



Heart and Stroke Foundation Research Report 2018–2019



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 \$1.55 billion into vital heart and 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 78).

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 79).

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 2018-2019, 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 2018-2019 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, 2018 to June 30, 2019. 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 2018-2019, 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 (2018-2019)

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		
	#	\$	#	\$	#	\$	#	\$	#	#	\$	#	\$
BC & Yukon	29	2,286,836	-	-	-	-	1	4,167	6	16	200,000	52	2,491,003
Alberta, NWT & Nunavut	35	3,087,172	-	-	-	-	7	360,000	7	-	-	49	3,447,172
Saskatchewan	3	232,606	-	-	-	-	-	-	1	-	-	4	232,606
Manitoba	10	907,669	-	-	-	-	2	11,000	0	-	-	12	918,669
Ontario	113	9,232,541	-	-	-	-	39	2,070,000	7	-	-	159	11,302,541
Quebec	45	3,466,070	-	-	-	-	-	-	-	5	96,113	50	3,562,183
New Brunswick	-	-	-	-	-	-	-	-	-	-	-	-	-
Nova Scotia	7	550,427	-	-	-	-	-	-	1	7	32,000	15	582,427
Prince Edward Island	-	-	-	-	-	-	-	-	-	-	-	-	-
Newfoundland and Labrador	-	-	-	-	-	-	5	10,000	-	-	-	5	10,000
All†	-	-	27§	1,130,000*	24	751,763	-	-	-	-	2,000,000†	51	3,881,763
TOTAL	242	\$19,763,321	27	\$1,130,000	24	\$751,763	54	2,455,167	22*	28	\$2,328,113	397	\$26,428,363

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

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

‡Denotes competitions/initiatives eligible nationally.

§Includes Improving Heart and Brain Health for Women: Seed/Catalyst Grants

¶Represents only Heart & Stroke Funding \$

*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 (2018-2019)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
BC & Yukon	Grant-in-Aid	29	2,286,836	2,491,003
	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 Award:			
	Robert Hayden Research Fellowship	1	4,167	
	Other Provincial Initiative:			
	Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)	16	200,000	
Alberta, NWT & Nunavut	Grant-in-Aid	35	3,087,172	3,447,172
	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 Award:			
	New Investigators	7	360,000	
Saskatchewan	Grant-in-Aid	3	232,606	232,606
	Research Chair*:			
	Chair in Clinical Stroke Research	1	-	
Manitoba	Grant-in-Aid	10	907,669	918,669
	Personnel Award:			
	Sanofi Canada Heart & Stroke Award in Cardiology	1	10,000	
	Master's Student Award	1	1,000	
Ontario	Grant-in-Aid	113	9,232,541	11,302,541
	Research Chairs*:			
	Chair in Population Health Research	1	-	
	Chair in Cardiac Nursing	1	-	
	Chair in Cardiovascular Research	5	-	
	Personnel Awards:			
	Clinician Scientist	11	735,000	
	Mid-Career Investigator	16	1,280,000	
	Summer Student Scholarship	12	55,000	
Quebec	Grant-in-Aid	45	3,466,070	3,562,183
	Other Provincial Initiative:			
	Awards for Excellence in Research	3	70,000	
	Training bursaries	1	7,000	
	Bursaries in partnership with FRQS	1	19,113	

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
New Brunswick	Grant-in-Aid	-	-	
Nova Scotia	Grant-in-Aid	7	550,427	582,427
	Research Chair*:			
	Chair in Cardiology Research	1	-	
	Other Provincial Initiative:			
	Dr. Gregory Ferrier Award	1	5,000	
	BrightRed Student Research Award	5	25,000	
	Sandra Rashed Bursary	1	2,000	
Prince Edward Island	Grant-in-Aid	-	-	
Newfoundland and Labrador	Grant-in-Aid	-	-	10,000
	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		346	22,546,601	22,546,601
	Directed Research Fund	24	751,763	751,763
	National Personnel Awards†	27§	1,130,000	1,130,000
	Heart & Stroke Canadian Partnership for Stroke Recovery‡	-	2,000,000	2,000,000
TOTAL		397	\$26,428,363	26,428,363

* 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

§ Includes Seed/Catalyst Grants

¶ Represents only Heart & Stroke Funding \$

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 2018-2019, 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 the new investigator level); 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 (2018-2019)

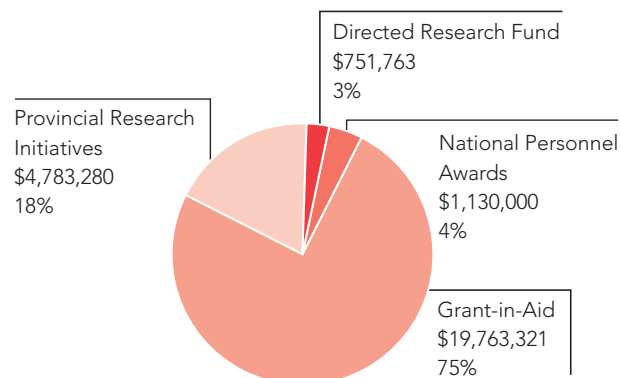
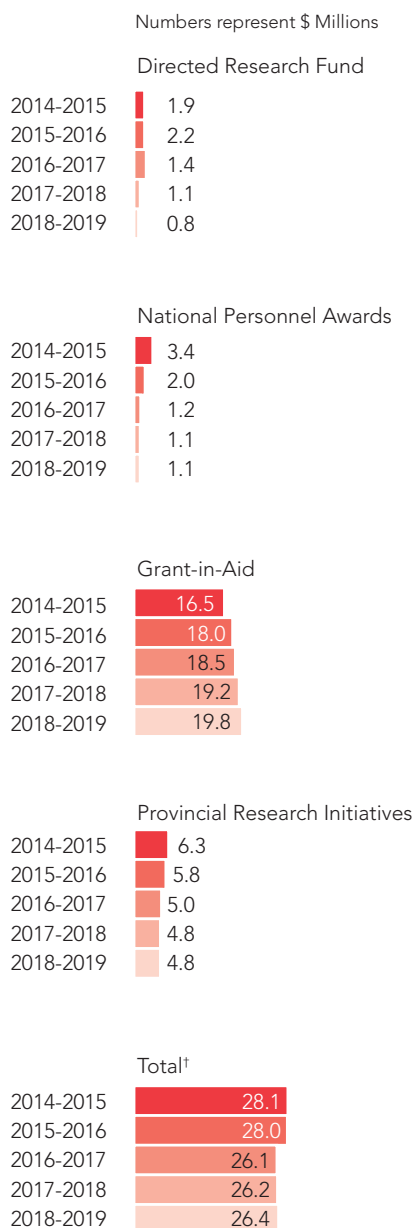


Figure 2. Heart & Stroke Research Funding Trends by Program (2014-2019)



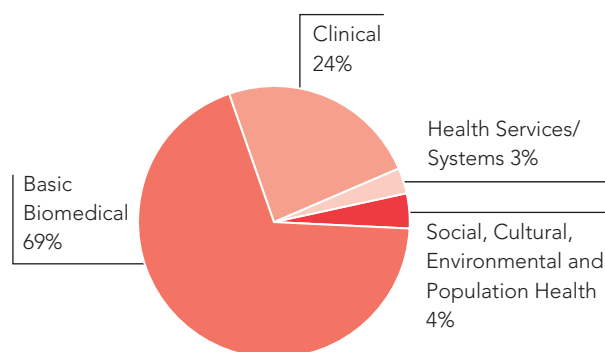
† Does not include Chair and Professorship values.
Includes Heart and Stroke Foundation Canadian Partnership for Stroke Recovery value.

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).

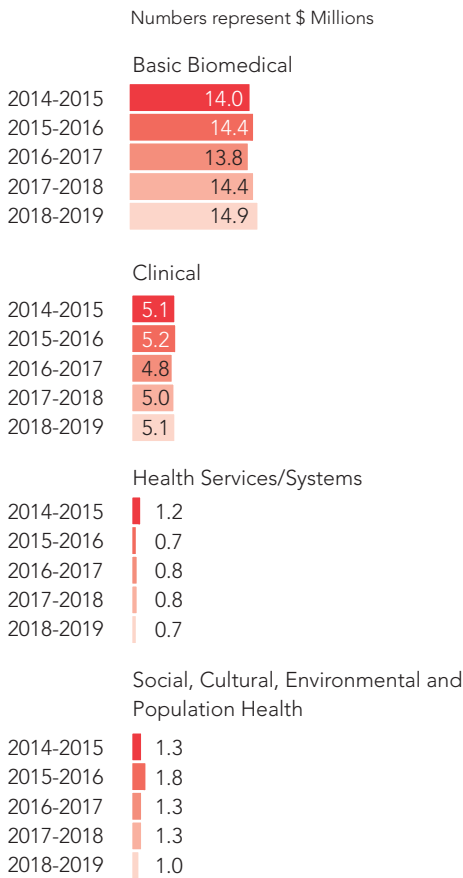
Figures 3 and 4 show the relative Heart & Stroke investments across health research themes. Further in the report, funding by health research theme in each of the foundation-wide programs is presented. Currently, we do not have data on provincial initiatives by theme.

Figure 3. Heart & Stroke Research Funding by Health Research Theme (2018-2019) †



† 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 (2014-2019) [†]



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

4. 2018–2019 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(s) appearing in this year's report:

- 1) *Chair in Women's Heart and Brain Health:*
- 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 initiative, Heart & Stroke, the Canadian Institutes of Health Research (CIHR) Institute of Indigenous Peoples' Health, Institute of Circulatory and Respiratory Health and Institute of Gender and Health, and the New Brunswick Health Research Foundation (NBHRF) supports four (4) investigators who demonstrated long-term commitment to women's heart and brain health.

The mandate of each Chair is to generate new knowledge that improves awareness, prevention and understanding of how biology and socio-cultural factors affect women's heart and brain health. The mandate of the Indigenous Chairs in particular will include barriers and external factors that can influence Indigenous women's health in Canada. The specific objectives of this funding opportunity are:

- To create new knowledge that advances understanding of women's heart and stroke health.

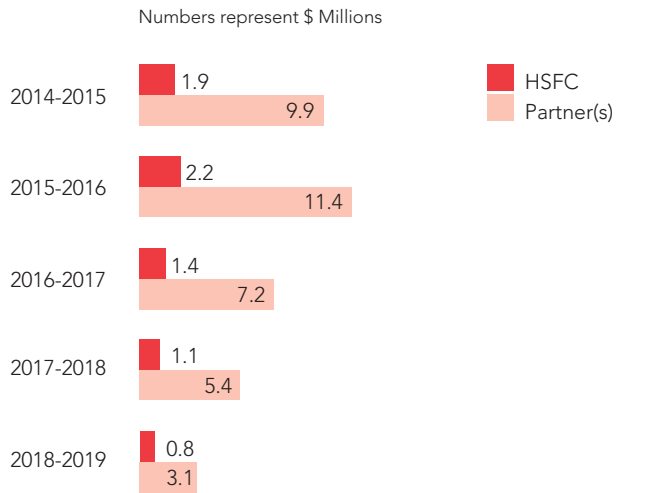
- To foster innovative, sex- and gender-sensitive approaches to diagnosis, access to high quality care and treatment of heart disease and stroke in women, especially within Indigenous communities.
- To foster the translation of research knowledge into evidence-based policies and interventions that improves heart and brain health and promotes wellness of women.

The majority of the projects listed in Appendix A represent the continuation of previously reported research investments. A total of 7 initiatives, representing 24 individual grants and awards, are detailed in Appendix A.

