BANTING
RESEARCH FOUNDATION

Annual Report 2019

Inspiring health science discovery—
Building on the Banting legacy

Table of Contents

Mission

The Banting Research Foundation invests in the early careers of researchers who demonstrate excellence and creativity in health and biomedical sciences.

La Fondation de recherche Banting investit dans le début de carrière de chercheurs qui font preuve d'excellence et de créativité en sciences de la santé et en sciences biomédicales.

The lab of Dr. Florian Bentzinger (2017 Discovery Award recipient)

Message from the Chair

Through our Discovery Awards program, The Banting Research Foundation continues to fulfill its mission by supporting young investigators across Canada who are destined to become our future scientific and academic leaders. I am quite confident in this statement for the following reasons. First, our Awardees have demonstrated both outstanding scientific achievement and creative innovation in their highly competitive projects adjudicated by our expert Grant Review Panel. Second, based on a recent analysis, we know that within the first 5 years of their university appointments 88% of our Awardees' successfully compete for federal Tri-Council research grants. The usual success rate for these competitions is less than 20%, attesting to the amazing quality of our Awardees. Finally, if we look back over the many years of Awardees, the vast majority represent Canada's top health and biomedical researchers. These include Henry Friesen who discovered the hormone prolactin and as President of the Medical Research Council of Canada led its transformation into the Canadian Institutes of Health Research. Imogen Coe, recognized for her research in membrane biology, became the founding Dean of Science at Ryerson University. The Banting legacy lives on through the careers and contributions of all our Awardees.

Over the past few years, we have partnered with our donors and sponsors to increase the funds available for Discovery Awards. I wish to thank the McLean Foundation, the Dystonia Medical Research Foundation, the J.P. Bickell Foundation, the Henry White Kinnear Foundation and the McLaughlin Centre at the University of Toronto, along with our many donors for their generous support. The Foundation continues to receive applications from many excellent candidates who we are unable to fund. Therefore, we continue our efforts to increase our funding capacity through strategic partnering and fund- raising.

May I thank our volunteers including our Board of Trustees, and members of our Campaign Cabinet and Grant Review Panel for their commitment, expertise and many hours of service. Their efforts sustain the Banting legacy of scientific excellence and innovation in Canada. I wish to specifically recognize and thank three long standing Trustees who have completed their terms this year for their stellar contributions – Aubie Angel, Avrum Gotlieb, and William

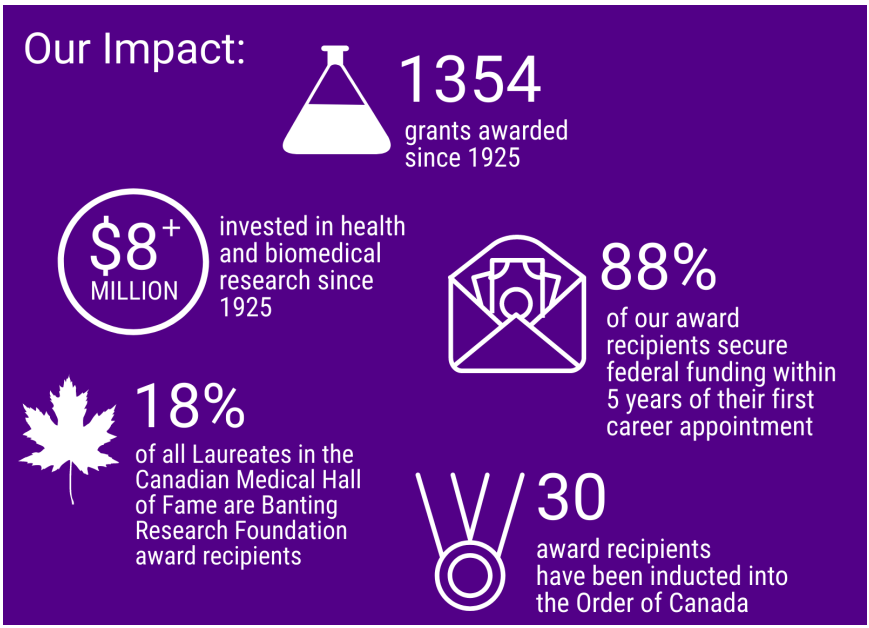
Hewitt. We were delighted to welcome Gerald Lokash to our Board who will Chair our Audit, Finance and Investment Committee.

The Banting Research Foundation is now working jointly with the Charles H. Best Foundation, the Sir Frederick Banting Legacy Foundation and the Royal Canadian Institute for Science on events scheduled for April 17 & 18, 2021 to celebrate the 100th Anniversary of the Discovery of Insulin. We will highlight the continuing impact of the discovery on past and future generations of researchers and on the many lives of persons who have benefited from insulin. Mark your calendars!

This year, The Banting Research Foundation was granted Viceregal Patronage by Her Excellency the Right Honourable Julie Payette, Governor General of Canada. We are thrilled to be welcoming an Honorary Patron who shares our passion for supporting health and biomedical science and research.

