

FISCAL YEAR 2018–19

# PHSA RESEARCH METRICS

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# PHSA RESEARCH METRICS FISCAL YEAR SUMMARY PHSa OVERALL

INDICATOR		KEY MEASURE DESCRIPTION	FY 2016-17	FY 2017-18	FY 2018-19
			Value	Value	Value
PRODUCING & ADVANCING KNOWLEDGE	1a	<b>Total Annual Grant Awards by Type</b> (including Major CFI Infrastructure grants)	<b>\$131,522,583</b>	<b>\$152,418,527</b>	<b>\$134,292,906</b>
		Salary Awards	14,205,812	13,731,347	13,121,094
		Infrastructure Awards	2,121,562	10,678,089	6,260,726
		Operating Grants	110,287,899	122,147,885	112,180,392
		Other	4,907,310	5,861,206	2,730,693
	1b	<b>Total Annual Grant Awards by RISE Sector</b> (including Major CFI infrastructure grants)			
		Government	57,406,340	75,675,710	65,855,459
		Non-Profit	57,394,081	57,711,527	50,949,809
		Industry	16,722,161	19,031,290	17,487,637
	1c	<b>CIHR Annual Grant Application Success Rate - PHSa Overall/Nat'l**</b> 2018-19 Foundation Grant (Open) 2018-09 Project Grant 2019-03 Project Grants	[See footnote]	11.1%/11.9% 15.4%/15.9% 19.7%/15.5%	0%/13% 17.7%/14.9% 20.3%/15.6%
1d	<b>Total # of Publications with Program Author</b>				
	BCCHR	840	943	858	
	BC Cancer	335	449	655	
	WHRI	476	585	670	
	BCCDC	211	215	305	
	BCMHSUS	80	82	61	
BUILDING RESEARCH CAPACITY	2a	<b>Total # of Research Trainees</b>	1,687	1,970	2,315
	2c	<b>Total # of Researchers</b> (excluding Category 3 – Affiliate Investigator)	793.5	817	788
	2e	<b>Research Support Fund Grants</b> (Tri-Council only)	\$4,273,685	\$3,973,494	\$4,049,673
Achieving Economic Benefits & Innovation	3a	# of Invention disclosures	53	41	48
		# of Provisional Patent applications filed	20	21	24
		# of PCT applications filed	5	3	6
		# of Patents Filed/Issued	16/37	18/30	12/17
	3b	# Active License Agreements	167	175	116
		# of Spin-off Companies	12	12	14
		<b>IP related revenue – Realized Revenue</b> BC Cancer BCCHR	\$258,713 \$23,665	\$285,169 \$40,921	\$445,861 \$66,713
ADVANCING HEALTH & POLICY BENEFITS	4a	<b>Clinical Trials</b> (including Non-PHSa PIs utilizing PHSa facilities and resources) # active trials at the end of the FY Cumulative Subject Enrollment at end of FY	541 92,366	561 149,773	619 47,600
		4b,c,d	<b>Registries as Research Resources</b> # of Research Requests/Approvals	264/250	211/200

\*\*CIHR phased out the Open Operating Program beginning in Fall 2014 and replaced it with the Foundation and Project Scheme Competitions so comparisons to previous FY's are not applicable.

# PHSA AGGREGATE ANALYSIS

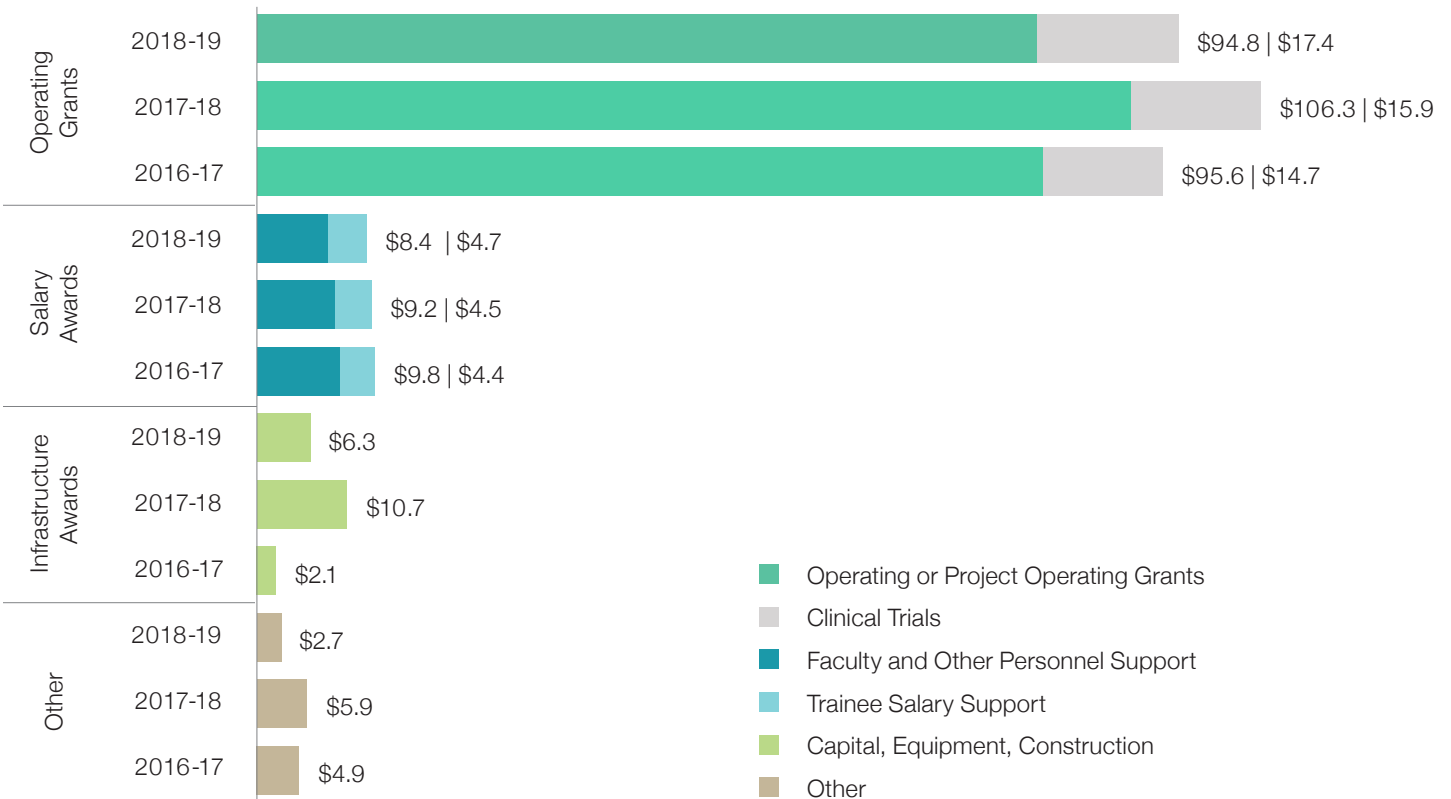
## Producing and Advancing Knowledge

In FY 2018-19, researchers affiliated with PHSA were awarded a total of \$134,292,906 a decrease of approximately 18% from FY 2017-18. This is partially attributed to the lack of any major CFI or BCKDF grant competitions during the fiscal year. Operating Grants (\$112,180,392) decreased by 8% from FY 17-18. This may be due in part to researchers who were successful in a previous year who did not submit again, leading to fewer “competitive” submissions. This can also be caused by an increase in applicants from new investigators, who are less likely to be funded on first try. Operating grants continue to make up the largest portion (83.5%) of total funding received. Operating grants support specific, time-limited research projects. While operating grants are the “bread and

butter” of research grants, salary awards are important to provide researchers with the protected time to successfully compete for operating grants and represent approximately 9.5% of total awards for the past five fiscal years.

A breakdown of funding types and subtypes by fiscal year can be found in Figure 1. For FY 2018-19, the subtype of Operating or Project Operating Grants garnered the largest portion of research funding in its type category. Clinical Trials funding continued to increase resulting in the highest percentage (12.5%) since reporting began in FY 12-13.

**FIGURE 1 Total PHSA Research Funding by Funding Type and Sub-Type by Fiscal Year**

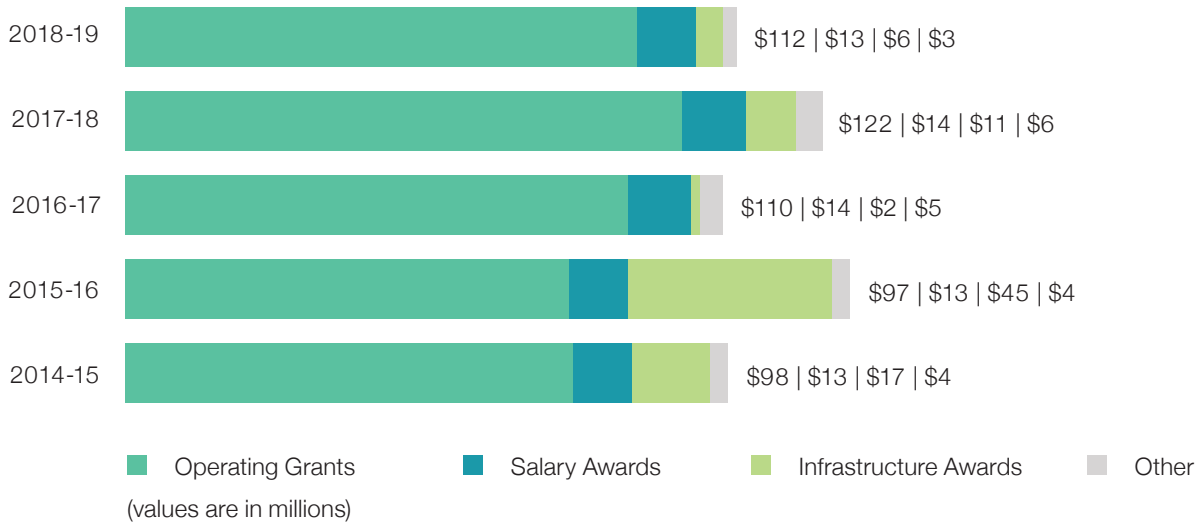


(values are in millions)

Research Support Fund grants total \$4,049,673 and represent funding to support the indirect costs of research for tri-council awards, but is not included in total research funding or the figures below. Because research support is a shared expense between

UBC and PHSA research programs, PHSA has negotiated to receive 66% of the applicable UBC ICP grant. Figure 2 shows Total Research Funding by Fiscal Year and Type for the past five fiscal years.

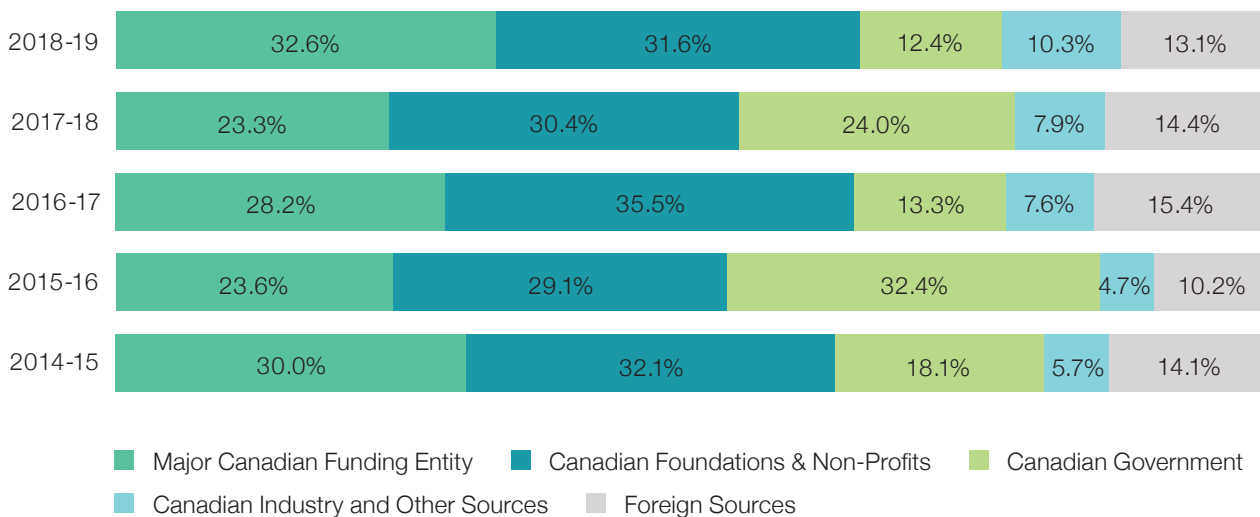
**FIGURE 2 Total PHSA Research Funding by Fiscal Year and Type**



A comparison of funding source by source category over five (5) fiscal years can be found in Figure 3. This figure, generated by compiling hundreds of potential sources into five categories, highlights the extent to which primary sources of funding vary from year to year. This year, both Major Canadian Funding entities and Canadian Foundations & Non-profits increased 10.5% to 64.2%

of the total, in line with other non-CFI/BCKDF competition years. The decrease in funding from Canadian Government is due to no major CFI and BCKDF competitions this fiscal year. Canadian Industry and Foreign sources remained relatively stable from last year's levels.

**FIGURE 3 Percentage of PHSA Research Funding by Funding Source Category by Fiscal Year**





In addition to the above, Figures 4 and 5 show the same award data by RISE sector (see Glossary – Appendix 1, pg. 63, for sector definition) both by fiscal year and by program for five fiscal years. Category percentages are relatively unchanged from FY 17-18.

**FIGURE 4 Percentage of PHSA Research Funding by RISE Sector and Fiscal Year**

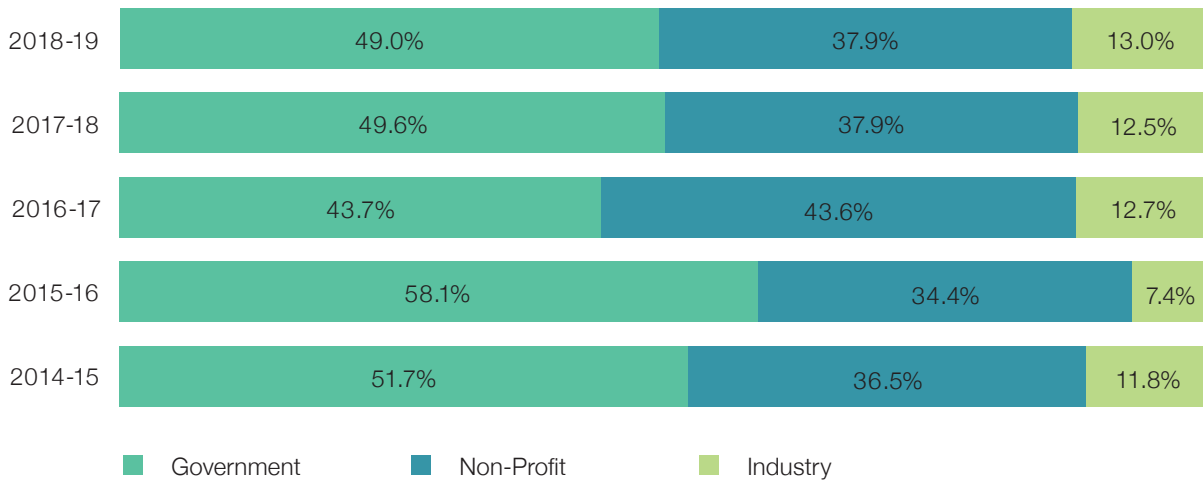
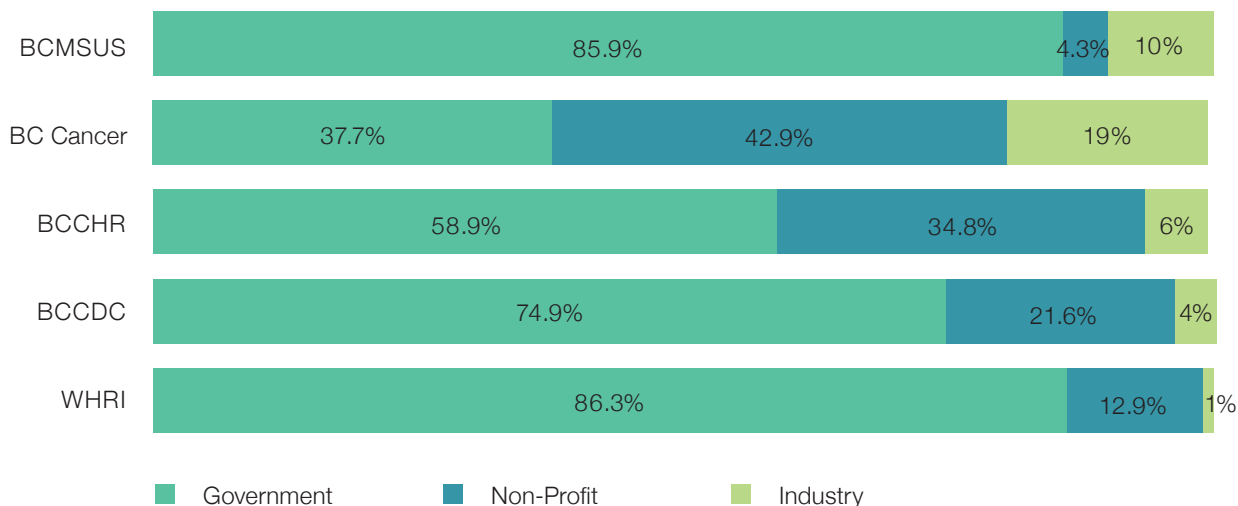


Figure 5 shows the percentage of funding by RISE sector and program for FY 2018-19. This graph reflects the variations in funding sources for all PHSA research entities, as BCMHSUS, BCCDC and WHRI rely heavily on government funding.

**FIGURE 5 Percentage of PHSA Research Funding by RISE Sector and Program**



The application success rate is reported for three separate CIHR grant opportunities for FY 18-19: 1) The 2018-19 Foundation Grant Open competition, 2) The 2018-09 Fall Project Grant competition, and 3) The 2019-03 Spring Project Grant competition. Results (see table 1) are shown for National and PHSA research entities combined.

PHSA had no approved 2018-19 Foundation Grant Open awards. Results in this competition were impacted by CIHR’s decision to sunset the Foundation Grant Program after four completed Foundation Grant competitions. The decision was made as evidence “highlights that there are unintended consequences in funding distribution within the Foundation Grant Program that are not evident in the Project Grant Program (and were not in

the former Open Operating Grant Program). Furthermore, the program’s peer review process does not align with our renewed commitment to face-to-face review and has not reduced reviewer burden, as originally envisioned.” Issues related to the Foundation Program, and knowledge that CIHR was re-evaluating its funding programs, led to fewer Foundation applications from research entities both nationally and at PHSA. Nationally, this is the smallest cohort to date (216 vs. 1,366 in 2014) with the largest percentage of applicants invited to Stage 2 (82% vs. 34% in 2014). In addition, only one 1 of 23 submissions from British Columbia was funded.

However, PHSA enjoyed success in both Project Grant programs and was above the national averages resulting in 29 awards over the two competitions.

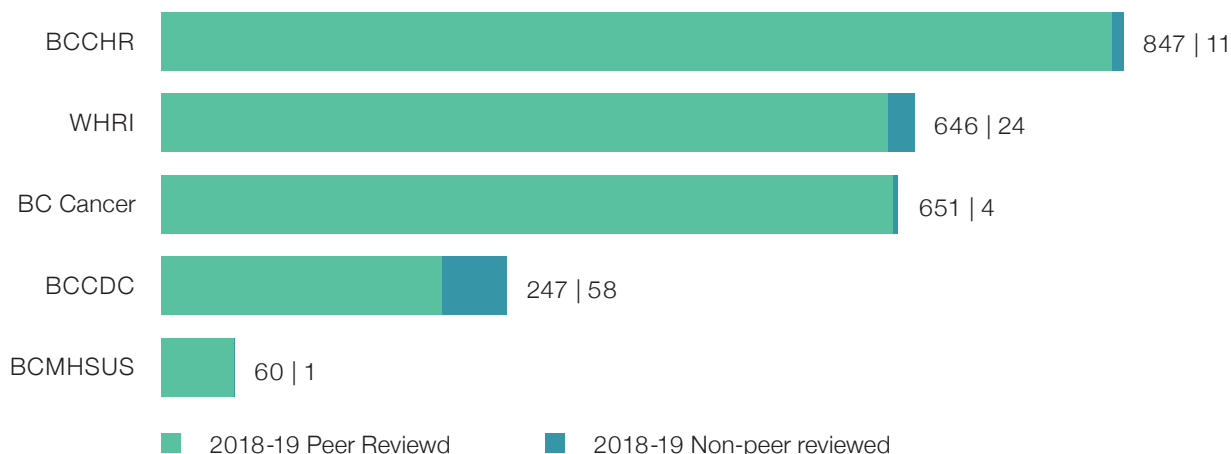
**TABLE 1 PHSA Annual Grant Application Success Rate**

Grant Funding Opportunity	National Overall Results % (Approved/Submitted)	PHSA Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	0% (0/5)
2018-09 Project Grant	14.9% (371/2,484)	17.7% (14/79)
2019-03 Project Grants	15.6% (545/3,415)	20.3% (15/74)

Statistics for publications were collected utilizing SciVal with Scopus as the source. Publications were collected in the categories of books, book chapters, peer-reviewed publications inclusive of published journal articles, case reports, essays, literature reviews, and reports produced for government.

See Figure 6 for a breakdown of total publications by program and category. Totals are reported by calendar year for all programs. A breakdown by types is shown in the program specific sections due to low sample size.

**FIGURE 6 Total Number of Publications by Agency and Category**



## Building Research Capacity

PHSA research entities identified 788 researchers in categories 1, 2, and 5 in FY 2018-19, down 19 from FY 2017-18 (see Figure 7). These reductions are attributed to decreases in researchers at both BCHHR (6% reduction since FY 2016-17) and BC Cancer (8% reduction since FY2016-17). Category 3 researchers are defined as Affiliate Investigators and represent those researchers with a primary affiliation with a research or academic institution external to PHSA, but who wish to remain collaborators with PHSA researchers. PHSA does not track category 3 members funding, publications or trainees. Details on affiliate members can be found in each program section. BC Cancer, BCMHSUS and BCCHR are

able to report their researchers utilizing BCCHR defined categories, which highlight the amount of time protected for research purposes. BCCDC and WHRI define researchers utilizing a methodology that best reflects the type of work and relationships they have with their researchers. Further information on these methods can be found in specific program sections. An attempt to count each researcher only once was made by attributing each researcher to the entity where the bulk of salary and/or support are received. Category 1 researchers are best positioned to compete for external grants.

**FIGURE 7 Total Number of PHSA Researchers by Category and FY**

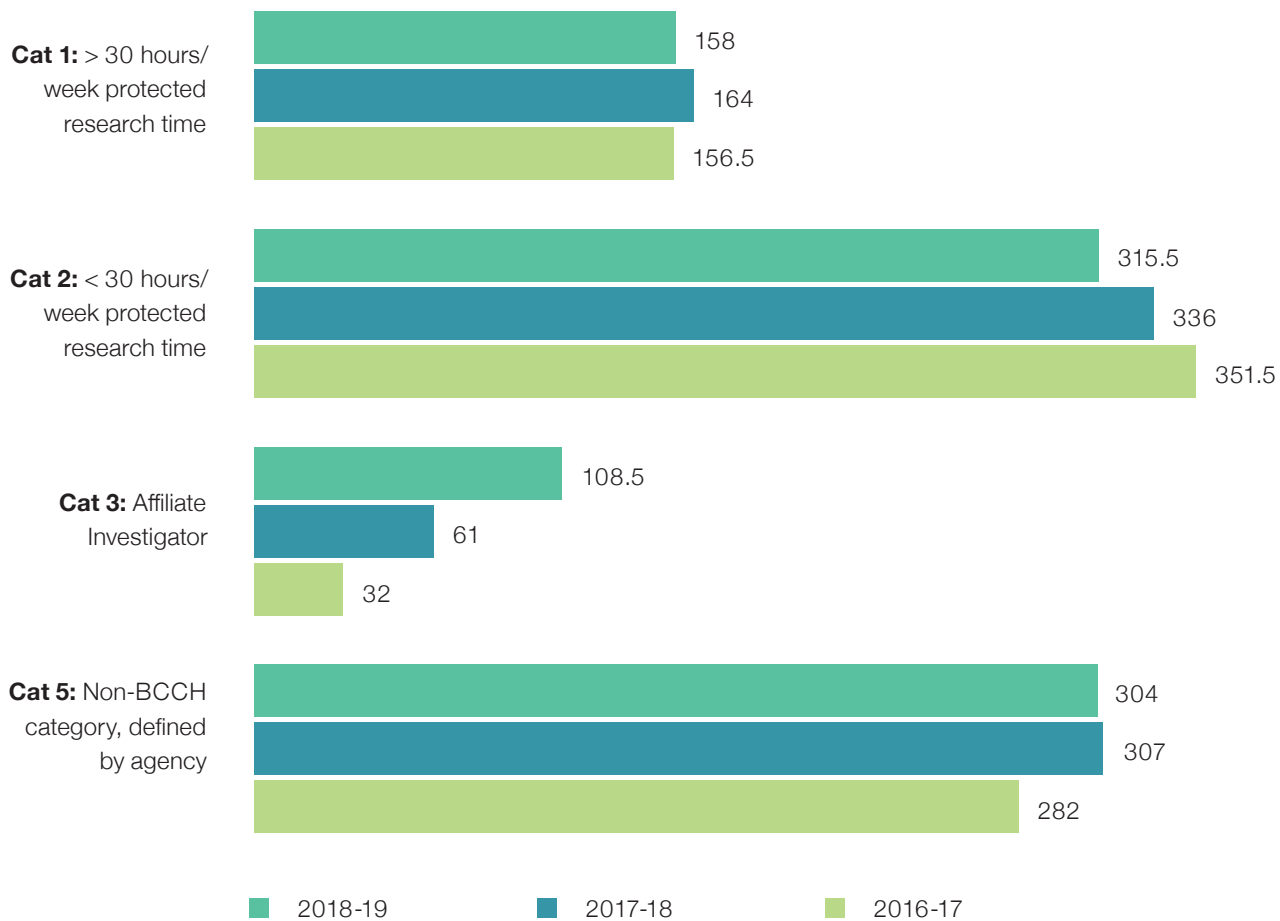


Table 2 provides summary statistics by program at the Principal Investigator (PI) level. PHSA received funding for 381 Principal Investigators collaborating with 1,516 UBC co-investigators for 1,301 unique studies in FY 2018-19. This excludes Salary and Other award types as these are not designated for specific studies and the number of co-investigators from other academic institutions.

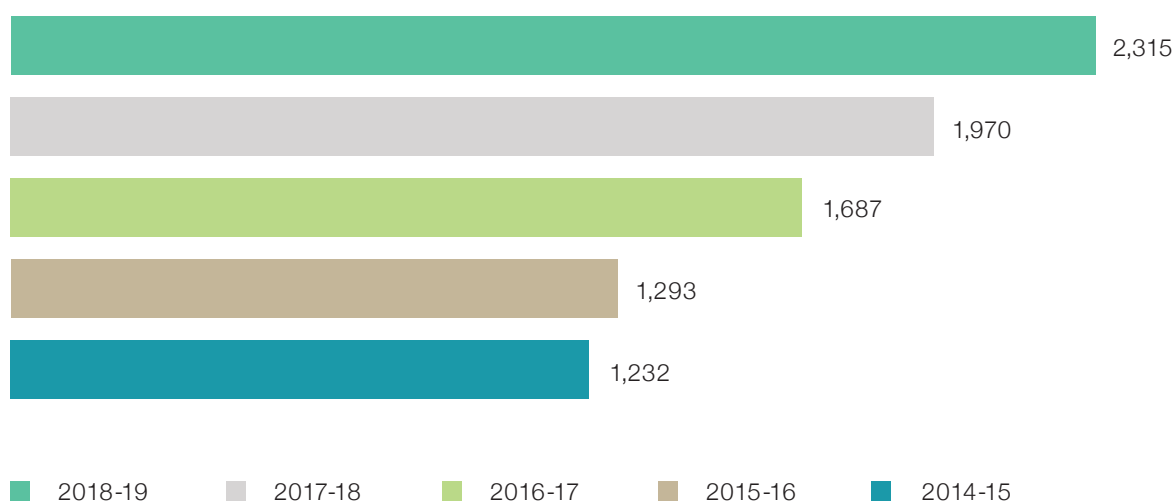
**TABLE 2 Number of Funded Studies, PI's, UBC Co-PI's and Award Amount by Program**

PROGRAM	# of Unique Studies	# of Unique PI's by Program	# of UBC Co-PIs by Program	Total Award Amount
BC Cancer	554	147	690	66,229,643
BCCHR	647	185	639	46,284,661
WHRI	47	21	125	2,404,786
BCCDC	39	21	52	2,307,577
BCMHSUS	14	7	10	1,214,450
<b>GRAND TOTAL</b>	<b>1,301</b>	<b>381</b>	<b>1,516</b>	<b>\$118,441,118</b>

During FY 2018-19, PHSA researchers provided training and supervision to a total of 2,315 research trainees, an increase of 345 or 17.5% from FY 2017-18. This is a significant metric because the training of Post-doctoral fellows (PDFs), Doctoral, and Masters Trainees in particular is a major indicator of the degree to which PHSA and its research entities are supporting their

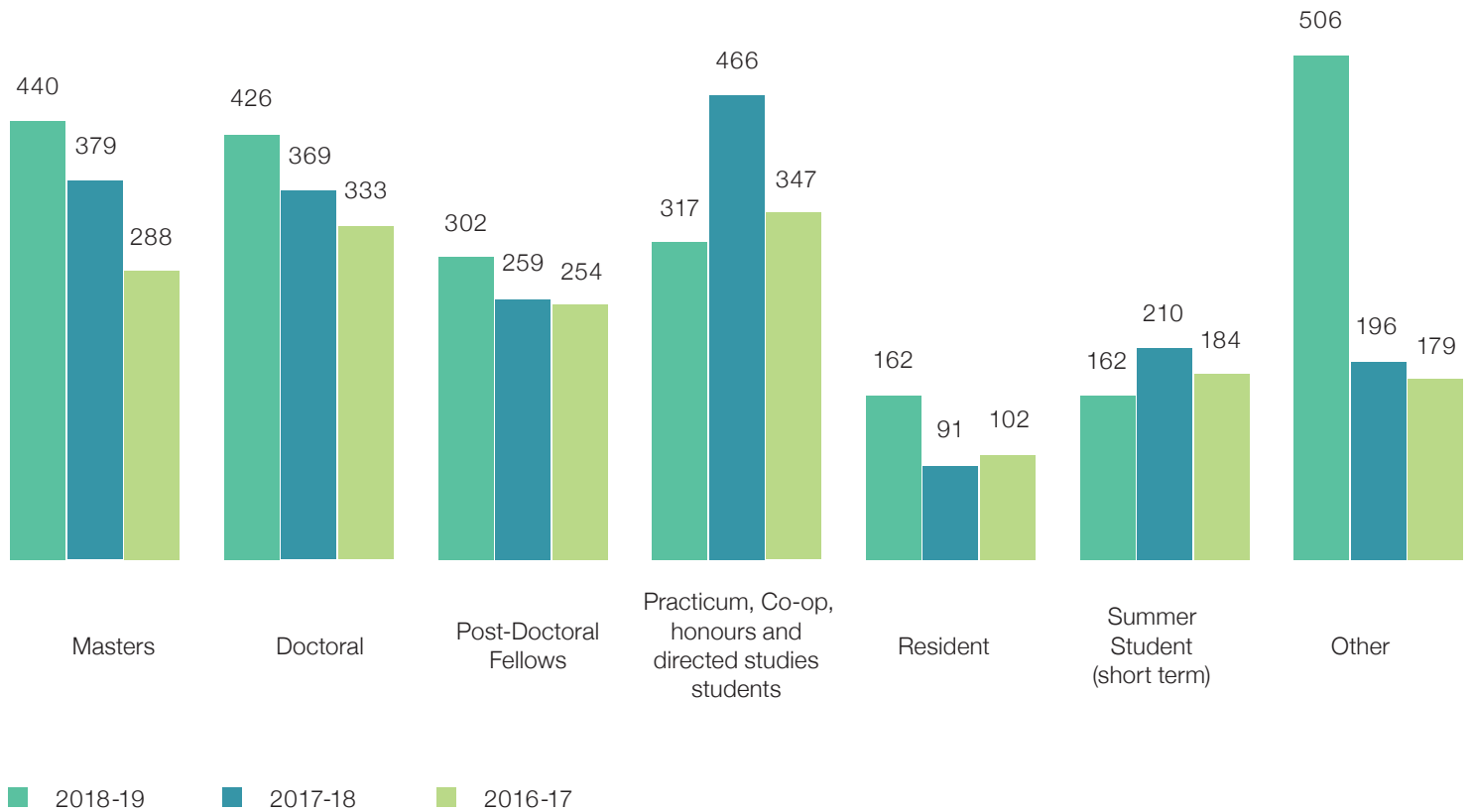
academic mandate and ensuring the next generation of highly qualified research personnel. In addition, Post-doctoral fellows and Doctorals contribute significantly to the conduct of research under the supervision of principal investigators. See Figure 8 and 9 for the number of trainees by type and fiscal year for PHSA overall.