The total value of the foundation's investment in these strategic projects for 2018-2019 is over \$750 thousand. 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 four 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 (2014-2019)



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 (2018-2019)

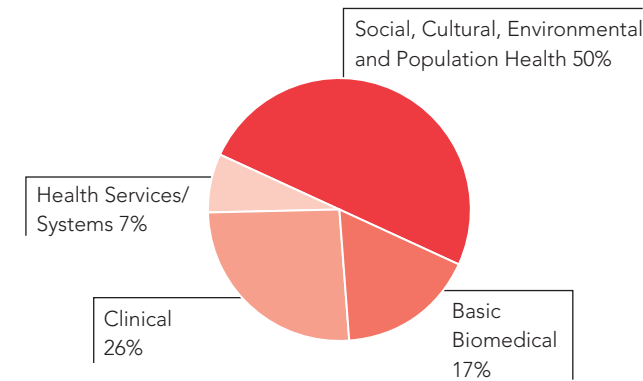
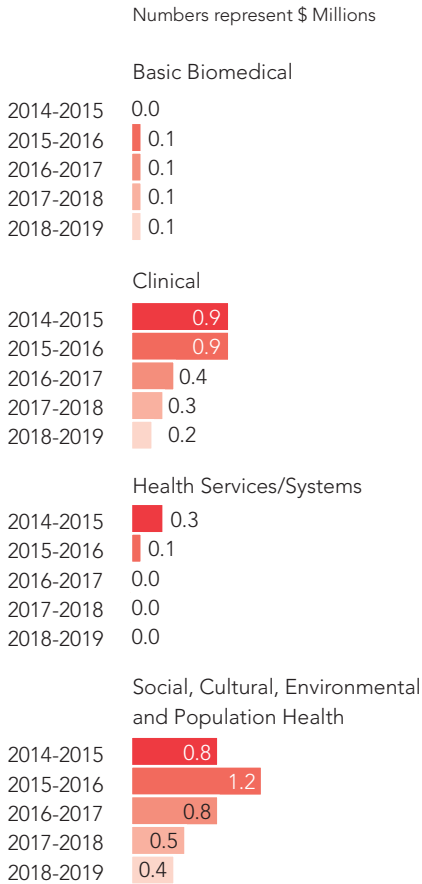


Figure 7. Directed Research Fund Funding Trends by Health Research Theme (2014-2019)



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 2018-2019, Heart & Stroke only launched the New Investigator award program.

The New Investigator Award is 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).

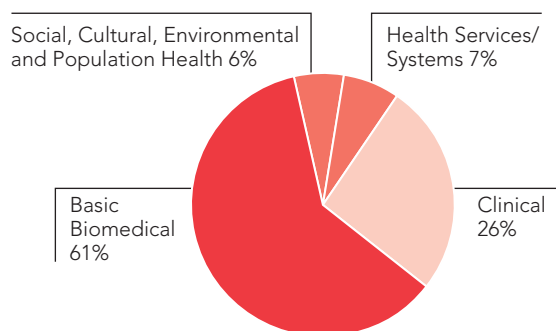
In 2018-2019, 23 new and continuing awards were funded. The total Heart & Stroke investment in National Personnel Awards in 2018-2019 was over 1 million. A list of award recipients can be found in Appendix B.

Table 3. National Personnel Awards by Health Research Theme (2018-2019) [†]

Type of Award	Basic Biomedical		Clinical		Health Services/ Systems		Social, Cultural, Environmental and Population Health		Total	
	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)
New Investigator	14.5	685,750	6.2	290,500	1.3	84,750	1.1	69,000	23.0	1,130,000
TOTAL	14.5	\$685,750	6.2	\$290,500	1.3	\$84,750	1.1	\$69,000	23.0	\$1,130,000

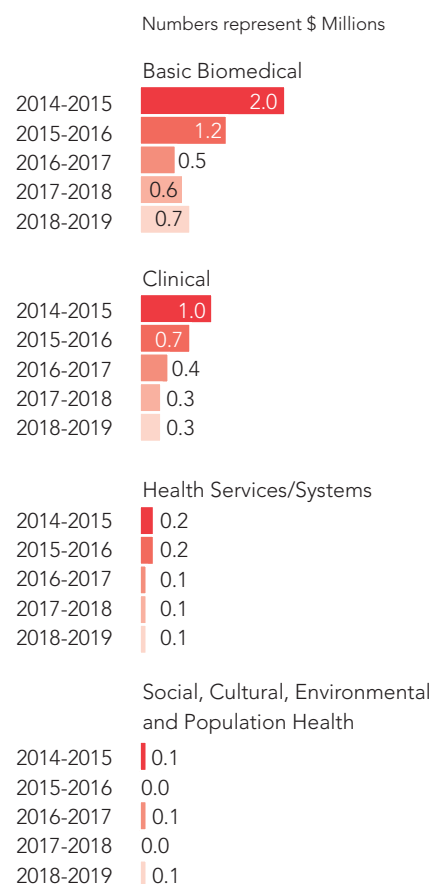
[†] Includes award stipends only.

Figure 8. National Personnel Awards Funding by Health Research Theme (2018-2019) [†]



[†] Includes award stipends only.

Figure 9. National Personnel Awards Funding Trends by Health Research Theme (2014-2019) [†]



[†] 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. Gopinath Sutendra from the University of Alberta was Heart & Stroke's 2018-2019 McDonald Scholar. Dr. Sutendra is studying new molecular targets that can be used to protect against chemotherapy-induced heart failure in cancer patients without hindering the chemotherapy treatment itself.

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. Thalia Field from the University of British Columbia was Heart & Stroke's 2018-2019 Barnett Scholar. Dr. Field is investigating which blood thinners are best for treating cerebral venous thrombosis (a rare type of stroke).

4.2.2 Improving the Heart and Brain Health for Women: Seed/Catalyst Grants for New Investigators

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 health and to promote collaboration between research institutions across the country.

Through this new commitment, the Heart and Stroke offered Seed/Catalyst Grants, specifically targeted towards the improvement of the heart and brain health for women to applicants of the 2018/19 National New Investigator (NNI) program. Four Seed/Catalyst grants were offered to the highest rated in this category, within the cut-point of the overall National New Investigator competition. Dr. Thalia Field (University of British Columbia), Dr. Michel Shamy (Ottawa Hospital Research Institute), Dr. Craig Steinback (University of Alberta), and Dr. Wendy Tsang (University of Toronto) are the recipients of the Improving Heart and Brain Health for Women Seed/Catalyst Grant. Details of these awards can be found in Appendix B.

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 2018-2019, 242 Grants-in-Aid (new and continuing) were funded, representing an investment of over \$19 million (Table 4). 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 health and to promote collaboration between research institutions across the country.

Through this commitment, the foundation in 2018-2019, offered as part of the GIA program funding specifically targeted towards the improvement of the heart health for women, five GIAs to the highest ranked in this category, within the cut-point of the overall GIA competition. Dr. Nathalie Auger (Centre Hospitalier de l'Université de Montréal), Dr. Kaberi Dasgupta (Research Institute of the McGill University Health Center), Dr. Maryam Faiz (University of Toronto), Dr. Hélène Girouard (Université de Montréal), and Dr. Susanna Mak (Samuel Lunenfeld Research Institute) were the recipients of the 2018-2019 Improving Heart and Brain Health for Women GIA awards. Details of the project can be found in Appendix C.

Table 4. Number of Grants-in-Aid and Investment of Funds (2018-2019)

Province(s)/Territory(ies)	Recipients (#)	Funds Invested (\$)
BC & Yukon	29	2,286,836
Alberta, NWT & Nunavut	35	3,087,172
Saskatchewan	3	232,606
Manitoba	10	907,669
Ontario	113	9,232,541
Quebec	45	3,466,070
New Brunswick	0	0
Nova Scotia	7	550,427
Prince-Edward-Island	0	0
Newfoundland and Labrador	0	0
TOTAL	242	\$19,763,321

Figure 10. Grant-in-Aid Funding by Health Research Theme (2018-2019)

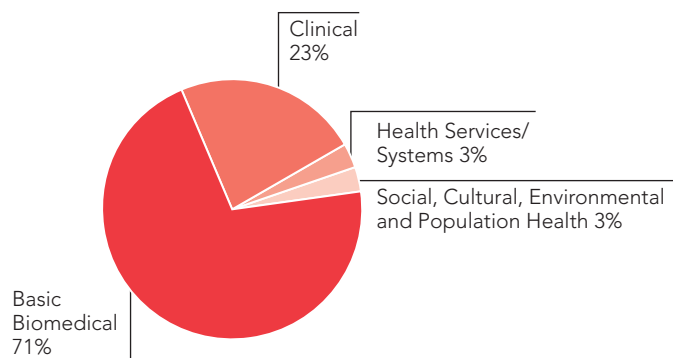
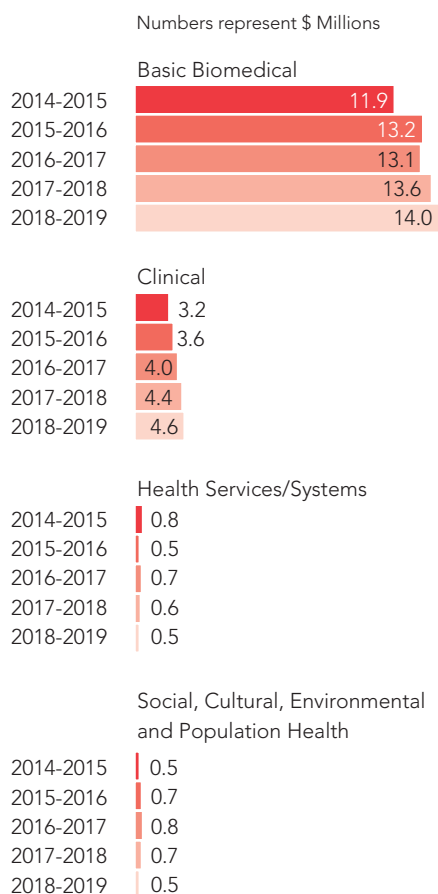


Figure 11. Grant-in-Aid Funding Trends by Health Research Theme (2014-2019)



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 2018-2019 was approximately 23%.

Figure 12. Number of Grant-in-Aid Applications Submitted by Province(s)/Territory(ies) (2014-2019)

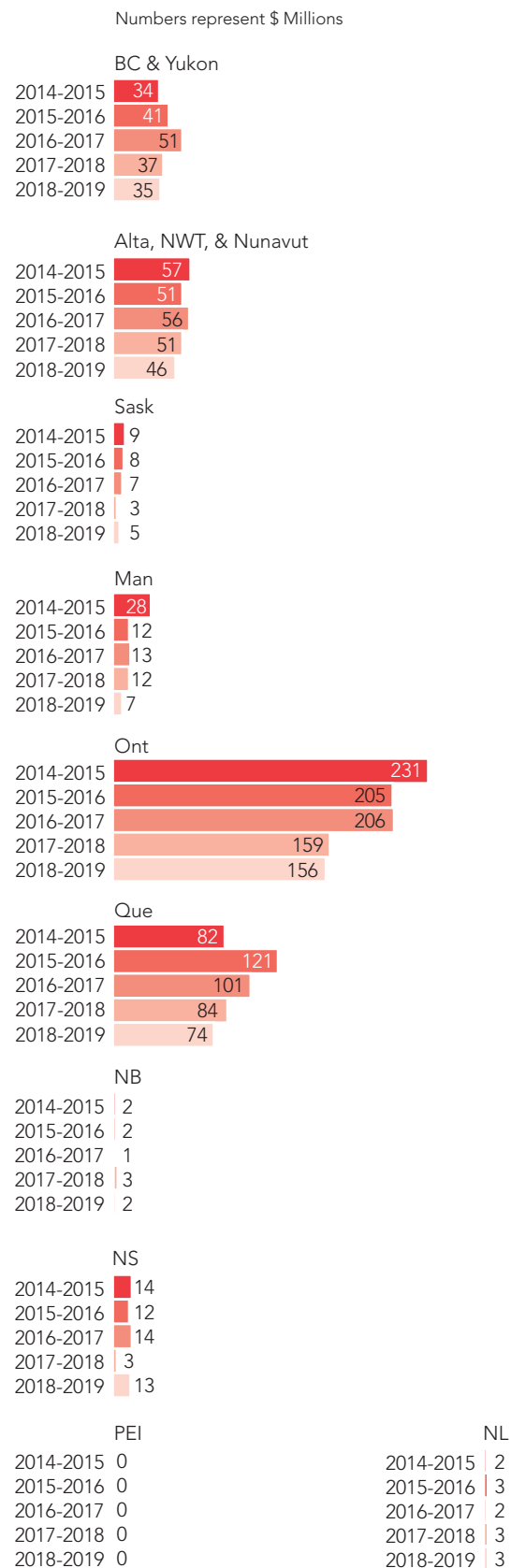
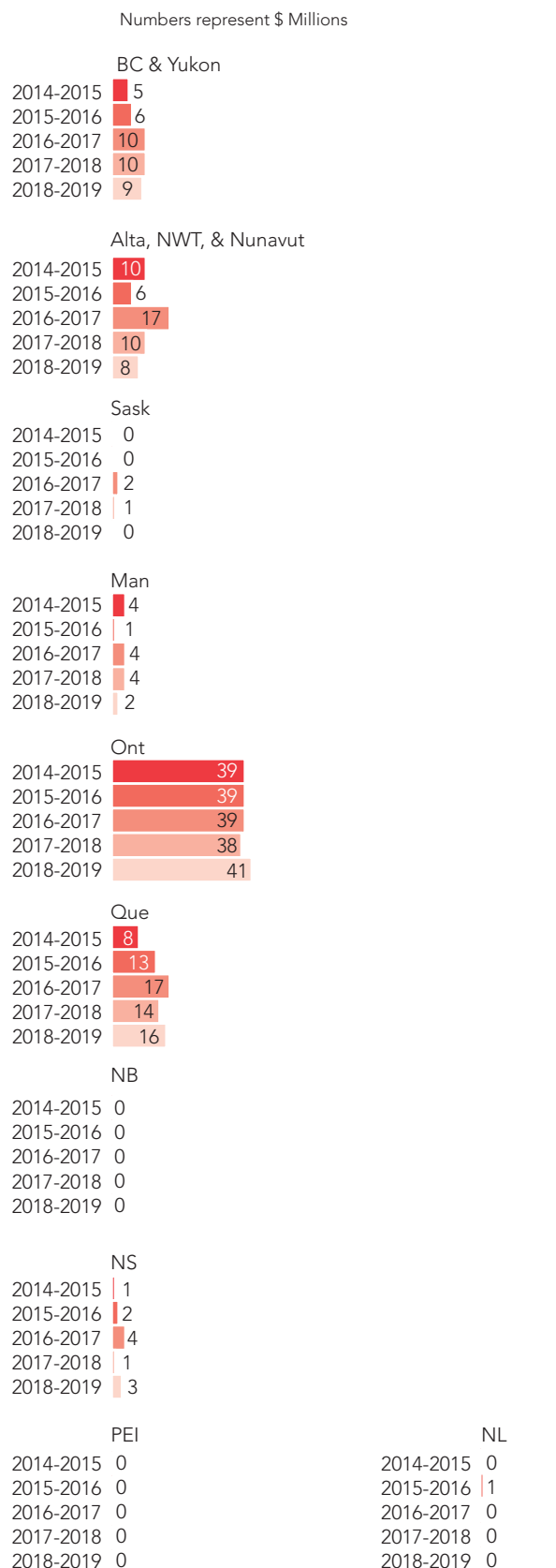