Many, many thanks to our Executive Director, Tavia Caplan, who works tirelessly on behalf of the Foundation. The renewal of our website, enhanced social media presence and seamless management of our Discovery Awards competition are among her many accomplishments for which we are most grateful.

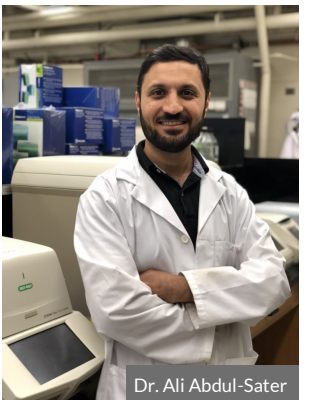
Catharine Whiteside, CM MD PhD FRCPC
Chair, Board of Trustees
The Banting Research Foundation



Research updates from the 2018-19 Discovery Award recipients

Ali Abdul-Sater, PhD, York University

Dissecting the role of TRAF1 in regulating inflammatory and autoimmune diseases

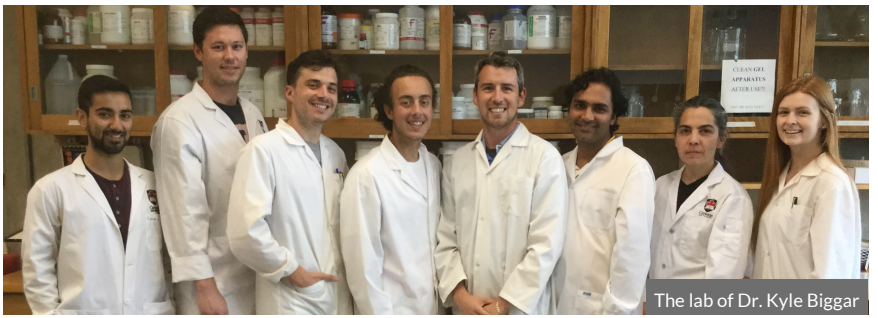

Dr. Ali Abdul-Sater

TRAF1 is an immune signaling molecule associated with the development of Rheumatoid Arthritis. Dr. Abdul-Sater's research group set out to understand how TRAF1 interacts with different immune pathways– results that will ultimately help the team devise a research model to specifically target TRAF1. By employing a series of genetic and biochemical experiments, the team identified the residues of interaction between TRAF1 and cIAP2 as well as LUBAC components. With this preliminary data, Dr. Abdul-Sater was able to secure nearly 1.2 million dollars in funding from federal and other agencies and now has a robust research group composed of 10 highly qualified personnel.

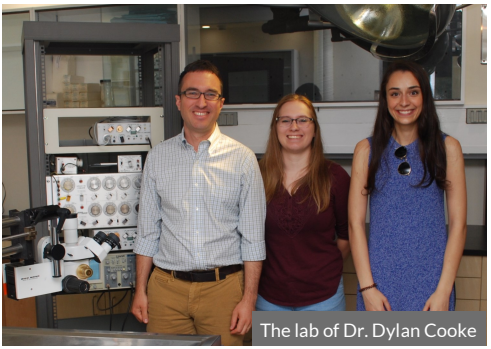
Kyle Biggar, PhD, Carleton University

Identification of new substrates of the histone regulator, SMYD3, and their implication in lung cancer development

In lung cancer patients, previous work showed that expression of the histone regulator SMYD3 predicted both progression and survival. To advance our understanding of how SYMD3 dysfunction drives cancer, Dr. Biggar's team used modern biochemical approaches to identify new proteins that are modified by SMYD3. Dr. Biggar's Discovery Award helped him train a team of two scientists, who successfully identified a new and functionally relevant substrate of SYMD3, which has direct implications in cancer cell migration.


The lab of Dr. Kyle Biggar

Dylan Cooke, PhD, Simon Fraser University


The lab of Dr. Dylan Cooke

Accelerated mapping of individual variation in brain organization with online detection of EMG activity

Brain organization varies significantly between individuals, yet no studies have tested whether it is associated with skills like dexterity. Dr. Cooke's research is focused on developing an automated brain mapping system—a fast method to measure the organization of the part of the brain that controls muscle activity. The team has now successfully collected data which will crucially inform an algorithm to analyze muscle activity. This work will ultimately be used to answer questions such as: Are "natural athletes" aided by specific natural variations in the ways that brains control muscles?


Dr. Nomazulu Dlamini

Nomazulu Dlamini, MD PhD, The Hospital for Sick Children, University of Toronto

Recipient of the 2018 Discovery Award supported by Dystonia Medical Research Foundation Canada

Neural network reorganization and maladaptive plasticity in dystonia post childhood basal ganglia stroke

Dystonia is a disabling movement disorder common in children with basal ganglia stroke. Dr. Dlamini's research group is examining pediatric stroke patients with and without post-stroke dystonia to asses the differences in their neural networks. The team has successfully recruited several participants and began completing structural and functional imaging (MRI and MEG) and conducting a battery of cognitive and psychological tests. This data will improve our understanding of why, when, and in whom dystonia occurs, and help to identify potential targeted therapies.

