



# Heart and Stroke Foundation Research Report 2017–2018





# Mission

The Heart and Stroke Foundation's mission is to prevent disease, save lives and promote recovery. A volunteer-based health charity, we strive to tangibly improve the health of every Canadian family, every day. 'Healthy lives free of heart disease and stroke. Together we will make it happen.'

Every seven minutes in Canada, someone dies from heart disease or stroke.

Heart disease and stroke are two of the three leading causes of death in Canada; more than 62,000 strokes, an estimated 70,000 heart attacks, and up to 40,000 cardiac arrests occur every year.

Since its inception in 1952, the foundation has invested more than \$1.52 billion into vital heart & stroke research, making it the largest contributor in Canada after the federal government.

Over the past 60 years, thanks to the work of the foundation and our partners, the death rate from heart disease and stroke in Canada has declined by more than 75 per cent. This decline has resulted in 1.6 million people living with their effects today.

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# Acknowledgements

Each year, individuals across Canada join together to further the Heart & Stroke mission of eliminating heart disease and stroke. Canadians from coast to coast to coast donate valuable resources, including their time, money, and expertise, to improve the health and quality of life of all Canadians. The following groups deserve special thanks:

**Donors.** Providing funds to support heart and stroke research is the first step in a process which culminates in scientific breakthroughs that touch all our lives. The donors and volunteers in every community across Canada that have supported the foundation's fundraising efforts have made lasting investments in the future health and well-being of Canadians.

**Council on Mission: Priorities, Advice, Science and Strategy (CoMPASS).** The foundation's primary mechanism for informing Mission directions. Comprised of a cadre of thoughtfully selected, dedicated Canadian experts and Heart & Stroke Mission champions, the CoMPASS mandate is to provide considered and strategic advice on Mission priorities. The members of this committee are identified in Appendix G (page 76).

**Scientific Review Committees.** The scientific and lay reviewers' expertise and commitment enable Heart & Stroke to fund the highest standard of scientific excellence. Exemplary leadership to over 150 volunteer reviewers has been provided by the Scientific Review Committee's Chair and Vice Chair, Drs Gary Newton and Richard Frayne, respectively. The Chairs of Heart & Stroke's vital peer review committees across the foundation are identified in Appendix G (page 77).

**Heart & Stroke Researchers.** Each one of Heart & Stroke's researchers, through extraordinary work, contributes to advancements in the understanding of cardio- and cerebrovascular disease. The knowledge gained from their efforts leads to earlier diagnoses, better treatments and new insights into prevention. Their ongoing commitment to the advancement of knowledge helps Heart & Stroke move closer to achieving its mission.

**Partners.** A number of organizations collaborated with Heart & Stroke in 2017-2018, enabling the foundation to leverage funding and resources for heart and stroke research.

# 1. Purpose and Scope

The purpose of this report is two-fold:

1. To illustrate the Heart & Stroke's overall research investments made in 2017-2018 across all research funding programs and initiatives.
2. To serve as a reference tool for volunteers and staff across the Heart and Stroke Foundation, the research community, other research funding agencies, and academic institutions.

This report covers the period from July 1, 2017 to June 30, 2018. It is a snapshot of expenditures in research during that period. The report presents financial and statistical data for new grants and awards made in 2017-2018, as well as continued funding of previously reported multi-year grants and awards.

## 2. Summary Tables

Table 1. Summary Foundation-wide and Province Specific Research Funding (2017-2018)

Province(s)/ Territory(ies)	Foundation-wide Research Initiatives						Province-specific Research Initiatives						Total	
	Grant-in-Aid		National Personnel Awards		Directed Research Fund		Personnel Awards		Chairs		Other			
	#	\$	#	\$	#	\$	#	\$	#	#	\$	#	\$	
British Columbia/ Yukon	26	2,121,051	-	-	-	-	1	50,000	6	16	200,000	49	2,371,051	
Alberta/Northwest Territories/Nunavut	32	2,721,404	-	-	-	-	5	240,000	7	-	-	44	2,961,404	
Saskatchewan	3	224,974	-	-	-	-	-	-	1	-	-	4	224,974	
Manitoba	9	807,913	-	-	-	-	2	11,000	1	-	-	12	818,913	
Ontario	112	9,106,600	-	-	-	-	39	2,104,000	8	-	-	159	11,210,600	
Quebec	43	3,574,369	-	-	-	-	-	-	-	7	123,980	50	3,698,349	
New Brunswick	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nova Scotia	7	595,220	-	-	-	-	-	-	1	6	30,000	14	625,220	
Prince Edward Island	-	-	-	-	-	-	-	-	-	-	-	-	-	
Newfoundland and Labrador	1	96,113	-	-	-	-	5	10,000	-	-	-	6	106,113	
All**	-	-	21	1,145,012*	29	1,065,340	-	-	-	-	2,000,000†	50	4,210,352	
TOTAL	233	\$19,247,644	21	\$1,145,012	29	\$1,065,340	52	2,415,000	24‡	29	\$2,353,980	388	\$26,226,976	

\*Includes award stipends and applicable travel and/or allowances.

\*\*Denotes competitions/initiatives eligible nationally.

†Heart & Stroke contributions to the Canadian Partnership for Stroke Recovery

‡For the most part, Research Chair and Professorship awards are funded by endowments and are partnered with academic / health research institutions.

The amounts, therefore, are not shown in the financial charts/summary information provided with this report.



Table 2. Detailed Foundation-wide and Province-specific Research Funding (2017-2018)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
British Columbia/Yukon	Grant-in-Aid	26	2,121,051	2,371,051
	Research Chairs*:			
	Chair in Cardiology Research	1	-	
	Chair in Heart Health and Wellness	1	-	
	Chair in Cardiovascular Prevention Research	1	-	
	Chair in Stroke Research	1	-	
	Professorship in Clinical Stroke Research	1	-	
	Professorship in Cardiovascular Nursing	1	-	
	Personnel Awards:			
	Robert Hayden Research Fellowship	1	50,000	
	Other Provincial Initiatives:			
	Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)	16	200,000	
Alberta/Northwest Territories/Nunavut	Grant-in-Aid	32	2,721,404	2,961,404
	Research Chairs*:			
	Chair in Cardiovascular Research	1	-	
	Chair in Stroke Research	1	-	
	Professorship in Cardiovascular Research	1	-	
	Professorship in Neonatal Resuscitation	1	-	
	Professorship in Stroke Research	3	-	
	Personnel Awards:			
	New Investigators	5	240,000	
Saskatchewan	Grant-in-Aid	3	224,974	224,974
	Research Chairs*:			
	Chair in Clinical Stroke Research	1	-	
Manitoba	Grant-in-Aid	9	807,913	818,913
	Research Chairs*:			
	Chair in Primary Prevention	1	-	
	Personnel Awards:			
	Sanofi Canada Heart & Stroke Award in Cardiology	1	10,000	
	Master's Student Award	1	1,000	
Ontario	Grant-in-Aid	112	9,106,600	11,210,600
	Research Chairs*:			
	Chair in Population Health Research	1	-	
	Chair in Cardiac Nursing	1	-	
	Chair in Cardiovascular Research	5	-	
	Chair in Aboriginal and Rural Health	1	-	
	Personnel Awards:			
	Career Investigator	4	332,000	
	Clinician Scientist	8	515,000	
	Mid-Career Investigator	15	1,200,000	
	Summer Student Scholarship	12	57,000	

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
Quebec	Grant-in-Aid	43	3,574,369	3,698,349
	Other Provincial Initiatives:			
	Awards for Excellence in Research	5	100,000	
	Training bursaries	1	6,666	
	Bursaries in partnership with FRQS	1	17,314	
New Brunswick	Grant-in-Aid	-	-	
Nova Scotia	Grant-in-Aid	7	595,220	625,220
	Research Chairs*:			
	Chair in Cardiology Research	1	-	
	Other Provincial Initiatives:			
	Dr. Gregory Ferrier Award	1	5,000	
	BrightRed Student Research Award	5	25,000	
Prince Edward Island	Grant-in-Aid	-	-	
Newfoundland and Labrador	Grant-in-Aid	1	96,113	106,113
	Personnel Awards:			
	Graduate Scholarship	1	1,500	
	Keith Griffiths Memorial Scholarship	1	1,500	
	Undergraduate Nursing Award in Cardiovascular Health	1	1,500	
	Undergraduate Nursing Award in Stroke	1	1,500	
	Heart and Stroke Foundation (NL) MD Research Award	1	4,000	
SUBTOTAL		338	22,016,624	22,016,624
	Directed Research Fund	29	1,065,340	1,065,340
	National Personnel Awards†	21	1,145,012	1,145,012
	Heart & Stroke Canadian Partnership for Stroke Recovery‡	-	2,000,000	2,000,000
TOTAL		388	\$26,226,976	26,226,976

\* For the most part, Research Chair and Professorship awards are funded by endowments and are partnered with academic / health research institutions.

† Includes award stipends, obligatory benefits, and applicable travel and/or research allowances.

‡ Heart & Stroke contributions to the Canadian Partnership for Stroke Recovery

## 3. Research Funding Overview

### 3.1 Scientific Review Process

Scientific peer review is the cornerstone of the foundation's research enterprise. All research funded by Heart & Stroke, at a national or provincial level, undergoes peer review and must meet criteria for scientific rigor.

The purpose of peer review is to ensure excellence in research funded by Heart & Stroke. Peer review is carried out by committees of experts (peer review committees) that encompasses all four themes of health research (basic biomedical, clinical, health services/systems, and social, cultural, environmental and population health). The foundation's peer review is overseen by the Scientific Review Committee (SRC), an advisory committee. For recurring competitions, standing peer review committees are formed, and committee members are recruited for a term of service (typically three years) in order to ensure consistency and continuity in the review process. Standing committee membership may be supplemented by additional members as required, based on the applications received and expertise needed for their review. For ad hoc competitions, committees are formed to review applications for that particular competition and then disbanded.

A typical SRC peer review committee consists of a Chair, Deputy Chair, scientific peer reviewers, Heart & Stroke staff secretariat and other specialized roles, such as lay reviewers or knowledge users, depending on the funding opportunity. Committee members are selected for their high levels of expertise related to the mandate of the review committee and their experience in evaluating and reviewing research funding applications. In addition, membership balances expertise, and ensures that each committee has the capacity to review applications submitted in English or French. Peer review meetings are held in English, but internal and external reviewers are assigned with linguistic abilities in mind.

Standard Steps in Peer Review Process:

1. Applications submitted to Heart & Stroke are administratively reviewed and sorted into their appropriate committee.
2. An allocation meeting to distribute applications is held. The Chair and Deputy Chair of the committee select two internal reviewers (and any required external reviewers) for each application. Internal reviewers are members of the Scientific Review Committee who meet face to face whereas external reviewers are members of the scientific community across Canada and internationally selected for their particular expertise.

External reviewers supplement the expertise of the panels and provide written comments on the application submitted. The foundation relies on the support and commitment of many researchers across Canada and internationally to ensure this process is effective.

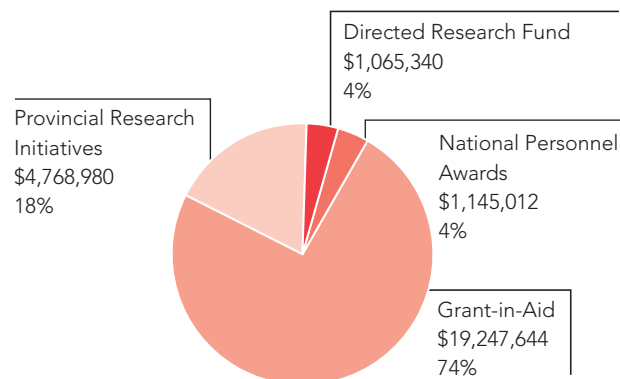
3. Peer review meetings are held in December through to March where the applications are discussed. The Chair or Deputy Chair writes an SRC report which summarizes the discussion and the application is rated.
4. Based on the ratings/rankings as well as available funds, the foundation determines which grants and awards will be funded.

In 2017-2018, over 150 of Canada's top cardio- and cerebrovascular scientists participated on the SRC.

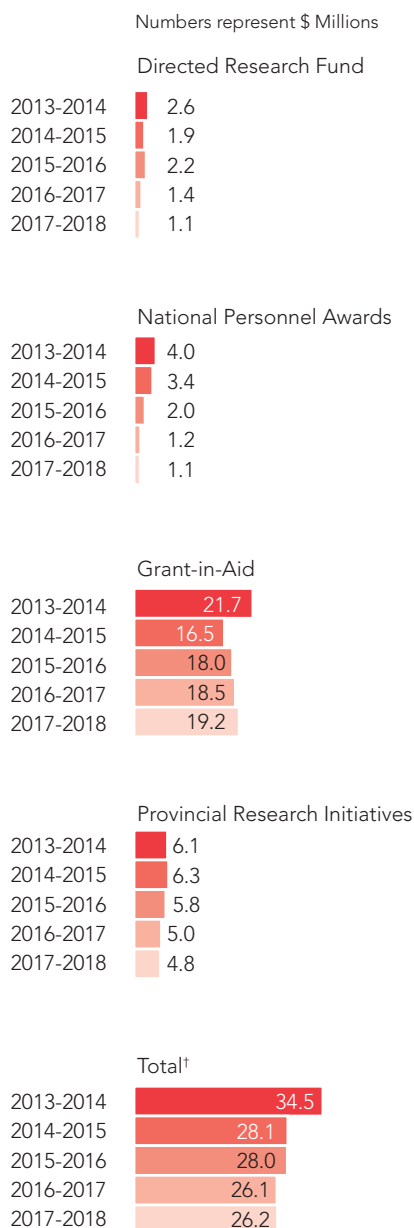
### 3.2 Research Enterprise Components

The Heart & Stroke research enterprise contains four key parts presented in Figure 1. The Grant-in-Aid program (research project operating grants); the National Personnel Awards program (salary awards at doctoral, post-doctoral, and new investigator levels); the Directed Research Fund initiatives (strategic research initiatives primarily in partnership with other funding agencies); and provincial research initiatives (personnel awards, grants, and other awards).

Figure 1. Heart & Stroke Research Funding by Program (2017-2018)



**Figure 2. Heart & Stroke Research Funding Trends by Program (2013-2018)**



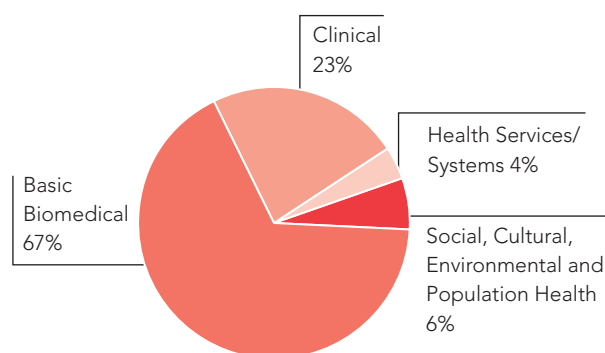
† Does not include Chair and Professorship values.  
Includes Heart and Stroke Foundation Canadian Partnership for Stroke Recovery value.

### 3.3 Investments across Health Research Themes

Research supported by Heart & Stroke spans the four health research themes: basic biomedical, clinical, health services/systems, and social, cultural, environmental and population health (defined in Appendix H).

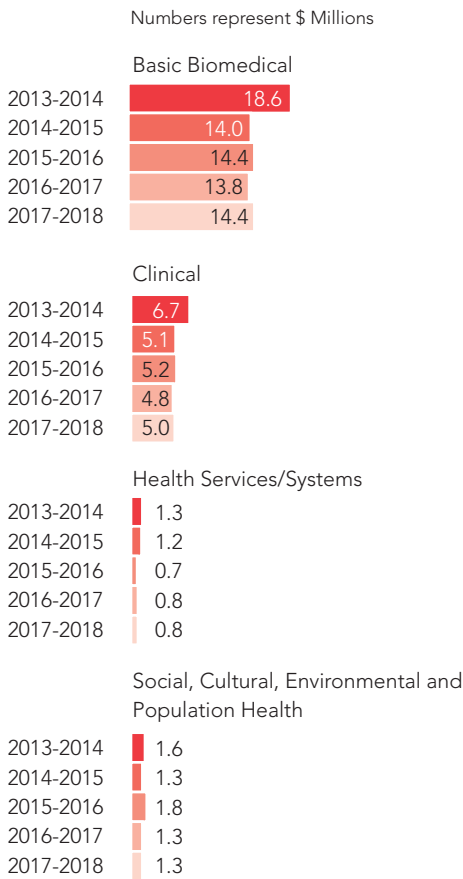
Figures 3 and 4 show the relative Heart & Stroke investments across health research themes. Further in the report, funding by health research theme in each of the foundation-wide programs is presented. Currently, we do not have data on provincial initiatives by theme.

**Figure 3. Heart & Stroke Research Funding by Health Research Theme (2017-2018) †**



† Includes Directed Research Fund, National Personnel Awards (stipends only), and Grant-in-Aid funding.

Figure 4. Heart & Stroke Research Funding Trends by Health Research Theme (2013-2018)<sup>†</sup>



<sup>†</sup> Includes Directed Research Fund, National Personnel Awards (stipends only), and Grant-in-Aid funding.

## 4. 2017–2018 Research Funding by Program

This section provides summary information for each of the four main components of the Heart & Stroke research enterprise:

Foundation-wide research programs:

1. Directed Research Fund
2. National Personnel Awards
3. Grant-in-Aid
4. Province-specific research initiatives:
  - i. Provincial Research Chairs and Professorships
  - ii. Provincial Personnel Awards
  - iii. Other Provincial Research Initiatives

### 4.1 Directed Research Fund

The Directed Research Fund (DRF) supports research in areas of strategic priority to the foundation, typically through a request for applications process, and in partnership with other agencies and organizations.

New initiative appearing in this year's report:

- 1) *HSFC/CIHR Chair in Hypertension Prevention and Control:*

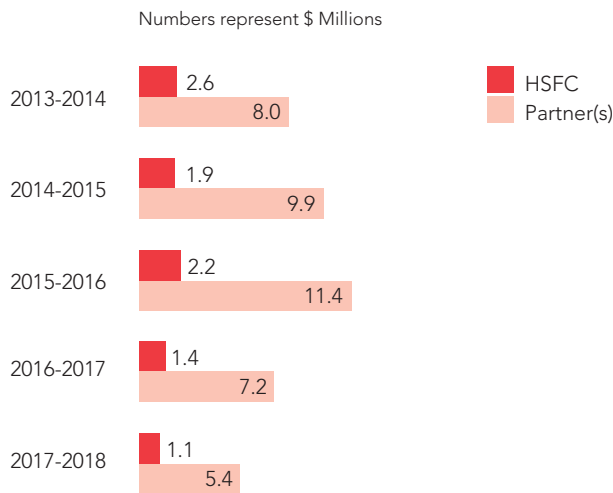
This initiative supports a Chair in the area of hypertension research who will focus on improving awareness, prevention and control of hypertension; identifying gaps in knowledge transfer and exchange / knowledge translation from evidence to practice for hypertension prevention and control; and developing and evaluating new policies, programs and interventions aimed at reducing the burden and/or impact of hypertension.
- 2) *Emerging Research Leaders Initiative (ERLI) 2016:* ERLI is an establishment grant program for researchers at the transition stage from post-doctoral fellow to early professional career stage in the areas of cardiovascular and/or cerebrovascular research. This initiative aims to support successful early career launch of new investigators. Through this initiative, partners will provide establishment grant funds that will create a set of conditions conducive to the successful career launch of emerging research leaders in the cardiovascular and/or cerebrovascular health research domains.

The majority of the projects listed in Appendix A represent the continuation of previously reported research investments. A total of 7 initiatives, representing 29 individual grants and awards, are detailed in Appendix A.

The total value of the foundation's investment in these strategic projects for 2017-2018 is over \$1 million. In addition to the foundation's investment, partner funds have further extended the DRF research portfolio, leveraging donors' dollars.

As outlined in Figure 5, foundation funding is leveraged by a ratio of five to one. Over a 5 year period, the foundation has taken steps to more fully align the DRF's investments with the strategic mission priorities of the foundation.

Figure 5. Directed Research Fund Leveraged Funding (2013-2018)



One of the objectives of the DRF is to support multi-disciplinary research in the areas of health services/systems and social, cultural, environmental and population health. Figures 6 and 7 illustrate significant progress in achieving this objective while remaining responsive across health research themes.

Figure 6. Directed Research Fund Funding by Health Research Theme (2017-2018)

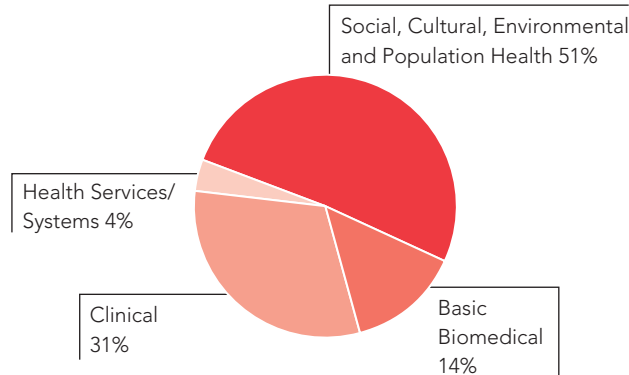
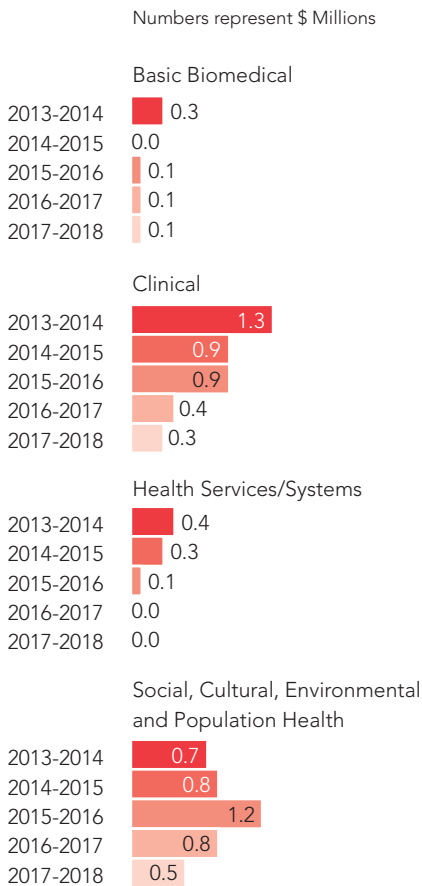


Figure 7. Directed Research Fund Funding Trends by Health Research Theme (2013-2018)



4.2 National Personnel Awards

National Personnel Awards build Canada's cardio- and cerebrovascular research capacity by providing salary support to investigators at early scientific career stages. In 2017-2018, Heart & Stroke only launched the New Investigator award program. Other existing awards continued being funded in 2017-2018. These programs included Distinguished Clinician Scientist and Doctoral Research Award.

