



IRCM

MONTREAL CLINICAL
RESEARCH INSTITUTE



2019 / 2020 **ANNUAL REPORT**

2019-2020 ANNUAL REPORT

Montreal Clinical Research Institute (IRCM)

AFFILIATED WITH CLINIC AFFILIATED WITH

Université
de Montréal

CHUM

ASSOCIATED WITH

McGill

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THE IRCM IS A TALENT INCUBATOR. THROUGH THE EXCELLENCE OF ITS ACTIVITIES AND THE QUALITY OF THE SUPPORT OFFERED TO YOUNG RESEARCHERS, WE ARE SURE TO BENEFIT FROM A NEW GENERATION OF HIGH-CALIBRE SCIENTISTS.

HÉLÈNE BOISJOLY
Dean of the Faculty of Medicine of Université de Montréal
from 2011 to 2020



MCGILL UNIVERSITY IS COMMITTED TO TRAINING EMERGING SCIENTISTS WITH ITS PARTNERS AT THE IRCM TO ENSURE THAT THE NEW GENERATION OF RESEARCHERS IS READY TO TACKLE THE CHALLENGES OF TOMORROW.

SUZANNE FORTIER
Principal and Vice-Chancellor of McGill University

THE IRCM AT A GLANCE



RECIPIENT OF BUDGET SUPPORT



53 years

53 years of basic and clinical biomedical research, in addition to training high-calibre scientists in an innovative technological environment in the heart of downtown Montreal.

425

employees and students from diverse backgrounds

35

laboratories in:

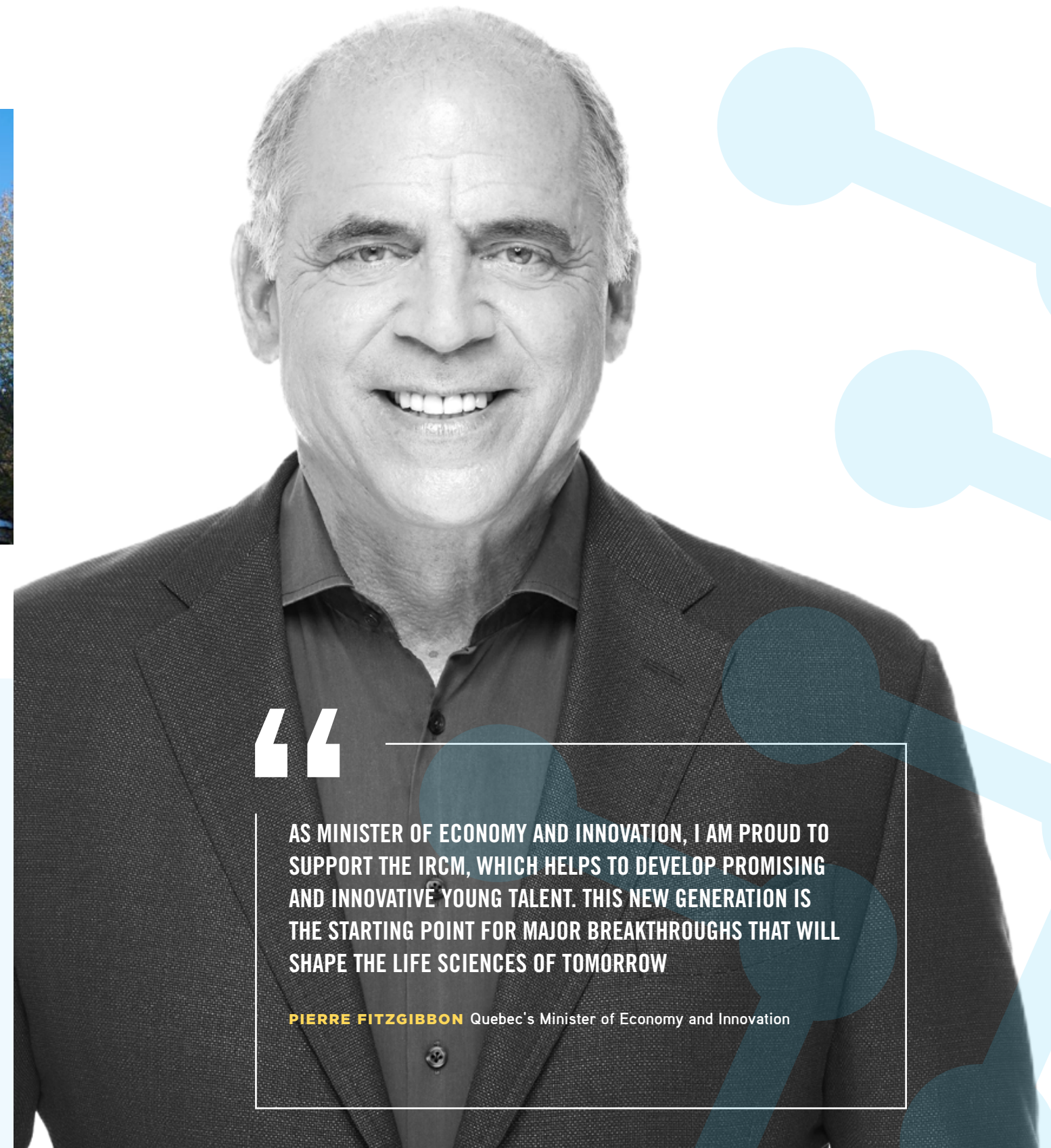
- systems biology and medicinal chemistry
- cancer and genetic diseases
- immunity and viral infections
- cardiovascular and metabolic diseases
- neurobiology and development

3

research clinics specialized in:

- hypertension
- lipids
- diabetes

as well as a research centre on rare and genetic diseases in adults



“

AS MINISTER OF ECONOMY AND INNOVATION, I AM PROUD TO SUPPORT THE IRCM, WHICH HELPS TO DEVELOP PROMISING AND INNOVATIVE YOUNG TALENT. THIS NEW GENERATION IS THE STARTING POINT FOR MAJOR BREAKTHROUGHS THAT WILL SHAPE THE LIFE SCIENCES OF TOMORROW

PIERRE FITZGIBBON Quebec's Minister of Economy and Innovation

MESSAGE FROM THE CHAIRMAN OF THE BOARD

The 2019-2020 year has been unique. It began with the arrival of a new President and Scientific Director, Dr. Max Fehlmann, and ended with the unprecedented COVID-19 crisis, which had a major impact on the IRCM's activities. Nevertheless, it was another successful year under the banner of excellence!

We can be proud of the work accomplished. Once again, the IRCM made its mark through the quality of its research work, winning distinctions and grants in the most prestigious national competitions, and contributing

significantly to the advancement of knowledge through publications in the best scientific journals. The Institute also provided research centres around the world with a new generation of high-calibre scientists trained in our laboratories.

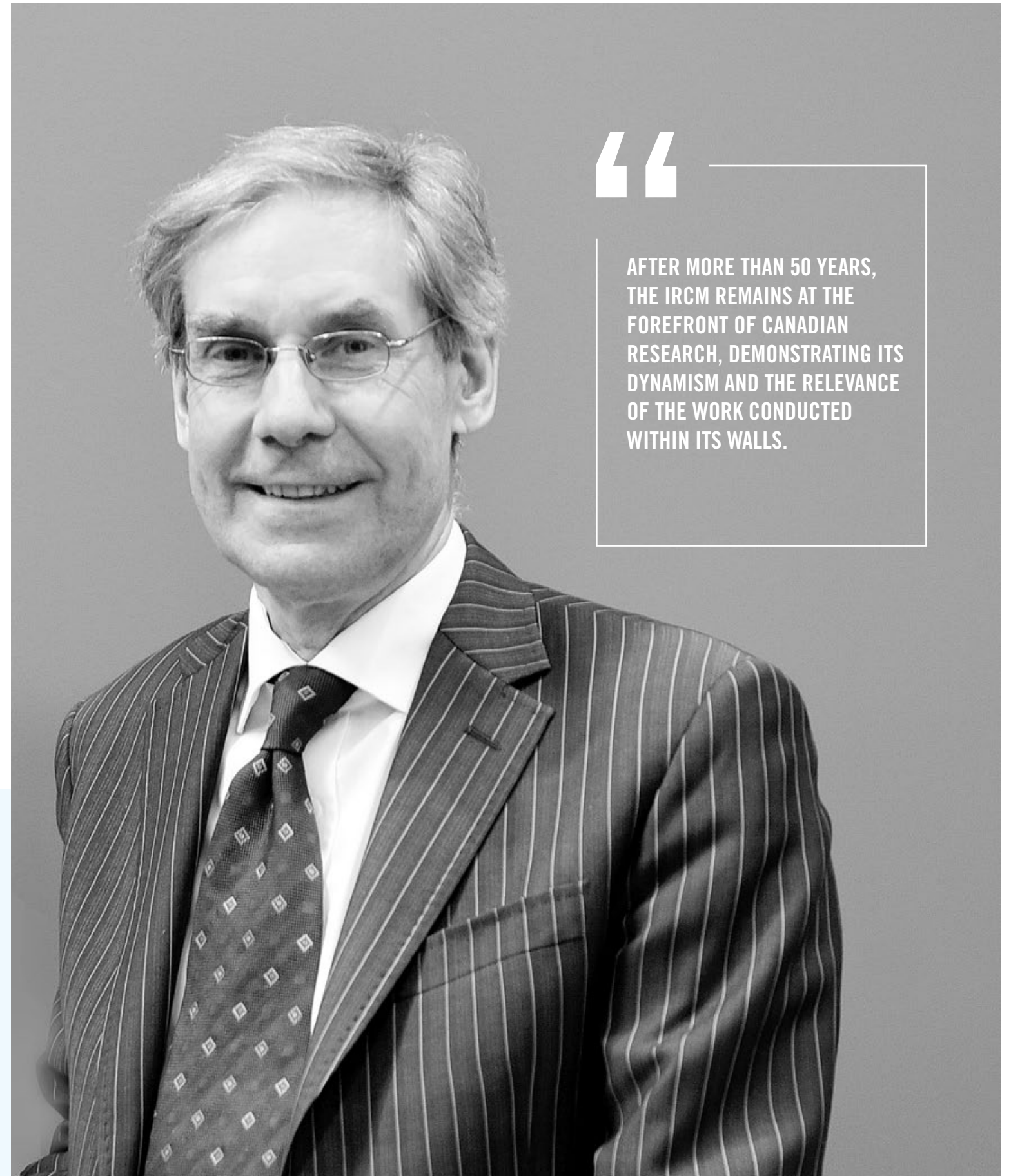
Even today, after more than 50 years, the IRCM remains at the forefront of Canadian research, demonstrating its dynamism and the relevance of the work conducted within its walls. I would like to thank each member of our community, our researchers, our students, our staff and our

partners, who together constitute the brains, the mobilizing force and the vitality of the Institute.

Together with you, we can look to the future with confidence!



PIERRE DUPLESSIS



“

AFTER MORE THAN 50 YEARS, THE IRCM REMAINS AT THE FOREFRONT OF CANADIAN RESEARCH, DEMONSTRATING ITS DYNAMISM AND THE RELEVANCE OF THE WORK CONDUCTED WITHIN ITS WALLS.

MESSAGE FROM THE PRESIDENT AND SCIENTIFIC

It is with great pride that I accepted the mandate to lead the IRCM in March 2019. From the moment of my arrival, I saw just how vibrant the Institute is, as evidenced by the activities of the past year reflected in this report.

Furthermore, I cannot ignore the colossal work accomplished thus far and the incredible potential passed down to us by the giants who preceded us.