**FIGURE 8 Total Number of PHSA Trainees by Fiscal Year**



**FIGURE 9 Total Number of PHSA Trainees by Type by Fiscal Year**

The significant increase in the Other category in FY 2018-19 is due to BCCHR combining Practicum, Co-op students with Summer students in their data collection.

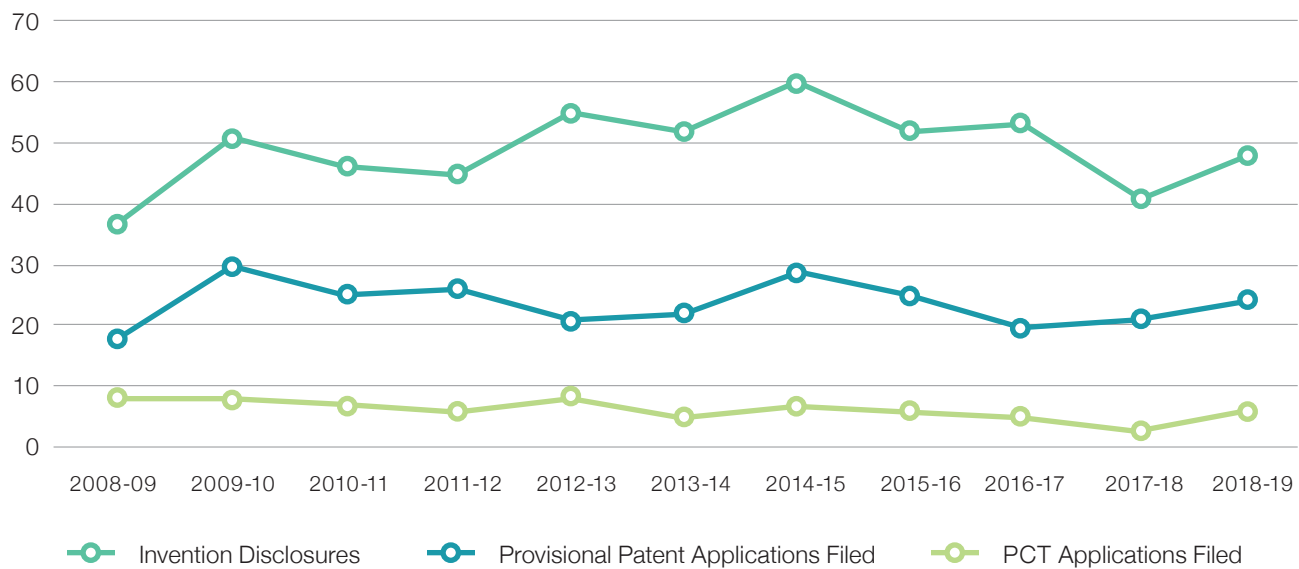


### Achieving Economic Benefits and Innovation

The patent process, along with data on licensing and spin-off companies, is provided to measure the commercialization of discoveries, and other economic benefits resulting from these discoveries. Data are included for BC Cancer and BCCDC (through the TDO), and BCCHR (through UILO). Program specific IP related revenue data is provided in program sections.

See Figure 10 for total number of invention disclosure, provisional patent and patent cooperative treaties (PCT) applications filed by fiscal year. Invention disclosures are primarily internal documents, filed with TDO to inform the decision of whether or not to proceed with the patent process. The next stage in the patent process is to file provisional patent applications followed by patent cooperative treaties, or PCTs, which act as a gateway to world-wide patents, each step involving greater specificity.

**FIGURE 10 Total # of Invention Disclosures, Provisional Patent and PCT Applications Filed by Fiscal Year**



See Figure 11 for the number of national provisional patent applications filed and issued. Applications filed in a given year represent different applications than those which are approved in that same year.

**FIGURE 11 Total # of National Provisional Patent Applications Filed and Issued by Fiscal Year**

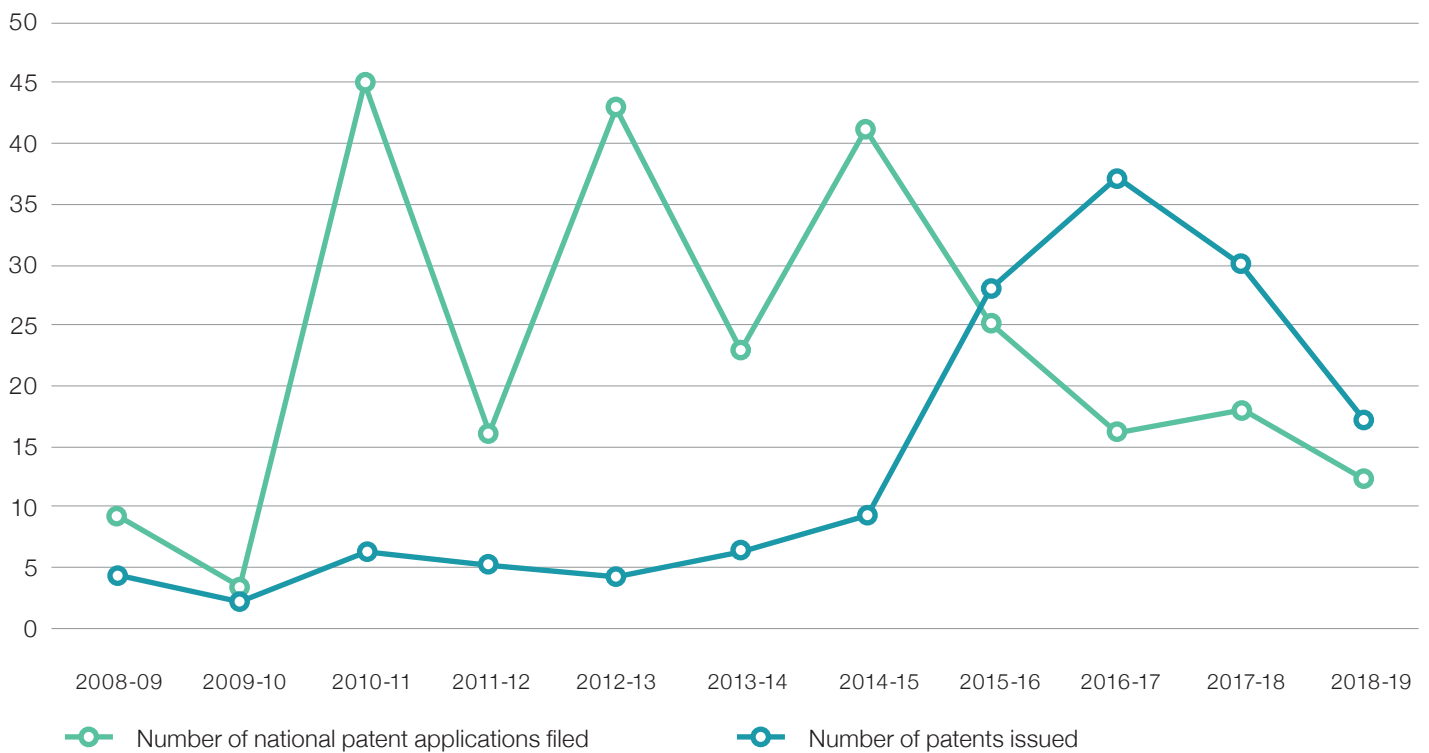
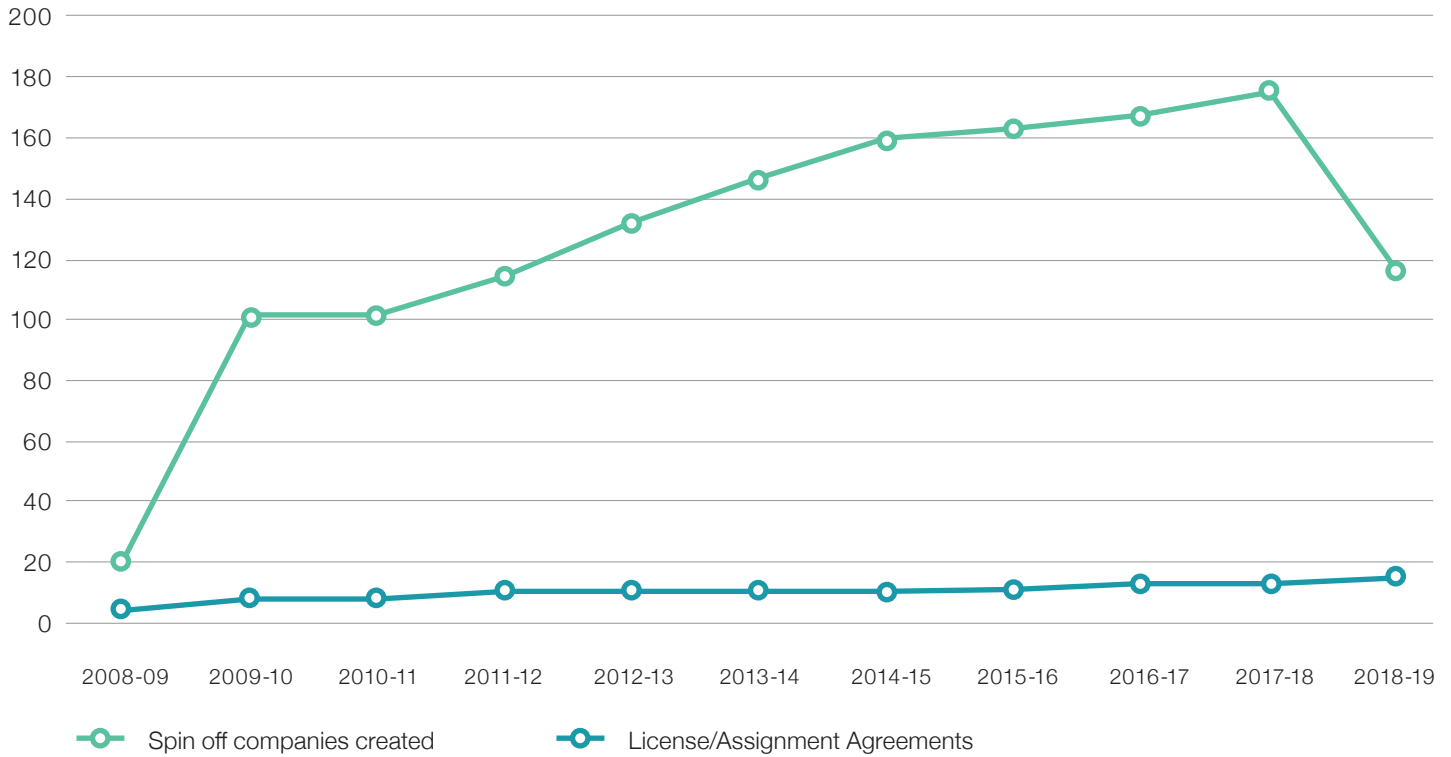


Figure 12 shows all licensing agreements and spin-off companies for PHSA Overall, combined for the past 10 years. Data is collected from the Technology Development Office (TDO) of BC Cancer and through UBC's University-Industry Liaison Office (UILO) which includes activities from BCCHR and BCMHSUS

researchers. Program specific numbers can be found in the BC Cancer and BCCHR program sections. Two spin-offs were created; Cuprous and ARTMS (BC Cancer). The decline in the License Agreements is due to a data collection change to reflect all active license agreements during the fiscal year.

**FIGURE 12 License/Assignment Agreements and Spin-Off Companies by Fiscal Year**



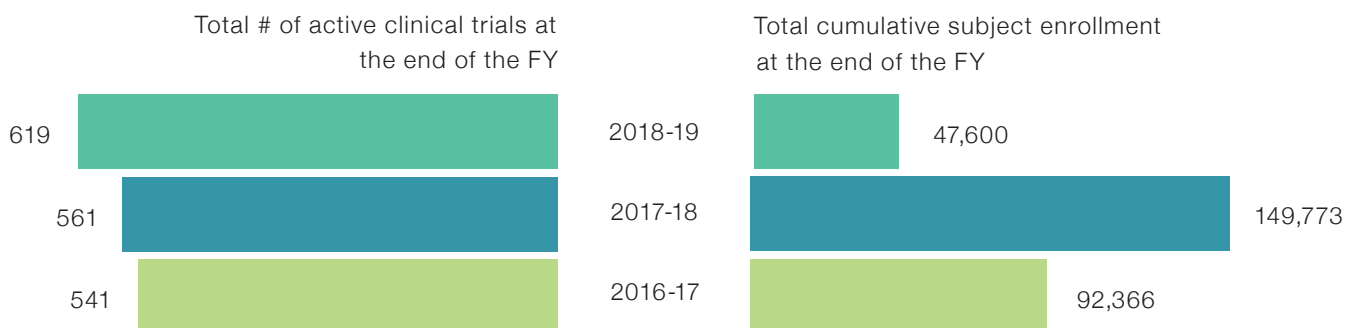
### Advancing Health and Policy Benefits

For FY 2018-19, the number of clinical trials increased by 58 to 619. The large decrease in enrollment, is primarily due to the termination of the CLIP [Community Level Interventions for Pre-eclampsia] Study in June of 2018. See Figure 13 for number of Clinical Trials and Total Cumulative Subject Enrollment by Fiscal Year.

clinical evaluation of new drugs, many of which achieve therapeutic benefits beyond those offered by standard of care treatment. Clinical trials also represent the final step in the translational research continuum, which begins with basic or discovery research, includes development of particular products, and culminates with the testing of those products in rigorous trials.

The opportunity to participate in clinical trials is an important metric because it offers patients the opportunity to participate in

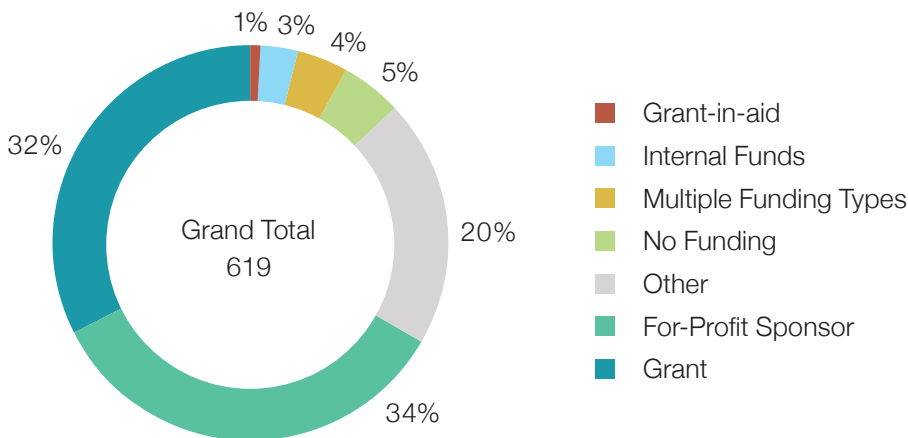
**FIGURE 13 Total # of Clinical Trials and Total Cumulative Subject Enrollment by Fiscal Year**



Grant funding type for Clinical Trials is sourced from the REB (Research Ethics Board) file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 68 for a definition of funding types). The percentage of trials that are

industry sponsored (For-Profit Sponsor) was 34.1%, down less than a half percent from FY 17-18. See Figure 14 for a breakout of trials by funding type percentage and the details on the number of trials in each category.

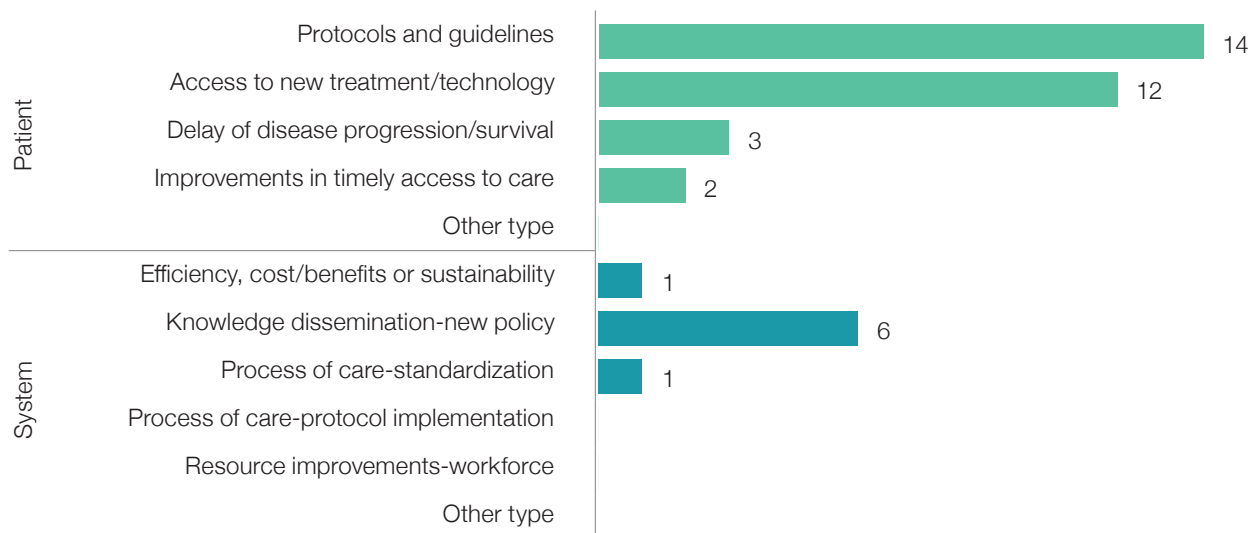
**FIGURE 14 PHSA Percent of Clinical Trial Grant Funding Type – Active and Terminated Trials within the FY**



In FY 2018-19, the programs completed the survey that asked respondents to identify guidelines, drugs, diagnostic agents or devices adopted or approved in FY 2018-19 because of research driven by PHSA researchers or collaborative research in which PHSA researchers were key participants. The survey was not intended to be exhaustive, but to capture the significant, top of mind advancements, and, further, asked respondents to identify

the benefits to patients, population health, and/or health system sustainability of those advancements. Respondents were asked to classify the stated benefits into categories to more fully summarize the responses. Figure 15 is a summary of the classification of benefits realized through research. These represent the top choice of category as many benefits were classified into more than one category.

**FIGURE 15 Classification of Benefits Summary for All Programs**





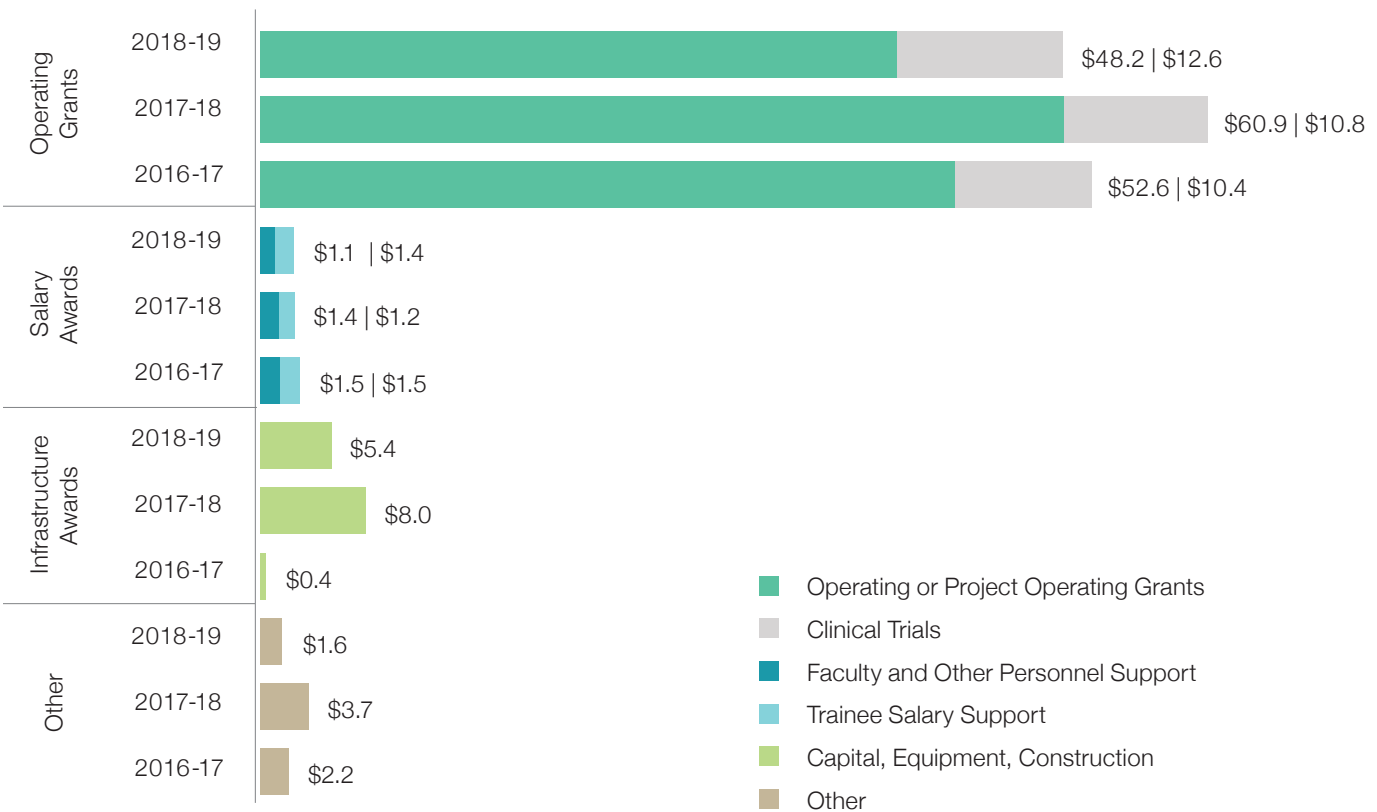
## Producing and Advancing Knowledge

In FY 2018-19, researchers affiliated with BC Cancer were awarded a total of \$70,373,853 in research funding which represents a \$15,626,260 or 18% decrease over FY 17-18. Operating Grants (\$60,808,133) represent 86.4% of total awards. Large infrastructure awards totaled \$5,421,510 and were the result of a large awards for the following; Canada's genomics enterprise (CGEn): A national genomic tools network for transforming life science research.

A breakdown of funding types and subtypes can be found in Figures 16.

BC Cancer's portion of the Research Support Fund grant for FY 2018-19 is \$1,684,204 but is not included in total research funding or the figures below.

**FIGURE 16 Total BC Cancer Research Funding by Funding Type and Sub-type by Fiscal Year**

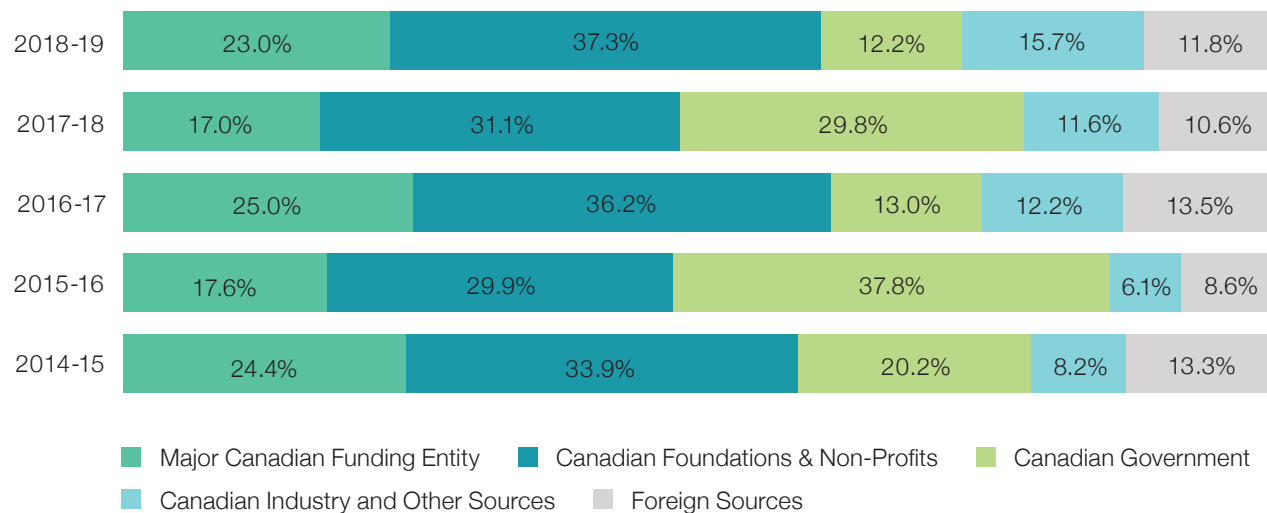


(values are in millions)

Figure 17 shows the percentage of funding by funding source category for the past 5 fiscal years. The Major Canadian Funding Entity category includes CIHR and its Institutes, Genome Canada and the Provincial Genome Agencies, Michael Smith Foundation for Health Research (MSFHR), Natural Sciences & Engineering Research Council (NSERC), and the Social Sciences & Humanities

Research Council (SSHRC). While there has been fluctuation between categories, Canadian sources of funding have remained approximately 80% of total funding, each year. Of note this FY, is the increase in Canadian Foundations & Non-profit funding as well as the decrease in Canadian Government.

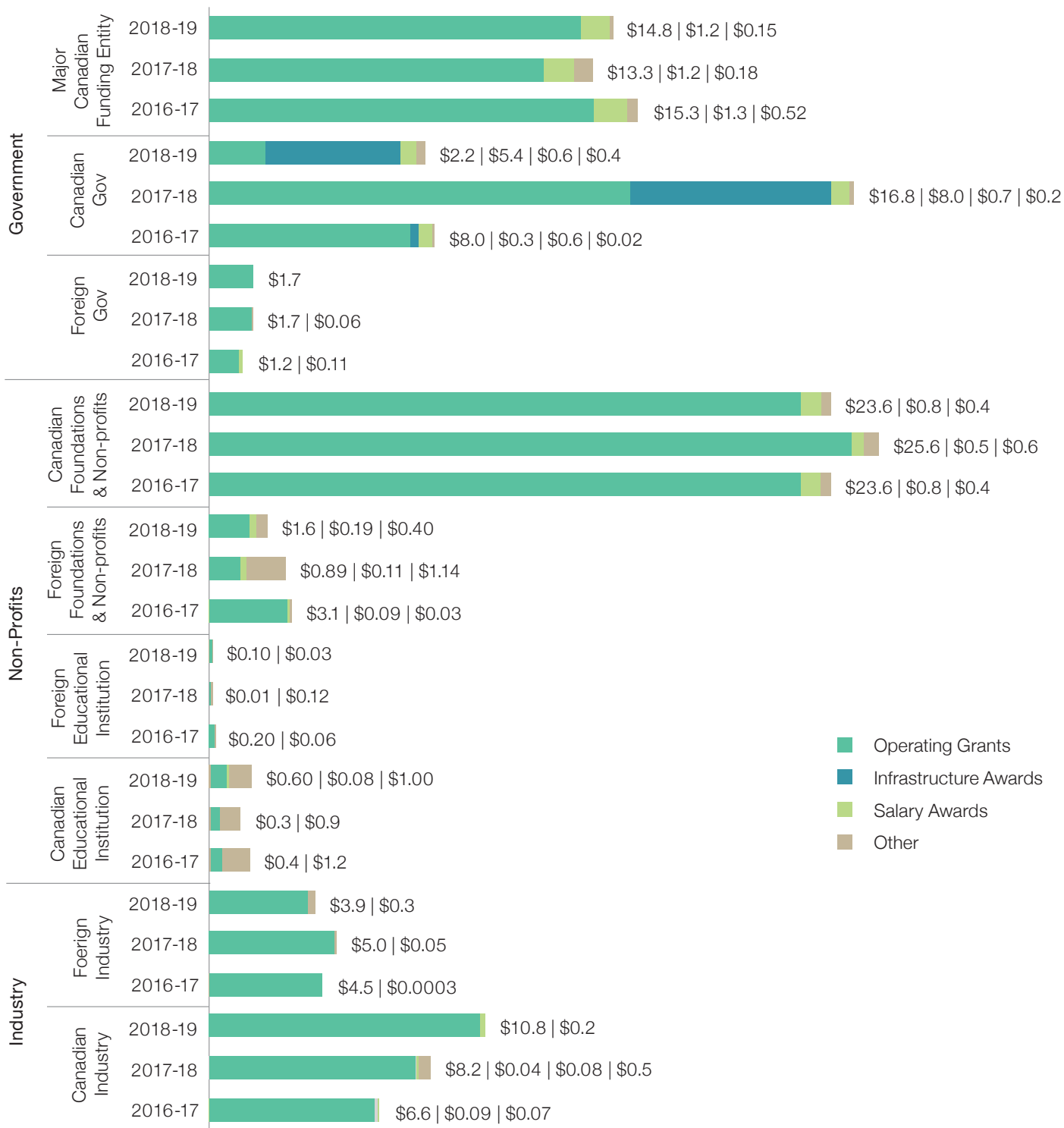
**FIGURE 17 Percentage of BC Cancer Research Funding by Funding Source Category by Fiscal Year**



As in the PHSa overall section, BC Cancer's Total Award Funding is shown by RISE sector, Funding Source Category and Funding Type. In FY 18-19, the top funding sources are, Canadian Foundations & Non-profits, Major Canadian Funding Sources (CIHR, MSFHR,

NSERC, SSHRC and Genome Canada), Canadian Industry and Canadian Government. Figure 18 details the major funding categories by funding type.

**FIGURE 18 BC Cancer Research Funding by RISE Sector, Funding Source Category and Type by Fiscal Year**



(values are in millions)

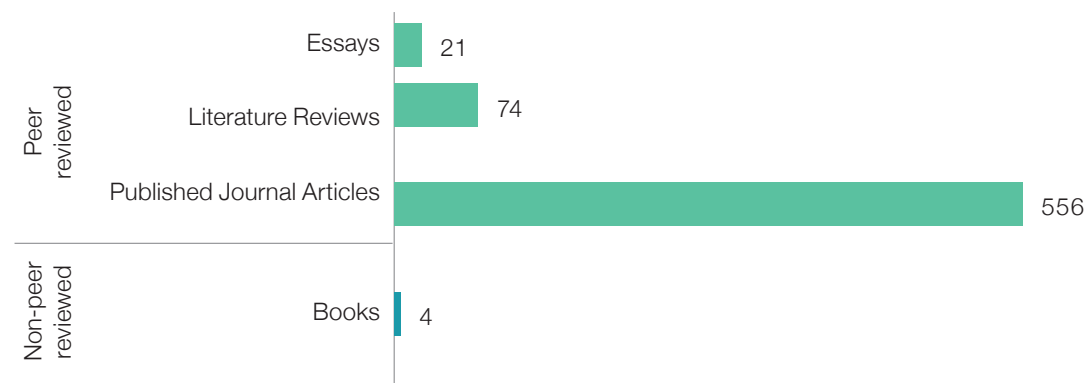
Reporting for CIHR Funding competitions includes one Foundation Grant and two Project Grant competitions during FY 2018-19. While BC Cancer did not receive any Foundation Grant awards, they were successful in both Project Grant competitions for a total of 8 awards, beating the national average in the Fall 2018 Project competition.

**TABLE 3 BC Cancer Annual Grant Application Success Rate**

GRANT FUNDING OPPORTUNITY	National Overall Results % (Approved/Submitted)	BC Cancer Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	0% (0/1)
2018-09 Project Grant	14.9% (371/2,484)	18.8% (6/32)
2019-03 Project Grants	15.6% (545/3,415)	6.7% (2/30)

Total number of publications by type and category of peer vs. non-peer review is seen in Figure 19. BC Cancer had a total of 655 publications, with a majority (556) of published journal articles.

