to guide treatment as it would save patients both time and suffering,” says Dr. Cassidy. The longer term implications of the research conducted by the Military Mental Health Research Unit at the IMHR will not only address relevant issues to veteran and military populations, but also inform other populations suffering from PTSD, such as first responders and victims of accidents or violence.

“If we can understand the individual differences for those suffering from PTSD, we won’t need to use a trial and error approach to treating their illness, which is how PTSD patients are treated now,” says Colonel Jetly. “Our goal is to guide clinical treatment so we can improve patient outcomes.”



MEET BRUNO GUEVREMONT

Life after PTSD: A story of survival

Retired Royal Canadian Navy Diver Bruno Guevremont joined the Canadian Armed Forces in 1999 wanting to serve his country. He served as a paratrooper, diver, and bomb expert for 15 years and was trained to be at the top of his game and perform at a very high standard.

“I was taught to be laser sharp with how I performed my duties and to be exceptional at everything,” he says. “I was trained to adapt to situations and taught how to respond to fear and anger – it was ingrained.”

After Bruno’s second tour in Afghanistan in 2009, he started to experience things he had never felt before. “I started to experience anxiety, depression, and panic attacks – which all felt uncontrollable,” he says. “I was having nightmares and couldn’t sleep. I was suffering from mental illness and I had no idea that’s what it was. I had never been trained to recognize the symptoms of PTSD.”

Anger was one of the first symptoms that made Bruno realize that something was wrong. “I was taught in the military to respond to fear or uncomfortable situations with aggression,” he says. “I was now a civilian living a seemingly regular life and my anger would get triggered for the smallest things – in traffic, at the grocery store, or in interactions with my family members. Even smells or noises would set me off.”

“I had never been affected by mental illness before,” says Bruno. “It didn’t even occur to me that it was happening. My doctor in the military recognized that I was experiencing symptoms of PTSD, and encouraged me several times to get help,

but I was in denial. I finally went down the dark path of contemplating suicide and realized I couldn’t continue on this way if I wanted to live. I decided to give it one last chance and asked for help.”

“I received amazing care and treatments from my military doctors and sought out information to better understand my disease. It was a trial and error journey of medications and different therapies, and not all of them were effective, but we eventually found a combination that worked,” says Bruno. “I realized that physical fitness was always something that helped me feel my best so we integrated daily fitness into my treatment.”

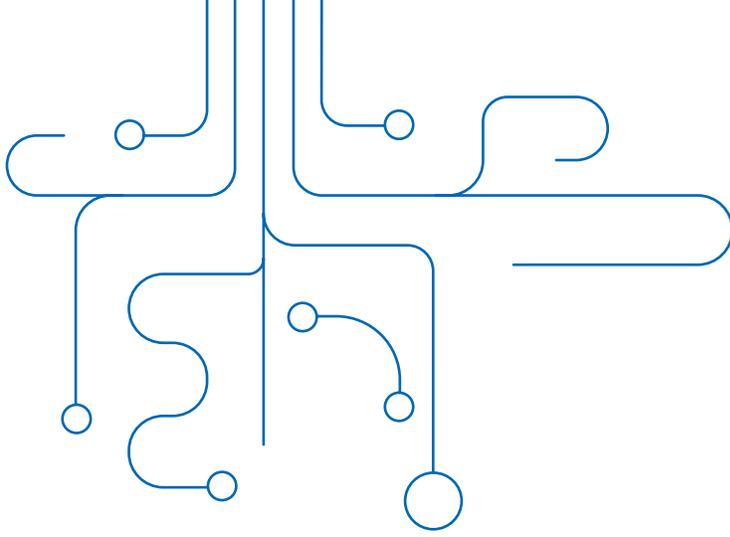
“Unfortunately, many veterans suffer for years before they seek help. I’ve seen others affected by mental health issues such as PTSD, anxiety, depression, and in some cases substance abuse and chronic illness management, and it can become almost impossible to adjust to life after the military. Like me, they don’t have the ability to maintain relationships, to work, and to maintain a quality of life,” he says.

“Advances in research are needed to give more guidance when it comes to treatment selection. We also need to provide better training to our troops so they can recognize the signs of PTSD and get treatment sooner. We need our veterans to suffer less after life in the military. Better training, earlier treatments and faster recovery will help us reach that goal.”

In 2016 Bruno went on to become the Canadian team captain for the Invictus Games, established by Prince Harry as a sporting event for wounded, injured and sick military veterans. He’s now the owner and head coach of a cross-fit business in British Columbia. “I felt that if I’m going to give this amount of service to my country, then I should be able to reap some of the rewards, which includes a fulfilling life after service,” says Bruno. “Recognizing my mental illness was my first step towards achieving that fulfilling life.”

“Through our partnerships, we’ve created a hub of excellence for military mental health where military, veteran, and civilian leaders from across Canada and internationally will be able to conduct research, access evidence and provide better treatment options for patients suffering from PTSD. We’re working together to get people better, faster through patient-centered research.”

DR. ZUL MERALI
PRESIDENT & CEO, IMHR



A breakthrough treatment for suicide prevention

Dr. Pierre Blier, director of the Mood Disorders Clinical Research Unit at The Royal's IMHR, holds a Canada Research Chair through the University of Ottawa and is one of the pioneers in the use of ketamine for treatment resistant depression.

“According to the World Health Organization, an estimated 1 million people die every year from suicide,” says Dr. Blier. “The prevention of suicide is a social and economic goal of great importance, but no specific strategy has been universally successful.”

“About half of patients with major depressive disorder don't respond well to traditional treatments, including antidepressants,” says Dr. Blier. “Clinicians continue to try different therapies and medications in an attempt to treat patients suffering from major depressive disorder. It's been trial and error and it's time consuming. We decided to do something different and use ketamine to change the course.”

For the past several years, Dr. Blier has been conducting research on the effects of ketamine – originally introduced as a type of anaesthetic – on depression and suicidal thoughts in patients where other forms of treatment have been ineffective. His research confirmed that ketamine, at a very low dose, works as an antidepressant for some people within hours, rather than the weeks required for more traditional drugs to work. But even in patients where depressive symptoms were not improved after ketamine, he discovered there was a marked decrease in suicidal thoughts and actions for almost all patients.

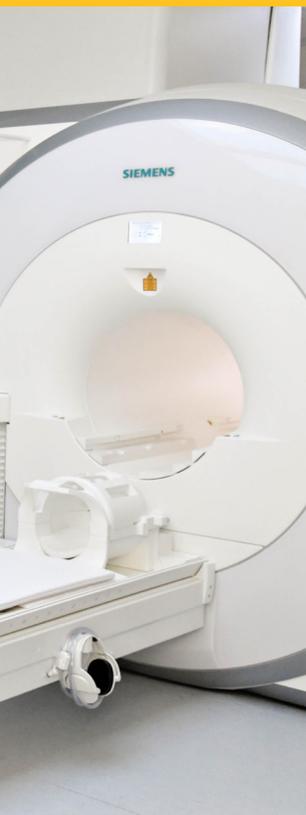
“The use of ketamine in Pierre's clinical work has been ground-breaking,” says Dr. Zul Merali, President & CEO of the IMHR. “The impact on the quality of life for his patients has been significant - both in the effectiveness of reducing suicidal thoughts and acts, and with how quickly it works for patients who would have had to wait weeks or months to see results from traditional treatments.”



Dr. Blier is launching a collaborative study with Dr. Georg Northoff, director of the Mind, Brain Imaging & Neuroethics Research Unit, at The Royal's Brain Imaging Centre using functional magnetic resonance imaging (fMRI) and electroencephalography (EEG).

“If we can identify specific regions of the brain that show a change in brain activity in relation to a patient's reduction in suicidal ideation after receiving ketamine therapy, we hope to identify the brain circuits that contribute to an increased risk for suicide,” says Dr. Blier.