With all of that in mind, I joined the IRCM to embrace our future prospects and work together towards an even more integrated approach to medical research. Several avenues have been identified, with an aim to consolidate and extend the Institute's prestige both locally and internationally, redefine its

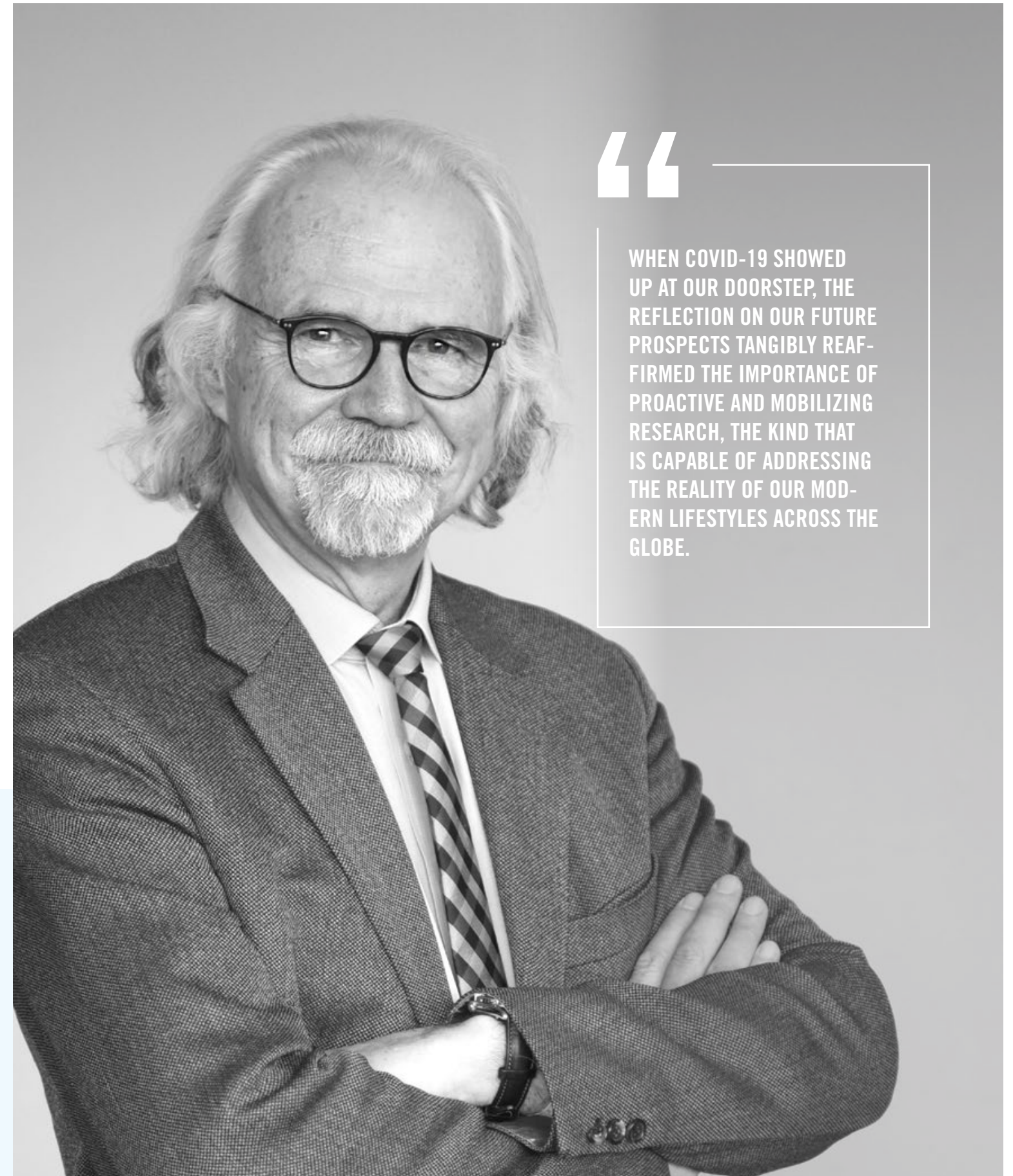
pioneering and unifying role in cutting-edge research, and mobilize its various stakeholders, to mention just a few. When COVID-19 showed up at our doorstep, this reflection tangibly reaffirmed the importance of proactive and mobilizing research, the kind that is capable of addressing the reality of our modern lifestyles across the globe.

This major challenge is certainly within our grasp, because we have all the conditions for success within our walls, through passion, collaboration, excellence, talent and a deep desire to push our limits. I would also like to take this opportunity to thank our partners, our collaborators, our donors and our beneficiaries, who are at the heart of this movement.

As you can see, I am absolutely enthusiastic when I think about everything that we are going to accomplish together!



MAX FEHLMANN



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WHEN COVID-19 SHOWED UP AT OUR DOORSTEP, THE REFLECTION ON OUR FUTURE PROSPECTS TANGIBLY REAFFIRMED THE IMPORTANCE OF PROACTIVE AND MOBILIZING RESEARCH, THE KIND THAT IS CAPABLE OF ADDRESSING THE REALITY OF OUR MODERN LIFESTYLES ACROSS THE GLOBE.

RESEARCH TO DISCOVER

35

MULTIDISCIPLINARY
RESEARCH LABORATORIES

5

RESEARCH DIVISIONS

165

PEER-REVIEWED
SCIENTIFIC PUBLICATIONS

6

CANADA RESEARCH CHAIRS

5

NEW GRANTS FROM THE
CIHR



CANCER AND GENETIC DISEASES



JEAN-FRANÇOIS CÔTÉ
Cytoskeletal Organization
and Cell Migration
Research Division Director



TARIK MÖRÖY
Hematopoiesis and Cancer



MARTIN SAUVAGEAU
Functional Genomics
and Noncoding RNAs



MARIE TRUDEL
Molecular Genetics
and Development



WILLIAM TSANG
Cell Division
and Centrosome Biology



JEAN VACHER
Cellular Interactions
and Development

CARDIOVASCULAR AND METABOLIC DISEASES



JENNIFER ESTALL
Molecular Mechanisms
of Diabetes
Research Division Director



BENOIT COULOMBE
Translational Proteomics



CHRISTIAN DESCHEPPER
Experimental Cardiovascular
Biology



MAY FARAJ
Nutrition, Lipoproteins and
Cardiometabolic Diseases



MATHIEU FERRON
Integrative and Molecular
Physiology



RÉMI RABASA-LHORET
Metabolic Diseases



NABIL G. SEIDAH
Biochimie neuroendocrinienne

IMMUNITY AND VIRAL INFECTIONS



WOONG-KYUNG SUH
Immune Regulation
Research Division Director



ÉRIC A. COHEN
Human Retrovirology



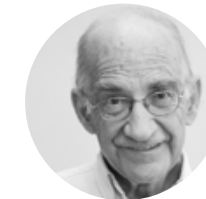
JAVIER DI NOIA
Mechanisms of Genetic
Diversity



EMILIA LIANA FALCONE
Microbiome and Mucosal
Defense



HUA GU
Molecular Immunology



PAUL JOLICOEUR
Molecular Biology



ANDRÉ VEILLETTE
Molecular Oncology

NEUROBIOLOGY AND DEVELOPMENT



MARIE KMITA
Genetics and Development
Research Division Director



MICHEL CAYOUCETTE
Cellular Neurobiology



FRÉDÉRIC CHARRON
Molecular Biology of Neural
Development



JACQUES DROUIN
Molecular Genetics



DAVID R. HIPFNER
Epithelial Cell Biology



ARTUR KANIA
Neural Circuit Development



ERIC RACINE
Pragmatic Health Ethics



HIDETO TAKAHASHI
Synapse Development
and Plasticity

SYSTEM BIOLOGY AND MEDICAL CHEMISTRY



NICOLE J. FRANCIS
Biochemistry of Epigenetic
Inheritance
Research Division Director



YVAN GUINDON
Bioorganic Chemistry



ÉRIC LÉCUYER
RNA Biology



MOHAN MALLESIAH
Stem Cells and Cell
Reprogramming



MARLENE OEFFINGER
Ribonucleoprotein Biochemistry



FRANÇOIS ROBERT
Chromatin and Genomic
Expression



PETER W. SCHILLER
Chemical Biology and Peptide
Research

RESEARCH DIVISIONS AND UNITS 2019-2020

CANCER AND GENETIC DISEASES CONQUERING CANCER

Accounting for more than 30% of all deaths in Canada, the roughly 200 different diseases commonly known as cancer represent the leading cause of death. Although scientific advances have led to a considerable improvement in survival rates, nearly 1 in 2 Canadians will be diagnosed with cancer during their lifetime, and about 1 out of 4 Canadians will die from it. The work carried out within the IRCM's Cancer and Genetic Diseases Research Division seeks to decipher the genetic basis of cancers and understand the mechanisms involved in their progression in order to find new ways of countering these diseases.

THE RESEARCH UNITS

- Cytoskeletal Organization and Cell Migration, **Jean-François Côté**, **Research Division Director**
- Cell Division and Centrosome Biology, **William Tsang**
- Functional Genomics and Noncoding RNAs, **Martin Sauvageau**
- Molecular Genetics and Development, **Marie Trudel**
- Hematopoiesis and Cancer, **Tarik Möröy**
- Cellular Interactions and Development, **Jean Vacher**

2

RESEARCH
CHAIRS

1

NEW GRANT
IN 2019-2020

13

PUBLICATIONS
IN 2019-2020

A MYSTERY UNRAVELLED

In a study published in the journal *Nature Cell Biology*, Jean-François Côté's team solved a 20-year-old mystery of cell biology. Using a new microscopic "fishing" technique, they threw "baits" to catch proteins and study them. They discovered thousands of interactions between proteins involved in the formation of the cytoskeleton.

CUTTING-EDGE EQUIPMENT TO REMAIN COMPETITIVE

Martin Sauvageau received \$400,000 in funding as part of the Canada Foundation for Innovation's 2018 Leaders Opportunity Fund competition. Together with the amount also obtained by Mohan Malleshaiah and a contribution from the IRCM Foundation, a total of \$761,000 will be invested in the purchase of five high-performance devices to further cutting-edge research.

“

WE AIM TO
TRANSFORM
LEUKEMIA AND
LYMPHOMA FROM
DEADLY CANCERS
TO MANAGEABLE
DISEASES.

TARIK MÖRÖY

A \$1.2 MILLION GRANT TO BETTER TARGET CERTAIN DIFFICULT-TO-TREAT CANCERS

Tarik Möröy and his IRCM team, in collaboration with Nicolas Moitessier, a specialist in medicinal and computational chemistry at McGill University, are working on a promising project that has been awarded a \$1.2 million grant from AmorChem. With this funding, the researchers will study the c-Myc oncogene, a gene involved in several types of cancer, which is particularly difficult to target in therapy.

CARDIOVASCULAR AND METABOLIC DISEASES

LIVING WITH A HEALTHY HEART

Cardiovascular diseases remain among the leading causes of death in the western world.

At the IRCM, researchers of this division work on the biology of cardiovascular and metabolic diseases. Collectively, their projects lead to a better understanding of these diseases' risk factors, including genetic factors, hypertension, dyslipidemia, endothelial cell dysfunctions and metabolic disorders.

Research is conducted by both basic and clinical researchers, thereby increasing collaborations and, in turn, reaffirming the clinical relevance of their work.

THE RESEARCH UNITS

- Molecular Mechanisms of Diabetes, **Jennifer Estall**, [Research Division Director](#)
- Biochemical Neuroendocrinology, **Nabil G. Seidah**
- Experimental Cardiovascular Biology, **Christian Deschepper**
- Metabolic Diseases, **Rémi Rabasa-Lhoret**
- Nutrition, Lipoproteins and Cardiometabolic Diseases, **May Faraj**
- Integrative and Molecular Physiology, **Mathieu Ferron**
- Translational Proteomics, **Benoit Coulombe**

6

RESEARCH CHAIRS

8

NEW GRANTS IN 2019-2020

54

PUBLICATIONS IN 2019-2020

COUNTERING COVID-19

With the arrival of the pandemic, Nabil G. Seidah and his team have been looking into furin, an enzyme that facilitates the cellular entry of the virus into the body. The team has identified strong furin inhibitors that could block infection in cultured cells. This promising work is expected to lead to clinical trials in 2021.