**FIGURE 19 Total Number of BC Cancer Publications by Type and Category**

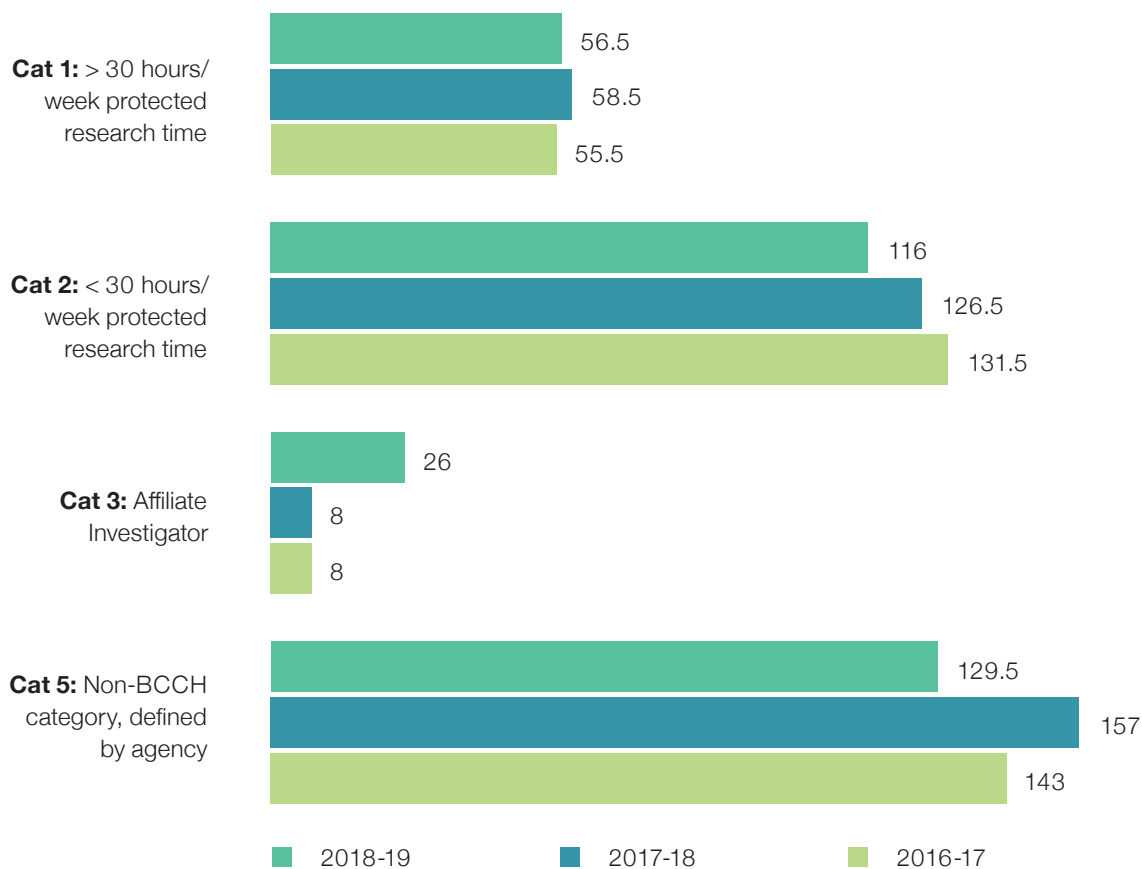


### Building Research Capacity

BC Cancer has a total of 302 researchers in FY 2018-19 in categories 1, 2, and 5. Of note is the decrease (7.7%) in the number of researchers in categories 1 and 2 since FY 2016-17. While adoption of the BCCHR category classifications is in place, a significant amount (129.5) of the total researchers are in Category 5, which is a program specific category used to describe researchers

that do not meet BCCHR category classifications. For BC Cancer, the majority of Category 5 researchers are Medical or Radiation Oncologists, Program or Practice Leaders, and Nurses. As in past year's reports, researchers whose funding is officially split 50/50 between research entities are classified as 0.5. See Figure 20 for the number of researchers by category.

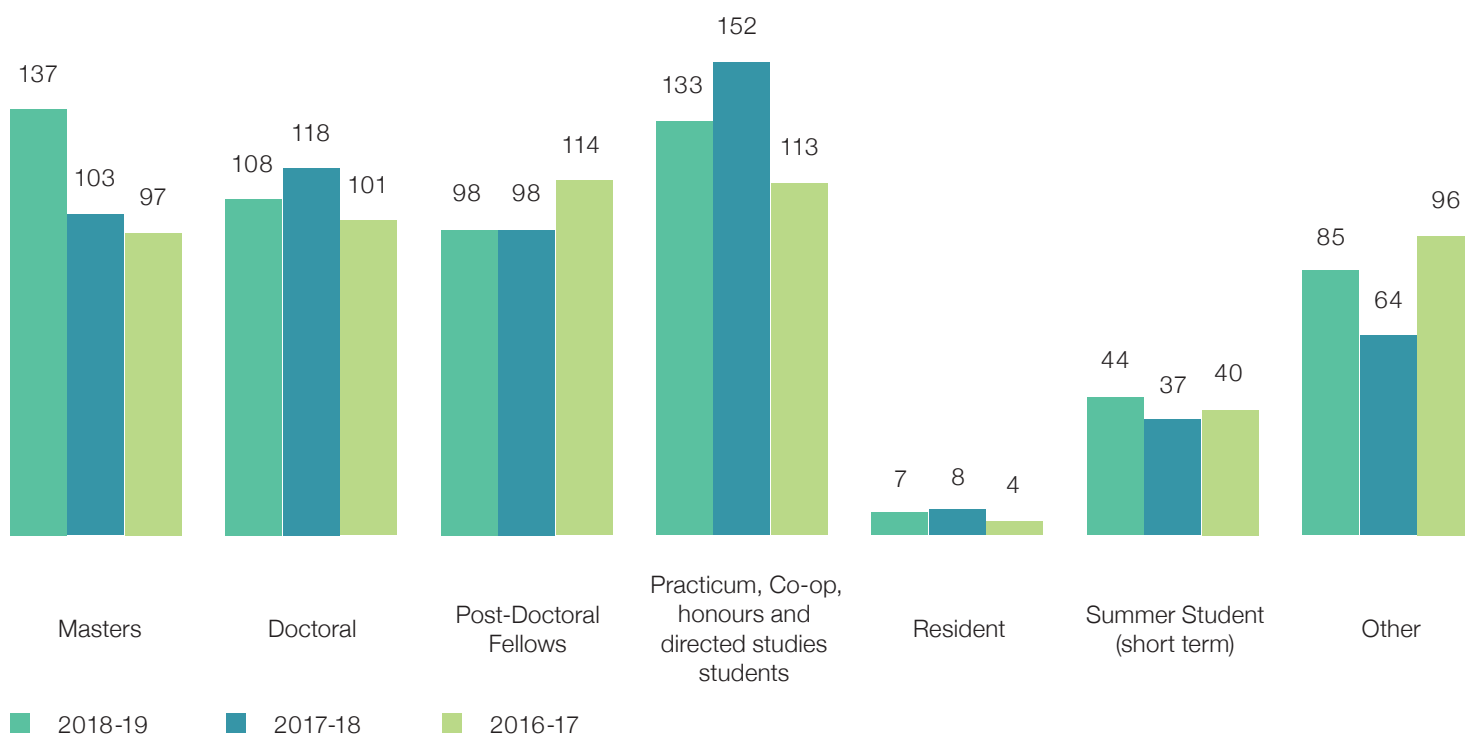
**FIGURE 20 Total Number of BC Cancer Researchers by Category and Fiscal Year**



During FY 2018-19, BC Cancer researchers provided training and supervision to a total of 612 trainees, an increase of 32 over FY 17-18. See Figure 21 for the number of trainees by type. Factors influencing the number of trainees include but are not limited

to, operating grant success rates; whether trainees can obtain fellowships to secure their own funding, and how often trainee competitions are held and the envelope of funding.

**FIGURE 21 Total Number of BC Cancer Trainees by Type and Fiscal Year**

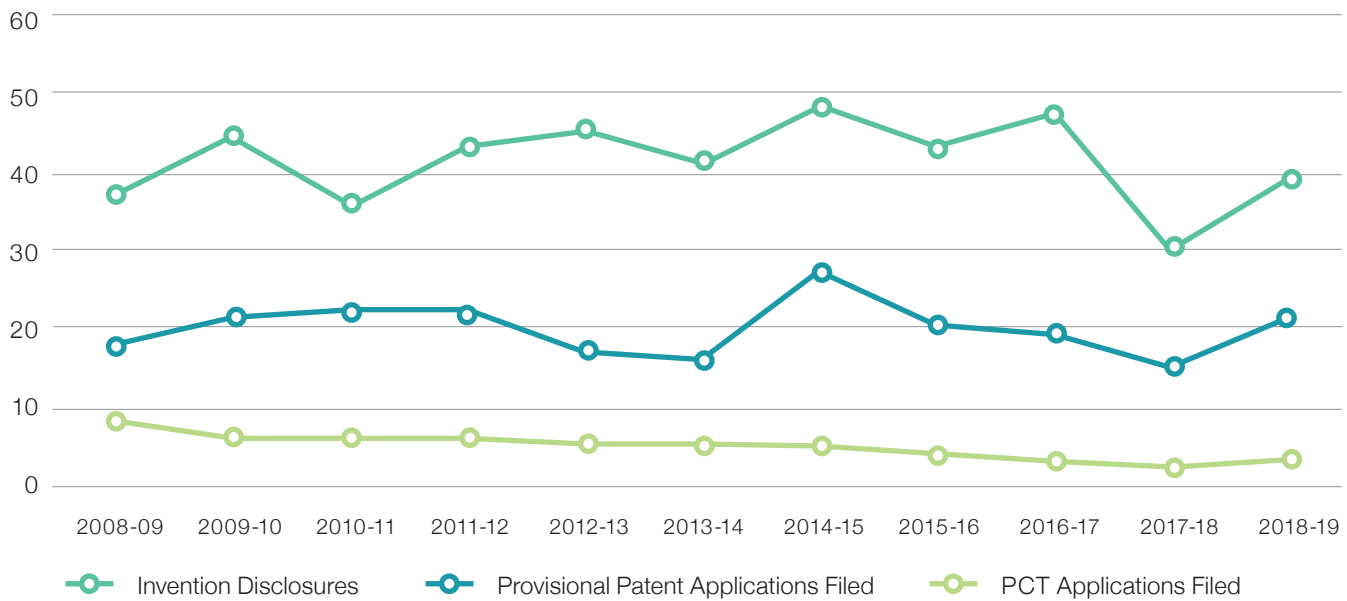


## Achieving Economic Benefits and Innovation

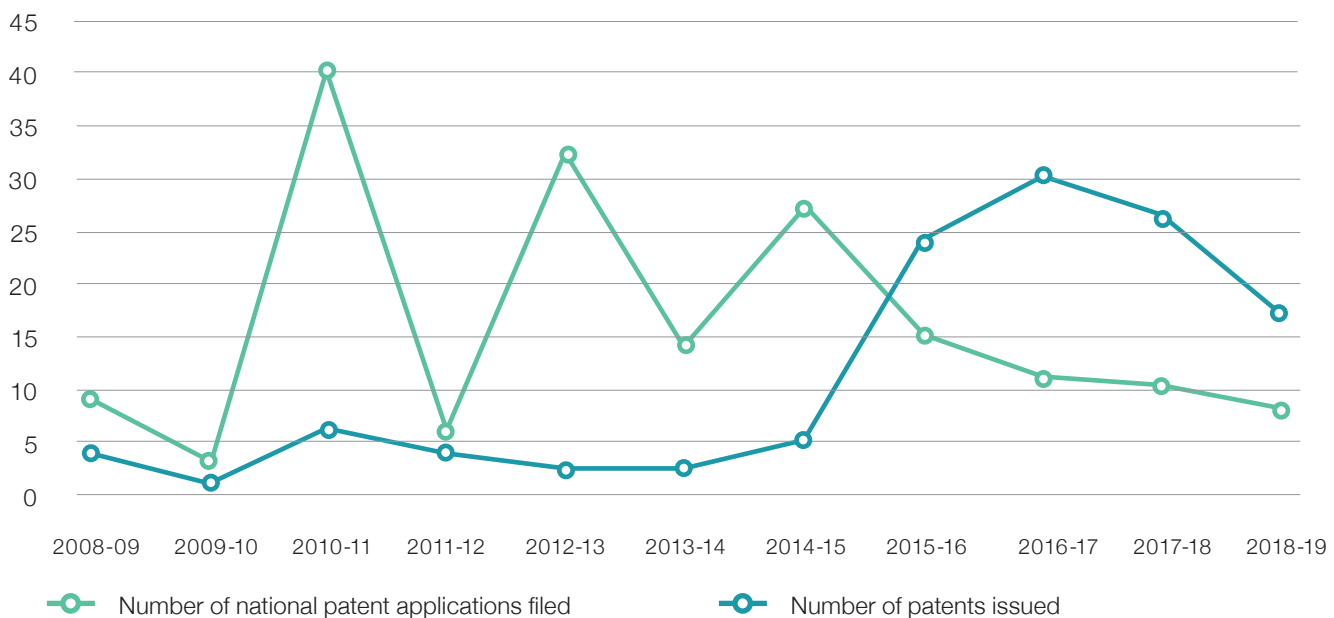
Patent Activity has remained relatively stable over the last eleven fiscal years (see Figure 22). Invention disclosures are primarily internal BC Cancer documents, filed with the Technology Development Office (TDO) to inform the decision of whether to proceed with the patent process. The next stage in the patent process is to file provisional patent applications followed by patent cooperative treaties, or PCTs, which act as a gateway to world-wide patents.

National patent applications are then filed with each step involving greater specificity. The start-up with the largest number of issued patents is Essa (6), which is developing small molecules for the treatment of cancer. Once technologies are licensed, then the partner typically funds patent filings in multiple countries and is especially true for new pharmaceuticals. See Figure 23 for a breakdown by fiscal year.

**FIGURE 22 BC Cancer Invention Disclosures, Provisional Patent and PCT Applications by Fiscal Year**



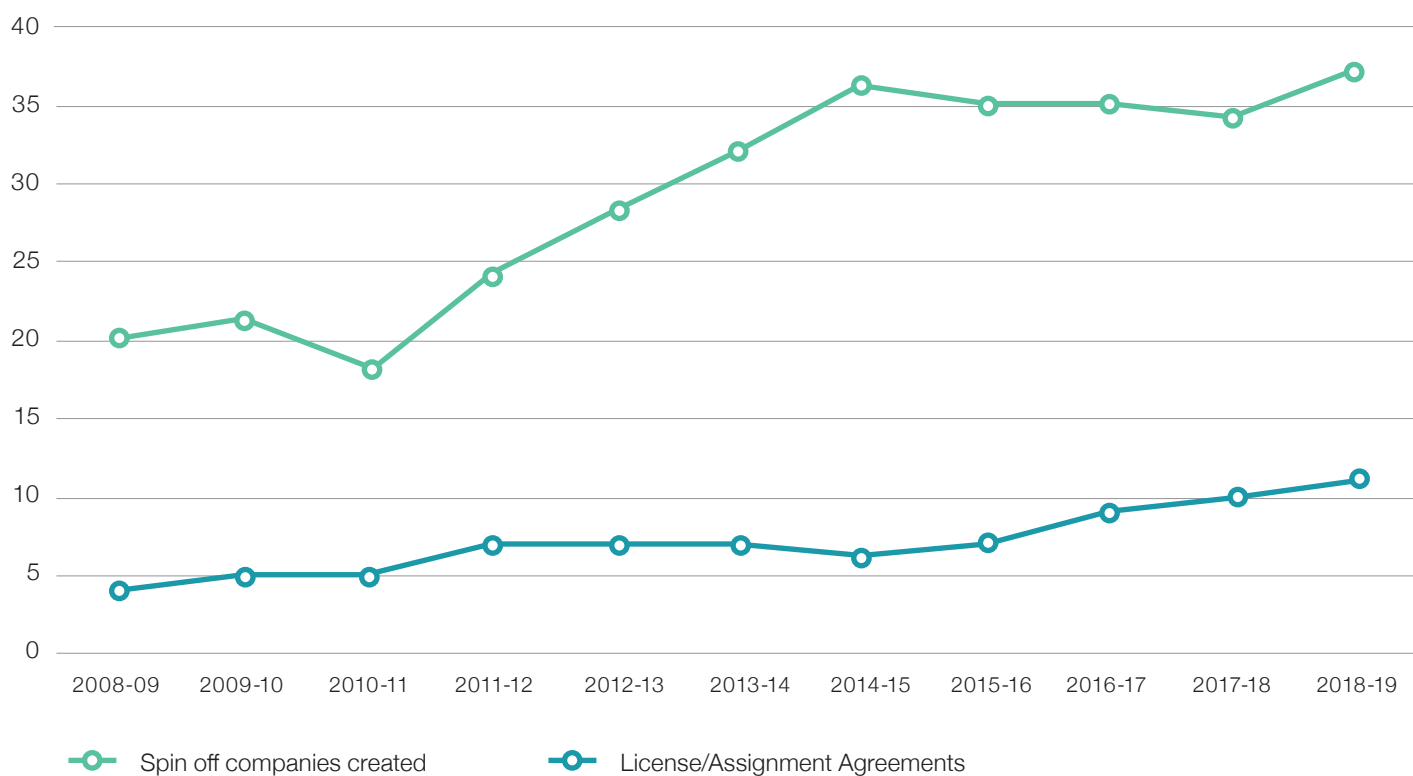
**FIGURE 23 BC Cancer National Patent Activity by Fiscal Year**



In FY 2018-19, there were 37 active license agreements (see Figure 24), including five (5) new licenses/assignment agreements. There were two (2) new spin-off companies created; CUPROUS Pharmaceuticals Inc. (CPI) a Canadian biotechnology company, spun out from BC Cancer. CPI is developing copper-activated drugs for the treatment of aggressive cancers that are resistant to existing standard of care therapeutics; and ARTMS™ Products

which is a leader in the development of novel technologies which enable the production of the world's most-used diagnostic imaging isotopes. Other active Spin-off companies include Aquinox Pharmaceuticals, Essa Pharmaceuticals, Repeat Diagnostics, Logipath Medical, Qing Bile Therapeutics, Metera Pharma and Fusion Genomics.

**FIGURE 24 BC Cancer License Agreements and Spin-Off Companies by Fiscal Year**



IP related revenue, in accordance with UBC (University Industry Liaison Office UILO) definitions (see Glossary – Appendix 1, page 63) is reported in Table 4. Expenses related to patenting, license IP and legal costs totaled \$317,510 in FY 2018-19. Realized licensing revenue per the distribution agreements totals \$445,861.46

with \$144,263.36 to PHSA and \$301,598.10 to BC Cancer departments. While distribution agreements vary, typically the inventor receives 50% of the net licensing revenue, with the remainder split between PHSA, BC Cancer departments, and UBC for those researchers with a UBC affiliation.

**TABLE 4 TDO IP Related Revenue**

IP RELATED REVENUE	FY 2015-16	FY 16-17	FY 17-18	FY 18-19
Royalties	\$337,646.78	\$765,483.79	\$410,845.30	\$637,718.79
Equity Liquidated	\$257,794.00	\$101,351.28	\$303,880.54	\$122,861.33
License Fees	\$111,500.00	\$149,840.95	\$113,517.95	\$251,513.80
License Management	\$299,798.18	\$237,120.85	\$154,190.87	\$112,066.91
Option Fees	\$5,000.00			
Technology Assignment				
<b>GROSS LICENSING REVENUE (TOTAL)</b>	<b>\$1,011,738.96</b>	<b>\$1,253,796.85</b>	<b>\$982,434.66</b>	<b>\$1,127,160.83</b>

### Advancing Health and Policy Benefits

See Table 5 for a detailed breakdown of clinical trial activity by fiscal year.

**TABLE 5 BC Cancer Clinical Trials**

	13-14	14-15	15-16	16-17	17-18	18-19
<b>TOTAL NUMBER OF CLINICAL TRIALS ACTIVE DURING THE FY</b>	321	317	303	321	309	337
<b>STATUS OF THE TRIAL AT THE END OF THE FY:</b>						
Total Number of Active Trials	274	234	249	265	257	277
Total Number of Trials that closed during the FY	47	83	54	56	52	60
<b>ENROLMENT NUMBERS:</b>						
Expected Local Subject Enrolment (for the term of the study)	36,653	41,867	41,598	44,305	43,064	47,366
Total Cumulative Subject enrolment at the end of the FY	27,299	28,521	29,244	30,084	34,573	34,341

Grant funding type is reported for Clinical Trials in figure 25. This information is sourced from the REB file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 68 for a definition of funding types). This

information can be used to trend the percentage of trials that are industry sponsored. Forty-three percent (43%) of BC Cancer Clinical Trials are Industry funded, the same as last FY.

**FIGURE 25 BC Cancer Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the FY**

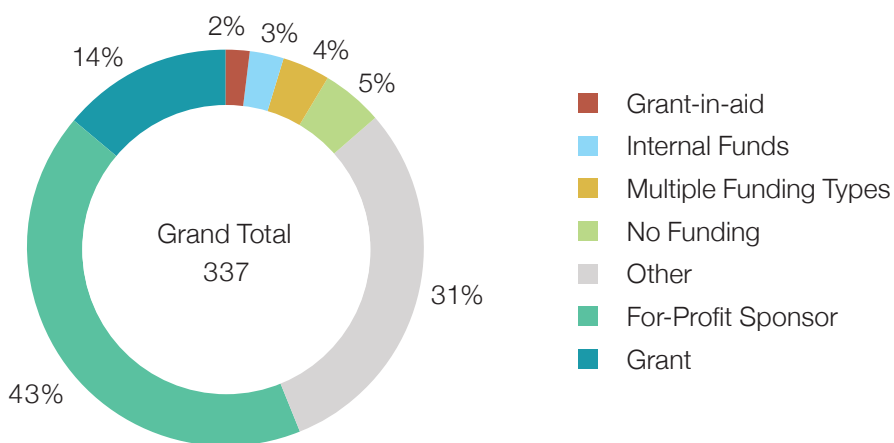




Table 6 reflects BC Cancer’s Top Three Achievements/Accomplishments/Highlights, and can include awards, citations, clinical programs, either in progress or historical, and be relevant to FY 18-19 timeframe (April 1, 2018 - March 31, 2019).

**TABLE 6 BC Cancer Top Three Achievements/Accomplishments/Highlights**

**CLINICAL TRAIL FOR NEW THERAPY SHOWS SUPERIOR EFFICACY OVER STANDARD REGIME IN HODGKIN LYMPHOMA TREATMENT**

The team at the BC Cancer Centre for Lymphoid Cancer (CLC) is committed to improve the outcomes and quality of life of patients suffering from lymphoid cancers through clinical and translational research. Recently, Drs. Connors and Savage of the CLC led a large international clinical trial involving multiple cancer centers to investigate the efficacy of a new combination therapy in patients with advanced stage Hodgkin lymphoma. This new therapy combines the standard chemotherapy with a newly developed antibody-drug which specifically targets cancer cells in Hodgkin lymphoma. Their results which were published in New England Journal of Medicine showed superior efficacy of the combination therapy over the standard regimen in these patients. The data generated by the CLC team and its collaborators significantly contribute to outcomes research and continue to impact clinical practice and management of lymphoma around the world.

**ESTABLISHMENT OF A NEW MOLECULAR IMAGING AND THERAPEUTICS PROGRAM**

An \$18 million-dollar anonymous donation establishes a new Molecular Imaging and Therapeutics Program. The establishment of the Program means that a new form of cancer treatment – radioligand therapy (RLT) will soon be available to cancer patients in BC. The donation is the second largest made to cancer research in BC and will fuel a world-leading Molecular Imaging and Therapeutics program at BC Cancer that will allow the research and development of cutting-edge radiopharmaceuticals through to clinical trials. Over the next five years, the program will expand infrastructure, scale up development of radioactive isotope treatments and launch a series of clinical trials. The first trials will focus on RLT for men with incurable, metastatic prostate cancer. Early research results indicate great promise for the treatment of other common cancers, including metastatic melanoma, breast, ovarian, pancreatic and blood cancers. The targeted RLT compounds are developed at BC Cancer and in partnership with TRIUMF.

**PACER RESEARCH LAB RECEIVES INTERNATIONAL RECOGNITION**

Dr. Dean Regier’s Research Lab, PACER (patient-centered, accessible, and efficient applications of precision medicine) has increased its national and international impact with team members presenting at seven health economics, health services research and oncology conferences, four of which were at International conferences. PACER published 10 peer-reviewed manuscripts in leading academic health journals, with an additional seven manuscripts currently under review and two in press. Dr. Regier was awarded \$500,000 in grant funding from Genome British Columbia to conduct health economic analyses in context to precision medicine implementation for rare diseases in B.C. and England. PACER’s ongoing research in precision medicine sustainability includes international collaborations with health economics and clinical leaders from Oxford University and Genomics England, Manchester University, University of Washington, and the University of Alabama. PACER’s emerging presence and outstanding performance were recognized in 2018 with two conference presentation awards (Weymann, Pollard) and a trainee publication award from BC Cancer (Weymann).

# BC CHILDREN'S HOSPITAL RESEARCH (BCCHR)



## Producing and Advancing Knowledge

In FY 2018-19, researchers affiliated with BCCHR were awarded a total of \$56,665,620 in research funding, a decrease of \$1,113,814 (2%) from last FY. The amounts awarded as Operating Grants (\$45,477,483) make up approximately 80% of total funding received and represent a 4% increase over last FY. A breakdown of funding types and subtypes can be found in Figure 26.

BCCHR's portion of the Indirect Costs Program grant totaled \$1,910,832, for FY 2018-19 but is not included in total research funding or the figures below.

**FIGURE 26 Total BCCHR Research Funding by Funding Type and Sub-type by Fiscal Year**

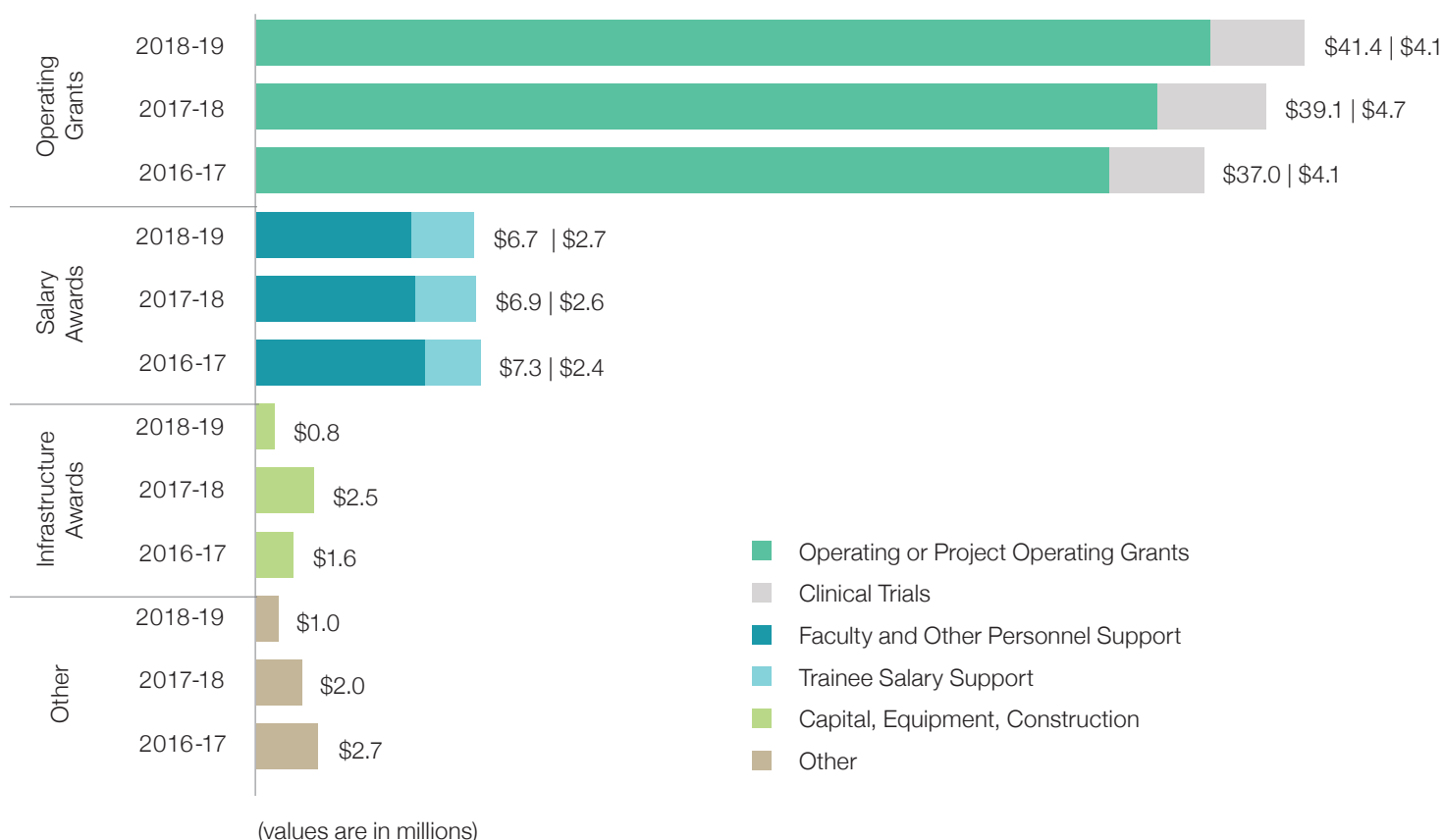
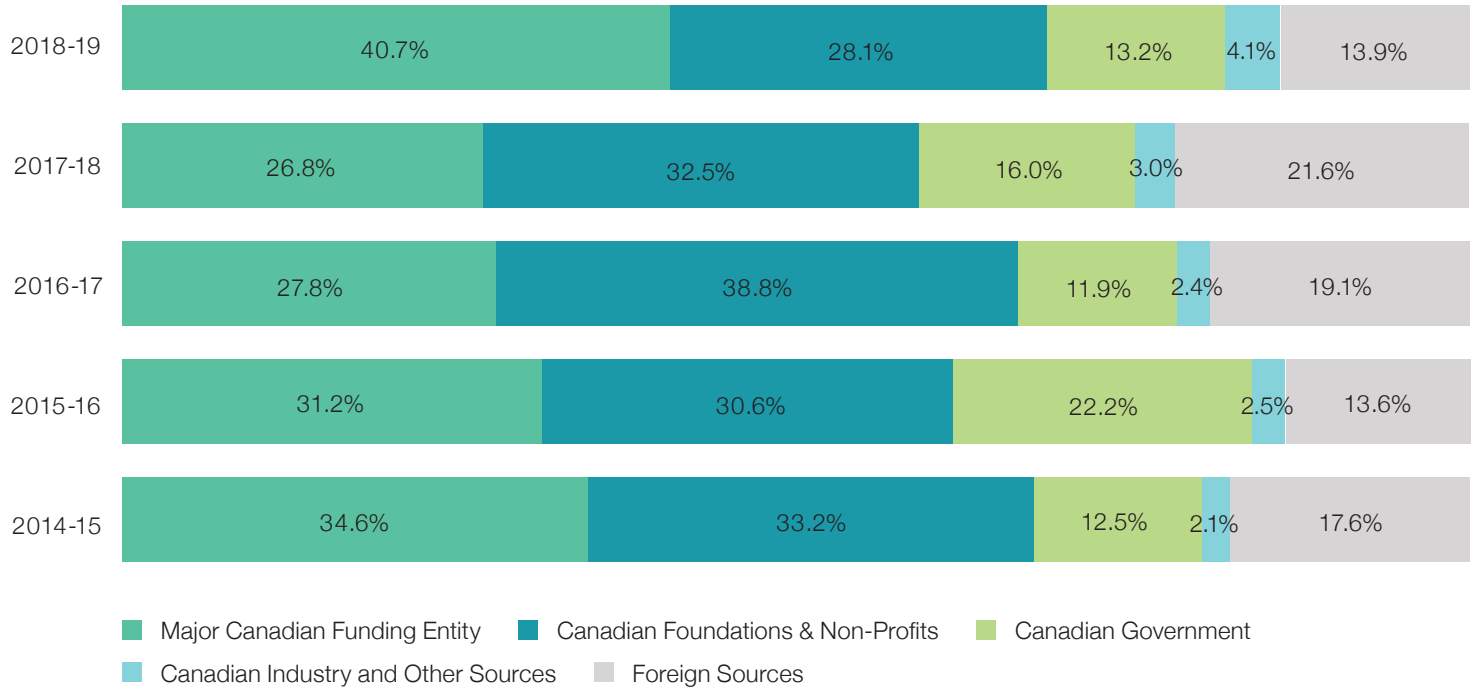


Figure 27 shows funding by funding source category. The large increase in the Major Canadian Funding Entity category is due to increase in CIHR awards and those from Genome Canada and Provincial Genome Agencies

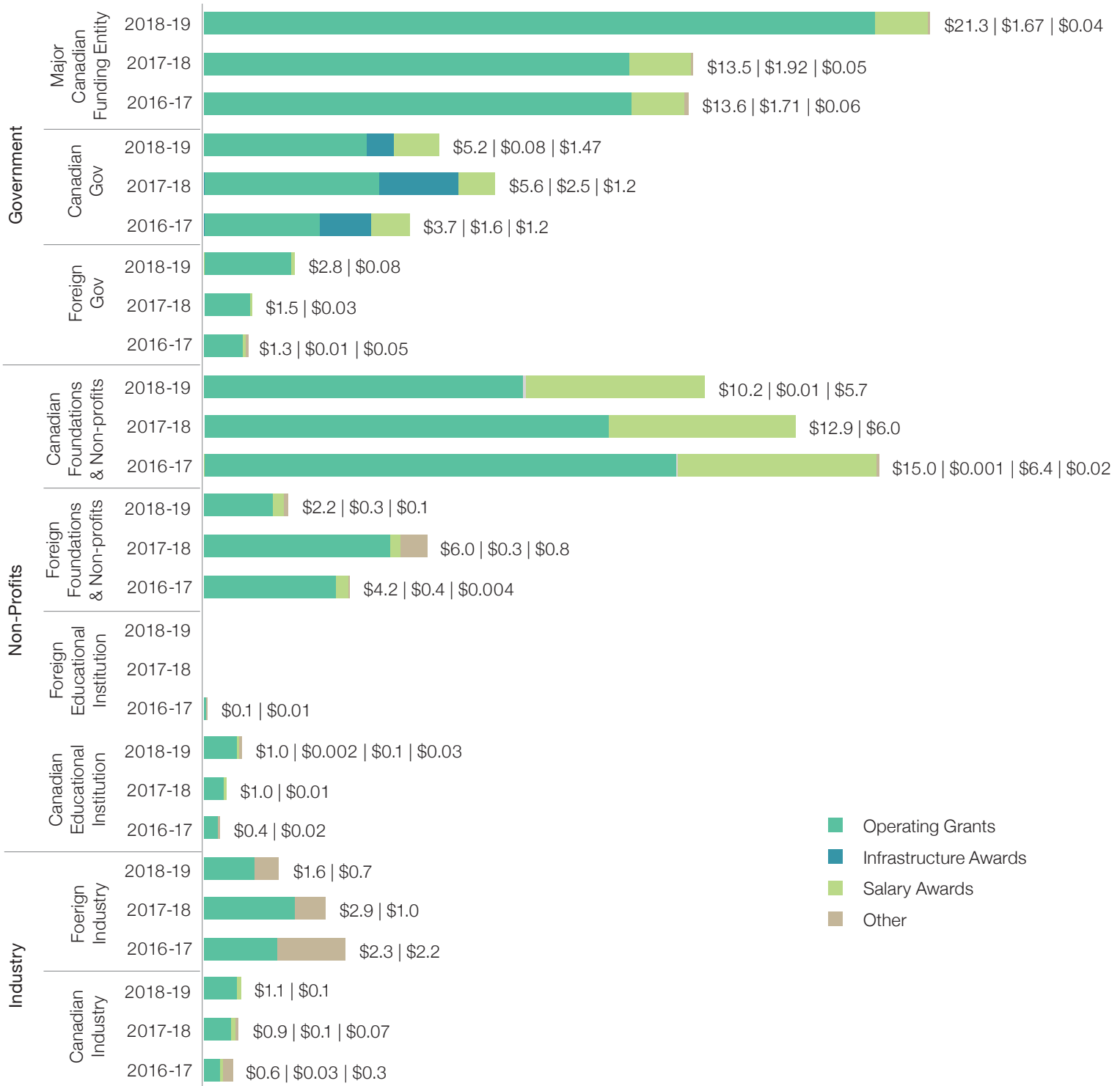


**FIGURE 27 Percentage of BCCHR Research Funding by Funding Source Category by Fiscal Year**



The top three funding categories are Major Canadian Funding Entity (40.7%), Canadian Foundations & Non-Profits (28.1%) and Canadian Government (13%). Figure 28 details the RISE sector and funding categories by funding type.