National Personnel Awards Programs in 2017-2018

- Distinguished Clinician Scientist* — A salary award to support clinical new investigators who wish to establish their own independent research laboratory. This award is given to the highest ranked eligible clinician in the New Investigator competition (\$75,000 stipend + \$25,000 research allowance per year for five years, including fringe benefits).
- New Investigator* — A salary award to support new investigators who wish to establish their own independent research laboratory (\$60,000 per year for four years, including fringe benefits).
- Doctoral Research Award* — A training award for graduate students, enrolled in a PhD program, who are undertaking full-time research training (\$21,000 + \$1,000 travel allowance per year for up to three years).

In 2017-2018, 21 new and continuing awards were funded. The total Heart & Stroke investment in National Personnel Awards in 2017-2018 was over \$1.1 million (Table 3). A list of award recipients can be found in Appendix B.

Improving the Heart and Brain Health for Women:

The Canadian Federal Budget 2016 provided for an investment of \$5 million over five years to the Heart and Stroke Foundation to support targeted research on women's heart and brain health and to promote collaboration between research institutions across the country.

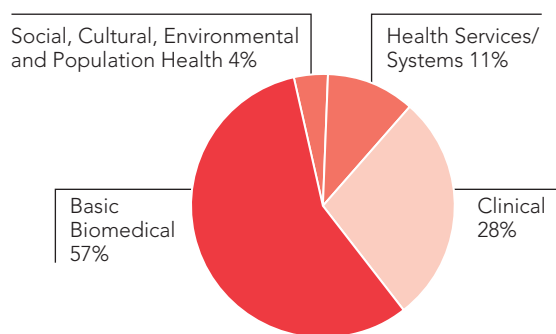
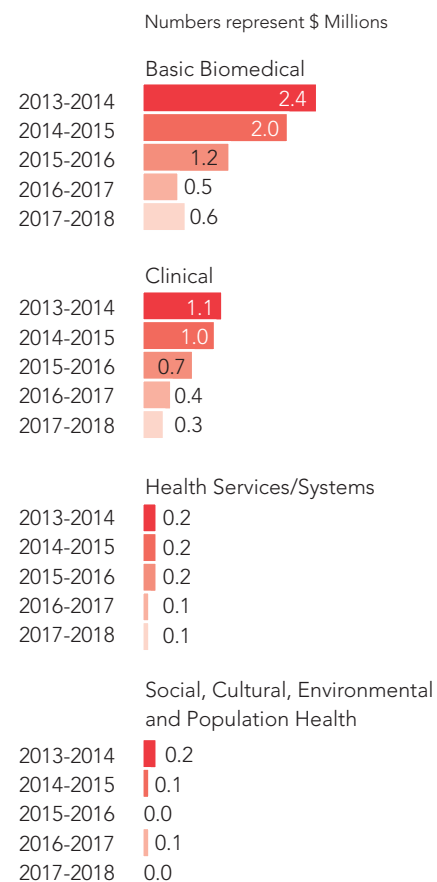
Through this new commitment, the foundation in 2017-2018 offered as part of the National New Investigator (NNI) program funding specifically targeted towards the improvement of the heart and brain health for women. One NNI award is offered to the highest rated in this category, within the cut-point of the overall National New Investigator competition. Dr. Margaret Davenport from the University of Alberta is the recipient of the Improving Heart and Brain Health for Women New Investigator award. Details of the New Investigator award can be found in Appendix B.

Table 3. Number of National Personnel Awards and Investment of Funds (2017-2018)

Program	Recipients (#)	Funds Invested (\$)
Distinguished Clinician Scientist	1	75,000
New Investigator	19	1,029,167
Doctoral Research Award	1	14,000
Research Allowance	-	25,000
Travel Allowance	-	1,845
TOTAL	21	1,145,012

Table 4. National Personnel Awards by Health Research Theme (2017-2018) <sup>†</sup>

Type of Award	Basic Biomedical		Clinical		Health Services/ Systems		Social, Cultural, Environmental and Population Health		Total	
	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)
Distinguished Clinician Scientist	0.0	-	0.1	7,500	0.8	60,000	0.1	7,500	1.0	75,000
New Investigator	11.4	635,417	6.0	290,250	1.1	68,500	0.6	35,000	19.0	1,029,167
Doctoral Research Awards	0.0	-	1.0	14,000	0.0	-	0.0	-	1.0	14,000
<b>TOTAL</b>	<b>11.4</b>	<b>\$635,417</b>	<b>7.1</b>	<b>\$311,750</b>	<b>1.9</b>	<b>\$128,500</b>	<b>0.7</b>	<b>\$42,500</b>	<b>21.0</b>	<b>\$1,118,167</b>

<sup>†</sup> Includes award stipends only.Figure 8. National Personnel Awards Funding by Health Research Theme (2017-2018) <sup>†</sup><sup>†</sup> Includes award stipends only.Figure 9. National Personnel Awards Funding Trends by Health Research Theme (2013-2018) <sup>†</sup><sup>†</sup> Includes award stipends only.



#### 4.2.1 Heart and Stroke Foundation Prestigious Awards

Each year, the Heart and Stroke Foundation recognizes leadership and scientific excellence through the following prestigious awards.

##### *McDonald Scholarship*

The McDonald Scholarship is named in honour of Ewing McDonald, the Heart and Stroke Foundation of Canada's Executive Director from 1968 to 1987. This award is given annually to the highest-rated applicant in the New Investigator program. The recipient is awarded a \$10,000 research grant (in addition to the New Investigator award stipend).

Dr. Wenbin Liang from the University of Ottawa Heart Institute was Heart & Stroke's 2017-2018 McDonald Scholar. Dr. Liang is studying the cellular and molecular mechanisms of cardiac arrhythmias so novel therapies can be developed.

##### *Henry J.M. Barnett Scholarship*

The Henry J.M. Barnett Scholarship was established to honour Dr. Henry J.M. Barnett's exceptional contributions to stroke research, education, and patient care in Canada. This award is presented annually to a highly rated investigator applicant working in stroke research. The recipient is awarded a \$10,000 research grant (in addition to their award stipend).

Dr. Glen C. Jickling from the University of Alberta was Heart & Stroke's 2017-2018 Barnett Scholar. Dr. Jickling is studying how molecules present in blood cells could provide insight into the factors that contribute to risk of transient ischemic attack (TIA, or mini stroke), including how the immune system responds to brain injury, clot formation, and disease of the arteries that cause stroke.

#### 4.3 Grant-in-Aid

Grants-in-Aid form the largest category of research expenditure for Heart & Stroke. The Grant-in-Aid program supports the direct operating costs of conducting research, including laboratory supplies, technicians, and some equipment.

In 2017-2018, 233 Grants-in-Aid (new and continuing) were funded, representing an investment of over \$19 million (Table 5). A list of grant recipients can be found in Appendix C.

##### **Improving the Heart and Brain Health for Women:**

The Canadian Federal Budget 2016 provided for an investment of \$5 million over five years to the Heart and Stroke Foundation to support targeted research on women's heart and brain health and to promote collaboration between research institutions across the country.

Through this new commitment, the foundation in 2017-2018, offered as part of the GIA program funding specifically targeted towards the improvement of the heart and brain health for women, one GIA to the highest ranked in this category, within the cut-point of the overall GIA competition. Dr. Jacqueline Saw from the University of British Columbia was the recipient of 2017-2018 Improving Heart and Brain Health for Women GIA award. Details of the project can be found in Appendix C.

**Table 5. Number of Grants-in-Aid and Investment of Funds (2017-2018)**

Province(s)/Territory(ies)	Recipients (#)	Funds Invested (\$)
British Columbia/Yukon	26	2,121,051
Alberta/Northwest Territories/Nunavut	32	2,721,404
Saskatchewan	3	224,974
Manitoba	9	807,913
Ontario	112	9,106,600
Quebec	43	3,574,369
New Brunswick	-	-
Nova Scotia	7	595,220
Prince-Edward-Island	-	-
Newfoundland and Labrador	1	96,113
<b>TOTAL</b>	<b>233</b>	<b>\$19,247,644</b>

Figure 10. Grant-in-Aid Funding by Health Research Theme (2017-2018)

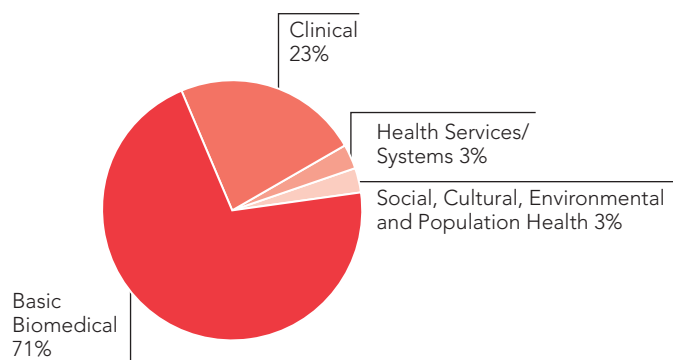


Figure 11. Grant-in-Aid Funding Trends by Health Research Theme (2013-2018)

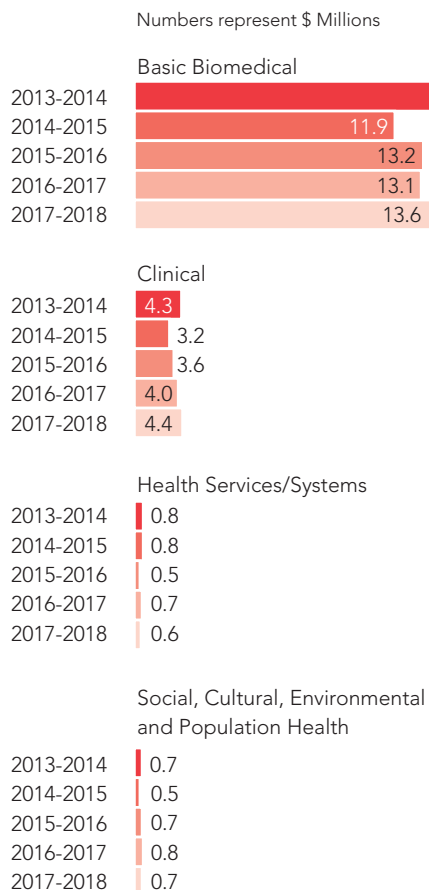
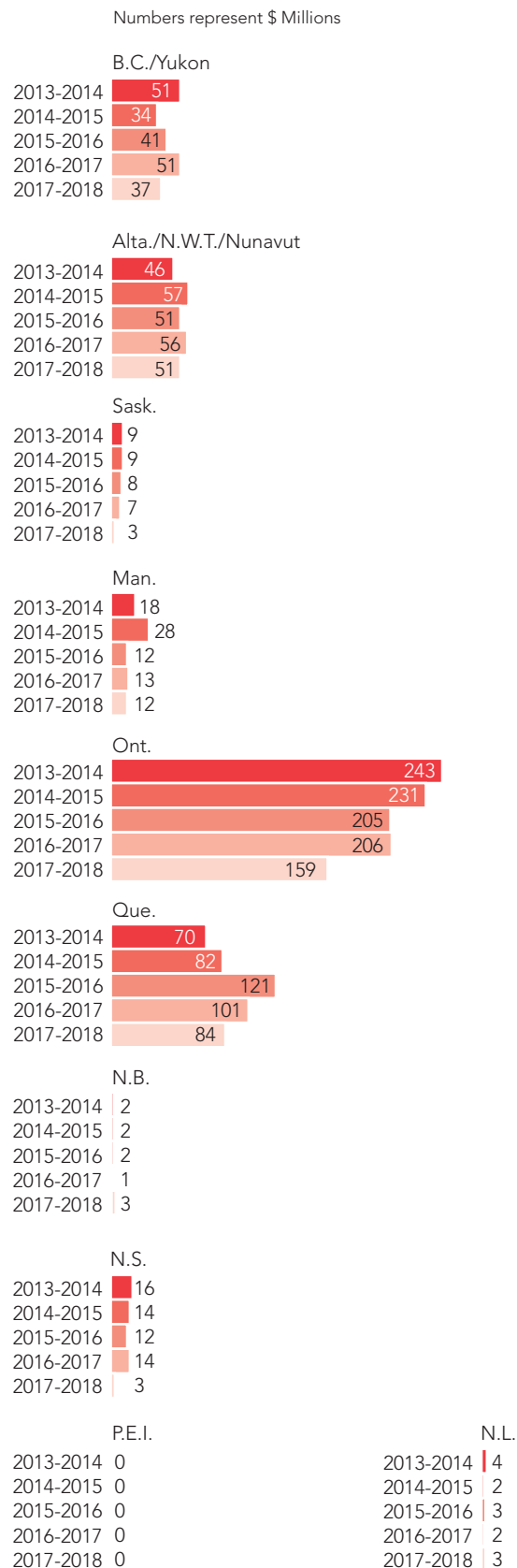
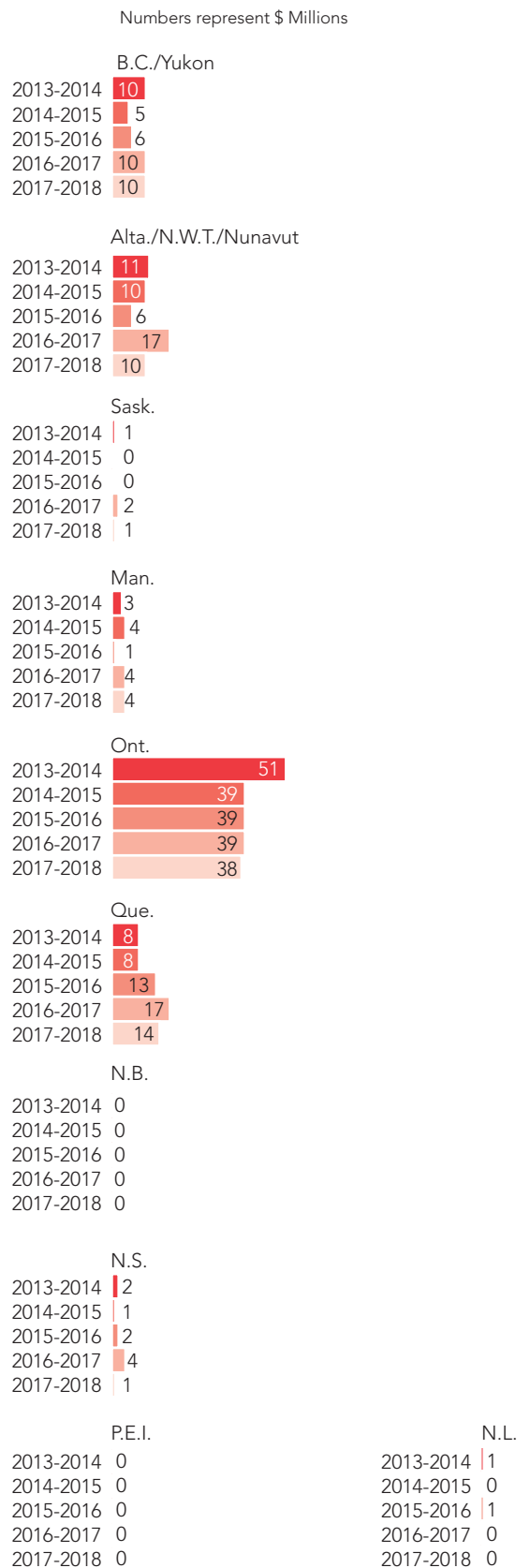


Figure 12. Number of Grant-in-Aid Applications Submitted by Province(s)/Territory(ies) (2013-2018)



The number of applications submitted and funded in the Grant-in-Aid program varies widely across provinces (Figures 12 and 13). The overall success rate for the Grant-in-Aid competition in 2017-2018 was approximately 22%.

Figure 13. Number of Grant-in-Aid Applications Funded by Province/Territory (2013-2018)



#### 4.4 Province Specific Research Initiatives

In addition to the Grant-in-Aid program, many of the provincial offices administer Research Chairs and Professorships; Provincial Personnel Awards; and other research initiatives.

##### 4.4.1 Research Chairs and Professorships

Research Chair and Professorships funding provides salary, research and infrastructure support to enable a leading researcher to develop a particular research focus at a Canadian university. In 2017-2018 a total of 24 Chairs and Professorships were supported by Heart & Stroke in the areas of aboriginal and rural health, cardiology, cardiac nursing, stroke, neonatal resuscitation, population health and primary prevention. The recipients of these Chairs and Professorships can be found in Appendix D.

Table 6. Research Chairs and Professorships (2017-2018)<sup>†</sup>

Province(s)/Territory(ies)	Program	Awards (#)	Total (#)
British Columbia/Yukon	Chair in Cardiology Research	1	6
	Chair in Heart Health and Wellness	1	
	Chair in Cardiovascular Prevention Research	1	
	Chair in Stroke Research	1	
	Professorship in Clinical Stroke Research	1	
	Professorship in Cardiovascular Nursing	1	
Alberta/Northwest Territories/Nunavut	Chair in Cardiology Research	1	7
	Chair in Stroke Research	1	
	Professorship in Cardiology Research	1	
	Professorship in Neonatal Resuscitation	1	
	Professorship in Stroke Research	3	
Saskatchewan	Chair in Clinical Stroke Research	1	1
Manitoba	Chair in Primary Prevention	1	1
Ontario	Chair in Population Health Research	1	8
	Chair in Cardiac Nursing	1	
	Chair in Cardiovascular Research	5	
	Chair in Aboriginal and Rural Health	1	
Quebec	-	-	-
New Brunswick	-	-	-
Nova Scotia	Chair in Cardiology Research	1	1
Prince Edward Island	-	-	-
Newfoundland and Labrador	-	-	-
TOTAL		24	24

<sup>†</sup> For the most part, Research Chair awards are funded by endowments and are partnered with academic/health research institutions.

#### 4.4.2 Provincial Personnel Awards

In 2017-2018, the provincial offices funded a total of 52 Personnel Awards, building capacity by supporting cardio- and cerebrovascular researchers throughout their careers, from high school students working in research settings to established senior scientists (Table 7). The recipients of these awards can be found in Appendix E.

Table 7. Heart &amp; Stroke Provincial Personnel Awards Funded (2017-2018)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
British Columbia/Yukon	Robert Hayden Research Fellowship	1	50,000	50,000
Alberta/Northwest Territories/Nunavut	New Investigator	5	240,000	240,000
Saskatchewan	-	-	-	-
Manitoba	Sanofi Canada Heart & Stroke Award in Cardiology	1	10,000	11,000
	Master's Student Award	1	1,000	
Ontario	Career Investigator	4	332,000	2,104,000
	Clinician Scientist	8	515,000	
	Mid-Career Investigator	15	1,200,000	
	Summer Student Scholarship	12	57,000	
Quebec	-	-	-	-
New Brunswick	-	-	-	-
Nova Scotia	-	-	-	-
Prince Edward Island	-	-	-	-
Newfoundland and Labrador	-	-	-	10,000
	Graduate Scholarship	1	1,500	
	Keith Griffiths Memorial Scholarship	1	1,500	
	Undergraduate Nursing Award in Cardiovascular Health	1	1,500	
	Undergraduate Nursing Award in Stroke	1	1,500	
	Heart and Stroke Foundation (NL) MD Research Award	1	4,000	
TOTAL		52	\$2,415,000	\$2,415,000

## Description of Provincial Personnel Awards

### Heart & Stroke in British Columbia/Yukon

*Robert Hayden Research Fellowship* — The Robert Hayden Research Fellowship was established to promote cardiovascular outcomes research that utilizes the rich clinical data in **HEART is** to improve cardiovascular care in British Columbia. The award will provide a stipend and travel allowance to support a post-doctoral fellow using data in their research project. The successful candidate will be provided with a workspace at ICVHealth in Vancouver and work collaboratively with epidemiologists, biostatisticians and knowledge translation experts.

### Heart & Stroke in Alberta/Northwest Territories/Nunavut

*New Investigator* — The New Investigator Awards aim to provide outstanding Alberta investigators in their early career with the opportunity to establish research programs and build teams through provision of a contribution to their group research efforts, laboratories or salary. The intent is to foster research excellence and support retention of outstanding talents in Alberta. This initiative provides salary support to excellent Alberta applicants whose innovative research plans have demonstrated strong potential to deliver impact on the Heart & Stroke mission. The applicants are expected to demonstrate that their overall research program and plan have a cardio or cerebrovascular focus.

### Heart & Stroke in Manitoba

*Sanofi / Heart and Stroke Foundation in Manitoba Award in Cardiology* — A \$10,000 award presented to a clinical cardiology resident who demonstrates academic excellence and pursues additional academic training beyond core cardiology

*Master's Student Award* — This \$1,000 award was established by Heart & Stroke in Manitoba to encourage the training of young investigators in cardiovascular sciences in Manitoba and to recognize the achievements of a student at the Master's level.

### Heart & Stroke in Ontario

*Career Investigator* — Stipend support for up to five years for investigators of national/international stature.

*Clinician Scientist Phase 1* — Stipend support for up to four years, to provide clinician-scientists who are within 4 years of their first full-time academic appointment with protected time to build influential programs of cardio- or cerebrovascular research.

*Clinician Scientist Phase 2* — Stipend support for up to three years, to provide clinician-scientists within no fewer than 4, and no more than 8 years since their first full-time academic appointment with protected time to build influential programs of cardio- or cerebrovascular research.

*Mid-Career Investigator* — Stipend support for up to four years, to provide investigators within no fewer than 8, and no more than 18 years since their first full-time academic appointment with protected time to build influential programs of cardio- or cerebrovascular research.

*Summer Student Scholarship* — Stipend support for up to four months for students to conduct cardio- or cerebrovascular research with mentorship from established investigators.