Figure 13. Number of Grant-in-Aid Applications Funded by Province/Territory (2014-2019)



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 2018-2019 a total of 22 Chairs and Professorships were supported by Heart & Stroke in the areas of cardiology, cardiac nursing, stroke, neonatal resuscitation, and population health. The recipients of these Chairs and Professorships can be found in Appendix D.

Table 5. Research Chairs and Professorships (2018-2019)[†]

Province(s)/Territory(ies)	Program	Awards (#)	Total (#)
BC & 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, NWT & 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	-	-	-
Ontario	Chair in Population Health Research	1	7
	Chair in Cardiac Nursing	1	
	Chair in Cardiovascular Research	5	
Quebec	-	-	-
New Brunswick	-	-	-
Nova Scotia	Chair in Cardiology Research	1	1
Prince Edward Island	-	-	-
Newfoundland and Labrador	-	-	-
TOTAL		22	22

[†] 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 2018-2019, the provincial offices funded a total of 54 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 6). The recipients of these awards can be found in Appendix E.

Table 6. Heart & Stroke Provincial Personnel Awards Funded (2018-2019)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
BC & Yukon	Robert Hayden Research Fellowship	1	4,167	4,167
Alberta, NWT & Nunavut	New Investigator	7	360,000	360,000
Saskatchewan	-	-	-	-
Manitoba	Sanofi Canada Heart & Stroke Award in Cardiology	1	10,000	11,000
	Master's Student Award	1	1,000	
Ontario	Clinician Scientist	11	735,000	2,070,000
	Mid-Career Investigator	16	1,280,000	
	Summer Student Scholarship	12	55,000	
Quebec	-	-	-	-
New Brunswick	-	-	-	-
Nova Scotia	-	-	-	-
Prince Edward Island	-	-	-	-
Newfoundland and Labrador	Graduate Scholarship	1	1,500	10,000
	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		54	\$2,455,167	\$2,455,167

Description of Provincial Personnel Awards

Heart & Stroke in BC & 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, NWT & 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

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 three 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 2018-2019, the provincial offices funded a wide variety of other research initiatives. Table 7 provides details of these initiatives and a list of recipients can be found in Appendix F.

Table 7. Other Provincial Research Initiatives (2018-2019)

Province(s)/Territory(ies)	Program	Awards (#)	Awards (\$)	Total (\$)
BC & Yukon	Heart & Stroke-UBC Cardiology Research Partnership: Cardiology Academic Practice Plan (CAPP)	16	200,000	200,000
Alberta, NWT & Nunavut	-	-	-	-
Saskatchewan	-	-	-	-
Manitoba	-	-	-	-
Ontario	-	-	-	-
Quebec	Awards for Excellence in Research	3	70,000	96,113
	Training bursaries	1	7,000	
	Bursaries in partnership with FRQS	1	19,113	
New Brunswick	-	-	-	-
Nova Scotia	Dr. Gregory Ferrier Award	1	5,000	32,000
	BrightRed Student Research Award	5	25,000	
	Sandra Rashed Bursary	1	2,000	
Prince Edward Island	-	-	-	-
Newfoundland and Labrador	-	-	-	-
Heart and Stroke Foundation Canadian Partnership for Stroke Recovery [†]		-	2,000,000	2,000,000
TOTAL		28	\$2,328,113	\$2,328,113

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

Description of Other Provincial Research Initiatives

Heart & Stroke in BC & 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.

Sandra Rashed Bursary — Through a generous donation, the Sandra Rashed Bursary is available to the highest ranked Atlantic Canada researcher in the Personnel Award Program. The award is a one-time supplementary amount of \$2,000, to be used towards furthering the purpose of the research project, including knowledge translation and exchange activities.



Appendix A

Directed Research Fund

Dr. Heather Foulds (University of Saskatchewan) is the recipient of the Indigenous Women's Heart and Brain Health Chair (Early Career).

New Initiatives

Chair in Women's Heart and Brain Health

Partner(s): The Canadian Institutes of Health Research (CIHR); Institute of Indigenous Peoples' Health; Institute of Circulatory and Respiratory Health; Institute of Gender and Health; New Brunswick Health Research Foundation (NBHRF).

Total Initiative funding: \$3,113,007

Total Heart & Stroke funding: \$609,502

Description: The mandate of each Chair is to generate new knowledge that improves awareness, prevention and understanding of how biology and socio-cultural factors affect women's heart and brain health. The mandate of the Indigenous Chairs in particular will include barriers and external factors that can influence Indigenous women's health in Canada. The specific objectives of this funding opportunity are:

- To create new knowledge that advances understanding of women's heart and stroke health.
- To foster innovative, sex- and gender-sensitive approaches to diagnosis, access to high quality care and treatment of heart disease and stroke in women, especially within Indigenous communities.
- To foster the translation of research knowledge into evidence-based policies and interventions that improves heart and brain health and promotes wellness of women.

Chair in Women's Heart and Brain Health

Chair	Principal Investigator(s)	Institute	Project	Term	18-19 \$ Heart & Stroke	Total 18-19 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Chair in Women's Heart and Brain Health – Early Career	Abdel-Qadir, Husam M.	Women's College Hospital	Characterizing heart and mind health post-chemotherapy in women with breast cancer.	2018-2021	-	131,250	150,000	750,000	II, III, IV
Chair in Indigenous Women's Heart and Brain Health – Early Career	Downey, Bernice E.	McMaster University	Understanding & mending 'broken' hearts: linking European colonization, Indigenous women's heart health, and resiliency-focused approaches to health literacy.	2018-2021	36,374	174,465	178,813	1,090,250	II, III, IV
Chair in Indigenous Women's Heart and Brain Health – Early Career	Foulds, Heather J.A.	University of Saskatchewan	Social and cultural impacts on cardiovascular health determinants for Indigenous women.	2018-2021	25,167	81,793	130,689	522,757	II, IV
Chair in Women's Heart and Brain Health – Mid Career	Nerenberg, Kara	University of Calgary	Program to IMPROVE the heart and brain health of postpartum Canadian women.	2018-2021	-	131,250	150,000	750,000	III, IV

Continuing 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; 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 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	18-19\$ Heart & Stroke	Total 18-19\$ (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	49,167	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	-	49,914	-	148,424	II,III,IV
Rotstein, Benjamin H.	University of Ottawa Heart Institute	Validation of a fluorine-18 radiotracer for imaging sympathetic denervation in cardiac arrhythmias.	Liu, Peter P.; deKemp, Robert	2017-2020	-	50,000	-	138,000	I

Principal Investigator(s)	Institute	Project	Mentor(s)	Term	18-19\$ Heart & Stroke	Total 18-19\$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
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
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	-	36,847	-	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	18-19\$ Heart & Stroke	Total 18-19\$ (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

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	18-19 \$ Heart & Stroke	Total 18-19 \$ (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	-	49,616	-	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.	Western University	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	49,388	49,388	145,635	145,635	I,II,III,IV
Ussher, John Edward	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	18-19 \$ Heart & Stroke	Total 18-19 \$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
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.	2015-2019	-	12,430	-	148,927	II
Santosa, Sylvia	Concordia University	Acute and chronic effects of obesity on cardiovascular disease risk factors.	Bacon, Simon L.; Morais, José A.	2015-2019	50,000	50,000	150,000	150,000	I,II

Canadian Resuscitation Outcomes Consortium (CanROC)

Partner(s): The CIHR Institute of Circulatory and Respiratory Health; 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	18-19 \$ Heart & Stroke	Total 18-19 \$ (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.	British Columbia: 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.	Ontario: 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.	Ontario: 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	18-19 \$ Heart & Stroke	Total 18-19 \$ (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).	Alberta: Wilton, Stephen; Sandhu, Roopinder; Quinn, Francis Russell; McRae, Andrew; Hill, Michael D.; Exner, Derek V. British Columbia: Krahn, Andrew D.; Andrade, Jason G.; Tang, Anthony S.L. Nova Scotia: Parkash, Ratika Ontario: 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. Quebec: Talajic, Mario; Philippon, François; Khairy, Paul; Huynh, Thao T.; Essebag, Vidal	2013-2019	66,667	1,126,667	1,000,000	18,520,000	II



Appendix B

National Personnel Awards

Dr. Georg Schmoelzer (left) and Dr. Po-Yin Cheung (University of Alberta) are working together aiming to improve current CPR practices to enhance infant survival. Dr. Georg Schmoelzer was funded in 2018-2019 through the joint Alberta New Investigator and National New Investigator award (awarded in 2016-2017). In addition, Dr. Schmoelzer, holds a Heart and Stroke Foundation/University of Alberta Professorship in Neonatal Resuscitation.

New Investigators

Awardee	Research Institution	Project	Keywords	Term	18-19 \$*	Total \$*	Theme(s)
Arcand, JoAnne L.	University of Ontario Institute of Technology	Studies on the implementation of dietary recommendations for hypertension.	<i>Diet, nutrition, sodium, hypertension, primary care, clinical practice, guidelines.</i>	2018-2022	65,000	260,000	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
Field, Thalia [†]	University of British Columbia	SECRET: Safety of rivaroxaban for CeREbral venous Thrombosis.	<i>Stroke, cerebral venous thrombosis, clinical trials, feasibility, safety.</i>	2018-2021	75,000	270,000	II, III, IV
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	5,000	270,000	I, II
Kienesberger, Petra C.	Dalhousie University	The role of autotaxin-lysophosphatidic acid signaling in obesity-related heart disease.	<i>Obesity, diabetes, cardiomyopathy, lipids, metabolism.</i>	2018-2022	65,000	262,000	I
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	65,000	270,000	I
Murias, Juan [‡]	University of Calgary	Healthy vasculature for successful aging: The optimal prescription of exercise as medicine.	<i>Oxygen transport, vascular responsiveness, independent aging, exercise training, sex-related differences.</i>	2018-2022	5,000	260,000	I, II
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	65,000	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

*Amount shown represents stipend value only.

[‡]Joint title Alberta New Investigator and National New Investigator

[†]Joint title National New Investigator and Improving Heart and Brain Health for Women: Seed/Catalyst Grant recipient

Awardee	Research Institution	Project	Keywords	Term	18-19 \$*	Total \$*	Theme(s)
Rose, Robert A.	University of Calgary	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, apnoea, newborn, infants.</i>	2016-2020	5,000	260,000	I,II
Shamy, Michel [¶]	Ottawa Hospital Research Institute	When are RCTs necessary and ethical in stroke research.	<i>Randomized clinical trials, ethics, epistemology, stroke.</i>	2018-2021	65,000	260,000	II, III
Singh, Krishna K.	Western University	Novel mechanisms in cardiac fibrosis and heart failure.	<i>Cardiac fibrosis, heart failure, endothelial cells, primary cilia, endothelial-to-mesenchymal transition.</i>	2018-2022	65,000	260,000	I, II
Sutendra, Gopinath [‡]	University of Alberta	Metabolic modulation as a novel therapy for chemotherapy-induced cardiotoxicity.	<i>Metabolism, heart failure, p53, Pyruvate Kinase M2, redox.</i>	2018-2022	15,000	270,000	I
Steinback, Craig D. [‡] & [¶]	University of Alberta	Neural control of blood pressure in healthy and complex pregnancies.	<i>Pregnancy, cardiovascular health, preeclampsia.</i>	2018-2022	5,000	260,000	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.