**FIGURE 28 BCCHR Research Funding by RISE Sector, Funding Source Category and Type by Fiscal Year**



(values are in millions)

Reporting for CIHR Funding competitions includes one Foundation Grant and two Project Grant competitions during FY 2018-19. BCCHR was successful in both Project Grant competitions for a total of 11.5 awards, beating the national average in the Spring 2019 competition.

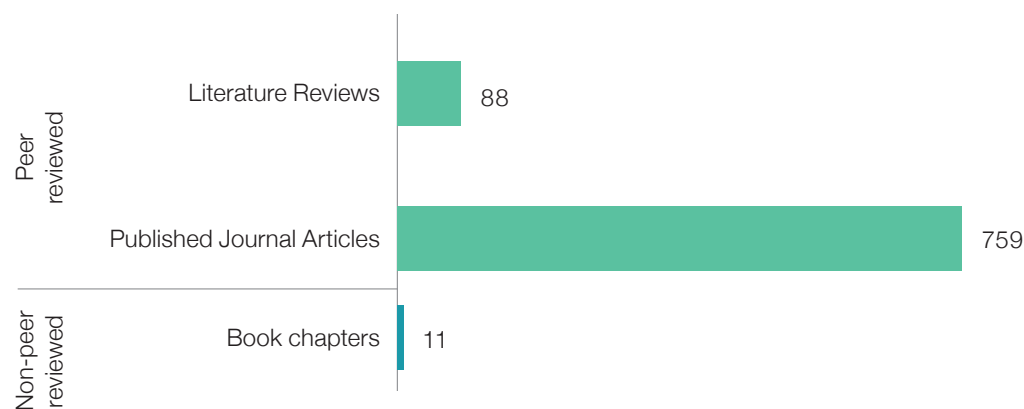
**TABLE 7 BCCHR Annual Grant Application Success Rate**

GRANT FUNDING OPPORTUNITY	National Overall Results % (Approved/Submitted)	BCCHR Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	0% (0/2)
2018-09 Project Grant	14.9% (371/2,484)	12.5% (4/32)
2019-03 Project Grants	15.6% (545/3,415)	30.6% (7.5/24.5)

BCCHR had 858 publications in calendar year 2018, with 99% of them being peer reviewed. Total number of publications by type and category of peer vs. non-peer reviewed, is seen in Figure 29. Peer review represents the gold standard for scientific credibility. The program total represents the number of publications where at least one

program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program. BCCHR includes case reports and essays in journal articles and accepts e-journal articles.

**FIGURE 29 Total Number of BCCHR Publications by Type and Category**



For the first time as part of this report, BCCHR is including results related to their four research specific social media channels; Facebook (member since July 2011); Twitter (member since March 2009); Instagram (member since January 2018); and LinkedIn (member since 2015). Social media employs “mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content” (Kietzmann et al., 2011). Tracking and

reporting of this data is a measure of knowledge translation in addition to meeting the following goals with regard to BCCHR research activities:

- To increase online visibility of and traffic to BCCHR website
- To have our audience complete a specific ask, such as sign up for our newsletter, request information about a study, participate in a study.

- To further disseminate the knowledge that's produced here to the public, to our own PIs and trainees, and to our colleagues at BCCHF, BCCH and PHSA
- To engage and connect internal audiences including researchers and students

Table 8 shows 3rd quarter (Jan. 1 – March 31, 2019) and fiscal year 2018-19 results compared to the previous fiscal year. These metrics are a measure of reach and engagement

and provide an indication of the volume of activity. They also include data that shows activity after a program posts content. These would include conversation rate (# of comments your content generated); amplification rate (the # of times your content was shared) and applause rate (# of likes or favorite clicks per post).

In addition to the above activity, many BCCHR researchers maintain their own professional accounts to engage peers, funders and patients, but this information is not tracked.

**TABLE 8 BCCHR Social Media Statistics**

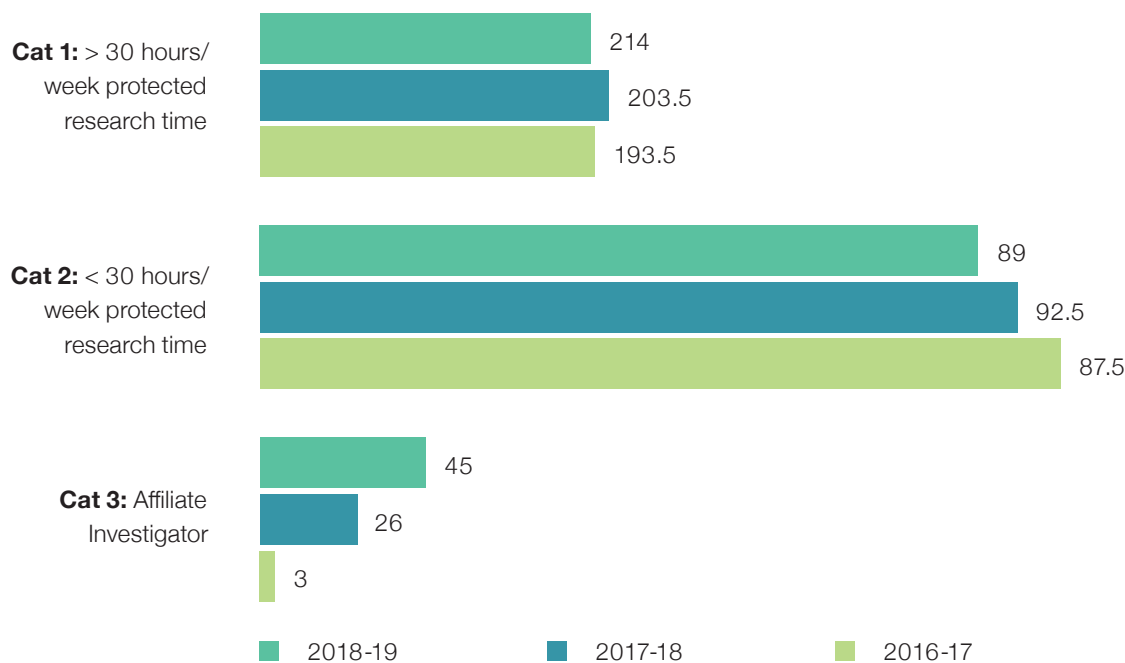
SOCIAL MEDIA CHANNEL		Followers			Activity Rate			
		# of Followers	# of New Followers	% change	# of likes	% change	# of shares	% change
Twitter	Quarterly	NA	174	+7.8%	1,584	+78.2%	368	+56%
	Annual	2,405	626	+35.2%	4,228	+38.3%	1,505	+3%
LinkedIn	Quarterly	NA	187	+16.7%	403	+70.8%	11	-15.4%
	Annual	1,306	389	+42.4%	1,063	+19.8%	71	+255%
Facebook	Quarterly	NA	92	+8.1%	1,872	+212%	201	+128.4%
	Annual	1,225	324	+36%	3,895	+17.4%	473	+63.7%
Instagram	To Date	480	151	+31.5%	1,543	+197.3%	58	+107.1%

## Building Research Capacity

BCCHR has a total of 282.5 researchers in categories 1 and 2 and 45 affiliate researchers. The distribution of these researchers is represented in Figure 30. Researchers in categories 1 and 2 are primarily based on the BC Children's Hospital and BC Women's Hospital + Health Centre campus with the largest proportion of the members being split between Category 1 – those that have greater than 30 hours per week of their time protected for research and Category 2 – those that have less than 30 hours per week of protected research time. Category 3 members (45 in FY 2018-19) are affiliate investigators that are not based on

site but who collaborate with BCCHR members and are affiliated with a research theme. Their primary affiliation will be with another academic and/or research institution. The purpose of this category is to provide official recognition for these individuals who collaborate with BCCHR members on a regular basis. The BCCHR does not track category 3 members funding, publications or trainees. There is one additional category, Emeritus/Emerita Investigators who have prior status as an investigator with BCCHR.

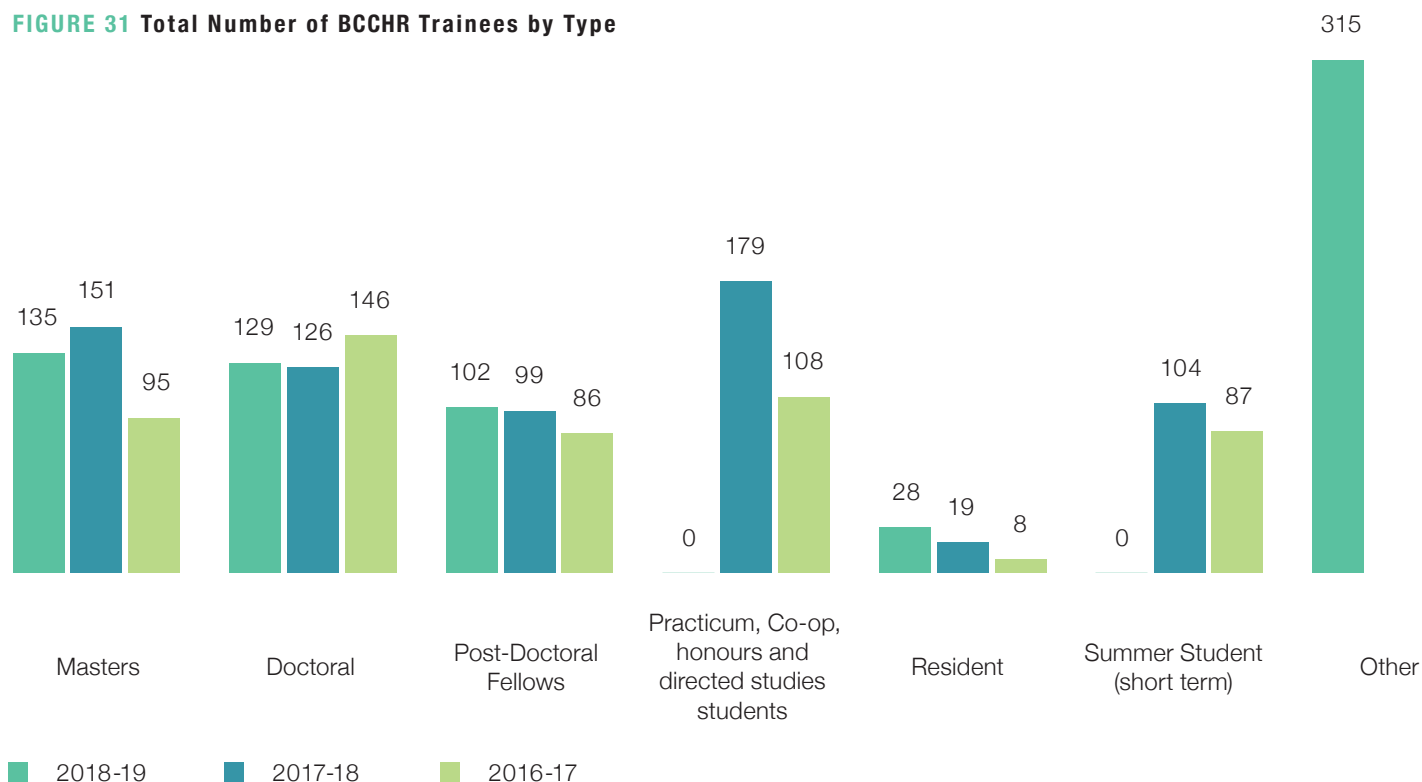
**FIGURE 30 Total Number of BCCHR Researchers by Category**



During FY 2018-19, BCCHR researchers provided training and supervision to a total of 709 (up 31 from FY 2017-18) trainees. The large increase in the Other category is due to the tracking of Practicum, co-op, honours and directed studies students in addition to summer students in one

combined category, without the ability to differentiate type. See Figure 31 for number of trainees by type. BCCHR currently tracks full-time research trainees (masters, doctoral and postdoctoral fellows) and undergraduate students undertaking their training at BCCHR.

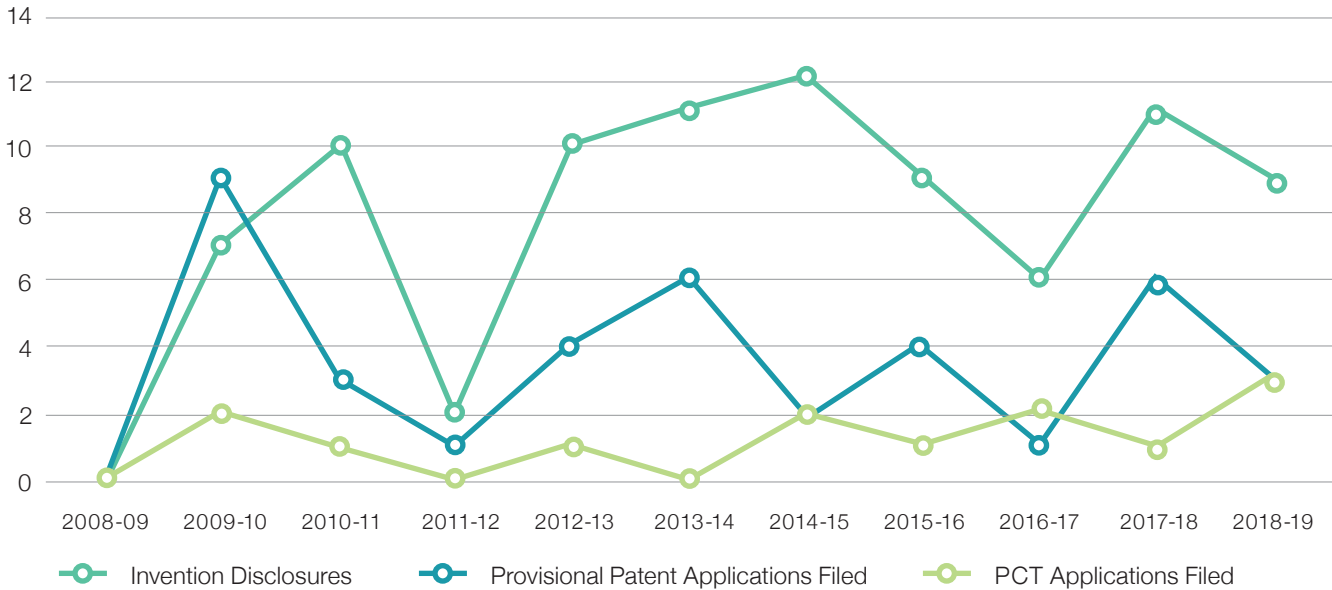
**FIGURE 31 Total Number of BCCHR Trainees by Type**



## Achieving Economic Benefits and Innovation

The number of invention disclosures, provisional patent and PCT applications filed by fiscal year are shown in Figure 32.

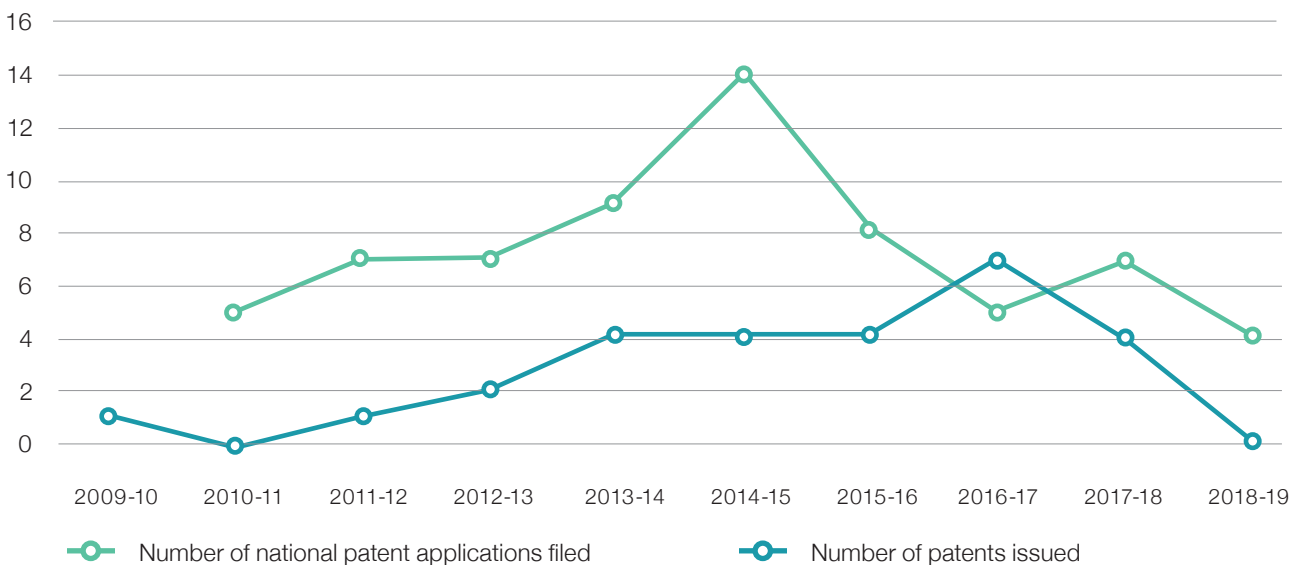
**FIGURE 32 BCCHR Invention Disclosures, Provisional Patent and PCT Applications Filed by Fiscal Year**



Patents are reported in Figure 33 below. Applications filed in a given year represent different applications than those which are approved in that same year (which typically

are the result of applications in previous years). Data is collected and reported by the University of British Columbia University-Industry Liaison Office (UILO).

**FIGURE 33 BCCHR National Patent Activity by Fiscal Year**

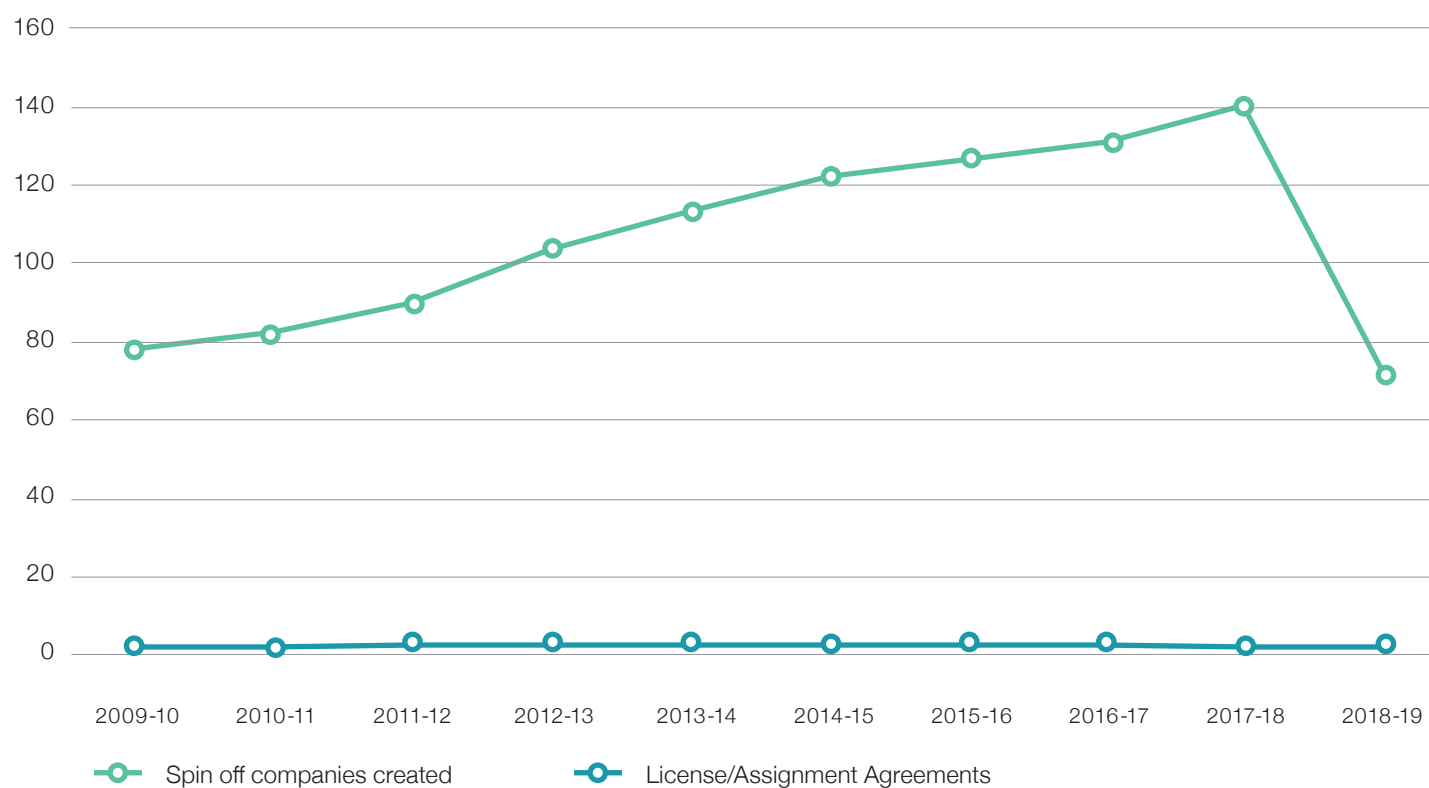




In FY 2018-19 there were 72 active license/assignment agreements in place (See Figure 34), thirteen (13) new. No new spin-off companies were created in FY 18-19. The decrease in license agreements is due to reporting only

active license agreements beginning this fiscal year. BCCHR holds shares in Lions Gate Technologies, ME Therapeutics, and Xenon Pharmaceuticals (private) which is held in trust by UBC.

**FIGURE 34 BCCHR License/Assignment Agreements and Spin-off Companies by Fiscal Year**



IP related line item revenue data for FY 18-19 is shown below.

BCCHR reported realized revenue per the distribution agreements for FY 2018-19 of \$66,719.13.

**TABLE 9 BCCHR IP Related Revenue**

IP RELATED REVENUE	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Royalties	\$178,795.65	\$258,100	NA	\$313,462.10
Equity Liquidated				
License Fees				\$50,000.00
License Management		\$36,600	NA	
Option Fees				
Technology Assignment				
<b>NET LICENSING REVENUE (TOTAL)</b>	<b>\$178,795.65</b>	<b>\$225,800</b>	<b>NA</b>	<b>\$363,452.79</b>

### Advancing Health and Policy Benefits

See Table 10 for a detailed breakdown of clinical trial activity by fiscal year. The percentage of BCCHR trials that had no enrollment figures (28%) rose 3% in FY 18-19. The large decrease in enrollment, is due to the end of the CLIP (Community Level

Interventions for Pre-Eclampsia) Study which terminated in July 2018. Once these fields are made mandatory as opposed too optional, enrollment figures should increase.

**TABLE 10 BCCHR Clinical Trials**

	13-14	14-15	15-16	16-17	17-18	18-19
<b>TOTAL NUMBER OF CLINICAL TRIALS ACTIVE DURING THE FY</b>	166	183	180	198	195	212
<b>STATUS OF THE TRIAL AT THE END OF THE FY:</b>						
Total Number of Active Trials	133	143	152	154	153	175
Total Number of Trials that closed during the FY	33	40	28	44	42	37
<b>ENROLMENT NUMBERS:</b>						
Expected Local Subject Enrolment (for the term of the study)	120,491	102,505	103,936	106,212	102,916	108,147
Total Cumulative Subject Enrolment at the end of the FY	7,023	31,379	26,846	57,789	108,720	6,564

Grant funding type is reported for Clinical Trials in Figure 35. This information is sourced from the REB (Research Ethics Board) file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 68 for a definition

of funding types). Sixty-three percent (63%) of BCCHR’s clinical trials are grant funded, with 27% industry funded, a 6% increase of last fiscal year.

**FIGURE 35 BCCHR Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the FY**

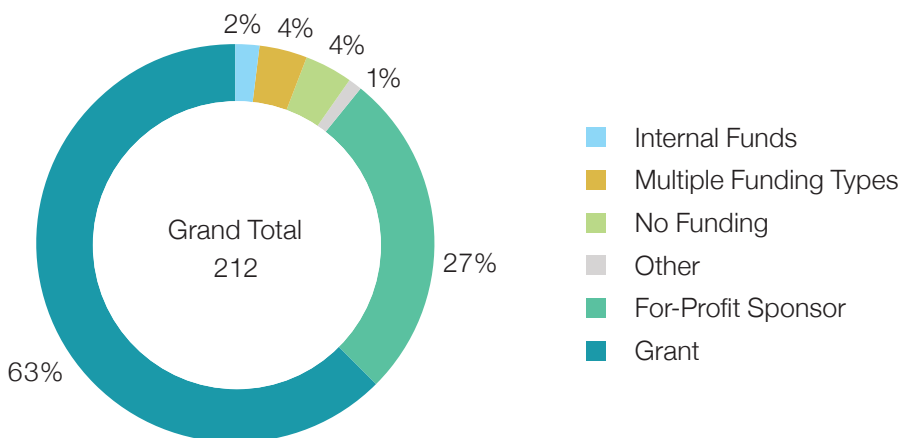


Table 11 reflects BCCHR's Top Three Achievements/Accomplishments/Highlights, and can include awards, citations, clinical programs, either in progress or historical, and be relevant to FY 18-19 timeframe (April 1, 2018 - March 31, 2019).

**TABLE 11 BCCHR Top Three Achievements/Accomplishments/Highlights**

**RARE DNA MUTATION IDENTIFIED AS THE CAUSE OF A GENETIC METABOLIC DISORDER: A FIRST FROM BC CHILDREN'S HOSPITAL AND AN INTERNATIONAL TEAM OF RESEARCHERS**

A New England Journal of Medicine study is the first to identify a repeat expansion of DNA – where the gene does not function because the DNA adjacent to it has extended several hundred times its normal length – as the cause of an inherited metabolic disorder. In inherited metabolic disorders the body can't break down specific nutrients from food leading to a range of serious health problems. For children with these often unexplained, degenerative conditions, a diagnosis is the first step towards identifying interventions that could slow the progression of damaging symptoms and improve their quality of life.

**NEW RESEARCH SHEDS LIGHT ON LINK BETWEEN EXPOSURE TO ANTI-DEPRESSANTS BEFORE BIRTH AND BRAIN ACTIVITY IN NEWBORNS**

Roughly one in ten pregnant women experience depression and, while many benefit from anti-depressants, there are unanswered questions about how these drugs affect a baby's development. A BC Children's Hospital study in Biological Psychiatry: Cognitive Neuroscience and Neuroimaging reported that newborns who were exposed to selective serotonin reuptake inhibitors (SSRIs) during pregnancy showed changes in brain activity in areas of the brain believed to be associated with early auditory processing and language development. This paper could contribute to new approaches for managing depression that give mothers and babies the best possible chance for a long-term health.

**RESEARCH INTO IMPROVING AND PERSONALIZING CARE FOR KIDS WITH IMMUNE DISORDERS GETS A BOOST WITH NEW METHODOLOGY**

BC Children's Hospital researchers are helping to improve diagnosis and care for kids who have immune-related diseases or have undergone a cell or tissue transplant with a new easy-to-replicate protocol, published in JCI Insight, that speeds the discovery and validation of new biomarkers. Biomarkers can provide personalized and accurate insight into how a disease is progressing and whether treatment is working as expected. In the case of kids who have undergone transplantation, biomarkers could help doctors catch the earliest signs of transplant rejection, greatly improving a child's chance at avoiding serious complications like diabetes and heart disease.