PREDICTING DIABETES

Published in *American Journal of Physiology*, a collaboration between the teams of Mathieu Ferron and Rémi Rabasa-Lhoret has led to a better understanding of the role of osteocalcin, a bone-derived hormone. In overweight people, they found that low osteocalcin levels were associated with higher glucose levels and the presence of diabetes. This new active osteocalcin test, now commercially available, could therefore help detect the risk of diabetes in overweight patients ahead of time.

“

WE HOPE THAT OUR WORK WILL HELP TO IDENTIFY NEW THERAPEUTIC TARGETS FOR DIABETES AND OTHER METABOLIC DISEASES.

JENNIFER ESTALL

THE SWORN ENEMY OF DIABETES COULD ULTIMATELY BE A VALUABLE ALLY

In a new study published in *Proceedings of the National Academy of Sciences (PNAS)*, Jennifer Estall and her team looked into the mechanism behind the role of glucagon in blood sugar levels. This role could be crucial and potentially protective in controlling insulin action, a new perspective that challenges the dogma that glucagon interferes with insulin action. Shedding light on the underlying mechanism paves the way for further studies on glucagon, towards new therapeutic targets for diabetes.

IMMUNITY AND VIRAL INFECTIONS

FIGHTING INFECTIOUS DISEASES

For some time now, our world has been facing an increase in allergic reactions, respiratory diseases and autoimmune diseases.

The world's populations are also facing an upsurge in infectious diseases that were thought to have been eradicated and the emergence of new viruses, such as COVID-19. In this context, the work of the Immunity and Viral Infections Research Division has become all the more meaningful, exploring new avenues to develop tomorrow's medical knowledge.

THE RESEARCH UNITS

- Immune Regulation, **Woong-Kyung Suh**, [Research Division Director](#)
- Molecular Biology, **Paul Jolicoeur**
- Molecular Immunology, **Hua Gu**
- Mechanisms of Genetic Diversity, **Javier Di Noia**
- Microbiome and Mucosal Defense, **Emilia Liana Falcone**
- Molecular Oncology, **André Veillette**
- Human Retrovirology, **Éric A. Cohen**

2

RESEARCH CHAIRS

6

NEW GRANTS IN 2019-2020

22

PUBLICATIONS IN 2019-2020

A CANADA RESEARCH CHAIR FOR EMILIA LIANA FALCONE

In the spring of 2019, Emilia Liana Falcone was awarded the Canada Research Chair in the Role of the Microbiome in Primary Immunodeficiency. This Chair represents an opportunity for her to propel her research work, train emerging scientists and contribute to future treatments for inflammatory bowel disease.

HIV: A DISCOVERY THAT BRINGS HOPE

Éric A. Cohen and Tram N. Q. Pham have identified a way to thwart HIV infection at a very early stage. Published in *Cell Reports*, their research identifies a window where it is still possible to prevent infection by multiplying a type of immune cells. Éric Cohen also leads the Canadian HIV Cure Enterprise (CanCURE), which received a \$6 million grant from the Canadian Institutes of Health Research this year.

“

THE MOST EFFECTIVE TOOL AGAINST CANCER AND INFECTIONS IS THE IMMUNE SYSTEM. HOW CAN WE HARNESS THE IMMUNE SYSTEM TO EFFECTIVELY FIGHT DISEASES?

ANDRÉ VEILLETTE

PREVENTING MICROBES FROM KILLING OUR CELLS

Led by researcher André Veillette, a discovery published in *Cell Reports* reveals a new mechanism that could protect humans against certain infectious diseases. "Some microbes cause diseases by punching holes in the external layer of cells and killing these cells," explains André Veillette. "We have identified a molecule in our body that can repair these holes and prevent the cells from dying."

NEUROBIOLOGY AND DEVELOPMENT

UNDERSTANDING THE NERVOUS SYSTEM

Embryonic development is carefully controlled by cellular and molecular mechanisms that ensure the proper functioning of our organs later on. Thus, any disruption of these mechanisms may give rise to diseases such as cancer, Parkinson's disease or Alzheimer's disease.

By studying the basic mechanisms of development, this research division explores new avenues with a specific objective: to broaden therapeutic options for neurodegenerative diseases, blindness, muscular dystrophies and hormonal deficiencies, while also exploring the accompanying essential ethical issues.

THE RESEARCH UNITS

- Genetics and Development, **Marie Kmita**, **Research Division Director**
- Epithelial Cell Biology, **David R. Hipfner**
- Molecular Biology of Neural Development, **Frédéric Charron**
- Neural Circuit Development, **Artur Kania**
- Synapse Development and Plasticity, **Hideto Takahashi**
- Pragmatic Health Ethics, **Eric Racine**
- Molecular Genetics, **Jacques Drouin**
- Cellular Neurobiology, **Michel Cayouette**

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RESEARCH CHAIRS

7

NEW GRANTS IN 2019-2020

31

PUBLICATIONS IN 2019-2020

NEURONS BETTER UNDERSTOOD

This year, Frédéric Charron's team shed light on a mechanism that tells our neurons how to build the delicate circuits of our nervous system, a discovery published in the journal *Neuron*. This improved understanding of how neurons work opens the door to new avenues of treatment for people with a spinal cord injury or a genetic disorder affecting their motor function.

SHEDDING LIGHT ON THE PITUITARY GLAND

Transcription and translation are two mechanisms responsible for the production of proteins in the body. In an article published in *Nature Communications*, Jacques Drouin's team shed light on the regulators of these mechanisms within the pituitary gland, the master gland for hormone production. These findings could explain hormonal deficiencies in humans and help improve performance in the production of essential proteins.

“

OUR GOAL IS TO IDENTIFY MOLECULAR MECHANISMS RESPONSIBLE FOR CONGENITAL DISEASES AND PROVIDE THE FUNDAMENTAL KNOWLEDGE TO HELP DEVELOP THERAPIES.

MARIE KMITA

SHEDDING LIGHT ON EMBRYO FORMATION

In an article published in the scientific journal *Developmental Cell*, Marie Kmita's team unveiled the molecular mechanism responsible for the formation of fingers and toes at the ends of the arms and legs. This discovery brings a new understanding of the development of not only fingers but also other organs that use the same network of genes for their formation.

SYSTEMS BIOLOGY AND MEDICINAL CHEMISTRY EXPLORING BIOLOGICAL SYSTEMS

The Institute plays a leading role in the revolution of this still-emerging discipline, which aims to explore and understand the complexity of biological systems by taking chemical biology into account. It then becomes possible to better understand cells functions and their disorders when a disease occurs.

THE RESEARCH UNITS

- Biochemistry of Epigenetic Inheritance, **Nicole J. Francis**, [Research Division Director](#)
- Ribonucleoprotein Biochemistry, **Marlene Oeffinger**
- Chemical Biology and Peptide Research, **Peter W. Schiller**
- RNA Biology, **Éric Léculyer**
- Stem Cells and Cell Reprogramming, **Mohan Malleshaiah**
- Bioorganic Chemistry, **Yvan Guindon**
- Chromatin and Genomic Expression, **François Robert**

1

RESEARCH
CHAIR

5

NEW GRANTS
IN 2019-2020

20

PUBLICATIONS
IN 2019-2020

DEVELOPMENT OF A CARDIOPROTECTIVE AGENT

In the spring of 2019, Yvan Guindon was among seven grant recipients of the Canadian Glycomics Networks (GlycoNet) who presented highly innovative projects. He thus received \$210,000 to develop a carbohydrate-based small molecule that protects heart muscles, helping to prevent heart failure.

INNOVATIVE WORK ON ALS

In the fall of 2019, Ulises Rodríguez Corona, a postdoctoral student at Marlene Oeffinger's laboratory, received a \$165,000 grant from the ALS Society of Canada. His work is aimed at understanding whether cell nucleus structures have therapeutic potential for amyotrophic lateral sclerosis (ALS).

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WE HOPE THAT OUR
WORK WILL HELP
TO IDENTIFY NOVEL
THERAPIES FOR
REGENERATIVE AND
PERSONALIZED
MEDICINE.

MOHAN MALLESHAIAH

A CUTTING-EDGE TOOL TO BETTER OBSERVE CELLS

In a study published in high impact factor journal *Nature*, Mohan Malleshaiah's team developed CellRouter, a new computational method to efficiently analyze complex single-cell genomics data. The new method allows to robustly interpret cells transition from one state to another. When applied to analyze blood stem cell differentiation, CellRouter helped discover new molecular regulators. This new tool will allow researchers to perform in-depth study of cells in diseases such as cancer.

TREAT TO HEAL

3

RESEARCH CLINICS

3

CLINICS SPECIALIZED
IN RARE DISEASES

91

ACTIVE CLINICAL STUDIES

19

NEW CLINICAL STUDIES EVALUATED
BY THE INSTITUTE'S RESEARCH ETHICS
COMMITTEE

26

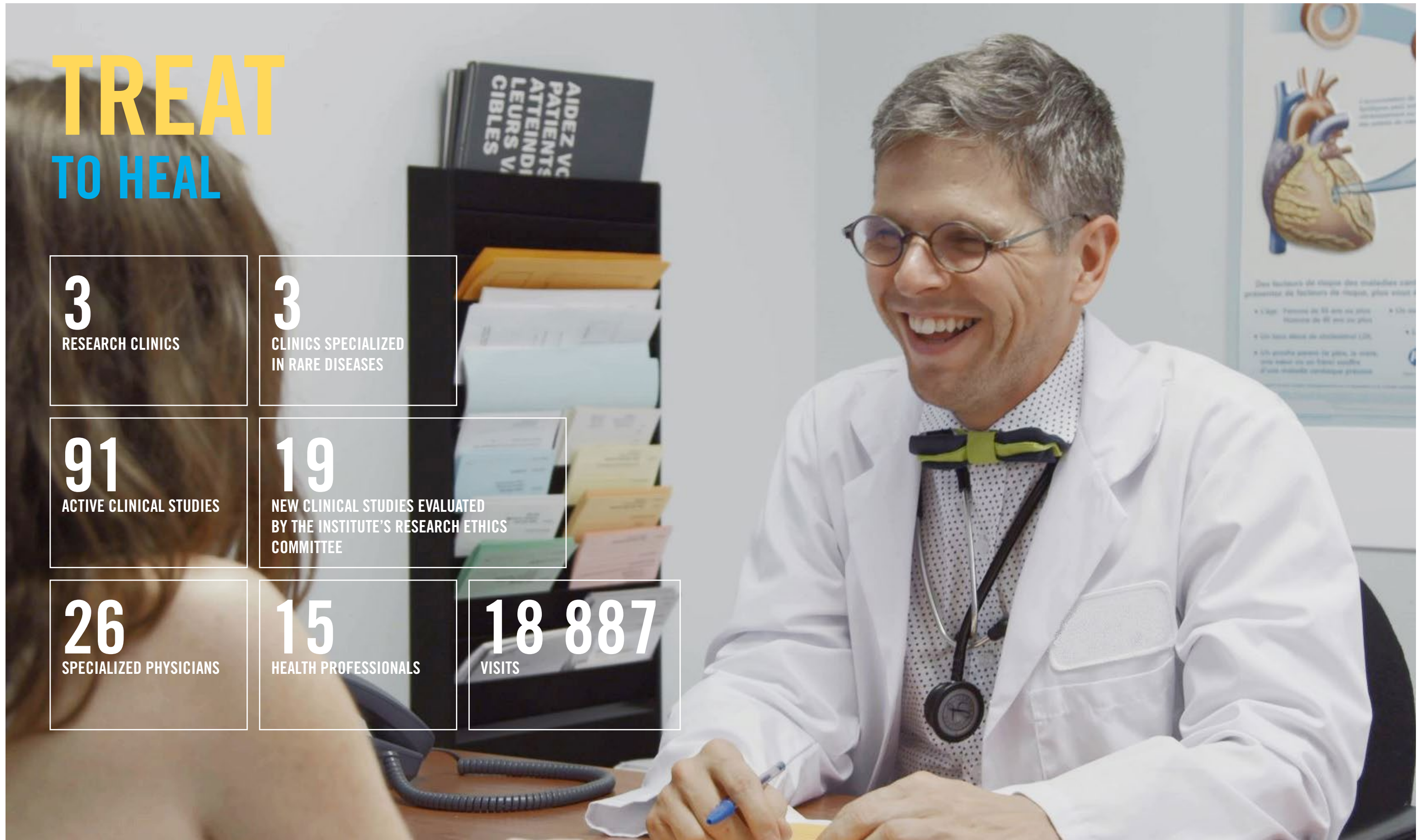
SPECIALIZED PHYSICIANS

15

HEALTH PROFESSIONALS

18 887

VISITS



Unique to Montreal, the Institute's clinics served nearly 5,000 patients this year, including 659 first-time patients. For these people, the Institute represents access to first-rate care from high-calibre specialists.