[¶]Joint title National New Investigator and Improving Heart and Brain Health for Women: Seed/Catalyst Grant recipient

Themes I: Basic Biomedical II: Clinical III: Health Services/Systems IV: Social, Cultural, Environmental and Population Health

Improving the Heart and Brain Health for Women†

Awardee	Institute	Project	Keywords	Term	18-19\$ Heart & Stroke*	Total 18-19\$ (All Partners)*	Total \$ Heart & Stroke*	Total \$ (All Partners)*	Theme(s)
Davenport, Margaret (Marge)‡	University of Alberta	Determinants of maternal cardiovascular health.	<i>Pregnancy, cardiovascular health, physical activity, preeclampsia.</i>	2017-2021	-	65,000	-	260,000	I,II

Improving the Heart and Brain Health for Women Award (Seed/Catalyst Grant)†

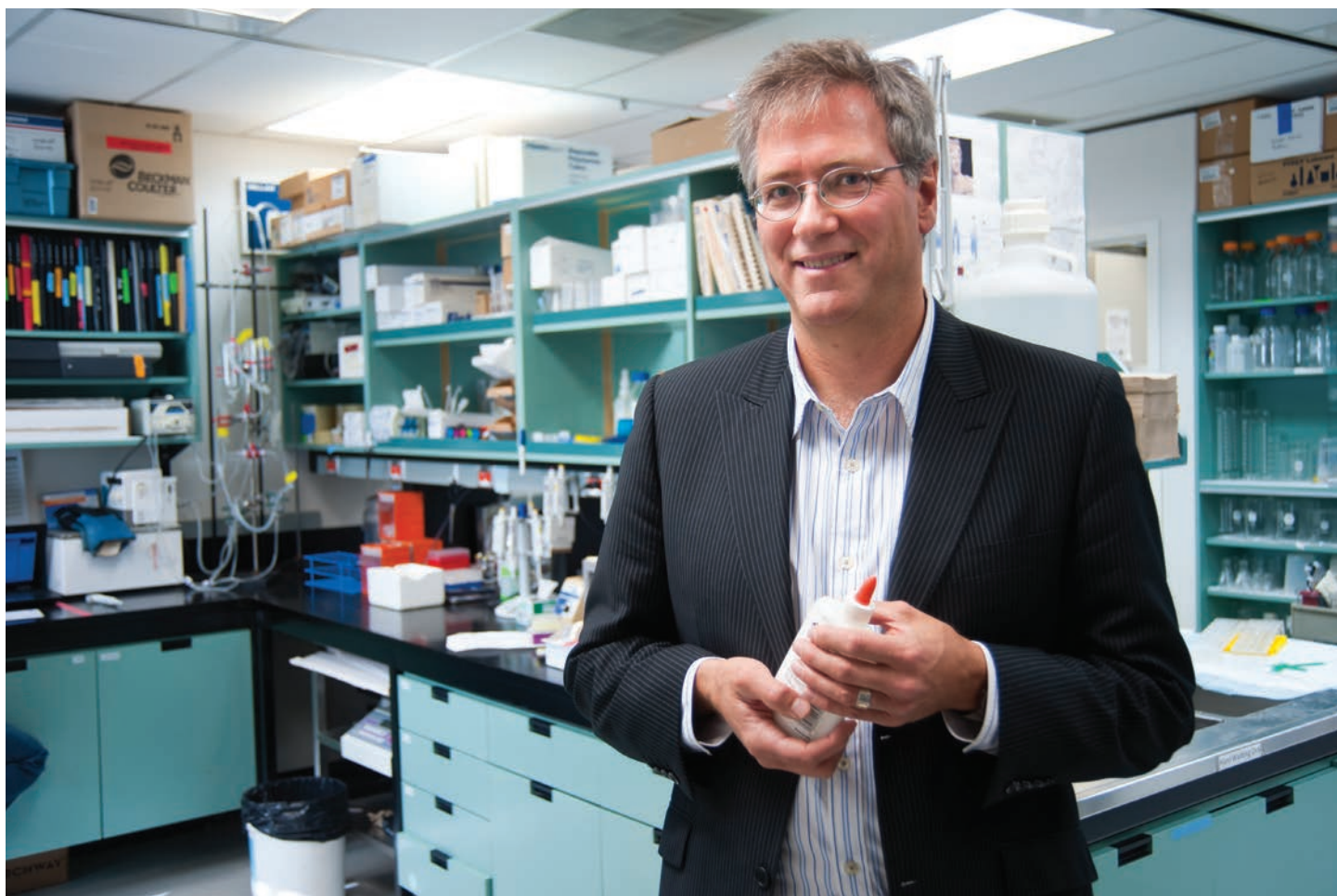
Awardee	Institute	Project	Keywords	Term	18-19\$ Heart & Stroke*	Total 18-19\$ (All Partners)*	Total \$ Heart & Stroke*	Total \$ (All Partners)*	Theme(s)
Field, Thalia§	University of British Columbia	SECRET: Safety of rivaroxaban for CeREbral venous Thrombosis	<i>Stroke, cerebral venous thrombosis, clinical trials, feasibility, safety.</i>	2018-2020	-	50,000	-	100,000	II, III, IV
Shamy, Michel§	Ottawa Hospital Research Institute	When are RCTs necessary and ethical in stroke research.	<i>Randomized clinical trials, ethics, epistemology, stroke.</i>	2018-2020	-	50,000	-	100,000	II, III
Steinback, Craig D.‡ & §	University of Alberta	Neural control of blood pressure in healthy and complex pregnancies.	<i>Pregnancy, cardiovascular health, preeclampsia.</i>	2018-2020	-	50,000	-	100,000	I
Tsang, Wendy	University of Toronto	Sex differences in valvular heart disease.	<i>Mitral regurgitation, echocardiography, outcomes, gender, pregnancy.</i>	2018-2020	-	50,000	-	100,000	II

†This award is partnered with Health Canada.

*Amount shown represents stipend value only.

‡Joint title Alberta New Investigator and National New Investigator.

§Joint title National New Investigator and Improving Heart and Brain Health for Women: Seed/Catalyst Grant recipient



Appendix C

Grants-in-aid

Dr. Ian Dixon (University of Manitoba) was funded in 2018-2019 through his Grant-in-Aid, awarded in 2017-2018.

BC & Yukon

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	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	178,000	I,II
Ainslie, Philip; Fisher, Joseph A.; Duffin, James; Griesdale, Donald E. G.; Rauscher, Alexander; Sekhon, Mypinder	University of British Columbia	Cerebral blood flow regulation by nitric oxide in health and aging.	<i>Cerebral blood flow, nitric oxide, aging, magnetic resonance imaging, ultrasound.</i>	2018-2021	100,000	100,000	I
Brown, Craig E.	University of Victoria	Chemogenetic modulation of disinhibitory cortical circuits to improve stroke recovery.	<i>Stroke recovery, interneurons, somatosensory cortex, 2-photon imaging, chemo-genetics.</i>	2018-2021	87,550	87,550	I
Choy, Jonathan C.; Morin, Ryan; Brinkman, Fiona	Simon Fraser University	Immune and vascular effects of IL-6 in transplant arteriosclerosis.	<i>Transplant arteriosclerosis, heart transplantation, IL-6, T cells, endothelial cells.</i>	2018-2021	98,095	98,095	I
Claydon, Victoria E.; Raj, Satish; Sanatani, Shubhayan; Loughin, Thomas; Armstrong, Kathryn	Simon Fraser University	Mechanisms and management of pediatric syncope.	<i>Syncope, pediatric, mechanisms, management, salt supplementation.</i>	2018-2021	67,150	67,150	I, II
Conway, Edward M.	University of British Columbia	Modulation of vascular function and thrombus formation by CD248.	<i>Thrombosis, mouse models, glycoprotein, perivascular, endothelial.</i>	2018-2021	81,000	81,000	I
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	88,539	177,252	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Field, Thalia S.; Hill, Michael D.; Benavente, Oscar; Blacquiere, Dylan P.V.; Boulos, Mark I.; Buck, Brian; Coutts, Shelagh B.; Demchuk, Andrew M.; Dowlathshahi, Dariush; Gubitz, Gordon J.; Hall, William; Jin, Albert Y.; Lee, Agnes Y. Y.; Mandzia, Jennifer; Murray, Maria; Pettersen, Jacqueline A.; Pikula, Aleksandra; Shoamanesh, Ashkan; Sposato, Luciano A.; Weitz, Jeffrey I.; Wong, Hubert H.C.; Mitton, Craig R.	University of British Columbia	SECRET – Study of rivaroxaban for CeREbral venous Thrombosis.	<i>Stroke, cerebral venous thrombosis, clinical trials, feasibility, safety.</i>	2018-2021	100,000	100,000	II, III
Foster, Glen E.; Ayas, Najib T.; Floras, John S.	University of British Columbia	Intermittent hypoxia and cardiovascular disease.	<i>Intermittent hypoxia, renin-angiotensin system, chemoreflex, obstructive sleep apnea, sympathetic neurovascular transduction.</i>	2018-2021	39,300	39,300	I, II
Gibson, William	Child and Family Research Institute	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	55,000	134,785	I,II,III,IV
Grewal, Jasmine; Levin, Adeera; Beauchesne, Luc; Harris, Kevin; Humphries, Karin; Khairy, Paul; Kiess, Marla; Mackie, Andrew; Marelli, Ariane; Oechslin, Erwin; Siversides, 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	94,151	189,763	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Griesdale, Donald; Ainslie, Philip; Boyd, John Gordon; Brasher, Penelope; Dorian, Paul; Field, Thalia S.; McCredie, Victoria; Menon, David K.; 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	99,370	196,991	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	97,830	193,951	II
Hopmann, 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	70,791	245,188	II,IV
Johnson, James D.; Allard, Michael F.; 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	71,500	142,000	I
Jung, Mary; Halperin, Frank A.; Ivanova, Elena; Little, Jonathan; Singer, Joel; Pistawka, Kevin	University of British Columbia	The power of choice on exercise adherence and cardiovascular health in prediabetes.	<i>Cardiorespiratory fitness, exercise psychology, prediabetes.</i>	2018-2021	83,015	83,015	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	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	79,449	238,066	I, 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	89,429	266,891	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	66,934	125,568	I,II
Luo, Honglin	St. Paul’s Hospital	Molecular chaperones in viral cardiomyopathy.	<i>Molecular chaperones, alphaB-crystallin, viral cardiomyopathy.</i>	2016-2019	92,460	274,880	I
Luo, Honglin; McManus, Bruce M.	University of British Columbia	Enteroviral control of autophagy: Relevance to heart failure.	<i>Enterovirus, heart failure, protein quality control, protease, autophagy.</i>	2018-2021	75,750	75,750	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	252,690	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	48,015	154,165	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	66,717	205,391	I,II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	199,952	I,II
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	98,054	297,163	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	247,500	I
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	76,432	229,296	I,II

