

# IMPACT REPORT



2016 - 2017

# TABLE OF CONTENTS

1

## CANCER BY THE NUMBERS:

PROBABILITY OF READER GETTING CANCER

2

## A HISTORY OF HOPE

3

## WELCOME MESSAGE FROM MORAG PARK

4

## GLOBAL COLLABORATIONS

5

## MILESTONES

8

## ENQUIRING MINDS:

LIST OF RESEARCHERS, AND ASSOCIATE MEMBERS

9

## AWARDS AND DISTINCTIONS:

RESEARCHERS, TRAINEES STUDENTS

12

## CANCER CARES: IN THE COMMUNITY

DÉFI CANDAREL GALA PUBLIC TERRY FOX RUN

13

## THE FUTURE OF CANCER RESEARCH

SHAWN MCGUIRK VANESSA SUNG DR. IAN WATSON

16

## ENABLERS

18

## FINANCIAL REPORT

19

## BY THE NUMBERS

Editor: Stephanie Malley | Design: Eliot Edwards, Studio Outlook | Photography: Will Allen

Thank you to all those who contributed their time and talent in putting this report together.



**McGill**

The Rosalind and Morris Goodman  
Cancer Research Centre



**McGill**

Faculty of  
**Medicine**

# CANCER BY THE NUMBERS

## LUNG CANCER

kills more Canadians each year than prostate, colon and breast cancers combined

On average,

**221**

Canadians will die from cancer every day

The five-year net survival rate for lung cancer is

**17%**

Cancer is a general term for a group of over

**200**

related but different diseases

**25%** of all new cancer cases in women are breast cancer

The 5-year net survival rate is

**95%**

for prostate cancer and

**87%**

for breast cancer

**90%** of high-priority research projects went unfunded in 2016

**1 IN 4**

Canadians will die of cancer

**60%** cancer survival rate today vs

**25%**

in 1940

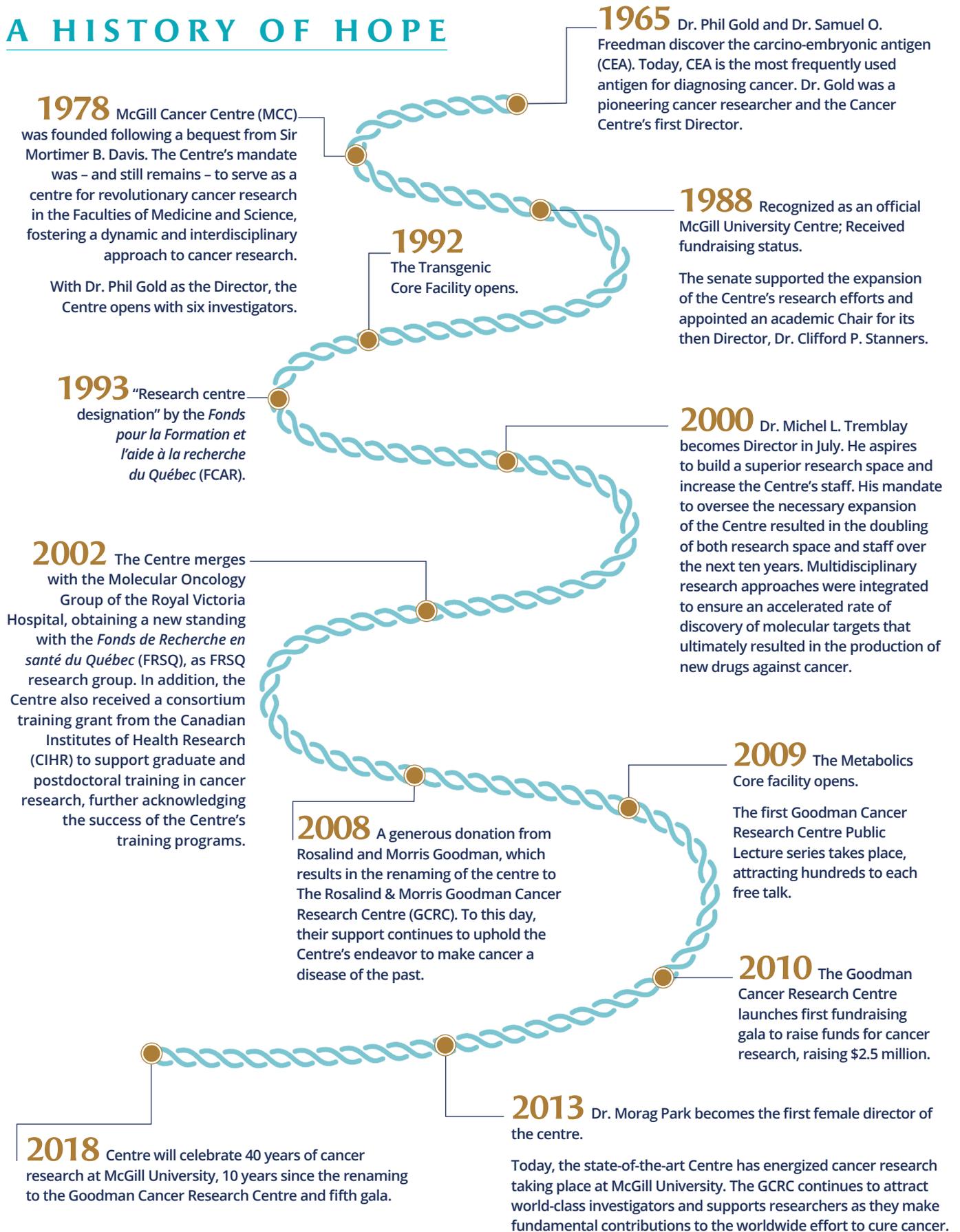
**1 IN 2** Canadians will be diagnosed with cancer in their lifetime

On average,

**565**

Canadians will be diagnosed with cancer every day

# A HISTORY OF HOPE



# WELCOME MESSAGE FROM MORAG PARK

**AM EXTREMELY PROUD** of our research activities at the Goodman Cancer Research Centre over the past year. As an internationally recognized hub of excellence and innovation in cancer research, the Centre continues to make impactful scientific advances that are enabling us to better understand cancer at a genomic, cellular and molecular level, as well as how it progresses, spreads and resists therapies.

Our scientists are recognized both nationally and internationally and are the recipients of some of the most prestigious prizes in cancer research worldwide.

The successes of the Centre are the result of the work of many dedicated research teams, each comprised of students, postdoctoral researchers, professionals and principal investigators.

Our research teams rely on the expertise and professionalism of our cutting edge technology research platforms and support staff.

The Centre provides a stimulating and supportive environment for training, recruiting and educating the next generation of cancer researchers. Alumni of the Centre training programs hold top positions in industry, academia and policy worldwide.

The Centre's goals are to improve cancer treatments and understand why patients fail to respond to treatment. Some of the many achievements of our researchers are described in the following pages.

They include important breakthroughs in our understanding of mechanisms underlying cancer, the development of new and innovative research tools, and fundamental discoveries leading towards new therapeutic applications.