Robert Huber, PhD, Trent University

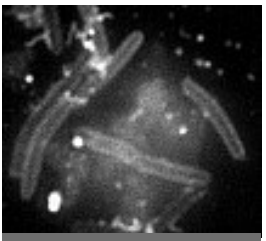
Using the social amoeba Dictyostelium discoideum to study Batten disease

Mutations in the CLN5 gene cause Batten disease, a rare and devastating neurological disorder. Dr. Huber's research team is using a social amoeba as a

model system to examine the function of CLN5 and the effects of CLN5-deficiency. Their work showed for the first time that CLN5 is an enzyme that processes sugar-containing molecules, providing insight into how mutated CLN5 could ultimately lead to neurodegeneration. Using this pilot data, Dr. Huber was able to secure longer-term funding from the federal government to continue to examine the mechanisms underlying Batten disease.

Salim Islam, PhD, INRS – Institut Armand-Frappier

Understanding colonization and persistence in bacterial social networking



Bacterial cells creating tubes

Dr. Islam's research group examines the mechanisms used by bacteria to remodel their surfaces in order to generate connection tubes important for colonizing biological settings. To monitor the bacterial cell surface in live cells, the research team synthesized molecules to fluorescently label the cell surface. This labeling allowed them to visualize the cell surface using florescence microscopy and collect preliminary data on the events taking place to produce cell-cell interactions.

> *"The seed funding provided by the Banting Discovery Award has allowed me to launch a truly novel and innovative research project in my laboratory which has the potential to fundamentally change the way in which microbiologists study the surface of bacterial cells."*

Dr. Ian Rodrigue-Gervais

Ian Rodrigue-Gervais, PhD, INRS – Institut Armand-Frappier, Université de Québec

Examining the function of mitochondrial proteases in flu pathogenesis

The flu kills thousands of people annually, often as a result of tissue death, or necrosis, which occurs as the body attempts to clear the virus. Dr. Rodrigue-Gervais' group is working to understand how proteins control necrosis, which is a key step towards developing new methods to combat the flu. His team of 5 student-researchers has made significant progress in understanding how the mitochondrial protease HtrA2 controls virus-induced necrosis. This work was published in Scientific Reports and let to a new avenue of research in Dr. Rodrigue-Gervais' lab focused on how mitochondrial genetic risk is associated with mortality from severe flu disease.

Rebecca Shapiro, PhD,
University of Guelph

Using genetic and functional genomic analysis to study antifungal drug resistance in Candida auris


The lab of Dr. Rebecca Shapiro

Candida auris is an emerging fungal pathogen that is highly resistant to antifungal drugs and a critical threat to public health. With the support of her Discovery Award, Dr. Shapiro's research group developed a novel CRISPR repression system (CRISPRi) for applications in fungal pathogens. The group is continuing to discover how this system can be used for large-scale functional genomic screening of genes involved in resistance to antifungal drugs. Since receiving her Discovery Award, Dr. Shapiro's group has published several papers on this subject and secured over 1.9 million dollars in research funding from federal and provincial agencies.

John Trant, PhD, University of Windsor

Developing enzymatically-resistant carbohydrate vaccines for treating lung cancer

Certain sugars are found on most carcinomas but not on healthy cells, making them excellent targets for vaccine development. Dr. Trant's research is focused on creating an effective vaccine against carcinomas by preparing stable forms of cancer-specific sugars that can be easily recognized by our immune systems. The team has successfully prepared several artificial versions of cancer-specific sugars, and is now working to produce candidate vaccines.

"This is an absolutely career-changing program and is extremely important for Canadian Health Science."


The lab of Dr. John Trant

2019-20 Discovery Awards

These projects were approved for funding in the 2019-20 year.

Lindsay Bodell, PhD, Western University

Negative Affect and Reward Processing in Individuals with Binge Eating

Binge eating is a key feature of eating disorders and affects approximately 10% of the population. It is critical to understand what causes individuals to binge eat, so we can improve treatments. Dr. Bodell's research aims to better understand the ways in which negative affect may lead to binge episodes. Her research will examine how negative affect impacts motivation to eat and how individual differences in brain responses to different mood states affect this relationship.

Andrea Bombak, PhD, University of New Brunswick

Intersections of Weight Stigma in New Brunswick

Weight stigma affects risk for stress, diabetes, and heart disease. Little research has explored how people facing other stigmas (like racism, ageism, or classism) are affected by weight stigma. Dr. Bombak's research will explore recommendations for safe healthcare and healthy places in New Brunswick among diverse people of higher weights through interviews and accompanying people to sites they find welcoming and accessible or unsafe, unwelcoming, and inaccessible.

Mahsa Jessri, PhD, University of British Columbia

Dietary Patterns and Food Policies

Poor diet is the most common preventable behavioral risk for chronic diseases in Canada. Using Canada's unique strength in recording population data, Dr. Jessri's research will estimate current and predict the future contribution of dietary patterns to deaths, cardiovascular disease and diabetes. New tools will be created to allow policymakers to assess the impact of different preventive strategies, such as taxations, on death and disease burden across different social groups.