“Much like when a doctor conducts blood tests or x-rays and, depending on the results, tailors treatment accordingly, we'll be able to do the same thing with this system,” explains Dr. Northoff. “Until now, diagnosis has been based very much on subjective measures, such as the symptoms that a patient describes. When it comes to a person who is suicidal, novel treatments and brain imaging could be a lifesaver.”



Dr. Georg Northoff, Dr. Zuli Merali, Dr. Pierre Blier



Juxtaposition by
Thea Cunningham

Alexandra's story

Dr. Pierre Blier was treating Alexandra, a 37-year-old professional and mother of four for severe depression. She was experiencing suicidal ideation and had tried different treatments, including antidepressants, but they weren't effective.

“I woke up one day and knew that if I didn't get serious help right away, I wasn't going to make it,” she says. She called Dr. Blier's office and said “I need help and I need it right now. They got me in to see Dr. Blier within the hour. It was the longest hour of my life.”

“On my way there, I kept thinking of ways to kill myself that wouldn't hurt my children,” she says. “Something that wasn't my fault - like accidentally getting hit by a train, so they wouldn't have to live with knowing their mom had killed herself.”

Alexandra kept telling herself “Something's going to change. Something's going to get better.” She broke the hour into smaller chunks of time, so they felt

more manageable, and kept repeating “I just need to make it another two minutes.” When those two minutes were over, she'd tell herself “You did it. Now you need to make it another two minutes.”

When she finally got there, Dr. Blier offered his patient the only two options he had during that visit - hospitalization for electroconvulsive treatment, or ketamine - an experimental treatment. Alexandra chose ketamine.

“I would have done anything to stop what I was feeling,” she says. “If there was even a small chance that it would help me stay with my children, I was going to try it.” “It was almost instantaneous,” she says. “It started with a feeling of warmth and then relief. I closed my eyes to rest, and realized I felt safe for the first time in years.” Alexandra experienced complete remission within about an hour.

“Alexandra had a relapse within about two weeks, experiencing some depression and anxiety, but her suicidal ideation did not come back,” says Dr. Blier. His patient received two more ketamine treatments, which kept her other depressive symptoms from returning. “Because we were able to significantly reduce her suicidal ideation with the ketamine treatment and weren't in crisis mode, we were able to modify her other treatments for depression and anxiety, keeping her in remission.”

“I had spent my entire life feeling like I was in an endless fight that I couldn't win. That no matter how hard I fought, I was never going to get better,” says Alexandra. “After the ketamine treatment, I had a feeling of hope that I don't ever remember feeling before. I finally felt like my life had possibility. For the first time in my life, I realized I could get better.”

A work in progress:

Improving workplace mental health

Each week, 500,000 Canadians will not go to work because of mental illness.

“Mental health problems in the workplace are prevalent,” says Dr. JianLi Wang, director of the Work & Mental Health Research Unit – a new area of research at The Royal’s IMHR.

“If you just look at depression based on clinical diagnostic criteria, the annual problems of depressive episodes in the workplace are around 5%,” says Dr. Wang. “That means out of 100 employees, you may have 5 who are experiencing or have experienced a major depressive episode in any given year.”

The typical symptoms of major depression include fatigue, loss of interest, decreased mood and difficulty concentrating. “As you can imagine, those symptoms can affect your functionality tremendously, and as a result, your productivity,” he says.

“Over 30% of health claims are related to mental health problems,” says Dr. Wang. “According to the Mental Health Commission of Canada, employee mental health has a significant impact on the economy – over 50 billion dollars each year.”

“This is why we conduct this kind of research – because it affects a worker’s health and well-being. It affects their ability to concentrate and their productivity. If people aren’t productive in the workplace, it’s also going to have a financial impact on employers,” he says.

To address mental health in the workplace, Dr. Wang is leading the development of an e-mental health program, funded by



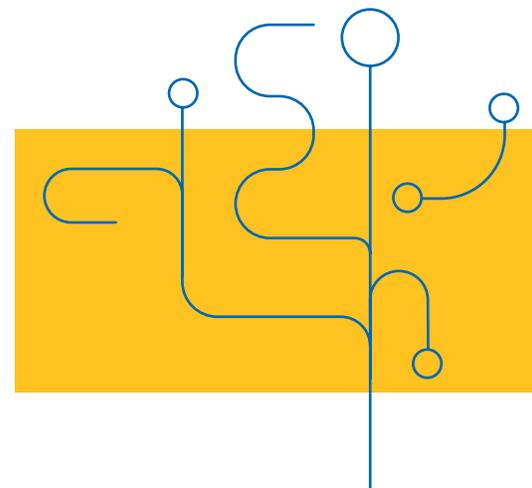
Dr. JianLi Wang

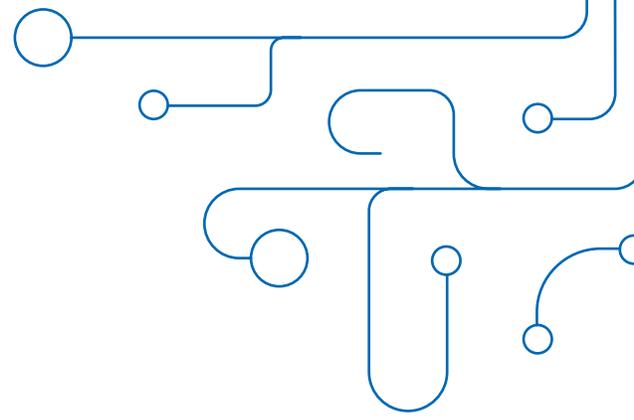
the Movember Foundation. The program is designed to identify working men who do not yet have clinical depression, but are at a high risk. “We can use this e-health program to help them learn how to deal with work related issues and life stress, so we can reduce the overall risk of having major depression in the future. It’s focusing on early prevention,” he says. “We’re currently running a randomized controlled trial of 1500 men to evaluate if the program actually reduces risk, how many depression cases can be prevented, and if there’s a return on investment.”

He also is working to promote the use of a depression risk calculator he developed, which tells the user his or her probability of having a major depressive episode in the future, based on epidemiological data. “This tool can help people take ownership of their own prevention and recovery, and it can help primary care providers identify their patients at risk of depression in

order to connect them with the help they need,” he says.

“We know the potential causes of workplace mental health problems, but now we need to work on potential solutions,” he says. “Employers and policymakers need that kind of knowledge. We believe the best way to reduce the disease is to stop it before it actually happens.”





MEET CELINA CAESAR-CHAVANNES

Shifting the culture around mental health

“You don’t really know what mental health means until you’re dealing with it,” says Celina Caesar-Chavannes. The Member of Parliament (MP) for Whitby, Ontario and Parliamentary Secretary to the Minister of International Development, Caesar-Chavannes has openly shared her own struggles with mental illness.

She reached a low point in early 2016. “I had a great job, great family and support system but I just didn’t want to do anything. My relationships were strained,” says Caesar-Chavannes.



Celina Caesar-Chavannes

Afraid to talk about it because of the external stigmas around mental health, there was also self-stigmatization and questioning – “Why can’t I get out of bed? What adult stays in bed and doesn’t function? Just get your butt out of bed, go to work and do those things! But I just couldn’t,” she says.

By the time she got help, she was in the deep end of crisis. “I left work in the middle of a meeting, crying my eyes out on the train from Toronto to Whitby and ended up in hospital. I realized that I was having what they classically call a ‘breakdown’ and was diagnosed with major depressive disorder.”

After her diagnosis, she realized she had an incredible platform to be able to tell her story. “I realized it’s OK to not be OK. Telling my story was important for me so others could validate their own experience with mental illness,” says Caesar-Chavannes.

Now an advocate for mental health, she feels there needs to be more understanding of mental health in the workplace. “For some people, it’s just being able to take a 15 minute break. For others, they might need 2 days off because they just can’t function,” she says.