### Heart & Stroke in Newfoundland and Labrador

*Graduate Scholarship* — This scholarship, valued at \$1,500 per annum, is awarded to a full-time graduate level student in the Faculty of Medicine, who is pursuing a research program related to cardiovascular disease.

*Keith Griffiths Memorial Scholarship* — This scholarship, valued at \$1,500 per annum, was established through a generous contribution by the Griffiths family, in memory of their father, Keith Griffiths, a stroke survivor and dedicated volunteer, and in partnership with the Heart and Stroke Foundation. The scholarship is awarded to a full-time graduate level student in the Faculty of Medicine, who is pursuing a research program in stroke or neurological issues related to stroke.

*Undergraduate Nursing Award in Cardiovascular Health* — This scholarship, valued at \$1,500 annually, is awarded to an undergraduate student in any year of the Bachelor of Nursing program at the School of Nursing who demonstrates an interest in cardiovascular health, have actively volunteered with the Heart and Stroke Foundation and also have met the minimum academic requirements for an award.

*Undergraduate Nursing Award in Stroke* — This scholarship, valued at \$1,500 annually, is awarded to an undergraduate student in any year of the Bachelor of Nursing program at the School of Nursing who demonstrates an interest in patient health related to stroke care, have actively volunteered with the Heart and Stroke Foundation and also have met the minimum academic requirements for an award.

*Heart and Stroke Foundation MD Research Award* — This scholarship, valued at \$4,000 per annum, is awarded to a second year student in the undergraduate medical education degree program at the Faculty of Medicine, who is conducting research in a heart and stroke related area.

#### 4.4.3 Other Provincial Initiatives

In 2017-2018, the provincial offices funded a wide variety of other research initiatives. Table 8 provides details of these initiatives and a list of recipients can be found in Appendix F.

Table 8. Other Provincial Research Initiatives (2017-2018)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
British Columbia/Yukon	Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)	16	200,000	200,000
Alberta/Northwest Territories/Nunavut	-	-	-	-
Saskatchewan	-	-	-	-
Manitoba	-	-	-	-
Ontario	-	-	-	-
Quebec	Awards for Excellence in Research	5	100,000	123,980
	Training bursaries	1	6,666	
	Bursaries in partnership with FRQS	1	17,314	
New Brunswick	-	-	-	-
Nova Scotia	Dr. Gregory Ferrier Award	1	5,000	30,000
	BrightRed Student Research Award	5	25,000	
Prince Edward Island	-	-	-	-
Newfoundland and Labrador	-	-	-	-
Heart and Stroke Foundation Canadian Partnership for Stroke Recovery <sup>†</sup>		-	2,000,000	2,000,000
TOTAL		29	\$2,353,980	\$2,353,980

<sup>†</sup> Heart & Stroke contributions to the Canadian Partnership for Stroke Recovery

## Description of Other Provincial Research Initiatives

### Heart & Stroke in British Columbia/Yukon

*Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)* — As part of its mandate to support innovative research and its application to improve the health of Canadians, Heart and Stroke Foundation in BC & Yukon, has partnered with the University of British Columbia's Division of Cardiology to support research by early career cardiologists. By providing grant support that will protect the research time of awardees, the academic practice plan will cultivate academic capacity, supporting increased clinical research and education. This will in turn strengthen the recruitment and retention of outstanding early career physicians in British Columbia.

### Heart & Stroke in Quebec

*Awards for Excellence in Research* — A number of Awards for Excellence in Research are awarded each year by Quebec mostly in partnership with individual and corporate donors. These awards are in partnership with the Grant-in-Aid program to support Quebec researchers. The awards range from \$5,000 to \$50,000.

*Training bursaries for PhD students in Cardiovascular and Stroke Research* — Partnership between the Fonds de recherche du Québec en santé (FRQS) and the Heart & Stroke in Quebec. The partners offer training bursaries for PhD students working with researchers receiving a Grant-in-Aid from the Heart & Stroke in Quebec.

*Bursaries in partnership with FRQS for new investigators in Cardiovascular and Stroke Research* — Partnership between the Fonds de recherche du Québec en santé (FRQS) and the Heart & Stroke in Quebec. The partners offer bursaries for new investigators.

### Heart & Stroke in Nova Scotia

*Dr. Gregory Ferrier Award* — Nova Scotia offers an award for excellence in research. This award is given annually to the highest rated Nova Scotia Grant-in-Aid recipient in honour of Dr. Gregory Ferrier, an internationally respected, award-winning scientist known for his groundbreaking and innovative research program related to heart failure mechanisms. The award also honours the spirit of Dr. Ferrier's mentorship to a new generation of researchers; he went above and beyond to ensure they were able to conduct their research in Nova Scotia. A stipend of \$5,000 is awarded to the grant budget in support of student funding in recognition of Dr. Ferrier's commitment to research training.

*BrightRed Student Research Award* -- The BrightRed Student Research Awards Program recognizes excellent emerging cardiovascular and cerebrovascular researchers in Nova Scotia at differing stages of career development, by providing financial support to students and trainees enrolled in research-based Masters, Doctorate, or Post-doctorate programs at academic institutions in Nova Scotia.





# Appendix A

## **Directed Research Fund**

Dr. Roxanne Paulin (Institut universitaire de cardiologie et de pneumologie de Québec) was funded in 2017-2018 through her Emerging Research Leaders Initiative grant (awarded in 2016-2017) and her 2017-2018 New Investigator Award.

# New Initiatives

## Emerging Research Leaders Initiative (ERLI) 2016

Partner(s): Canadian Stroke Prevention Intervention Network; Cardiac Arrhythmia Network of Canada; Canadian National Transplant Research Program; Canadian Venous Thromboembolism Clinical Trials and Outcomes Research Network; New Brunswick Health Research Foundation; Pfizer Canada Inc.; Fonds de recherche du Québec - Santé; Canadian Cardiovascular Society; Canadian Institutes of Health Research; Heart & Stroke.

Total Initiative funding: \$1,004,496

Total Heart & Stroke funding: \$134,183

Description: ERLI is an establishment grant program for researchers at the transition stage from post doctoral fellow to early professional career stage in the areas of cardiovascular and/or cerebrovascular, and/or respiratory health research. This initiative aims to support successful early career launch of new investigators. Through this initiative, partners will provide establishment grant funds that will create a set of conditions conducive to the successful career launch of emerging research leaders in the cardiovascular and/or cerebrovascular health research domains. Emerging Research Leaders Initiative (ERLI)

Principal Investigator(s)	Institute	Project	Mentor(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Chruscinski, Andrzej	University Health Network	Immune markers and tolerance in transplantation.	Levy, Gary; Zhang, Li	2017-2020	-	49,834	-	149,502	I,II
Fine, Nowell	University of Calgary	Risk estimation following infarction non-invasive evaluation-implantable cardioverter-defibrillator (REFINE-ICD) imaging sub-study.	Exner, Derek V.; White, James A.	2017-2020	37,253	49,253	134,183	147,759	II
Hawkins, Nathaniel M.	University of British Columbia	Contemporary treatment and outcomes of atrial fibrillation.	Cairns, John A.; Humphries, Karin.	2017-2020	-	49,990	-	149,979	II,III,IV
Reed, Jennifer L.	University of Ottawa Heart Institute	Exercise training in patients with atrial fibrillation.	Birnie, David H.; Pipe, Andrew	2017-2020	-	50,000	-	148,424	II,III,IV
Rotstein, Benjamin H.	University of Ottawa	Validation of a fluorine-18 radiotracer for imaging sympathetic denervation in cardiac arrhythmias.	Liu, Peter P.; deKemp, Robert	2017-2020	-	38,000	-	138,000	I
Shoamanesh, Ashkan	McMaster University	New anticoagulants for stroke prevention in patients with atrial fibrillation and prior intracerebral hemorrhage (NASPAF-ICH).	Hart, Robert; Sharma, Mukul	2017-2020	-	50,000	-	137,159	II

Principal Investigator(s)	Institute	Project	Mentor(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Siegal, Deborah M.	McMaster University	Improving cardiovascular outcomes through safe resumption of anticoagulants after anticoagulant-related bleeding.	Crowther, Mark A.; Connolly, Stuart J.	2017-2020	-	46,887	-	133,673	II

### HSFC/CIHR/HTC Chair in Hypertension Prevention and Control

Partner(s): CIHR Institute of Circulatory and Respiratory Health; Hypertension Canada; Heart & Stroke.

Total Initiative Funding: \$975,000

Total Heart & Stroke Funding: \$375,000

Description: The goal of this strategic initiative is to support a Chair in the area of hypertension research who will focus on improving awareness, prevention and control of hypertension; identifying gaps in knowledge transfer and exchange / knowledge translation from evidence to practice for hypertension prevention and control; and developing and evaluating new policies, programs and interventions aimed at reducing the burden and/or impact of hypertension.

### HSFC/CIHR/HTC Chair in Hypertension Prevention and Control

Principal Investigator(s)	Institute	Project	Co-Investigator(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Kaczorowski, Janusz A.	Université de Montréal	Prevention and control of hypertension in Canada.	N/A	2017-2022	75,000	195,000	375,000	975,000	II,III,IV

# Continuing Initiatives

## Emerging Research Leaders Initiative (ERLI) 2015

Partner(s): Canadian Stroke Prevention Intervention Network; Canadian Vascular Network; New Brunswick Health Research Foundation; Fonds de recherche du Québec – Santé; Pfizer Canada Inc.; Canadian Cardiovascular Society; Cardiac Arrhythmia Network of Canada; Canadian Institutes of Health Research; Heart & Stroke.

Total Initiative funding: \$894,069

Total Heart & Stroke funding: \$445,635

Description: ERLI is an establishment grant program for researchers at the transition stage from post doctoral fellow to early professional career stage in the areas of cardiovascular, cerebrovascular, and/or respiratory health research. This initiative aims to support successful early career launch of new investigators. Through this initiative, partners will provide establishment grant funds that will create a set of conditions conducive to the successful career launch of emerging research leaders in the cardiovascular, cerebrovascular, and/or respiratory health research domains.

### Emerging Research Leaders Initiative (ERLI)

Principal Investigator(s)	Institute	Project	Mentor(s)	Term	17-18\$ Heart & Stroke	Total 17-18\$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Fullerton, Morgan	University of Ottawa Heart Institute	The role of AMP-activated protein kinase (AMPK) in cardiovascular disease.	McPherson, Ruth	2016-2019	50,000	50,000	150,000	150,000	I
Lin, Steve	St. Michael's Hospital	Optimizing cerebral oxygenation and metabolism in cardiac arrest.	Lin, Paul	2016-2019	-	49,904	-	149,434	I,II
Paulin, Roxane	Institut universitaire de cardiologie et de pneumologie de Québec	An RV-T cell axis in pulmonary hypertension.	Provencher, Steeve; Michelakis, Evangelos D.	2016-2019	50,000	50,000	150,000	150,000	I
Roberts, Jason D.	University of Western Ontario	GENetic predictors of successful atrial fibrillation treatment (GENE-AF).	Tang, Anthony S.L.	2016-2019	-	50,000	-	150,000	I,II,III,IV
Udell, Jacob A.	Women's College Hospital	Disruptive innovation in heart disease research.	Farkouh, Michael, E.	2016-2019	48,023	48,023	145,635	145,635	I,II,III,IV
Ussher, John R.	University of Alberta	Vascular insulin signaling and pulmonary arterial hypertension.	Seubert, John M.	2016-2019	-	50,000	-	149,000	I

**Emerging Research Leaders Initiative (ERLI)**

Partner(s): Canadian Respiratory Research Network; Canadian Stroke Prevention Intervention Network; Canadian Vascular Network; AllerGen NCE; Brain Canada Foundation; New Brunswick Health Research Foundation; Pfizer Canada Inc.; Canadian Cardiovascular Society; Canadian Institutes of Health Research; Heart & Stroke.

Total Initiative funding: \$1,195,038

Total Heart & Stroke funding: \$373,934

Description: ERLI is an establishment grant program for researchers at the transition stage from post doctoral fellow to early professional career stage in the areas of cardiovascular, cerebrovascular, and/or respiratory health research. This initiative aims to support successful early career launch of new investigators. Through this initiative, partners will provide establishment grant funds that will create a set of conditions conducive to the successful career launch of emerging research leaders in the cardiovascular, cerebrovascular, and/or respiratory health research domains.

**Emerging Research Leaders Initiative (ERLI)**

Principal Investigator(s)	Institute	Project	Mentor(s)	Term	17-18\$ Heart & Stroke	Total 17-18\$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Arcand, JoAnne L.	University of Ontario Institute of Technology	Evaluation of web-based dietary screening tools in the management of cardiovascular risk factors.	Floras, John S.; L'Abbé, Mary R.	2015-2018	-	49,861	-	149,762	II,III,IV
Brunham, Liam R.	University of British Columbia	Genomic markers of cerebral small vessel ischemia.	Khan, Nadia A.	2015-2018	24,710	49,420	74,130	148,260	I,II
de Azeredo Coutinho, Thais	University of Ottawa Heart Institute	Investigating the pathogenesis and clinical applications of arterial health in cardiovascular diseases.	Beanlands, Rob S.B.	2015-2018	-	49,387	-	148,927	II
Kramer, Caroline	Mount Sinai Hospital	Longitudinal course of metabolic health across the full spectrum of body weight.	Retnakaran, Ravi R.; Zinman, Bernard	2015-2018	49,804	49,804	149,804	149,804	I,II
Sandhu, Roopinder	University of Alberta	Improving stroke prevention in atrial fibrillation through pharmacist prescribing: PIAAF Rx Study.	McAlister, Finlay A.	2015-2018	-	50,000	-	150,000	II,III
Santosa, Sylvia	Concordia University	Acute and chronic effects of obesity on cardiovascular disease risk factors.	Bacon, Simon L.; Morais, José A.	2015-2018	25,000	25,000	150,000	150,000	I,II
West, Christopher	University of British Columbia	Habitual physical activity, exercise and cardiovascular function in spinal cord injury.	Sheel, Andrew W.	2015-2018	-	49,894	-	149,282	I,II
Wilton, Stephen	University of Calgary	An individualized shared decision-making intervention for atrial fibrillation stroke prevention.	Ghali, William A.; Sheldon, Robert S.	2015-2018	-	49,705	-	149,003	II,III

Themes I: Basic Biomedical

II: Clinical

III: Health Services/Systems

IV: Social, Cultural, Environmental and Population Health

**Population-Level Nutrition Interventions**

Partner(s): Heart &amp; Stroke.

Total Initiative funding: \$779,346

Total Heart &amp; Stroke funding: \$779,346

Description: The purpose of this initiative is to focus on generating evidence about the impact on nutrition of population-level policy and/or program interventions. Ultimately, funded projects should contribute to primary prevention of heart disease and stroke within and/or applicable to Canadian contexts and populations. The intent is to generate evidence for decision-makers who require relevant research to inform policies and programs.

## Population-Level Nutrition Interventions

Principal Investigator(s)	Institute	Project	Co-Investigator(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
L'Abbé, Mary R.	University of Toronto	FoodSwitch: testing the effectiveness of a food information app to promote the selection of healthier foods.	<b>Ontario:</b> Lou, Wen-Yi Wendy W. <b>Quebec:</b> Dubé, Laurette	2015-2018	25,300	25,300	213,640	213,640	IV
Naylor, Patti-Jean	University of Victoria	Eat, play, live: a population intervention to promote nutrition guideline implementation in recreation facilities across three Canadian provinces.	<b>British Columbia:</b> Masse, Louise C. <b>Alberta:</b> Olstad, Dana <b>Nova Scotia:</b> Kirk, Sara; Langille, Jessie-Lee <b>Ontario:</b> Hanning, Rhona	2015-2018	100,000	100,000	299,630	299,630	IV
Vatanparast, Hassanali	University of Saskatchewan	The impact of Health-Start-Depart-Sante intervention on improving dietary intake of 3-5 year-old children attending childcare centers in Saskatchewan and New Brunswick.	<b>Saskatchewan:</b> Engler-Stringer, Rachel; Froehlich Chow, Amanda; Humbert, Margaret Louise; Muhajarine, Nazeem; Osgood, Nathaniel D.; Szafron, Michael <b>Quebec:</b> Bélanger, Mathieu	2015-2018	80,250	80,250	266,076	266,076	III, IV

**Canadian Resuscitation Outcomes Consortium (CanROC)**

Partner(s): The CIHR Institute of Circulatory and Respiratory Health and Heart & Stroke.

Total Initiative funding: \$3,000,000

Total Heart & Stroke funding: \$1,500,000

Description: The overall goal is to improve the outcomes of out-of-hospital cardiac arrest (OHCA) and trauma patients, both adult and paediatric. The plan is to create a Canadian version of ROC (CanROC) that is more national in breadth and that can stand alone to perform intervention studies in OHCA and major trauma, as well as to also collaborate with US-ROC and other international partners. The goal is to advance the capacity, competitiveness, and impact of resuscitation clinical research conducted in Canada.

## Canadian Resuscitation Outcomes Consortium (CanROC)

Principal Investigator(s)	Institute	Project	Co-Investigator(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Christenson, James M.	University of British Columbia	CanROC - Canadian Resuscitation Outcomes Consortium: toward a national resuscitation clinical research network.	<b>British Columbia:</b> Ramanathan, Krishnan	2015-2020	150,000	150,000	750,000	750,000	IV
Morrison, Laurie J.	St. Michael's Hospital	CanROC - Canadian Resuscitation Outcomes Consortium: toward a national resuscitation clinical research network.	<b>Ontario:</b> Nascimento, Barto; Scales, Damon; Hutchinson, Jamie; Dainty, Katie; Parker, Melissa; Dorian, Paul; Verbeek, Rick; Rizoli, Sandro; Cheskes, Sheldon; Brooks, Steve; Lin, Steve	2015-2020	-	300,000	-	1,500,000	IV
Stiell, Ian G.	Ottawa Hospital-Civic Campus	CanROC - Canadian Resuscitation Outcomes Consortium: toward a national resuscitation clinical research network.	<b>Ontario:</b> Vaillancourt, Christian; Wells, George; Osmond, Martin	2015-2020	150,000	150,000	750,000	750,000	IV

**Emerging Network: Canadian Stroke Prevention Intervention Network (C-SPIN)**

Partner(s): The CIHR Institute of Circulatory and Respiratory Health and the Institute of Aging; Heart & Stroke.

Total Initiative funding: \$18,520,000

Total Heart & Stroke funding: \$1,000,000

Description: The ultimate goal of an Emerging Network will be to generate new knowledge and bridge gaps between research and outcomes by contributing to one or more of the following: identifying key knowledge gaps, promoting national and international collaborations among scientists from all themes to address those gaps in a coherent fashion by sharing ideas, tools, methods, and scarce resources, accelerating translation of biomedical discoveries into clinical applications and best practices as well as; to the marketplace; developing, validating, and implementing an intervention that changes a significant aspect of practice; and evaluating outcomes to demonstrate impact. The Canadian Stroke Prevention Intervention Network (C-SPIN) stems from the necessity to develop relevant and integrated stroke-prevention strategies to reduce embolic strokes across Canada and address the specific challenges of our population.



## Emerging Network: Canadian Stroke Prevention Intervention Network (C-SPIN)

Principal Investigator(s)	Institute	Project	Co-Investigator(s)	Term	17-18 \$ Heart & Stroke	Total 17-18 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Healey, Jeff S.; Sheldon, Robert S.	McMaster University	Canadian Atrial Fibrillation Stroke Prevention Intervention Network (CAF-SPIN).	<b>Alberta:</b> Wilton, Stephen; Sandhu, Roopinder; Quinn, Francis Russell; McRae, Andrew; Hill, Michael D.; Exner, Derek V. <b>British Columbia:</b> Krahn, Andrew D.; Andrade, Jason G.; Tang, Anthony S.L. <b>Nova Scotia:</b> Parkash, Ratika <b>Ontario:</b> Whitlock, Richard P.; Verma, Atul; Tobe, Sheldon W.; Thabane, Lehana; Sharma, Mukul; Redfearn, Damian Paul P.; Nieuwlaat, Robby; Morillo, Carlos A.; Meshkat, Nazanin; Ivers, Noah; Hart, Robert; Ha, Andrew C.T.; Graham, Ian D.; Goeree, Ron; Gladstone, David J.; Dolovich, Lisa R.; Connolly, Stuart J.; Atzema, Clare L.; Dorian, Paul; Birnie, David H. <b>Quebec:</b> Talajic, Mario; Philippon, François; Khairy, Paul; Huynh, Thao T.; Essebag, Vidal	2013-2019	200,000	4,440,000	1,000,000	18,520,000	II





## Appendix B

### **National Personnel Awards**

Dr. Margaret Davenport (University of Alberta) was a recipient of a 2017-2018 Alberta New Investigator and National New Investigator Award (Joint title) and the recipient of the 2017-2018 Improving Heart and Brain Health for Women Award. Dr. Davenport also holds a Grant-in-Aid, awarded in 2016-2017.