Understanding that no new treatments come to the clinic without fundamental research we continue to strengthen our alliances with clinicians and clinician scientists within the McGill University hospital network recognizing that together, we are more powerful and effective, maximizing the impact of the Centre's research.

Sincerely,

**Morag Park**, Ph.D., FRSC  
Director, Rosalind and Morris Goodman Cancer Research Centre  
Diane and Sal Guerrero Chair in cancer genetics  
James McGill Professor

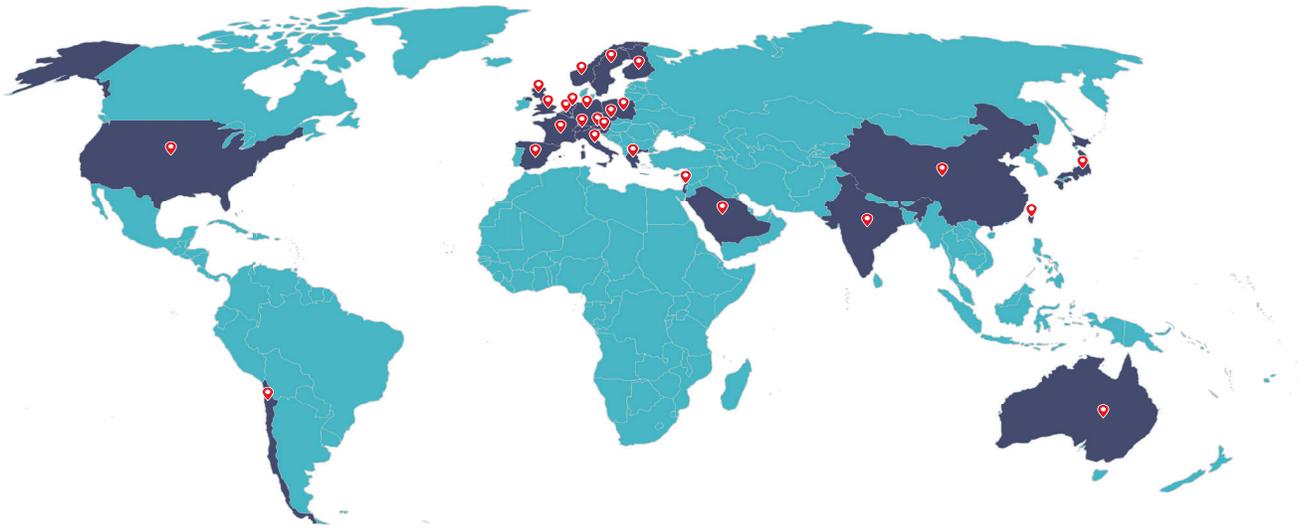
# GLOBAL COLLABORATIONS

Cancer research is a highly collaborative field, and scientists at the Goodman Cancer Research Centre are no exception.

With scientific partnerships, and research collaborations as far-reaching as Israel and Japan, it means no longer do patients only benefit from the research performed in their own city.

Instead, scientists are pooling their resources and knowledge base, sharing them with international colleagues, all while learning from one another.

The result? More innovative research and newer treatments – now.



Australia | Austria | Chile | Greece | Saudi Arabia | Scotland | England Slovenia | Finland | India  
Belgium | United States | Israel | Japan | France | Germany | Czech Republic | Spain | China  
Italy | Switzerland | Norway | Poland | United Kingdom | The Netherlands | Taiwan | Sweden



## Korean scientists visit the Goodman

In August 2017 scientists from Korea visited the Goodman as part of the Canada-Korea Conference on Science and Technology. Dr. Michel Tremblay spoke with them about the McGill Stem Cell and Regenerative Medicine network, of which he is one of the cofounders. The network includes research centres at McGill University, the Jewish General Hospital and the MUHC.



## Cyprus medical students welcomed at the centre

In August 2017, the Goodman welcomed medical students from the University of Cyprus, as part of one-week visit to Montreal, and the Steinberg Centre for Simulation & Interactive Learning at McGill. The tour, led by Dr. Peter Siegel and Ph.D. students, highlighted the various core facilities at the centre, and showcased the important research that is being conducted daily.

# MILESTONES

## PRIZES

### **Dr. Morag Park awarded the prestigious Robert L. Noble Prize**

Dr. Morag Park, Director of the Goodman Cancer Research Centre and Professor of Biochemistry, Medicine and Oncology, is the recipient of the Canadian Cancer Society 2017 Robert L. Noble Prize.

The Canadian Cancer Society honoured Dr. Park for her role as a leader in Canadian cancer research, being widely recognized for identifying key events in cancer development and the importance of a tumour microenvironment for cancer growth, as well as her exceptional leadership in establishing national cancer research strategies.

### **Congratulations Dr. Nicole Beauchemin for her role in the collaborative project that was awarded Québec Science's "Découverte de l'année 2016 – Prix du public"**

Professor Sylvain Martel of École Polytechnique de Montréal's Nanorobotics laboratory has pioneered an approach using special bacteria that can be directed by a magnetic field to deliver chemotherapy directly to the site of tumors, reducing side-effects.

With the support of a team of co-investigators from McGill University (Drs. Te Vuong, Gerald Batist, Maryam Tabrizian, Nicole Beauchemin, Danuta Radzioch), the Université de Montréal (Dr. Louis Gaboury, Dr. Michel Lafleur), and with the support of a generous grant from CQDM, Dr. Martel and his team have demonstrated proof-of-concept as well as efficacy and lack of toxicity of this new technique using primary colorectal cancer cells.

This novel approach holds significant promise for improving cancer targeting with chemotherapy.



### **Dr. Michel Tremblay becomes third Goodman Cancer Researcher to receive prestigious McLaughlin Medal**

Dr. Michel Tremblay has been awarded the McLaughlin Medal by the Royal Society of Canada for his outstanding work in protein phosphatases. The medal – given out annually since 1979 – is presented to a researcher who has demonstrated sustained excellence in the medical sciences.

The former Director of the Centre has dedicated his career to studying the function and regulation of the Protein Tyrosine Phosphatase (PTP) gene family. He is internationally recognized for his work with PTP and its function in cancer, diabetes and neuroscience.

Dr. Tremblay becomes the third member of the Goodman to win this prestigious medal, with Drs. Nahum Sonenberg and Philippe Gros having won it in 2013 and 2014, respectively.



### **Dr. Phil Gold honoured**

The Canadian Friends of Hebrew University has developed the Einstein Legacy Project, a global initiative to inspire the next generation of brilliant minds and bring fresh thinking to the problems facing our planet.

Included in their list of 100 of the world's foremost thought leaders

is Dr. Phil Gold, the founder of the McGill University cancer research centre.

### **Dr. Jerry Pelletier becomes newest member of McGill's Quarter Century Club**

Dr. Jerry Pelletier celebrated his 25<sup>th</sup> anniversary at the university. With countless research papers published, his guidance and continued dedication to cancer research makes him a pillar of cancer research.