“It’s about having positive space where you feel you can reach out to say ‘I’m not feeling well’ and not be criticized or

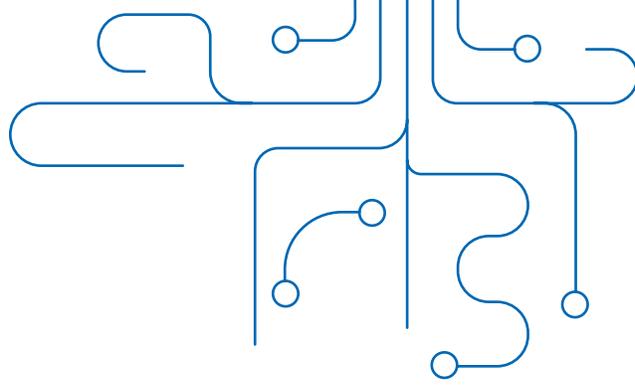
asked a million questions about why,” she says. “Sometimes you don’t know what’s wrong. You just don’t feel well and that should be enough.”

“It’s not about implementing a whole program on workplace mental health, but a shift in culture around mental health,” she says. “If you had cancer, you would get help. If you have a laceration on your arm, a doctor can easily see it. Do you need stitches or surgery? With mental health that’s not the case - it just doesn’t work that way.”

“You don’t really know what mental health means until you’re dealing with it.”

“The brain is one of the organs that we least understand and research can help us get some answers. Until we have those answers, we’re not going to be able to help people. Which is the point of what we do, to help people - not patients, but people,” she says.

“So I’m sharing my story,” says Caesar-Chavannes. “I’m saying that I am on your side. Let’s fight for mental health.”



HYPE:

Increasing access to youth mental health care

“Research tells us that about 20% of youth suffer from mental illness. If you talk to adults with a mental illness, about 70% will tell you that the illness started before the age of 18. Adolescence and young adulthood are very significant developmental periods. For many, this is when mental illness starts,” says Dr. Manion, the Director of Youth Mental Health Research at The Royal’s IMHR.

An outside-of-the-box thinker who believes firmly in the value of working together, Dr. Manion says an important element of his role at the IMHR is reaching out to partners across sectors and across local, provincial, national and international borders “to bring our expertise and knowledge together to change the youth mental health agenda.”

Healthy Young People Everywhere (HYPE) is an example of how he’s working to make that happen.

Co-led by Dr. Manion of the IMHR and Dr. Steve Mathias of Foundry in British Columbia, HYPE is an international knowledge translation initiative, housed at The Royal’s IMHR, designed to gather the best evidence in the world about youth mental health care and make it come alive.

HYPE involves more than 100 partners and 25 universities, 9 countries, and 5 foundations, all working together towards a focused goal - to integrate youth mental health research from around the world, identify research gaps to better use research dollars, and implement findings

into the real world so youth are receiving the right care at the right time, specifically stepped care.

“Stories like Mackenzie’s are not uncommon,” says Dr. Manion. “The help youth are often seeking like support for addictions, mental health and physical health, tend to be in different places. As a result, mental health care for youth is segmented and hugely stigmatizing. We have a lot of people waiting in the wrong lines and we have systems that were built for service providers, not for the receivers of services.”

“If a community, region, province, state, or country wants to refine or implement innovative youth mental health care practices, they have to reinvent the wheel and collect the same evidence all over again – no one is bringing it all together,” says Dr. Manion. Their goal is to co-create a system with youth and families that will increase access to youth mental health care and is informed by evidence, effective, and provides the right level of care at the right time by the right provider. “I defy you to tell me that mental health is not a population health issue that affects us all,” says Dr. Manion.

“When I present to groups about youth mental health, I always ask people to stand up if someone in their immediate or extended family has suffered from depression at some point in their life,” he says. “Every time, about 85% of the room stands up and they all look around shocked. That’s when they realize mental health doesn’t just affect 1 in 5. It’s not just 20%. It affects all of us.”



Dr. Ian Manion



Mackenzie and her mother Hilary

MACKENZIE'S STORY

A voice for integrated care

Mackenzie was fifteen when she walked into her parents' bedroom and told them she wanted to end her life. "We knew Mackenzie was struggling and she had been seeing a psychologist," says her mother Hilary, "but we had no idea how bad it was."

Mackenzie always knew she was different. She had a hard time making friends and she often felt anxious. "I remember being in grade 6, thinking about my funeral and killing myself and how I would do it," said Mackenzie. "I thought everybody my age thought those things. I thought it was normal. I would see commercials on TV of middle-aged people who had depression. I had no idea kids could be depressed. I thought depression only happened to grownups," she said.

It was at an event at The Royal called You Know Who I Am when Mackenzie realized she might be suffering from depression. She was listening to Rachel Scott-Mignon - a young woman who openly shares her own experience with depression. "I was fifteen and it was kind of scary because I could really relate to a lot of what Rachel said," said Mackenzie. "I did want help if I could get it, and I knew that I didn't want to just quit without even trying, but I didn't know what was available."

"The night Mackenzie came into our room and said she wanted to end her life - we were shocked and scared," says Hilary. "That's when our journey really started," says Mackenzie.

After many doctors and hospitalizations, multiple diagnoses and 12 medications, Mackenzie was still feeling suicidal and suffering from an eating disorder, which made it even harder to cope. "It was frustrating because I had to tell my story over and over, and some days I probably didn't tell it the best because I wasn't feeling the best," she says.

"I was lucky I had access to doctors who knew me and knew what I needed. That really helped," says Mackenzie. "My doctor got me in to the outpatient program at The Royal, and they put me into the youth day program for 16-18 year olds, and that was good. Then I got into The Royal's inpatient program and they were finally able to find a medication that worked for me - that was really good."