It is also an opportunity to benefit from cutting-edge research while participating in the identification of new treatments. IRCM patients are among the Institute's best ambassadors, actively promoting the importance of scientific advances. Their commitment is evident through their involvement with the Foundation, the Board and other IRCM bodies.



“

BASIC AND CLINICAL RESEARCH MUST GO HAND IN HAND FOR THE RESEARCH TO BEAR FRUIT. THIS SYNERGY IS IMPORTANT SO THAT THE RESULTS PRODUCED IN LABORATORIES CAN BE TAKEN UP, TESTED AND HIGHLIGHTED IN CLINICAL RESEARCH, IN ORDER TO PRODUCE TREATMENTS THAT WILL BENEFIT PATIENTS. IT IS ESSENTIAL IF WE WANT TO CONTINUE TO ADVANCE MODERN MEDICINE.

RÉMI RABASA-LHORET

THE IRCM CLINIC WELCOMES A NEW VICE PRESIDENT

Dr. Rémi Rabasa-Lhoret succeeds Dr. Yves Berthiaume as Vice President, Clinic and Clinical Research. In addition to directing the IRCM's clinic and clinical research, Dr. Rabasa-Lhoret will be responsible for the deployment of strategic initiatives and fostering links between basic research and clinical research within the IRCM.

DIABETES

RÉMI RABASA-LHORET
Clinic Director



HYPERTENSION

MAXIME LAMARRE-CLICHE
Clinic Director



LIPIDS

SOPHIE BERNARD
Clinic Director



**OUR
RESEARCH
CLINICS**

DIABETES CLINIC

The IRCM Diabetes Clinic treats patients with type 1 and type 2 diabetes. It offers specialized care, conducts teaching tasks for patients and health professionals, and carries out research projects. In the past year, the Diabetes Clinic conducted 29 clinical research projects. The team also launched the BETTER registry, which aims to better identify the needs of Quebecers living with type 1 diabetes in order to improve treatments and quality of life.

HYPERTENSION CLINIC

The IRCM Hypertension Clinic assesses and treats patients who have rare disorders of blood pressure regulation. A pioneer in Canada in this field of expertise, the clinic teaches and conducts research efforts focused on new methods of diagnosis, monitoring and treatment, aiming to improve hypertensive patient care. This year, 9 clinical research projects were conducted at the Hypertension Clinic.

**LIPIDS, NUTRITION AND
CARDIOVASCULAR
PREVENTION CLINIC**

The Lipids, Nutrition and Cardiovascular Prevention Clinic assesses and treats patients with high cholesterol and/or triglyceride levels, and who are at risk of developing cardiovascular or metabolic diseases. To better understand the origin of these lipid disorders and their complications, the team is studying nutritional, biochemical, genetic, molecular and pharmacological aspects of these issues to offer more effective treatments and to reduce complications. Thus, there have been 8 clinical research projects and 4 therapeutic trials in 2019-2020.



I'VE HAD CHOLESTEROL SINCE CHILDHOOD. IT'S GENETIC. STAYING HEALTHY IS MY PRIORITY AND I FEEL THAT IT IS JUST AS MUCH A PRIORITY FOR THE IRCM CLINIC AND ITS EMERGING PROFESSIONALS.

ALEXANDRE BARRETTE
Patient of the IRCM's Lipids, Nutrition and Cardiovascular Prevention Clinic



GENETIC DYSLIPIDEMIAS

SOPHIE BERNARD
Clinic Director

OUR CLINICS SPECIALIZED IN RARE DISEASES



PRIMARY IMMUNODEFICIENCY

HUGO CHAPDELAINÉ
Clinic Director



RARE KIDNEY DISEASES

GUILLAUME BOLLÉE
Clinic Director

GENETIC DYSLIPIDEMIAS

The Genetic Dyslipidemias Clinic assesses and treats individuals with rare and severe cases that lead to a significant increase in blood cholesterol and/or triglyceride levels, which can cause cardiovascular or pancreatic complications. In addition, the team carries out research projects to improve screening, diagnosis and treatments of genetic dyslipidemias to provide personalized care and to reduce complications.

PRIMARY IMMUNODEFICIENCY

The Primary Immunodeficiency Clinic assesses and treats patients who, due to a dysfunctional immune system, are at risk of frequent, long-term, severe or atypical autoimmune manifestations and infections. There are an estimated 13,000 such patients in Canada.

The clinic's staff also collaborates with researchers of the IRCM's Immunity and Viral Infections Research Division to better understand the evolution of primary immunodeficiency in order to identify appropriate treatments.

RARE KIDNEY DISEASES

The Rare Kidney Diseases Clinic assesses and treats patients with various kidney diseases including: polycystic kidney disease, thrombotic microangiopathies, tubulopathies, tubulointerstitial kidney diseases and hereditary glomerulopathies. The research protocols that are carried out mainly focus on new methods of diagnosis, monitoring and treatment in order to define a better approach for patient management.



“

THE IRCM'S RESEARCH CENTRE ON RARE AND GENETIC DISEASES IN ADULTS MEETS CRITICAL NEEDS. AS PARENTS, ADVANCING KNOWLEDGE IN THIS FIELD ENCOURAGES US TO HOPE FOR A FUTURE FOR OUR CHILDREN.

ISABELLE CANTIN member of the IRCM Foundation Board and mother of Camille and Sophie, who have empty sella syndrome.

A LOOK BACK ON THE FIRST YEAR OF THE GENETIC DYSLIPIDEMIAS CLINIC

Opened in March 2019, the Genetic Dyslipidemias Clinic got off to a spectacular start. With its multidisciplinary team of health professionals, it has helped to diagnose over a hundred patients so far.

In collaboration with other institutions, the clinic launched three pharmaceutical studies and several research projects concerning nutritional intervention during severe hypertriglyceridemia, pancreatitis secondary to severe hypertriglyceridemia, lipid disorders in connection with nephrotic syndrome and lipoprotein lipase deficiency.

Beyond Canadian borders, this rare disease clinic has initiated a worldwide collaboration for data collection.

Internationally, this is the first study to validate a risk score to predict the occurrence of cardiovascular events.

Lastly, over the past year, Dr. Sophie Bernard was invited to participate on the Quebec Rare Diseases Advisory Committee and the Montreal InVivo Rare Disease Expert Committee.

A first year full of accomplishments!



“

THROUGH OUR WORK, WE SEEK TO DEVELOP PRECISION MEDICINE TO PROVIDE PERSONALIZED CARE TO EACH OF OUR PATIENTS WITH LIPID DISORDERS.

SOPHIE BERNARD
Genetic Dyslipidemias Clinic Director

TRAIN TO DEVELOP

267

STUDENTS AND POSTDOCTORAL FELLOWS:
93 INTERNS, 49 MASTER'S STUDENTS, 80 PHD
STUDENTS AND 45 POSTDOCTORAL FELLOWS

47

COMPLETED TRAININGS AT THE MASTER'S AND PHD LEVELS
INCLUDING 14 POSTDOCTORAL FELLOWSHIPS

122

SCHOLARSHIPS AWARDED

750+

HOURS OF TEACHING BY OUR RESEARCHERS
AT UNIVERSITÉ DE MONTRÉAL AND MCGILL UNIVERSITY



The IRCM's mission is to train the next generation of high-calibre researchers. During the past year, a total of 32 new graduate students and postdoctoral fellows from all over the world have joined the Institute to improve their knowledge and consolidate their scientific career. Thus, they can benefit from the expertise of eminent researchers, while discovering an environment where basic and clinical research come together to optimize the impact of the research.

“

THE NEXT GENERATION OF SCIENTISTS AT THE IRCM IS PRIVILEGED TO RELY ON OVER 50 YEARS OF EXPERTISE AND SUCCESS. QUEBEC CAN BE VERY PROUD OF THIS WORLD-RENOWNED INSTITUTE.

RÉMI QUIRION Chief Scientist of Quebec

“

WE DESPERATELY NEED NEW IDEAS AND SOLUTIONS TO ADDRESS GLOBAL HEALTH CHALLENGES. IT IS THEREFORE ESSENTIAL TO PROMOTE THE NEXT GENERATION OF SCIENTISTS.

DETLEV GANTEN Founding President of the World Health Summit and IRCM alumnus



DRIVEN BY EXCELLENCE



This year, the IRCM welcomed a new group of master's students in Molecular and Cellular Medicine (MCM). Hailing from Quebec, Jordan, India and Singapore, these students form the seventh cohort of the MCM program, which began in 2013. Each student enrolled receives a Bombardier-Molson scholarship valued at \$20,000.

49
SCHOLARSHIPS FROM EXTERNAL
FUNDING AGENCIES

36
SCHOLARSHIPS FROM UNIVERSITY
DEPARTMENTS

37
SCHOLARSHIPS FROM
THE IRCM FOUNDATION

OUR STUDENTS STAND OUT

Amaryllis Ferrand is the 2019 recipient of the prestigious Vanier Scholarship. She conducts her work in the Pragmatic Health Ethics Research Unit, in addition to being a PhD student in biomedical sciences at Université de Montréal's Faculty of Medicine. Amaryllis is also a doctor specialized in neonatology.

Among the most prestigious scholarships in Canada, the Vanier Scholarship is awarded to students who have distinguished themselves by their academic excellence, the quality of their research work and their leadership skills.



“

I CHOSE THE IRCM'S MCM MASTER'S PROGRAM BECAUSE IT OFFERS AN INNOVATIVE CURRICULUM THAT ALLOWS YOU TO LEARN BOTH CLINICAL RESEARCH NEEDS AND THE LATEST TECHNOLOGIES IN BASIC RESEARCH. THE MCM PROGRAM GAVE ME AN OVERVIEW AND GUIDED MY CHOICE OF DOCTORAL STUDIES AT THE INSTITUTE.

YANNICK CYR Postdoctoral fellow at NYU Langone Medical Center

THE MCM PROGRAM PROVES ITS WORTH

February 2020 marked a special moment for the next generation of scientists at the Institute. Indeed, Yannick Cyr as the first student in the master's program in Molecular Biology, Molecular and Cellular Medicine (MCM) option, to defend his doctoral thesis. His career path led him to pursue postdoctoral studies at New York University's renowned Langone Medical Center.

The IRCM's intensive MCM master's program allows direct passage to doctoral studies. It aims to train a new generation of scientists in molecular biology who are sensitive to a global vision of the study of human diseases. Affiliated with Université de Montréal's Faculty of Medicine, the program welcomed its 7th cohort in 2019.

OUR STUDENT AND POSTDOC ASSO

The IRCM Student Association brings together a number of students from all over the world at various stages of their academic career. The ASSO is therefore a place for meeting and exchange where this diversity plainly manifests itself, contributing to the vitality of the Institute.