Benoit Laurent, PhD, Université de Sherbrooke

Deciphering the epigenetic regulation of alternative splicing in neurons

Aging can reduce the birth of new neurons. The challenge is to prevent neurons from dying in old age and keep growing new ones in order to stave off neurodegenerative diseases. Dr. Laurent's research aims to understand the mechanisms promoting the generation of neurons. His research will focus

on the transcription factor GATA3 and how it regulates the production of proteins. The findings will ultimately help to develop new therapeutic strategies against neurodegenerative diseases.

Daiva Nielsen, PhD, McGill University

Characterization of the workplace food environment in Montreal Canada

The retail food environment plays a significant role in public health. Dr. Nielsen's research aims to characterize the workplace food environment in the city of Montreal using participant workplace location data for 40,000 middle aged adults. Statistical analyses will be conducted to evaluate relationships between the workplace food environment and health status. The findings will advance methods for studying the food environment and will enable new considerations for gene-environment interaction research.

Arneet Saltzman, PhD, University of Toronto

Recipient of the 2019 Banting Research Foundation/ McLaughlin Centre Discovery Award

Investigating the role of heterochromatin readers in genome stability

Chromosomes consist of DNA packaged with proteins to form chromatin. Mutations of genes controlling chromatin structure are prevalent in cancer. Dr. Saltzman's research will focus on the role of proteins that recognize the more compact regions of the chromosome, termed heterochromatin. She will investigate how these proteins affect cell division, accumulation of DNA mutations, and how they interact with other cancer promoting pathways. This research will lead to a better understanding of the relationship between heterochromatin and genome integrity.

Nicholas Strzalkowski, PhD, Mount Royal University

Recipient of the 2019 Discovery Award supported by Dystonia Medical Research Foundation Canada

Sensory Feedback in Dystonia

Idiopathic dystonia is the third most common movement disorder in adults. Muscle sensory feedback is thought to contribute to dystonia, however this has not been investigated directly. Dr. Strzalkowski's research will use an innovative approach combining microneurography (technique to record from sensory nerves) and a robotic exoskeleton (to control arm position and movement) to provide the first direct measurements of sensory nerve feedback in dystonia. His team expects to find elevated feedback in dystonic patients, a discovery that would help explain disease symptoms and help inform treatment approach.

Viceregal Patronage

In May 2019, The Banting Research Foundation was delighted to announce Her Excellency the Right Honorable Julie Payette, Governor General of Canada, as our Honorary Patron. The Governor General grants Viceregal Patronage to recognize special contributions to society, and to bring special attention to worthy causes and showcase excellence. The Foundation is honoured to gain the support of a governor general who shares our passion for supporting health and biomedical science and research.

Her Excellency the Right Honourable Julie Payette, Governor General and Commander-in-Chief of Canada

Dr. Catharine Whiteside, Chair of the Board of Trustees of The Banting Research Foundation, met with Her Excellency at the CIHR 2018 Golf Leaf Prize Ceremony at Rideau Hall in June 2019. Dr. Whiteside had the pleasure of thanking Her Excellency for her patronage as we continue to support Canada's most promising young researchers.

Dr. Catharine Whiteside and Her Excellency the Right Honourable Julie Payette, Governor General of Canada, at the CIHR 2018 Golf Leaf Prize Ceremony at Rideau Hall in June 2019.

Launching Discovery Event


Dr. Ali Abdul-Sater (2018 Discovery Award recipient)

At our September 2019 recognition event, **Dr. Susan George** (1988 award recipient) shared her inspiring story from her days as an early-career researcher to her current role as Senior Clinician-Scientist at Toronto General Hospital. She expressed how critical funding from The Banting Research Foundation at an early stage of her career allowed her to yield promising data, which eventually led her to study the healthy and diseased human brain . **Dr. Ali Abdul-Sater** (2018 Discovery Award recipient) spoke about his research on inflammation at York University and how his Discovery Award allowed him to hire the right people and get the preliminary data he needed to secure major federal research funding in 2019.


From left to right: Dr. Avrum Gotlieb, Dr. Catharine Whiteside, and Dr. Aubie Angel (1965 award recipient)

The Board recognized Dr. Aubie Angel, Dr. Avrum Gotlieb, and Mr. William Hewitt for their dedicated and long-term service on the Board of Trustees. The Board also recognized Dr. Reinhart Reithmeier, Dr. Robert Maunder, and Dr. Rodrigo Fernandez-Gonzalez for their dedicated service to the Grant Review Panel.


From left to right: Dr. Janet Rossant (1983 award recipient), Dr. Mark Bayfield (2009 award recipient), Dr. Jennifer Steeves (2007 award recipient), and Dr. Ron Pearlman.


From left to right: Dr. Rebecca Shapiro (2018 Discovery Award recipient), Dr. Alicia Viloria-Petit (2009 award recipient).