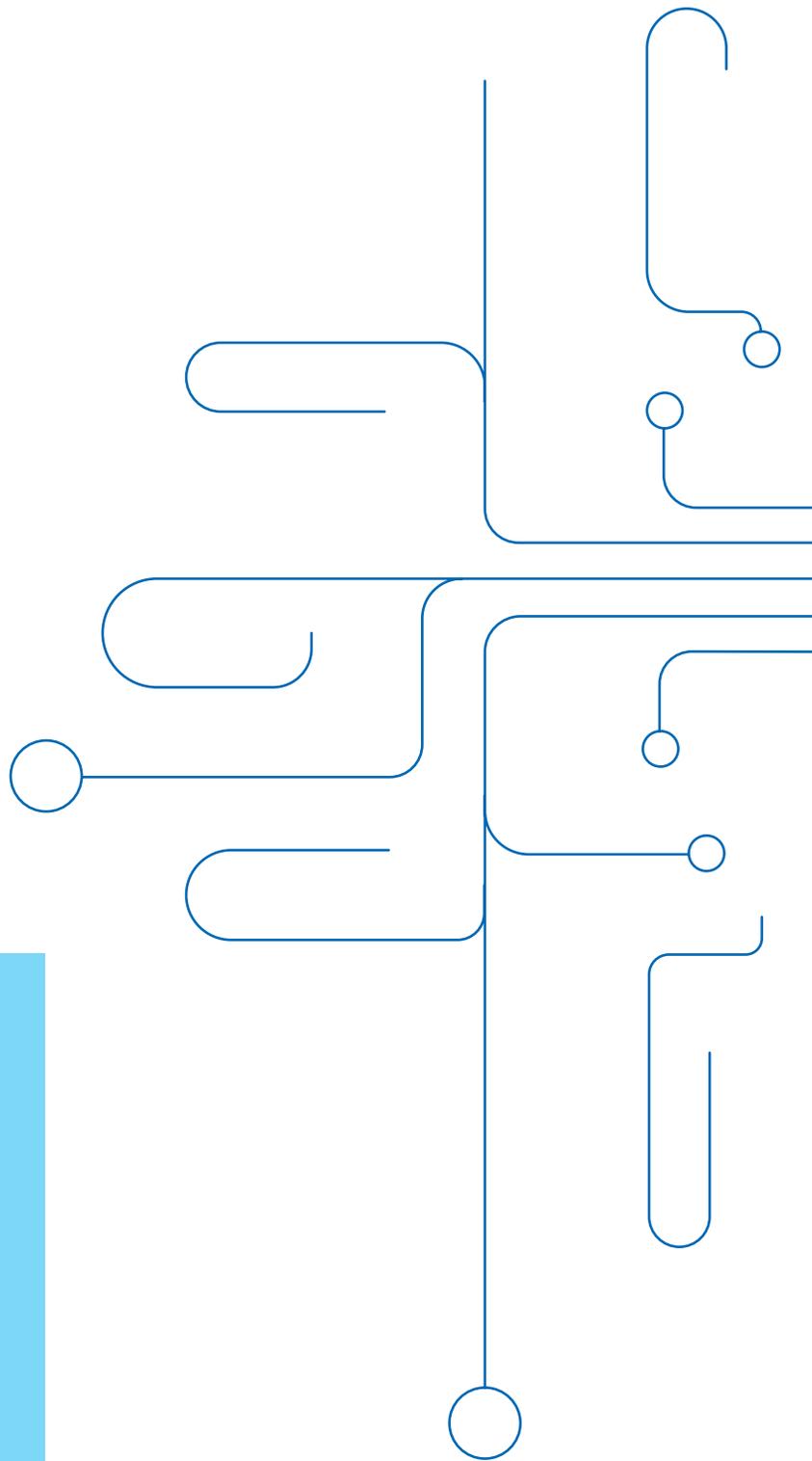
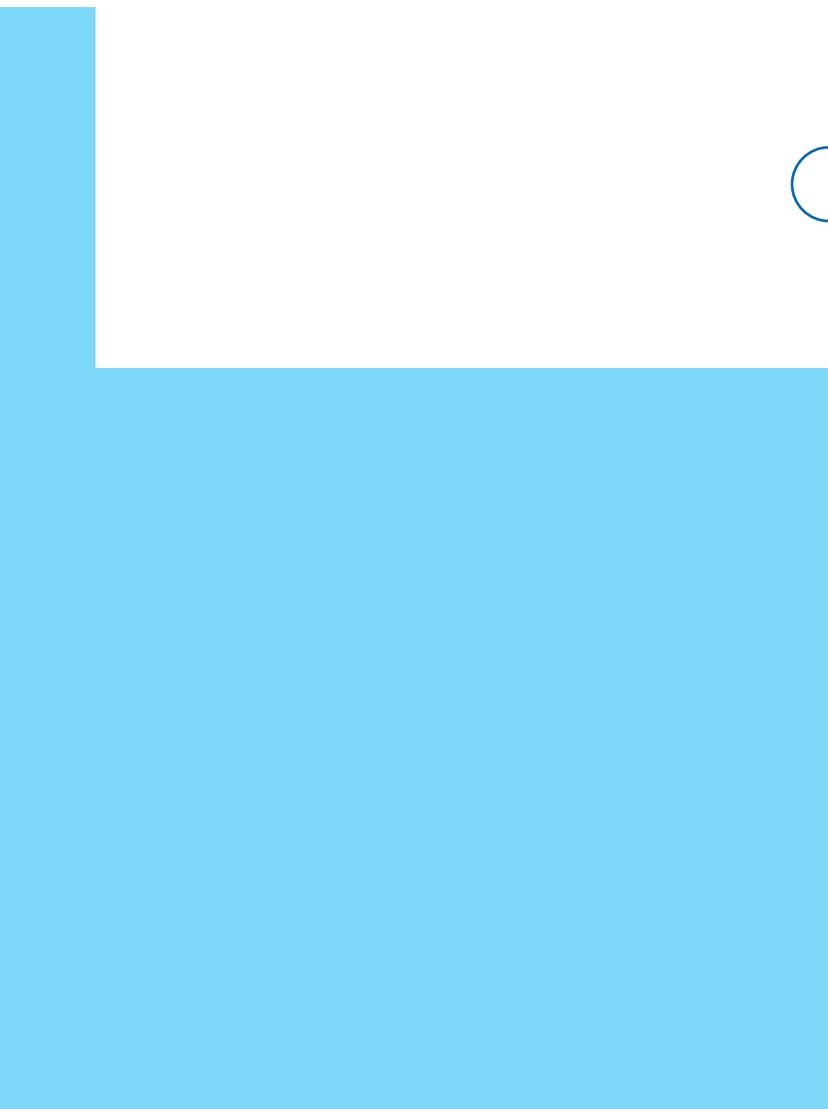
"Mackenzie received great care and we're very grateful for that, but it was all very fragmented," says Hilary. "She got treatment for some of her conditions at one hospital and treatment for her eating disorder at another hospital, which made it harder for us to manage. Integrated care would have been a lot better, but they just didn't have the resources in place."

"We experienced gaps in the system and that had a real impact on us. We want to raise awareness so that something can be done," says Hilary. "I knew that if I did get better I would want to help people like me, which is why I'm telling my story," says Mackenzie.

Now 19 years old and attending school in Hamilton, Mackenzie receives outpatient care at local hospital and feels optimistic about her future. When asked what she'd tell her 15-year-old self now, she said, "Don't be afraid if the help doesn't work right away. If you keep persisting, your future self is going to thank you. When I was fifteen, I couldn't imagine how great my life is now. Even the colours are brighter."

The next generation of researchers





Big ideas

To change the future of mental health research

In the past few decades, science has significantly changed how we detect and treat medical conditions such as cancer, diabetes and heart disease. People often get cured, or at least survive these illnesses for much longer than ever before - but nothing much has changed when it comes to treating mental illness.

“We still diagnose mental illness based on the symptoms of how you feel,” says Dr. Zul Merali, President and CEO of The Royal’s IMHR. “We haven’t yet developed blood tests or brain scans to diagnose mental illness. Even though there are glimmers of hope, more than 60% of those seeking help still do not respond adequately to the treatments we have to offer.”

“At the IMHR, we want to chart a new course to predict better outcomes. We want to change this reality,” he says. “What can we do for the 1 in 4 Canadians suffering in silence? The answer is research.” Thanks to a 6 million dollar donation from an anonymous donor, the IMHR has created a new research incubator called Emerging Research Innovators in Mental Health (e-RIM^h) - the first of its kind in Canada focusing solely on Mental Health Research.

“We need curiosity-driven, innovative and hard driving researchers - the best and brightest young minds to engage in mental health research,” he says. “We need to bring mental health research and care into the 21st century. We’re creating an ecosystem to help grow, nurture

and unleash the ideas of brilliant young minds.” e-RIM^h is an exciting leadership opportunity for young researchers eager to launch their careers in mental health research. Through salary and research grant support, labs and mentorship they’ll have opportunities to share and translate their exciting results into new ways of treating mental illness locally and globally.

“We want those affected with mental illness to live their lives to their fullest potential,” says Dr. Merali. “Our goal is to drive innovation by putting young leaders in the driver’s seat. To dream big and make the seemingly impossible, possible. To finally understand what goes awry in the brain’s biology to cause mental illness - and to fix it.”





RACHEL'S STORY

Living with mental illness

Rachel Scott-Mignon is a wife, a daughter, a granddaughter, a sister, an aunt, and a friend. She also has a mental illness and was diagnosed with bipolar disorder 11 years ago at the age of 23.

Almost immediately after Rachel was diagnosed, she made the decision to be open about her illness and has frequently shared her story publicly in an attempt to help others and raise awareness. Rachel became an advocate for the Royal's Foundation for Mental Health and has been involved in various campaigns, including the Is It Just Me? Program for youth, Do It For Daron, the You Know Who I Am campaign, and the Women for Mental Health Campaign.

"The reason I've been so eager to share is because for the first 23 years of my life, I hid the symptoms and feelings I was so ashamed of," she says. "I didn't tell my friends, family, teachers or anyone about what I was going through. I hid

my emotions because I was embarrassed about them and felt isolated - that I was the only one with these feelings."