# BC MENTAL HEALTH AND SUBSTANCE USE SERVICES (BCMHSUS)



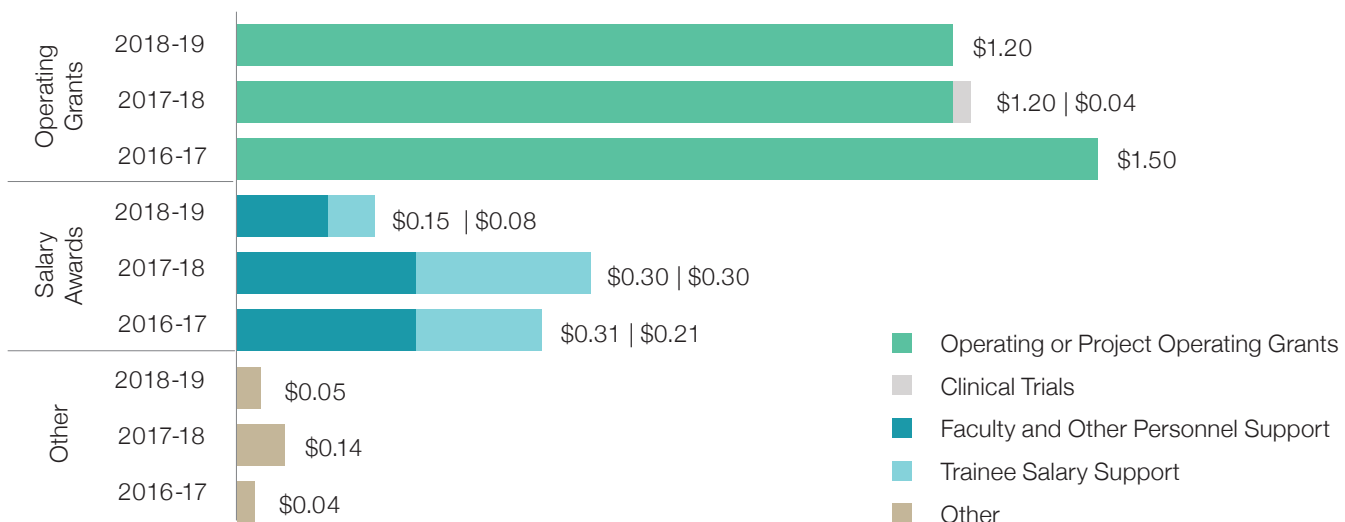
**BC MENTAL HEALTH & SUBSTANCE USE SERVICES**  
 An agency of the Provincial Health Services Authority

## Producing and Advancing Knowledge

In FY 2018-19, researchers associated with BCMHSUS, were awarded a total of \$1,496,934. Operating grants make up the majority (81%) of awards. A breakdown of funding types and subtypes can be found in Figure 36. The drop-in award funding from FY 17-18 continues to be influenced by a drop in the number

researchers associated with BCMHSUS as well as a reduction in grant funds from the non-profit sector. BCMHSUS's portion of the Indirect Costs Program grant totaled \$182,085 for FY 2018-19 but is not included in total research funding or the figures below.

**FIGURE 36 BCMHSUS Research Funding by Funding Type and Sub-type by Fiscal Year**



(values are in millions)



Of note in FY 18-19 is the absence of any funding from the Canadian Foundation & Non-profits category. Previous years amounts in this category have come from BC Children's Hospital Research and BC Children's Hospital Foundation.

**FIGURE 37 Percentage of BCMHSUS Research Funding by Funding Source Category by Fiscal Year**

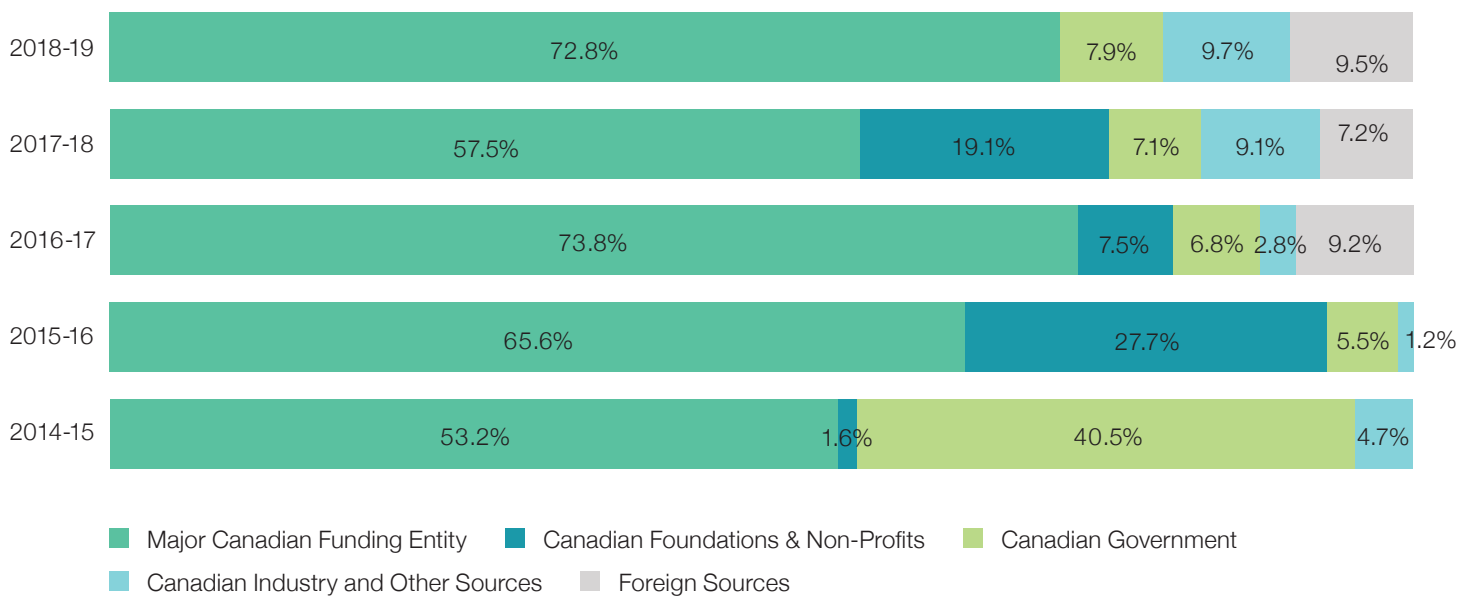
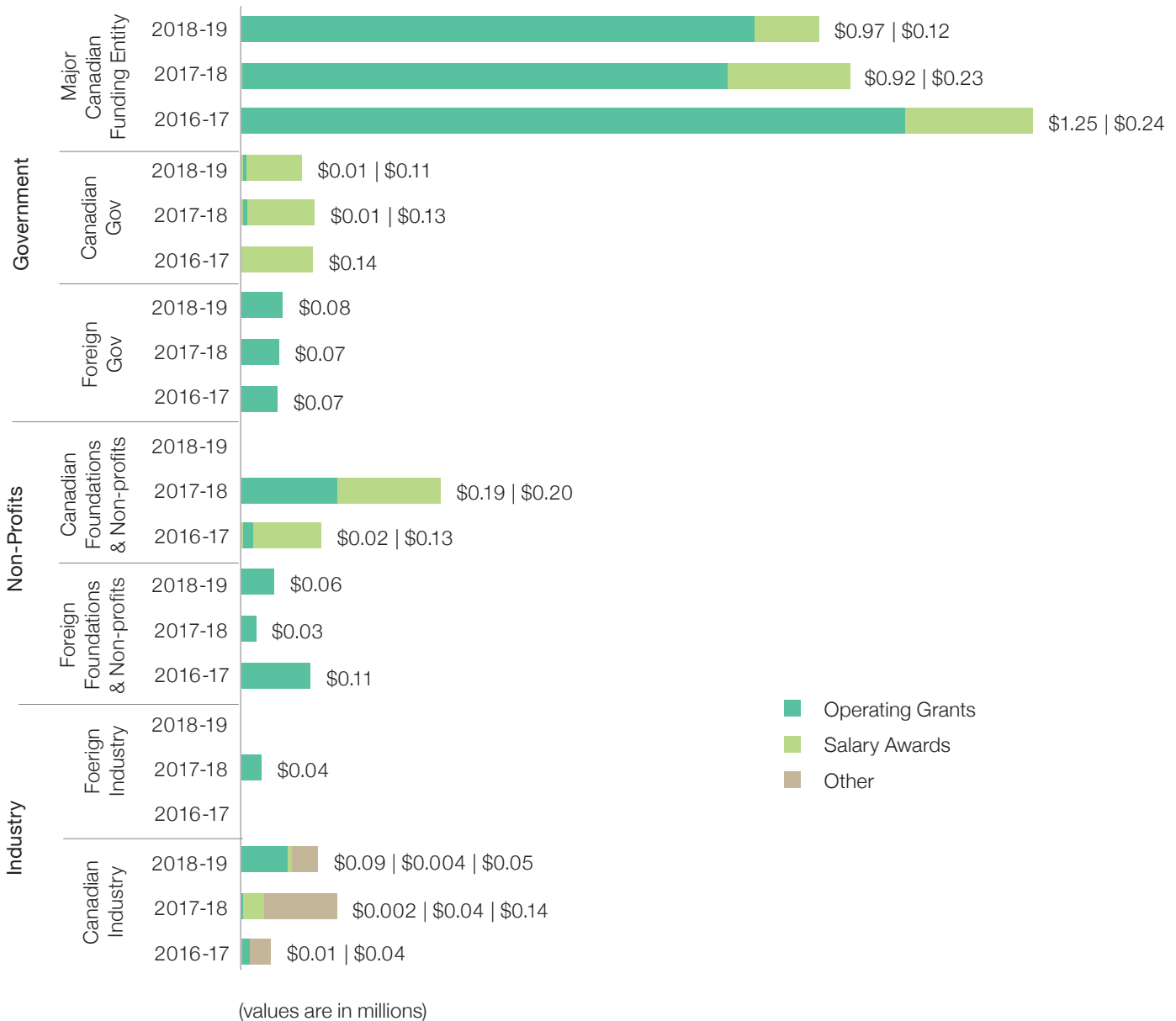


Figure 37 shows total awards by funding source category, with Major Canadian Funding Entity (73%) sources being the largest. Figure 38 details the major funding categories by RISE sector, funding source category and funding type.

**FIGURE 38 Total BCMHSUS Research Funding by RISE Sector, Funding Source Category and Type by Fiscal Year**



Reporting for CIHR Funding competitions includes one Foundation Grant and two Project Grant competitions during FY 2018-19. BCMHSUS did not receive approval for any of the Foundation Grant or Project Grant submissions.

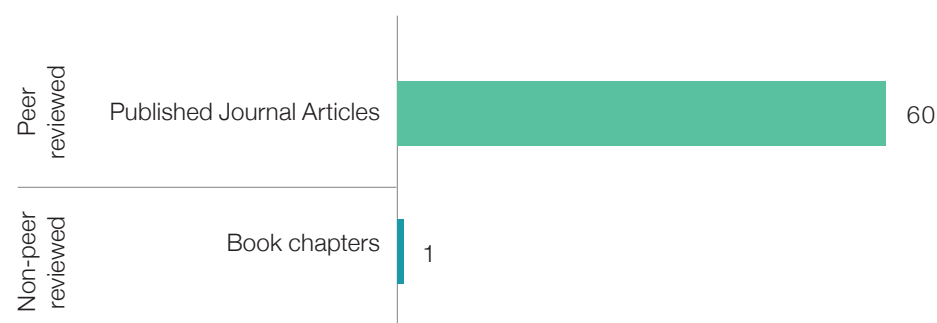
**TABLE 12 BCMHSUS Annual Grant Application Success Rate**

GRANT FUNDING OPPORTUNITY	National Overall Results % (Approved/Submitted)	BCMHSUS Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	0% (0/2)
2018-09 Project Grant	14.9% (371/2,484)	0% (0/4)
2019-03 Project Grants	15.6% (545/3,415)	0% (0/5)

BCMHSUS had a total of 61 publications of which 98% were peer reviewed, a 5% increase over last FY. Total number of publications by type and category (peer vs. non-peer reviewed) is seen in Figure 39. The program total represents the number of publications

where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

**FIGURE 39 Total Number of BMHSUS Publications by Type and Category**



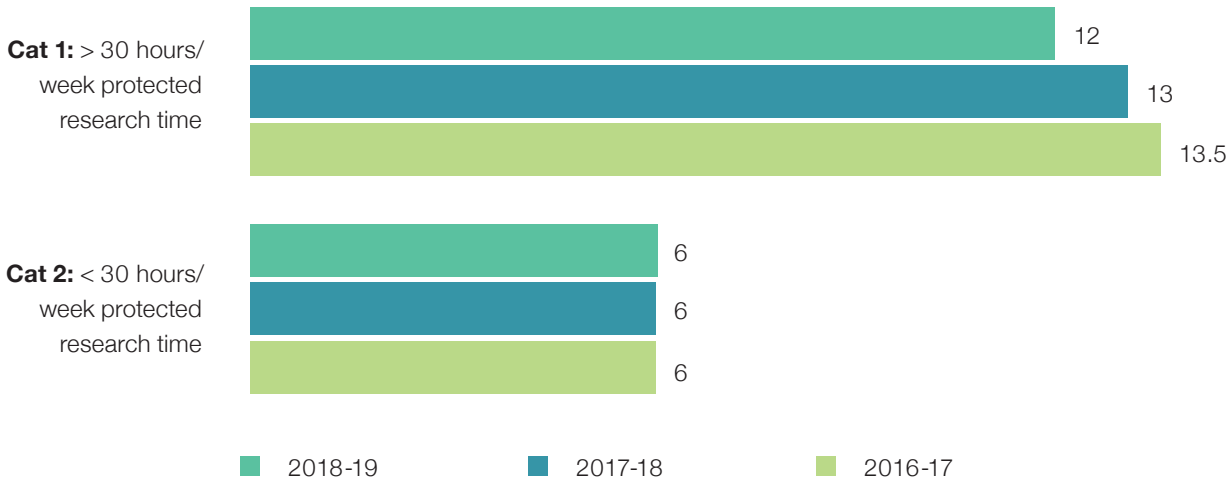


## Building Research Capacity

BCMHSUS had a total of 19 researchers in FY 2017-18, with 13 having greater than 30 hours of protected research time per week (Figure 40). While this is a decrease from previous years, a number

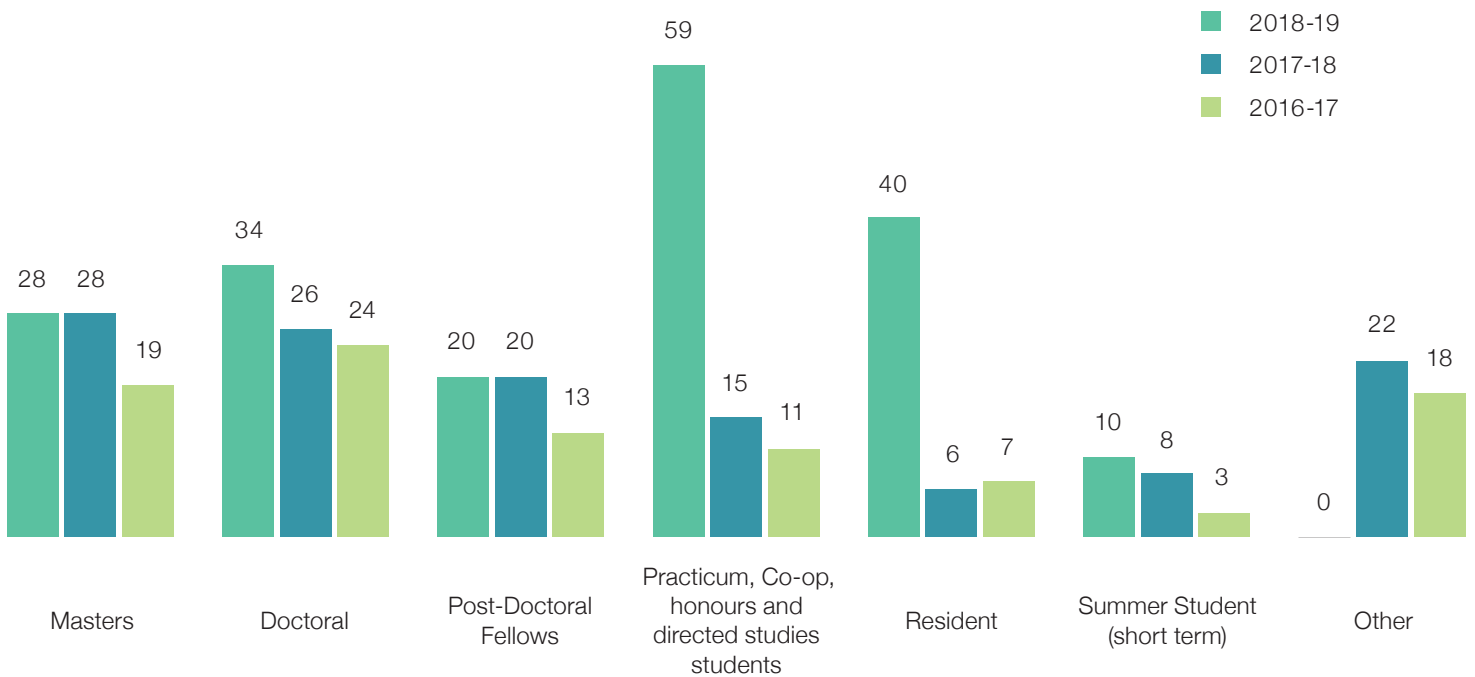
of BCMHSUS clinicians engaged in research are now counted in the BCCHR totals following the operational transfer of Child & Youth Mental Health back to BC Children’s Hospital.

**FIGURE 40 Total Number of BCMHSUS Researchers by Category**



During FY 2018-19, BCMHSUS researchers provided training and supervision to a total of 191 trainees, an increase of 66 of last FY (see Figure 41).

**FIGURE 41 Total Number of BCMHSUS Trainees by Category**





## Advancing Health and Policy Benefits

See Table 13 for a detailed breakdown of clinical trial activity by fiscal year. Of note is that all, except 1, of BCMHSUS trials contained enrollment figures in all REB (Research Ethics Board) records.

**TABLE 13 BCMHSUS Clinical Trials**

	13-14	14-15	15-16	16-17	17-18	18-19
<b>TOTAL NUMBER OF CLINICAL TRIALS ACTIVE DURING THE FY</b>	7	5	4	2	5	7
<b>STATUS OF THE TRIAL AT THE END OF THE FY:</b>						
Total Number of Active Trials	7	5	4	2	5	7
Total Number of Trials that closed during the FY	2	0	0	0	0	0
<b>ENROLMENT NUMBERS:</b>						
Expected Local Subject Enrolment (for the term of the study)	688	563	640	450	902	1,217
Total Cumulative Subject enrolment at the end of the FY	56	77	228	244	423	465

Grant funding type is reported for Clinical Trials in Figure 42. This information is sourced from the REB (Research Ethics Board) file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 68 for a definition of funding types). The majority, seventy-one percent (71%) of BCMHSUS' Clinical Trials are Grant funded.

**FIGURE 42 BCMHSUS Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the FY**

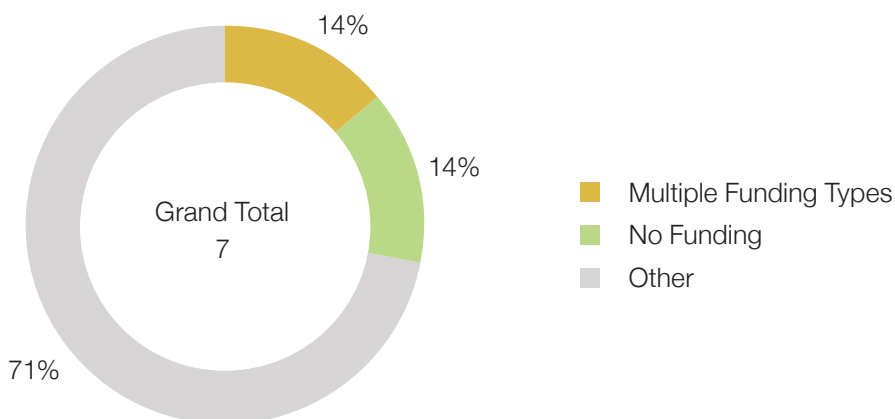




Table 14 reflects BCMHSUS' Top Three Achievements/Accomplishments/Highlights, and can include awards, citations, clinical programs, either in progress or historical, and be relevant to FY 18-19 timeframe (April 1, 2018 - March 31, 2019).

**TABLE 14 BCMHSUS Top Three Achievements/Accomplishments/Highlights**

<b>DR. AUSTIN RECIPIENT OF THE 2017-18 UBC KILLAM TEACHING PRIZE</b>
<p>BC Mental Health and Substance Use Services Research Institute's executive director Dr. Jehannine Austin is the recipient of the 2017- 2018 UBC Killam Teaching Prize, which was announced on May 10, 2018. This honour recognizes her outstanding achievement as a teacher. In Canada, the Killam name is synonymous with financial support for advanced studies. The Killam Trusts, established by Dorothy Johnston Killam and Izaak Walton Killam, benefit The University of British Columbia, The Canada Council for the Arts, Dalhousie University, Montreal Neurological Institute of McGill University, University of Alberta and The University of Calgary.</p>
<b>DR. HONER RECIPIENT OF THE CANADIAN PSYCHIATRIC ASSOCIATION J.M. CLEGHORN AWARD OF EXCELLENCE AND LEADERSHIP IN CLINICAL RESEARCH</b>
<p>Dr. William Honer received the Canadian Psychiatric Association (CPA) 2018 J.M. Cleghorn Award for Excellence and Leadership in Clinical Research. The J.M. Cleghorn Award is dedicated to the memory of Dr. John Cleghorn and is presented annually to a CPA member for excellence in clinical psychiatric research or leadership in advancing clinical psychiatric research in Canada. The Research Committee believed that Dr. Honer's outstanding and impactful contributions to the basic and clinical research of schizophrenia reflect the high standards set by Dr. John M. Cleghorn. Dr. Honer's research has established the effectiveness of medication treatment of first-episode psychosis in mitigating symptoms and relapse. The committee believes that Dr. Honer is a renowned academic, a highly sought mentor, and a clinician scientist dedicated to improving the care of vulnerable patients.</p>
<b>BCMHSUS PHD RECEIVES CIHR DOCTORAL RESEARCH AWARD</b>
<p>Ms. Amanda Butler who works with BCMHSUS Distinguished Scientist, Dr. Tonia Nicholls, received a CIHR Doctoral Research Award, the Frederick Banting and Charles Best Canada Graduate Scholarship (CGS-D) - 3 years \$30,000 /annum plus 5,000 research funding. She was rated 4.55 overall, putting her application in the outstanding range. Particularly noteworthy, she was ranked 20th out of 592 applications (top 3.38%).</p>

# BC CENTRE FOR DISEASE CONTROL/UBC CENTRE FOR DISEASE CONTROL (BCCDC/UBC CDC)



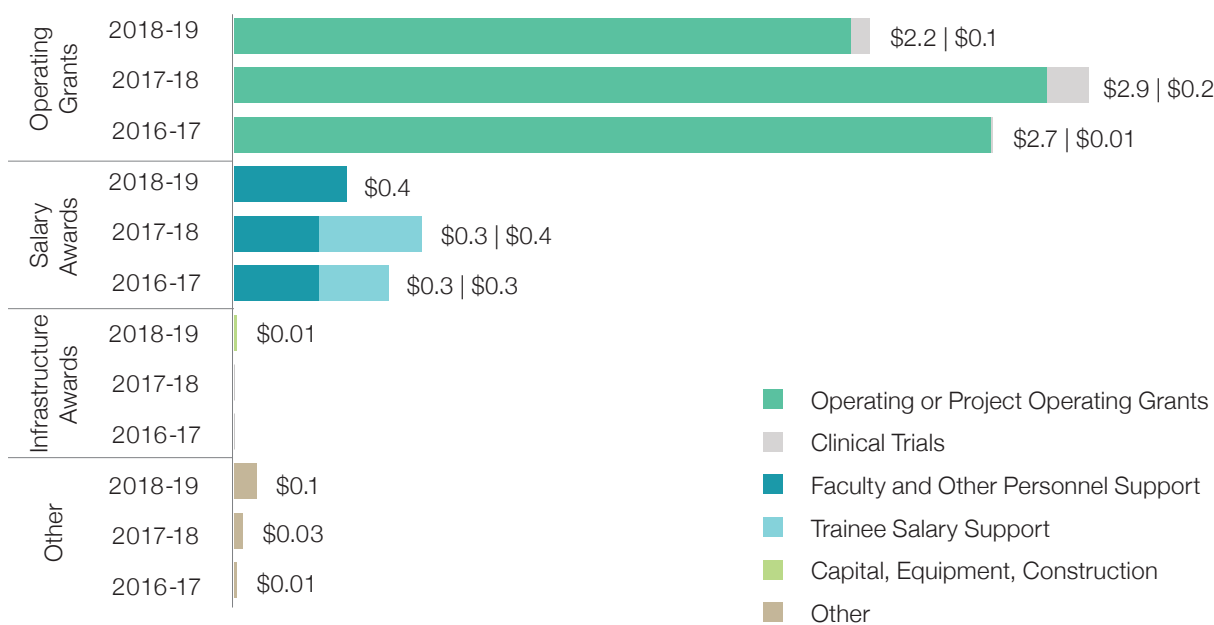
BC Centre for Disease Control  
An agency of the Provincial Health Services Authority

## Producing and Advancing Knowledge

In FY 2018-19, researchers affiliated with BCCDC/UBC CDC were awarded a total of \$2,777,563 in research funding. The amount awarded as Operating Grants (\$2,302,458) makes up 83% of total awards. A breakdown of funding types and subtypes can be found in Figure 43 and by funding source category in Figure 44. BCCDC's portion of the Indirect Costs Program grant totaled

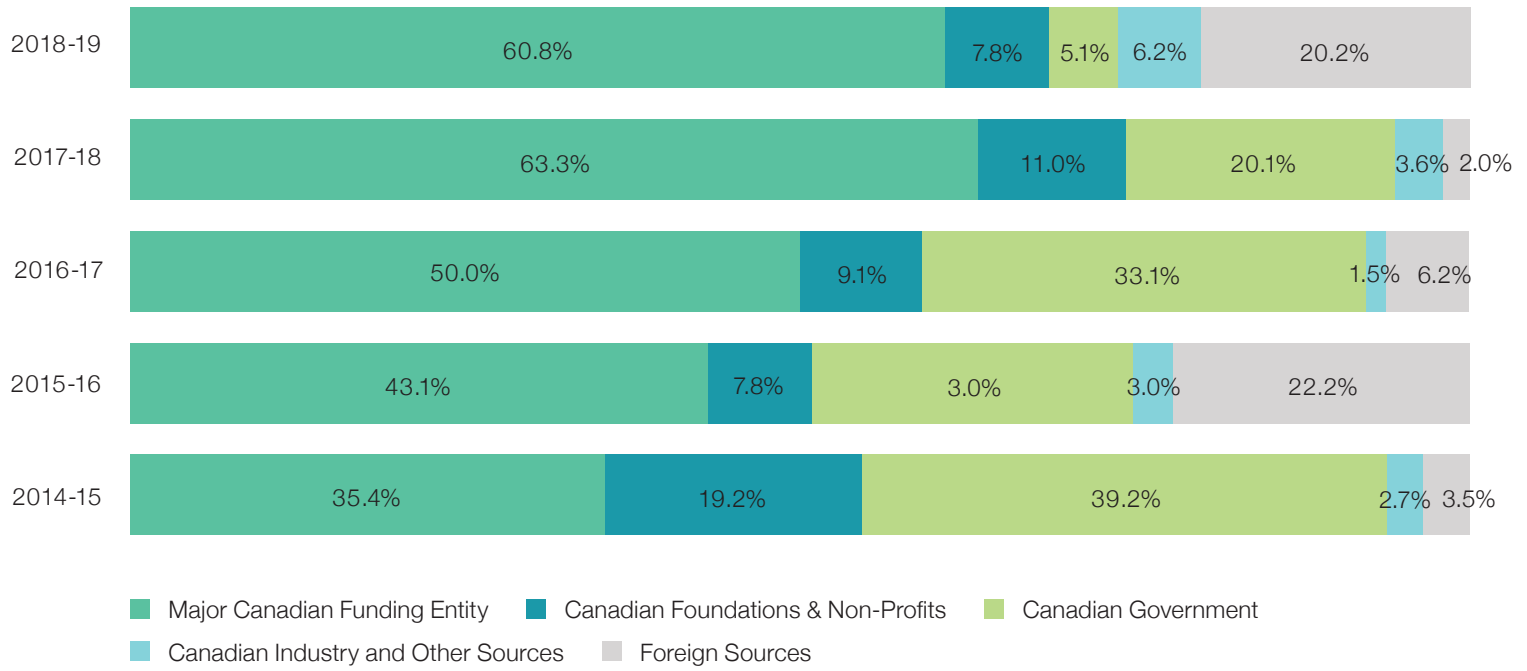
\$89,957 for FY 2018-19 but is not included in total research funding or the figures below. Because of its public and population health mandate, research at BCCDC is very much embedded within its clinical mandate and, as such, is also supported by operating funding to a significant degree.

**FIGURE 43 Total BCCDC/UBC CDC Research Funding by Funding Type and Sub-type by Fiscal Year**



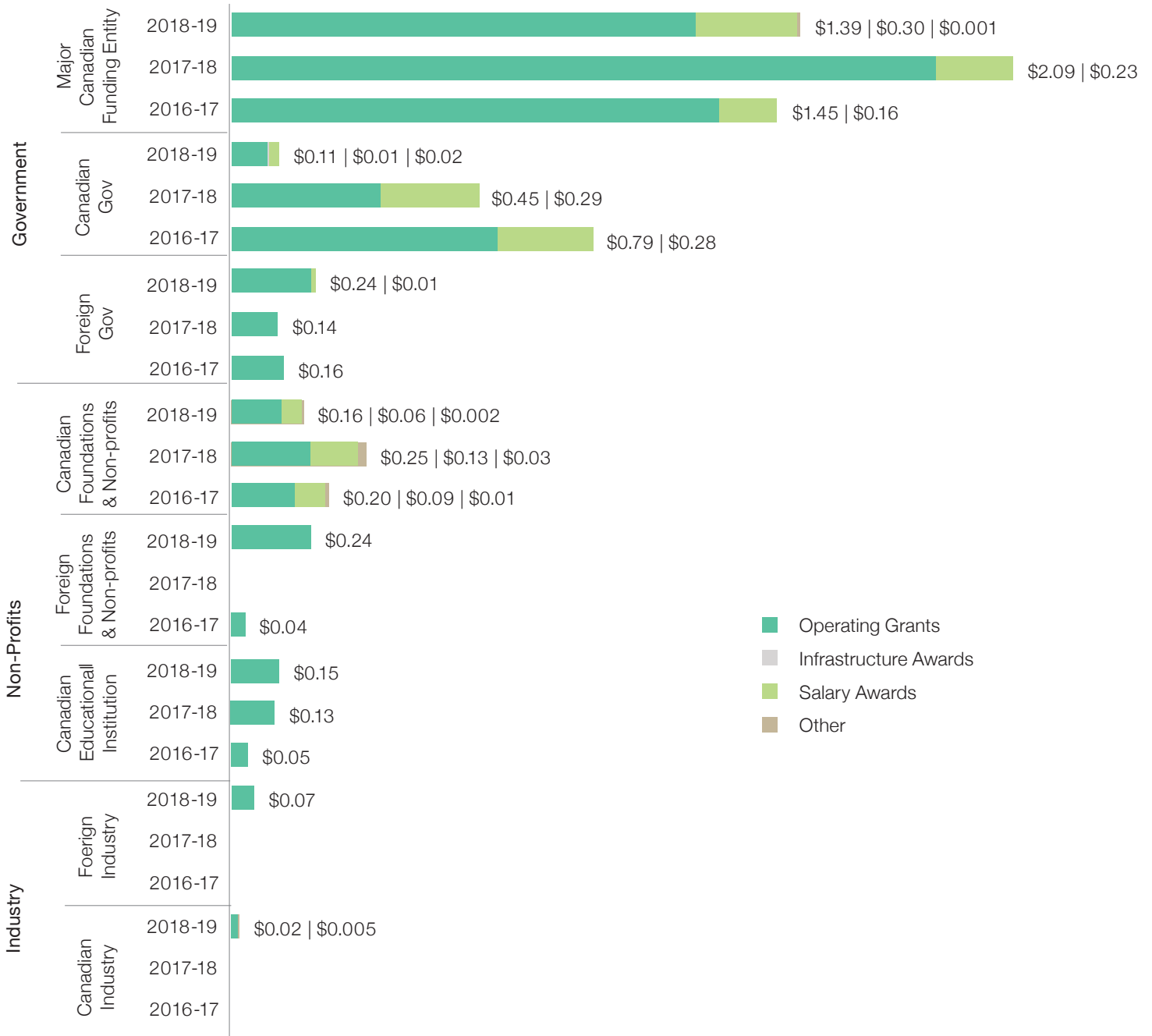
(values are in millions)

**FIGURE 44** Percentage of BCCDC/UBC CDC Research Funding by Funding Source Category by Fiscal Year



The top two funding categories are Major Canadian Funding Entity (63%) and Foreign Government (20%). Figure 45 details the RISE sector and major funding categories by funding type.