### **Congratulations to Dr. Philippe Gros for his appointment to the Order of Canada**

Established in 1967 by Her Majesty Queen Elizabeth II, the Order of Canada is the cornerstone of the Canadian Honours System, and recognizes outstanding achievement, dedication to the community and service to the nation.

Philippe Gros, O.C. received this honour for his pioneering use of molecular genetics to identify risk factors in a range of conditions, including infectious diseases and cancer, and for his leadership in the health sciences.

## MILESTONES (cont'd)

### PRIZES

#### Dr. Philip Branton receives the McGill University Medal for Exceptional Academic Achievement

Established in 2009, the McGill University Medal for Exceptional Academic Achievement is awarded to retired members of McGill's academic staff who are uniquely deserving in light of their exceptional contributions to their discipline, to the University and to society at large.

#### Three of the Centre's renowned researchers were presented with prestigious awards in recognition of their outstanding work

Congratulations to the Goodman researchers who were honoured at the 4<sup>th</sup> biennial Goodman Gala:

**Dr. Nicole Beauchemin**, who was presented with the Limelight Award for her commitment to colon cancer research and her dedication to the Centre's public outreach forums.

**Dr. Nahum Sonenberg**, who was presented with the Leadership Impact Award for his longstanding leadership in cancer research. Dr. Sonenberg was the 2014 recipient of the prestigious Wolf Prize, generally regarded as a precursor to the Nobel Prize.

**Dr. Ian Watson**, who was presented with the Future is Bright Award for his leadership in melanoma genomics research.



#### Dr. Jerry Pelletier named as Fellow of the Royal Society of Canada

In September 2017, Dr. Jerry Pelletier was named a Fellow by the Royal Society of Canada (RSC). He joined eight other researchers from McGill who were also inducted into the RSC this year.

With over 2,000 Fellows, inductees are selected by their peers for outstanding contributions to the natural and social sciences, arts and humanities.

#### Dr. Jose Teodoro receives Movember Discovery Grant

12 researchers, from across Canada, were rewarded with a grant worth up to \$200,000, with Dr. Jose Teodoro being one of them.

Funded by the Movember Foundation, and selected by Prostate Cancer Canada, recipients are considered innovators in their field of research, and well positioned to make a significant impact in prostate cancer research.



#### Goodman Cancer Research Centre receives \$20,000 donation from La Vie en Rose

La Vie en Rose generously donated \$20,000 to breast cancer research at the Goodman Cancer Research Centre. The announcement, made in October 2017, is part of a larger giving campaign by La Vie en Rose called, *Le Confort pour la Cause* (Comfort for the Cause), where the company donates a total of \$100,000 each year to organizations across the country.

#### To celebrate Canada's 150<sup>th</sup> anniversary, Canadian Institutes of Health Research (CIHR) asked researchers to submit short texts on why they pursued a career in health research, and speak about the latest issues they are tackling.

#### Dr. Nicole Beauchemin McGill University Bringing hope to patients with colorectal cancer

My interest in health research was stimulated by my mother's devotion to her profession as a nurse: she was always looking for answers to why diseases occur. My laboratory has been working on the development and progression of colorectal cancer (CRC) and the identification of novel biomarkers and therapeutic targets. I was responsible for characterization of one of the best biomarkers for CRC, namely CarcinoEmbryonic Antigen (CEA). Following this work, we identified an important family of related proteins, one of which (CEACAM1) is conserved throughout all species and assumes several important functions in the normal setting such as immune recognition



and tolerance, insulin resistance and lipid metabolism and differentiation of epithelial cells. CEACAM1 expression decreases in most early cancers but often gets re-expressed very abundantly as the cancer progresses to the metastatic state. Using mouse models and human tissue samples, we have investigated how decreasing CEACAM1 expression as an immune checkpoint inhibitor via specific antibodies can participate in activation of the immune system. The mouse models we have generated have made possible the development of novel therapeutic tools. We have also identified cohorts of human patients likely to benefit from these therapies. We believe that CIHR funding of our research has made it possible to undertake clinical trials within the next 18 months.

**Drs. Vincent Giguère and Étienne Audet-Walsh**  
**Goodman Cancer Research Centre, McGill University**  
**Prostate cancer: With research, there is hope**  
**Protein mTOR associated with aggressiveness of cancer**

The protein mTOR was previously understood to be in the cytoplasm in most human cells. It was discovered that not only is mTOR found in the nucleus of prostate cancer cells, but that a strong correlation exists between mTOR nuclear content and the aggressiveness of the cancer. Healthy prostate cells show little evidence of mTOR in their nucleus, but its localization to the nucleus dramatically increases as the cancer progresses toward a poorer outcome. The more aggressive the cancer, the higher concentration and activity of nuclear mTOR. Accordingly, an mTOR-dependent gene signature has been successfully identified, which could help predict recurrence in prostate cancer patients.

Additionally, the research conducted by Drs. Giguère and Audet-Walsh demonstrates that the androgen receptor, the major driver of prostate cancer, works together with mTOR in the nucleus to exert its oncogenic effect on prostate cancer cells. The presence of mTOR allows for prostate cancer cells to reprogram their metabolism to sustain their rapid growth and proliferation.

These two researchers work at the Goodman Cancer Research Centre, in collaboration with Dr. Simone Chevalier at the McGill University Health Centre.

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## PUBLICATIONS

**Drs. Peter Siegel and Julie St-Pierre released a new breast cancer study revealing new pathways for metastasis.**

Their paper, published in *Cell Metabolism* in October 2017, likens cell travel to when driving to a remote destination that is accessible by only one road, if this is blocked you are stuck. In contrast, if you are travelling in the city and discover that your preferred route is blocked, you can adjust

and take another path to your destination. That is what is happening here – if breast cancer cells are restricted to one metabolic pathway they are not able to spread as effectively as cancer cells that engage multiple pathways.



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### **New breast cancer study could lead to more accurate predictions of cancer development**

New research published in *Genes and Development* by Dr. Luke McCaffrey and his lab could lead to more accurate predictions of breast cancer development. Previously, it was thought that carcinoma

tumours were caused by cells shedding to fill the middle of the mammary duct in a single step, but in fact it was found that there are a number of discrete steps that define the progression that were previously not known.

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### **Dr. Pelletier's publication 'Using CRISPR to validate drug-target interactions' is featured on the cover of Cell Reports**

Precise genome engineering for validation of drug mechanism. Chu et al. use CRISPR/Cas9 to demonstrate that inhibition of eukaryotic initiation factor (eIF) 4A by rocaglates is responsible for their in vivo anti-neoplastic activity. The gears represent mechanism of action with the laser denoting precise targeting of a critical component, eIF4A.

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## ANNIVERSARIES

### **Tremblay Lab celebrates quarter century of leading science**

Since 1992, Dr. Tremblay and his lab members have helped put the Goodman on the global map of discovery and innovation.

Over 60 researchers, students, postdoctoral fellows and supporting staff have been, or are currently committed to the Tremblay Lab research projects. New discoveries are on the horizon for the lab which will lead to the development of novel treatments for a broad range of diseases including cancer, diabetes, obesity, spinal cord injury and infectious diseases.