BALANCE SHEET

As at June 30

	2019	2018
	$	$
ASSETS		
Cash and cash equivalents	**37,235**	23,849
HST recoverable	**5,394**	6,297
Investments, at fair value	**4,729,501**	4,670,922
Artwork	**60,000**	60,000
	4,832,130	4,761,068
LIABILITIES AND FUND BALANCES		
Liabilities		
Accounts payable and accrued liabilities	**7,882**	10,770
Fund balances		
General Fund	**792,947**	829,723
Restricted Fund	**37,500**	12,500
Endowment Fund	**3,993,801**	3,908,075
Total fund balances	**4,824,248**	4,750,298
	4,832,130	4,761,068

This summarized financial information is derived from financial statements that were audited by Ernst & Young LLP, Chartered Professional Accountants. Complete financial statements are available upon request.

CONDENSED STATEMENT OF REVENUE AND EXPENSES AND CHANGES IN FUND BALANCES

Year ended June 30

	2019	2018
	$	$
REVENUE		
Investment income, net	**281,446**	460,840
Donations	**106,273**	63,739
Contribution of artwork	**-**	60,000
	387,719	584,579
EXPENSES		
Grants awarded to new investigators	**225,000**	149,565
Academic grants	**7,500**	9,500
Professional fees	**57,087**	75,932
Office, general and administrative	**12,879**	8,793
Accounting and audit fees	**11,303**	11,164
	313,769	254,954
Excess of revenue over expenses for the year	**73,950**	329,625
Fund balances, beginning of year	**4,750,298**	4,420,673
Fund balances, end of year	**4,824,248**	4,750,298

This summarized financial information is derived from financial statements that were audited by Ernst & Young LLP, Chartered Professional Accountants. Complete financial statements are available upon request.

Board of Trustees and Campaign Cabinet 2018-19

Dr. Catharine Whiteside
Chair of the Board
Emerita Professor and former Dean of Medicine
University of Toronto

Dr. Aubie Angel
Vice-Chair
Professor Emeritus
Senior Fellow, Massey College
University of Toronto
President, Friends of CIHR

Mr. Donald A. Guloien
Past President and Chief Executive Officer of Manulife

Dr. Avrum I. Gotlieb
Professor, Department of Laboratory Medicine and Pathobiology
University of Toronto

Dr. Alexandra Harris
Professional Practice Consultant, Trillium Health Partners

Mr. William E. Hewitt
Treasurer
Chair, Audit, Finance & Investment Committee
Independent Financial and Investment Consultant

Mr. Gerald A. Lokash
C.A./Chartered Professional Accountant and Business Advisor (Retired)

Mr. William Pashby
Secretary
Chair, Governance Committee
Retired Partner
Borden Ladner Gervais

Ms. Molly Verrier
Emerita Professor and former Chair of Physical Therapy and Rehabilitation Science
University of Toronto

Ms. Elizabeth Vosburgh
Former Governor
Governing Council
University of Toronto

Additional Campaign Cabinet members:

Dr. John Floras
Dr. Anna Jarvis
Dr. Reinhart Reithmeier
Dr. Hugh Scully

Viceregal Patron

Her Excellency the Right Honourable Julie Payette

Honourary Patron

Mrs. Nona Macdonald Heaslip

Recent Past Chairs of the Board of Trustees: John S. Floras (2009-2015), John M. Burnes (2000-2009), John G. Ambrose (1994-2000), Dorothy M. Hellebust (1990 -1994), John H. Watson (1987-1990), Elizabeth H. Pearce (1981-1987)

Grant Review Panel 2019

Dr. Reinhart Reithmeier, Chair
Professor, Department of Biochemistry
University of Toronto

Dr. Patricia Brubaker, Vice-Chair and Scientific Officer
Professor, Departments of Physiology and Medicine
University of Toronto

Dr. Irene Andrulis
Professor, Departments of Molecular Genetics and Laboratory Medicine and Pathobiology
University of Toronto

Dr. Imogen Coe
Professor, Department of Chemistry and Biology
Ryerson University

Dr. Whitney Berta
Professor, Institute of Health Policy, Management and Evaluation
University of Toronto

Dr. Brent Derry
Professor, Department of Molecular Genetics
University of Toronto

Dr. Rodrigo Fernandez-Gonzalez
Associate Professor, Institute of Biomaterials & Biomedical Engineering
University of Toronto

Dr. Anthony Gramolini
Professor, Department of Physiology
University of Toronto

Dr. Edith Hillan
Professor, Faculty of Nursing
University of Toronto

Dr. Lorraine Kalia
Assistant Professor, Department of Medicine
University of Toronto

Dr. Peter Lewis
Professor, Department of Biochemistry
University of Toronto

Dr. Robert Maunder
Professor, Department of Psychiatry
University of Toronto

Dr. Daniel Moore
Assistant Professor, Faculty of Kinesiology and Physical Education
University of Toronto

Dr. Arthur Mortha
Assistant Professor, Department of Immunology
University of Toronto