## Doctoral Research Awards

Awardee	Supervisor(s)	Research Institution	Project	Keywords	Term	17-18 \$*	Total \$*	Theme(s)
Adnan, Areeba	Turner, Gary R.	York University	A brain-based approach to enhancing executive control in multi-modal mild cognitive impairment.	<i>Aging, goal management training, multi-modal mild cognitive impairment, rehabilitation, cerebrovascular health.</i>	2014-2018	14,000	73,500	II

## New Investigators

Awardee	Research Institution	Project	Keywords	Term	17-18 \$*	Total \$*	Theme(s)
Atzema, Clare L.	Institute for Clinical Evaluative Sciences	Atrial fibrillation in the emergency room: The AFTER study.	<i>Atrial fibrillation, emergency department, health services, clinical decision rule, arrhythmia.</i>	2013-2018	60,000	315,000	II,III,IV
Auger-Messier, Mannix	Université de Sherbrooke	Préservation de la contractilité et de la structure des cardiomyocytes dans l'insuffisance cardiaque.	<i>Insuffisance cardiaque, contractilité, sarcomere, dual-specificity phosphatases (DUSP), ArfGAP with dual PH domains (ADAPs).</i>	2014-2019	60,000	300,000	I
Dowlatsahi, Dariush	Ottawa Hospital Research Institute	Predicting intracerebral hemorrhage expansion using the dynamic CT-angiography spot sign.	<i>Intracerebral hemorrhage, stroke, CT-angiography, hematoma expansion, critical care.</i>	2013-2018	60,000	300,000	I,II
Gauthier, Claudine	Concordia University	Quantitative MRI of cerebral vascular and metabolic health: cardiovascular risk factors, stroke and exercise.	<i>Cerebrovascular health, oxidative metabolism, quantitative MRI, cardiovascular disease, stroke, exercise.</i>	2016-2020	65,000	270,000	I,II
Jickling, Glen C.**	University of Alberta	Genomics of high risk transient ischemic attacks.	<i>TIA, ischemic stroke, gene expression, cardiovascular risk, immune response.</i>	2017-2021	15,000	270,000	I,II
Larrivée, Bruno	Université de Montréal	Targeting BMP signaling for the treatment of cardiovascular complications of diabetes.	<i>Angiogenesis, vascular biology, cell signalling, blood vessel morphogenesis, diabetes.</i>	2014-2019	60,000	300,000	I
Liang, Wenbin	University of Ottawa Heart Institute	Role of Wnt signalling in cardiac arrhythmogenesis.	<i>Ion channels, electrophysiology, cardiac arrhythmia, heart failure, Wnt.</i>	2017-2021	75,000	270,000	I
Lin, Steve	St. Michael's Hospital	Optimizing cerebral oxygenation and metabolism in cardiac arrest.	<i>Cardiac arrest, resuscitation, hyperspectral near-infrared spectroscopy, oxygen saturation, cytochrome c oxidase.</i>	2017-2021	70,000	280,000	I,II

\*Amount shown represents stipend value only.

\*\*Joint title Alberta New Investigator and National New Investigator

Awardee	Research Institution	Project	Keywords	Term	17-18 \$*	Total \$*	Theme(s)
Paulin, Roxane	Université Laval	Role of circulating metabolic factors in the pulmonary arterial hypertension syndrome.	<i>Pulmonary hypertension, metabolism, mitochondrial, signaling, metabolic factors.</i>	2017-2022	54,167	260,000	I
Prager-Khoutorsky, Masha	McGill University	The role of brain mechanisms in detecting blood sodium in health and salt-sensitive hypertension.	<i>Vasopressin, salt-sensitive hypertension, cytoskeleton, RhoA, astrocytes.</i>	2017-2021	65,000	260,000	I
Quinn, T. Alexander	Dalhousie University	Mechanisms and importance of mechano-electric coupling in arrhythmogenesis during acute regional ischemia.	<i>Cardiac, arrhythmias, ischemia, electrophysiology, mechanics.</i>	2016-2020	65,000	270,000	I
Rose, Robert A.	Dalhousie University	Natriuretic peptides regulate sinoatrial node function and arrhythmogenesis in heart disease.	<i>Natriuretic peptide, sinoatrial node, electrophysiology, arrhythmias, ion channels.</i>	2014-2019	60,000	315,000	I
Schmoelzer, Georg M.**	University of Alberta	Novel resuscitation to improve the recovery of asphyxiated newborns.	<i>Neonatal resuscitation, asphyxia, newborn, infants.</i>	2016-2020	5,000	260,000	I,II
Simpson, Jeremy A.	University of Guelph	Myocardial production of erythropoietin and hemoglobin variants.	<i>Cardiac, cytokines, hemoglobin, heart failure, erythropoietin, rodent.</i>	2013-2018	60,000	300,000	I
Swartz, Richard H.	Sunnybrook Health Sciences Centre	DOC: screening depression, OSA, and cognition to identify high-risk stroke clinic patients.	<i>Stroke prevention, vascular risk factors, vascular cognition, cognitive impairment, post-stroke depression, obstructive sleep apnea.</i>	2014-2019	60,000	315,000	II,III,IV
Thiruganasambandamoorthy, Venkatesh	Ottawa Hospital Research Institute	Improving syncope care in the emergency department and in the prehospital setting.	<i>Syncope, arrhythmia, risk-stratification, mortality, remote cardiac monitoring.</i>	2016-2020	65,000	260,000	II,III
Udell, Jacob A.***	Women's College Hospital	Disruptive innovation in heart disease research.	<i>Ischemic heart disease, heart failure, women, influenza, randomized registry trials.</i>	2016-2020	65,000	280,000	I,II,III,IV
West, Christopher	International Collaboration on Repair Discoveries (ICORD)	Cardiac function after SCI: from discovery to delivery.	<i>Hemodynamic measures, left-ventricular catheterization, exercise testing, tetraplegia, acute care.</i>	2017-2021	65,000	260,000	I,II

\*Amount shown represents stipend value only.

\*\*Joint title Alberta New Investigator and National New Investigator.

\*\*\*Joint title National New Investigator and Ontario Clinician Scientist Phase I.

Themes I: Basic Biomedical

II: Clinical

III: Health Services/Systems

IV: Social, Cultural, Environmental and Population Health

## Distinguished Clinician Scientist

Awardee	Research Institution	Project	Keywords	Term	17-18 \$ Heart & Stroke*	Total 17-18 \$ (All Partners)*	Total \$ Heart & Stroke*	Total \$ (All Partners)*	Theme(s)
Wijeyesundera, Harindra C.	Sunnybrook Research Institute	Evaluating therapeutic decision-making, outcomes and resource utilization in chronic stable angina: an interprovincial population-based study.	Angina, quality of life, health care costs, variation in care, administrative database.	2013-2018	75,000	75,000	375,000	375,000	II,III,IV

## Improving the Heart and Brain Health for Women†

Awardee	Institute	Project	Keywords	Term	17-18\$ Heart & Stroke*	Total 17-18\$ (All Partners)*	Total \$ Heart & Stroke*	Total \$ (All Partners)*	Theme(s)
Davenport, Margaret (Margie)**	University of Alberta	Determinants of maternal cardiovascular health.	Pregnancy, cardiovascular health, physical activity, preeclampsia.	2017-2021	-	65,000	-	260,000	I,II

† This award is partnered with Health Canada.

\*Amount shown represents stipend value only.

\*\*Joint title Alberta New Investigator and National New Investigator.



## Appendix C

### **Grants-in-aid**

Dr. Jacqueline Saw (University of British Columbia) was a recipient of the 2017-2018 Improving Heart and Brain Health for Women Award.

## British Columbia/Yukon

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Accili, Eric	University of British Columbia	Control of pacemaker channel opening by cyclic nucleotides.	<i>Pacemaker channel, cyclic nucleotides, sinoatrial node, conduction tissue, electrical activity.</i>	2017-2020	89,000	89,000	I,II
Ambrose, Teresa; Field, Thalia S.; Davis, Jennifer; Madden, Kenneth M.; Hsiung, Ging-Yuek Robin; Tam, Roger; Best, John; Goldsmith, Charles H.	University of British Columbia	Reshaping the path of vascular cognitive impairment with resistance training.	<i>Exercise training, white matter lesions, executive functions, rehabilitation, small vessel disease.</i>	2015-2018	99,942	299,838	II
Bernatchez, Pascal N.; van Breemen, Cornelis; Seidman, Michael	St. Paul's Hospital	Aberrant endothelial mechano-sensing is a cause of early atherosclerosis and a pharmacological target.	<i>Nitric oxide, atherosclerosis, mechano-sensing, shear stress, caveolae.</i>	2015-2018	86,678	263,735	I
Choy, Jonathan C.; Unrau, Peter	Simon Fraser University	Regulation of graft arteriosclerosis by IL-6.	<i>Transplantation, graft arteriosclerosis, T cell, IL-6, cell death.</i>	2015-2018	84,667	253,999	I
Claydon, Thomas W.	Simon Fraser University	Molecular mechanisms of gating and drug binding in hERG cardiac potassium channels.	<i>Electrophysiology, cardiac excitation, ion channels, voltage clamp fluorimetry (VCF), lanthanide-based resonance energy transfer (LRET).</i>	2015-2018	94,800	278,900	I
Eng, Janice J.; Mortenson, William B.; Yao, Jennifer	University of British Columbia	Use of a robotic exoskeleton to promote walking recovery after stroke.	<i>Rehabilitation, stroke, assistive technology.</i>	2015-2018	77,127	221,381	II,III
Fedida, David	University of British Columbia	Biophysical properties and regulation of the IKs channel complex.	<i>Cardiac repolarization, ion channels, IKs, single channel recording, unnatural amino acid crosslinking.</i>	2017-2020	88,713	88,713	I
Gibson, William	University of British Columbia	Next-generation sequencing for rare, highly-penetrant mutations in familial intracranial aneurysms.	<i>Stroke, aneurysm, rare versions of common disease, genomics, rare pathogenic variants of large effect.</i>	2017-2020	79,785	79,785	I,II,III,IV



Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Grewal, Jasmine; Levin, Adeera; Beauchesne, Luc; Harris, Kevin; Humphries, Karin; Khairy, Paul; Kiess, Marla; Mackie, Andrew; Marelli, Ariane; Oechslin, Erwin; Silversides, Candice; Vondermuhll, Isabelle; Wald, Rachel	St. Paul's Hospital	Chronic kidney damage in the Fontan population.	<i>Congenital heart disease, outcomes, kidney.</i>	2017-2020	95,612	95,612	II
Griesdale, Donald; Ainslie, Philip; Boyd, John; Brasher, Penelope; Dorian, Paul; Field, Thalia; McCredie, Victoria; Menon, David; Scales, Damon; Sekhon, Mypinder; Sirounis, Demetrious	University of British Columbia	Cerebral oximetry to assess cerebral autoregulation in hypoxemic ischemic brain injury.	<i>Cardiac arrest, cerebral autoregulation, hypoxemic ischemic brain injury, mean arterial pressure, neurologic outcomes.</i>	2017-2020	97,621	97,621	II
Harris, Kevin C.; Brant, Rollin; Faulkner, Guy; Masse, Louise; Potts, James; Sandor, George; Voss, Christine	University of British Columbia	Physical activity and aortic stiffness in children with congenital heart disease.	<i>Congenital heart disease, children, physical activity, aortic stiffness, prevention.</i>	2017-2020	96,121	96,121	II
Hoppmann, Christiane A.; Murphy, Rachel; Linden, Wolfgang; Madden, Kenneth M.; Ashe, Maureen C.	University of British Columbia	Linked lives - a couples approach to health behaviors post stroke.	<i>Health behaviors, couples, stroke, prevention, social resources.</i>	2016-2019	86,757	174,397	II,IV
Johnson, James D.; Allard, Michael; Moore, Edwin	University of British Columbia	Regulation of cardiomyocyte metabolism by partial Ryr2 loss.	<i>Calcium signalling in heart, mitochondrial glucose oxidation, heart failure mechanisms, tissue specific knockout mouse model.</i>	2017-2020	70,500	70,500	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Krahn, Andrew D.; Klein, George J.; Philippon, François; Birnie, David H.; Simpson, Christopher S.; Gerull, Brenda; Talajic, Mario; Arbour, Laura T.; Healey, Jeff S.; Roberts, Jason D.; Lettre, Guillaume; Sanatani, Shubhayan; Hamilton, Robert M.; Tadros, Rafik; Angaran, Paul; Gardner, Martin J.; Laksman, Zachary; Chauhan, Vijay S.	Vancouver General Hospital	CASPER: Canadian genetic heart rhythm network.	<i>Arrhythmia, electrophysiology, cardiology, genetics, sudden death.</i>	2016-2019	79,728	158,617	II
Krassioukov, Andrei; Floresco, Stan; Rauscher, Alexander; Kozlowski, Piotr; Laher, Ismail; Ainslie, Philip; Phillips, Aaron	University of British Columbia	When are blood vessels "ready to rupture"? Cerebrovascular health following spinal cord injury: from animal models to clinical practice.	<i>Cerebral circulation, spinal cord injury, cognitive function, humans, animals.</i>	2016-2019	95,433	177,462	I,II,III
Little, Jonathan P.	University of British Columbia	Impact of oral ketone supplements on cardiovascular risk factors.	<i>Ketones, endothelial function, impaired glucose tolerance, inflammation, oxidative stress.</i>	2017-2020	58,634	58,634	I,II
Luo, Honglin	St. Paul's Hospital-UBC	Molecular chaperones in viral cardiomyopathy.	<i>Molecular chaperones, alphaB-crystallin, viral cardiomyopathy.</i>	2016-2019	91,460	182,420	I
MacLeod, Kathleen M.	University of British Columbia	ROCK2 and obesity cardiomyopathy: mechanisms contributing to mitochondrial and contractile dysfunction.	<i>Obesity, cardiomyopathy, ROCK2, mitochondria, dynamics.</i>	2016-2019	84,230	168,460	I
McManus, Alison, Tremblay, Mark S.; Ainslie, Philip; Green, Daniel	University of British Columbia	Prolonged sitting and brain health in healthy weight and obese children.	<i>Sedentary behavior, sitting, cerebrovascular, exercise, children.</i>	2016-2019	54,575	106,150	I,II,IV
Menon, Carlo; Boyd, Lara A.	Simon Fraser University	Does haptic feedback via bimanual elbow robotic orthoses promote cortical function and recovery from stroke?	<i>Robotics, rehabilitation, upper extremities, stroke, biomedical research.</i>	2016-2019	69,292	138,674	I,II
Prydzial, Edward L.G.	University of British Columbia	Translating novel Factor Xa function to treat thrombosis.	<i>Thrombosis, thrombolysis, fibrinolysis, coagulation, biochemistry.</i>	2017-2020	99,976	99,976	I,II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Rhodes, Ryan E.; Gardner, Benjamin; Warburton, Darren E. R.; Blanchard, Chris M.; Carson, Valerie; Beauchamp, Mark R.	University of Victoria	Promoting family physical activity through habit formation: a randomized trial.	<i>Physical activity, children, parents, games, intervention.</i>	2016-2019	99,554	199,109	IV
Rodrigues, Brian B.	University of British Columbia	Endothelial cell - cardiomyocyte crosstalk in diabetic cardiomyopathy.	<i>Endothelial cell metabolism, cardiomyocyte metabolism, diabetes, vascular endothelial growth factor.</i>	2016-2019	82,500	165,000	I
Sanatani, Shubhayan; Lehman, Anna; Wilde, Arthur; Kannankeril, Prince; Krahn, Andrew D.	BC Children's Hospital	Understanding the risk of sudden death in families: cascade screening in CPVT.	<i>CPVT, sudden cardiac death, inherited arrhythmias, cardiac channelopathies, family screening.</i>	2015-2018	78,821	258,977	I,II,III,IV
Yang, Decheng	St. Paul's Hospital	Role of translation initiation factor DAP5 in viral myocarditis.	<i>Viral myocarditis, death-associated protein 5, protease inhibitor, selective translation, coxsackieviral pathogenesis.</i>	2016-2019	76,932	152,864	I,II

## Alberta/Northwest Territories/Nunavut

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Ballermann, Barbara J.	University of Alberta	Glomerular capillary integrity in the face of hypertension: CLIC-dependent control of the actin cytoskeleton.	<i>Hypertension, capillary, endothelial cell, glomerular, kidney.</i>	2016-2019	99,800	199,308	I
Barber, Philip A.; Sajobi, Tolulope; Longman, Stewart; Coutts, Shelagh B.; Smith, Eric E.; Frayne, Richard	University of Calgary	Predementia neuroimaging of TIA (PREVENT) study.	<i>Transient ischemic attack, dementia risk, brain atrophy, vascular risk reduction, MRI.</i>	2016-2019	97,708	195,416	II
Beaulieu, Christian; Butcher, Ken; Emery, Derek J.	University of Alberta	Timing stroke in wake-up patients with unknown onset using sodium magnetic resonance imaging at 3T.	<i>Magnetic resonance imaging, stroke, wake up stroke, unknown onset stroke, sodium MRI.</i>	2016-2019	74,188	139,876	II
Chen, S.R. Wayne	University of Calgary	Molecular basis of cardiac ryanodine receptor Luminal Ca <sup>2+</sup> activation and its role in arrhythmias.	<i>Cardiac arrhythmias and sudden death, Ca<sup>2+</sup> release channel Ryanodine receptor, ion channel structure and function, molecular biology and electrophysiology, single channel recordings and single cell Ca<sup>2+</sup> imaging.</i>	2016-2019	96,564	193,128	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Childs, Sarah J.	University of Calgary	Genetic mechanisms of blood vessel patterning into a branched network.	<i>Angiogenesis, arteriovenous malformation, endothelium, Rasa1.</i>	2016-2019	90,000	180,000	I
Colbourne, Frederick	University of Alberta	Use of therapeutic hypothermia for intracerebral hemorrhagic stroke.	<i>Stroke, hypothermia, neuroprotection, intracerebral hemorrhage, plasticity.</i>	2016-2019	72,605	144,210	I
Coutts, Shelagh B.	Foothills Medical Centre	TEMPO-2 – a randomized controlled trial of TNK-tPA versus standard of care for minor ischemic stroke with proven occlusion.	<i>Stroke, thrombolysis, TIA, outcomes, randomized trial.</i>	2016-2019	82,330	174,660	II
Davenport, Margaret (Margie)	University of Alberta	Blood pressure regulation during hypertensive pregnancies.	<i>Pregnancy, sympathetic regulation, cardiovascular regulation, preeclampsia, vascular health.</i>	2016-2019	77,885	144,549	I
Di Martino, Elena S.	University of Calgary	Bioengineering studies of aortic aneurysms.	<i>Aneurysm, histology/ morphology, histology, mechanics, computer modeling.</i>	2017-2020	85,700	85,700	I,II
Dyck, Jason R.B.	University of Alberta	The role of adipose tissue inflammation and lipolysis in the pathogenesis of heart failure.	<i>Heart failure, cardiac metabolism, insulin resistance, adipose tissue, lipolysis.</i>	2016-2019	75,000	150,000	I
Febbraio, Maria	University of Alberta	The role of endothelial cell CD36 in metabolism & cardiovascular disease.	<i>Fatty acid, endothelial, CD36, cardiovascular disease, insulin resistance.</i>	2017-2020	67,878	67,878	I
Fedak, Paul	University of Calgary	Epicardial infarct repair: defining mechanisms to optimize therapy.	<i>Tissue engineering, extracellular matrix, cardiac remodeling.</i>	2015-2018	98,900	293,703	I
Forkert, Nils Daniel	University of Calgary	Image-based predictive modelling of lesion evolution in acute ischemic stroke patients.	<i>Acute ischemic stroke, perfusion analysis, predictive modelling, lesion evolution, machine learning.</i>	2017-2020	66,000	66,000	I,II
Fouad, Karim; Winship, Ian R.	University of Alberta	Promoting spinal plasticity to enhance recovery following stroke.	<i>Spinal cord, rehabilitation, chondroitin sulfate proteoglycans, recovery, stroke.</i>	2016-2019	68,560	137,120	I
Hammond, James R.	University of Alberta	SLC29A4 in cardiovascular function and dysfunction.	<i>Transporters, adenosine, serotonin, cardioprotection.</i>	2016-2019	81,327	165,054	I
Jenne, Craig; Hollenberg, Morley D.	University of Calgary	The role of platelet activation in pathogen-induced coagulopathy.	<i>Infection, coagulation, platelets, imaging, intravascular.</i>	2016-2019	94,770	189,765	I,II
Jurasz, Paul	University of Alberta	Selective angiostatin neutralization for the promotion of therapeutic angiogenesis.	<i>Therapeutic angiogenesis, angiostatin, matrix metalloproteinases, nitric oxide, endothelial dysfunction.</i>	2017-2020	87,707	87,707	I
Kubes, Paul	University of Calgary	Role of platelets in sterile and infectious perturbations.	<i>Inflammation, neutrophils, platelets, vasculature, endothelium.</i>	2015-2018	76,982	226,946	I
Lehner, Richard	University of Alberta	Role of arylacetamide deacetylase (AADAC) in intestinal and hepatic lipoprotein production and atherosclerosis development.	<i>Atherosclerosis, lipase, cholesterol, lipoprotein, arylacetamide deacetylase.</i>	2017-2020	98,843	98,843	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Lopaschuk, Gary D.	University of Alberta	Branched chain amino acid contribution to cardiac insulin resistance in heart failure.	<i>Energy metabolism, heart failure, branch chain amino acids, obesity, mitochondria.</i>	2017-2020	73,878	73,878	I,II
Michelakis, Evangelos D.	University of Alberta	Metabolic modulation of the human pulmonary hypertension lung.	<i>Metabolism, pulmonary hypertension, small molecules, biomarkers, translational research.</i>	2016-2019	97,810	195,619	I,II
Murray, Allan G.	University of Alberta	Vascular repair in transplant vasculopathy.	<i>Heart transplantation, chronic allograft vasculopathy, endothelium vascular, regenerative medicine.</i>	2017-2020	86,978	86,978	I,II
Oudit, Gavin Y.	University of Alberta	Apelin analogs as novel therapeutic agents for heart failure.	<i>Heart failure, therapy, angiogenesis.</i>	2017-2020	90,100	90,100	I,II
Plane, Frances; DeLorey, Darren S.	University of Alberta	Calcium-activated potassium channels as targets for novel vascular drugs.	<i>Nitric oxide, calcium-activated potassium channel, endothelium, endothelial dysfunction, platelets.</i>	2016-2019	82,646	172,192	I
Poulin, Marc; Anderson, Todd J.; Hanly, Patrick J.V.	University of Calgary	Role of intermittent hypoxia in the pathogenesis of obstructive sleep apnea.	<i>Obstructive sleep apnea, intermittent hypoxia, cerebrovascular regulation, stroke, endothelial dysfunction.</i>	2016-2019	85,014	169,028	I,II,III,IV
Schmoelzer, Georg M.	Royal Alexandra Hospital	Novel resuscitation techniques to improve the recovery of asphyxiated newborns.	<i>Neonatal resuscitation, cardio-pulmonary resuscitation, cerebral hemodynamics, hemodynamics.</i>	2015-2018	67,036	221,908	I
Schulz, Richard	University of Alberta	Matrix metalloproteinase-2 at the myocardial endoplasmic reticulum/ mitochondrial interface in cardiac ischemia/reperfusion injury.	<i>Matrix metalloproteinase, mitochondria-associated membrane, ischemia/ reperfusion injury, protease substrates/targets.</i>	2015-2018	89,623	257,621	I
Ussher, John R.	University of Alberta	The role of FoxO1 in the pathology of diabetic cardiomyopathy.	<i>Diabetic cardiomyopathy, FoxO1, PDH, glucose oxidation, tissue-specific knockout mice.</i>	2017-2020	98,940	98,940	I
West, Lori J.; Dijke, Ilona Esmeralda	University of Alberta	ABO-incompatible heart transplantation: pathways to tolerance.	<i>ABO blood group, heart transplantation, tolerance, B cell, neonate.</i>	2015-2018	84,500	253,500	I
Young, Howard S.	University of Alberta	Mechanisms of SERCA dysregulation in dilated cardiomyopathy.	<i>Calcium homeostasis, sarcoplasmic reticulum, dilated cardiomyopathy.</i>	2016-2019	86,000	172,000	I
Zaugg, Michael	University of Alberta	Insulin resistance due to lipotoxicity of fat emulsions in healthy and diabetic hearts: underlying mechanisms and prevention.	<i>Heart, insulin resistance, fat emulsions, energy substrate metabolism.</i>	2017-2020	94,361	94,361	I
Zhang, Dawei	University of Alberta	Molecular mechanism and physiological roles of MT1-MMP-mediated downregulation of LDL receptor.	<i>Lipoprotein metabolism, low density lipoprotein, low density lipoprotein receptor, atherosclerosis, matrix metalloproteinase.</i>	2016-2019	91,771	183,541	I