Alberta, NWT & Nunavut

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	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	99,878	299,186	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	98,149	293,565	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	72,688	212,564	II
Chelikani, Prasanth	University of Calgary	Prebiotic Fiber: Mechanisms of protection against obesity, stroke and hypertension.	<i>Obesity, fiber, protein, stroke, microbiota.</i>	2018-2021	93,917	93,917	I
Chen, S.R. Wayne	University of Calgary	Molecular basis of cardiac ryanodine receptor Luminal Ca ²⁺ activation and its role in arrhythmias.	<i>Cardiac arrhythmias and sudden death, Ca²⁺ release channel Ryanodine receptor, ion channel structure and function, molecular biology and electrophysiology, single channel recordings and single cell Ca²⁺ imaging.</i>	2016-2019	99,564	292,692	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	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>	2016-2020	90,000	270,000	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	216,815	I
Coutts, Shelagh B.; Hill, Michael D.; Goyal, Mayank; Demchuk, Andrew M.; Menon, Bijoy K.	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	256,990	II
Davenport, Margaret (Margie); Steinback, Craig D.; Khurana, Rshmi; Chari, Radha S.; Stickland, Michael K.; Davidge, Sandra T.	University of Alberta	Blood pressure regulation during hypertensive pregnancies.	<i>Pregnancy, sympathetic regulation, cardiovascular regulation, preeclampsia, vascular health.</i>	2016-2019	82,885	227,434	I
Di Martino, Elena S.; Bromley, Amy; Rinker, Kristina D.; Moore, Randy	University of Calgary	Bioengineering studies of aortic aneurysms.	<i>Aneurysm, histology/morphology, histology, mechanics, computer modeling.</i>	2017-2020	86,200	171,900	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	76,000	226,000	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	69,878	137,756	I
Forkert, Nils Daniel; Menon, Bijoy K.; Demchuk, Andrew M.	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	63,500	129,500	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	72,960	210,080	I
Frayne, Richard; Sevik, Robert; Smith, Eric E.	Foothills Hospital	Micro MR Angiography (mMRA) – A tale of two approaches.	<i>Vascular dementia, small vessel disease, MR imaging, MR angiography.</i>	2018-2021	95,765	95,765	I, II
Hammond, James R.; Plane, Frances	University of Alberta	SLC29A4 in cardiovascular function and dysfunction.	<i>Transporters, adenosine, serotonin, cardioprotection.</i>	2016-2019	81,327	246,381	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	94,970	284,735	I,II
Jurasz, Paul K.	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	99,911	187,618	I
Kubes, Paul	University of Calgary	The pericardium as a source of repair macrophage.	<i>Inflammation, myocardial infarction, macrophages, repair, innate immunity.</i>	2018-2021	99,178	99,178	I, II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Lehner, Richard; Lian, Jihong	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>	2017-2019	97,843	196,686	I
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	147,756	I,II
Michelakis, Evangelos D.; Nagendran, Jayan	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	293,429	I,II
Murray, Allan G.; Sis, Banu	University of Alberta	Vascular repair in transplant vasculopathy.	<i>Heart transplantation, chronic allograft vasculopathy, endothelium vascular, regenerative medicine.</i>	2017-2020	89,144	176,122	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	180,200	I,II
Oudit, Gavin Y.	University of Alberta	Targeting ACE2 as a novel therapy for diabetic cardiovascular complications.	<i>Heart Disease, diabetes, obesity, vascular disease, cardiomyopathy.</i>	2018-2021	99,900	99,900	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	92,146	264,338	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	254,042	I,II,III,IV
Proctor, Spencer D.	University of Alberta	Efficacy of a novel idiotype antibody against arterial glycosaminoglycans to inhibit cholesterol retention during atherosclerosis and insulin resistance.	<i>Idiotype antibodies, atherosclerosis, insulin resistance, arterial retention, remnant lipoproteins.</i>	2018-2021	93,500	93,500	I, II
Rose, Robert A.	University of Calgary	The impacts of age and frailty on sinoatrial node and atrial structure, function and arrhythmogenesis.	<i>Aging, frailty, sinoatrial node, arrhythmias, atrial fibrillation.</i>	2018-2021	95,500	95,500	I
Seubert, John M.	University of Alberta	Protecting cardiac mitochondria from ischemic injury through a novel eicosanoid caveolin-1 pathway.	<i>Eicosanoids, mitochondria, caveolin-1, myocardial ischemia, cardioprotection.</i>	2018-2021	74,960	74,960	I
Thompson, Roger J.	University of Calgary	Role of asynchronous glutamate release in stroke induced dementia.	<i>Pannexin, excitotoxicity, amyloid beta, asynchronous release, dementia.</i>	2018-2021	94,000	94,000	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	99,540	198,480	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	258,000	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Zaugg, Michael; Clanachan, Alexander S.	University of Alberta	Insulin resistance due to lipotoxicity of fat emulsions in healthy and diabetic hearts: underlying mechanisms and prevention.	Heart, insulin resistance, fat emulsions, energy substrate metabolism.	2017-2020	94,361	188,722	I
Zhang, Dawei	University of Alberta	Molecular mechanism and physiological roles of MT1-MMP-mediated downregulation of LDL receptor.	Lipoprotein metabolism, low density lipoprotein, low density lipoprotein receptor, atherosclerosis, matrix metalloproteinase.	2016-2019	91,771	275,312	I

Saskatchewan

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	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	66,500	193,500	I
Chilibeck, Philip D.; 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	85,234	166,468	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	80,872	236,208	II,III

Manitoba

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Czubryt, Michael P.	St. Boniface G.H. Research Centre	Role of scleraxis in perivascular fibrosis.	<i>Perivascular fibrosis, gene expression, transcription factor, transgenic mice, hypertension.</i>	2018-2021	98,771	98,771	I
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	99,972	199,942	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	287,702	I
Duhamel, Todd A.	University of Manitoba	Examining SERCA2a acetylation in the diabetic heart.	<i>Diabetic cardiomyopathy, calcium handling, acetylation, site directed mutagenesis, sirtuins.</i>	2016-2019	85,323	271,705	I
Gordon, Joseph W.; West, Adrian; Dixon, Ian M. C.	University of Manitoba	Molecular regulation of cell death by myocardin following myocardial infarction.	<i>Myocardial infarction, myocardin, Nix, miR-133a, heart failure.</i>	2018-2021	90,706	90,706	I
Hatch, Grant M.	University of Manitoba	Regulation of cardiolipin biosynthesis in the heart.	<i>Cardiolipin, heart, synthesis, metabolism, phospholipid.</i>	2017-2020	99,602	199,212	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	81,212	232,148	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	98,800	298,800	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	199,998	I
McGavock, Jonathan; Booth, Gillian; Fransoo, Randall; Hobin, Erin; Isaranuwatchai, Wandrudee; Rosella, Laura; Russell, Kelly; Sharma, Atul	University of Manitoba	If you build it, will they come?... and live longer?	Population interventions, natural experiment, built environment, prevention policies, physical activity.	2017-2020	57,050	132,674	IV

Ontario

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Adeli, Khosrow	Hospital for Sick Children	Neuroendocrine mechanisms of hepatic steatosis and VLDL overproduction in insulin resistance.	<i>Lipoproteins, insulin resistance, gut peptides, liver, brain.</i>	2018-2021	97,428	97,428	I
Advani, Andrew; Connelly, Kim	St. Michael's Hospital	Inflammation, epigenetics and heart failure in diabetes.	<i>Heart failure, diabetes, epigenetics.</i>	2017-2020	70,508	141,015	I
Albert, Paul R.	Ottawa Hospital Research Institute	Enhancing behavioral and cognitive recovery from stroke.	<i>Stroke recovery, prefrontal cortex, limbic system, brain activation, antidepressant.</i>	2018-2021	84,520	84,520	I
Bagai, Akshay; Cheema, Asim; Connelly, Kim; Dehghani, Payam; Deva, Djeven; Farkouh, Michael; Goodman, Shaun; Juni, Peter; Lavi, Shahar; 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	174,000	II
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	98,958	198,566	II
Bendeck, Michelle P.; Santerre, J. Paul	University of Toronto	N-cadherin and strategies to inhibit smooth muscle cell migration.	<i>Atherosclerosis, restenosis, smooth muscle cell, migration, N-cadherin.</i>	2018-2021	92,799	92,799	I,II
Bergeron, Richard	Ottawa Hospital Research Institute	Glycine and brain ischemia.	<i>Synaptic transmission, glutamate, glycine, sniffer patch, stroke.</i>	2016-2019	68,731	202,760	I
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	213,141	I
Bolz, Steffen-Sebastian; Kroetsch, Jeffrey	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	184,296	I
Burns, Peter N.; Leong-Poi, Howard M.; Helfield, Brandon; Hynynen, Kullervo H.	Sunnybrook Health Sciences Centre	Ultrasound poration for gene delivery in cardiovascular therapy.	<i>Ultrasound poration, gene delivery, biophysics, plasma membrane wound healing, microbubbles.</i>	2018-2021	76,300	76,300	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Guerguerian, Anne-Marie; 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	64,345	132,790	II
Cameron, Jill; Bayley, Mark; Blacquiére, 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>	2017-2019	58,622	114,684	II,III
Cepinskas, Gediminas; Fraser, Douglas D.	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	86,240	172,660	I
Chakrabarti, Subrata	Western University	Vasoactive and cardioactive factors in diabetic heart disease.	<i>Diabetes, heart, endothelial-mesenchymal transition, epigenetics, non-coding RNA.</i>	2016-2019	73,400	220,200	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	17,000	99,400	II,III,IV
Chauhan, Vijay S.; Verma, Atul; Wilton, Stephen; Singh, Sheldon; Ha, Andrew C.T.	University Health Network	Electrogram-based evaluation of atrial myopathy in patients undergoing atrial fibrillation catheter ablation.	<i>Atrial fibrillation, catheter ablation, electrocardiography, mapping, scar.</i>	2018-2021	99,999	99,999	I, II
Chen, Hsiao-Huei	Ottawa Hospital Research Institute	Mechanisms to improve stroke recovery.	<i>Tyrosine phosphatase, endocannabinoid signaling, microglia, anxiety & depression, BDNF/trkB.</i>	2018-2021	93,400	93,400	I
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	62,875	191,603	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	200,000	II
Connolly, Stuart J.; Wong, Jorge; Healey, Jeff S.; Van Spall, Harriette; Conen, David	McMaster University	Role of silent atrial fibrillation in hospital readmission for heart failure.	<i>Subclinical atrial fibrillation, heart failure, heart failure hospitalization.</i>	2018- 2020	90,305	90,305	II
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	262,007	I
Cregan, Sean P.	Robarts Research Institute	Targeting the integrated stress response factor ATF4 for neuroprotection.	<i>Apoptosis, ischemia, neurons.</i>	2018- 2021	91,450	91,450	I
Cummins, Carolyn	University of Toronto	The LXR/EPC secretome as a new source of anti-atherogenic proteins.	<i>Endothelial progenitor cell, atherosclerosis, secretome, therapeutic protein, human cells.</i>	2018- 2021	81,950	81,950	I
Dawson, John F.; Van Raay, Terence; Gillis, Todd E.	University of Guelph	Hypertrophic cardiomyopathy: How cardiac actin mutations change contractility.	<i>Hypertrophic cardiomyopathy, calcium sensitivity, actomyosin regulation by tropomyosin, baculovirus expression system, zebrafish model of disease.</i>	2018- 2021	92,436	92,436	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	73,346	220,938	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	92,691	184,382	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Dowlatshahi, Dariush; Rochon, Elizabeth A.; Ramsay, Timothy O.; Atkinson, Katherine; Dukelow, Sean; Eng, Janice J.; Leonard, Carol L.; Mallet, Karen; Richardson, Denyse L.; Stotts, Grant; Shamy, Michel; Thavorn, Kednapa; Wilson, Kumanan; Pugliese, Michael; Pikula, Aleksandra	Ottawa Hospital Research Institute	RecoverNow: early tablet-based speech therapy for post stroke aphasia.	<i>Stroke, recovery, aphasia.</i>	2018-2021	96,119	96,119	II, III
Feng, Qingping; Di Guglielmo, John	Western University	Sepsis therapy with annexin A5.	<i>Sepsis, cardiovascular function, endothelial cells.</i>	2017-2020	99,875	199,750	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	267,457	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	88,741	178,675	I
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	82,051	246,082	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	80,400	256,440	II, III