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### **March 3, 2017 Teodoro Lab marks 10<sup>th</sup> anniversary**

It has been a decade since the Teodoro laboratory started its adventure. During this time, the lab has produced cutting edge research with 20 research papers published. The lab environment is one focused on learning, by training the next generation of researchers so that they can one day take the helm.

# ENQUIRING MINDS

## FACULTY AND ASSOCIATE FACULTY MEMBERS

### Full Members

Nicole Beauchemin  
Maxime Bouchard  
Thomas Duchaine  
Imed Gallouzi  
Vincent Giguère  
Philippe Gros  
Sidong Huang  
Russell Jones  
Lawrence Kazak  
Connie Krawczyk  
Luke McCaffrey  
William Muller  
Alain Nepveu  
Morag Park

Arnim Pause  
Jerry Pelletier  
Daniela Quail  
Gordon Shore  
Peter Siegel  
Nahum Sonenberg  
Jose Teodoro  
Michel Tremblay  
Logan Walsh  
Ian Watson  
Yojiro Yamanaka  
Xiang Jiao Yang  
George Zogopoulos

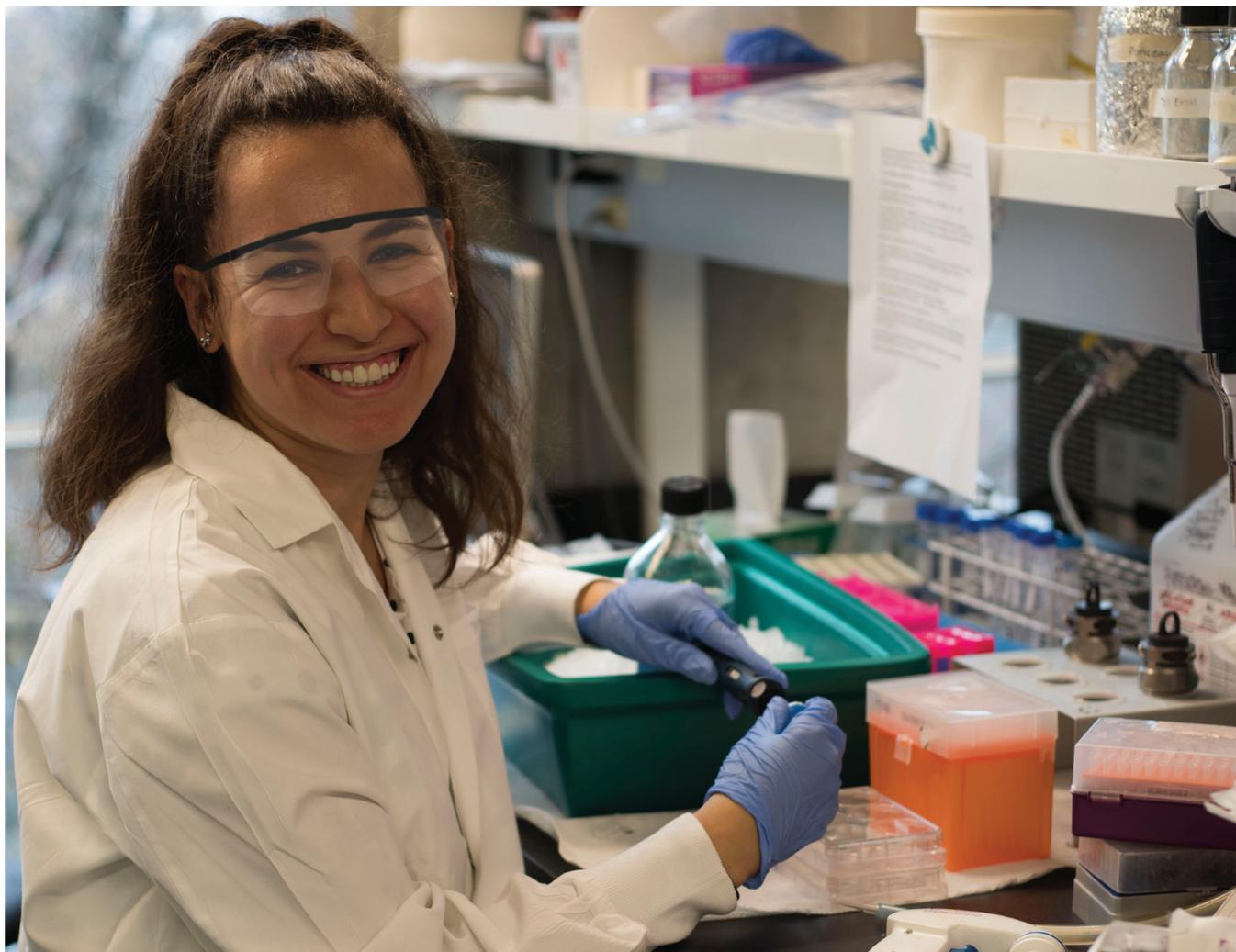
### Past Members

Phil Branton  
Abe Fuks  
Julie St. Pierre

### Affiliate & Associate Members

Uri-David Akavia  
Moulay Alaoui-Jamali  
Pnina Brodt  
David Dankort  
Josée Dostie  
Lorenzo Ferri  
Jörg Fritz  
Nada Jabado

Rak Janusz  
David Juncker  
Antonis Koromilas  
Nathalie Lamarche-Vane  
Paul Lasko  
Carmen Loiselle  
Richard Marcotte  
Christopher Moraes  
Michael Pollak  
Yasser Riazalhosseini  
Martin Richer  
Jon Spicer  
Patricia Tonin  
Jose Ursini-Siegel



# AWARDS AND DISTINCTIONS



## TRAINEE AWARDS AND SCHOLARSHIPS

### Canderel Studentships

- ◆ Christina Kalos
- ◆ Tim Kong
- ◆ Dana Pearl
- ◆ Hsin Wei (Cynthia) Tseng
- ◆ You Chi (Emily) Tang

**\$12,000** PER STUDENTSHIP

### Canderel Fellowship

- ◆ Agnieszka Skalecka
- ◆ Quafa Najyb

**\$20,000** PER FELLOWSHIP

### Charlotte and Leo Karassik Foundation Oncology PhD Fellowship

- ◆ Giselle Boukhaled
- ◆ Li-Ting Wang
- ◆ Valerie Vinette
- ◆ Maxwell Shafer

**\$22,000** PER FELLOWSHIP

### Cure Foundation Fellowship in Breast Cancer Research

- ◆ Gabrielle Brewer
- \$10,000**

### Michael D'Avirro Fellowship in Molecular Oncology Research

- ◆ Mireille Dessureault

**\$24,000**

### Cedars Cancer Institute Fellowship

- ◆ Tung Bui

**\$20,000**

### Dr. Victor K.S. Lui Fellowship

- ◆ Leeanna El-Houjeiri

**\$22,000**

### Rosalind Goodman Commemorative Scholarship

- ◆ Laura Jones
- ◆ Colin Ratcliffe

**\$25,000** PER SCHOLARSHIP

### Charlotte and Leo Karassik Foundation Oncology Postdoctoral Fellowship

- ◆ Tina Grusso

**\$40,000**

## DISTINGUISHED JAMES MCGILL PROFESSORS AWARDS RECIPIENTS

- ◆ Dr. Philippe Gros
- ◆ Dr. Morag Park
- ◆ Dr. Nahum Sonenberg
- ◆ Dr. Alain Nepveu
- ◆ Dr. Jerry Pelletier
- ◆ Dr. Michel Tremblay