## Saskatchewan

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Cayabyab, Francisco S.	University of Saskatchewan	Neurotoxicity through prolonged adenosine A1 receptor activation: cellular, synaptic plasticity, and behavioral implications in the rat hippocampus.	<i>Adenosine A1 receptors, AMPA receptors, serine/threonine protein phosphatases, hippocampal neurotoxicity, learning and memory behaviour.</i>	2016-2019	63,500	127,000	I
Chilibeck, Philip; Zello, Gordon	University of Saskatchewan	Endurance training and post-exercise low glycemic index recovery diet for improving postprandial triglycerides.	<i>Exercise, glycemic index, postprandial, triglycerides, lipids.</i>	2017-2020	81,234	81,234	I,II
Tomczak, Corey; Paterson, David Ian; Tan, Kiat; Eurich, Dean T.; Thompson, Richard B.; Brawley, Lawrence R.; Grace, Sherry L.	University of Saskatchewan	EVADE: Early Versus standard Access carDiac rehabilitation to counter ventricular remodeling post-MI.	<i>Cardiac rehabilitation, early access cardiac rehabilitation, cardiac rehabilitation adherence, myocardial infarction, ventricular remodeling.</i>	2016-2019	80,240	155,336	II,III

## Manitoba

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Dixon, Ian M.C.; Wagle, Jeffery	University of Manitoba	Ski regulates Hippo signaling and ZEB2 in the fibrosed post-MI heart.	<i>Cardiac myofibroblasts, Ski, Yap, TAZ, fibrosis.</i>	2017-2020	99,970	99,970	I
Dolinsky, Vernon W.	University of Manitoba	The regulation of cardiac mitochondrial homeostasis in heart failure by SIRT3.	<i>Metabolism, molecular biology, physiology, echocardiography, heart failure.</i>	2016-2019	96,234	191,468	I
Duhamel, Todd A.	St. Boniface G.H. Research Centre	Examining SERCA2a acetylation in the diabetic heart.	<i>Diabetic cardiomyopathy, calcium handling, acetylation, site directed mutagenesis, sirtuins.</i>	2016-2019	93,539	186,382	I
Garland, Allan; Sanmartin, Claudia; Fransoo, Randall; Forget, Evelyn L.; Wunsch, Hannah; Scales, Damon C.; Iwashyna, Theodore	University of Manitoba	Changes in work and earnings after heart attack and stroke.	<i>Myocardial infarction, stroke, income, employment status, outcomes research.</i>	2015-2019	72,000	245,000	III,IV
Hatch, Grant M.	University of Manitoba	Regulation of cardiolipin biosynthesis in the heart.	<i>Cardiolipin, heart, synthesis, metabolism, phospholipid.</i>	2017-2020	99,610	99,610	I
Jones, Peter J.H.; Aluko, Rotimi	University of Manitoba	Evaluating the anti-hypertensive properties of whole hemp seed protein and hemp seed protein hydrolysate derived bioactive peptide consumption.	<i>Hypertension, nutrition, dietary protein.</i>	2016-2019	70,937	150,936	I,II
Kauppinen, Tiina	University of Manitoba	The role of PARP-1 as a modulator of microglial responses in ischemic stroke.	<i>Microglia, cerebral ischemia, neuroinflammation, neurodegeneration, astrogliosis.</i>	2016-2019	100,000	200,000	I
Kirshenbaum, Lorrie A.	University of Manitoba	Mechanisms of P53 mediated cell death in the heart.	<i>P53, cell death, mitochondria, ventricular myocytes, heart failure.</i>	2017-2020	99,999	99,999	I
McGavock, Jonathan; Booth, Gillian; Fransoo, Randall; Hobin, Erin; Isaranuwachai, Wandrudee; Rosella, Laura; Russell, Kelly; Sharma, Atul	University of Manitoba	If you build it, will they come?... and live longer?	<i>Population interventions, natural experiment, built environment, prevention policies, physical activity.</i>	2017-2020	75,624	75,624	IV

## Ontario

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Adeli, Khosrow	Hospital for Sick Children	Mechanisms of hepatic steatosis and VLDL overproduction in insulin resistance: role of the gut-brain-liver axis.	<i>Lipoproteins, glucagon like peptide, liver, brain, gut.</i>	2015-2018	93,000	279,000	I
Advani, Andrew; Connelly, Kim	St. Michael's Hospital	Inflammation, epigenetics and heart failure in diabetes.	<i>Heart failure, diabetes, epigenetics.</i>	2017-2020	70,507	70,507	I
Alter, David A.; Grahn, Jessica; Trainor, Laurel; Goodman, Jack M.; Faulkner, Guy E.J.; Bartel, Lee; Marzolini, Susan; Oh, Paul; Stukel, Therese A.; Redelmeier, Donald A.	Institute for Clinical Evaluative Sciences	The efficacy of personalized audio-playlists with rhythmic auditory stimulation on exercise adherence in cardiac rehabilitation.	<i>Physical activity, adherence, music, cardiac rehabilitation, rhythmic auditory stimulation.</i>	2015-2018	20,825	218,364	II,IV
Anderson, Geoffrey M.; Abdel-Qadir, Husam M.; Lee, Douglas S.; Amir, Eitan; Thavendiranathan, Paaladinesh; Austin, Peter C.; Tu, Jack V.	University of Toronto	The impact and management of cardiovascular disease in Ontario women diagnosed with early stage breast cancer.	<i>Onco-cardiology, heart failure, coronary artery disease, breast cancer, competing risks.</i>	2016-2018	39,241	70,810	II,III,IV
Austin, Richard C.	St. Joseph's Hospital	Molecular and cellular basis of endoplasmic reticulum (ER) stress and its role in atherothrombotic disease.	<i>Atherosclerosis, vascular function, reactive nitrogen species, endoplasmic reticulum stress, endothelial cells and macrophages.</i>	2015-2018	93,450	278,850	I
Bagai, Akshay; Cheema, Asim; Connelly, Kim; Dehghani, Payam; Deva, Djeven; Farkouh, Michael; Goodman, Shaun; Juni, Peter; Lavi, Shahrar; Nadeem, Syed; Yan, Andrew	St. Michael's Hospital	ASSIST-MI CMR Trial: Revascularization Strategies for ST-Segment Elevation Myocardial Infarction Cardiac Magnetic Resonance.	<i>Acute myocardial infarction, primary percutaneous coronary intervention, multi vessel disease, comparative effectiveness, clinical trial.</i>	2017-2020	87,000	87,000	II



Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Beanlands, Rob S.; Connelly, Kim; Ezekowitz, Justin; Larose, Eric; Liu, Peter; Mielniczuk, Lisa; O'Meara, Eileen; Paterson, David Ian; Wells, George; White, James	University of Ottawa Heart Institute	Bio-AIMI-HF Study: Role of Biomarkers in Optimizing Imaging Directed Management in Ischemic Heart Failure.	<i>Biomarkers, ischemic heart failure, revascularization, outcome benefit, image guided management strategy.</i>	2017-2020	99,608	99,608	II
Béique, Jean-Claude	University of Ottawa	Synaptic mechanisms in post-stroke depression.	<i>Stroke, post-stroke depression, electrophysiology, synapses, optogenetics.</i>	2015-2018	94,860	279,080	I
Bendeck, Michelle P.	University of Toronto	N-cadherin and strategies to inhibit smooth muscle cell migration.	<i>Smooth muscle cell, cadherin, migration, polarity, therapeutic.</i>	2015-2018	96,875	289,125	I,II
Bergeron, Richard	Ottawa Hospital Research Institute	Glycine and brain ischemia.	<i>Synaptic transmission, glutamate, glycine, snitter patch, stroke.</i>	2016-2019	67,579	134,029	I
Bhatia, Rajan S.; Anderson, Geoffrey M.; Austin, Peter C.; Wijeysundera, Harindra C.; Dorian, Paul; Tu, Jack V.	Women's College Hospital	The relationship between low value cardiac testing, health utilization and quality of cardiovascular care.	<i>Cardiac imaging, echocardiography, appropriate use, quality improvement.</i>	2016-2018	56,412	115,447	III
Bolz, Steffen-Sebastian	University of Toronto	Correcting CFTR dysfunction normalizes microvascular reactivity and improves neurological outcome in subarachnoid hemorrhage.	<i>Subarachnoid hemorrhage, delayed ischemia, resistance arteries, cerebral blood flow, CFTR.</i>	2016-2019	71,047	142,094	I
Bolz, Steffen-Sebastian	University of Toronto	Circadian rhythms in the microcirculation govern cardiovascular homeostasis.	<i>Circadian rhythm, myogenic vasoconstriction, skeletal muscle resistance arteries, hemodynamics, heart failure.</i>	2017-2020	92,148	92,148	I
Caldarone, Christopher; Adatia, Ian; Grosse-Wortmann, Lars; Vanderlaan, Rachel	Hospital for Sick Children	Pilot study: losartan therapy for pediatric patients with pulmonary vein stenosis.	<i>Pulmonary vein stenosis, pediatrics, pulmonary hypertension, right heart failure, clinical trial.</i>	2017-2020	68,445	68,445	II
Cameron, Jill; Bayley, Mark; Blacquiere, Dylan; Gignac, Monique; Green, Theresa; Huijbregts, Maria; Naglie, Gary; Phillips, Stephen; Silver, Frank; Warner, Grace	University of Toronto	Identifying families' needs during palliative care post-stroke: a qualitative study.	<i>Palliative care, family caregiver, knowledge translation, stroke, qualitative.</i>	2017-2020	56,062	56,062	II,III

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Cepinskas, Gediminas; Fraser, Douglas	Lawson Health Research Institute	Cerebrovascular endothelial cell and leukocyte inflammatory interaction: modulation by carbon monoxide-releasing molecules (CORMs).	<i>Inflammation, cerebrovascular endothelium, carbon monoxide, leukocytes, cell signaling.</i>	2017-2020	86,420	86,420	I
Chakrabarti, Subrata	University of Western Ontario	Vasoactive and cardioactive factors in diabetic heart disease.	<i>Diabetes, heart, endothelial-mesenchymal transition, epigenetics, non-coding RNA.</i>	2016-2019	73,400	146,800	I
Chan, Vincent; Verma, Subodh; Leong-Poi, Howard M.; Chu, Michael W. A.; Mazer, David; Ruel, Marc	University of Ottawa Heart Institute	Randomized trial of mitral valve repair with leaflet resection versus leaflet preservation - multicenter study from the Canadian Mitral Researchers (CAMRA).	<i>Mitral valve, mitral regurgitation, echocardiography.</i>	2016-2019	41,200	82,400	II,III,IV
Chauhan, Vijay S.; Wintersperger, Bernd; Yee, Raymond; Gollob, Michael H.; Healey, Jeff S.; Sapp, John L.; Krahn, Andrew D.	University Health Network	Electrocardiographic evaluation of ventricular arrhythmia vulnerability in hypertrophic cardiomyopathy.	<i>Cardiomyopathy, sudden death, electrocardiography, magnetic resonance imaging.</i>	2015-2018	94,768	289,587	I,II
Chen, Joyce L.; Levin, Mindy; Schlaug, Gottfried; Edwards, Jodi D.; McEwen, Sara E.; Chen, Robert; Thiel, Alexander	Sunnybrook Research Institute	Towards a personalized approach to stroke motor recovery with transcranial direct current stimulation.	<i>Stroke, transcranial direct current stimulation, magnetic resonance imaging, motor rehabilitation, upper limb.</i>	2016-2019	64,264	128,728	II
Chih, Sharon S.; Beanlands, Rob; Chong, Aun Yeong; Liu, Peter; Mielniczuk, Lisa; Ross, Heather; So, Derek; Veinot, John; Wells, George	University of Ottawa Heart Institute	Early post transplant Cardiac Allograft Vasculopathy: ECAV phase I study.	<i>Heart transplant, cardiac allograft vasculopathy, optical coherence tomography, coronary physiology, positron emission tomography.</i>	2017-2020	100,000	100,000	II
Connelly, Kim A.	St. Michael's Hospital	Identifying the role of silent information regulator (Sirt1) in ventricular remodeling using genetic ablation and pharmacological strategies.	<i>Heart failure, non histone lysine acetylation, smad, growth factors, silent information regulator 1.</i>	2015-2018	84,720	254,875	I
Corbett, Dale R.; Dancause, Numa	University of Ottawa	Removing the brakes on post-stroke behavioural recovery.	<i>Stroke recovery, animal models, behaviour, neuroplasticity, electrophysiology.</i>	2016-2019	87,336	174,671	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Corrales-Medina, Vicente F.; Dwivedi, Girish; Zuckier, Lionel; Beanlands, Rob S.B.; de Kemp, Robert A.; Taljaard, Monica	Ottawa Hospital Research Institute	Vascular inflammation after acute pneumonia as measured by 18FDG-PET/CT scan.	<i>Myocardial infarction, stroke, pneumonia, PET/CT, elderly.</i>	2016-2018	72,887	152,576	II
Cregan, Sean P.	University of Western Ontario	Role of ATF4 and P53 family transcription factors in the regulation of neuronal cell death.	<i>Apoptosis, neuron, P53, ATF4, ischemia.</i>	2015-2018	85,400	256,200	I
Dawson, John F.; Van Raay, Terence	University of Guelph	Hypertrophic cardiomyopathy: actin variants in the actomyosin interface.	<i>Hypertrophic cardiomyopathy, actomyosin interactions, baculovirus expression system, zebrafish model of disease, molecular causes of disease.</i>	2015-2018	76,300	222,900	I
de Azeredo Coutinho, Thais; Nagpal, Sudhir; Wells, George A.; Dennie, Carole J.; Dick, Alexander; Chan, Kwan-Leung; Boodhwani, Munir; Beauchesne, Luc M.	University of Ottawa Heart Institute	Predictors of disease progression in thoracic aorta aneurysms: role of arterial stiffness and hemodynamics.	<i>Thoracic aortic aneurysm, arterial stiffness, hemodynamics, aneurysm growth, magnetic resonance imaging.</i>	2016-2019	66,346	147,592	I,II
Delgado Olguin, Paul	Hospital for Sick Children	Epigenetic regulation of placental vascular development.	<i>Cardiovascular development, transcriptional regulation, placental vascular maturation.</i>	2017-2020	91,691	91,691	I
Epelman, Slava	University Health Network	Precise functional characterization of macrophage and dendritic cell subsets during viral myocarditis.	<i>Viral, myocarditis, macrophage, dendritic cell, IRF8.</i>	2015-2018	99,821	299,463	I
Feldman, Ross D.	University of Western Ontario	Estrogen regulation of vascular remodelling: role of GPER.	<i>Estrogen, vascular biology, aldosterone.</i>	2015-2018	94,582	283,746	I
Feng, Qingping; Di Guglielmo, John	University of Western Ontario	Sepsis therapy with annexin A5.	<i>Sepsis, cardiovascular function, endothelial cells.</i>	2017-2020	99,875	99,875	I
Figeys, Daniel; Mayne, Janice E.	University of Ottawa	Molecular mechanisms of PCSK9 regulation.	<i>Proprotein convertase 9, low density lipoprotein receptor, hypercholesterolemia, protein interactions, proteomics.</i>	2016-2019	87,259	180,198	I
Flynn, Lauren; Hess, David A.; Amsden, Brian G.	University of Western Ontario	Co-delivery of adipose-derived stem cells and SDF-1/HGF-1 in ligand grafted, in situ setting gels for the treatment of peripheral arterial disease.	<i>Tissue engineering and regenerative medicine, peripheral vascular disease, cell and drug delivery vehicles, therapeutic angiogenesis, adipose-derived stem cells.</i>	2015-2018	89,500	268,500	I
Friedberg, Mark K.	Hospital for Sick Children	Heart rate reduction for therapeutic benefit in pulmonary arterial hypertension.	<i>Pulmonary arterial hypertension, heart rate, ventricular-ventricular interactions, heart function, translational research.</i>	2017-2020	89,934	89,934	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Friedberg, Mark K.	Hospital for Sick Children	Septal insertion injury mediates adverse ventricular-ventricular interaction in right ventricular pressure and volume loading.	<i>Ventricular-ventricular interactions, right ventricular afterload, right ventricular preload, rabbit, fibrosis.</i>	2016-2019	82,002	164,031	I
Garg, Amit; Walsh, Michael W.; Mustafa, Reem; Wald, Ron; Oliver, Matthew J.; Sood, Manish M.; Presseau, Justin; Grimshaw, Jeremy M.; McIntyre, Christopher; Iliescu, Eduard; Jain, Arsh K.; Devereaux, Philip J.; Dixon, Stephanie; Sontrop, Jessica; Al-Jaishi, Ahmed; Acedillo, Rey; Pandeya, Sanjay; Wodchis, Walter P.; Nesrallah, Gihad; Goluch, Richard	London Health Sciences Centre	Major cardiovascular outcomes with personalized dialysate TEMPerature (MY TEMP): a registry-based cluster randomized control trial.	<i>Hemodialysis, major cardiovascular events, individualized dialysate temperature.</i>	2016-2019	84,020	176,040	II,III
Gill, Sean Edward; Mehta, Sanjay	University of Western Ontario	The role of tissue inhibitors of metalloproteinases in microvascular endothelial cell activation and dysfunction during sepsis.	<i>Sepsis, microvasculature, endothelial dysfunction, TIMPs, human.</i>	2017-2020	78,348	78,348	I
Gilliland, Jason; Campbell, Martha Karen; Doherty, Sean; Haines, Jennifer (Jess); Minaker, Leia; Norozi, Kambiz; O'Connor, Colleen; Simpson, Bonnie; Wilk, Piotr	University of Western Ontario	Development and evaluation of a smartphone based program for improving food literacy and healthy eating among youth.	<i>Healthy eating, youth, intervention, smartphone, food literacy.</i>	2017-2020	86,460	86,460	IV
Goldstein, Benjamin I.; Andreazza, Ana; Black, Sandra; Kertes, Peter; Strauss, Bradley; Yang, Victor	Sunnybrook Health Sciences Centre	Integrating neurocognition and inflammation with retinal vascular photography among adolescents at increased clinical and familial risk for cardiovascular disease.	<i>Retinal vessels, inflammation, bipolar disorder, cognition, adolescent.</i>	2017-2020	95,340	95,340	I,II
Gramolini, Anthony	University of Toronto	Regulation of phospholamban expression and activity in cardiac muscle.	<i>Cardiac calcium, protein phosphorylation, protein degradation, autophagy.</i>	2017-2020	87,275	87,275	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Grant, David; Levy, Gary; Atkins, Harold; Chruscinski, Andrzej; Gorczynski, Reginald; Juvet, Steven; Ross, Heather; Tinckam, Kathryn	Toronto General Hospital	FGL2 and heart allotransplantation.	<i>Heart transplantation, tolerance, biomarkers, regulatory T cells, cardiac allograft vasculopathy.</i>	2017-2020	74,800	74,800	I,II
Gros, Robert; Prado, Marco A.M.	Robarts Research Institute	The protective role of the cholinergic system in the heart.	<i>Genetically modified mice, cholinergic tone, cardiac dysfunction, hemodynamic measurements, ECG telemetry.</i>	2016-2019	72,500	145,000	I
Haas, Tara L.; Biot, Olivier; Ellis, Christopher	York University	Angiogenic regulators in peripheral limb ischemia.	<i>Angiogenesis, microcirculation, oxygen transport, ischemic muscle, shear stress.</i>	2015-2018	84,209	266,211	I,II
Hegele, Robert A.	Robarts Research Institute	Genomics and phenomics of hypertriglyceridemia and cardiometabolic syndrome.	<i>Lipoproteins, triglycerides, metabolic syndrome, human genetic variation, atherosclerosis.</i>	2015-2018	96,826	285,930	I,II,III,IV
Heximer, Scott P.	University of Toronto	Defining novel mechanisms in the pathogenesis of bradyarrhythmias and sick sinus node syndrome.	<i>SAN function, RGS proteins, parasympathetic signaling, autorhythmicity, autophagy.</i>	2015-2018	74,976	224,928	I
Husain, Mansoor	University Health Network	Mechanisms of action of the cardioprotective metabolite GLP-1(28-36).	<i>Glucagon-like peptide-1, soluble adenylylase cyclase, cardioprotection, coronary artery smooth muscle cells, mitochondrial metabolism.</i>	2016-2019	84,875	170,968	I
Ikura, Mitsuhiro; Stathopoulos, Peter	University Health Network	Mechanistic studies on store-operated calcium entry in heart and stroke.	<i>Calcium signaling, protein structure, membrane biology, NMR, crystallography.</i>	2016-2019	74,600	149,200	I
Jankov, Robert P.	Children's Hospital of Eastern Ontario	A novel approach to nitric oxide-based therapy for chronic neonatal lung injury and pulmonary hypertension.	<i>Bronchopulmonary dysplasia, pulmonary hypertension, nitric oxide, S-nitrosylation, newborn.</i>	2017-2020	99,997	99,997	I
Kapral, Moira K.; Tu, Jack V.; Swartz, Richard H.; Silver, Frank L.; Manuel, Douglas G.; Hall, Ruth; Jin, Albert Y.; Austin, Peter C.	Toronto General Hospital	Measuring and improving stroke care in rural Ontario.	<i>Stroke, rural health, registries, administrative data.</i>	2016-2018	89,986	181,690	II,III
Kassner, Andrea; Narang, Indra; Janzen, Laura; Shroff, Manohar M.; deVeber, Gabrielle A.	Hospital for Sick Children	MRI assessment of cerebral vascular injury in obese children with obstructive sleep apnea.	<i>Obstructive sleep apnea, vascular, neuroimaging, MRI, stroke.</i>	2015-2018	87,580	256,118	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Khan, Zia A.	University of Western Ontario	Regulation of vascular stem cell differentiation and plasticity.	<i>Vascular stem cells, vasculogenesis, blood vessels, stem cell plasticity, cell differentiation.</i>	2015-2018	63,800	219,400	I
Koschinsky, Marllys L.	Robarts Research Institute	Role of oxidized phospholipid modification and lysine-binding properties of apo(a) in the pathogenicity of Lp(a).	<i>Lipoprotein(a), apolipoprotein(a), atherosclerosis, oxidized phospholipids, vascular cells.</i>	2017-2020	91,270	91,270	I
Kuebler, Wolfgang M.	St. Michael's Hospital	HMGB1 promotes pulmonary hypertension by triggering inflammation and autoimmunity.	<i>Pulmonary hypertension, vascular remodelling, HMGB1, B cells, autoimmunity.</i>	2016-2019	92,275	188,176	I
Kutryk, Michael J.B.	St. Michael's Hospital	Surface modification of implantable materials for novel therapeutic applications.	<i>Antibody immobilization, regional drug delivery, vascular prostheses, material functionalization.</i>	2015-2018	80,990	238,699	I
Lacoste, Baptiste; Béique, Jean-Claude; Tremblay, Marie-Ève	Ottawa Hospital Research Institute	Rho-kinase2 inhibition as an early intervention after ischemic stroke to modulate cerebrovascular plasticity and promote functional recovery.	<i>Post-stroke functional recovery, cerebrovascular remodeling, RhoA/Rho-kinase pathway, neuronal plasticity, in/ex vivo physiology.</i>	2017-2020	85,650	85,650	I
Lagace, Thomas A.	University of Ottawa Heart Institute	Regulation of the PCSK9 binding interaction with LDL receptor.	<i>Low-density lipoprotein receptor, PCSK9, low-density lipoprotein cholesterol, protein-protein interaction, plasma clearance.</i>	2015-2018	94,057	296,455	I,II
Le Gal, Grégoire; Kearon, Clive; Righini, Marc; Rodger, Marc A.; De Wit, Kerstin; Ramsay, Timothy O.; Wells, Philip S.; Anderson, David R.; Shivakumar, Sudeep; Kahn, Susan	Ottawa Hospital Research Institute	Age-adjusted D-dimer cutoff levels to rule out deep vein thrombosis (The ADJUST-DVT Study).	<i>Deep vein thrombosis, diagnostic strategy, D-dimer, age.</i>	2015-2018	83,467	255,538	II
Lee, Warren L.	St. Michael's Hospital	Molecular mechanisms of LDL transcytosis.	<i>Atherosclerosis, LDL cholesterol, endothelial transcytosis, cell biology, animal models.</i>	2016-2019	88,624	176,237	I
Leong-Poi, Howard M.	St. Michael's Hospital	Ultrasound-targeted microRNA therapy for aortic aneurysm.	<i>Aortic aneurysm, microRNA, gene therapy, microbubbles, smooth muscle cells.</i>	2016-2019	89,544	179,501	I
Lewis, Gary	Toronto General Research Institute	CNS-mediated effects of insulin and GLP-1 on intestinal and hepatic lipoprotein particle production in humans.	<i>Lipoprotein, insulin, GLP-1, intestine, brain.</i>	2015-2018	92,356	272,568	I,II
Li, Ren-Ke	University Health Network	A new growth factor, CNPY2, to induce angiogenesis after cardiac ischemia.	<i>Ischemic cardiomyopathy, angiogenesis, gene therapy, growth factor, cardiac function.</i>	2015-2018	91,370	268,103	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Lok, Charmaine E.; Moist, Louise; Tomlinson, George; Farkouh, Michael, E.	Toronto General Hospital	PISCES-Pilot: Protection against Incidences of Cardiovascular Events Study with daily fish oil supplementation in dialysis patients - Pilot study in satellite dialysis.	<i>Satellite dialysis, omega-3, cardiovascular events, hemodialysis.</i>	2015-2018	83,426	281,405	II
Marsden, Philip A.	University of Toronto	Post-transcriptional regulation of endothelial gene expression.	<i>RNA interference, endothelium, atherosclerosis, transcription, hypoxia.</i>	2016-2019	89,445	178,890	I
Martino, Tami A.	University of Guelph	Role of CLOCK in heart disease.	<i>Cardiovascular disease, myocardial infarction, circadian rhythms, physiology, molecular biology, immune.</i>	2015-2018	95,000	287,680	I,II
McIntyre, Christopher W.; Mandzia, Jennifer; Prato, Frank; St. Lawrence, Keith; Theberge, Jean	Lawson Health Research Institute	Reducing hemodialysis induced recurrent brain injury to improve patients' lives.	<i>Medical biophysics, hemodialysis, cardiovascular, stroke, vascular dementia.</i>	2017-2020	72,544	72,544	I,II
Mehta, Sanjay; Gill, Sean E.	Victoria Hospital	Mechanisms and regulation of microvascular endothelial cell apoptosis in sepsis.	<i>Sepsis, microvascular, endothelial cell, apoptosis, microRNA.</i>	2016-2019	86,450	172,900	I
Mehta, Shamir R.; Baine, Kevin; Cheema, Asim; Lavi, Shahar; Meeks, Brandi; Overgaard, Christopher; Rinfret, Stephane; Sheth, Tej; Wood, David	McMaster University	STRIVE Pilot Trial: adjunctive, low-dose intracoronary recombinant tissue plasminogen activator versus placebo for primary PCI in patients with ST-segment elevation myocardial infarction.	<i>Acute myocardial infarction, fibrinolytic therapy, myocardial tissue perfusion, distal embolization, clinical trial.</i>	2017-2020	84,925	84,925	II
Mequanint, Kibret	University of Western Ontario	Engineered human vascular tissues as platforms for preclinical testing.	<i>Engineered vascular tissues, pre-clinical model, elastin, vascular smooth muscle phenotype, notch signaling.</i>	2015-2018	82,458	247,374	I
Mielniczuk, Lisa M.; de Kemp, Robert; Beanlands, Rob; Dick, Alexander; Floras, John; Liu, Peter; Wells, George	University of Ottawa Heart Institute	Spironolactone Therapy in Chronic Stable Right Heart Failure (STAR-HF) trial.	<i>Heart failure, right ventricle, PET imaging, cardiac remodeling.</i>	2017-2020	95,087	95,087	II
Musselman, Kristin; Rumney, Peter; Yang, Jaynie; Manns, Patricia J.	University Health Network	Functional electrical stimulation to improve upper extremity function in young children with perinatal stroke: a proof of concept study.	<i>Functional electrical stimulation, perinatal stroke, rehabilitation, arm function.</i>	2016-2019	86,415	182,859	II



Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Nery, Pablo; Redfearn, Damian; Adler, Andy; Birnie, David; de Kemp, Robert; Nair, Girish; Wells, George	University of Ottawa Heart Institute	Correlation between arrhythmia mechanism and substrate to ablate persistent atrial fibrillation.	<i>Atrial fibrillation, catheter ablation, treatment.</i>	2017-2020	67,540	67,540	II
Ni, Heyu	St. Michael's Hospital	Apolipoprotein A-IV and platelet function: novel links with thrombosis, inflammation, and atherosclerosis.	<i>Apolipoprotein A-IV, platelets and integrins, thrombosis and hemostasis, atherosclerosis, inflammation.</i>	2015-2018	79,686	242,335	I
Ni, Heyu	St. Michael's Hospital	The PSI domain of beta3 integrin: a novel mechanism and target for anti-thrombotic therapy.	<i>Integrin, PSI domain, thrombosis, protein disulfide isomerase, cardiovascular disease.</i>	2017-2020	97,075	97,075	I
Ouimet, Mireille	University of Ottawa Heart Institute	Macrophage lipophagy in immunometabolism and atherosclerosis.	<i>Macrophage, autophagy, lipid droplets, metabolism, inflammation.</i>	2017-2020	73,113	73,113	I
Pare, Guillaume; Yusuf, Salim; Shoamanesh, Ashkan; Hart, Robert; Sharma, Mukul; O'Donnell, Martin J.	McMaster University	Genetic determinants of early stroke – a population study from INTERSTROKE.	<i>Stroke, genetics, next-generation sequencing.</i>	2015-2018	20,000	149,600	I,II
Park, David S.	University of Ottawa	Mechanisms of delayed death in stroke.	<i>Stroke, neuronal death, cell cycle, in vivo, ischemia.</i>	2015-2018	75,802	227,406	I
Patterson, Kara K.; Brooks, Dina	Toronto Rehabilitation Institute	Dance for the improvement of balance and gait after stroke: a randomized controlled trial.	<i>Stroke, rehabilitation, dance, balance, gait.</i>	2017-2020	72,866	72,866	II
Peng, Tianqing	Lawson Health Research Institute	Junctophilin-2 protects the heart against ischemia/reperfusion injury by preventing junctin degradation.	<i>Junctophilin-2, junctin, myocardial infarction, ubiquitination, calcium release unit.</i>	2017-2020	87,590	87,590	I
Radisic, Milica; Keller, Gordon	University of Toronto	Mobilizing epicardial cells for enhanced integration of human cardiac patches.	<i>Regenerative medicine, epicardium, stem cells, tissue engineering, biomaterials.</i>	2016-2019	91,317	174,667	I
Rayner, Katey	University of Ottawa Heart Institute	Exosomal microRNAs as mediators of cell-cell communication in atherosclerosis.	<i>MicroRNA, macrophage, atherosclerosis.</i>	2016-2019	99,021	198,450	I
Salbach, Nancy M.; Kelloway, Linda; Moineddin, Rahim; Zee, Joanne; Cameron, Jill; Tee, Alda; Howe, Jo-Anne; Wodchis, Walter P.; Bayley, Mark T.; Jaglal, Susan B.; Hunter, Susan	University of Toronto	Increasing access to community-based task-oriented exercise programs through healthcare-recreation partnerships to improve function post-stroke: feasibility of a 2-group RCT protocol.	<i>Stroke, community, task-oriented training, healthcare-recreation partnership, everyday function.</i>	2016-2019	82,849	162,562	II,III



Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Scott, Ian C.; Wilson, Michael	Hospital for Sick Children	Dissecting the gene regulatory network of cardiac lineage specification and regeneration.	<i>Cardiac stem cells, zebrafish, genomics, regeneration, developmental biology.</i>	2016-2019	73,000	146,000	I
Sharpe, Simon J.; Pomès, Régis; Keeley, Fred W.	Hospital for Sick Children	Linking structural and functional consequences of sequence polymorphisms in human tropoelastin with susceptibility to late-onset vascular diseases.	<i>Vascular diseases, elastin structure and function, structural biology, arterial elasticity, genetic risk factors for disease.</i>	2015-2018	91,279	273,837	I
Sheehan, Kathleen A.; Kapral, Moira; Casaubon, Leanne; Kurdyak, Paul	Toronto Western Hospital	Quality of care and mortality following stroke for individuals with schizophrenia.	<i>Stroke, schizophrenia, quality of health care.</i>	2017-2020	61,968	61,968	II,III,IV
Sheffield, William P.	McMaster University	Targeting factor XIa for improved antithrombotic therapy.	<i>Coagulation, thrombosis, coagulation factor XI, protease nexin 2, aptamers.</i>	2015-2018	64,273	185,875	I
Simmons, Craig; Yau, Terrence M.	University of Toronto	The roles of C-type natriuretic peptide in aortic valve disease.	<i>C-type natriuretic peptide, calcific aortic valve disease, fibrosis, hemodynamics, bicuspid aortic valve.</i>	2015-2018	96,460	288,867	I
Simpson, Jeremy A.; Brunt, Keith R.	University of Guelph	Reduced infarct size and preserved cardiac function by a novel reactive pharmacological intervention after infarction.	<i>Interventional pharmacology, myocardial infarction, heart failure, mouse.</i>	2016-2019	91,771	183,542	I,II
Singh, Krishna K.	St. Michael's Hospital	Novel mechanisms in cardiac fibrosis and heart failure.	<i>Heart failure, cardiac fibrosis, tissue-specific knockout mice.</i>	2017-2020	79,811	79,811	I,II,III,IV
Slack, Ruth S.	University of Ottawa	Regulation of Opa1 to maintain mitochondrial energy metabolism and survival after stroke.	<i>Stroke, cell death, mitochondria.</i>	2017-2020	89,700	89,700	I
Stampfli, Martin R.; Robbins, Clinton	McMaster University	Relative importance of monocyte recruitment versus local macrophage proliferation in abdominal aortic aneurysms associated with cigarette smoke exposure.	<i>Abdominal aortic aneurysms, cigarette smoke, animal models, macrophage biology, parabiosis.</i>	2017-2020	90,311	90,311	I
Steinman, David A.; Mendes Pereira, Vitor; Radovanovic, Ivan	University of Toronto	Hemodynamic predictors of cerebral aneurysm wall vulnerability.	<i>Aneurysm, stroke, hemodynamics, rupture risk, brain surgery.</i>	2016-2019	85,750	173,500	I,II
Stewart, Alexandre F.R.	University of Ottawa Heart Institute	Mechanisms of coronary artery calcification risk conferred by 9p21.3 genetic variants.	<i>Atherosclerosis, arterial calcification, gene regulation, primary human aortic smooth muscle cells, transgenic mouse models.</i>	2016-2019	72,580	145,160	I
Szabo, Eva; Pare, Guillaume	McMaster University	Modeling endothelial dysfunction in early onset of cardiovascular artery disease (EOCAD) using patient specific induced pluripotent stem cell derived endothelial cells.	<i>Induced pluripotent stem cells (iPSCs), early onset of cardiovascular disease, DHX34, pathogenic variants, endothelial cells.</i>	2017-2020	80,720	80,720	I,II,IV

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Thebaud, Bernard	Ottawa Hospital Research Institute	NeoPerPHuse: Neonatal Pulmonary Exosome Rescue for Pulmonary Hypertension Using Superior Endothelial progenitor cells.	<i>Endothelial progenitor cells, pulmonary hypertension, regenerative medicine, newborn, clinical translation.</i>	2017-2020	99,715	99,715	I
Thiruganasambandamoorthy, Venkatesh; Krahn, Andrew D.; Sheldon, Robert S.; Graham, Ian; Sivilotti, Marco; Taljaard, Monica; Calder, Lisa; Wells, George A.; Stiell, Ian G.	Ottawa Hospital Research Institute	Risk Stratification of adult Emergency Department Syncope patients to predict short-term serious adverse events after discharge (RiSEDS study) Phase II.	<i>Syncope, arrhythmia, death, risk-stratification, emergency department.</i>	2015-2018	80,510	243,045	II,III
Tijssen, Janice A.; Bhanji, Farhan; Cheng, Adam; de Caen, Allan; Morrison, Laurie; Shariff, Salimah	Lawson Health Research Institute	Bystander CPR for paediatric out-of-hospital cardiac arrest.	<i>Pediatric, out-of-hospital cardiac arrest, bystander CPR, cardiac arrest outcomes.</i>	2017-2020	19,133	19,133	II,III,IV
Timmons, Brian W.; Cellucci, Tania; MacDonald, Maureen; Obeid, Joyce; Thabane, Lehana	McMaster University	Longitudinal Cardiovascular Health AssessMent in Pediatric chronic Inflammatory conditiONs: role of physical activity and fitness (the CHAMPION-2 Study).	<i>Physical activity, fitness, risk factors, vascular function, pediatric chronic disease.</i>	2017-2020	99,860	99,860	I,II
Tremblay, Mark S.; Larouche, Richard; Trudeau, Francois; Faulkner, Guy E.J.	Children's Hospital of Eastern Ontario	Active transportation, independent mobility, and physical activity among school children: a multi-site study.	<i>Active transportation, physical activity, independent mobility, social-ecological model, moderators.</i>	2015-2018	85,211	216,692	IV
Trigatti, Bernardo L.	McMaster University	Role of the multisubunit adaptor protein, PDZK1, in leukocytes in atherosclerosis development and HDL induced plaque regression.	<i>HDL, PDZK1, atherosclerosis, regression, macrophage.</i>	2015-2018	84,108	252,180	I
Trigatti, Bernardo L.	McMaster University	Targeting interleukin-15 to reduced experimental atherosclerosis in mice.	<i>Interleukin 15, interleukin 15 receptor, inflammation, atherosclerosis, coronary artery disease.</i>	2016-2019	96,274	192,548	I
Tulloch, Heather E.; Collins, Barbara; Wells, George A.; Awad Shimoon, Nesrine; Quinlan, Bonnie; Duchesne, Lloyd James; Lemay, Michel R.; McHugh, Tara-Leigh	University of Ottawa Heart Institute	Neurocognitive outcomes after out-of-hospital cardiac arrest.	<i>Cardiac arrest, neurocognitive, quality of life, psychosocial outcome, heart attack.</i>	2015-2018	44,725	149,644	II,IV

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Tymianski, Michael	Toronto Western Hospital	Developing the "EpiPen" of acute stroke and stroke recovery.	<i>Stroke, PSD-95, neuroprotection, NMDA receptor, Src kinase.</i>	2016-2019	91,113	185,180	I
Verma, Atul; Ha, Andrew C.T.; Healey, Jeff S.; Birnie, David H.; Wijeyesundera, Harindra C.	Southlake Regional Heath Centre	Evaluation of "real-world" clinical and economical outcomes of catheter-based atrial fibrillation ablation: insights from a prospective, population-based registry.	<i>Atrial fibrillation, catheter-based ablation, registry, real-world outcomes, economic analysis.</i>	2016-2018	61,853	127,691	II,III
Verma, Atul; Ha, Andrew; Fedak, Paul; Gladstone, David; Mamdani, Muhammad; Mazer, C. David; Thorpe, Kevin; Verma, Subodh; Yanagawa, Bobby; Yau, Terrance	St. Michael's Hospital	Post-Surgical Enhanced Monitoring for Cardiac Arrhythmias and Atrial Fibrillation (SEARCH-AF): a randomized controlled trial.	<i>Post-operative atrial fibrillation, cardiac surgery, stroke, cardiac rhythm monitoring, randomized controlled trial.</i>	2017-2020	99,955	99,955	II
Wang, Jing	Ottawa Hospital Research Institute	Targeting the aPKC-CBP pathway for neurovascular regeneration after stroke related brain injury.	<i>ET-1 induced focal ischemic stroke, neurogenesis, angiogenesis, histone acetylation, CBP phosphorylation.</i>	2016-2019	89,934	179,868	I
Weitz, Jeffrey I.	Hamilton General Hospital	Prevention of clotting on mechanical heart valves.	<i>Mechanical heart valves, thromboembolism, factor XII, factor Xa, thrombin.</i>	2016-2019	75,000	150,000	I
Werstuck, Geoffrey H.; Gerstein, Hertz; Nair, Vidhya	McMaster University	Investigating the effect of hyperglycemia on the vasa vasorum: is accelerated atherosclerosis a microvascular complication of diabetes mellitus?	<i>Hyperglycemia, diabetes mellitus, vasa vasorum, atherosclerosis.</i>	2017-2020	92,374	92,374	I
Whitlock, Richard P.; Connolly, Stuart J.; Casanova, Amparo; Belley-Cote, Emilie; Yusuf, Salim; Hanif, Hasib; Eikelboom, John W.A.; Lamy, Andre; Healey, Jeff S.; Devereaux, Philip J.	McMaster University	Left atrial appendage study (LAAOS) III.	<i>Left atrial appendage, atrial fibrillation, cardiac surgery, stroke, non-CNS systemic embolism.</i>	2016-2019	55,000	155,000	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Wijeyesundera, Harindra C.; Wong, William Wai Lun; Pelletier, Marc P.; Knudtson, Merrill L.; Baaney, Kevin; Ko, Dennis T.; Austin, Peter C.; Tu, Jack V.; Hoch, Jeffrey S.; Asgar, Anita; Lauck, Sandra B.; Potter, Brian; Rodes Cabau, Josep; Wood, David A.; Nadeem, Syed; Webb, John	Sunnybrook Health Sciences Centre	Improving triage and informing capacity needs for patients with severe aortic stenosis undergoing transcatheter aortic valve implantation (TAVI): a pan-Canadian evaluation.	<i>Aortic stenosis, transcatheter aortic valve implantation (TAVI), wait-time management, predictive models, discrete event modelling.</i>	2016-2019	62,552	140,047	II,III
Woo, Minna	Toronto General Research Institute	Molecular dissection of the role of NAFLD in atherosclerosis.	<i>Atherogenesis, insulin resistance, inflammation, IGF-1, JAK-STAT pathway.</i>	2016-2019	81,166	162,332	I
Wu, Lingyun (Lily)	Laurentian University of Sudbury	The mechanisms for endogenous fructose accumulation and the related vascular complications.	<i>Fructose, aldolase B knockout mice, vascular remodeling, hypertension, Akt.</i>	2016-2019	95,000	190,000	I
Zhang, Shetuan	Queen's University	Identification of uremic toxin p-cresol-mediated hERG dysfunction as a mechanism for sudden cardiac death associated with chronic kidney disease.	<i>Potassium channel hERG, arrhythmias, chronic kidney disease, electrophysiology, animal model.</i>	2017-2020	92,926	92,926	I