Rachel has struggled with depression for a large part of her life. "Food lacks flavour and appeal, colour lacks vibrancy. This is in stark contrast to the manic periods of bipolar disorder, which I began to experience in my late teens," she says. "I always describe mania like a carnival in my head: thoughts, ideas, colours are vivid and swirling around quickly and out-of-control."

The first time Rachel seriously considered suicide was when she was about 16 years old.

"It may be hard for you to imagine what it is like to contemplate suicide but when you have lost all hope of ever coming out of the lonely black hole in which you find yourself, it often seems like the only rational answer," she says. "It seems like a way to free yourself from the heavy burden and terror that you are plagued with each living moment."

"What I have learned from being sick is that having a mental illness is a lonely place. Often it is you and your thoughts," she says. "And your thoughts cannot always be trusted. That's what is so terrifying about a mental illness as opposed to a physical one - you cannot trust your own thoughts. For me, things like self-harm including cutting myself have seemed rational. I have also often heard voices in my head telling me to harm myself or take my own life. Usually the voice is mean and angry. It's male. It's very much outside myself."

Rachel has been willing to try just about everything in order to get well. "I've tried at least 30 different medications in various combinations, been hospitalized nearly ten times, travelled to the United States to find new medications, and underwent

electro-convulsive therapy (ECT) several times. But nothing worked," she says.

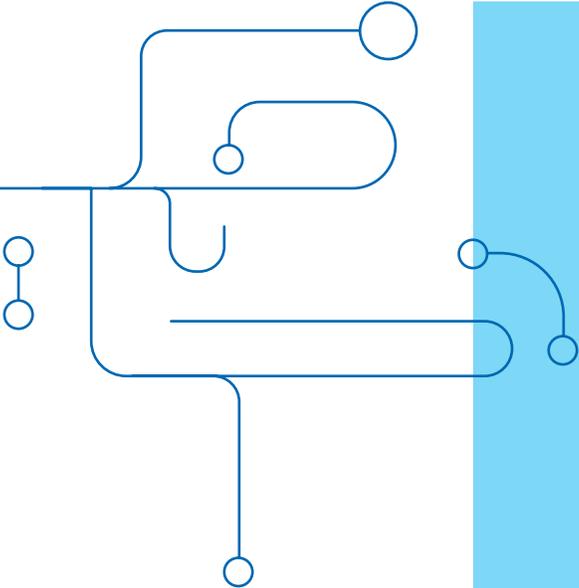
"I think we are progressing well when it comes to addressing the stigma surrounding mental illness. But we need to find better ways to treat people like me who have been sick for way too long," says Rachel. "As it stands, our approach to mental health care often seems like trial-and-error. We just don't know enough about the brain and what's different for people suffering from mental illness."

"What I have learned from being sick is that having a mental illness is a lonely place. Often it is you and your thoughts."

But she still has hope for new discoveries to help her and others like her. "The Royal's IMHR is constantly driving to break new ground through research," she says. "I know what a difference it could make in my life to have improved diagnostic tools and new treatments."

Why does Rachel think it's called research? "Because to help me, and the many like me, you have to search and search again," she says.

After years of trying different treatments Rachel has gone into remission, thanks to finding the right combination of medications, therapy, diet, exercise, sleep and social support. She says, "I'm feeling better, but I don't know what tomorrow holds. I can't tell you how much I wish for the day when my mental illness goes into remission for good. Research gives patients like me hope for a brighter future."



Sharon Johnston's dedication to mental health

Sharon Johnston has a special relationship with The Royal, having visited the organization on several occasions, including one very special visit with a dear friend, Rachel Scott-Mignon. They first met in 2012 when Rachel was receiving a Diamond Jubilee Medal for raising awareness of mental health issues - particularly bipolar disorder.

“People with serious mental illness have families, hobbies, talents, quirks and passions just like you and me.”

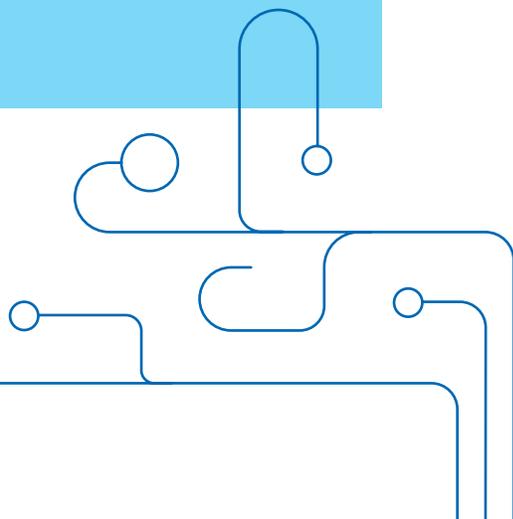
“Rachel had just been released from the hospital and she was not feeling well,” said Mrs. Johnston. Despite the severe side effects of her medication, she still came to Rideau Hall for a ceremony during which she received a medal for her outstanding work related to mental health. I was deeply touched by her strength and courage, and I personally reached out to her afterwards to talk about her mental illness. It was such an eye opener for me.”

“People with serious mental illness have families, hobbies, talents, quirks and passions just like you and me,” said Mrs. Johnston. “It is imperative we get to know one another and that we work together to reduce the stigma around mental illness.”

Nancy Stanton, Acting President & CEO, The Royal's Foundation, Rachel Scott-Mignon and Her Excellency Sharon Johnston.

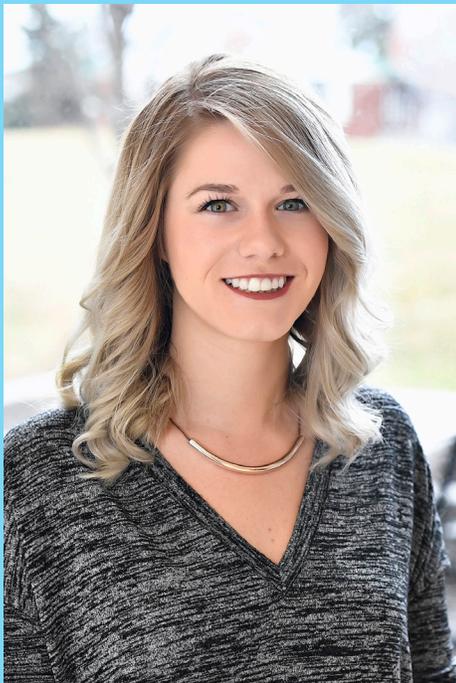


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IMHR Graduate Student Research Awards

Each year, The Royal's IMHR Graduate Student Research Award is presented to promising graduate students focusing on depression research. The 2017 awards, presented to Molly Hyde and Anna Herman, will fund research and education experiences for these young IMHR researchers as they work to make a difference in the lives of people suffering from mental illness. This award is supported by The Jennie James Depression Research Fund, The Allison Lees Depression Research Fund and The Louise Helen Waddington Research Fund.



MEET MOLLY HYDE

Molly Hyde has always had an interest in mental health – beginning when she was very young and her mother was diagnosed with bipolar disorder. Growing up, Molly didn't understand what having a psychological illness really meant. "To me it was 'why is my mom not paying attention to me', or 'why is my mom being cranky today for no reason?' I didn't get it," she says.

As Molly grew up and heard other stories of mental illness, she also started to learn about science and the brain. "It really inspired me to want to help people like my mom who are trying to overcome mental illness," she says. Molly decided to study neuroscience and is currently working on a Master of Science degree from the University of Ottawa. She's completing her thesis in the Clinical Neuroelectrophysiology and Cognitive Research Laboratory at the IMHR, under the supervision of Dr. Verner Knott.

As a young researcher at the IMHR, Molly is part of a team of researchers running a clinical trial on repetitive transcranial magnetic stimulation (rTMS) - a tech-

nology that uses a specific non-invasive electronic pulse to stimulate the brain as treatment for patients with major depressive disorder who don't respond very well to medications.

"My professional growth has been incredible since I've started working here," she says. "Opportunities like the graduate research award are allowing me to go do things like present my research at international conferences, which I probably wouldn't be able to do otherwise." Molly plans to use the award to travel to the World Psychiatric Association's World Congress of Psychiatry in Berlin, Germany to present her work.