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Ghugre, Niles; Strauss, Bradley H.; Martino, Tami A.	Sunnybrook Health Sciences Centre	Iron-mediated cardioprotection in ischemia-reperfusion injury.	<i>Myocardial infarction, iron chelation, hemorrhage, inflammation, left ventricular remodeling.</i>	2018-2021	87,250	87,250	I
Giacca, Adria	University of Toronto	Vascular actions of insulin: 'Selective insulin resistance' revisited.	<i>Insulin resistance, obesity, diabetes, restenosis, atherosclerosis.</i>	2018-2021	96,233	96,233	I, II
Gill, Sean Edward; Mehta, Sanjay	Western University	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	156,696	I
Gilliland, Jason; Campbell, Martha Karen; Doherty, Sean; Haines, Jennifer (Jess); Minaker, Leia; Norozi, Kambiz; O'Connor, Colleen; Simpson, Bonnie; Wilk, Piotr	Western University	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	83,460	169,920	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	94,478	189,818	I,II
Gramolini, Anthony O.	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	174,550	I
Grant, David; Levy, Gary; Atkins, Harold; Chruscinski, Andrzej; Gorczyński, 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	75,800	150,600	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	217,500	I
Gross, Peter L.	McMaster University	The ideal ASA dose in dual antiplatelet therapy.	<i>P2Y12 Inhibitors, ASA, platelets, thrombosis, clopidogrel.</i>	2018-2021	90,880	90,880	I, II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Ha, Andrew C.T.; Lee, Douglas S.; Angaran, Paul; Austin, Peter C.; Birnie, David H.; Crystal, Eugene; Dorian, Paul; Harkness, Karen I.; Healey, Jeff S.; Mak, Susanna; Manlucu, Jaimie; Moe, Gordon W.; Poon, Stephanie; Ross, Heather J.; Thavendiranathan, Paaladinesh; Wintersperger, Bernd J.; Yee, Raymond	University Health Network	Validation and comparative evaluation of the Bimodal Survival and Implantable Defibrillator Shock (BaSIS) risk score.	<i>Implantable cardioverter defibrillator, prospective observational registry, prediction rule, clinical cardiac electrophysiology, health services research.</i>	2018-2021	88,883	88,883	II
Hamilton, Jill K.; Retnakaran, Ravi R.; Weksberg, Rosanna; Connelly, Philip W.; Palmert, Mark; Butcher, Darci; Hanley, Anthony J.G.	Hospital for Sick Children	Impact of gestational diabetes on the epigenome, adiposity, and cardiometabolic risk in early childhood.	<i>Gestational diabetes, cardiometabolic risk, epigenetics, child, obesity.</i>	2018-2021	90,727	90,727	I, II, III, IV
Healey, Jeff S.; Belley-Cote, Emilie; Conen, David; Connolly, Stuart J.; Devereaux, Philip J.; McIntyre, William; Whitlock, Richard P.; Wong, Jorge	McMaster University	Atrial Fibrillation Occurring Transiently with Stress (AFOTS) quantifying the risks of recurrent AF.	<i>Atrial fibrillation, stroke, secondary, surgery, acute illness.</i>	2018-2020	56,494	56,494	II
Hegele, Robert A.	Western University	Clinical translation of genomic determinants of cardiometabolic risk.	<i>Lipoproteins, triglycerides, next generation DNA sequencing, human genetic variation, atherosclerosis.</i>	2018-2021	48,427	48,427	I, II, III, IV
Honjo, Osami; Amon, Cristina; Doyle, Matthew G.; Roche, Susan; Forbes, Thomas	Hospital for Sick Children	Development of mechanical circulatory support system for failing single ventricle fontan physiology.	<i>Congenital heart disease, failing fontan circulation, mechanical circulatory support, cavopulmonary assist, computational flow dynamics simulation.</i>	2018-2021	94,971	94,971	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	83,057	254,025	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	223,800	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	199,994	I
Kanelis, Voula	University of Toronto Mississauga	Understanding molecular defects and drug correction of KATP channel mutations that cause cardiovascular disease.	<i>Cardiac KATP channel, sulphonylurea receptor 2, electrophysiology, disease-mutant protein structure, pharmacological chaperone and activator drugs.</i>	2018-2021	79,300	79,300	I
Kim, Kyoung Han	University of Ottawa Heart Institute	Transcriptional and non-transcriptional functions of <i>Irx5</i> in heart disease.	<i>Iroquois transcription factor, cardiomyopathy, non-transcriptional function.</i>	2018-2021	91,179	91,179	I
Koschinsky, Marlys 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	88,020	179,290	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	88,677	276,853	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	88,000	173,650	I
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	88,632	264,869	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	89,400	268,901	I
Lillicrap, David P.; Swystun, Laura L.	Queen's University	The role of von Willebrand factor in deep vein thrombosis.	<i>von Willebrand factor, deep vein thrombosis, platelet, leukocyte, erythrocyte.</i>	2018-2021	96,811	96,811	I
Ma, David W.L.; Haines, Jess (Jennifer); Duncan, Alison; Buchholz, Andrea; Darlington, Gerarda.A.	University of Guelph	Impact of sugar intake and non-nutritive sweeteners on cardiometabolic risk factors, and modification by genetic factors, among preschool children in the Guelph Family Health Study.	<i>Sugar, non-nutritive sweeteners, modifiable cardiometabolic risk factors, preschoolers, obesity.</i>	2018-2021	75,000	75,000	I, IV

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Mansfield, Avril; Huntley, Andrew; Inness, Elizabeth L.; Marzolini, Susan; Mochizuki, George; Oh, Paul	Toronto Rehabilitation Institute	Effect of perturbation-based balance training on physical fitness post-stroke.	<i>Rehabilitation, exercise, balance, strength, fitness.</i>	2018-2021	94,225	94,225	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	268,335	I
McIntyre, Christopher W.; Mandzia, Jennifer; Prato, Frank; St. Lawrence, Keith; Theberge, Jean	London Health Sciences Centre	Reducing hemodialysis induced recurrent brain injury to improve patients' lives.	<i>Medical biophysics, hemodialysis, cardiovascular, stroke, vascular dementia.</i>	2017-2020	72,544	145,088	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	259,350	I
Mehta, Shamir R.; Bainey, 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.	Acute myocardial infarction, fibrinolytic therapy, myocardial tissue perfusion, distal embolization, clinical trial.	2017-2020	84,930	169,855	II
Mequanint, Kibret	Western University	Roles of elastin and notch in VSMC differentiation for clinically relevant engineered human vascular tissues.	<i>Engineered vascular tissues, elastin-VSMC interaction, vascular smooth muscle phenotype, ectopic vascular calcification, notch signaling.</i>	2018-2021	84,012	84,012	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	91,173	186,260	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	97,175	280,034	II
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	135,080	II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	96,972	194,047	I
Oh, Paul; MacIntosh, Bradley J.; Corbett, Dale R.; Anderson, Nicole D.; Robertson, Andrew D.; Brooks, Dina; Marzolini, Susan	Toronto Rehabilitation Institute	High intensity interval training for people with stroke deficits: Optimizing the exercise intervention a randomized clinical study.	<i>Stroke, cardiorespiratory fitness, cognition, mobility, cerebrovascular blood flow.</i>	2018-2021	79,383	79,383	I, II, III, IV
Ouimet, Mireille	University of Ottawa Heart Institute	Macrophage lipophagy in immunometabolism and atherosclerosis.	<i>Macrophage, autophagy, lipid droplets, metabolism, inflammation.</i>	2017-2020	82,345	155,458	I
Pare, Guillaume; Yusuf, Salim	McMaster University	An integrated genomic-biomarker approach for discovery of novel causal mediators of cardio-metabolic diseases.	<i>Biomarkers, stroke, heart disease, genetics.</i>	2018-2021	75,000	75,000	I, II
Parker, Thomas G.	St. Michael's Hospital	The functional role of the S100 family of EF-hand proteins and their receptors in sepsis-induced cardiovascular pathophysiology.	<i>S100 proteins, sepsis, gene expression, cardiovascular function.</i>	2018-2021	77,650	77,650	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	89,337	162,203	II
Peng, Tianqing	London Health Sciences Centre	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	95,990	183,580	I
Petrella, Robert J.; Gill, Dawn; Boa Sorte Silva, Narlon	Western University	Exercise to improve the hearts and minds of Canadian older adults with hypertension: The heart & mind study.	<i>Hypertension, cognition, exercise, older adults.</i>	2018-2021	77,178	77,178	II, IV
Pinthus, Jehonathan; Duivenvoorden, Wilhelmina; Werstuck, Geoffrey H.; Leong, Darryl	St. Joseph's Healthcare Hamilton	Cardiovascular risk with androgen deprivation therapy (ADT) for prostate cancer: Investigations into the role of follicle-stimulating hormone (FSH).	<i>Atherosclerosis, follicle-stimulating hormone, plaque vulnerability, androgen-deprivation therapy, prostate cancer.</i>	2018-2021	91,960	91,960	I, II
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	90,197	264,874	I
Radisic, Milica; Epelman, Slava	University of Toronto	Harnessing the body's inherent molecular defense to develop new antimicrobial and immunomodulatory polymers for cardiac and surgical applications.	<i>Biomaterial, antibacterial, regenerative medicine, tissue engineering, immunomodulation.</i>	2018-2021	85,940	85,940	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	97,991	296,441	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	62,331	224,893	II,III
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	73,500	219,500	I
Sharpe, Simon J.; Pomès, Régis	Hospital for Sick Children	Structural effects of polymorphisms in tropoelastin - molecular basis for increased susceptibility to cardiovascular disease.	<i>Cardiovascular disease, elastic tissues, tropoelastin, structural biology, disease susceptibility.</i>	2018-2021	96,950	96,950	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	63,349	125,317	II,III,IV
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	85,771	269,313	I,II
Singh, Krishna K.	Western University	Novel mechanisms in cardiac fibrosis and heart failure.	<i>Heart failure, cardiac fibrosis, tissue-specific knockout mice.</i>	2017-2020	79,811	159,622	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	179,400	I
So, Derek Y.F.; Goodman, Shaun G.; Wells, George A.; Bagai, Akshay; Chong, Aun-Yeong; Farkouh, Michael, E.; Hibbert, Benjamin; Madan, Minakshi; Lordkipanidzé, Marie; Tanguay, Jean-François	University of Ottawa Heart Institute	A randomized study of novel strategies for antiplatelet therapy in patients with prior myocardial infarction – The RAPID TAILOR EXTEND Pilot Study.	<i>Long-term antiplatelet therapy, myocardial infarction, personalized therapy, P2Y12 monotherapy.</i>	2018-2021	89,947	89,947	II, III
Sorisky, Alexander	Ottawa Hospital Research Institute	Thymic stromal lymphopoietin: a novel thyrotropin-regulated pro-inflammatory cytokine expressed by human adipocytes.	<i>Adipocyte, inflammation, TSLP, TSH, cytokine.</i>	2018-2021	87,664	87,664	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	180,622	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	87,750	261,250	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	217,740	I
Swartz, Richard H.; Yu, Amy Y. X.; Hassan, Ayman; Dowlatshahi, Dariush; Sahlas, Demetrios J.; Mandzia, Jennifer; Lanctôt, Krista L.; Casaubon, Leanne K.; Kapral, Moira K.; Herrmann, Nathan; Austin, Peter C.; Bronskill, Susan; Perez, Yael	Sunnybrook Health Sciences Centre	Adherence to risk reduction after stroke/TIA – The role of cognitive impairment and mood symptoms.	<i>Stroke prevention, vascular risk factors, vascular cognitive impairment, post-stroke depression, drug adherence.</i>	2018-2021	69,645	69,645	II, III, IV
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	81,720	162,440	I,II,IV
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	199,430	I
Tijssen, Janice A.; Bhanji, Farhan; Cheng, Adam; de Caen, Allan; Morrison, Laurie; Shariff, Salimah	London 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	20,902	40,035	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	199,720	I,II
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	288,822	I
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	80,381	265,561	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	99,998	199,953	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	86,934	266,802	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	225,000	I
Werstuck, Geoffrey H.; Gerstein, Hertzell; Nair, Vidhya	Hamilton General Hospital	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	184,748	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	210,000	II
Wijeyesundera, Harindra C.; Wong, William Wai Lun; Pelletier, Marc P.; Knudtson, Merrill L.; Bainey, Kevin; Ko, Dennis T.; Austin, Peter C.; 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	64,553	204,600	II,III

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Wijeysundera, Harindra C.; Austin, Peter C.; Czarnecki, Andrew; Humphries, Karin; Ko, Dennis T.; Krahn, Murray D.; Lauck, Sandra B.; Wood, David A.; Webb, John	Sunnybrook Health Sciences Centre	Identifying predictors of cumulative health care costs associated with trans-catheter aortic valve implantation in severe aortic stenosis: an inter-provincial evaluation.	<i>Severe aortic stenosis, trans-catheter aortic valve implantation (TAVI), health care costs.</i>	2018-2021	65,049	65,049	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	81,168	243,500	I
Woo, Minna	Toronto General Research Institute	Dissecting the metabolic and inflammatory role of DJ-1 in atherogenesis.	<i>Atherogenesis, insulin resistance, inflammation, IGF-1, JAK-STAT pathway.</i>	2018-2021	80,427	80,427	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	285,000	I
Yang, Guangdong; Wu, Lingyun (Lily)	Laurentian University of Sudbury	The regulatory roles of cystathionine gamma-lyase/H2S system in aortic aneurysms.	<i>Hydrogen sulfide, cystathionine gamma-lyase, abdominal aortic aneurysms, medial degeneration, endothelial hypermeability.</i>	2018-2021	90,400	90,400	I
Zariffa, José; Wang, Rosalie H.	University Health Network	Monitoring functional hand use in stroke survivors using wearable technology.	<i>Upper limb function, outcome measures, wearable technology, computer vision, egocentric video.</i>	2018-2021	90,436	90,436	II, III
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	185,852	I