**FIGURE 45 Total BCCDC/UBC CDC Research Funding by RISE Sector, Funding Source Category and Type by Fiscal Year**



(values are in millions)



Reporting for CIHR Funding competitions includes one Foundation Grant and two Project Grant competitions during FY 2018-19. BCCDC did not participate in the Foundation Grant award competition, however, they were successful in the Fall Project Grant competitions for a total of 1 award, beating the national average for this competition.

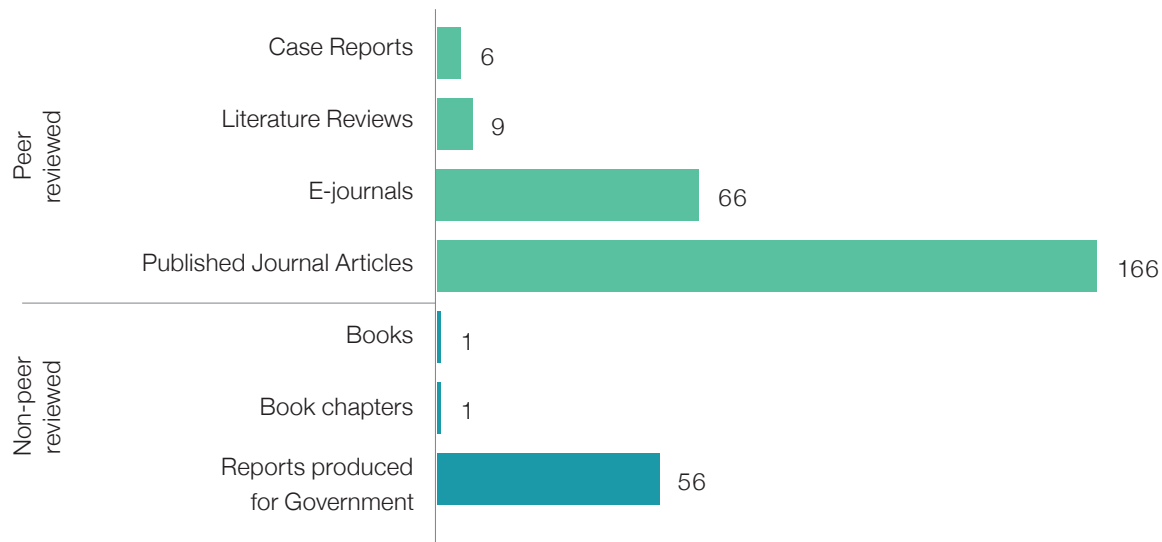
**TABLE 15 BCCDC Annual Grant Application Success Rate**

GRANT FUNDING OPPORTUNITY	National Overall Results % (Approved/Submitted)	BCCDC Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	N/A
2018-09 Project Grant	14.9% (371/2,484)	25% (1/4)
2019-03 Project Grants	15.6% (545/3,415)	0% (0/3)

BCCDC had a total of 305 publications of which 81% were peer reviewed. Total number of publications by type and category (peer vs. non-peer reviewed) is seen in Figure 46. The program total represents the number of publications where at least one program

researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

**FIGURE 46 Total Number of BCCDC/UBC Publications by Type and Category**

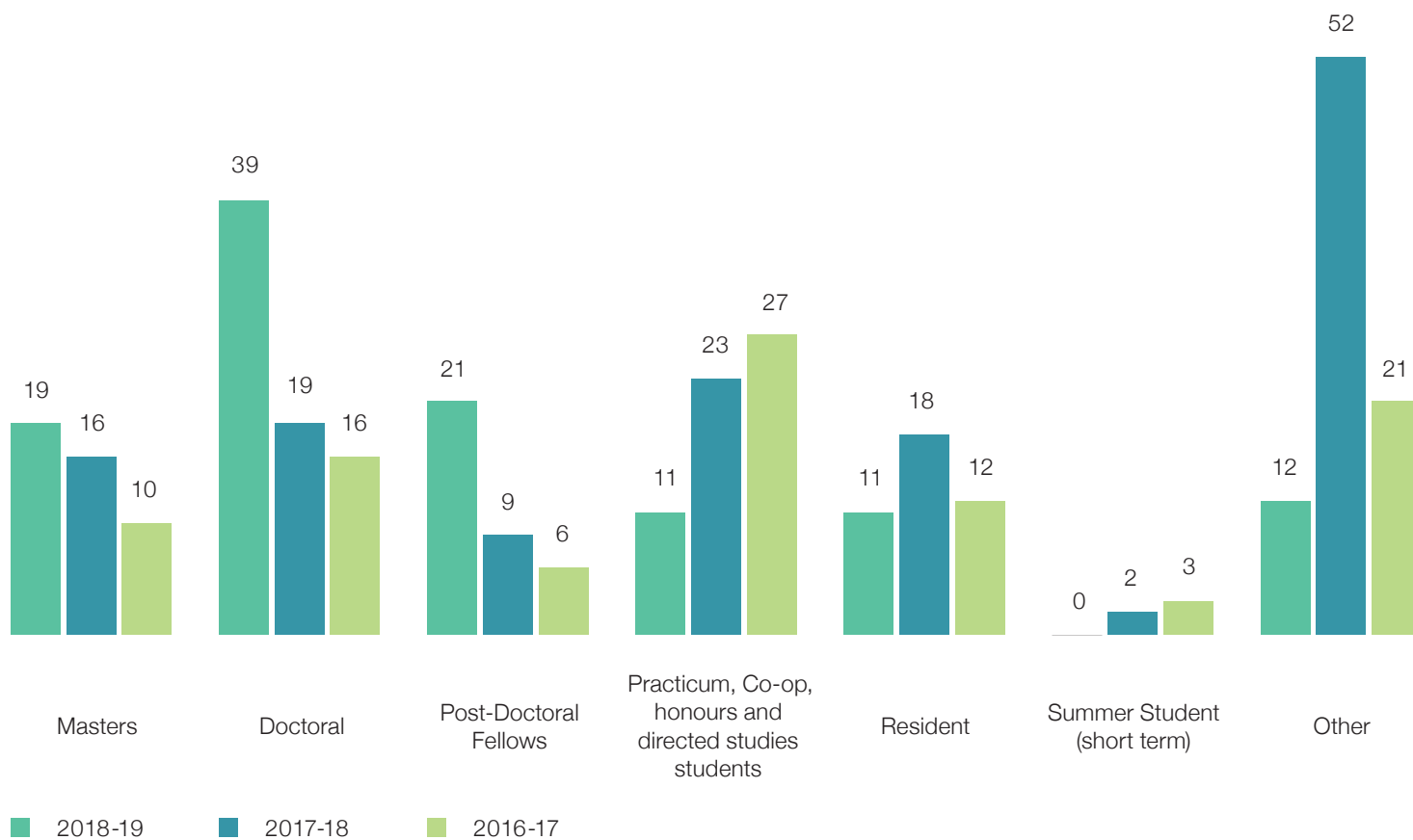


## Building Research Capacity

BCCDC/UBC CDC defines a researcher as any principal investigator or co-investigator involved in BCCDC/UBC CDC research projects. BCCDC had a total of 35 researchers meeting this definition in FY 2018-19.

During FY 2018-19, BCCDC/UBC CDC researchers provided training and supervision to a total of 113 trainees (see Figure 47). Trainees in the Other category includes medical students, research associates, undergraduates and clinical fellows.

**FIGURE 47 Total Number of BCCDC/UBC CDC Trainees by Type**



## Advancing Health and Policy Benefits

Clinical trial data from the REB is provided for a third year utilizing the same methodology as last year. See Table 16 for a detailed breakdown of clinical trial activity by fiscal year.

**TABLE 16 BCCDC/UBC CDC Clinical Trials**

	13-14	14-15	15-16	16-17	17-18	18-19
<b>TOTAL NUMBER OF CLINICAL TRIALS ACTIVE DURING THE FY</b>	2	3	4	5	5	9
<b>STATUS OF THE TRIAL AT THE END OF THE FY:</b>						
Total Number of Active Trials	2	3	4	5	4	8
Total Number of Trials that closed during the FY	0	0	0	0	1	1
<b>ENROLMENT NUMBERS:</b>						
Expected Local Subject Enrolment (for the term of the study)	532	401	2,000	2,696	2,750	6,699
Total Cumulative Subject enrolment at the end of the FY	55	157	294	2,656	1,639	2,707

Grant funding type is sourced from the REB (Research Ethics Board) file and reflects the funding type entered as part of the ethics application (see Glossary – Appendix 1, page 68 for a definition of funding types). Sixty-seven percent (67%) of BCCDC's clinical trials are grant funded, 11% have multiple funders, with the remaining 22% with no funding.

Table 17 reflects BCCDC's Top Three Achievements/Accomplishments/Highlights, and can include awards, citations, clinical programs, either in progress or historical, and be relevant to FY 18-19 timeframe (April 1, 2018 - March 31, 2019).



**TABLE 17 BCCDC/UBC CDC Top Three Achievements/Accomplishments/Highlights**

### MEASLES OUTBREAK COMMUNICATIONS STRATEGY

Measles was on the increase in BC in the first quarter of 2019 due to multiple importations, some of which led to transmissions including a school-based outbreak in Vancouver. BCCDC laboratory performed timely measles diagnostic testing including on weekends. Weekly epidemiological summaries were posted online providing up to date information to the public health community, healthcare providers, the Ministry of Health, media and the public. Information about settings where the public could have been exposed to measles were issued and included up to date information on appropriate actions to take. Many media interviews were provided. BCCDC secured and distributed 67 thousand doses of measles-containing vaccines during February and March to facilitate immunization of under-vaccinated children and adults.

### BCCDC LEADS PROVINCIAL EFFORT TO REDUCE PUBLIC HEALTH IMPACTS OF WILDFIRE SMOKE

Over the past ten years, British Columbia (BC) has experienced five of the worst wildfire seasons on provincial record. The extreme seasons of 2017 and 2018 were both more than three times worse than any other season since 1958. While a relatively small proportion of the BC population faced the direct threat of wildfire, most of the population was exposed to heavy smoke in both summers. For example, Metro Vancouver was under air quality advisory for a record-setting 22 days in 2018.

The BCCDC has been conducting research, surveillance, and knowledge translation related to wildfire smoke since 2010 to support evidence-based public health practice. During the summer of 2017 it became apparent that we could also play a leading role in the development and delivery of consistent messaging for the general public. With support from Health Canada and extensive engagement with partner agencies, we identified thirteen topics for fact sheets in the Wildfire Smoke and Your Health series.

Over the past year each of these fact sheets has been drafted by the BCCDC and sent to many partner agencies for review: Office of the Provincial Health Officer; Ministry of Health; Ministry of Environment and Climate Change Strategy; Health Emergency Management BC; WorkSafe BC; Provincial Health Services Authority; First Nations Health Authority; Fraser Health; Vancouver Coastal Health; Interior Health; Northern Health; Island Health; Health Canada; Public Health Agency of Canada; and Environment and Climate Change Canada. Feedback from these reviewers is integrated into each document until consensus is reached and the fact sheet is published on the BCCDC website ([bccdc.ca/wildfiresmoke](http://bccdc.ca/wildfiresmoke)).

The first sheet published was How to Prepare for the Wildfire Smoke Season, which was used to generate media interest in pre-season preparedness during the spring of 2019. The BCCDC also ran a smoke preparedness workshop in Prince George in May, as well as ten different preparedness webinars for partner agencies. Now that the 2019 wildfire season has started, we have shifted our focus to making the BC Asthma Prediction System (BCAPS) available to health users and the general public through a dynamic online interface. Over the next year we look forward to starting cutting-edge research on the effects of wildfire smoke for those exposed in utero, and the long-term effects of severe and repeated exposures in children and adults.

### BCCDC REPORTS HEALTH TRENDS UTILIZING INTERACTIVE DASHBOARDS

#### Dashboards and data visualization in antimicrobial stewardship

The Community Antimicrobial Stewardship program has been producing publicly accessible interactive dashboards for antimicrobial utilization and antimicrobial resistance via the BCCDC website since 2016. Leveraging data sharing agreements with the Ministry of Health and LifeLabs Inc. the dashboards allow individuals to better understand trends in antibiotic prescribing and resistance, and have been valuable knowledge translation tools for practitioners, researchers and the general public.

#### Web-based visualization for Community Health Data

The Population & Public Health (PPH) team at the BC Centre for Disease Control (BCCDC), a part of Provincial Health Services Authority (PHSA) developed and maintains the Community Health Data Website. The online resources are available to assist local governments, school boards and non-governmental organizations in evidence-based decision making for community health initiative planning. It enables users to explore, access and use local data related to demographics, health status and factors that affect health. All resources were successfully developed and disseminated by BCCDC in partnership with the BC Ministry of Health (MoH), regional health authorities, local governments (Union of BC Municipalities) and non-governmental organizations (BC Healthy Communities Society).

# WOMEN'S HEALTH RESEARCH INSTITUTE (WHRI)

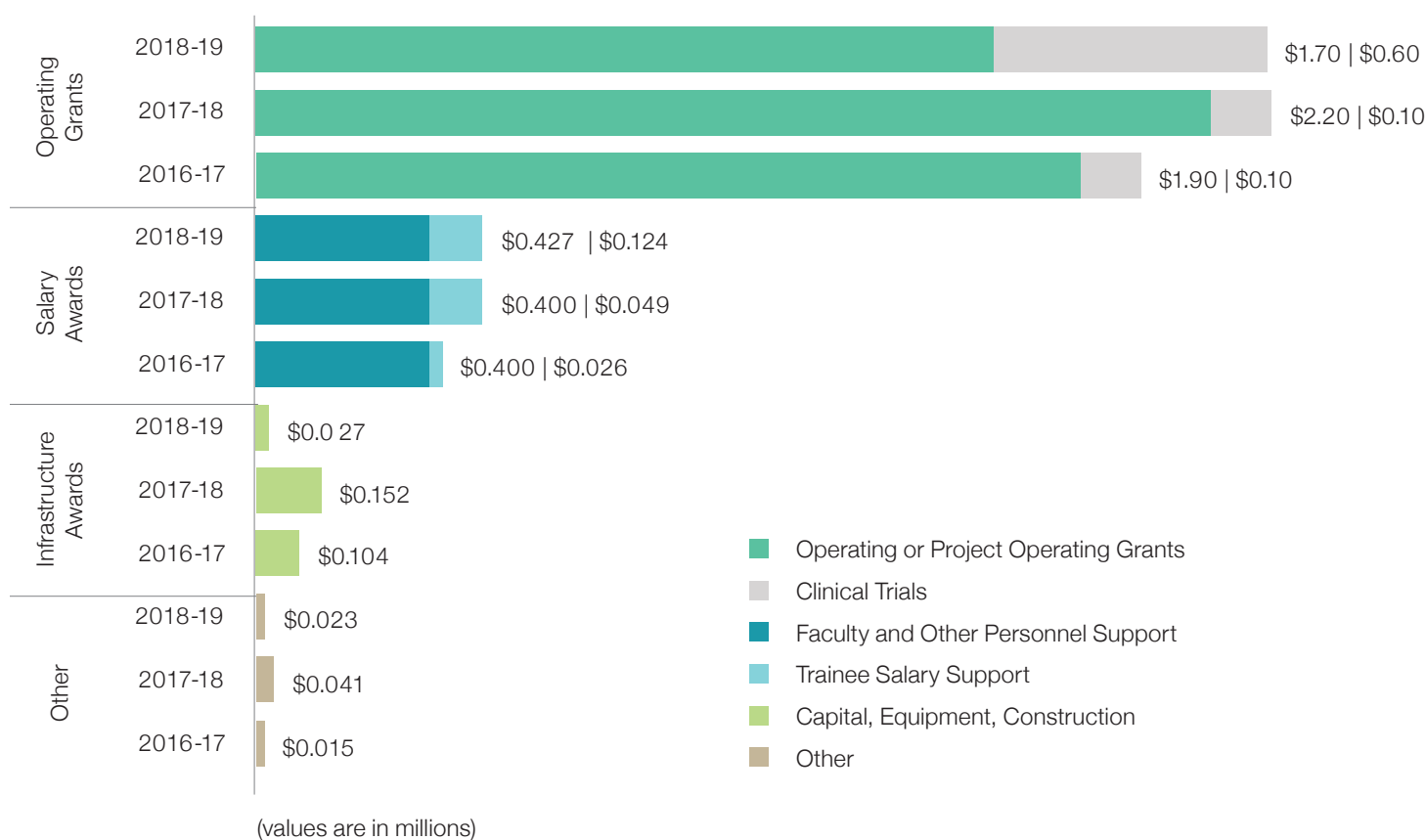


## Producing and Advancing Knowledge

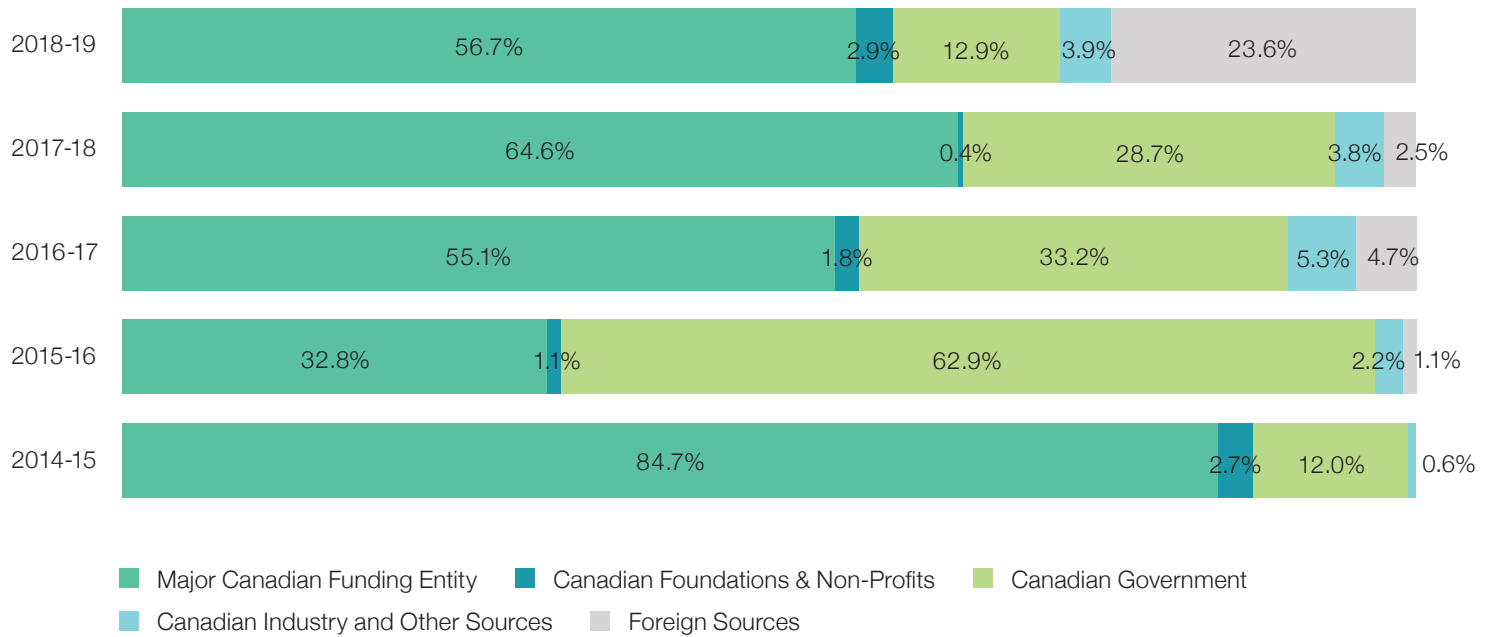
In FY 2018-19, researchers affiliated with WHRI were awarded a total of \$2,967,120 in research funding, which represents a 15% increase over last year. The amount awarded as Operating Grants (\$2,225,204) makes up 78% of total awards. A breakdown of funding types and subtypes can be found in Figure 48 and by funding source category in Figure 49. WHRI's portion of the Indirect Costs Program grant totaled \$160,596 for FY 2018-19

but is not included in total research funding or the figures below. WHRI shares investigators with a number of other health research institutes and universities and benefits from additional external grant revenues linked to these investigators. At this time, those research dollars are only included if a formal transfer agreement is in place to allocate attribution of shared investigator grants. As a result, total research funding below is understated.

**FIGURE 48 Total WHRI Research Funding by Funding Type and Sub-type by Fiscal Year**

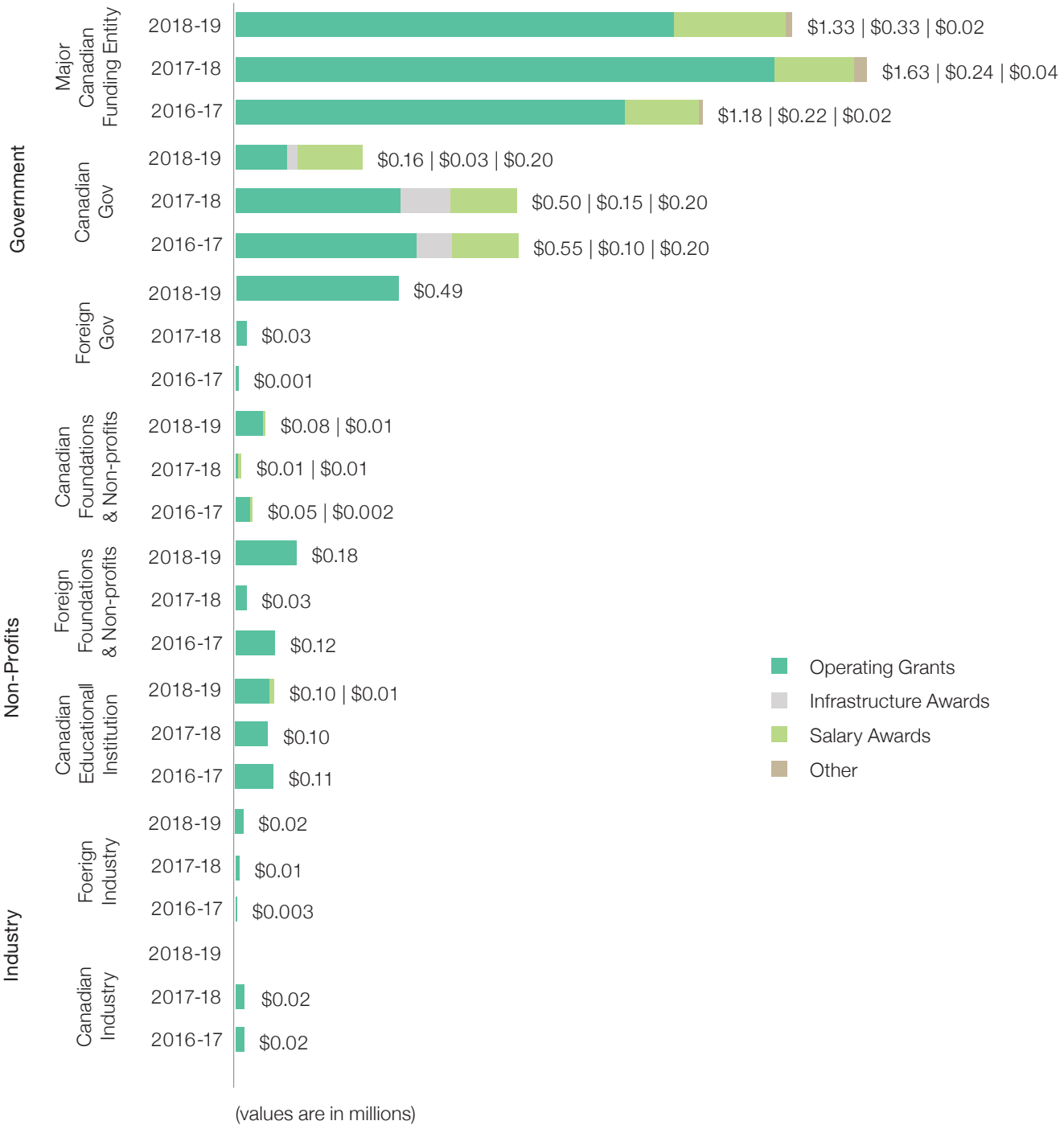


**FIGURE 49** Percentage of WHRI Research Funding by Funding Source Category by FY



In FY 2018-19, the top two funding categories are Major Canadian Funding Entity (65%) and Canadian Government (29%). Figure 50 details the major funding categories by funding type.

**FIGURE 50 Total WHRI Research Funding by RISE Sector, Funding Source Category and Type by Fiscal Year**



Reporting for CIHR Funding competitions includes one Foundation Grant and two Project Grant competitions during FY 2018-19. While WHRI did not participate in the Foundation Grant competitions, they were successful in both Project Grant

competitions with a total of 8.5 awards. In both Project Grant competitions, WHRI was above the national average success rate. WHRI investigators apply for grant competitions that are offered by a variety of granting agencies.

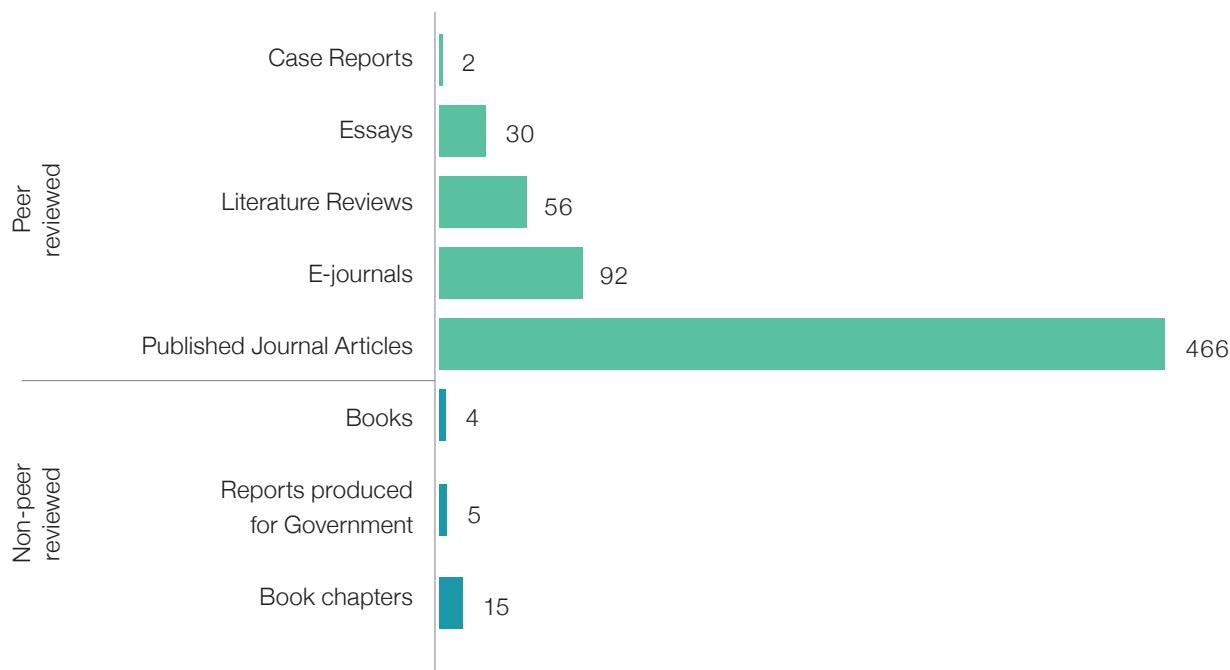
**TABLE 18 WHRI Annual Grant Application Success Rate**

GRANT FUNDING OPPORTUNITY	National Overall Results % (Approved/Submitted)	WHRI Results % (Approved/Submitted)
2018-19 Foundation Grant (Open-Stage 3)	12.9% (28/216)	N/A
2018-09 Project Grant	14.9% (371/2,484)	42.9% (3/7)
2019-03 Project Grants	15.6% (545/3,415)	47.8% (5.5/11.5)

WHRI had a total of 670 publications in calendar year 2018 of which 96% were peer reviewed. Total number of publications by type and category (peer vs. non-peer reviewed) is shown in Figure 51. Peer review represents the gold standard for scientific credibility. The program total represents the number of publications

where at least one program researcher was an author of the publication. When researchers from more than one research entity/program collaborate on the same publication, it is counted once for each program.

**FIGURE 51 Total Number of WHRI Publications by Type and Category**



For the first time as part of this report, WHRI is including results related to their four research specific social media channels; Facebook (member since Aug 2010); Twitter (member since August 2010); Instagram (member since May 2018; and LinkedIn (member since June 2017). Social media employs “mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content” (Kietzmann et al., 2011). Tracking and reporting of this data is a measure of knowledge translation in addition to meeting the following goals with regard to WHRI research activities:

- Increase traffic to the WHRI website
- Enhance the profile of the WHRI as one of only 3 women’s research institutes in Canada
- Increase the number of times that WHRI researcher publications are cited

- Strengthen and track the impact of WHRI events (e.g. #WHRISym19)
- Disseminate research evidence to targeted knowledge users (e.g. patients, providers, prescribers, decision makers)
- Track the impact of KT/dissemination campaigns (e.g. #itsnotinyourhead)

Table 19 shows 3rd quarter (Jan. 1 – March 31, 2019) and fiscal year 2018–19 results compared to the previous fiscal year. These metrics are a measure of reach and engagement and provide an indication of the volume of activity. They also include data that shows what happens after a program posts content. These would include conversation rate (# of comments your content generated); Amplification rate (the # of times your content was shared) and Applause rate (# of likes or favorite clicks per post).

In addition to the above activity, many WHRI researchers maintain their own professional accounts to engage peers, funders and patients, but this information is not tracked.

**TABLE 19 WHRI Social Media Statistics**

SOCIAL MEDIA CHANNEL		Followers			Activity Rate			
		# of Followers	# of New Followers	% change	# of likes	% change	# of shares	% change
Twitter	Quarterly	NA	171	+8.6%	615	+8.7%	264	-1.9%
	Annual	2,163	–	–	3,052	–	1,528	–
LinkedIn	Quarterly	NA	7	+9.5%	3	-40%	1	0%
	Annual	81	36	+80%	38	–	3	–
Facebook	Quarterly	NA	32	+5.4%	34	-53.4%	5	-50%
	Annual	620	98	+18.8%	49	–	392	–
Instagram	To Date	311	56	+22%	245	-10.6%	4	-33.3%

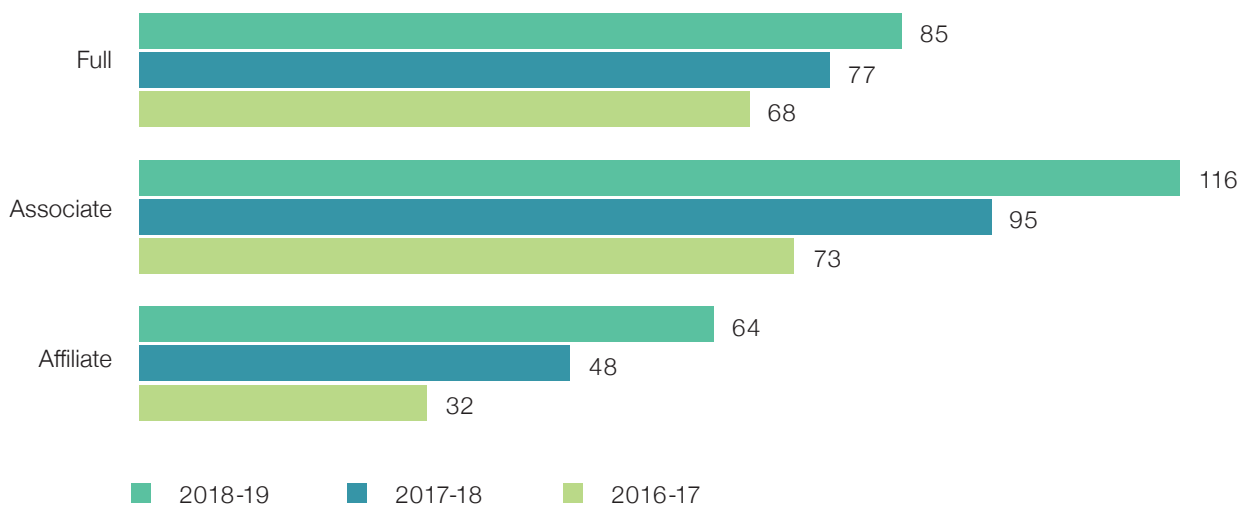
## Building Research Capacity

In an effort to show WHRI’s activities, their membership statistics are shown (see Figure 52). In FY 2018-19, membership increased by 45 for a total of 265 members, a 20.5% increase.