## WILLIAM DAWSON SCHOLARS

- ◆ Dr. Russell Jones
- ◆ Dr. Peter Siegel

## CANADA RESEARCH CHAIR, TIER 1 RECIPIENT

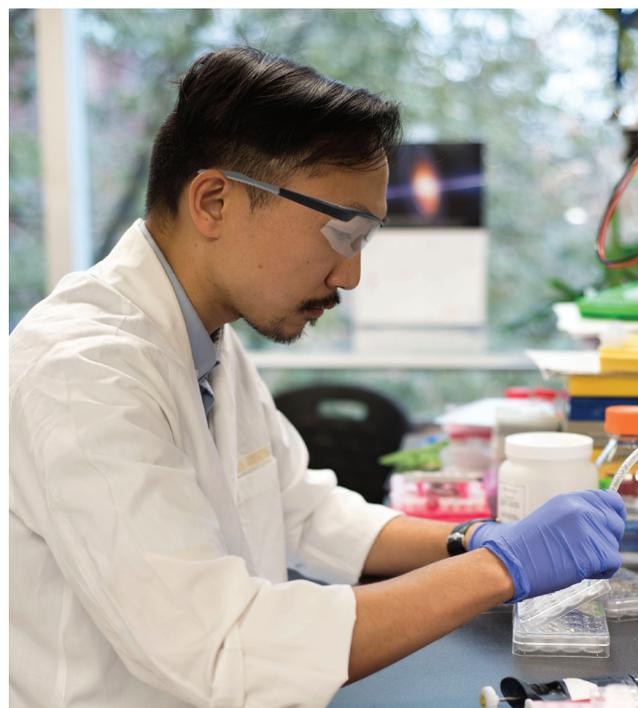
Tier 1 Chairs, tenable for seven years and renewable once, are for outstanding researchers acknowledged by their peers as world leaders in their fields. For each Tier 1 Chair, the institution receives \$200,000 annually for seven years.

- ◆ Dr. William Muller

## CANADA RESEARCH CHAIR, TIER 2 RECIPIENT

The intent of Tier 2 Chairs is to provide emerging researchers with support that will kick-start their careers. For each Tier 2 Chair, the institution receives \$100,000 annually for five years.

- ◆ Dr. Sidong Huang
- ◆ Dr. Ian Watson



# AWARDS AND DISTINCTIONS (cont'd)



## ENDOWED CHAIR

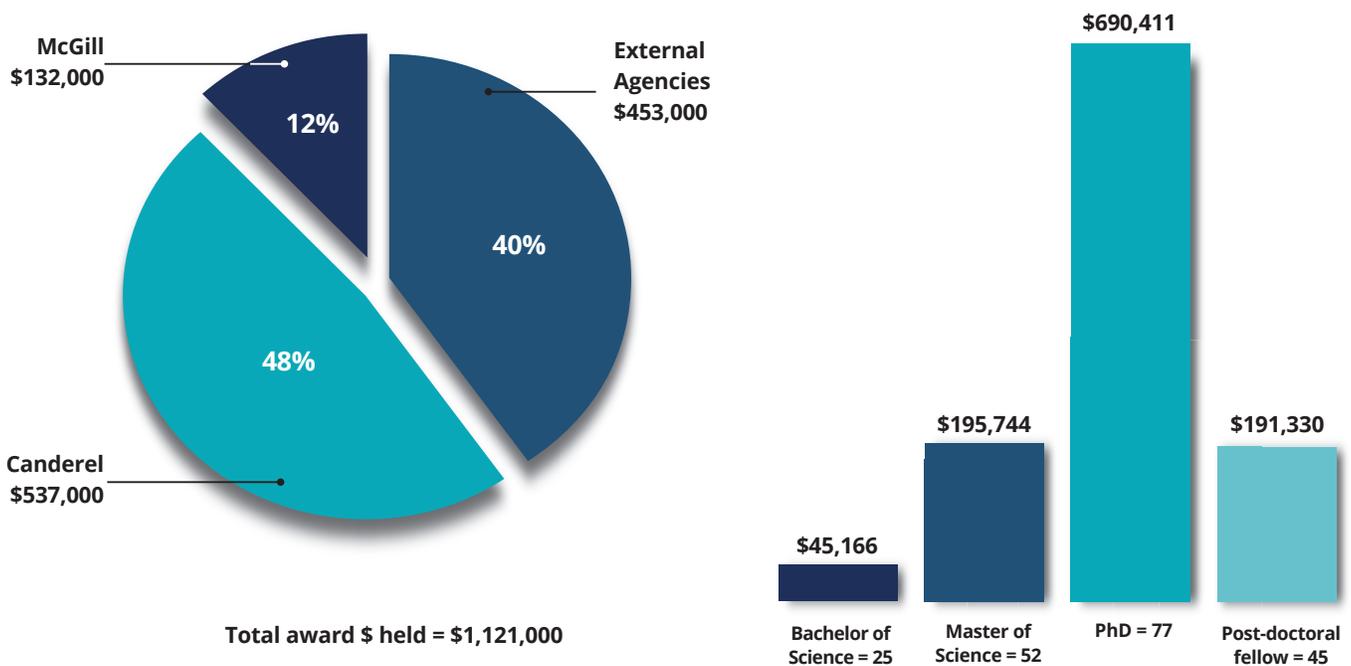
- ◆ Dr. Michel Tremblay | Jeanne and J.-Louis Levesque Chair in Cancer Research
- ◆ Dr. Morag Park | Diane and Sal Guerrera Chair in Cancer Genetics
- ◆ Dr. Nahum Sonenberg | Gilman Cheney Chair in Biochemistry

## UNDERGRADUATE STUDENT AWARD RECIPIENTS 2016/2017

Each student received \$2,000 and an opportunity to work with researchers for an average three to four months.