Quebec

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Allen, Bruce	Institut de cardiologie de Montréal	MAP Kinase-Activated Protein Kinases (MKs) mediate distinct detrimental effects in heart.	<i>Protein kinase, cardiac hypertrophy, cardiac fibrosis, p38 MAP kinase, cellular signalling.</i>	2018-2021	93,000	93,000	I
Andelfinger, Gregor U.	Hôpital Sainte-Justine	Role of Adamts19 in development and homeostasis of the aortic valve.	<i>Aortic stenosis, extracellular matrix, metalloproteinase, high throughput genomics, animal models of disease.</i>	2017-2020	90,382	180,763	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	91,800	179,600	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	74,634	219,902	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	49,375	238,689	II,III
Bub, Gil; Ehrlicher, Allen; Herring, Neil	McGill University	Neurally mediated arrhythmogenesis.	<i>Myocardial infarction, optogenetics, sympathetic innervation, cell culture, mathematical modelling.</i>	2018-2021	90,308	90,308	I
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	244,440	I,II
Clavel, Marie-Annick; Mathieu, Patrick	Institut de cardiologie de Québec	Sex-dependent pathophysiological mechanisms in aortic valve stenosis: implication of sex hormones and the renin-angiotensin system.	<i>Aortic stenosis, sex-differences, animal model, fibro-calcific remodeling, angiotensin receptor blocker.</i>	2018-2021	80,950	80,950	I, II
Dancause, Numa; Thiel, Alexander; Barthélemy, Dorothy; Corbett, Dale R.	Université de Montréal	A primate-to-human translational platform to optimize repetitive magnetic stimulation protocols after stroke.	<i>Stroke recovery, primate model, cCortex, reorganization, network.</i>	2018-2021	81,564	81,564	I
Daskalopoulou, Styliani Stella; Colmegna, Ines; Côté, Robert; Hébert, Terry; Pelletier, Jerry; Piccirillo, Ciriaco	Research Institute of the McGill University Health Centre	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	200,000	I,II

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	89,283	269,730	I,II
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	179,902	I
Dumaine, Robert	Université de Sherbrooke	Role of sodium channels in epilepsy related arrhythmias and sudden death.	<i>Sodium channel, epilepsy, arrhythmia.</i>	2018-2021	87,780	87,780	I
EIAli, Ayman	CHUL Research Center	Neurovascular restoration in stroke: role of dickkopf-related protein-1 (DKK1).	<i>Stroke, neurovascular unit, cell signalling.</i>	2018-2021	95,000	95,000	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	282,384	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	135,104	I
Gagnon, Daniel; Nigam, Anil; Juneau, Martin; White, Michel; Gayda, Mathieu; Sirois, Martin G.	Montreal Heart Institute	Sauna therapy to improve vascular function in middle-aged to older adults with and without heart disease.	<i>Aging, vascular function, heat therapy, human physiology.</i>	2018-2021	85,067	85,067	II
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	75,030	159,729	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	35,455	114,256	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	71,680	143,580	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	185,216	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	86,461	178,961	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	78,357	228,071	I
Lavoie, Kim; Bacon, Simon L.; Diodati, Jean G.; Morissette, Mathieu; Paine, Nicola J.; Daskalopoulou, Styliani Stella; Reid, Robert D.	Hôpital du Sacré-Coeur de Montréal	Cardiovascular, immune and thrombotic responses to smoking e-cigarettes vs combustible cigarettes under conditions of physical and mental stress.	<i>Smoking, e-cigarettes, stress, cardiovascular disease, prevention.</i>	2018-2021	89,964	89,964	II,III,IV
Lettre, Guillaume	Montreal Heart Institute	The genetics of endothelial functions: impact on coronary artery disease risk.	<i>Genetics of coronary artery diseases, vascular endothelium, CRISPR-Cas9, chromosome conformation capture, epigenomics.</i>	2018-2021	93,848	93,848	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	172,332	I,IV
Marelli, Ariane J.; Abrahamowicz, Michal; Mackie, Andrew S.; Kaul, Padmaja (Padma); Gurvitz, Michelle; Therrien, Judith; Brophy, James M.	Research Institute of the McGill University Health Centre	Low dose ionizing radiation procedures and cancer in Canada's children with congenital heart disease.	<i>Congenital heart disease, children, health services research, cancer, population health.</i>	2018-2021	75,193	75,193	III
Marleau, Sylvie; Ong, Huy; Laporte, Stéphane; Burelle, Yan	Université de Montréal	Regulation of macrophage immunometabolism in atherosclerosis by CD36 azapeptide ligands.	<i>Azapeptides, CD36, macrophages, polarization, trafficking.</i>	2018-2021	87,043	87,043	I
Mourad, Walid M.; Hassan, Ghada S.; Merhi, Yahye	Centre hospitalier de l'université de Montréal	Novel functions of CD154 in atherothrombosis.	<i>CD154, receptors, bidirectional cell/cell signaling, tools for blocking CD154 interactions, atherothrombosis.</i>	2016-2019	87,800	263,800	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	94,489	283,465	I
Nattel, Stanley	Montreal Heart Institute	Molecular control of cardiac rhythm in atrial cardiomyopathy.	<i>Atrial fibrillation, cardiomyopathy, ion channels, fibrosis, calcium handling.</i>	2018-2021	79,000	79,000	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
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	62,971	227,078	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	199,988	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	84,688	248,064	I,II
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>	2017-2019	60,309	129,426	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	280,065	I
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	146,918	I
Sapieha, Przemyslaw S. (Mike); Mallette, Fred	Université de Montréal	Modulation of neuronal stress for vascular regeneration.	<i>Angiogenesis, ER stress, vascular regeneration, retina.</i>	2016-2019	95,938	288,767	I
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	270,000	I

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-19 \$	Cumulative \$ to 2019	Theme(s)
Thanassoulis, George; Engert, James C.; Lathrop, Mark	Research Institute of the McGill University Health Centre	Genomics of aortic stenosis.	<i>Aortic stenosis, genomics, genome-wide association study, single nucleotide polymorphism, Mendelian randomization.</i>	2018-2021	73,500	73,500	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	63,252	193,676	I,II,III
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	186,512	I,IV

Nova Scotia

Principal Investigator and Co-Investigator(s)	Research Institution	Project	Keywords	Term	18-189 \$	Cumulative \$ to 2019	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	60,500	234,500	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	61,610	187,544	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	80,525	268,635	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, cardiac development.</i>	2018-2021	96,055	96,055	I
Quinn, Alexander; Smith, Frank M.; Croll, Roger	Dalhousie University	Role of the intracardiac nervous system in stress-induced arrhythmias with popdc1 mutation.	<i>Arrhythmias, autonomic nervous system, intracardiac nerves, stress, zebrafish.</i>	2018-2021	78,310	78,310	I
Robertson, George S.	Dalhousie University	Gait preservation by conditional neuron-specific mitochondrial calcium uniporter deficiency in mouse models of hemorrhagic and ischemic stroke.	<i>Mitochondrial calcium uniporter, neuroprotection, hemorrhagic stroke, ischemic stroke, gait.</i>	2018-2021	87,997	87,997	I
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	170,860	I

Improving the Heart and Brain Health for Women†

Awardee	Institute	Project	Keywords	Term	18-19\$ Heart & Stroke	Total 18-19\$ (All Partners)	Total \$ Heart & Stroke	Total \$ (All Partners)	Theme(s)
Auger, Nathalie; Fraser, William C.; Paradis, Gilles; Schnitzer, Mireille	Centre Hospitalier de l'Université de Montréal (CHUM)	Women at the intersection of pregnancy and cardiovascular disease: the WRISQ cohort.	<i>Pregnancy characteristics, congenital anomalies, postpartum mental health, myocardial infarction, ischemic stroke.</i>	2018-2021	-	99,203	-	297,894	II, IV
Dasgupta, Kaberi; Rahme, Elham; Nakhla, Meranda	Research Institute of the McGill University Health Centre	Childhood, youth, and parental outcomes after gestational diabetes mellitus and gestational hypertension – within and across families.	<i>Gestational diabetes, gestational hypertension, cardiovascular disease, congenital heart disease, diabetes.</i>	2018-2021	-	89,422	-	266,847	IV
Faiz, Maryam; Morshead, Cindi M.; Livingston-Thomas, Jessica	University of Toronto	Reprogramming astrocytes: a tool for stroke recovery?	<i>Astrocytes, cellular reprogramming, stroke, transgenic systems, sex differences.</i>	2018-2021	-	87,644	-	261,958	I
Girouard, Hélène	Université de Montréal	Neurovascular coupling in hypertension.	<i>Hypertension, couplage neurovasculaire, arterial stiffness, angiotensin, apolipoprotein E4.</i>	2018-2021	-	81,117	-	271,789	I
Mak, Susanna; Grant, John T.; Udell, Jacob A.	Samuel Lunenfeld Research Institute of Mount Sinai Hospital	The role of exercise hemodynamic testing to improve pulmonary hypertension diagnosis in older adults.	<i>Hemodynamics, pulmonary hypertension, humans, exercise.</i>	2018-2021	-	88,090	-	266,806	I, II
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	4,599	89,599	16,319	271,319	II

†This award is partnered with Health Canada



Appendix D

Research Chairs and Professorships

Dr. Michael Kelly (University of Saskatchewan) is the Saskatchewan Clinical Stroke Research Chair.

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	BC & Yukon
Lear, Scott St. Paul's Hospital/ Simon Fraser University	Pfizer/ Heart and Stroke Foundation Chair in Cardiovascular Prevention Research	Cardiovascular Prevention Research	BC & Yukon
Reading, Jeff St. Paul's Hospital/ Simon Fraser University	First Nations Health Authority Chair in Heart Health and Wellness		BC & Yukon
Wang, Yu Tian University of British Columbia	Heart and Stroke Foundation Chair in Stroke Research	Stroke	BC & Yukon
Becher, Harald University of Alberta	Heart and Stroke Foundation Chair in Cardiovascular Research	Cardiology	Alberta, NWT & Nunavut
Demchuk, Andrew University of Calgary	Heart and Stroke Foundation Chair in Stroke Research	Stroke	Alberta, NWT & Nunavut
Kelly, Michael University of Saskatchewan	Saskatchewan Clinical Stroke Research Chair	Clinical Stroke	Saskatchewan
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 Western University	Heart and Stroke Foundation / Barnett-Ivey Chair at the Robarts Research Institute	Cardiology	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		BC & Yukon
Teal, Philip University of British Columbia	The Sauder Family/ Heart and Stroke Foundation Professorship in Clinical Stroke Research	Clinical Stroke	BC & Yukon
Chen, Wayne University of Calgary	Heart and Stroke Foundation/Libin Cardiovascular Institute of Alberta Professorship in Cardiovascular Research	Cardiology	Alberta, NWT & Nunavut
Butcher, Ken University of Alberta	Heart and Stroke Foundation Professorship in Stroke Research	Stroke	Alberta, NWT & Nunavut
Hill, Michael University of Calgary	Heart and Stroke Foundation/Hotchkiss Brain Institute Professorship in Stroke Research	Stroke	Alberta, NWT & Nunavut
Menon, Bijoy K. University of Calgary	The Heart and Stroke Foundation/University of Calgary Professorship in Brain Imaging	Stroke	Alberta, NWT & Nunavut
Schmoelzer, Georg M. University of Alberta	The Heart and Stroke Foundation/University of Alberta Professorship in Neonatal Resuscitation	Neonatal Resuscitation	Alberta, NWT & Nunavut

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



Appendix E

Provincial Personnel Awards

Dr. Gustavo Saposnik (St. Michael's Hospital) was funded in 2018-2019 through his Mid-Career Investigator Award, awarded in 2017-2018.

Alberta, NWT & Nunavut

New Investigator Awards

Awardee	Research Institution	Project	Term	18-19 \$	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
Murias, Juan [‡]	University of Calgary	Healthy vasculature for successful aging: The optimal prescription of exercise as medicine.	2018-2022	60,000	260,000
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
Steinback, Craig D. [‡] & [§]	University of Alberta	Neural control of blood pressure in healthy and complex pregnancies.	2018-2022	60,000	260,000
Sutendra, Gopinath [‡]	University of Alberta	Metabolic modulation as a novel therapy for chemotherapy-induced cardiotoxicity.	2018-2022	60,000	270,000

BC & Yukon

Robert Hayden Research Fellowship

Awardee	Research Institution	Project	Term	18-19 \$	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	4,167	150,000

Manitoba

Sanofi Canada - Heart & Stroke 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 recipient. This award is partnered with Health Canada.