EXECUTIVE COMMITTEE

Co-Presidents: Sepideh Mikaeeli and Aurélie Fallon

Treasurers: Thulaj Meharwade and Thomas Brown

Communications: Joanna Li and Vincent Penneton

Scientific Life Representatives: Sarah Nahle, Sophie Ehresmann and Marion Lacroix

Sepideh Mikaeeli and Aurélie Fallon share the presidency of the IRCM Student Association. Respectively a doctoral student and a master's student at the IRCM, these two determined young women are committed to making the Institute a welcoming place for students from all around the globe.

"The IRCM is a wonderful institute that welcomes students from diverse backgrounds. That's why the student association is so important. It is not just a gathering place, it is also a community that fosters a rich social, cultural and educational environment

for our students. It is the ideal place for students to discuss and share about their reality, their difficulties and the opportunities given to them to improve their learning. In this sense, the student association gives students a voice.

The support that students receive from the Institute is truly incredible. It is tangible not only through the student association's committee and activities, but also through scholarships for student training. The IRCM is an excellent place of learning where students are valued and are given the opportunity to develop to their full

potential. From an academic point of view, students can benefit from a resource-rich environment surrounded by world-class researchers.

Students who wish to pursue a career in biomedical research should certainly consider the IRCM among their choices!"

Sepideh Mikaeeli - Aurélie Fallon



“

THE STILL-UNTAPPED POTENTIAL OF THE NEXT GENERATION OF RESEARCHERS IS A POWERFUL LEVER THAT WILL HELP US ADDRESS SOME OF THE MOST PRESSING CHALLENGES IN GLOBAL HEALTH WORLDWIDE.

DAVID EIDELMAN Dean of the Faculty of Medicine of McGill University

OUTREACH THROUGH EXCELLENCE

160+

CONFERENCES AND SEMINARS GIVEN BY
OUR RESEARCHERS IN MORE THAN 60 CITIES AROUND THE WORLD

56

SPEAKERS INVITED TO
IRCM ACTIVITIES, CONFERENCES,
AND SEMINARS



2019



THE IRCM, A LEADER IN QUEBEC'S SCIENTIFIC LANDSCAPE

April 2019 saw the first edition of Effervescence, the first major event on the future of life sciences in Quebec. The IRCM dazzled over 550 participants by holding a plenary session on rare diseases, which was moderated by science journalist Sophie-Andrée Blondin.

At the close of the day, **Tarik Möröy**, Director of the IRCM's Hematopoiesis and Cancer Research Unit, was among the three finalists in the Knock Out challenge. During this challenge, university researchers showcased their work to a panel of experts in order to qualify for \$500,000 in AmorChem funding. **Mathieu Ferron**, in turn, won an Effervescence Stars award, a distinction given to 10 young and talented Quebec university researchers who distinguished themselves through their research and their partnerships with the life sciences industry.



AN INSTITUTE OPEN TO THE WORLD

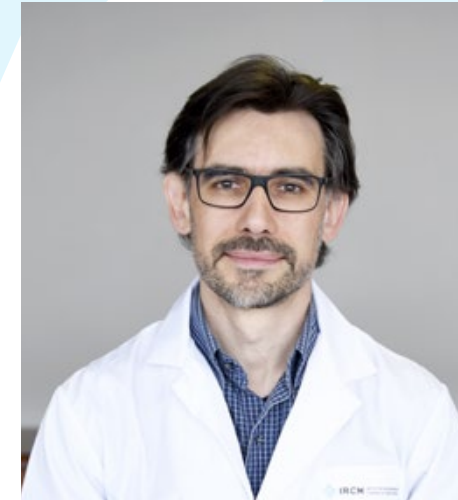
In April, in front of a packed and captivated room, renowned artificial intelligence researcher **Yoshua Bengio** delivered a lecture at the IRCM, entitled Deep Learning for Health Care. A professor at Université de Montréal and a co-awardee of the prestigious A.M. Turing Award, Yoshua Bengio is recognized as one of the world's leading experts in artificial intelligence and a pioneer in deep learning.

In July, the IRCM also welcomed a delegation from one of China's top universities, Huazhong University of Science and Technology (HUST), and its affiliated institution Tongji Medical College (TMC). Led by **Jian-Guo Chen**, Vice President of HUST and Dean of TMC, the delegation met with senior leadership and IRCM researchers in a formal meeting where opportunities for collaborations were discussed with keen interest.



A 3RD SCIENTIFIC FORUM TO PROMOTE COLLABORATION

In June, over 160 people took part in the IRCM's 3rd Scientific Forum, an event exclusively for members of the Institute. Over 80 students and researchers presented their work, allowing their colleagues to learn more about their projects and their most recent achievements. A total of 25 awards were presented to students who distinguished themselves by the quality of their presentations. It was an enriching activity that helped to foster collaboration and internal synergy while promoting scientific reflection.



THE IRCM STANDS OUT IN FRQ-S COMPETITIONS

Thanks to the excellence of their research work and their academic record, fifteen members of the IRCM community have obtained grants from the Fonds de recherche du Québec - Santé (FRQ-S). More than \$1.7 million was awarded to three researchers, **Javier Di Noia**, **Eric Racine** and **Éric Lécyer**, as well as to 12 students and postdoctoral fellows of the Institute. Javier Di Noia and Eric Racine represent two of the four recipients of the FRQ-S Research Scholar Emeritus, while Éric Lécyer was awarded the distinction of Senior Research Scholar.



AN INTERNATIONAL REVIEW COMMITTEE TO DESIGN THE IRCM OF TOMORROW

As part of the reflection on the Institute's future prospects, a review committee was set up in the fall of 2019. Made up of Canadian, American and European scientists, the committee met at the Institute to conduct a comprehensive assessment of its performance and operations. To this end, the committee met with all researchers and top leadership. In addition to providing an independent perspective on the Institute's processes, this exercise was also an excellent opportunity to discuss best practices, trends in biomedical sciences and, above all, the avenues to be explored in order to design the IRCM of tomorrow.

2020



INTERVIEW WITH CLAUDE CASTONGUAY: TAKING STOCK OF THE FUTURE OF THE HEALTH SYSTEM

The Pragmatic Health Ethics Research Unit had the immense honour of welcoming none other than **Claude Castonguay** as part of the Montreal Health Ethics Conference Series. Claude Castonguay is an important figure in the history of Quebec, father of Medicare, and former Quebec Minister of Health, Family and Social Welfare.

OVERVIEW OF THE IRCM IN THE MEDIA



In the fall of 2019, **Chantale Blais**, a nutritionist at the IRCM, was a guest on the program *L'Épicerie* on Ici Radio-Canada Télé, where she took stock of what the science says about the risks associated with eating red meat.



In the spring of 2019, an article by Jean-François Guillet in *La voix de l'Est* highlighted two patients of **Rémi Rabasa-Lhoret** at the IRCM Diabetes Clinic. Thanks to research advances, these patients benefit from innovative treatments that improve their quality of life.



As the Quebec government moves forward with legislation on medical assistance in dying, fears persist. On CBC/Radio-Canada, **Eric Racine** reiterates the importance of reflection and dialogue on ethical issues relating to the well-being of individuals and the framework for decision-making processes.



In the October issue of *L'Actualité* magazine, **Maxime Lamarre-Cliche** explained how to optimize the use of medication to prevent heart attacks in people with high blood pressure.



Speaking with Sophie-Andrée Blondin on Ici Radio-Canada Première's *Les années lumière* program, researcher **Marie Kmita** explained the fascinating phenomenon of phantom muscles in the human embryo.

THE IRCM'S EXPERTS ARE OFTEN INVITED BY THE MEDIA TO COMMENT ON A VARIETY OF CURRENT EVENTS AND HEALTH TOPICS. IN THE PAST YEAR, THIS RESULTED IN OVER A HUNDRED INTERVIEWS AND MEDIA PUBLICATIONS.

AWARDS AND HONOURS



BENOIT COULOMBE
Bell-Bombardier Chair of Excellence - IRCM



JAVIER DI NOIA
Research Scholar Emeritus - FRQ-S



JENNIFER ESTALL
Research Scholar Emeritus - FRQ-S
Pierre Bois Award of Excellence - IRCM



MATHIEU FERRON
Effervescence Stars Award - Effervescence Montreal Conference
Jean Davignon Young Investigator Award - FRQ-S, CMDO and Novo Nordisk



TARIK MÖRÖY
Merit Award - IRCM



MARLENE OEFFINGER
Research Scholar: Junior 2 - FRQ-S



ERIC RACINE
Research Scholar: Junior 2 - FRQ-S
Marcel Piché Prize - IRCM



NABIL G. SEIDAH
McGill University Louis and Artur Lucian Award for Research in Circulatory Diseases - McGill University's top award for cardiovascular research in Canada



ANDRÉ VEILLETTE
Research Chair in Immune System Signalling (Tier 1) - Canada Research Chair

TECHNOLOGY TRANSFER

FOR ADVANCEMENT

80%

OF IRCM RESEARCHERS HAVE SHARED THEIR DISCOVERIES WITH THE TECHNOLOGY TRANSFER OFFICE

40

PATENTS ISSUED OVER THE PAST 34 YEARS

4

NEW PATENT APPLICATIONS FILED IN 2019-2020

\$8.9 M

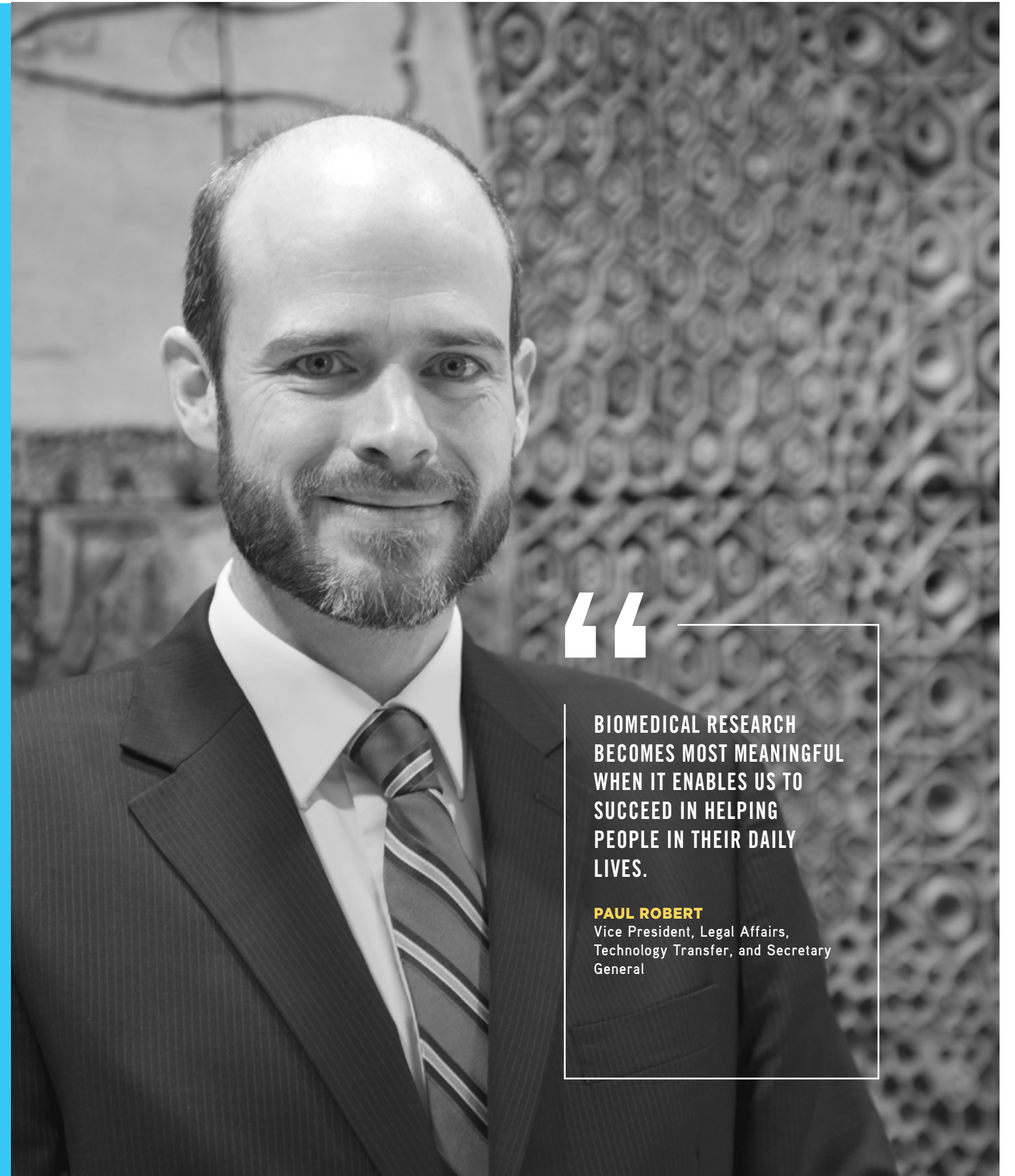
IN CUMULATIVE REVENUE FOR THE INSTITUTE, ITS LABORATORIES AND ITS RESEARCHERS OVER THE PAST 14 YEARS



The IRCM's contribution to Quebec's socioeconomic development constitutes an important element of its mission.