## Quebec

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Afilalo, Jonathan; Joseph, Lawrence; Stevens, Louis-Mathieu; Graham, Michelle M.	Sir Mortimer B. Davis Jewish General Hospital	Optimal revascularization strategy in patients undergoing aortic valve replacement.	<i>Aortic valve replacement, coronary artery bypass, revascularization, outcomes, coronary artery disease.</i>	2015-2018	97,352	293,098	II
Anand-Srivastava, Madhu B.	Université de Montréal	Natriuretic peptide receptors in cardiovascular physiology and pathology.	<i>Natriuretic peptide receptors A and C, knockout mice, G proteins, hypertension, cell proliferation.</i>	2015-2018	94,124	280,872	I
Andelfinger, Gregor	Hôpital Sainte-Justine	Role of Adams19 in development and homeostasis of the aortic valve.	<i>Aortic stenosis, extracellular matrix, metalloproteinase, high throughput genomics, animal models of disease.</i>	2017-2020	90,381	90,381	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Beaudoin, Jonathan; Couet, Jacques; Arsenault, Marie; Mathieu, Patrick; Pibarot, Philippe	Institut universitaire de cardiologie et de pneumologie de Québec	Role and mechanisms of mitral leaflet remodeling in functional mitral regurgitation.	<i>Mitral regurgitation, cardiac imaging, animal models, heart failure, valvular heart disease.</i>	2015-2018	87,565	251,197	I
Boivin, Benoit	Institut de cardiologie de Montréal	Understanding PTP1B regulation of microRNA-mediated gene silencing in cardiac hypertrophy.	<i>Cardiac hypertrophy, signalling, transgenic, protein phosphatase, gene silencing.</i>	2015-2018	87,476	269,930	I
Bonnet, Sébastien; Boucherat, Olivier; Provencher, Steeve	Institut universitaire de cardiologie et de pneumologie de Québec	Role of FOXM1 in DNA damage response and cell survival progression in pulmonary hypertension.	<i>Pulmonary hypertension, animal model, vascular remodeling.</i>	2017-2020	87,800	87,800	I,II
Bossé, Yohan; Mathieu, Patrick; Pibarot, Philippe	Institut universitaire de cardiologie et de pneumologie de Québec	Multidimensional genomic profiling to elucidate the molecular mechanisms underpinning calcific aortic valve stenosis.	<i>Calcific aortic valve stenosis, genomics, epigenetics, microRNA, gene expression.</i>	2015-2018	99,960	299,743	I,II
Bourque, Charles W.; Prager-Khoutorsky, Masha	Montreal General Hospital	Role of osmoreceptor gain in salt-sensitive hypertension.	<i>Vasopressin, salt-sensitive hypertension, osmoregulation, cytoskeleton, BDNF.</i>	2016-2019	72,634	145,268	I
Brambati, Simona; Marcotte, Karine; Desautels, Alex; Descoteaux, Maxime; Rochon, Elizabeth A.; Leonard, Carol L.	Institut Universitaire de Geriatrie de Montreal	Dynamics of language recovery in post-stroke aphasia: a longitudinal neuroimaging study.	<i>Aphasia, magnetic resonance imaging, language recovery, brain plasticity, diffusion MRI.</i>	2016-2019	94,598	189,314	II,III
Chalifour, Lorraine E.; Chevrier, Jonathon; Leask, Richard	Lady Davis Institute for Medical Research	Bisphenols, phthalates and recovery post-myocardial infarction.	<i>Bisphenol and phthalate exposure, myocardial infarction model, monocyte and macrophage characterization, cardiac structure/function analyses.</i>	2016-2019	81,480	162,960	I,II
Couet, Jacques; Arsenault, Marie; Laplante, Mathieu	Institut universitaire de cardiologie et de pneumologie de Québec	Modulating mTOR activity in aortic stenosis.	<i>Heart valve disease, heart hypertrophy, mTOR, aortic stenosis, pressure overload.</i>	2015-2018	89,777	269,331	I
Daskalopoulou, Styliani Stella; Colmegna, Ines; Côté, Robert; Hébert, Terry; Pelletier, Jerry; Piccirillo, Ciriaco	McGill University Health Center Research Institute	Modulation of the adiponectin receptor pathway: a novel target for carotid atherosclerotic plaque stabilization.	<i>Stroke, atherosclerosis, carotid plaque instability, adiponectin, adiponectin receptors, immunomodulation, gene and protein expression.</i>	2017-2020	100,000	100,000	I,II
Dehaes, Mathieu; Lodygensky, Gregory	Université de Montréal	Bedside monitoring of pre- and postoperative brain metabolic needs in neonatal d-transposition of the great arteries.	<i>Congenital heart disease, neurodevelopmental outcome, cerebral oxygen metabolism, brain abnormality and injury, near infrared spectroscopy.</i>	2016-2019	89,912	180,447	I,II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Di Cristo, Graziella; Carmant, Lionel	Hôpital Sainte-Justine	Mechanisms of GABAergic neuron vulnerability caused by perinatal asphyxia.	<i>Asphyxia, neonate, GABAergic circuit, cognitive impairments, p75NTR.</i>	2017-2020	89,951	89,951	I
Fiset, Céline	Université de Montréal	Influence of pregnancy on the automaticity of the heart.	<i>Pregnancy, cardiac arrhythmias, sinoatrial node, cardiac automaticity, heart rate.</i>	2016-2019	94,128	188,256	I
Flamand, Louis; Dubé, Marie-Pierre; Tardif, Jean-Claude	Centre Hospitalier Universitaire de Québec	Inherited chromosomally-integrated human herpesvirus 6 and cardiovascular diseases.	<i>Cardiovascular disease, angina, human herpesvirus 6, chromosomally-integrated HHV-6, telomere.</i>	2017-2020	67,552	67,552	I
Gallagher, Anne; Carmant, Lionel; Dehaes, Mathieu; Lippé, Sarah; Poirier, Nancy	Hôpital Sainte-Justine	Functional brain connectivity in infants with congenital heart disease (CHD): a predictor of neurodevelopmental outcomes?	<i>Congenital heart disease, neurodevelopmental outcome, predictive markers, functional brain connectivity imaging, NIRS-EEG.</i>	2017-2020	84,699	84,699	I,II
Gallagher, Anne; Carmant, Lionel; Poirier, Nancy Claire	Université de Montréal	Impact of early intervention on neurodevelopmental outcome in CHD.	<i>Congenital heart disease, early multidisciplinary intervention, neurodevelopmental outcome.</i>	2016-2019	33,455	78,801	II
Gauthier, Claudine; Bherer, Louis; Nigam, Anil; Stikov, Nikola; Vuckovic, Dajana	Concordia University	Quantitative MRI of cerebral vascular, metabolic and microstructural health in cardiovascular disease.	<i>Cerebrovascular health, cerebral metabolism, cardiovascular disease, fitness, cognition.</i>	2017-2020	71,900	71,900	I
Hébert, Terence; Tanny, Jason	McGill University	The role of the RNA polymerase II elongation complex in cardiac hypertrophy and heart disease.	<i>Cardiac hypertrophy, heart failure, transcription elongation, RNA polymerase, G protein signalling.</i>	2015-2018	98,000	294,000	I
Kriz, Jasna	Université Laval	Therapeutic reprogramming of microglia after stroke: identifying sex-dependent immune networks and targets.	<i>Experimental stroke, sexual dimorphism, post-stroke microglia activation, immune networks, sex-dependent targets.</i>	2017-2020	92,608	92,608	I
Lamarche-Vane, Nathalie	McGill University Health Center Research Institute	Molecular analysis of the Rac1/Cdc42 regulator CdGAP in post-natal angiogenesis and cardiac function.	<i>Angiogenesis, cardiac development, notch signaling, VEGF signaling, ARHGAP31.</i>	2017-2020	92,500	92,500	I
Larrivée, Bruno	Hôpital Maisonneuve-Rosemont	Targeting BMP signalling for the prevention of vascular retinal dysfunctions.	<i>Vascular dysfunctions, diabetes, vascular biology, molecular biology, experimental models of diabetes.</i>	2016-2019	75,357	149,714	I
Mann, Koren K.	Lady Davis Institute for Medical Research	Arsenic-enhanced atherosclerosis: the role of the macrophage.	<i>Atherosclerosis, arsenic, macrophage.</i>	2017-2020	86,166	86,166	I,IV
Marette, André	Institut universitaire de cardiologie et de pneumologie de Québec	Cardioprotective action of PDX in obese diabetic mice.	<i>Diabetes, obesity, cardiac dysfunction, aortic stenosis, omega 3 fatty acids.</i>	2015-2018	92,964	278,892	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Mourad, Walid M.; Hassan, Ghada S.; Merhi, Yahye	CHUM	Novel functions of CD154 in atherothrombosis.	<i>CD154, receptors, bidirectional cell/cell signaling, tools for blocking CD154 interactions, atherothrombosis.</i>	2016-2019	88,000	176,000	I
Nattel, Stanley	Montreal Heart Institute	Molecular control of cardiac repolarization and the substrate for lethal ventricular arrhythmias.	<i>Remodeling, proarrhythmia, sudden death, ion channels, cell calcium.</i>	2015-2018	80,208	237,773	I
Nattel, Stanley	Montreal Heart Institute	Nuclear-delimited signaling in arrhythmogenic cardiac remodeling.	<i>Remodelling, atrial fibrillation, gene regulation, calcium handling, ion channels.</i>	2016-2019	94,488	188,976	I
Noiseux, Nicolas; Roy, Denis C.; Larose, Eric; Yau, Terrence M.; Stevens, Louis-Mathieu; Mansour, Samer; Der Sarkissian, Shant	Hôtel-Dieu du CHUM	Optimizing cell therapy for cardiovascular disease: a translational approach to the next generation clinical trials.	<i>Stem cell, cell therapy, pharmaco-optimization, cell viability, new chemical entity.</i>	2016-2019	80,838	164,107	I,II
Nuyt, Anne Monique; Luu, Thuy Mai; Burger, Dylan; Curnier, Daniel; Deschenes, Sylvain; Friedrich, Matthias G.; Mathieu, Marie-Eve; Parraga, Grace; Stickland, Michael	Hôpital Sainte-Justine	Exercise intervention to rescue the adverse effect of preterm birth on cardiovascular and pulmonary health.	<i>Preterm birth, cardiovascular diseases, respiratory health, exercise capacity, exercise intervention.</i>	2017-2020	99,994	99,994	I,II
Nuyt, Anne Monique; Luu, Thuy Mai; Thebaud, Bernard	Hôpital Sainte-Justine	Endothelial progenitor cells impairment and activation of the renin angiotensin system as mechanism for cardiovascular disease after preterm birth: a translational approach.	<i>Cardiovascular diseases, preterm birth, endothelial progenitor cells, renin angiotensin system, translational approach.</i>	2016-2019	81,688	163,376	I,II
Parent, Lucie	Institut de cardiologie de Montréal	Unraveling the complex interactions between the auxiliary Cavalpha2delta subunit and the cardiac L-type calcium channel.	<i>Arrhythmias, ion channel, genetic diseases, calcium cycling, structure.</i>	2015-2018	88,575	257,094	I
Perreault, Sylvie; Cote, Robert; de Denus, Simon; Dubé, Marie-Pierre; Tardif, Jean-Claude; White-Guay, Brian	Université de Montréal	Effectiveness and safety of Direct Oral AntiCoagulants (DOACs) among older adults with atrial fibrillation.	<i>Atrial fibrillation, direct oral anticoagulants, cohort study, effectiveness, safety.</i>	2017-2020	69,117	69,117	III
Reinhardt, Dieter	McGill University	Role of plasma and cellular fibronectin in blood vessel function.	<i>Extracellular matrix, fibronectin isoforms, vascular smooth muscle cells, conditional knockout mouse models, cardiovascular diseases.</i>	2016-2019	93,355	186,710	I



Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Rivard, Alain	Centre hospitalier de l'université de Montréal	Targeting soluble guanylate cyclase to improve ischemia-induced neovascularization in pathological conditions.	<i>Neovascularization, guanylate cyclase, cardiovascular risk factors, angiogenesis.</i>	2017-2020	73,459	73,459	I
Sapieha, Przemyslaw S. (Mike); Mallette, Fred	University of Montreal	Modulation of neuronal stress for vascular regeneration.	<i>Angiogenesis, ER stress, vascular regeneration, retina.</i>	2016-2019	95,834	192,829	I
Schmitz, Norbert; Deschenes, Sonya; Burns, Rachel	McGill University	Poor sleep and mental health: independent or overlapping risk factors for heart diseases? A community based study in Quebec.	<i>Mental health, epidemiology, sleep, heart disease, community study.</i>	2016-2018	24,000	102,000	II,IV
Servant, Marc	Université de Montréal	Studying the involvement of IkkappaB kinase (IKK)beta in vascular remodeling events.	<i>Abdominal aortic aneurysm, chronic inflammation, protein kinase, target identification and validation, mouse model.</i>	2016-2019	90,000	180,000	I
Shrier, Alvin; Glass, Leon M.; Essebag, Vidal	McGill University	Transition to tachycardia.	<i>Arrhythmia, dynamics, heterogeneities, fluorescent imaging, tissue culture.</i>	2015-2018	48,225	155,301	I,II
Thanassoulis, George; Tsimikas, Sotirios	Research Institute of the McGill University Health Centre	The lipoprotein(a), oxidized phospholipid and lipoprotein-associated phospholipase A2 pathway in aortic valve calcification.	<i>Valve disease, lipoproteins, phospholipids, molecular and genetic epidemiology.</i>	2015-2018	57,450	196,714	I,II
Thiel, Alexander; Ostry, David; Kuceyeski, Amy; Vahdat, Shahabeddin	Institut Lady Davis	Robot-assisted modulation of post-stroke motor-network connectivity: from basic science to clinical application.	<i>Stroke recovery, robot assisted therapy, functional connectivity, structural connectivity.</i>	2016-2019	70,772	130,424	I,II,III
Thorin, Eric; Lesage, Frédéric	Institut de Cardiologie de Montreal	Pulse pressure-dependent regulation of cerebrovascular endothelial function through age and cardiovascular diseases.	<i>Cerebral arteries, cerebral circulation, brain imaging, aging, pulse pressure.</i>	2015-2018	92,771	268,313	I
Vohl, Marie-Claude; Pérusse, Louis; Tchernof, André	Université Laval	DNA methylation-based determinants of obesity-related metabolic complications and improvements after bariatric surgery.	<i>Metabolic syndrome, obesity, epigenetics, genetics, adipose tissue.</i>	2017-2020	93,256	93,256	I,IV



## Nova Scotia

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Bedard, Karen J.; Saric, Tomo; Rose, Robert A.	Dalhousie University	Using patient derived cells to study heritable arrhythmogenic right ventricular cardiomyopathy.	<i>Arrhythmogenic right ventricular cardiomyopathy, induced pluripotent stem cells, RNAseq, genetics, cardiac myocytes.</i>	2016-2019	76,500	174,000	I,II,IV
Eskes, Gail A.; Krigolson, Olave; Boe, Shaun G.; Westwood, David A.; Newman, Aaron J.	Dalhousie University	The behavioural and neural mechanisms in prism adaptation treatment for spatial neglect.	<i>Spatial neglect, prism adaptation, event related brain potentials (ERPs), stroke.</i>	2016-2019	62,610	125,934	I,II
Parkash, Ratika; Huynh, Thao T.; Kaczorowski, Janusz A.; Graham, Ian; Atzema, Clare L.; Dorian, Paul; Connolly, Stuart J.; Healey, Jeff S.	Queen Elizabeth II Health Sciences Centre	Canadian Community Utilization of Stroke Prevention study - focusing on Emergency Department care (C-CUSPED).	<i>Stroke, atrial fibrillation, emergency department, clinical trial.</i>	2016-2019	98,305	188,110	II,III,IV
Pasumarthi, Kishore Babu S.	Dalhousie University	Molecular and functional characterization of cardiac progenitor cells.	<i>Cardiac progenitor cells, cell proliferation and differentiation, cell transplantation, donor cell and drug interactions, cardiomyogenic pathways.</i>	2015-2019	95,350	280,550	I
Robertson, George S.	Dalhousie University	Mitochondrial calcium uptake and targeted therapeutics.	<i>Neuroprotection, mitochondria, calcium, CREB, synergism.</i>	2015-2018	89,610	268,830	I
Sapp, John L.; Deyell, Marc W.; Ha, Andrew C.T.; Coyle, Douglas A.; Sarrazin, Jean-Francois; Gula, Lorne J.; Tang, Anthony S.L.; Stevenson, William G.; Parkash, Ratika; Hruczkowski, Tomasz; Rivard, Lena; Nery, Pablo B.; Amit, Guy; Kuriachan, Vikas; Wells, George; Nair, Girish M.; Essebag, Vidal	Queen Elizabeth II Health Sciences Centre	Ventricular tachycardia antiarrhythmics or ablation in structural heart disease 2 pilot study.	<i>Ventricular tachycardia, cardiac arrhythmia, catheter ablation, antiarrhythmic drug therapy.</i>	2016-2018	87,415	181,065	II,III
Waisman, David M.	Dalhousie University	Defining the physiological function of S100A10 with the S100A10 knockout mouse.	<i>s100a10, plasminogen, plasmin, fibrinolysis, stroke.</i>	2017-2020	85,430	85,430	I

## Newfoundland and Labrador

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	17-18 \$	Cumulative \$ to 2018	Theme(s)
Woods, Michael; McGowan, Ross	Memorial University of Newfoundland	Identification of novel genes causing intracranial aneurysms.	Intracranial aneurysms, gene discovery, next generation sequencing, zebrafish model organism.	2015-2018	96,113	283,689	I,II

## Improving the Heart and Brain Health for Women<sup>†</sup>

Awardee	Institute	Project	Keywords	Term	17-18\$ Heart & Stroke	Total 17-18\$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Saw, Jacqueline; Ganesh, Santhi; Brunham, Liam R.	University of British Columbia	Canadian spontaneous coronary artery dissection genetic study.	<i>Spontaneous coronary artery dissection, genome wide association study, arteriopathy, fibromuscular dysplasia, whole exome sequencing.</i>	2017-2020	2,593	85,000	16,319	271,319	II

<sup>†</sup> This award is partnered with Health Canada.



# Appendix D

## **Research Chairs and Professorships**

Dr. J. Geoffrey Pickering was a member of Scientific Review Committee Leadership team in 2017-2018 and is the Heart and Stroke Foundation / Barnett-Ivey Chair at the Robarts Research Institute.

## Research Chairs and Professorships

Research Chairs	Title	Type	Province
Krahn, Andrew University of British Columbia	The Sauder Family/ Heart and Stroke Foundation Chair in Cardiology	Cardiology	British Columbia/Yukon
Lear, Scott St. Paul's Hospital/ Simon Fraser University	Pfizer/ Heart and Stroke Foundation Chair in Cardiovascular Prevention Research	Cardiovascular Prevention Research	British Columbia/Yukon
Reading, Jeff St. Paul's Hospital/ Simon Fraser University	First Nations Health Authority Chair in Heart Health and Wellness		British Columbia/Yukon
Wang, Yu Tian University of British Columbia	Heart and Stroke Foundation Chair in Stroke Research	Stroke	British Columbia/Yukon
Becher, Harald University of Alberta	Heart and Stroke Foundation Chair in Cardiovascular Research	Cardiology	Alberta/Northwest Territories/Nunavut
Demchuk, Andrew University of Calgary	Heart and Stroke Foundation Chair in Stroke Research	Stroke	Alberta/Northwest Territories/Nunavut
Kelly, Michael University of Saskatchewan	Saskatchewan Clinical Stroke Research Chair	Clinical Stroke	Saskatchewan
Katz, Alan University of Manitoba	Manitoba Research Chair in Primary Prevention	Primary Prevention	Manitoba
Anand, Sonia McMaster University	Heart and Stroke Foundation / Michael G. DeGroote Chair in Population Health Research	Population Health	Ontario
McGillion, Michael McMaster University	Heart and Stroke Foundation / Michael G. DeGroote Chair in Cardiovascular Nursing	Cardiac Nursing	Ontario
Goodman, Shaun University of Toronto	Heart and Stroke Foundation Polo for Heart Chair	Cardiology	Ontario
Mital, Seema Hospital for Sick Children	Heart and Stroke Foundation / Robert M. Freedom Chair in Cardiovascular Science	Cardiology	Ontario
Pickering, Geoffrey University of Western Ontario	Heart and Stroke Foundation / Barnett-Ivey Chair at the Robarts Research Institute	Cardiology	Ontario
Tobe, Sheldon Northern Ontario School of Medicine	Heart and Stroke Foundation / NOSM Chair in Aboriginal and Rural Health	Aboriginal and Rural Health	Ontario
Weitz, Jeffrey McMaster University	Heart and Stroke Foundation / J. Fraser Mustard Chair in Cardiovascular Research	Cardiology	Ontario
Yusuf, Salim McMaster University	Heart and Stroke Foundation / Marion W. Burke Chair in Cardiovascular Disease	Cardiology	Ontario
Cox, Jafna Dalhousie University	Heart and Stroke Foundation Chair Endowed Chair in Cardiovascular Outcomes Research	Cardiology	Nova Scotia

Professorships	Title	Type	Province
Lauck, Sandra University of British Columbia	UBC Professorship in Cardiovascular Nursing		British Columbia/Yukon
Teal, Philip University of British Columbia	The Sauder Family/ Heart and Stroke Foundation Professorship in Clinical Stroke Research	Clinical Stroke	British Columbia/Yukon
Chen, Wayne University of Calgary	Heart and Stroke Foundation/Libin Cardiovascular Institute Professorship in Cardiovascular Research	Cardiology	Alberta/Northwest Territories/Nunavut
Butcher, Ken University of Alberta	Heart and Stroke Foundation Professorship in Stroke Research	Stroke	Alberta/Northwest Territories/Nunavut
Hill, Michael University of Calgary	Heart and Stroke Foundation/Hotchkiss Brain Institute Professorship in Stroke Research	Stroke	Alberta/Northwest Territories/Nunavut
Menon, Bijoy K. University of Calgary	The Heart and Stroke Foundation/University of Calgary Professorship in Brain Imaging	Stroke	Alberta/Northwest Territories/Nunavut
Schmoelzer, Georg University of Alberta	The Heart and Stroke Foundation/University of Alberta Professorship in Neonatal Resuscitation	Neonatal Resuscitation	Alberta/Northwest Territories/Nunavut

Typically, Research Chairs and Professorships are funded via an endowment from the provincial Foundations listed as well as endowments from other sources.