Dr. Kelly O'Brien
Associate Professor, Department of Physical Therapy
University of Toronto

Dr. Jonathan Rocheleau
Associate Professor, Institute of Biomaterials & Biomedical Engineering
University of Toronto

Dr. Christopher Yip
Professor, Department of Chemical Engineering and Applied Chemistry
Director, Institute of Biomaterials & Biomedical Engineering
University of Toronto

Donors, Partners and Sponsors

The Banting Research Foundation was established in 1925 to fund biomedical research innovation. From its endowment, interest and new donations, the Foundation has now funded 1354 awards. Currently, only 9-12% of eligible Discovery Award applicants across Canada are funded due to our limited resources. To ensure that every opportunity to support innovative scientific discovery is achieved, we are working hard to increase our funding capacity to support more young scientists. Since 2017, we have more than doubled our annual revenue from donations thanks to generous contributions from individuals and foundations and partnerships with other small health organizations. Still in 2019, 13 deserving applications were left unfunded.

Your contribution will go a long way to help launch the careers of our young scientists whose research promises to have major impacts on improving health. We are interested in providing opportunities for sponsors who wish to partner with the Foundation targeting research in a specific health or biomedical field.

The Banting Research Foundation gratefully acknowledges donations from the following individuals and foundations during the 2019 fiscal year (donors who made donations of $1k or more are listed):

Jackman Foundation
J.P. Bickell Foundation
The Henry White Kinnear Foundation
The McLean Foundation
The William and Nona Heaslip Foundation

John Burnes
Don Guloien and Irene Boychuk
Anna Jarvis
Catharine Whiteside
Anonymous

Thank you! Your donations have supported innovative health and biomedical research projects by outstanding early-career investigators.

Many thanks to the University of Toronto Faculty of Medicine for the in-kind contribution of our office space.

Thank you to Velcro Dog Designs for the in-kind web-design services.

Charitable registration number 108072927 RR 0001
We invite you to donate online at www.bantingresearchfoundation.ca/donate

Save the date: The 100th Anniversary of the Discovery of Insulin

APRIL 17-18, 2021

Walk in the Footsteps of Banting

Visit the birthplace of Frederick Banting and meet today's diabetes researchers

- Saturday April 17- Banting Homestead Heritage Park, Alliston, ON

Living Legacy of Discovery

Celebrate Canada's gift to the world and its impact worldwide

- Sunday April 18 - University of Toronto, Toronto, ON

Presented by:

BANTING RESEARCH FOUNDATION
CHARLES H. BEST FOUNDATION
SIR FREDERICK BANTING LEGACY FOUNDATION
RCIScience

The Banting Research Foundation
10 — 6 Queen's Park Crescent West
Toronto ON M5S 3H2

416-595-9046

info@bantingresearchfoundation.ca

BantingResearchFoundation.ca

 @BantingResearch

The Banting Research Foundation

Financial statements
June 30, 2019

Independent auditor's report

To the Members of
The Banting Research Foundation

Opinion

We have audited the financial statements of **The Banting Research Foundation** [the "Foundation"], which comprise the statement of financial position as at June 30, 2019 and the statement of revenue and expenses and changes in fund balances and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Foundation as at June 30, 2019, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of our report. We are independent of the Foundation in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

Management is responsible for the other information. The other information comprises the information included in the Annual Report, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information, and in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

We obtained the Annual Report prior to the date of this auditor's report. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian generally accepted accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Foundation's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Foundation or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Foundation's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Foundation's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Foundation's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Foundation to cease to continue as a going concern.
- Evaluate the overall presentation, structure, and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Ernst & Young LLP

Chartered Professional Accountants
Licensed Public Accountants

Toronto, Canada
November 7, 2019

The Banting Research Foundation

Statement of financial position

As at June 30

	2019 $	2018 $
Assets		
Cash and cash equivalents	**37,235**	23,849
HST recoverable	**5,394**	6,297
Investments, at fair value *[note 3]*	**4,729,501**	4,670,922
Artwork	**60,000**	60,000
	4,832,130	4,761,068
Liabilities and fund balances		
Liabilities		
Accounts payable and accrued liabilities	**7,882**	10,770
Total liabilities	**7,882**	10,770
Commitment *[note 7]*		
Fund balances		
General Fund	**792,947**	829,723
Restricted Fund	**37,500**	12,500
Endowment Fund *[note 5]*	**3,993,801**	3,908,075
Total fund balances	**4,824,248**	4,750,298
	4,832,130	4,761,068

See accompanying notes

On behalf of the Board:

Trustee

Trustee

The Banting Research Foundation

Statement of revenue and expenses and changes in fund balances

As at June 30

	General Fund		Restricted Fund		Endowment Fund		Total	
	2019	2018	2019	2018	2019	2018	2019	2018
	$	$	$	$	$	$	$	$
Revenue								
Investment income, net *[note 6]*	**195,720**	308,883	**—**	—	**85,726**	151,957	**281,446**	460,840
Donations	**68,773**	26,239	**37,500**	37,500	**—**	—	**106,273**	63,739
Contribution of artwork	**—**	60,000	**—**	—	**—**	—	**—**	60,000
	264,493	395,122	**37,500**	37,500	**85,726**	151,957	**387,719**	584,579
Expenses								
Grants awarded to new investigators	**212,500**	124,565	**12,500**	25,000	**—**	—	**225,000**	149,565
Academic grants	**7,500**	9,500	**—**	—	**—**	—	**7,500**	9,500
Professional fees	**57,087**	75,932	**—**	—	**—**	—	**57,087**	75,932
Office, general and administrative	**12,879**	8,793	**—**	—	**—**	—	**12,879**	8,793
Accounting and audit fees *[note 4]*	**11,303**	11,164	**—**	—	**—**	—	**11,303**	11,164
	301,269	229,954	**12,500**	25,000	**—**	—	**313,769**	254,954
Excess (deficiency) of revenue over expenses for the year	**(36,776)**	165,168	**25,000**	12,500	**85,726**	151,957	**73,950**	329,625
Fund balances, beginning of year	**829,723**	664,555	**12,500**	—	**3,908,075**	3,756,118	**4,750,298**	4,420,673
Fund balances, end of year	**792,947**	829,723	**37,500**	12,500	**3,993,801**	3,908,075	**4,824,248**	4,750,298

See accompanying notes

The Banting Research Foundation

Statement of cash flows

Year ended June 30

	2019 $	2018 $
Operating activities		
Excess of revenue over expenses for the year	**73,950**	329,625
Deduct non-cash items		
Realized gain on sale of investments	**(65,540)**	(126,622)
Increase in unrealized gain	**(50,387)**	(175,357)
Contribution of artwork	**—**	(60,000)
Changes in non-cash working capital balances related to operations		
Decrease (increase) in HST recoverable	**903**	(5)
Decrease in accounts payable and accrued liabilities	**(2,888)**	(6,557)
Cash used in operating activities	**(43,962)**	(38,916)
Investing activities		
Proceeds on sale of investments, net	**57,348**	33,977
Cash provided by investing activities	**57,348**	33,977
Net increase (decrease) in cash during the year	**13,386**	(4,939)
Cash and cash equivalents, beginning of year	**23,849**	28,788
Cash and cash equivalents, end of year	**37,235**	23,849

See accompanying notes

The Banting Research Foundation

Notes to financial statements

June 30, 2019

1. Description of organization

The Banting Research Foundation [the "Foundation"] was incorporated under the *Corporations Act* (Ontario) by Letters Patent in 1925. The Foundation supports talented young medical researchers in Canada conducting a broad range of health and bio-medical research. As its principal focus, the Foundation supports research awards for investigators who are within the first three years of their first university or research institute appointment.

The Foundation is a registered charity [charitable number 108072927RR0001] and, as such, is exempt from income taxes under the *Income Tax Act* (Canada).

2. Summary of significant accounting policies

The financial statements of the Foundation have been prepared in accordance with Canadian accounting standards for not-for-profit organizations. The significant accounting policies are as follows:

Fund accounting

The Foundation follows the restricted fund method of accounting for contributions. The Foundation ensures, as part of its fiduciary responsibilities, that all funds received with a restricted purpose are expended for the purpose for which they are provided.

For financial reporting purposes, the accounts have been classified into the following funds:

General Fund

The General Fund accounts for the other revenue and expenses of the Foundation. The General Fund reports unrestricted resources available for immediate purposes.

Restricted Fund

The Restricted Fund accounts for the resources with restrictions required by the donor or the Board with respect to the purpose of the funds or when the funds can be spent. The Restricted Fund reports, as revenue and expenses, the receipt and the use of funds restricted by donors.

Endowment Fund

The Endowment Fund accounts for the resources that are required by the donor to be maintained by the Foundation on a permanent basis and resources transferred to the Endowment Fund by the Board of Trustees [the "Board"].

Cash and cash equivalents

Cash and cash equivalents consist of cash on deposit and short-term investments with a short term to maturity of three months or less from the date of purchase unless they are held for investment rather than liquidity purposes, in which case they are classified as investments.

Notes to financial statements

June 30, 2019

Financial instruments

Investments reported at fair value consist of equity instruments that are quoted in an active market, as well as investments in pooled funds and any investments in fixed income securities that the Foundation designates upon purchase to be measured at fair value. Transaction costs are recognized in the statement of revenue and expenses and changes in fund balances in the period during which they are incurred.

Investments in fixed income securities not designated to be measured at fair value, are initially recorded at fair value plus transaction costs and are subsequently measured at amortized cost using the straight-line method, less any provision for impairment.

All investment transactions are recorded on the trade date.

Other financial instruments, including receivables and payables, are initially recorded at their fair value and are subsequently measured at cost.

Artwork

Donated artwork is recorded at an appraised value established by an independent appraisal in the year received by the Foundation. These assets are considered to have a permanent value and are not amortized, but are assessed annually for indicators of impairment.