[‡] Joint title Alberta New Investigator and National New Investigator

[§] Joint title Alberta New Investigator and Improving Heart and Brain Health for Women: Seed/Catalyst Grant recipient

Ontario

Clinician Scientist

Awardee	Research Institution	Project	Term	18-19 \$	Total \$
Bhatia, Rajan S.	Women's College Hospital	Reducing low value cardiac care.	2017-2021	70,000	280,000
Chih, Sharon	University of Ottawa Heart Institute	Coronary anatomic-physiologic alterations and novel therapies in cardiac allograft vasculopathy.	2018-2022	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
Dowlatsahi, Dariush	Ottawa Hospital General Campus	RecoverNow: early mobile tablet-based speech therapy for post-stroke aphasia.	2018-2021	80,000	240,000
Epelman, Slava	University Health Network	Distinct mononuclear phagocyte subsets mediate cardiac tissue injury and repair.	2015-2019	70,000	280,000
Leong, Darryl	McMaster University	Frailty and cardiovascular disease.	2017-2021	70,000	280,000
Lin, Steve	St. Michael's Hospital	Optimizing cerebral oxygenation and metabolism in cardiac arrest.	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
Roifman, Idan	Sunnybrook Health Sciences Centre	Harnessing cardiovascular imaging to improve patient outcomes.	2018-2022	70,000	280,000
Udell, Jacob A. [§]	Women's College Hospital	Disruptive innovation in heart disease research.	2016-2020	5,000	280,000
Wijeyesundera, Harindra C.	Sunnybrook Research Institute	A pan-Canadian network for real world evidence in health technology assessments: applications in trans-catheter aortic valve implantation (TAVI).	2018-2021	80,000	240,000

Mid-Career Investigator

Awardee	Research Institution	Project	Term	18-19 \$	Total \$
Atzema, Clare L.	Institute for Clinical Evaluative Sciences	Atrial fibrillation in the emergency department: Standardizing and improving care to reduce strokes and safely keep patients in their homes.	2018-2022	80,000	320,000
Austin, Peter C.	Institute for Clinical Evaluative Sciences	Statistical methods for cardiovascular research.	2018-2022	80,000	320,000
Bolz, Steffen-Sebastian	University of Toronto	Unlocking the potential of microvascular research, from discovery to the patient's bedside.	2018-2022	80,000	320,000
Chauhan, Vijay S.	Toronto General Research Institute	Electrical sources and substrate in human atrial fibrillation.	2015-2019	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.	University of Toronto	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

[§] Joint title National New Investigator and Ontario Clinician Scientist Phase I

Awardee	Research Institution	Project	Term	18-19 \$	Total \$
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
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
Salbach, Nancy M.	University of Toronto	Improving mobility and physical activity through stroke prevention and rehabilitation interventions.	2018-2022	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 Medical School Scholarship

Awardee	Supervisor	Research Institution	18-19 \$
Selya Amrani	Alarcon, Emilio	University of Ottawa	5,000
Simon Beshara	Shoamanesh, Ashkan	McMaster University	5,000
Chloe Brown	Maynes, Jason	University of Toronto	5,000
Laavanya Dharmakulaseelan	Boulos, Mark	University of Toronto	5,000
Matthew Hewak	Hamilton, Douglas	Western University	1,000
Farzad Izaddoust Dar	Saha, Tarit	Queen's University	5,000
Timothy Lee	Hegele, Rob	Western University	4,500
Xingy (Robin) Liu	Hegele, Rob	Western University	4,500
Kevin Si	Amy Yu	University of Toronto	5,000
Kevin J. Um	Richard P. Whitlock	McMaster University	5,000
Ryan Wang	Richard Swartz	University of Toronto	5,000
Leza (Lisa) Youseff	Alexandra Pikula	University of Toronto	5,000

Newfoundland and Labrador

Award	Research Institution	18-19 \$
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

Myles O'Brien, Brittany Roberts, Eilidh MacDonald, Laura Smith, and Philippe Tremblay (left to right) were the recipients of 2018 Nova Scotia's BrightRed Student Research Awards.

BC & 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.

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	18-19\$
Thanassoulis, George	John J. Day M.D. Award	McGill University Health Centre	Genomics of aortic stenosis.	10,000
ElAli, Ayman	Louise Rousselle Trottier Award	Université Laval	Neurovascular restoration in stroke: role of dickkopf-related protein-1 (DKK1).	10,000
Bub, Gil	Groupe Jean-Coutu (PJC) Inc. Award	McGill University	Neurally mediated arrhythmogenesis.	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	18 -19 \$
Mylène Shen	7,000

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	18 -19 \$
Mélanie Henderson	19,113

Nova Scotia

Dr. Gregory Ferrier Award

Award: \$5,000

Awardee	Research Institution	Project
Quinn, T. Alexander	Dalhousie University	Role of the intracardiac nervous system in stress-induced arrhythmias with popdc1 mutation.

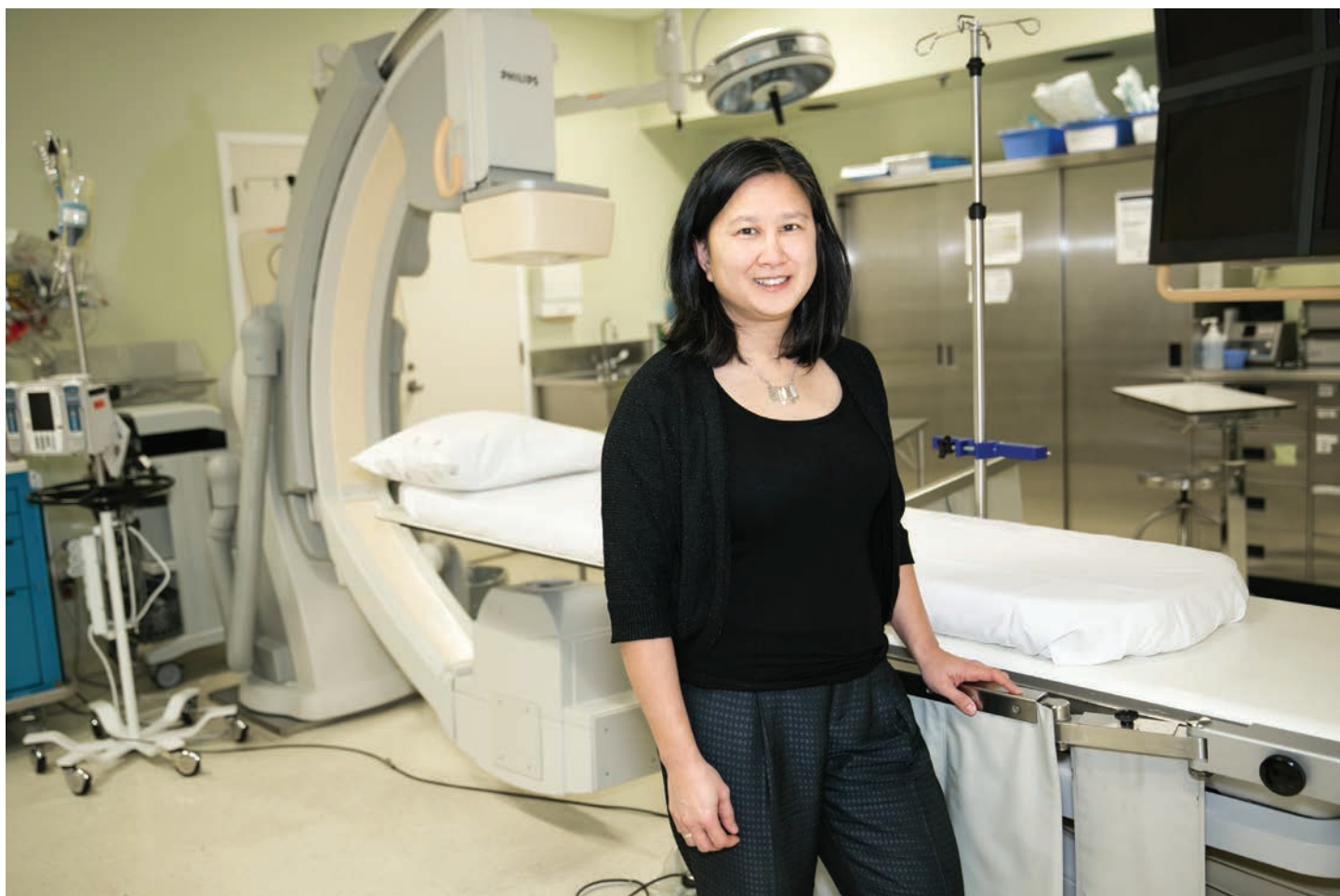
BrightRed Student Research Award

Award: \$5,000

Awardee	Research Institution	Project
O'Brien, Myles	Dalhousie University	Can exercise training attenuate prolonged sitting-induced declines in vascular and cognitive function in older adults?
Tremblay, Philippe	Dalhousie University	The effect of Left Ventricular Assist Devices (LVAD) support on pulmonary hypertension in end-stage heart failure.
MacDonald, Eilidh	Dalhousie University	Effects of stretch on heart rate and rhythm.
Roberts, Brittany	Dalhousie University	Brain function and regular physical activity after aerobic exercise.
Smith, Laura	Dalhousie University	Neuromechanisms underlying prism adaptation in children.

Sandra Rashed Bursary

Award Name	Research Institution	Project	18-19\$
Kienesberger, Petra C.	Dalhousie University	The role of autotaxin-lysophosphatidic acid signaling in obesity-related heart disease.	2,000



Appendix G

Research Committee Members

Dr. Susanna Mak was a member of the Scientific Review Committee Leadership team in 2018-2019 and was a recipient of a 2018-2019 Improving Heart and Brain Health for Women Grant-in-Aid award.

2018-2019 Council on Mission: Priorities, Advice, Science and Strategy (CoMPASS)

Michael McGillion, PhD, Co-Chair
McMaster University

Kim Griffin, Co-Chair
Maritime Electric in Prince Edward Island

Rick Adams
Health PEI

Dave Allingham
BWV Technologies, Inc.

Rob Beanlands, MD
University of Ottawa Heart Institute

Debbie Benczkowski
Past Chief Operating Officer, Alzheimer Society of Canada

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

Robert Hegele, MD
Western University

Michael Hill, MD
University of Calgary

Karin H. Humphries, DSc
University of British Columbia

Maira Kapral, MD
University of Toronto

Andrew Krahn, MD
University of British Columbia

Mary L'Abbé, PhD
University of Toronto

Caroline Lavallée
Communications Professional

Kelly Lendsay
Indigenous Works

Peter Liu, MD
University of Ottawa Heart Institute

Ariane Marelli, MD
McGill University Health Centre

Gary Newton, MD
Sinai Health System

Philippe Pibarot, DVM, PhD
Université Laval

Andrew Pipe, MD
University of Ottawa

Catherine Praamsma
Health Canada (retired)

Jeffrey Reading, PhD
Simon Fraser University

Heather Ross, PhD
University Health Network

Shelagh Ross
K2 Animal Health Publishing

Mike Sharma, MD
McMaster University

Eric Smith, MD
University of Calgary

John C. Spence, PhD
University of Alberta

Wendy St. Denis
Skate Canada

Julie St-Pierre, MD, PhD
Université de Sherbrooke

Sandra Thornton
EQUUS REA LTD.

Christian Vaillancourt, MD
Ottawa Hospital Research Institute

Thomas Warshawski, MD
University of British Columbia

2018-2019 Scientific Review Committee Leadership

Gary Newton, MD, Executive 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
Mark Crowther, MD, Chair
McMaster University

Susanna Mak, MD, Deputy Chair
Sinai Health System

Clinical cardiovascular and cerebrovascular research: mechanistic studies and clinical trials / health services research B
Todd Anderson, MD, Chair
Foothills Hospital

Lisa Mielniczuk, MD, Deputy Chair
University of Ottawa Heart Institute

Integrative studies: genetic manipulations / imaging / bioengineering
Howard M. Leong-Poi, MD, Chair
St. Michael's Hospital

Michael Sean McMurtry, PhD, Deputy Chair
University of Alberta

Basic science stroke / neurophysiology / neuroregulation
James Eubanks, PhD, Chair
Toronto Western Hospital

Michael Jackson, PhD, Deputy Chair
University of Manitoba

Cellular Biochemistry, Pharmacology and Electrophysiology
Anthony Gramolini, PhD, Chair
University of Toronto

Robert Rose, PhD, Deputy Chair
University of Calgary

Molecular basis of cardiac and vascular function
Mike Czubryt, PhD, Chair
St. Boniface G.H. Research Centre

Jonathan Choy, PhD, Deputy Chair
Simon Fraser University

Thrombosis / lipids and lipoproteins / fundamental nutrition research
Murray Huff, PhD, Chair
Robarts Research Institute/Western University

Elizabeth Rideout, PhD, Deputy Chair
University of British Columbia

Behavioural Research/Health Psychology/Rehabilitation/Population Health
Kathryn King-Shier, PhD, Chair
University of Calgary

Jonathan McGavock, PhD, Deputy Chair
University of Manitoba

Senior Personnel
Grant Pierce, PhD, Chair
St. Boniface G.H. Research Centre

Maira Kapral, MD, Deputy Chair
University of Toronto

Budget Review Committee
Sandra Davidge, PhD, Chair
University of Alberta

Celine Fiset, PhD, Deputy Chair
Université de Montréal



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