## Alberta/Northwest Territories/Nunavut

### New Investigator Awards

Awardee	Research Institution	Project	Term	17-18 \$	Total \$
Davenport, Margaret (Margie)†&**	University of Alberta	Determinants of maternal cardiovascular health.	2017-2021	-	260,000
Jickling, Glen C.**	University of Alberta	Genomics of high risk transient ischemic attacks.	2017-2021	60,000	270,000
Nerenberg, Kara	University of Calgary	IMPROVE - identifying methods for postpartum reduction of vascular events.	2017-2020	60,000	180,000
Schmoelzer, Georg M.**	University of Alberta	Novel resuscitation to improve the recovery of asphyxiated newborns.	2016-2020	60,000	260,000
Ussher, John R.	University of Alberta	The role of pyruvate dehydrogenase in FoxO1/3-driven diabetic cardiomyopathy.	2015-2018	60,000	180,000

## British Columbia/Yukon

### Robert Hayden Research Fellowship

Awardee	Research Institution	Project	Term	17-18 \$	Total \$
Kearns, Mark J.	University of British Columbia	Sternal closure technique in patients at high-risk of developing sternal wound complications: a study of cardiac surgery patients in British Columbia.	2015-2019	50,000	150,000

## Manitoba

### Sanofi Canada – Heart & Stroke Foundation in Manitoba Award in Cardiology

Award: \$10,000

Principal Investigator	Research Institution
Fernandes, Russell	University of Manitoba

### Master's Student Award

Award: \$1,000

Awardee	Supervisor	Research Institution
Al-Hattab, Danah	Czubryt, Michael	St. Boniface Hospital Research Centre

† Improving the Heart and Brain Health for Women Award 2017 recipient. This award is partnered with Health Canada.

\*\*Joint title Alberta New Investigator and National New Investigator.



## Ontario

### Career Investigator Awards

Awardee	Research Institution	Project	Term	17-18 \$	Total \$
Austin, Peter C.	Institute for Clinical Evaluative Sciences	Statistical methods for cardiovascular research.	2013-2018	83,000	415,000
Bolz, Steffen-Sebastian	University of Toronto	Translating molecular mechanisms governing microvascular behavior - a bench to bedside strategy.	2013-2018	83,000	415,000
Nanthakumar, Kumaraswamy	Toronto General Hospital	Human ventricular fibrillation, defibrillation, and cardiac arrest: mechanisms & modulation.	2013-2018	83,000	415,000
Rodger, Marc A.	Ottawa Hospital Research Institute	Venous thrombosis and thrombophilia.	2013-2018	83,000	415,000

### Clinician Scientist

Awardee	Research Institution	Project	Term	17-18 \$	Total \$
Bhatia, Rajan S.	Women's College Hospital	Reducing low value cardiac care.	2017-2021	70,000	280,000
de Azeredo Coutinho, Thais	University of Ottawa Heart Institute	Exploring the role of arterial stiffness in sex differences of cardiovascular diseases.	2016-2021	70,000	280,000
Epelman, Slava	University Health Network	Distinct mononuclear phagocyte subsets mediate cardiac tissue injury and repair.	2015-2019	70,000	280,000
Johri, Amer M.	Queen's University	Carotid artery plaque quantification to assess progression of atherosclerosis.	2014-2018	70,000	280,000
Le Gal, Grégoire	The Ottawa Hospital	Improving the diagnostic management of venous thromboembolism.	2015-2018	80,000	240,000
Leong, Darryl	McMaster University	Frailty and cardiovascular disease.	2017-2021	70,000	280,000
Patterson, Kara K.	University of Toronto	An investigation of novel approaches to the rehabilitation of gait and balance after stroke: the use of rhythm and dance.	2017-2020	80,000	240,000
Udell, Jacob A.***	Women's College Hospital	Disruptive innovation in heart disease research.	2016-2020	5,000	280,000

\*\*\*Joint title National New Investigator and Ontario Clinician Scientist Phase I

## Mid-Career Investigator

Awardee	Research Institution	Project	Term	17-18 \$	Total \$
Chauhan, Vijay S.	Toronto General Research Institute	Electrical sources and substrate in human atrial fibrillation.	2015-2019	80,000	320,000
Chen, Hsiao-Huei	Ottawa Health Research Institute	A systems approach to stroke recovery.	2014-2018	80,000	320,000
Eikelboom, John W.A.	McMaster University	Mechanisms and treatment of antithrombotic drug failure.	2015-2019	80,000	320,000
Gladstone, David J.	University of Toronto	Protecting the brain from the heart: improving prediction & prevention of cardioembolic stroke.	2017-2021	80,000	320,000
Kapral, Moira K.	Toronto General Research Institute	Stroke health service research program.	2017-2021	80,000	320,000
Ko, Dennis T.	Institute for Clinical Evaluative Sciences	Using big data to improve identification, prevention and management of cardiovascular diseases.	2016-2020	80,000	320,000
Lee, Douglas S.	Institute for Clinical Evaluative Sciences	Program of research on outcomes, treatment and evaluation of care in the spectrum of HF (PROTECT-HF).	2016-2020	80,000	320,000
Lok, Charmaine E.	Toronto General Hospital	A program of cardiovascular health improvement in chronic and endstage kidney disease.	2014-2018	80,000	320,000
Mielniczuk, Lisa M.	University of Ottawa Heart Institute	The evaluation of neurohormonal and metabolic aspects of heart failure across the translational spectrum.	2017-2021	80,000	320,000
Park, David S.	University of Ottawa	Deciphering the mechanisms of stroke injury.	2016-2020	80,000	320,000
Retnakaran, Ravi R.	Mount Sinai Hospital	The early natural history and pathophysiology of cardiometabolic disease in mother and child.	2014-2018	80,000	320,000
Saposnik, Gustavo	St. Michael's Hospital	Improving stroke outcomes by making better decisions.	2017-2021	80,000	320,000
So, Derek Y.F.	University of Ottawa Heart Institute	Reassessment of anti-platelet therapy using individualized strategies - the RAPID program.	2016-2020	80,000	320,000
Sweeney, Gary	York University	Understanding mechanisms of heart failure in obesity and diabetes.	2017-2021	80,000	320,000
Whitlock, Richard P.	McMaster University	Atrial fibrillation in cardiac surgery.	2017-2021	80,000	320,000

## Summer Student Scholarship

Awardee	Award Name	Supervisor	Research Institution	17-18 \$
Himanshu Gupta	Evelyn McGloin Scholarship	Shoamanesh, Ashkan	McMaster University	\$5,000
Daniel Dalcin	HSF-TD scholarship *	Escott, Nicholas	Northern Ontario School of Medicine	\$12,000
Sean Tom	Jay Newman, Kitty Newman Memorial	Casadei, Barbara	Queen's University	\$5,000
Kai Yi Wu	Hannah Pherril Scholarship	deKemp, Robert	University of Ottawa	\$5,000
Matthew Dozias	Jay Newman, Kitty Newman Memorial	Simmons, Craig	University of Toronto	\$4,000
Christopher Olesovsky	Jay Newman, Kitty Newman Memorial	Horlick, Eric	University of Toronto	\$4,000
Alanna Rigobon	Jay Newman, Kitty Newman Memorial	Alba, Carolina	University of Toronto	\$4,000
Meha Munawar	Jay Newman, Kitty Newman Memorial	Parotto, Matteo	University of Toronto	\$4,000
Leedan Cohen Mammon	Jay Newman, Kitty Newman Memorial	Appel, Lora	University of Toronto	\$4,000
Laura Ball	Murray R. O'Neil Award	Silverman, Michael	Western University	\$4,500
Andrew Gibson	Murray R. O'Neil Award	Whitehead, Shawn	Western University	\$1,000
Lucy Samoilov	Murray R. O'Neil Award	Sposato, Luciano	Western University	\$4,500

\* The HSF-TD Scholarship supports a three month research project with funding of \$12,000.

## Newfoundland and Labrador

Award	Research Institution	17-18 \$
Graduate Scholarship	Memorial University of Newfoundland	1,500
Keith Griffiths Memorial Scholarship	Memorial University of Newfoundland	1,500
Undergraduate Nursing Award in Cardiovascular Health	Memorial University of Newfoundland	1,500
Undergraduate Nursing Award in Stroke	Memorial University of Newfoundland	1,500
Heart and Stroke Foundation (NL) MD Research Award	Memorial University of Newfoundland	4,000





# Appendix F

## Other Provincial Initiatives

Dr. Styliani Stella Daskalopoulou (McGill University Health Center Research Institute) was a recipient of the Heart & Stroke Awards for Excellence in Research, John J. Day M.D. Award, as well as a recipient of a 2017-2018 Grant-in-Aid.

## British Columbia/Yukon

### Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)

As part of its mandate to support innovative research and its application to improve the health of Canadians, Heart & Stroke in BC & Yukon, has partnered with the University of British Columbia's Division of Cardiology to support research by early career cardiologists.

Grant: \$200,000

Principal Investigator	Research Institution
Ahmadi, Amir	St. Paul's Hospital
Davis, Margot	Vancouver General Hospital
Deyell, Marc	St. Paul's Hospital
Fordyce, Christopher	Vancouver General Hospital
Grewal, Jasmine	St. Paul's Hospital
Hawkins, Nathaniel	University of British Columbia
Laksman, Zachary	St. Paul's Hospital
McKinney, Jimmy	University of British Columbia
Ong, Kevin	St. Paul's Hospital
Ramanathan, Krishnan	St. Paul's Hospital
Saw, Jacqueline	Vancouver General Hospital
Sedlak, Tara	Vancouver General Hospital
Taylor, Carolyn	St. Paul's Hospital
Tsang, Michael	Vancouver General Hospital
Virani, Sean	Vancouver General Hospital
Wood, David	Vancouver General Hospital

## Quebec

### Heart & Stroke in Quebec Awards for Excellence in Research

Awards for excellence highlighting the outstanding contribution of researchers.

Principal Investigator	Award Name	Research Institution	Project	17-18\$
Andelfinger, Gregor	RBC Royal Bank Award	Hôpital Sainte Justine	Role of Adamts19 in murine aortic valve biology.	\$20,000
Daskalopoulou, Styliani Stella	John J. Day M.D. Award	McGill University Health Center Research Institute	Modulation of the adiponectin receptor pathway: a novel target for carotid atherosclerotic plaque stabilization	\$10,000
Gallagher, Anne	Louise Rousselle Trottier	Université de Montréal / CHU Ste-Justine	Functional brain connectivity in infants with congenital heart disease (CHD): A predictor of neurodevelopmental outcomes?	\$10,000
Clavel, Marie-Annick	Jacques-de Champlain Foundation Award	Institut universitaire de cardiologie et de pneumologie de Québec	Sex-dependent differences in pathophysiological mechanisms, presentation, outcome, and treatment of aortic valve stenosis	\$10,000
Perreault, Sylvie	Groupe Jean-Coutu (PJC) Inc. Award	Université de Montréal	Effectiveness and safety of Direct Oral AntiCoagulants (DOACs) among older adults with atrial fibrillation	\$50,000

**Training bursaries for PhD students in Cardiovascular and Stroke Research**

Partnership between the Fonds de recherche du Québec en santé (FRQS) and the Heart & Stroke in Quebec. The partners offer training bursaries for PhD students working with researchers receiving a Grant-in-Aid from the Heart & Stroke in Quebec.

Principal Investigator	17 -18 \$
Girard-Bock, Camille	6,666

**Bursaries in partnership with FRQS for new investigators in Cardiovascular and Stroke Research**

Partnership between the Fonds de recherche du Québec en santé (FRQS) and the Heart & Stroke in Quebec. The partners offer bursaries for new investigators.

Principal Investigator	17 -18 \$
Beaudoin Jonathan	17,314

## Nova Scotia

**Dr. Gregory Ferrier Award**

Award: \$5,000

Awardee	Research Institution	Project
Waisman, David M.	Dalhousie University	Defining the physiological function of S100A10 with the S10 A10 knockout mouse.

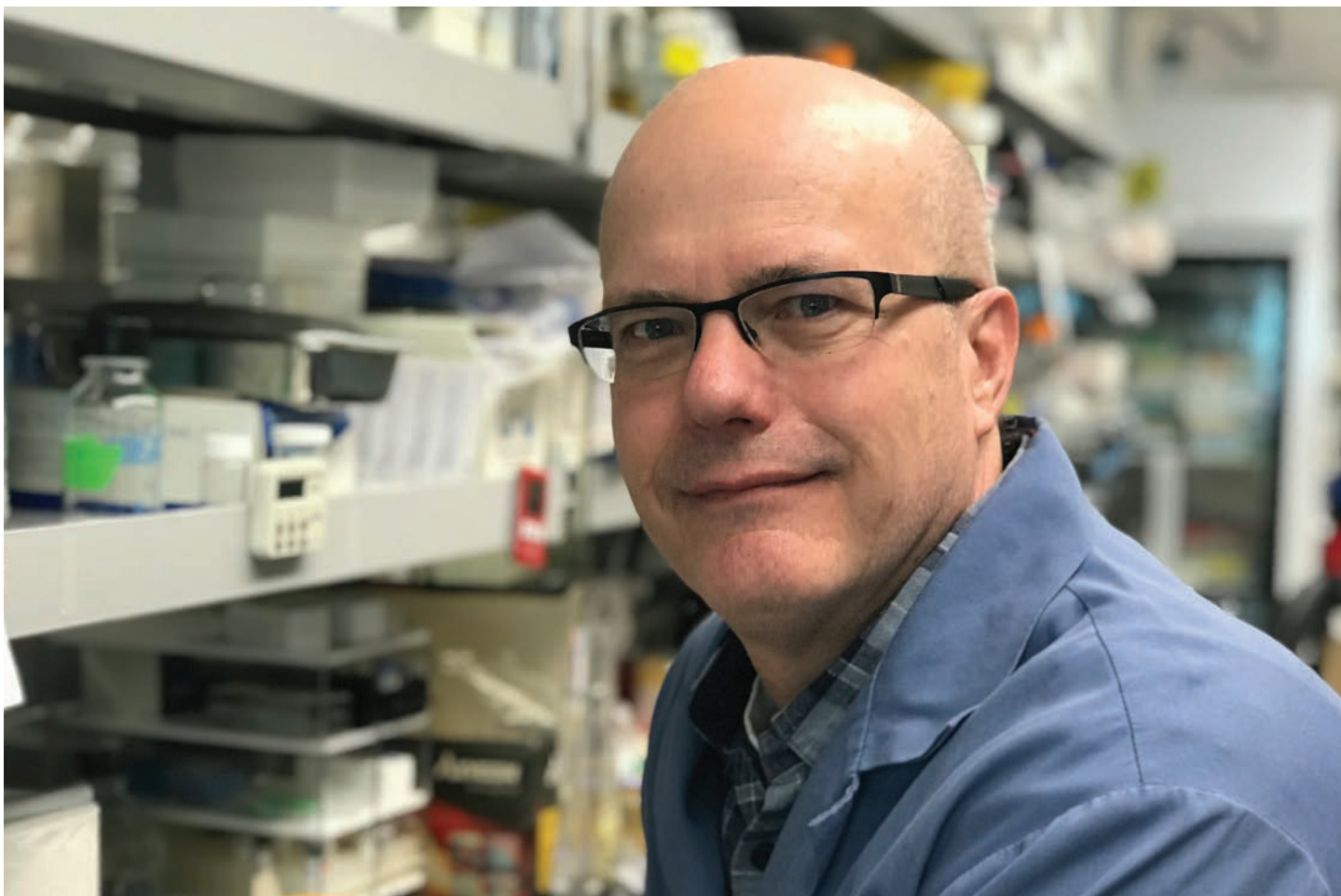
**BrightRed Student Research Award**

Award: \$5,000

Awardee	Research Institution	Project
Aziz, Jasmine	Dalhousie University	Can brain activity help explain the effects of prism adaptation in stroke patients with spatial neglect.
Ghimire, Anjali	Dalhousie University	Cardioprotection in the mouse heart: acute protective effects of an estrogen receptor agonist.
Rogers, Emily	Dalhousie University	Understanding the effects of high intensity training (HITT) on cortical excitability and motor learning.
Solomon, Jack	Dalhousie University	Exploring on-and off-line learning in motor imagery: forming foundations for the use of motor imagery in stroke rehabilitation.
Zhou, Shijie	Dalhousie University	Real-time localization of ventricular tachycardia origin from the standard 12-Lead ECG.







# Appendix G

## **Research Committee Members**

Dr. James Eubanks was a member of Scientific Review Committee Leadership team in 2017-2018.

## 2017-2018 Council on Mission: Priorities, Advice, Science and Strategy (CoMPASS)

Kim Raine, PhD, Co-Chair  
University of Alberta

Mary Lewis, Co-Chair  
Heart & Stroke

Rob Beanlands, MD  
University of Ottawa Heart Institute

Sandra E. Black, O.Ont., MD  
Sunnybrook Research Institute

Jafna Cox, MD  
Queen Elizabeth II Health Sciences Centre

Jonathon Fowles, PhD  
Acadia University

Richard Frayne, PhD  
University of Calgary

David Hammond, PhD  
University of Waterloo

Terry Hébert, PhD  
McGill University

Moir Kapral, MD  
University Health Network

Andrew Krahn, MD  
Vancouver General Hospital

Mary L'Abbé, PhD  
University of Toronto

Kelly Lendsay,  
Aboriginal Human Resource Council

Peter Liu, MD  
University of Ottawa Heart Institute

Michael McGillion, PhD  
McMaster University

Gary Newton, MD  
Sinai Health System

Philippe Pibarot, DVM, PhD  
Université Laval

Catherine Praamsma  
Health Canada

Jeffrey Reading, PhD  
Dalla Lana School of Public Health Institute for Indigenous Health

Mike Sharma, MD  
McMaster University

Eric Smith, MD  
University of Calgary

John C. Spence, PhD  
University of Alberta

St-Pierre, Julie, MD, PhD  
Université de Sherbrooke

Christian Vaillancourt, MD  
Ottawa Hospital Research Institute

Thomas Warshawski, MD  
University of British Columbia

## 2017-2018 Scientific Review Committee Leadership

Gary Newton, MD, Chair  
Sinai Health System

Richard Frayne, PhD, Vice Chair  
University of Calgary

*Clinical cardiovascular and cerebrovascular research: mechanistic studies and clinical trials / health services research A*

Ratika Parkash, MD, Chair  
Queen Elizabeth II Health Sciences Centre

Susana Mak, MD, Deputy Chair  
Sinai Health System

*Clinical cardiovascular and cerebrovascular research: mechanistic studies and clinical trials / health services research B*

Jeff Healey, MD, Chair  
McMaster University

Shelagh Coutts, MD, Deputy Chair  
Foothills Medical Centre

*Integrative studies: genetic manipulations / imaging / bioengineering*

Balwant Tuana, PhD, Chair  
University of Ottawa

Christian Beaulieu, PhD, Deputy Chair  
University of Alberta

*Basic science stroke / neurophysiology / neuroregulation*

James Eubanks, PhD, Chair  
Toronto Western Hospital

Wolfgang Walz, PhD, Deputy Chair  
University of Saskatchewan

*Molecular, biochemical and cellular physiological approaches to cardiovascular health and disease, vascular disorders A*

J. Geoffrey Pickering, MD, PhD, Chair  
Robarts Research Institute

Scott Heximer, PhD, Deputy Chair  
University of Toronto

*Cardiac arrhythmias, cardiac mechanics, electrophysiological approaches to cardiovascular health and disease, ischemia related disorders B*

Terry Hébert, PhD, Chair  
McGill University

Anthony Gramolini, PhD, Deputy Chair  
University of Toronto

*Cardiovascular complications associated with obesity/diabetes, metabolism, and cardiac development/remodeling C*

Jason R.B. Dyck, PhD, Chair  
University of Alberta

Christine Des Rosiers, PhD, Deputy Chair  
Université de Montréal

*Molecular basis of cardiac and vascular function*

Stéphanie Lehoux, PhD, Chair  
McGill University

Jonathan Lytton, PhD, Deputy Chair  
University of Calgary

*Thrombosis / lipids and lipoproteins / fundamental nutrition research*

Grant Pierce, PhD, Chair  
St. Boniface Hospital Research Centre

Ed Prydzial, PhD, Deputy Chair  
Centre for Blood Research/UBC

*Health services and public health, health behaviour; health psychology*

Kathryn King-Shier, PhD, Chair  
University of Calgary

Moira Kapral, MD, Deputy Chair  
Toronto General Hospital/UHN

*Senior Personnel*

Richard Frayne, PhD, Vice Chair  
University of Calgary

Celine Fiset, PhD, Deputy Chair  
Université de Montréal

*Canadian Alliance for Healthy Hearts and Minds Initiative*

Robert D. Reid, PhD, Chair  
University of Ottawa Heart Institute

*Budget Review Committee*

Micheal Czubyrt, PhD, Chair  
St. Boniface Hospital Research Centre

Sandra Davidge, PhD, Deputy Chair  
University of Alberta





## Appendix H

### **Definition of Health Research Themes**

The four themes of health research as defined by the Canadian Institutes of Health Research are:

#### **I. Basic Biomedical**

Research with the goal of understanding normal and abnormal human function, at the molecular, cellular, organ system and whole body levels, including the development of tools and techniques to be applied for this purpose; developing new therapies or devices which improve health or the quality of life of individuals, up to the point where they are tested on human subjects. Studies on human subjects that do not have a diagnostic or therapeutic orientation.

#### **II. Clinical**

Research with the goal of improving the diagnosis and treatment (including rehabilitation and palliation) of disease and injury; improving the health and quality of life of individuals as they pass through normal life stages. Research on, or for the treatment of, patients.

#### **III. Health Services/Systems**

Research with the goal of improving the efficiency and effectiveness of health professionals and the health care system, through changes to practice and policy. Health services research is a multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviours affect access to health care, the quality and cost of health care, and ultimately our health and well-being.

#### **IV. Social, Cultural, Environmental and Population Health**

Research with the goal of improving the health of the Canadian population, or of defined sub-populations, through a better understanding of the ways in which social, cultural, environmental, occupational, and economic factors determine health status.



To find more information about heart disease, stroke,  
how to live a healthy life, as well as how you can offer  
much needed support in your community, visit

**[heartandstroke.ca](http://heartandstroke.ca)**