In collaboration with Univalor, a university technology transfer organization, the IRCM's Technology Transfer Office carries out the Institute's mission by facilitating the commercial development of new discoveries.

More specifically, the Office helps set up and facilitates partnerships between IRCM researchers, universities, research institutes and the industry, whether it be for a research collaboration, a licence, a research contract or material transfer.



“

BIOMEDICAL RESEARCH
BECOMES MOST MEANINGFUL
WHEN IT ENABLES US TO
SUCCEED IN HELPING
PEOPLE IN THEIR DAILY
LIVES.

PAUL ROBERT

Vice President, Legal Affairs,
Technology Transfer, and Secretary
General

CORE FACILITIES

8

NEW PIECES OF EQUIPMENT

\$202,317

VALUE OF NEW EQUIPMENT

50-237

INTERNAL USERS
OF EACH OF THE FACILITIES

3,750

PIECES OF EQUIPMENT
200 OF WHICH ARE ULTRA-SPECIALIZED



The core facilities are a great asset for the scientific community. They allow IRCM scientists to pool their resources and equipment to give everyone access to a greater variety of tools and technologies.

In terms of surface area, the Institute's infrastructure covers the size of two National Hockey League rinks.

The facilities also represent an undeniable learning platform for the Institute's students.



“

HAVING THIS TYPE OF TECHNOLOGY PARK GIVES THE INSTITUTE'S RESEARCHERS A COMPETITIVE ADVANTAGE. IMMEDIATE ACCESS TO A RANGE OF DEVICES ALSO BENEFITS THE YOUNG RESEARCHERS WE RECRUIT. THEY CAN START THEIR LABS FASTER, BECAUSE WE ALREADY HAVE MOST OF THE EQUIPMENT THEY NEED, PLUS THE STAFF TO SUPPORT THEM.

JUDITH COTTON-MONTPETIT Director, Core Facilities and Research Infrastructure

CORE FACILITIES



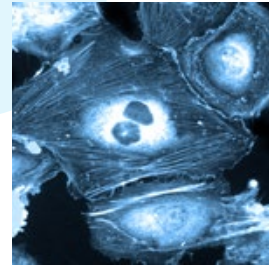
ANIMAL FACILITIES AND ANIMAL HEALTH

Promote and ensure the application of animal care and protection principles in accordance with the Canadian Council on Animal Care's standards and guidelines and provides technical assistance to researchers for experimental research programs.



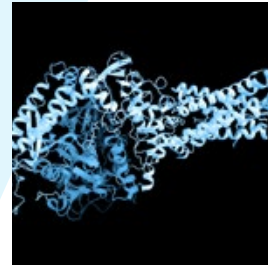
BIOINFORMATICS

Supports researchers in the analysis of biological data, particularly high-throughput genomic data.



HISTOLOGY

Provides expertise in tissue sections and staining for optical microscopy and analysis.



MASS SPECTROMETRY AND PROTEOMICS

Offers state-of-the-art mass spectrometry services for the identification, characterization and quantification of proteins and small molecules.



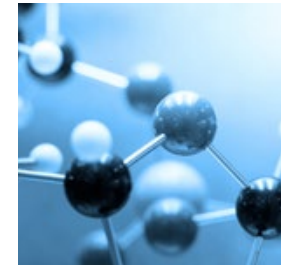
MICROINJECTION AND TRANSGENESIS

Allows the production of experimental models of human diseases to accelerate the understanding of their causes and progression.



MICROSCOPY AND IMAGING

Provides state-of-the-art fluorescence microscopes for observation of cells and tissues at different magnification and accuracy, as well as equipment for high-throughput microscopy and videomicroscopy.



MOLECULAR BIOLOGY AND FUNCTIONAL GENOMICS

Provides a range of services combining advice and access to state-of-the-art technology to meet the needs of genetic analysis and gene expression, with new high-throughput sequencing technique, which is now a standard technique in biomedical and enables a large amount of data acquisition in one experiment.



FLOW CYTOMETRY

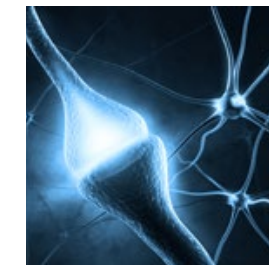
Provides characterization services of a large number of cells simultaneously as well as cell sorting using flow cytometry as a multiparametric analysis tool.

RESEARCH PLATFORM



RESEARCH PLATFORM ON OBESITY, METABOLISM AND DIABETES

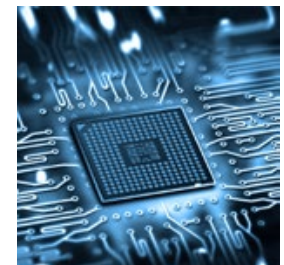
SPECIALIZED SERVICES



ELECTROPHYSIOLOGY



NUCLEAR MAGNETIC RESONANCE



SPECIALIZED EQUIPMENT

FINANCIAL STATEMENTS



	Operating Funds		Research Funds		Restricted Funds Capital Asset Funds	
	2020	2019	2020	2019	2020	2019
	\$	\$	\$	\$	\$	\$
REVENUES						
Peer review grant program	—	—	16,483,908	16,980,239	—	—
Grant from ministère de l'Économie et de l'Innovation (MEI)	—	—	12,000,000	—	—	—
Grants - Research infrastructure	—	—	1,178,175	1,178,174	—	—
Grants - Interest portion	—	—	—	—	402,767	512,200
Other research grants	—	—	2,465,845	1,666,240	—	—
Restricted donations	—	—	100,995	200,730	—	—
MEI grant - First agreement	15,842,313	15,842,313	600,000	600,000	—	—
MEI grant - Second agreement	2,700,000	2,210,000	—	—	—	—
Federal grant from the Research Support Fund	1,543,917	1,341,595	—	—	—	—
Supplementary project grant arising from Research Support Fund	—	—	—	—	—	—
Grant from peer committee organizations for indirect costs	—	—	228,179	—	—	—
Donation from the Fondation de l'IRCM	267,993	205,252	—	—	—	—
Management fee revenues from the Fondation de l'IRCM	—	—	2,594,188	1,630,080	—	—
Investment income	784,112	641,708	—	—	—	—
Change in unrealized fair value of investments	329,000	245,000	—	—	—	—
	197,852	299,745	163,950	148,504	—	—
	(53,795)	8,227	—	—	—	—
	21,611,392	20,793,840	35,815,240	22,403,967	402,767	512,200
EXPENSES						
Research Fund expenses for the year	—	—	20,940,900	19,660,266	—	—
Operating Fund expenses for the year	20,780,638	20,000,298	—	—	—	—
Donations to the Fondation de l'IRCM	—	—	—	65,000	—	—
Amortization of capital assets	—	—	—	—	5,754,978	5,936,284
Interest on notes payable	—	—	—	—	402,767	512,200
Loss on sale of capital assets	—	—	—	—	6,782	440
Share in the loss of the subsidiary	—	—	222,577	644,454	—	—
	20,780,638	20,000,298	21,163,477	20,369,720	6,164,527	6,448,924
Excess (deficiency) of revenues over expenses	830,754	793,542	14,651,763	2,034,247	(5,761,760)	(5,936,724)

SUMMARIZED STATEMENT OF CHANGES IN FUND BALANCES

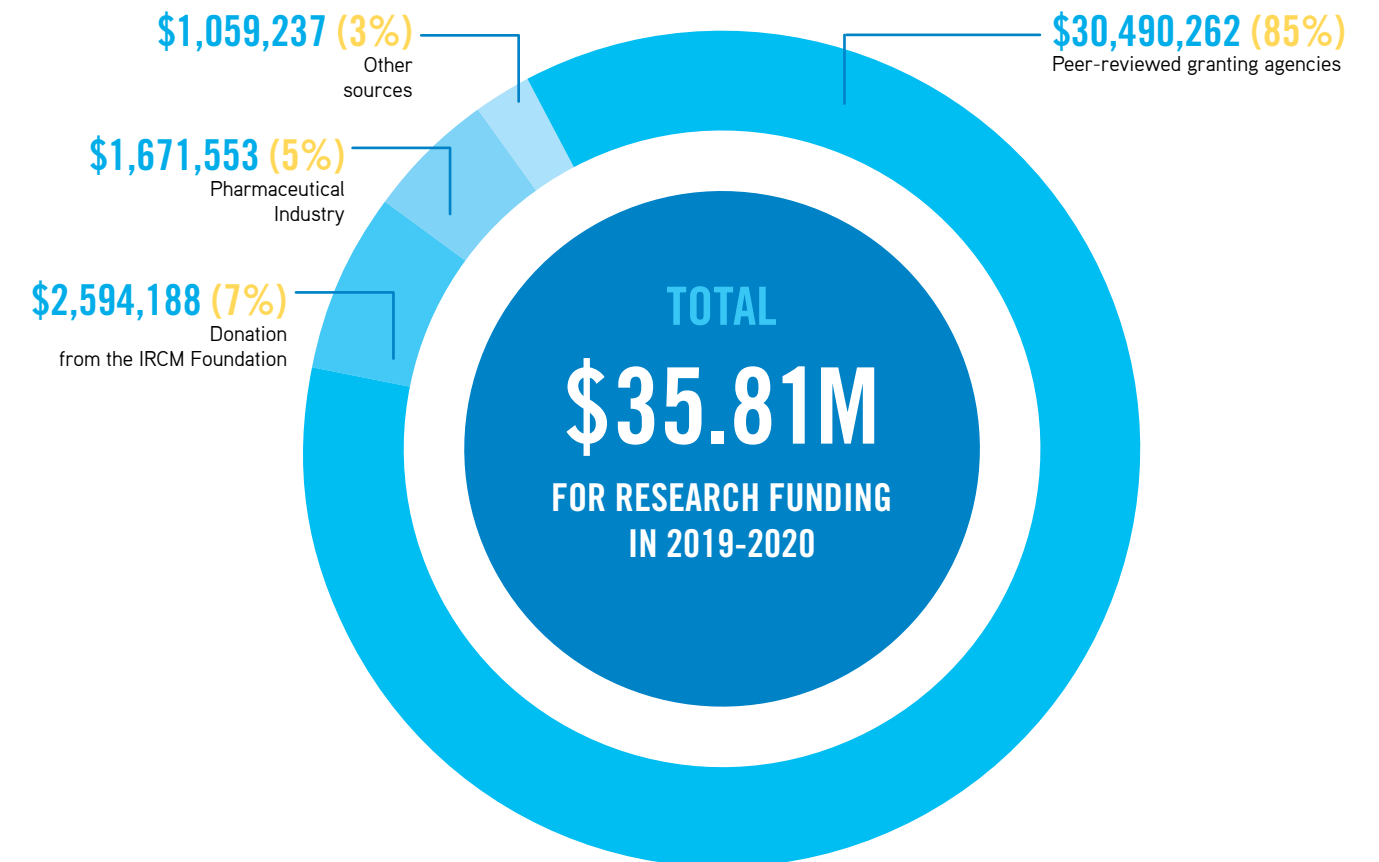
MARCH 31, 2020

	Operating Funds		Research Funds		Restricted Funds Capital Asset Funds	
	2020	2019	2020	2019	2020	2019
	\$	\$	\$	\$	\$	\$
Fund balances, beginning of year	—	(289,225)	8,516,236	9,385,790	38,392,121	40,920,727
Excess (deficiency) of revenues over expenses	830,754	793,542	14,651,763	2,034,247	(5,761,760)	(5,936,724)
Change in remeasurments and other recognized items	(260,200)	—	—	—	—	—
Interfund transfers	(570,554)	(504,317)	(24,177)	(2,903,801)	594,731	3,408,118
Fund balances, end of year	—	—	23,143,822	8,516,236	33,225,092	38,392,121