The membership categories are as follows:

<b>FULL MEMBER</b>	Individuals involved in women’s health research for which the WHRI would be the only research institute affiliation.
<b>ASSOCIATE MEMBER</b>	Individuals who are involved in women’s health research, at least in part, but have a strong relationship with another research institute (e.g. BCCHR) that they wish to maintain; the result is a dual membership with the WHRI and their current affiliation.
<b>AFFILIATE MEMBER</b>	Individuals who are extensively involved with another institute but may have projects that would overlap with WHRI.

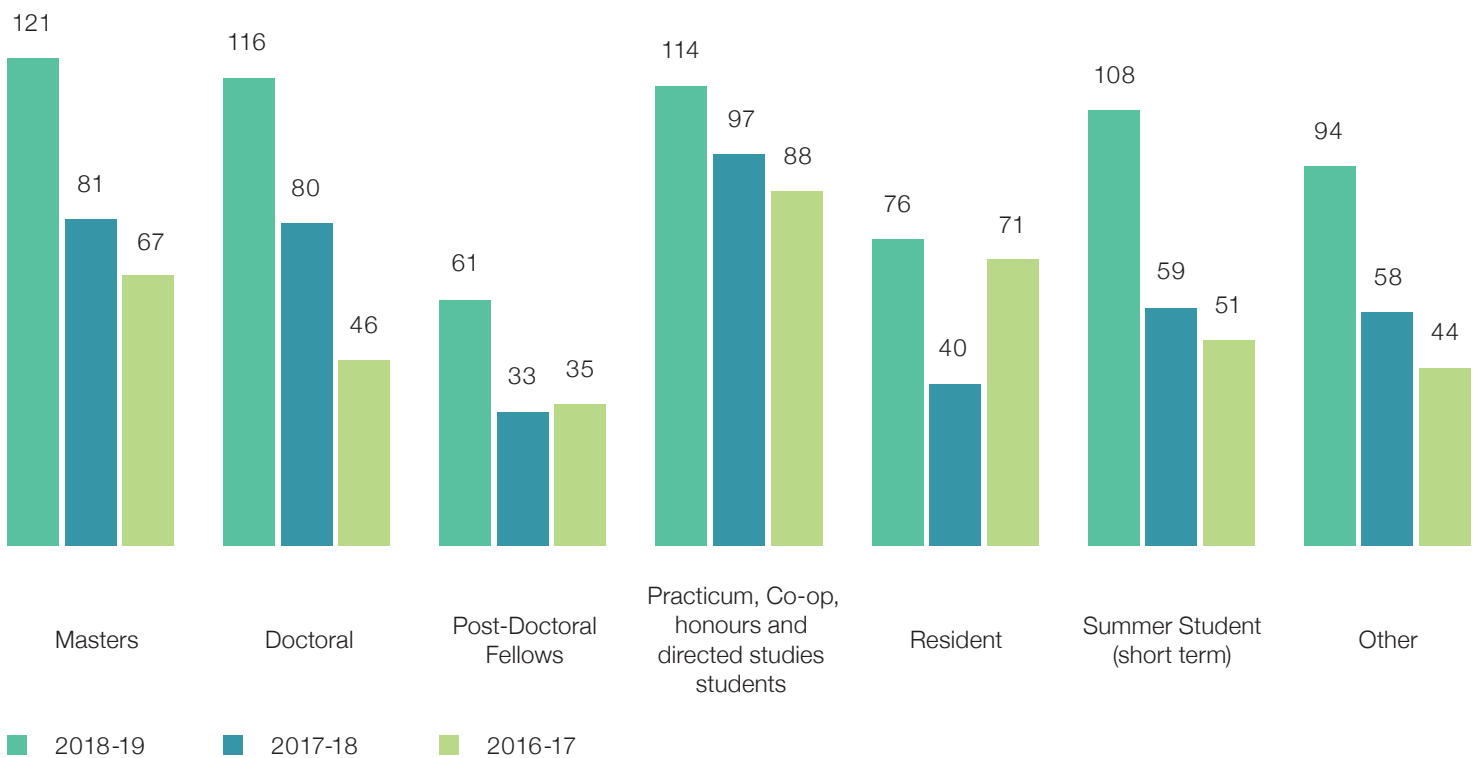
**FIGURE 52 Total WHRI Membership by Category**



WHRI researchers provided training and supervision to a total of 690 trainees (see Figure 53) and increase of 242 (54%) over last fiscal year. This increase is attributed to activities related to growing WHRI's membership and they absorb the trainees associated with

these new members. Also, WHRI hosted a new grant competition for graduate students and trainees which attracted great interest from WHRI members and their students.

**FIGURE 53 Total Number of WHRI Trainees by Type**



## Advancing Health and Policy Benefits

Clinical trial data from the REB (Research Ethics Board) is provided utilizing the same methodology as last year. See Table 20 for a detailed breakdown of clinical trial activity by fiscal year.

**TABLE 20 WHRI Clinical Trials**

	13-14	14-15	15-16	16-17	17-18	18-19
<b>TOTAL NUMBER OF CLINICAL TRIALS ACTIVE DURING THE FY</b>	26	27	28	11	31	38
<b>STATUS OF THE TRIAL AT THE END OF THE FY:</b>						
Total Number of Active Trials	26	20	24	7	23	30
Total Number of Trials that closed during the FY	6	7	4	4	8	8
<b>ENROLMENT NUMBERS:</b>						
Expected Local Subject Enrolment (for the term of the study)	3,709	3,433	4,058	1,162	6,653	10,928
Total Cumulative Subject enrolment at the end of the FY	1,811	1,940	2,360	545	3,092	3,160

Grant funding type is reported for Clinical Trials in figure 54. This information is sourced from the REB (Research Ethics Board) file and reflects the funding type entered as part of the ethics

application (see Glossary – Appendix 1, page 68 for a definition of funding types). Thirty-nine percent (39%) of WHRI's clinical trials are Grant funded, and 13% are Industry funded.

**FIGURE 54 WHRI Percentage of Clinical Trial Grant Funding Type – Active and Terminated Trials within the FY**

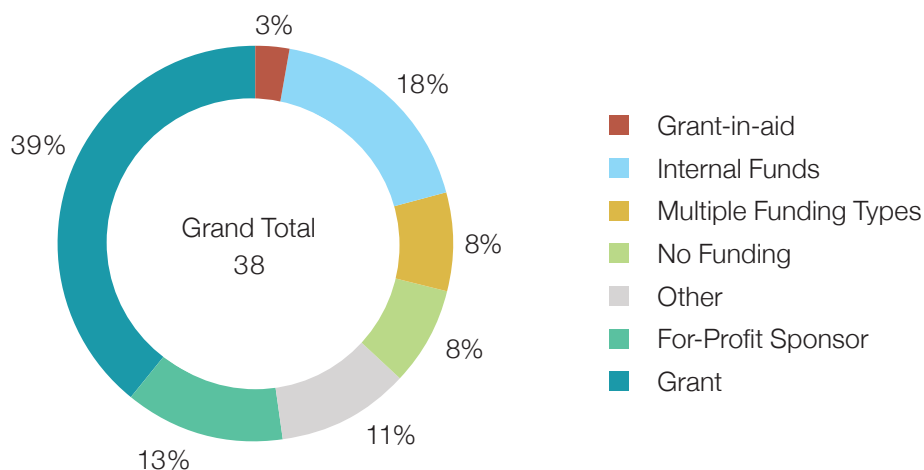




Table 21 reflects WHRI's Top Three Achievements/Accomplishments/Highlights, and can include awards, citations, clinical programs, either in progress or historical, and be relevant to FY 18-19 timeframe (April 1, 2018 - March 31, 2019).

**TABLE 21 WHRI Top Three Achievements/Accomplishments/Highlights**

**WHRI CHAMPIONS NEW DIGITAL AND VIRTUAL HEALTH PORTFOLIO SPECIFIC TO WOMEN'S AND NEWBORN'S HEALTH RESEARCH**

Recognizing the rapid and monumental advances within the technology and digital health sector, the WHRI has created capacity for in-house expertise in order to catalogue the range and depth of women's and newborn's health projects related to digital and virtual health. The WHRI has recently hired Ciana Maher into the new role of "Research Projects Manager, Digital Health". The deliverables for this role are to build capacity for a women's and newborn's health focused digital health strategy within the Women's Health Research Institute and within BC Women's Hospital + Health Centre, to conduct an environmental scan to better understand the current landscape of digital health research across women's and newborn's health research in BC, and to identify priorities to enhance digital health research initiatives for the institute. This initiative aligns with PHSA's new mandate focused on Provincial digital and information technology, and with the PHSA office of Virtual Health. There is also cross-pollination with similar efforts from the BC Children's Hospital Research Institute to create a digital health research strategy.

**WHRI INVESTIGATOR TO LEAD \$20M NATIONAL RESEARCH STRATEGY AIMED AT THE ELIMINATION OF CERVICAL CANCER**

This spring, the Federal Government announced an investment of \$10 million over 5 years to fund a national program of cervical cancer research and prevention which will be led by WHRI researcher, Dr. Gina Ogilvie, and her team at BC Women's Hospital + Health Centre, the B.C. Elimination of Cervical Cancer Task Force, and colleagues at the Gynecological Cancer Initiative. The BC Women's Health Foundation committed to matching the federal government's investment, for a total of \$20M in funding to support a program of research that will explore new strategies to better prevent and treat cervical cancer. Most cases of cervical cancer are caused by HPV, a sexually transmitted infection. While the vast majority of such infections clear up on their own, chronic HPV infection can cause abnormalities that lead to cervical cancer if undetected and untreated. About 1,550 women across Canada are diagnosed each year with cervical cancer and nearly 400 die from the disease. A large-scale study published recently by Dr. Ogilvie and colleagues showed that a new test for cervical cancer screening that looks for the human papillomavirus (HPV) is more effective than the conventional Pap smear test that has been used for decades. This new funding will be used by Dr. Ogilvie's team to study things like HPV vaccination and other methods to prevent cervical cancer and increase cervical cancer screening rates. This work will contribute to the global call for action toward the elimination of cervical cancer.

**WHRI LAUNCHES KNOWLEDGE TRANSLATION CONSULTING FOR RESEARCH TEAMS TO MOVE EVIDENCE INTO PRACTICE**

Knowledge translation activities aim to close the gap between research and implementation by improving the use of research evidence into practice. The WHRI provides leadership in this area by establishing dedicated knowledge translation supports for researchers, including partnering with the Michael Smith Foundation for Health Research to host various workshops on knowledge translation and Implementation Science for researchers and by hiring a knowledge translation specialist to give women's and newborn health researchers the support they need to increase the impact of their research. The WHRI's Knowledge Translation Manager acts as an expert resource by providing leadership and consultation to WHRI researchers and other stakeholders on translation research projects. This role works collaboratively with internal and external stakeholders at various points in the research cycle for the purpose of increasing the use of health research evidence in practice, policy and further research and building organizational capacity to strength knowledge translation within WHRI and other clinical sites.

# REGISTRIES & DATASETS

## Advancing Health and Policy Benefits

For a sixth year, data was collected from PHSA’s registries and data sets to capture information to allow identification of users of the databases and how the data support research.

Data stewards for a total of 16 PHSA registries or datasets, were invited to participate in a survey designed to assess the research activities of the registry/dataset. Completed surveys from 15 out of the 16 registries/datasets were obtained. It was decided to roll the PREDICT dataset into the responses for the Tumor Tissue Repository. The Research Metrics working group drew a distinction between two types of databases that might be counted. The first

are those that serve as registries. These are the result of significant infrastructure investment in the collection of longitudinal data that are regional, provincial or national in scope regarding provision of services to specific population(s), maintained for the purposes of undertaking analysis, surveillance and/or research. They represent a significant resource for and investment in research. The second (not collected) are short-term, project-related databases that are primarily grant funded and are not maintained for use beyond the term of a given research project.

## Registry/data set Definition/Purpose

The information on each registry/dataset was compiled from online resources and is described below.

REGISTRY/DATASET	PURPOSE
<b>BC CANCER REGISTRY</b>	The BC Cancer Registry is a population-based registry of all cancers diagnosed in British Columbia residents. It collects data and generates cancer statistics on the BC Population for the purpose of monitoring the burden of cancer in the province. It also serves as a source of information for research.
<b>BC CARDIAC REGISTRY (HEARTIS)</b>	Heart Information System (HEARTIS) tracks a patient journey for all current and future cardiac procedures, throughout British Columbia, from registry on the waitlist to procedure completion and follow up. Its purpose is to support clinical care, quality assurance and improvement, and outcome-based research.
<b>BCEHS ADMINISTRATIVE DATABASE</b>	The BCEHS administrative dataset consists of both dispatch (CAD) and patient care information (PCIS).
<b>BC GENERATIONS PROJECT</b>	The BC Generations Project is British Columbia’s largest-ever health study. The Project follows a cohort of nearly 30,000 BC participants who volunteer their health information and biological samples to help researchers learn more about how environment, lifestyle and genes contribute to cancer and other chronic diseases.
<b>BC PERINATAL DATABASE REGISTRY (BCPDR)</b>	The (BCPDR) contains data abstracted from obstetrical and neonatal medical records on nearly 100% of births in the province of British Columbia from over 60 hospitals as well as births occurring at home attended by BC registered midwives. The BCPDR also collects data on maternal postpartum readmissions up to 42 days post-delivery and baby transfers and readmissions up to 28 days after birth. Data access is provided for public-interest research purposes, surveillance, program delivery, and evaluation.
<b>BC TRAUMA REGISTRY</b>	Provides data collection, reporting and support of research and quality initiatives related to trauma care.
<b>BCCH’S BIOBANK</b>	The mission of the BCCH BioBank is to provide a comprehensive service for the collection, processing, storage, rapid access and retrieval of biospecimens and clinical information for research projects using a professional and compassionate approach to patient consenting that adheres to the highest standards of research ethics and patient privacy. A single biospecimen from one patient has the ability to fuel numerous research projects, any one of which might lead to an important medical breakthrough. BC Children’s Hospital BioBank collects samples from patients at both BC Children’s Hospital and BC Women’s Hospital.
<b>CERVICAL CANCER SCREENING DATABASE</b>	A population based clinical system for cervical cancer screening as well as a lab system for all gynaecological cytology performed by the Provincial lab.
<b>ENDOMETRIOSIS AND PELVIC PAIN INTERDISCIPLINARY COHORT (EPPIC)</b>	A prospective data collection to evaluate patient outcomes after interdisciplinary care for endometriosis and pelvic pain
<b>HEREDITARY CANCER PROGRAM</b>	The Hereditary Cancer Program provides genetic counselling and genetic testing for BC/Yukon residents who may have inherited an increased risk for specific types of cancer.

REGISTRY/DATASET	PURPOSE
<b>LUNG CANCER SCREENING PROGRAM</b>	The BC Lung Screen Trial provides the only access to organized lung cancer screening to eligible B.C. residents.
<b>PROMIS-BC RENAL/ TRANSPLANT</b>	Patient Records and Outcome Management Information System – is the renal and transplant care community’s clinical information system. With data collected from the 39 renal units in British Columbia, PROMIS supports: Individual patient care management; Renal unit management; Continuous quality improvement and research; Outcomes-based planning. PROMIS database is used as a source of important epidemiological data in support of clinical trials and for assessing new therapies.
<b>SCREENING MAMMOGRAPHY DATABASE (SMP)</b>	Clinical system for scheduling, reporting and tracking of screening mammography exams.
<b>RESUSCITATION OUTCOMES CONSORTIUM (ROC)</b>	The Resuscitation Outcomes Consortium (ROC) was created to conduct clinical research in the areas of cardiopulmonary resuscitation and traumatic injury. ROC consists of 10 Regional Clinical Centers (RCCs), one satellite site and a Data and Coordinating Center (DCC) that will provide the necessary infrastructure to conduct multiple collaborative trials to aid rapid translation of promising scientific and clinical advances to improve resuscitation outcomes.
<b>SURGICAL PATIENT REGISTRY (SPR)</b>	SPR is a provincial program involving the five regional Health Authorities, the Provincial Health Services Authority (PHSA) and the Ministry of Health (MoH). SPR tracks patients waiting for surgery in British Columbia and provides information to evaluate and monitor surgical wait times in the province.
<b>TUMOUR TISSUE REPOSITORY (TTR)</b>	TTR is a provincial resource to support translational cancer research at BC Cancer, across Canada and internationally. The TTR is a state-of-the-art tumour bank that collects tissues, blood, and clinical information and processes these to create anonymous cases that can be studied by cancer researchers to understand how cancer develops, how it grows, how it spreads, and how it responds to treatment.

## Supporting Research Activities

For FY 2018-19, fourteen (14) out of the fifteen (15), or 93% of registries/datasets are used for the purpose of research as defined by UBC (see Glossary – Appendix 1, page 70). In addition, respondents were asked to identify other activities they provide in support of research. Table 22 lists the support activities by

registry/dataset and shows the number of times in the past three fiscal years that a registry has provided a particular support activity. These research support activities are ranked from most provided to least over the three-year period.

**TABLE 22 Research Activities Supported by Registries and Datasets**

RESEARCH SUPPORT ACTIVITY	CANCER	CARDIAC	CERVICAL	PERINATAL	RENAL	SMP	TRANSPLANT	TRAUMA	TTR	BIOBANK	GENERATIONS	HEREDITARY	EPPIC	LUNG	BCEHS	GRAND TOTAL
SUPPORT IN MANAGING AND LINKING DATA	3	3	2	3	3	3	2	3	3	2	2	1	2	2	1	37
SUPPORT IN DESIGNING RESEARCH STUDIES	3	2	2	3	3	3	2	3	3	2	1	1	2	2	1	36
ASSIST IN IDENTIFYING KNOWLEDGE GAPS AND IMPROVEMENT NEEDS	2	3	3	3	3	3	2	3		1	1	2	2	2	1	33
FACILITATE COMMUNICATION TO IDENTIFY PERTINENT RESEARCH QUESTION		3	3	2	3	3	1	3			1	1	1	2	1	26
SUPPORT IN ENSURING STUDIES MEET REGULATORY STANDARDS	1	3	1	1	3	1	2	3	3	2			1	2		25
SUPPORT IN CONDUCTING BIostatistical ANALYSIS		3	1	3	3	1	2	2	1		1	1	1	2		23
PROVIDE SPECIALIZED AND MULTIDISCIPLINARY METHODOLOGICAL EXPERTISE	1	3		3	3	1		3	2				1	2		19
TEACHING AND HANDS ON TRAINING FOR THE ABOVE		2		2	3				3					2		13
APPLICATION OF NEW TECHNICAL CAPABILITIES TO PROVIDE MORE TIMELY ACCESS TO WIDER RANGE OF DATA				2	2		1	3				1	1	2	1	13
SUPPORT IN PROVIDING AND TEACHING PROJECT MANAGEMENT SKILLS				2	1							1				4
OTHER	1										2					3
<b>GRAND TOTAL</b>	<b>11</b>	<b>22</b>	<b>12</b>	<b>24</b>	<b>27</b>	<b>15</b>	<b>12</b>	<b>23</b>	<b>15</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>11</b>	<b>18</b>	<b>5</b>	<b>237</b>

Respondents were asked if they submit data to external organizations for the purposes of research. See Table 23 for the breakdown of data set type by registry/dataset for FY 2018-19.

This table lists the type of external data set and shows the number of times in the past three years that the registry has submitted data. The type of dataset is ranked from most submitted to least.

**TABLE 23 Provision of Data to external Data Sets by Registry**

TYPE OF EXTERNAL DATA SET	CANCER	CARDIAC	CERVICAL	PERINATAL	RENAL	SMP	SPR	TRANSPLANT	TRAUMA	TTR	BIOBANK	GENERATIONS	HEREDITARY	LUNG	EPPIC	BCEHS	GRAND TOTAL
PAN CANADIAN DATASET	3	2	1		4	3	1	2	1	3		2		2		1	27
PROVINCIAL DATA		3		3	3		3		1			3				1	17
CROSS FEEDING WITHIN PHSA		3		2	3			1	2				1		1		13
DATA NOT SUBMITTED TO ANY ORGANIZATION			2								1		1		1		8
INTERNATIONAL DATASET	1				3			2									6
OTHER	1	1				1					1	1					5
<b>GRAND TOTAL</b>	<b>5</b>	<b>9</b>	<b>3</b>	<b>5</b>	<b>13</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>76</b>

**Names of the external datasets include:**

- Provincial:**
  - Chronic Disease Registry Initiative
  - First Nations Health Authority
  - Surgical Patient Registry (SPR) Completed Surgical Cases – Ministry of Health
  - Ministry of Health
  - Population Data BC
  - Statistics Canada
- Pan Canadian:**
  - Canadian Cancer Registry – Statistics Canada
  - Canadian Joint Replacement Registry - CIHI
  - Canadian Organ Replacement Registry (CORR)
  - Canadian Ovarian Experimental Unified Resource (COEUR) – Terry Fox Research Institute
  - Canadian Partnership for Tomorrow Project – Canadian Partnership Against Cancer
  - Canadian Resuscitation Outcomes Consortium (CanROC)
  - Canadian Tissue Repository Network (CTRNet)
  - Institute for Clinical Evaluative Sciences (ICES)
  - Pan-Canadian Early Detection of Lung Cancer Study
  - Public Health Agency of Canada (Canadian Breast Cancer Screening Database)
  - VIGOUR (Virtual Coordinating Centre for Global Collaborative Cardiovascular Research)
- International:**
  - North American Association of Central Cancer Registries (NAACCR)
  - International Agency for Research on Cancer (IARC – a division of the World Health Organization)
  - International Society for Heart & Lung Transplant (ISHLT)
  - Resuscitation Outcomes Consortium (RoC)\*
  - Chronic Kidney Disease Prognosis Consortium (CKD-PC)
  - Peritoneal Dialysis Outcome and Practice Patterns Study (PDOPPS)

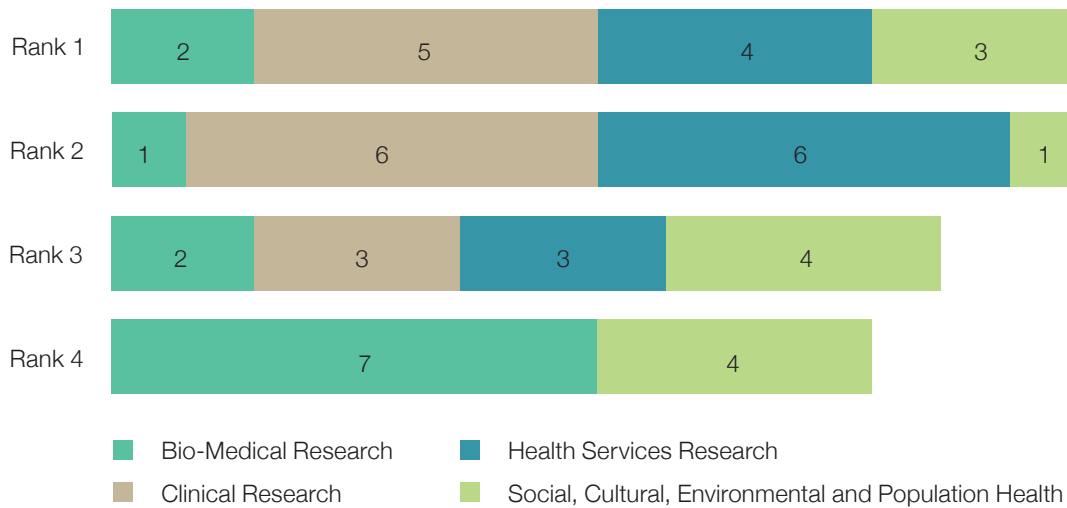
\*ROC include 4 distinct data sets; Cardiac Clinical Trials, Trauma Clinical Trials, Cardiac Arrest Registry and Trauma Registry.

## Nature of Research Activities

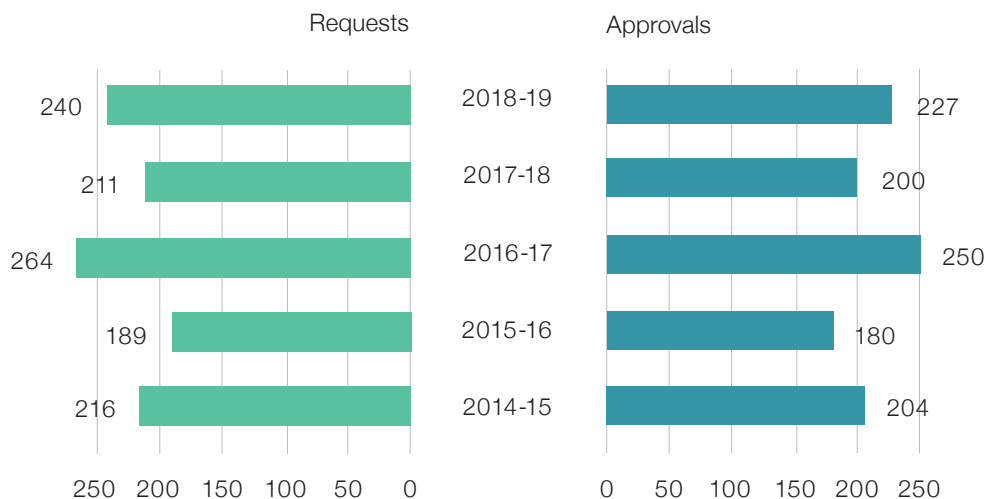
CIHR (Canadian Institutes of Health Research) categorizes health research into four broad themes: biomedical research, clinical research, health services research (research respecting health systems and services); and social, cultural, environmental

and population health. Research pursued using the registries/datasets above are categorized in Figure 55. Access requests are summarized in Figure 56.

**FIGURE 55 Ranking of Predominant Nature of Research Questions Using Data from the Registries/Datasets**



**FIGURE 56 Research Access Requests and Approvals from Registry/Dataset by Fiscal Year**



In addition, BCEHS manages a data set for ongoing research; the Red Blood Cell Products Pilot Project. BC Emergency Health Services is mainly a health service delivery program whose mandate includes the production of knowledge in the patient populations they serve.

## APPENDIX 1 GLOSSARY

TERM	DESCRIPTION [DATA SOURCE]
<b>METRIC DEFINITIONS</b>	
<b>Metrics 1ab, 2b</b> – Total annual grant awards, Total annual external grant awards by major funding categories by agency or research entity	Total Annual Award (\$) for Grants, Awards and Contracts by Funding Source  <i>[RISe annual file provided by UBC Office of Research Services]</i>
<b>Metric 1c</b> – Annual grant application success rate by agency/research entity. Added in FY 09-10	Success rates for two CIHR operating grant competitions (March and September of applicable year) for BC Cancer and BCCHR, BCMHSUS and WHRI.  <i>[CIHR website for National results; Agency results self-reported on the excel data collection form]</i>
<b>Metric 1d</b> – Total # of Publications Added in FY 10-11; Category addition in FY 11-12	Total number (of publications, not authors) published within applicable calendar year meeting the following criteria: Book, book chapter, reports produced for the government, peer-reviewed publication inclusive of published journal articles, case reports, essays, literature reviews, e-journals and monographs. Excluded = abstracts, editorials, summaries, letters to the Editor, epub, in press and submitted publications.  <i>[Agencies self-report utilizing SciVal to search Scopus utilizing researcher name; Agency inputs data on excel data collection form]</i>
<b>Metric 2a</b> – Total number of trainees by agency/research entity	Total Number (head count, not FTE) of Research Trainees by Student Type. (Exclude clinical trainees who are supported during their brief research rotations.) Research trainees counted will be any individuals who are primarily supervised by a researcher affiliated with the reporting unit, during all or a portion of the reporting year.  <i>[Agencies manually request trainee statistics from individual investigators and input data on excel data collection form]</i>
<b>Metric 2c</b> – Total number of researchers by agency/research entity	List of Researcher Names including Research definition (This metric is to be collected based on BCCHR methodology category types wherever possible, if not available in that format, please designate your category as “5” and add your research definition in the space provided.) Added in FY 11-12 is a column to collect whether a researcher is a shared resource or 100% attributable to a specific agency.  <i>[Previous year’s researchers are provided to each agency from the researcher database in excel; Agencies provide additions, deletions, changes on excel data collection form]</i>
<b>Metric 2d</b> - Infrastructure Investments - Major CFI Infrastructure Grants (Added FY 10-11)	Total FY \$ for Leading Edge Fund (LEF)/New Initiatives Fund (NIF) awards from Canada Foundation for Innovation. LEF projects sustain and further enhance the most advanced research and technology development efforts already supported by past CFI investments. LEF projects build on existing areas of research priority where institutions have a competitive advantage and a proven track record in enhancing Canada’s science and technology capacity. NIF projects build Canada’s capacity in new, promising areas of research and technology development. Also included in these amounts are the matching funds (industry, educational, charity, etc.) to these awards. Excluded from these amounts are \$’s associated with the Infrastructure Operating Fund (IOF) or Leaders Opportunity Fund (LOF) from CFI. These get reported under Infrastructure – HR awards and operating grant categories respectively.  <i>[RISe annual file provided by UBC Office of Research Services]</i>

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
<p><b>Metric 2e</b> – Research Support Fund grants (Added FY 12-13)</p>	<p>A federally funded grant to Canadian post-secondary institutions to help pay the indirect costs of research (e.g. salaries for research administrative staff, administrative costs associated with patent activities, maintenance of lab space). These annual grants are based on a formula related to tri-council award amounts (CIHR, NSERC, and SSHRC) and are paid to the research institutes based on a formal revenue sharing agreement. Due to how UBC is now reporting revenue precipitated by policy changes of the CAUBO (Canadian Association of University Business Officers), PHSA includes revenue related to the Research Support Fund (RSF).</p> <p><i>[RISe annual file provided by UBC Office of Research Services]</i></p>
<p><b>Metric 3a</b> - # of intellectual property disclosures, patents by agency/research entity</p>	<p>Total number of Invention Disclosure (internal documents), provisional patent and PCT applications by fiscal year.</p> <p><i>[BCTDO (for BC Cancer) and UILO (all other agencies) complete the excel data collection form]</i></p>
<p><b>Metric 3b</b> – Licenses, royalty income and # spin-off companies (Revised FY 10/11) (Revised Net Licensing Rev definitions in FY 2013-14)</p>	<p>Total number of active license/assignment agreements and spin-off companies. List the names of all active spin-off companies. These numbers represent cumulative totals from year to year and are no longer reported by region.</p> <p>IP related revenue shall follow the UILO (University-Industry Liaison Office) definitions from FY 2010-11 forward.</p> <p><b>Definitions:</b>  <b>Gross licensing revenue</b> = Royalties + Equity Liquidated + Option Fees + License Fees + License Management + Technology Assignment;            Royalties - royalty payments including minimum annual royalty payments            License Fees – upfront payments, milestone payments and other payments associated with the license            License Management - legal fees incurred by TDO (Technology Development Office) or UILO relating to the licensed IP and reimbursed by licensees  <b>Total TDO Expenses for patenting and legal costs</b>  <b>Expenses for Licensed IP</b> – patenting, legal and related costs associated with licensed IP  <b>Realized revenue per distribution agreements</b> – revenue accrued to PHSA agency after distribution to inventors, obligations due to affiliated academic institutions, granting agencies and inventor departments.</p> <p>The revenue distribution varies by entity and will be noted in the narrative.</p> <p><b><u>Royalty, equity liquidated and licensee fees</u></b>            When the UILO licenses technology to a company, the terms of the license typically include a requirement to pay a % royalty on product sales, an upfront license fee and an annual license maintenance fee. The UILO may also negotiate an equity component (company stock) as part of the license agreement. Under the licensing scenario, the University still owns the technology but is granting a license to a third party.</p> <p><b><u>Option Fees</u></b>            This relates to the scenario when a company desires an option on a technology (essentially reserving/ holding the technology). These are usually short-term contracts that have a modest option fee.</p> <p><b><u>Technology Assignment</u></b>            This relates to the scenario when a company wishes to take ownership of the technology and in return pays an Assignment fee.</p> <p><i>[BCTDO (for BC Cancer) and UILO (all other agencies) complete the excel data collection form]</i></p>



## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
<b>Metric 4a – Clinical Trials</b> Source: Ethics Module for all REBs	Number of active trials and cumulative subject enrollment at the end of the year. Includes CT data for all PHSA and non-PHSA PIs using PHSA facilities and resources
<b>FUNDING TYPE CATEGORIES (COLUMNS)</b>	
Funding Types/Grant Types	The columns on worksheet 1ab, 2b that correspond to the funding types agreed to by the Research Metrics Working Group on July 22, 2009 and revised at the working group's direction in subsequent fiscal years.
<b>SALARY AWARDS</b>	
Faculty and other personnel support	Dollar amount for FY for supported faculty salary awards including chairs.
Trainee salary support	Dollar amount for FY for supported trainee salary awards including trainee research allowances.
<b>INFRASTRUCTURE AWARDS</b>	
Human Resources	Dollar amount for FY for Human Resource Infrastructure including Michael Smith Foundation for Health Research (MSFHR) - team start-up, team, research units, platforms, networks and institutional infrastructure, CFI Infrastructure Operating Fund (IOF) awards.
Capital, Equipment, Construction	Dollar amount for FY for capital, equipment, or construction awards including BC Knowledge Development Fund (BCKDF), matched sources (charities, industry) and other large equipment grants. Excluded are Canada Foundation for Innovation (CFI) awards (see next category).
Capital, Equipment, Construction - Major CFI (Added in FY 10-11)	Dollar amount for FY for capital, equipment, or construction Major Canada Foundation for Innovation (CFI) awards for Leading Edge Fund (LEF)/New Initiatives Fund (NIF) awards. Also included in these amounts are the matching funds (industry, educational, charity, etc.) to these awards. Excluded are \$'s associated with the Infrastructure Operating Fund (IOF) or Leaders Opportunity Fund (LOF) from DFI. These get reported under Infrastructure - HR and Operating Grant categories respectively. (see Metric definition 2d for further detail)
<b>OPERATING GRANTS</b>	
Operating or Project Operating Grants (not exclusive of the next three columns)	Dollar amount for FY for operating or project operating grants including when the salary component is embedded in a grant; includes establishment grants; includes development grants.
Clinical Trials (4a) (Definition clarified in FY 10-11)	Dollar amount for FY for any research project that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects on health outcomes. Health related interventions include any intervention used to modify a biomedical or health-related outcome, for example drugs, surgical procedures, devices, behavioral treatments, dietary interventions, and process-of-care changes. Health outcomes include any biomedical or health related measures obtained in patients or participants, including pharmacokinetic measures and adverse events.
Clinical Lab Trials (4a) (Definition clarified in FY 10-11)	Dollar amount for FY for research involving a new laboratory technique or process, e.g. a new more cost-effective processing for a genetic diagnostic test, or a new tissue preparation process, etc. Trials that may use clinical material but do not directly involve patients in the research or involve a risk to the patients (may involve their tissue or blood samples however).