Joanna Bitharas	Catherine Pan	Lin Tze (Jacky) Tung	Maude Vinette
Dominique Geoffrion	Thiviya Jeyakumar	Christina Kalos	Jiachen Liang
ZongYi (Jessica) Ha	Hsin Wei Tseng	Sonja Lehmann	Crystal Sequeira
David Guan	Florence Lebel-Guay	Milani Sivapragasam	Jeremy Gungabeesoon
Jake Johnston	Nikki Cliffe	Catherine Lefebvre-Babinsky	Jasmine Li-Brubacher
Kateryna Rossokhata	Stefanie Valbon Fernandes	Tiffany Cho	Aarti Srivastava
Anthony Smith			

## TRAINEE AWARDS MAY 2016 – APRIL 2017



## STUDENT AWARDS

### Owen Chen

MITACS  
Mitacs | \$4,500  
Role of the soluble Pro Renin Receptor in human cancer

University Scholarship  
Nanjing University | \$10,000  
Role of the soluble Pro Renin Receptor in human cancer

### Mathieu Paquette

Masters Training Award  
FRQS | \$15,000  
Characterization of the AMPK-dependent regulation of TFEB and potential novel neurodegenerative disease therapies

### Brendan Cordeiro

Masters Training Award  
FRQS | \$18,000  
Regulation of dendritic cell function by microRNA-9

### Hannah Guak

PhD Award  
FRQS | \$20,000  
Metabolic Regulation of Dendritic Cell Function

### Amr Omer

MSc Training Award  
FRQS | \$30,000  
Effect of oxidative stress on the cellular senescence phenotype: Role of Stress Granules

### Amro Mohammed

Vanier  
CIHR | \$150,000  
Role of the pro-renin receptor in breast cancer

Sylvia Andrzejewski  
Doctoral Award  
FRQS | \$60,000  
Impact of metformin on cellular bioenergetics

### Papadopoli David

Doctoral Award  
FRQS | \$60,000  
AMPK/PGC-1 axis in breast cancer metabolism

### Shawn McGuirk

Vanier  
CIHR | \$150,000  
Metabolism in therapeutic resistance to cancer treatment

### Ruba Halaoui

PhD Studentship  
FRQS | \$60,000  
Mechanisms of breast cancer initiation

### Teri Hatzihristidis

PhD Fellowship  
FRQS | \$40,000  
PTP in stem cells and epigenetic development

### Paul Savage

Vanier  
CIHR | \$150,000  
Stromal control of breast cancer outgrowth and heterogeneity

### Colin Ratcliffe

PhD Fellowship  
FRQS | \$60,000  
Met integrin crosstalk in tumor cell migration

### Matthew Dankner

Research Studentship  
Brain Tumour Foundation of Canada | \$5,000  
Using patient-derived xenograft models to identify mediators of brain metastasis in diverse cancers

### Brian Hsu

RI-MUHC Award  
MUHC | \$8,000  
Elucidating the role of innate immune cell infiltration in breast cancer liver metastasis

### Eric Ma

Doctoral Award  
FRQS | \$20,000  
Examining the role of the serine biosynthesis in T cell function and inflammation control

### Bin Xiao

FRQS | \$60,000  
Role of Rheb GTPase in mammary tumor progression

### Kezhi Yan

Cole Foundation Fellowship  
Cole Foundation | \$42,000  
Roles of BRPF1 in mouse brain development

### So-Yoon Won

Masters Training Award  
CIHR | \$17,500  
Determining the mechanisms by which plant-made VLPs stimulate DC function

### Irina Perlitch

RI-MUHC Award  
MUHC | \$9,125  
Mechanisms of immunosuppression in models of basal breast cancer

### Rebecca Rabinovitch

CGSM  
CIHR | \$17,500  
Role of AMPK in tumour metastasis

### Cameron Levins

Masters Training Award  
FRQS | \$30,000  
Gain-of-function genetic screens to identify novel treatment targets in rhabdoid tumors

### Sara Ferwati

Masters Training Award  
CIHR | \$17,500  
Mechanistic role of Stromal Pancreatic Ductal Adenocarcinoma on Drug Resistance

### Keerthana Harwalkar

CRRD Studentship  
CRRD | \$5,000  
Oviduct epithelia homeostasis

### Deepak Saini

CRRD Studentship  
CRRD | \$5,000  
Morphogenesis and Hippo signaling activation in the preimplantation mouse embryo

### Oraly Sanchez-Ferras

Krescent  
KFOC | \$27,500  
Mechanisms of nephric duct elongation in the mouse embryo External funding: KRESCENT-CIHR (2015-)

### Danilo De Gregorio

RI-MUHC Award  
MUHC | \$18,000

### Marco Biondini

PhD Award  
FRQS | \$60,000  
Developing rationale therapeutic combinations to target GPNMB in triple-negative breast cancer

KEY:  
Name  
Awarding name  
Awarding agency | Award amount  
Thesis/Project title

13 FRSQ AWARDS



3 VANIER AWARDS



6 CIHR AWARDS



# CANCER CARES: IN THE COMMUNITY

## Goodman Cancer Research Centre Gala 2016

Every second year, the Goodman Cancer Research Centre holds a gala to raise funds and support cancer research. Since its inception in 2010, monies raised have helped to purchase much needed equipment, recruit top researchers and continue to bolster the fight against cancer.



On June 5, 2016, in the company of 800 generous supporters of the Goodman, Montrealers came together for the benefit of cancer research and successfully raised over \$2 million.

To those at the Centre, this means the development of new treatments and therapies. For patients, this equates to new hope.

Join us for our fifth anniversary gala, on June 6, 2018 where we hope to bring our total raised over the past five galas to \$10 million.

## Défi Canderel

With the smell of spring in the air, Goodman Cancer Research Centre scientists and administrators, joined hundreds of others in the annual Défi Canderel. The brainchild of Jonathan Wener, Chairman and CEO of Canderel, the annual running event raises money for cancer research centres throughout Montreal.



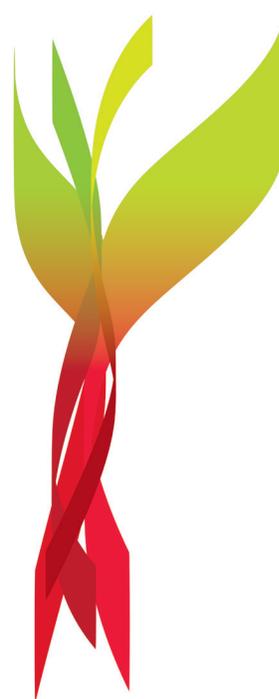
With cancer having affected the Wener family more than once, they know first-hand the struggles that follow a diagnosis. Through the Défi Canderel, they are doing more than just raising funds to cure this cruel disease, they are inspiring a healthy lifestyle and bringing continued awareness to a relentless disease.

## Public Forums

Anyone affected by cancer knows that information is key, whether it be from a physician, researcher or fellow patient. Being able to get access to all three isn't always as easy as one would like, which is why in 2009 the GCRC launched the Goodman Cancer Research Centre Public Forum series. Held annually, the four-part lecture series provides free talks on various types of cancer. Each lecture has three to four speakers, and is balanced between scientists, doctors and patients – allowing those in the room to hear about one type of cancer from each person's vantage point.

The 2016/2017 series entitled, Today's Research for Tomorrow's Cure, welcomed over 1,000 participants, continuing the history of success for the series.

Those interested can find out more about the series by visiting: [mcgillgcr.com/events/public-forum](http://mcgillgcr.com/events/public-forum).