"My professional growth has been incredible since I've started working here."

"Right now I'm working specifically with major depressive patients," she says "but I have no limitations in which area of mental health I'd like to work."



MEET ANNA HERMAN

It was while taking a course in her undergraduate program about psychopharmacology and how drugs affect the brain that Anna Herman decided to become involved in mental health research. “I’ve always been interested in why people are different, why they do what they do, and particularly why things go wrong.” But mainly, she says, “I care about it because I’m involved on a personal level. I have family members that have generalized anxiety disorder and bipolar disorder and have dealt with trying different medications that didn’t work, so I’ve seen it first-hand.”

Anna is a young researcher at The Royal’s IMHR completing a Master of Science degree in Neuroscience through the University of Ottawa. She’s currently working on her thesis in the Mood Disorders Research Unit at the IMHR, under the supervision of Dr. Pierre Blier.

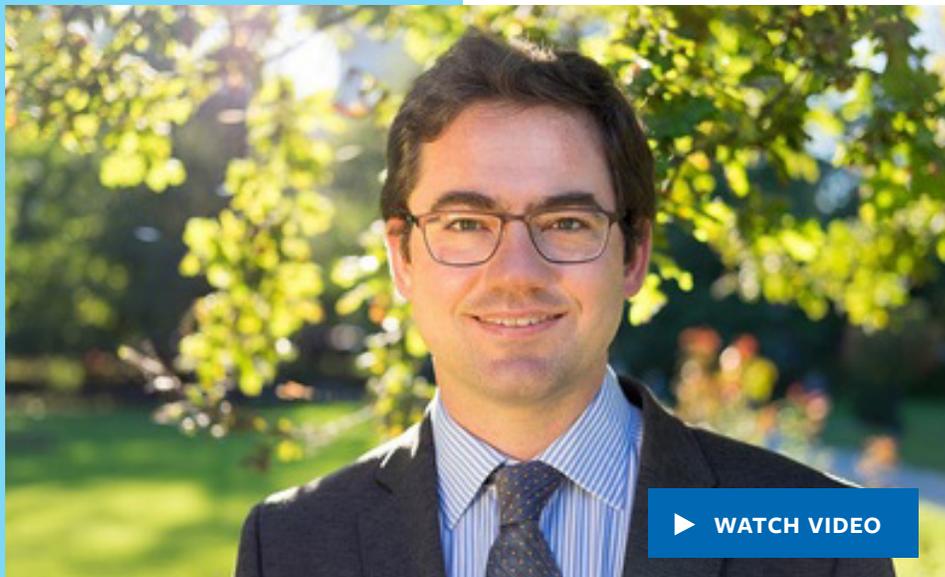
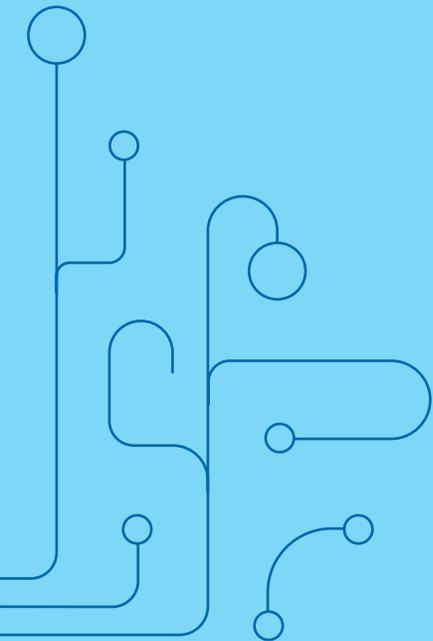
Her research objective is discovering the acute effects of a novel drug known as Cariprazine or Vraylar, which was recently approved for the treatment of schizophrenia and bipolar mania, but it’s still in the process of being approved for use in depression. “Clinical trials have already

shown that these drugs are clinically successful,” she says. “We want to see what it’s actually doing to neurons in the brain which could inform the development of future drugs.”

Anna intends to use the award to travel to the 72nd Annual Society of Biological Psychiatry Convention in San Diego, California to present her research.

“What I’m doing is part of a bigger movement.”

“Research can seem like such a slow process, but we’re working together to address a global issue – mental illness. Your contribution may seem small, but these little contributions add up to changes,” says Anna. “It helps when you have a better idea of what others are doing in mental health research – When you feel the encouragement that all of these studies are happening and it’s not just you isolated in your lab trying to understand this very specific part of the disorder. What I’m doing is part of a bigger movement.”



Dr. Rudolf Uher

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The Royal-Mach-Gaensslen Prize for Mental Health Research

Dr. Rudolf Uher believes that if children are given tools to cope with mental illness early on, there's a greater chance to reduce the impact of mental illness as they grow up.

"We found that when people were talking about early interventions it was at a point when it was almost already at a full mental illness," says Dr. Uher. "We weren't treating patients early enough. It's much easier to work with anxiety in a 10-year-old, than psychosis in an adult."

Dr. Uher is the 2017 winner of The Royal-Mach-Gaensslen Prize for Mental Health Research, an annual \$100,000 award that celebrates one of the most promising young mental health researchers in Canada and helps fund innovative and progressive studies.

A Dalhousie University professor and co-founder of Families Overcoming Risks and Building Opportunities for Well-Being (FORBOW), Dr. Uher is conducting research with more than 300 children, monitoring them as they grow up.

"We believe that the best way to learn about well-being in young people is to ask kids and their families about their experiences," he says. "We invite children and their parents to meet with us once every year. This gives us a chance to understand what really matters in the development of health and well-being."

This "groundbreaking" research could have far-reaching impact, said Dr. Chris Carruthers, Chair of the Mach-Gaensslen Foundation. "Nobody has embarked on such a long-term project that could potentially impact the well-being of people all over the world."

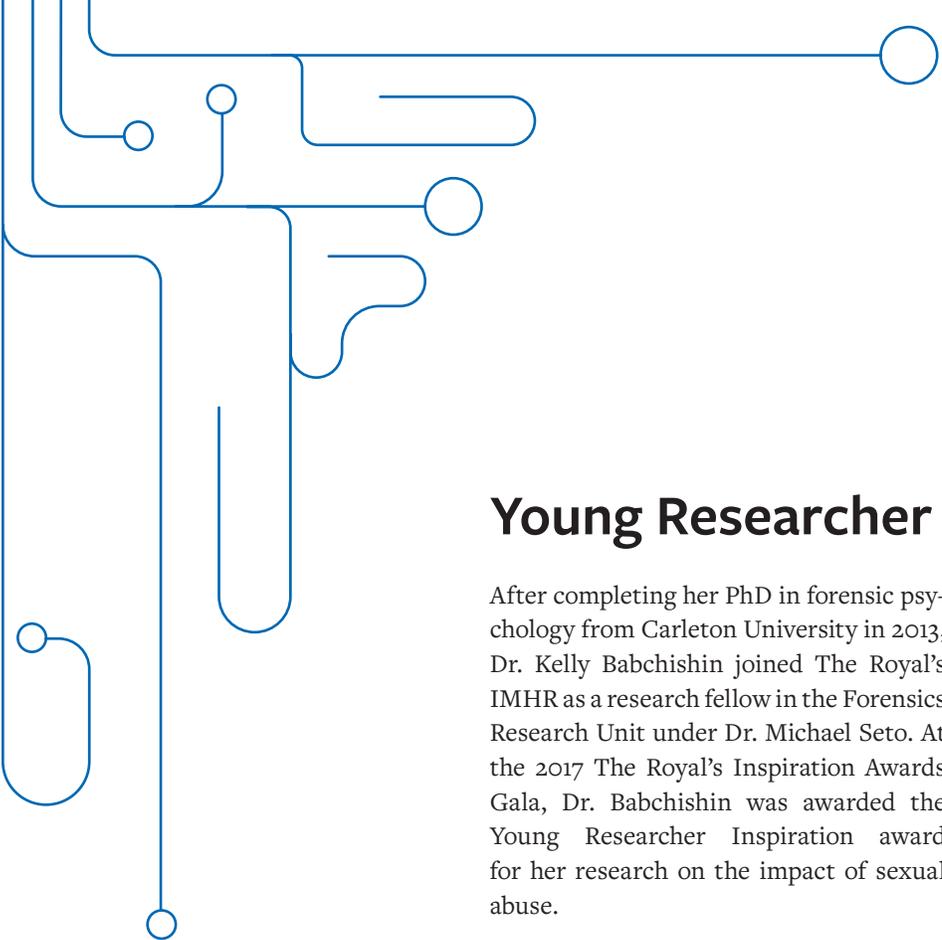
His earlier research found that one in three children of parents with existing mental illness, are likely to have a significant mental illness later in life. Because of this "genetic sensitivity," Dr. Uher believes giving children, as young as 9-years-old, the skills to counter issues like anxiety early will provide a solid foundation for them into adulthood.