Revenue recognition

Donations are recorded as revenue when received since pledges are not legally enforceable claims. Donor-restricted donations for endowment purposes are recognized as revenue in the Endowment Fund. Other donor-restricted donations are recognized as revenue in the Restricted Fund and unrestricted donations are recognized as revenue in the General Fund.

Income from investments, which consists of interest, dividends, distributions from pooled funds and realized and unrealized gains and losses, is recorded as revenue in the statement of revenue and expenses and changes in fund balances. Realized and unrealized gains (losses) earned on endowments externally restricted by donors are recorded as income (loss) of the Endowment Fund. Other investment income that must be spent on donor-restricted activities is recognized as income of the Restricted Fund. All other investment income (loss) is recognized as income (loss) of the General Fund.

Grants

Grants distributed by the Foundation are recorded as an expense when approved and all conditions to be complied with before payment is made have been met by the grantee. Grants returned to the Foundation are recorded as revenue when the Foundation becomes aware that the grantee is going to return the funds.

Contributed materials and services

Contributed materials and services are not recognized in the financial statements.

Notes to financial statements

June 30, 2019

3. Investments

Investments, at fair value, consist of the following:

	2019 $	2018 $
Cash	**18,149**	13,049
Phillips, Hager & North Canadian Money Market Fund	**—**	88,308
Phillips, Hager & North Bond Fund	**652,839**	613,590
Phillips, Hager & North Mortgage Pension Trust Fund	**706,613**	622,688
Phillips, Hager & North Canadian Equity Value Fund	**707,910**	717,090
RBC Qube Low Volatile Canadian Equity Fund	**705,298**	710,494
RBC Emerging Markets Equity Fund	**238,001**	219,911
RBC Global Equity Focus Fund	**1,700,691**	1,685,792
	4,729,501	4,670,922

The asset mix of investments is as follows:

	2019 %	2018 %
Cash and cash equivalents	**0.4**	2.2
Canadian fixed income	**28.7**	26.4
Total cash and cash equivalents and fixed income	**29.1**	28.6
Canadian equities	**29.9**	30.6
Global equities	**41.0**	40.8
Total equities	**70.9**	71.4
	100.0	100.0

4. Related party transactions

The University of Toronto [the "University"] provides facilities to the Foundation for which no rent is paid. In addition, the University provides accounting services for a fee of $4,200 [2018 – $4,200]. In the event of dissolution of the Foundation, all of its remaining assets [after the payment of debts and liabilities] would be distributed to the University to form part of its Connaught Fund.

Notes to financial statements

June 30, 2019

5. Endowment Fund

The Endowment Fund consists of the following:

	2019 $	2018 $
Externally restricted by the donor	**1,692,987**	1,607,261
Internally restricted by the Board	**2,300,814**	2,300,814
	3,993,801	3,908,075

The portion of the Endowment Fund externally restricted by the donor was derived from the initial seed capital contributed in 1925 of $456,438. The portion of the Endowment Fund internally restricted by the Board was substantially derived from a $1,000,000 donation from the estate of Kate Taylor, contributed in 1952. The appreciation of the portion of the Endowment Fund externally restricted by the donor has been achieved through realized and unrealized gains in investment income, while the appreciation of the portion of the Endowment Fund internally restricted by the Board has been achieved through Board-approved transfers from the General Fund.

6. Investment income, net

Investment income, net, consists of the following:

	2019 $	2018 $
Distributed income reinvested in pooled funds		
Interest and dividends	**105,915**	101,152
Capital gain distribution	**92,501**	90,270
Realized gain on sale of investments	**65,540**	126,622
Increase in unrealized gain	**50,387**	175,357
Investment management fees	**(32,897)**	(32,561)
	281,446	460,840

Investment income is allocated to the funds as follows:

	2019 $	2018 $
Total investment income reported above	**281,446**	460,840
Deduct 41.13% [2018 – 38.74%] of the realized gain and increase in unrealized gain allocated to the Endowment Fund	**(85,726)**	(151,957)
Investment gain allocated to the General Fund	**195,720**	308,883

Notes to financial statements

June 30, 2019

7. Commitment

The Foundation has committed to grant awards to new investigators totalling $164,152 in the next fiscal year.

8. Financial instruments

Currency risk

The Foundation is exposed to currency risk with respect to the underlying investments held by pooled funds denominated in foreign currencies because the fair value and future cash flows will fluctuate due to the changes in the relative value of foreign currencies against the Canadian dollar.

Credit risk

The Foundation is exposed to credit risk in connection with its pooled funds that hold fixed income securities because of the risk that one party to the financial instrument may cause a financial loss for the other party by failing to discharge an obligation.

Interest rate risk

The Foundation is exposed to interest rate risk with respect to the underlying investments in fixed income securities held by the pooled funds because the fair value will fluctuate due to changes in market interest rates.

Other price risk

The Foundation is exposed to other price risk through changes in market prices [other than changes arising from interest rate or currency risks] in connection with its investments in pooled funds.