## Terry Fox run

Every year researchers and trainees lace up, and hit the pavement in downtown Montreal, joining thousands of other Canadians across the country, who participate in similar Terry Fox runs. Participating in the 5K course allows those from the centre to show their appreciation for all the support that the Terry Fox Foundation has offered the centres scientists.

Since 2009, the Goodman Cancer Research Centre has been fortunate to receive over \$13.8 million in grant funding from the Terry Fox Foundation. The funds have helped support research in breast cancer, oncometabolism and molecular pathways that fuel cancer.



# THE FUTURE OF CANCER

## THE NEXT CANCER RESEARCH ADVOCATE

**O**n a cool fall afternoon **Shawn McGuirk**, a sixth-year post-doctoral student, sits in an office at the Goodman Cancer Research Centre pondering the question he's just been asked. After a few seconds he answers, "once I've completed my Ph.D., I'd like to secure a post-doc in the United States, and hopefully make my way back to Canada as either a Principal Investigator (PI) or a policy leader in government."

His focused response comes as no surprise, given the path he's taken to get to where he is now.

A biochemistry major, Mr. McGuirk's interest in science and the mechanics of how systems work started early on. In high school, he built robots as a hobby and would go on to win a robotics competition and lead the Vanier College team as a CEGEP student. This only fueled his passion of dissecting and looking at the inner workings of different systems to figure out how they function together.

As he continued to narrow down his career interests, Mr. McGuirk spent a year working in a Montreal hospital emergency department. Though ultimately medicine was not for him, the experience was beneficial and solidified his passion for pharmacology and biochemistry. Accepted to the former at University of Montreal at the latter at McGill University, he chose biochemistry due to his interest in metabolic research.

But, it was a teacher in his second year of undergraduate studies that led him to the Goodman Cancer Research Centre. His professor, Dr. Julie St-Pierre – a PI at the Centre at the time – spoke so inspiringly that it wasn't long before Mr. McGuirk become a member of her lab. Her mentorship would be something he would come to rely on. "Julie has been so supportive in my career. She has guided me in my research and has driven me to present at several international conferences, which helps me to network with leaders in my field."

Under her tutelage, he dove into breast cancer research focusing on the metabolic strategies that cancer cells use to survive and adapt to treatments. Additionally, looking at ways to reverse the mechanisms that make cancer cells resistant to chemotherapy, and finding new ways to eliminate them.

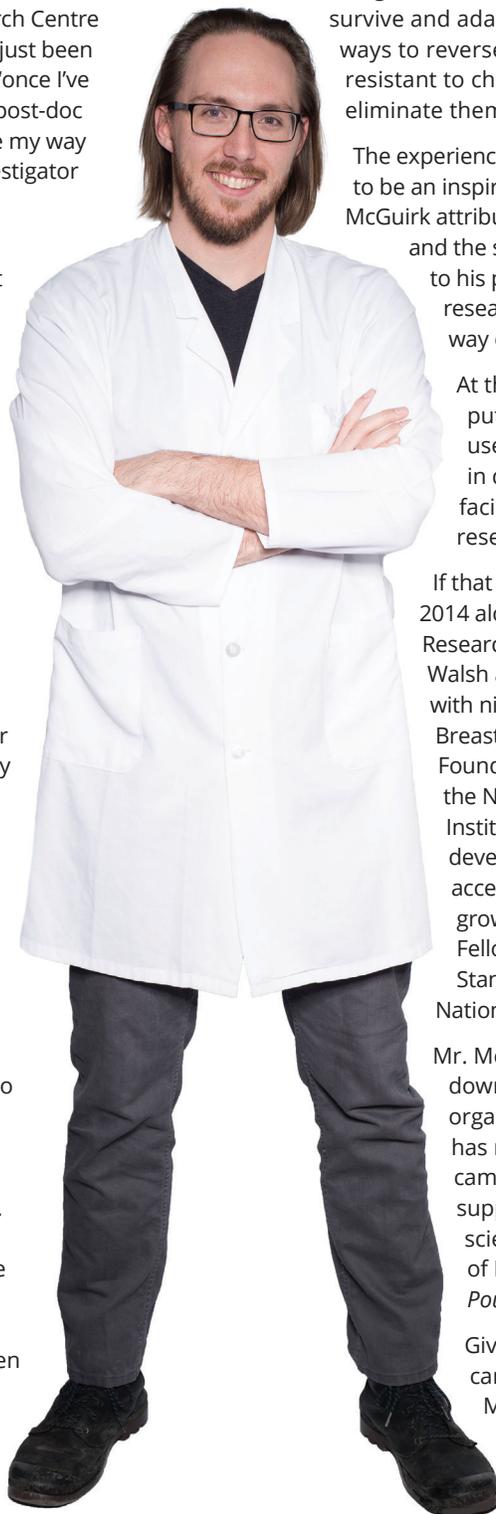
The experience with Dr. St-Pierre was, and continues to be an inspiring one, with ongoing collaborations. Mr. McGuirk attributes their positive working relationship, and the supportive atmosphere at the Goodman to his potential interest in pursuing an academic research career. In many ways, he sees it as a way of paying it forward.

At the Goodman, he's even been able to put his early years in robotics to good use. In 2013, Mr. McGuirk was successful in developing and coding an algorithm to facilitate tracing analysis, available to all researchers at the centre, and widely used.

If that wasn't enough of an accomplishment, in 2014 along with then fellow Goodman Cancer Research Centre scientists, Dr. Étienne Audet-Walsh and Dr. Dmitri Kharitidi, they were selected with nine other groups as the winners of the Breast Cancer Startup Challenge. Led by the Avon Foundation, Center for Advancing Innovation and the National Institutes of Health National Cancer Institute, the competition asked participants to develop a business plan with the intention to accelerate commercialization in support of high-growth business that spur entrepreneurship. Fellow winners included Cambridge University, Stanford University, Berkley Lawrence Berkeley National lab and Rutgers.

Mr. McGuirk shows very little signs of slowing down. He is the co-President of the non-profit organization Science & Policy Exchange, which has notably launched a social media student campaign known as #Students4theReport in support of increased federal funding for the sciences, and is also a member of the Board of Directors at the *Association Francophone Pour le Savoir* (ACFAS).

Given his wide involvement in the world of cancer research, no matter which path Mr. McGuirk takes next, he is sure to continue making a positive impact on the world of science.



## THE QUIET CRUSADER

For many, downtime is spent with a good book, family or dinner with friends. But, when the question was put to sixth year Ph.D. candidate **Vanessa Sung**, the answer was quite different. In a quiet and unassuming voice, she replied pleasantly, "I work with incarcerated men who are about to be, or have recently been released from minimum security prisons as they reintegrate back into community."

### Hardly your average weekend activity.

As the conversation progressed, it became very clear that nothing about Ms. Sung is average. Growing up in Vancouver, British Columbia, she always had an interest in the physical sciences. However, things changed when she arrived as an undergraduate student at McGill University. "I was sitting in a class one day, listening to the teacher, and thought, wow, it's a miracle that we are all walking around," says Ms. Sung.