"Dr. Uher's work has put Canada in a

leadership position," said Dr. Zul Merali, President and CEO of The Royal's Institute of Mental Health Research. "This is the kind of forward thinking approach we need in order to find real and meaningful solutions to mental illness."

"This is the kind of forward thinking approach we need in order to find real and meaningful solutions to mental illness."

The Royal-Mach-Gaensslen Prize for Mental Health Research was established in early 2015 with a \$1 million gift to The Royal from The Mach-Gaensslen Foundation of Canada.



Young Researcher Inspiration Award

After completing her PhD in forensic psychology from Carleton University in 2013, Dr. Kelly Babchishin joined The Royal's IMHR as a research fellow in the Forensics Research Unit under Dr. Michael Seto. At the 2017 The Royal's Inspiration Awards Gala, Dr. Babchishin was awarded the Young Researcher Inspiration award for her research on the impact of sexual abuse.

"During my training in criminology, I realized the gap in our understanding of why some people commit sexual offences," she says. Kelly wanted to make a difference and was motivated by the mental health benefits of reducing the number of people affected by sexual abuse and by the belief that a better understanding of sexual offending meant we could better prevent sexual abuse.

Dr. Babchishin already has more than 35 peer-reviewed journal publications under her name, presented her findings at more than 50 conferences world-wide, and received several prestigious national and international awards and grants, including the John Charles Polanyi Prize and a Banting Postdoctoral Fellowship from the Canadian Institutes of Health Research.

Recognized globally for her expertise, Dr. Babchishin is the Research Director of an international working group focusing on prevention of online sexual offending and was invited to join the Global Young Academy, an international association of early-career scientists working to shape policy and increase attention to mental health and violence towards children.

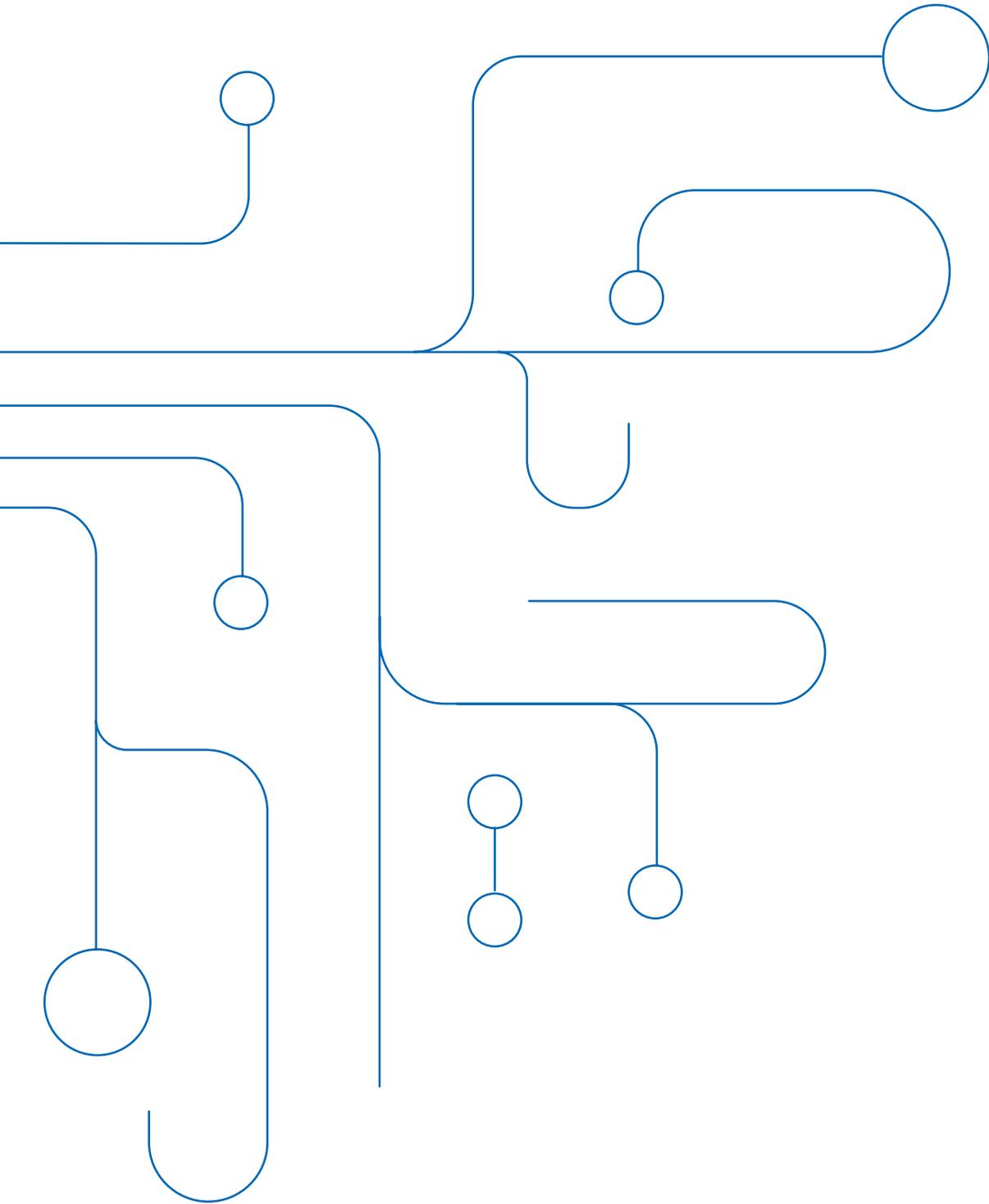
"Let's try to understand it more."

"Sexual abuse affects too many individuals, and young girls are particularly vulnerable," says Dr. Babchishin. "While the prevalence is not known exactly, some researchers suggest up to 25% of women experience sexual abuse. It's consistently identified by governments, as well as the World Health Association, as a key issue – something we need to better prevent." "And how do we better prevent it," she says? "Let's try to understand it more."