**SUMMARIZED
STATEMENT
OF OPERATIONS**
MARCH 31, 2020

ASSETS (CURRENT ASSETS)	2020 \$	2019 \$
Cash	61,836,356	10,160,775
Investments	3,055,724	4,882,492
Grants receivable and other receivables	2,138,170	2,354,843
Donation receivable from the Fondation de l'IRCM	1,899,243	677,922
Advances from the Fondation de l'IRCM, non-interest-bearing	39,429	20,151
Grants receivable	5,049,804	7,852,444
Prepaid expenses	243,104	215,495
	74,261,830	26,164,122
Investments	780,738	3,847,231
Investment in a subsidiary	311,053	293,728
Grants receivable	5,967,958	8,155,862
Capital assets	33,225,092	38,392,121
	114,546,671	76,853,064
LIABILITIES (CURRENT LIABILITIES)		
Line of credit	—	3,179,477
Accounts payable and accrued liabilities	1,621,293	1,544,361
Accrued interest payable	72,463	96,080
Salaries and wages payable	4,012,917	4,032,040
Notes payable	4,977,341	4,576,887
	10,684,014	13,428,845
Notes payable	5,967,958	8,155,862
Defined benefit obligation of the supplemental pension plan	893,000	570,000
Deferred grants	40,632,785	7,790,000
	58,177,757	29,944,707
FUND BALANCES		
Invested in capital assets	33,225,092	38,392,121
Externally imposed restrictions	25,396,675	12,950,060
Internally imposed restrictions (deficit)	(1,992,653)	(4,433,824)
Remeasurments and other recognized items related to the supplemental pension plan	(260,200)	—
	56,368,914	46,908,357
	114,546,671	76,853,064

RESEARCH FUNDING



PEER-REVIEWED GRANTING AGENCIES

Apogée Canada
Bill Gates Foundation
Brain Canada
International Research Development Center
Canada Research Chairs
Social Sciences and Humanities Research Council
Natural Sciences and Engineering Research

Council of Canada
Diabète Canada
Fondation Aclon
Canada Foundation for Innovation
Fonds de recherche du Québec – Santé
Foundation Fighting Blindness Canada
Leukodystrophy's Foundation
Génome Québec
Canadian Institutes of Health Research
Institut Mérieux

Juvenile Diabetes Research Foundation
Krembil Foundation
Larry L. Hillblom Foundation
Ministère de l'Économie, de la Science et de l'Innovation du Québec
National Institutes of Health
Parkinson Canada
Canadian Glycomics Network
Réseau québécois de recherche sur la douleur

Quebec Respiratory Health Research Network
Cardiometabolic health, Diabetes and Obesity Research Network
Alzheimer Society
ALS Society of Canada
Canadian Cancer Society
Cancer Research Society
Sick Kids Foundation
US Army Medical Research Acquisition Activity

PHARMACEUTICAL INDUSTRY

Abbott
Akcea Therapeutics
Amgen
Amorchem Therapeutics Inc.
AstraZeneca Canada
Bristol Myers Squibb
Eli Lilly
GlaxoSmithKline
Ionis Pharmaceuticals
Janssen inc.
JSS Medical Research

Medicines Company
Merck
Nephrology Research
Novo Nordisk
Pfizer Canada inc.
ProMetic BioSciences
Repare Therapeutics
Sanofi Canada

GOVERNANCE



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As of March 31, 2020

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Senior Vice President, Branch Manager, CIBC Wood Gundy

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OBSERVER

DENISE MORANVILLE

Ministère de l'Économie et de l'Innovation

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GILBERT TORDJMAN

Vice President, Administration and Finance

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President and Scientific Director

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Director, Cancer and Genetic Diseases Research Division

JENNIFER ESTALL

Director, Cardiovascular and Metabolic Diseases Research Division

NICOLE FRANCIS

Director, Systems Biology and Medicinal Chemistry Research Division

MARIE KMITA

Director, Neurobiology and Development Research Division

WILLIAM TSANG

Director, Cancer and Genetic Diseases Research Axis

FOUNDATION

\$2,376,133

TOTAL AMOUNT OF DONATIONS FOR THE YEAR

\$418,500

TOTAL AMOUNT OF STUDENT SCHOLARSHIPS AWARDED BY THE FOUNDATION

4

AWARDS OF EXCELLENCE

12

RESEARCH CHAIRS

3

FUNDRAISING EVENTS

1,995

DONORS

152

VOLUNTEERS



MESSAGE FROM THE PRESIDENT AND THE EXECUTIVE DIRECTOR

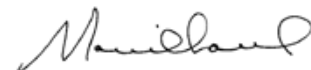
Another year of accomplishments, and to express our gratitude we can only say THANK YOU! Thanks to your support, our fundraising activities were a great success, raising a record \$2,376,133. As a result, we were able to support major research projects as well as the purchase of state-of-the-art equipment necessary for our researchers' work. For example, the proceeds from the golf tournament went towards the purchase of a device that analyzes the behaviour of living cells in real time, 24 hours a day, for extended periods. In addition, we were able to support the training of high-calibre scientists (on which the Institute stakes its reputation) by awarding \$418,500 in scholarships to 37 deserving students.

We gratefully accepted a \$1 million donation from the Lazaridis Family Foundation for Dr. Michel Chrétien's research on COVID-19. What a great way to kick off the planning activities for our next major campaign! The strategy has been established, and the silent phase of the campaign is scheduled to begin in the fall of 2020. In addition, our investment portfolio continues to grow under Fiera Capital's efficient management.

We cannot forget our donors and partners, without whom none of this would be possible. Your choice to encourage the activities of the IRCM Foundation, in support of lifesaving research, is a mark of trust that touches us deeply. Likewise, we express our gratitude to the Foundation's permanent staff, as well as to the 140 volunteers who support our events and those who sit on our seven committees, and the members of our Board. Your enthusiasm is the driving force that allows us to outdo ourselves year after year.

Please know that our support of the IRCM is not insignificant, because it helps to lay the groundwork to protect and improve present and future lives. In this way, the Institute is able to bring hope to hundreds of people every day.

A big thank you to everyone!



ANDRÉ COUILLARD
President



ISABELLE BARIL
Executive Director



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As of March 31, 2020

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Vice President, Executive Search & Recruitment Solutions,
Optimum Talent

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SERGE A. BOILEAU
President, Commission des services électriques de Montréal

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Private Banker, RBC Wealth Management, Royal Bank of
Canada

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Chair of the Board of Directors, IRCM
Management and Public Health Consultant

ROBERT DUPONT
Partner, Fasken

MAX FEHLMANN
President and Scientific Director, IRCM

ALAIN FONTAINE
Vice President, Finance and Administration, Guillevin
International Co

LOUISE ANN MAZIAK
Corporate Director

EDMÉE MÉTIVIER
Corporate Director

GINETTE PAQUIN
Consultant and Administrator

MAYA RAIC
Executive Director, Ordre des orthophonistes et audiologistes
du Québec

GUY SAINT-JACQUES
Consultant and Administrator

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Vice President, Legal Affairs, Technology Transfer, and
Secretary General, IRCM and IRCM Foundation

TREASURER

GILBERT TORDJMAN
Vice President, Administration and Finance, IRCM

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Édmée Métivier (President), Serge Boileau, Alain Fontaine,
Louise Ann Maziak

AD HOC RECRUITMENT COMMITTEE

Robert Dupont (président), André Couillard, Maya Raic

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SCHOLARSHIPS, CHAIRS AND FUNDS

SUMMER INTERNSHIPS

IRCM SCHOLARSHIPS FOR YOUNG RESEARCHERS: Diana Berry, Jonathan
Broadbent, Nicolas Chofflet, Iveta Demirova, Thaninna Hamadou,
Amy Ker, Alice Jisoo Nam, Miguel Alfonso Principe, Albert
Stancescu, Matthew Valiquette

MASTER'S SCHOLARSHIPS

ANGELO-PIZZAGALLI SCHOLARSHIPS: Jean-François Laurendeau,
XinYing Zhang

**BOMBARDIER-MOLSON IN MOLECULAR AND CELLULAR MEDICINE
SCHOLARSHIPS:** Antoine Bouchard, Emma Darbinian, Murooj Ghanem,
Nikhil Gnanavel, Laura Quirion, Shu Hui Wong

IRCM CHALLENGE SCHOLARSHIPS: Marjorie Aleman, Fanny Guérard-
Millet

MANUVIE SCHOLARSHIPS: Alexandre Laliberté

MICHEL-BÉLANGER SCHOLARSHIPS: Yasser C. Bouklouch

TD SCHOLARSHIPS: Sarah Hales

DOCTORAL SCHOLARSHIPS

ANGELO-PIZZAGALLI SCHOLARSHIPS: Nursen Balekoglu, Kevin Guo

CAL CONSTRUCTION SCHOLARSHIPS: Vatsal Sachan

IRCM CHALLENGE SCHOLARSHIPS: Sophie Ehresmann, Noé Seija

EMMANUEL-TRIASSI SCHOLARSHIPS: Hussam Khaled

GUÉPARDS ET GAZELLES GOURMANDS SCHOLARSHIPS: Céline Schott

JACQUES-GAUTHIER SCHOLARSHIPS: Cristian Galindo

TRANSAT SCHOLARSHIPS: Sushmetha Mohan

POSTDOCTORAL SCHOLARSHIPS

JEAN-COUTU SCHOLARSHIPS: Kaifee M. Arman, Ines Desanlis, Jaspreet
Jain, Ariane Larouche, Ali Ouadda Ben Djoudi

2020 IN-HOUSE FUND FOR EXCELLENCE AWARDEES

ANDRÉ-BARBEAU EXCELLENCE AWARD: Awais Javed

PIERRE-BOIS EXCELLENCE AWARD: Jennifer Estall

VINCENT-CASTELLUCCI EXCELLENCE AWARD: Claude Martel, Odile Neyret

IRCM FOUNDATION'S ACTIVE RESEARCH CHAIRS AND FUNDS

Bell-Bombardier Chair in cardiovascular disease

Benoit Coulombe

Canadian Pacific Research Chair in pain

Peter Schiller

André-Aisenstadt Chair of Excellence

Hua Gu

Gosselin-Lamarre Chair in clinical research

Gaëtane and Roland Pillenière Research Chair in Retinal Biology

Michel Cayouette

Michel-F.-Bélanger Cancer Research Chair

Œuvres du Docteur Roch Despatis Chair

Martin Sauvageau

J-Louis Lévesque in Rare Diseases Chair

Emilia Liana Falcone

J.A. DeSève Chair in clinical research

Rémi Rabasa-Lhoret

Jacques-Genest – Royal Bank Chair

John-Low-Beer Chair

Transat Chair in breast cancer research

Jean-François Côté

Angelo-Pizzagalli Postdoctoral Scholarship Fund *

Emmanuel-Triassi Fund for cancer research *

Fondation J.-Louis Lévesque Fund **

IRCM In-House Fund for Excellence *

J.A. DeSève Fund for diabetes research and the artificial pancreas

J. Armand Bombardier Foundation and Molson Foundation Fund for
molecular and cellular medicine

Jacques-Genest Scholarship Fund *

Jean-Coutu Postdoctoral Scholarship Fund *

Jean-Davignon and Pierre-Larochelle Fund

Jean-Guy-Desjardins Fund for priority research *

Marcel and Béatrice Piché Fund *

Marie and Willie Chrétien Fund *

Michel-Saucier Fund for priority research

National Bank Fund for cancer research

Rosario and Annette Genest Fund *

Sainte-Thérèse de l'Enfant-Jésus Fund in memory of Mable and Luc-
ien Toupin *

TD Fund for excellence in the medical field

UAP-NAPA Fund

* Capitalized funds

FUNDRAISING EVENTS

MAY 11



IRCM CHALLENGE MOUNT ROYAL PARK

\$160,000 raised

700 runners and walkers

Under the honorary chairmanship of Richard Payette, President and CEO of Manulife Quebec, the IRCM Challenge marked its 10th edition in the presence of its co-chairs Isabelle Cantin, of RBC Wealth Management, and Marc Tremblay, Chief Technology Officer of CONFORMIT.