A few years later, while speaking with a friend who, at the time worked in Dr. Morag Park's lab, Ms. Sung was introduced to the Goodman Cancer Research Centre. During her studies, she had developed an interest in cancer research, and it wasn't long until she too was a member of Dr. Park's lab.

Now six years later, her scientific accomplishments as she approaches her projected dissertation date of June 2018 are encouraging. With a focus on aggressive triple negative breast cancer, her research is looking to understand why very few tumors of this type respond to chemotherapy and radiation, and to identify new therapeutic targets for these patients.

Additionally, this past year, she was awarded the Rosalind Goodman Commemorative Scholarship, which serves to recognize the exceptional research and community work of a graduate student in the final years of their Ph.D. studies at the Goodman Cancer Research Centre.



Her successes don't end there. Unfortunately, like so many, Ms. Sung's family has been affected by cancer, which perhaps bolstered her passion for the cause, and helped position her as a student advocate for scientific funding amongst her peers. As a co-president of the student-run non-profit organization Science & Policy Exchange, Ms. Sung helped create a social media campaign entitled, #Students4theReport, in support of the Fundamental Science Review which advocates for increased scientific funding. The campaign encouraged students to create their own videos and explain how funding has helped their fundamental research, and what the result of less funding looks like. They also wrote an open letter, from the student perspective, asking the government of Canada to fully implement the recommendations from the Fundamental Science Review. To date, their campaign has produced almost 20,000 impressions on Twitter, and the open letter has been signed by nearly 1200 scientists across the country and endorsed by over a dozen student associations. Next step? Sending their results to the Prime Minister's office.

.....  
**Ms. Sung was awarded the Rosalind Goodman Commemorative Scholarship, which serves to recognize the exceptional research and community work of a graduate student in the final years of their Ph.D. studies at the Goodman Cancer Research Centre.**  
.....

As the conversation comes to a close, Ms. Sung is asked one last question.

"At the end of your career, how will you measure whether you've accomplished what you set out to do?"

Without hesitation she answers, "If I've made a difference."

If her track record to date is any indication, she's already doing just that.

## THE SCIENTIST REIMAGING MELANOMA RESEARCH

The game of golf – much like cancer research – is about patience. A player must be confident in their actions, self-motivated but above all, forbearing. Given the similarities, it should come as no surprise that when he's not in the lab, **Dr. Ian Watson**, Assistant Professor in the Department of Biochemistry, can be found on the golf course.

Specializing in melanoma research, Dr. Watson and his lab are working to solve the mysteries of this – often deadly – skin cancer. Each year, 7,200 Canadians will be diagnosed, with 20% succumbing to the disease – including famed Canadian author Stewart MacLean.

Since joining the Goodman Cancer Research Centre in 2015, Dr. Watson has been hard at work building a melanoma network. So far, he has been successful in developing partnerships with the Jewish General Hospital, McGill University Health Centre (MUHC) and the *Centre Hospitalier Universitaire de Montréal* (CHUM). Most recently, Sunnybrook Hospital in Toronto agreed to join the alliance, and Dr. Watson hopes that before long this will become a national translational research network, involving scientists, surgeons, pathologists and dermatologists.

If he is successful, this will be the first research-based melanoma network in Canada. Similar structures exist in the United States, including MD Anderson in Houston, Texas, where Dr. Watson spent five years before heading back to Canada.

Originally from Toronto, he was always aware that he wanted

to work in the scientific or medical fields. "I wanted to find something that I could dedicate my life to," says Dr. Watson. In melanoma research, he has found just that.

A reserved person by nature, don't let his shy disposition fool you. Dr. Watson is hyper-focused, and ready to take on complex research questions. He's had the good fortune of working with renowned melanoma scientists, and is fast becoming one of the next leaders' in the field.

It is clear that Dr. Watson isn't looking for praise, but results. It's rather fitting then, that when he received the award for Young Investigator at the Melanoma Research Alliance, the financial support that came along with it was given anonymously.

When asked about his future goals, his selflessness shines through once again, "I want to address the important issues, help to improve how we are treating patients and train the next generation of researchers."

These are large aspirations, but we are all rooting for him to get a hole-in-one.



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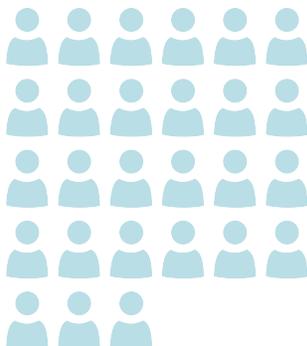
	2017			2015	
REVENUES (in dollars)	Operating	Research	Capital Assets	Total	Total
McGill University	\$21,709.00	\$4,674,697.51		\$4,696,406.51	\$4,974,711.21
Grants	\$170,000.00	\$14,151,503.53		\$14,321,503.53	\$16,680,410.16
Chairs & Salary Awards	\$106,528.00			\$106,528.00	\$23,882.00
Student & Postdoctoral Awards	\$309,900.02	\$313,653.75		\$623,553.77	\$775,988.89
Core Facilities (External clients)	\$655,296.70			\$655,296.70	\$352,362.97
Contracts		\$1,340,479.00		\$1,340,479.00	\$1,579,505.00
Donations		\$2,843,009.70		\$2,843,009.70	\$5,995,366.01
Sponsorship & Other	\$368,483.45			\$368,483.45	\$334,426.89
<b>TOTAL</b>	<b>\$1,631,917.17</b>	<b>\$23,323,343.49</b>	<b>\$ -</b>	<b>\$24,955,260.66</b>	<b>\$30,716,653.13</b>

EXPENSES (in dollars)	Operating	Research	Capital Assets	Total	Total
Salaries & Benefits	\$1,546,012.75	\$12,098,628.25		\$13,644,641.00	\$16,576,939.33
Supplies & Services	\$1,222,237.12	\$8,601,307.52	\$160.04	\$9,823,704.68	\$8,470,520.78
Maintenance & Repairs	\$8,411.46	\$142,440.40	\$360.46	\$151,212.32	\$134,938.70
Scientific Equipment	\$113,867.35	\$3,378,370.51	\$12,514.98	\$3,504,752.84	\$1,876,138.52
Miscellaneous	\$421.37	\$7,739.14		\$8,160.51	\$26,775.74
<b>TOTAL</b>	<b>\$2,890,950.05</b>	<b>\$24,228,485.82</b>	<b>\$13,035.48</b>	<b>\$27,132,471.35</b>	<b>\$27,085,313.07</b>

## BY THE NUMBERS

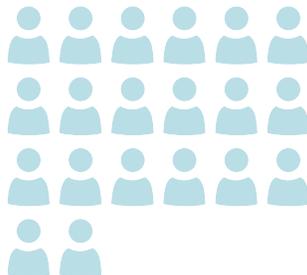
27

PRINCIPLE  
RESEARCHERS



20

AFFILIATE AND  
ASSOCIATE MEMBERS



18

ADMINISTRATIVE  
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215

TRAINEES