Dr. Kelly Babchishin



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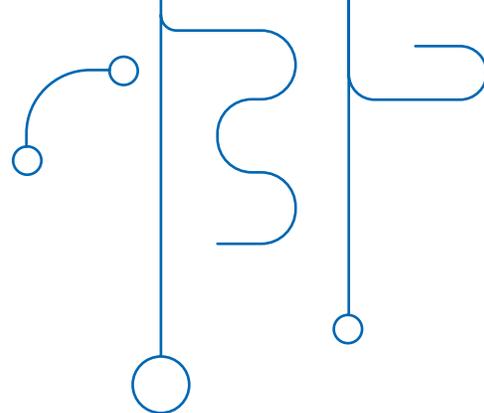
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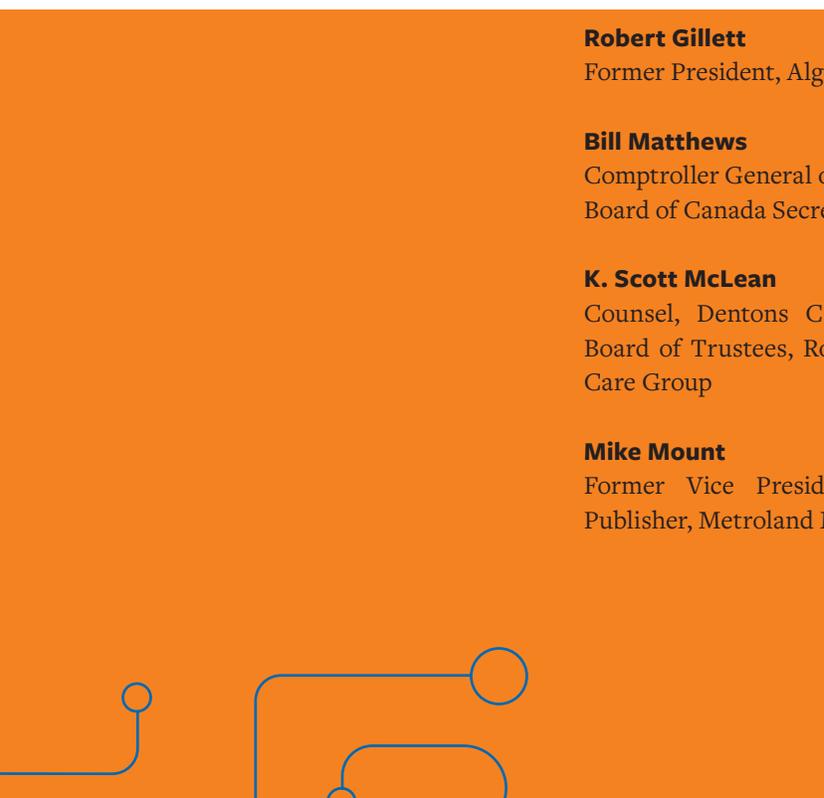
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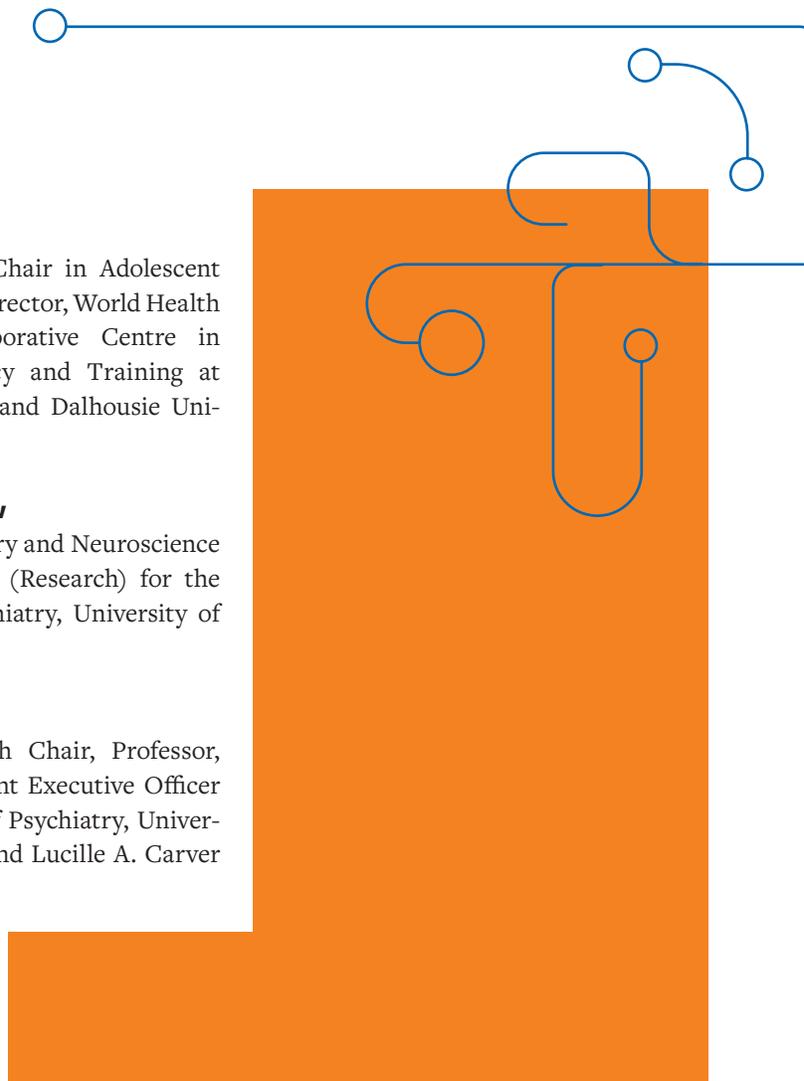
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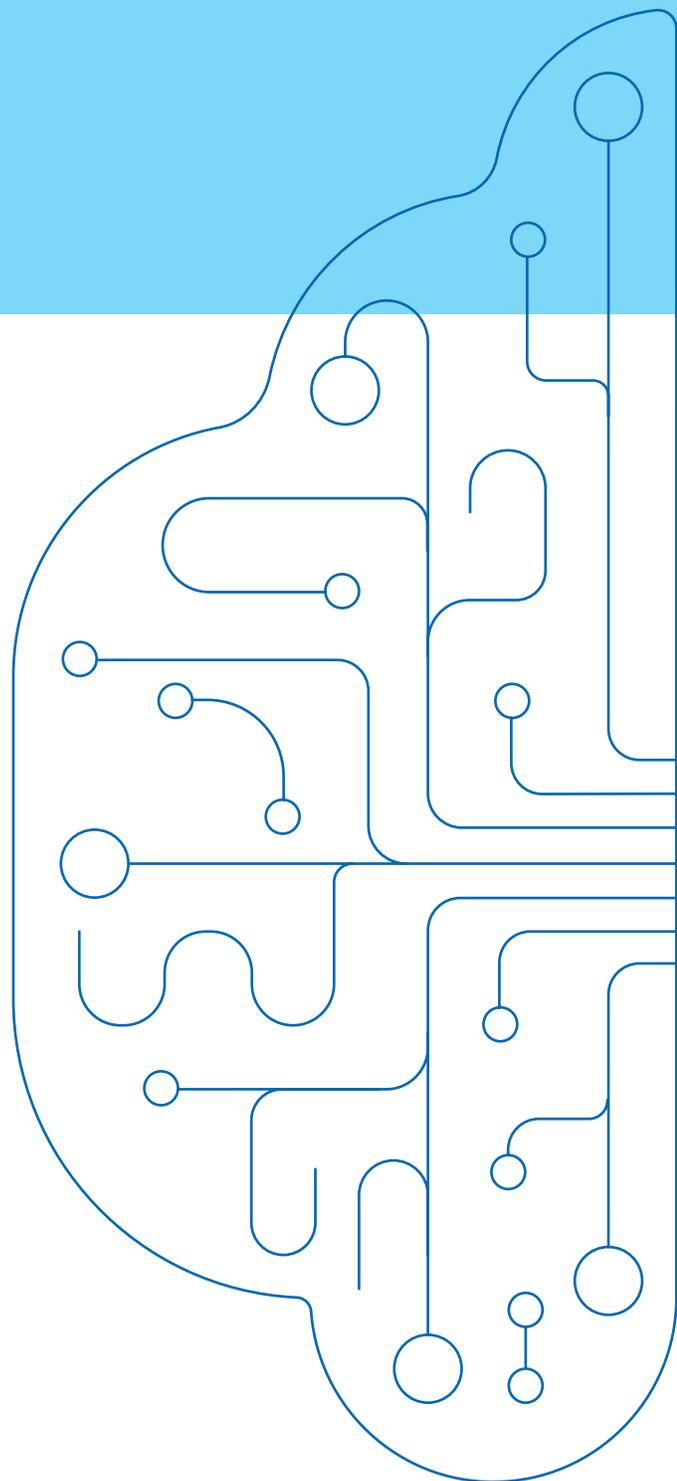
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