PRESENTING PARTNER

Financière Manuvie Québec



GOLD PARTNER

Fiera Capital



MAY 28



TOURNOI DE GOLF – PARCOURS SANTÉ ISLESMERE GOLF CLUB

\$189,000 raised

190 golfers

The money raised during the 2019 edition went towards the purchase of a state-of-the-art IncuCyte device that enables real-time analysis of the behaviour of live cells over time.

VISIONARY PARTNERS

Infrastructel experts-conseils

Lécuyer innovation béton



INNOVATIVE PARTNERS

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OCTOBER 17



RECOGNITION COCKTAIL RECEPTION IRCM

\$418,500 awarded

37 scholarships

Thanks to the generosity of its donors, the Foundation held its recognition cocktail reception to award 32 scholarships to students and 5 scholarships to postdoctoral fellows, who distinguished themselves by the excellence of their work.

NOVEMBER 28



ANNUAL DINNER MARCHÉ BONSECOURS

\$440,060 raised

470 participants

Under the honorary chairmanship of Alain Masse, President of UAP, the annual dinner was an opportunity to present Tarik Möröy with the Merit Award for the extraordinary work accomplished under his presidency from 2006 to 2019.

HONORARY PARTNER

UAP inc.

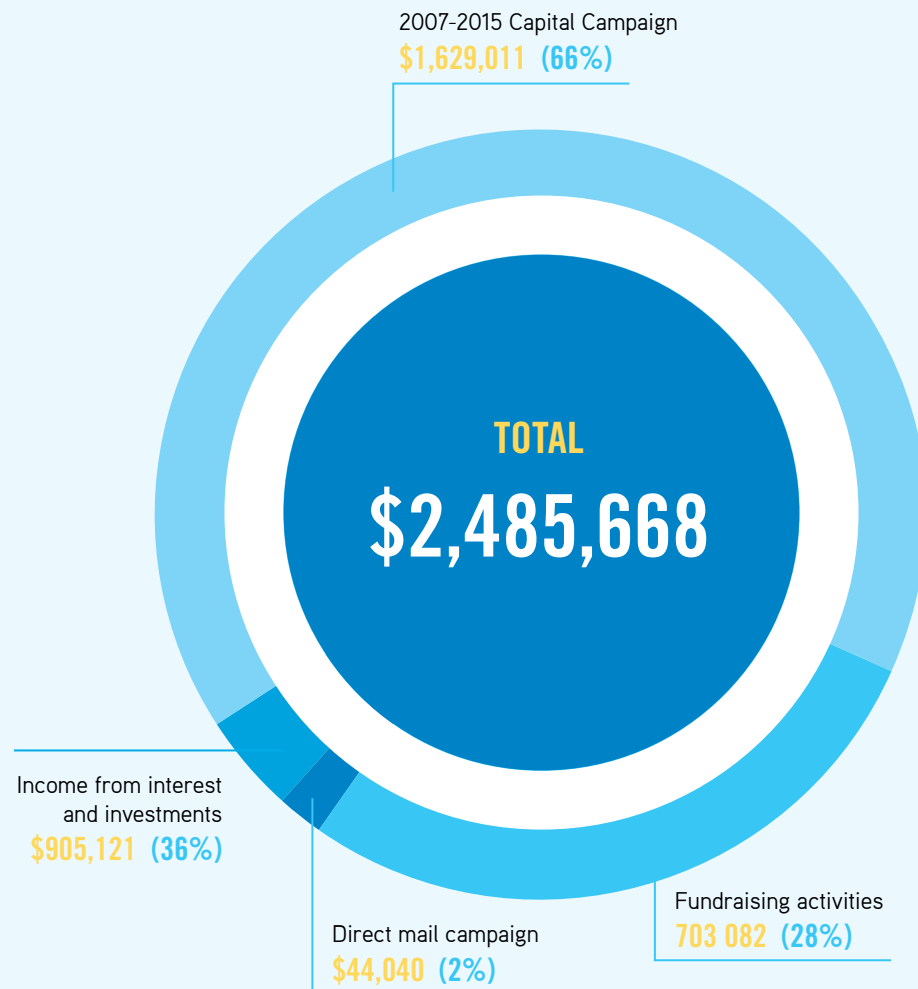


PASSIONATE PARTNERS

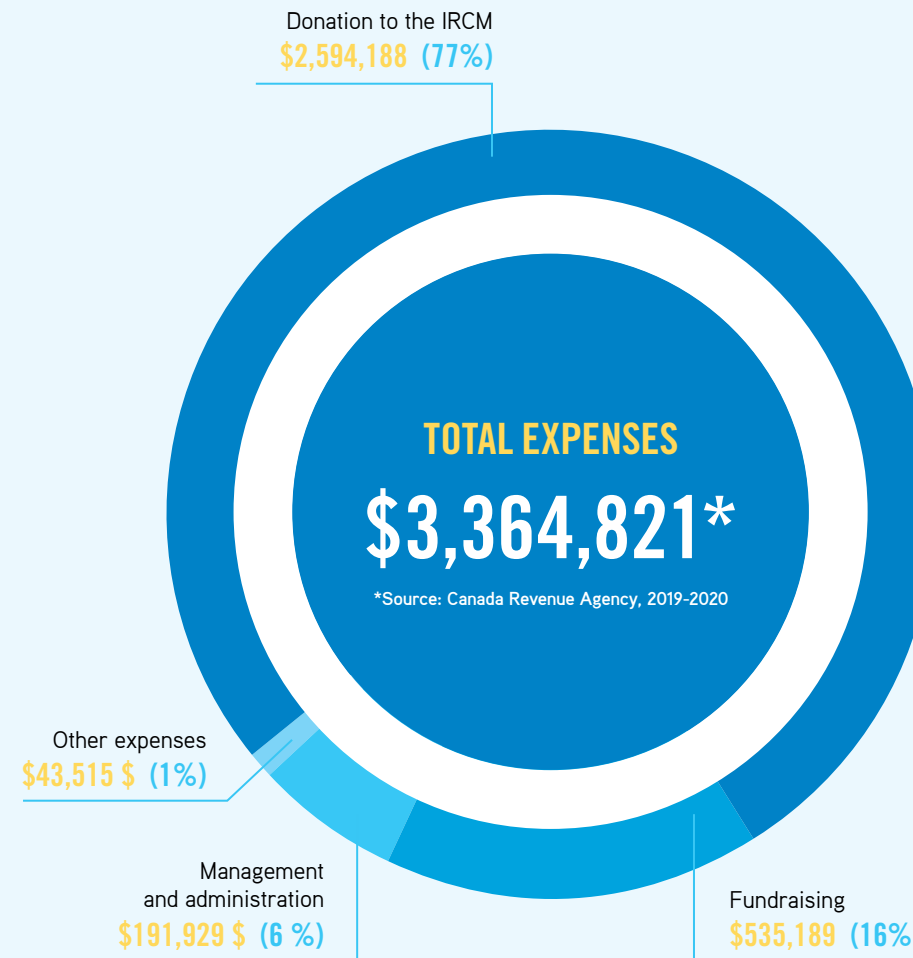
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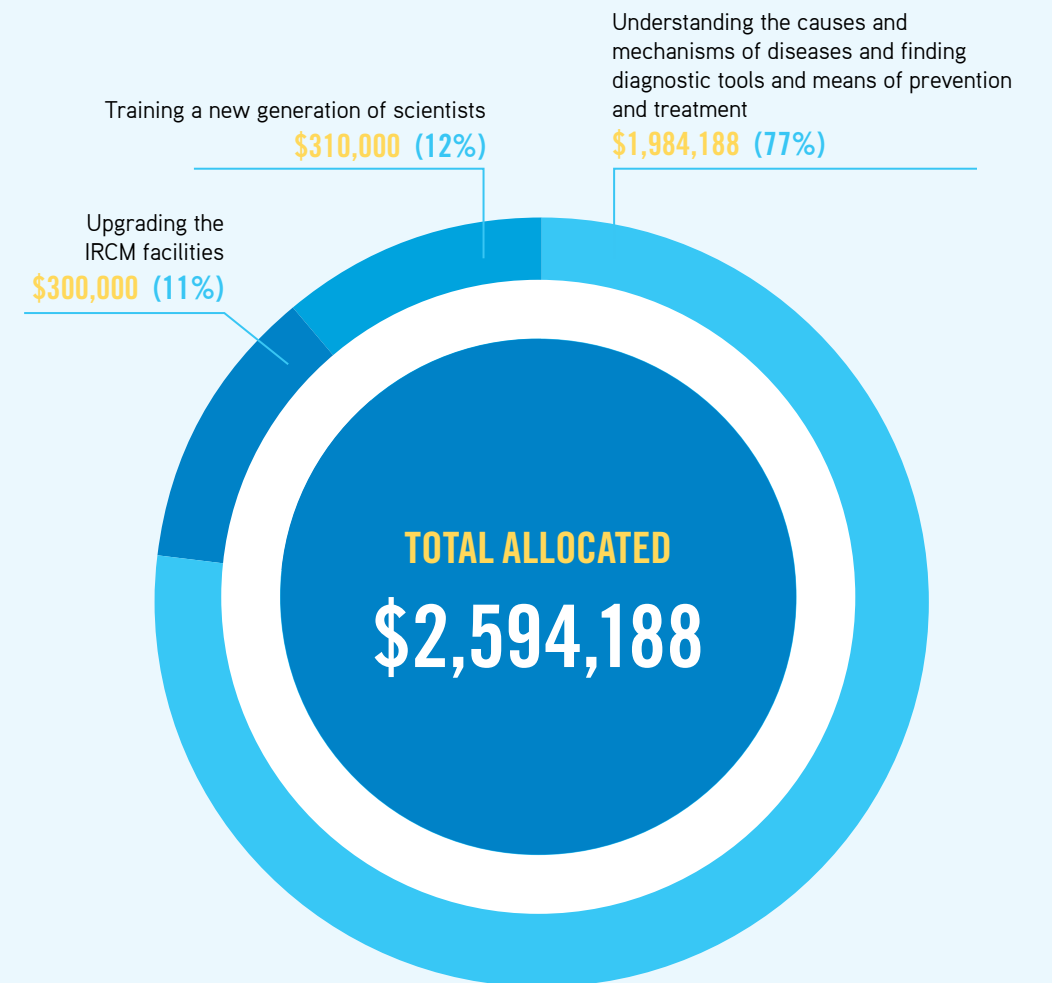
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EXPENSES



ALLOCATION OF DONATIONS TO THE IRCM





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The IRCM 2019-2020 annual
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and financial data for the period
beginning on April 1, 2019, and
ending on March 31, 2020.