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
Grant in Aid	<p>Dollar amount for FY for Grant-in-aid awards (Broad topic but not directed). A Grant-in-Aid is essentially a donation to one or more researchers, normally to conduct research in an area that is of mutual interest to both the donor and the researcher(s). These grants are normally in the form of a one-page letter addressed to a researcher and signed by the donor, and accompanied by the grant funds.</p> <p>Characteristics:</p> <ul style="list-style-type: none"> <li>• Sponsor supports research activities of an individual researcher or group of researchers. Sponsor does not restrict use of funds</li> <li>• Funds are paid in advance</li> <li>• No invoicing or financial statements are required by Sponsor</li> <li>• University/Host Institution retains all rights to inventions and other intellectual property</li> <li>• University/Host Institution is free to publish results</li> <li>• University/Host Institution provides the Sponsor with a final report only</li> <li>• Parties to the Agreement: University/Host Institution and Sponsor (may include University/Host Institution Affiliated Hospitals)</li> </ul>
Other Funding Type – Service Contracts Added as sub-type of Other Funding Type category in FY2010-11; Combined into one “Other” category as of FY 14-15	Characteristics: (1) Solely for testing, evaluation or analysis of materials or compounds owned by the Sponsor with no intellectual input or value-added by UBC. (2) Sponsor retains all rights to intellectual property provided by the Sponsor for the services
Other Funding Type – Donations & Endowment Interest Added as sub-type of Other Funding Type category in FY2010-11; Combined into one “Other” category as of FY 14-15	<p>A donation is a gift given by an individual or an organization to a non-profit organization, charity or private foundation in support of a specific purpose.</p> <p>Endowment – gift of money or income producing property to a public organization (such as a hospital foundation or university) for a specific purpose (such as research or scholarships). Generally, the endowed asset is kept intact and only the income (known as endowment interest) generated by it is consumed.</p>
Other Funding Type Combined into one “Other” category as of FY 14-15	Dollar amount for FY, combined, of any grant, award or contract that does not fit into the above categories. Please specify name of Funding Type in space provided.
<b>FUNDING SOURCE CATEGORIES (ROWS)</b>	
UBC RISe Sector	<p>Sector denotes an area of the economy in which the funder is assigned. This decision is based on how the organization is funded. Three sectors are currently utilized by UBC’s Research Information System (RISe) and include:</p> <p><b>Non-Profit</b> – funding provided mostly by private donations and endowments.  <b>Industry</b> – funding provided by a for-profit business in the private or commercial sectors of business.  <b>Government</b> – funding provided by local, provincial, national, federal or foreign government entity.          [definitions to be further developed with input from Working Group and RISe personnel]</p>
Funding Sources/Granting Agency	The rows on worksheet 1ab, 2b that correspond to the funding sources agreed to by the Research Metrics Working Group on July 22, 2009 and modified in subsequent fiscal years.

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
CIHR and its institutes (included in Major Canadian Funding Category)	The Canadian Institutes of Health Research and its thirteen subsidiary institutes: <ul style="list-style-type: none"> <li>* Aboriginal Peoples' Health</li> <li>* Aging</li> <li>* Cancer Research</li> <li>* Circulatory and Respiratory Health</li> <li>* Gender and Health</li> <li>* Genetics</li> <li>* Health Services and Policy Research</li> <li>* Human Development, Child and Youth Health</li> <li>* Infection and Immunity</li> <li>* Musculoskeletal Health and Arthritis</li> <li>* Neurosciences, Mental Health and Addiction</li> <li>* Nutrition, Metabolism and Diabetes</li> <li>* Population and Public Health</li> </ul>
CCSRI (formerly NCIC/Canadian Cancer Society/CCSR) – (name changed to CCSRI for FY 11-12 and moved to CDN Foundation & Non-profit category)	On February 1 2009, the Canadian Cancer Society integrated the operations of the National Cancer Institute of Canada (NCIC), creating the Canadian Cancer Society Research Institute. Grants from all three of these organizations should go in this category.
NSERC (included in Major Canadian Funding Category)	Natural Sciences and Engineering Research Council
SSHRC (included in Major Canadian Funding Category)	Social Sciences and Humanities Research Council
Genome Canada and provincial Genome agencies (included in Major Canadian Funding Category)	Genome Canada, and its regional centres: Genome BC, Genome Alberta, Ontario Genomics Institute, Genome Quebec, Genome Prairie, and Genome Atlantic
MSFHR (included in Major Canadian Funding Category)	Michael Smith Foundation for Health Research (BC)
Canadian Industry	Canadian-based for-profit corporations. Decisions on whether a funding source is Canadian or Foreign are driven by award payment or contract address.
Canadian Foundations & Non-Profits (name modified in FY 12-13 to align with UBC categories – all historical data was recorded)	Canadian not for profit organizations including foundations and charities. These include grants that are “internally” sourced (i.e. that are from BCCHR, BC Cancer or their affiliated Foundations such as BCWF, BCCHF, and BCCF etc.)
Canadian Educational Institution	This was added in FY 09-10 as a separate Funding Source Category and includes all educational and/or academic institutions in Canada. Foreign Educational Institutions are categorized under Foreign Other Source.
Canadian Government	Provincial, municipal, territorial or federal governments and crown corporations in Canada

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
Foreign Industry	For-profit corporations outside Canada. Decisions on whether a funding source is Canadian or Foreign are driven by award payment or contract address.
Foreign Foundations & Non-Profits (name modified in FY 12-13 to align with UBC categories – all historical data was recoded)	Not for profit organizations including foundations and charities headquartered outside Canada, e.g. March of Dimes, American Cancer Society
Foreign Government	Provincial, municipal, territorial or federal governments and government-controlled corporations outside Canada including the armed forces (e.g. US Military)
Foreign Other Source	All Foreign funding sources not captured in the above Foreign categories including Foreign Educational Institutions.
<b>CLINICAL TRIAL GRANT FUNDING TYPES</b>	
Source of funds refers to the funder, sponsor, grantor, or agency (government, industry, and non-profit) that is providing the funds needed to undertake the project. Projects are not considered “For-Profit” if a sponsor is only collaborating and not funding the study (e.g., providing study drug or lab space only).	
Grant	Funding provided for specific projects by sponsors in the government or non-profit sectors.
For-Profit Sponsor (Industry or Pharmaceutical)	Funding provided for specific projects by sponsors in the industry sector.
Grant-in-aid	Funding provided for general research activities by sponsors in any sector (Industry, Government or Non-profit)
Internal Funding	Funded by internal agency department, agency operational budget or non-profit foundation (e.g. salary award)
No Funding	No funding provided.
Other	Funding not yet known when ethics application was submitted.
Multiple Funding Type	Any combination of the above funding types.
<b>RESEARCH TRAINEES CATEGORIES (COLUMNS)</b>	
Research Trainee	Total number of research trainees by student type excluding clinical trainees who are supported during their brief research rotations. Research trainees counted will be any individuals who are primarily supervised by a researcher affiliated with the reporting unit, during all or a portion of the reporting year.
Masters	Graduate students enrolled in a full time Master’s program who are supervised by a faculty member affiliated with the reporting organization.
Doctoral (changed from PhD in FY 2010-11)	Graduate students enrolled in a full time PhD program who are supervised by a faculty member affiliated with the reporting organization.

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
Post-doctoral	Full time post-doctoral fellows whose primary focus is research (NOT clinical fellows)
Summer students (short term)	High school and or university students who are engaged in a short-term program with the reporting agency for a limited period (e.g. over the summer, a few weeks)
Residents	MDs engaged in a residency program that may include a research rotation
Practicum, co-op, honors and directed studies students	High school and/or university students whose assignment to the reporting organization is according to a practicum, co-op, honours and/or directed studies program
Other Research Trainee Type	(Reporting organization to specify definition)
<b>RESEARCH TRAINEES (ROWS)</b>	
Do you Support These Types of Research Trainees	To be answered Yes or No for each Research Trainee Category listed above. Is used to indicate that a research entity does have Research Trainees of this type but has no data collection ability. This will distinguish between those with zero (0) Trainee types from those that have them but can't count them.
Total Head Count	Total number of research trainees of that type, not an FTE (Full Time Equivalent number).
<b>LIST OF RESEARCHER NAME (COLUMNS AND ROW)</b>	
<p>Category</p> <p>(modified to add Shared Membership sub-category under BCCHR categories 1-3 in FY 2010-11)</p> <p>Membership categories revised FY 16-17</p>	<p>A number one through five (MUST have one selected). Categories 1-4 are as described in the BCCHR "Guide for Completing an Application for Membership" available online at <a href="http://www.cfri.ca/research_support/forms/membership.asp">http://www.cfri.ca/research_support/forms/membership.asp</a>. These categories are based on a calculation of a given individual's research hours/week.</p> <p>Category 5 will be for those research entities/agencies who do not utilize the CFRI categories. If you utilize category 5, please indicate the definition that your research entity/agency uses to define Researchers.</p> <p>A shared membership sub-category available in CFRI Categories 1-3 was added in FY 2010-11. This new category allows individuals to formally declare their alignments (including percentage affiliation) with more than one organization. Category 4 was clarified to include only affiliate investigators that are not based on site but who collaborate with agency members. Their primary affiliation will be with another academic and/or research institution.</p> <p>New categories for FY 16-17: <a href="http://bcchr.ca/research-support/membership">http://bcchr.ca/research-support/membership</a></p>
First, Last, Middle name	Self-explanatory, e.g. Jane Mary Smith
Short Name	Name as it would appear in PubMed, for example, Smith, JM
Count Attributed to Agency Added in FY 11-12	An indication by number (1 or .5) of whether a researcher is attributable to applicable agency 100% (full) or 50% (shared).

## APPENDIX 1 CONTINUED

TERM	DESCRIPTION [DATA SOURCE]
UBC's definition of Research Added in FY 13-14	UBC defines research involving human subjects as "any systematic investigation (including pilot studies, exploratory studies, and course-based assignments) to establish facts, principles or generalizable knowledge which involves: living human subjects; or human remains, cadavers, tissues, biological fluids, embryos or fetuses." It does not include..."quality assurance studies, performance reviews or testing within normal educational requirements, or activities undertaken for administrative or operational reasons..." unless they include an 'element of research.'
<b>OTHER</b>	
Fiscal Year	Includes data for April 1 - March 31 of applicable fiscal year (i.e., FY 14-15 is April 1, 2014 – March 31, 2015)

## APPENDIX 2 PHSA FUNDING SOURCES

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
CANADIAN FOUNDATIONS & NON-PROFITS	<b>NON-PROFIT</b>	<b>42,500,967</b>	<b>46,305,039</b>	<b>46,710,230</b>
	British Columbia Cancer Foundation	12,885,122	11,291,980	8,276,310
	BC Children's Hospital Research Institute	9,299,990	9,468,669	9,760,501
	Terry Fox Research Institute	5,168,257	6,795,186	5,700,699
	British Columbia Children's Hospital Foundation	3,298,281	4,492,185	6,143,049
	Canadian Cancer Society	2,295,525	766,706	34,519
	Canadian Cancer Society Research Institute	1,837,309	2,519,625	3,656,877
	NCIC Clinical Trials Group	898,343	1,041,691	1,075,841
	Canadian Partnership Against Cancer	677,525	752,745	1,843,576
	Prostate Cancer Canada	448,945	1,795,170	1,257,764
	The Canadian Paediatric Society	431,212	565,217	584,108
	Brain Canada	430,507	736,632	870,017
	Lotte & John Hecht Memorial Foundation	425,000	196,434	448,603
	Vancouver Prostate Centre	375,341	157,000	185,879
	Leukemia & Lymphoma Society of Canada	375,000	515,002	319,998
	Crohn's and Colitis Canada	364,700	379,000	211,600
	Canadian Cancer Trials Group	257,402	0	0
	VGH and UBC Hospital Foundation	220,800	220,800	729,600
	Cystic Fibrosis Canada	203,495	200,117	229,405
	National Sanitarium Association	175,000	0	175,000
	Arthritis Society	151,108	100,000	114,984
	Vancouver Coastal Health Research Institute (VCHRI)	144,576	0	0
	Heart and Stroke Foundation of Canada	140,245	253,477	180,682
	Canadian Blood Services	129,285	96,964	0
	Parachute Canada	118,000	20,778	38,222
	BCCDC Foundation for Population and Public Health	109,631	222,936	130,096
	Juvenile Diabetes Research Foundation Canadian Clinical Trial Network	108,700	316,456	135,000
	Multiple Sclerosis Society of Canada	105,500	100,000	103,250
	Weston Brain Institute	103,620	452,353	781,757
	Huntington Society of Canada	100,000	0	77,500
	Terry Fox Research Institute	95,747	0	0
Cancer Research Society	90,000	510,000	660,000	
Vancouver Foundation	80,000	105,000	146,622	
R. Howard Webster Foundation	80,000	80,000	80,000	
BC Women's Hospital and Health Centre Foundation	77,147	0	0	

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Canadian Association of Gastroenterology	73,500	50,000	31,071
	Pancreas Centre BC	58,925	77,900	0
	Canadian Dermatology Foundation	55,000	35,000	19,000
	Canadian Donation and Transplantation Research Program (CDTRP; formerly CNTRP)	50,000	0	0
	British Columbia Lung Association	50,000	100,000	125,000
	Transplant Research Foundation of British Columbia	50,000	50,000	75,000
	Kidney Foundation of Canada	50,000	50,000	0
	Canadian HIV Trials Network	50,000	0	0
	The Alva Foundation	46,000	64,870	95,295
	Donations for Health Science Research	43,613	5,283	11,788
	Canadian Orthopedic Foundation	30,000	0	0
	Carcinoid-Neuroendocrine Tumour Society Canada	30,000	0	0
	Dravet Canada	29,000	0	0
	Sick Kids Foundation	21,929	0	0
	The W. Garfield Weston Foundation	20,769	0	0
	Prostate Cancer Fight Foundation	20,000	0	5,990
	Ontario Institute for Cancer Research	17,900	0	0
	Ontario Clinical Oncology Group	16,380	13,780	8,670
	Saskatchewan Health Research Foundation	15,930	0	0
	MITACS, Inc.	12,500	0	0
	Canadian Association of Paediatric Surgeons	10,000	0	0
	Myeloma Canada Research Network (MCRN)	10,000	0	0
	Community-Based Research Centre Society	7,500	7,500	0
	Lloyd Jones Collins Foundation	6,000	3,000	2,000
	Lung Cancer Canada	5,000	0	0
	Pacific Otolaryngology Foundation	5,000	0	5,000
	Lawson Health Research Institute	4,200	170,501	13,167
	Canadian Institute for Advanced Research	4,000	125,750	136,250
	Fondation Centre de cancerologie Charles-Bruneau	3,000	0	0
	Women's Health Research Institute (WHRI)	2,200	2,200	0
	Canadian Breast Cancer Research Alliance	1,490	1,225	6,440
	Guide Outfitters Association of BC	1,067	0	0
	Canadian Network on Hepatitis C (CanHepC)	-1,250	120,000	40,000
Major Canadian Funding Entity	Government	43,714,656	35,506,808	37,038,163
	Canadian Institutes of Health Research (CIHR)	31,434,349	26,776,006	28,621,155
	Genome British Columbia	5,415,403	3,838,372	0



## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	MSFHR	2,628,928	2,323,883	2,096,053
	Genome Canada	2,561,396	952,072	0
	NSERC	1,671,829	1,607,225	2,061,600
	Genome Quebec	2,750	9,250	0
	Genome Canada and Provincial Genome agencies	0	0	4,207,954
	British Columbia Proteomics Network - Michael Smith Foundation for Health Research (MSFHR)	0	0	51,400
Canadian Government	Government	16,706,282	36,613,936	17,539,737
	Canada Foundation for Innovation	6,128,560	17,124,864	8,327,685
	Canada Research Chairs	2,230,000	2,200,000	2,200,000
	Kids Brain Health Network - Networks of Centres of Excellence (NCE)	1,254,671	2,717,465	1,185,362
	British Columbia Ministry of Health	915,257	1,028,570	1,166,070
	BioCanRx - Networks of Centres of Excellence (NCE)	819,962	790,249	553,877
	Provincial Health Services Authority	680,118	43,000	5,000
	Allergy, Genes and Environment Network (AllerGen) - Networks of Centres of Excellence (NCE)	666,884	286,547	330,869
	British Columbia Cancer Agency (BC Cancer)	613,869	101,224	65,383
	Public Health Agency of Canada	403,435	529,713	279,965
	Transport Canada	361,791	158,954	0
	Grand Challenges Canada	285,452	178,563	-48,718
	Hospital for Sick Children Toronto	228,211	68,293	80,756
	Government of Canada	202,134	165,665	139,054
	British Columbia Ministry of Children and Family Development	192,815	190,135	187,587
	Innovation, Science and Economic Development Canada	180,191	139,722	117,500
	Stem Cell network (SCN) - Networks of Centres of Excellence (NCE)	180,000	436,450	387,667
	Province of British Columbia	165,191	104,722	53,333
	Prostate Centre's Translational Research Initiative For Accelerated Discovery and Development (PC-TRiADD)	140,625	187,500	0
	Communities Against Preventable Injuries Association	125,488	0	0
	British Columbia Knowledge Development Fund (BCKDF)	123,818	8,745,456	395,800
	Canadian Glycomics Network (GlycoNet) - Networks of Centres of Excellence (NCE)	120,000	304,013	244,013
	Cancer Care Manitoba	120,000	45,000	0
	City of Surrey	91,856	44,159	27,587
	International Development Research Centre	91,351	96,135	0
	BC Healthy Living Alliance	70,000	-111,493	422,000
	Government of Nunavut	56,050	56,050	-137,111

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Alberta Innovates	50,200	0	0
	Providence Health Care	48,643	0	0
	British Columbia Immunization Committee	32,096	138,731	100,321
	University Health Network	31,956	181,996	422,817
	Canada First Research Excellence Fund	26,010	0	0
	British Columbia Centre for Disease Control	23,577	499,082	312,898
	Department of Foreign Affairs, Trade and Development	13,860	0	0
	British Columbia Mental Health & Substance Use Services	10,000	10,000	110,000
	Ovcare	8,000	28,568	0
	Foothills Hospital Calgary	5,710	0	0
	London Regional Cancer Program	4,500	5,250	2,250
	Elizabeth Fry Society of Greater Vancouver	4,000	3,250	0
Canadian Industry	Industry	10,819,344	10,062,368	7,714,423
	Pfizer Canada Inc.	2,785,057	1,775,579	409,042
	Novartis Pharmaceuticals Canada Inc.	1,004,927	424,253	583,749
	Bristol-Myers Squibb Co. (Canada)	912,284	1,216,781	903,076
	Roche Canada	798,739	1,237,020	1,334,590
	AstraZeneca Canada Inc.	787,318	503,142	999,884
	Merck Frosst Canada Inc.	616,614	495,651	394,278
	Janssen Inc.	568,148	349,383	251,321
	Trillium Therapeutics Inc.	544,712	7,238	0
	Astellas Pharma Canada Inc.	438,437	360,879	205,245
	Sanofi-Aventis Canada Inc.	393,777	746,547	326,640
	Canarie Inc.	216,621	246,300	0
	VBI Vaccines Inc.	215,515	0	0
	Pharmaplanter Technologies Inc.	124,688	117,188	0
	Emerald Health Therapeutics Inc.	119,460	49,000	0
	Dairy Farmers of Canada	110,680	0	0
	Merck Canada Inc.	95,969	0	0
	Eli Lilly Canada Inc.	81,951	168,314	185,298
	ESSA Pharma Inc	77,937	0	0
	Various Companies	65,580	53,624	71,864
	Hoffmann-La Roche Ltd. (Canada)	64,300	22,245	72,226
	Bayer Inc. (Canada)	63,238	75,843	144,654
	Cannevert Therapeutics Limited (CTL)	54,444	113,610	56,667
	Boehringer Ingelheim (Canada) Ltd.	53,937	40,209	73,046
	GenePOC Inc.	52,052	0	0
	Amgen Canada Inc.	48,558	44,617	59,559

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	ProSafe Pharmaceuticals Inc	45,000	45,000	0
	Applied Biological Materials Inc.	45,000	60,000	30,000
	Quintiles Canada Inc.	43,281	36,615	7,800
	Synaptitude Brain Health Inc.	38,339	10,000	0
	Zymeworks Inc.	33,000	37,000	0
	Dynacare	32,506	32,506	0
	Medtronic of Canada Ltd.	30,000	0	0
	Virogin Biotech Canada Ltd.	30,000	0	0
	Concord Pacific Developments Ltd.	25,058	13,466	1,513
	LifeLabs	25,000	0	0
	SignalChem Lifesciences Corporation	25,000	46,500	49,430
	GlaxoSmithKline (Canada) Inc.	23,464	57,009	48,959
	Sandoz Canada Inc.	18,313	1,875	0
	Abbott Nutrition Canada	17,500	0	-17,500
	Pharmaceutical Research Associates Inc.	15,199	0	0
	Molecular You Corporation	15,000	0	0
	Genzyme Canada Inc.	12,684	19,133	122,365
	Katenies Research and Management Services	12,000	0	0
	Global Cannabis Applications Corporation	10,000	0	0
	Marigold Foundation Ltd.	9,000	0	9,000
	Almaden Resources Corp.	6,000	0	0
	Qu Biologics Inc.	4,911	131,775	0
	Taylorred Ideas Burnaby	4,225	0	0
	Arbutus Medical Vancouver	3,000	0	0
	AbbVie, An Abbott company	1,005	12,169	0
	Wyeth Research (CAN)	213	10,247	106
	PSI CRO Research Canada, Inc.	-300	0	0
Foreign Industry	Industry	6,668,294	8,968,922	9,007,738
	TESARO Inc.	959,384	206,236	93,671
	Leidos, Inc.	743,087	1,919,962	1,279,974
	Paul G. Allen Frontiers Group	506,535	0	0
	Tx Cell SA	473,486	473,486	290,743
	Millennium Pharmaceuticals Inc.	373,214	242,497	390,754
	Nestec Ltd. (US Research Centre)	366,090	214,405	433,901
	Nanostring Technologies	315,000	0	0
	Agensys Inc.	300,903	1,286,434	453,745
	Vertex Pharmaceuticals inc.	222,559	194,384	303,010
	Zogenix International Limited	221,746	306,882	61,678

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Acerta Pharma, BV	201,007	373	7,800
	AVEO Pharmaceuticals, Inc.	142,708	100,530	0
	Celgene Corp.	129,719	165,629	484,084
	Uniqure Biopharma BV	125,950	125,949	365,947
	Biogen MA Inc.	115,419	150,132	78,884
	Shire Human Genetic Therapies Inc.	104,988	52,768	120,028
	BioMarin Pharmaceutical Inc.,	101,527	0	0
	Nektar Therapeutics	85,114	0	5,648
	Vedanta Biosciences, Inc.	71,692	0	0
	Debiopharm International SA	68,559	0	0
	Bristol-Myers Squibb Co. (US)	65,905	132,580	259,640
	Parexel International Corp.	61,407	223,005	0
	NeuroWave Systems Inc.	57,854	62,632	161,221
	ReveraGen BioPharma, Inc.	56,036	0	0
	CRISPR Therapeutics AG	53,593	0	0
	Tusker Medical, Inc.	50,401	0	0
	Aragon Pharmaceuticals	47,620	189,613	94,966
	Cascadian Therapeutics	40,774	0	0
	Eisai Inc.	38,520	0	0
	Seattle Genetics, Inc.	36,041	40,912	28,490
	Boston Biomedical, Inc.	33,618	0	0
	Roche Inc.	30,394	46,429	0
	Sarepta Therapeutics, Inc.	28,273	0	0
	Italfarmaco SpA	26,250	0	0
	Amgen Inc.	26,212	35,553	3,922
	NUREDIS Inc.	26,104	0	0
	Medivation, Inc.	24,973	0	68,714
	Genentech Inc.	23,014	168,790	168,773
	BioCeryx Inc.	22,663	10,795	0
	Allergan Inc.	21,170	45,110	1,500
	Merrimack Pharmaceuticals	21,136	0	0
	Meridian Bioscience, Inc.	21,069	88,306	0
	Regeneron Pharmaceuticals Inc.	21,046	0	0
	Patient-Centered Outcomes Research Institute	20,176	67,247	0
	Janssen Research and Development, LLC	19,601	0	0
	ProQR Therapeutics I B.V.	19,434	56,903	0
	Cytokinetics, Inc.	18,413	85,243	0
	DBV Technologies S.A.	18,394	183,291	137,807

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	AbbVie Inc.	18,262	0	0
	Curvafix Inc. USA	18,202	0	0
	Clovis Oncology, Inc	17,100	0	0
	Ajinomoto Co. Inc.	16,398	0	0
	Swedish Orphan Biovitrum AB	12,502	8,030	0
	Bioverativ Inc.	10,327	0	0
	LifeAssay Diagnostics (Pty) Ltd.	9,868	0	17,010
	Loxo Oncology	9,202	0	0
	Polynoma LLC	7,567	27,165	47,010
	Incyte Corp.	5,898	0	0
	Tokai Pharmaceuticals, Inc.	5,719	10,893	96,358
	Merck Sharp & Dohme Corp.	4,300	61,039	43,221
	Onyx Pharmaceuticals, Inc.	4,299	144,773	125,072
	Halt Medical Inc.	4,042	10,766	0
	Bristol Myers Squibb Medical Imaging	4,002	8,965	1,566
	ViiV Healthcare	3,541	9,496	3,360
	F. Hoffmann-La Roche Ltd.	2,500	0	5,230
	Ascendis Pharma A.S.	2,436	21,680	0
	Bayer Healthcare LLC	2,000	0	0
	Beigene, Ltd.	800	0	0
	Pharmacyclics LLC	760	0	0
	Savara Inc.	655	17,647	0
Insight Genetics	-25,186	0	0	
Pfizer Inc. (outside Canada)	-25,667	265,267	319,211	
Foreign Foundations & Non-profits	Non-Profit	5,350,824	9,222,271	8,077,862
	Bill and Melinda Gates Foundation	1,585,842	4,552,091	2,760,524
	Juvenile Diabetes Research Foundation International	709,701	602,421	734,364
	Fred Hutchinson Cancer Research Center	404,468	1,144,441	69,356
	Entertainment Industry Foundation (EIF)	400,000	200,000	300,000
	Cancer Research UK	330,612	264,765	0
	American Association for Cancer Research	262,500	102,313	56,250
	Breast Cancer Research Foundation	250,000	0	0
	National Surgical Adjuvant Breast and Bowel Project	218,773	132,621	53,031
	The Leona M. and Harry B. Helmsley Charitable Trust	156,486	340,780	0
	Children's Hospital of Philadelphia	149,544	167,993	150,031
	Conquer Cancer Foundation	115,000	0	0
	Pancreatic Cancer Action Network	112,500	0	0

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Society of Family Planning	84,431	17,876	115,124
	International Hip Dysplasia Institute (IHDI)	78,450	74,352	79,200
	Brain & Behavior Research Foundation (formerly NARSAD)	64,527	30,390	33,528
	The Waterloo Foundation	63,270	0	0
	Leukemia and Lymphoma Society	60,000	60,000	0
	Pediatric Orthopaedic Society of North America	59,376	64,665	0
	Kenneth Rainin Foundation	58,469	-25,980	246,850
	EveryLife Foundation for Rare Diseases	40,755	26,376	0
	Susan G. Komen Breast Cancer Foundation	35,000	0	60,000
	Thrasher Research Fund	32,280	2,780	30,534
	Jacobs Foundation	24,000	0	0
	International Life Sciences Institute North America	18,899	0	0
	American Association of Orthodontists Foundation	18,194	19,901	0
	Gateway for Cancer Research	16,162	0	0
	Cystic Fibrosis Foundation Therapeutics Inc.	14,413	26,512	32,364
	Kanae Foundation for the Promotion of Medical Science	12,130	0	0
	Institute of Coaching	10,027	7,026	24,174
	Wellcome Trust (UK)	10,000	181,000	2,627,426
	Pediatric Blood and Marrow Transplant Consortium	5,885	3,164	6,140
	Pediatric Epilepsy Research Foundation	4,251	0	0
	National Institute for Health Research (UK)	3,779	3,613	0
	AO Foundation	2,446	0	0
	CURE Childhood Cancer	1,944	3,688	0
Orthopaedic Research and Education Foundation (OREF)	350	350	150	
American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Rhoads Research Foundation	-13,638	30,000	0	
Brain Aneurysm Foundation	-50,000	0	0	
Foreign Government	Government	5,434,522	3,554,966	2,849,441
	NIH and its institutes (US)	3,866,909	3,002,984	2,113,878
	Medical Research Council (UK)	623,782	0	54,920
	US Department of Defense	621,824	345,548	477,957
	National Science Foundation (US)	124,198	123,493	47,140
	United States Department of Agriculture	102,000	0	0
	Netherlands Organization for Scientific Research	80,069	0	0
	Royal Embassy of Saudi Arabia - Cultural Bureau in Ottawa	15,000	0	15,000
	National Health and Medical Research Council	836	0	71,419
	European Society for Paediatric Infectious Diseases	-95	8,955	0
Canadian Educational Institution	Non-Profit	2,961,460	2,049,903	2,241,601

## APPENDIX 2 CONTINUED

PHSA FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	University of British Columbia	820,476	732,985	843,413
	UBC VP Research & Innovation	404,794	29,000	20,000
	UBC Faculty of Medicine	275,000	151,667	143,300
	UBC Unrestricted Research Funds	264,101	40,425	50,000
	University of Northern British Columbia	225,923	0	100,000
	UBC Department of Surgery	159,000	0	0
	UBC Department of Pathology and Laboratory Medicine	131,380	192,000	115,000
	Simon Fraser University	85,920	22,184	158,279
	UBC Department of Medical Genetics	75,000	75,000	95,000
	UBC School of Population and Public Health	60,740	54,045	33,195
	UBC Peter Wall Institute for Advanced Studies	60,000	0	0
	UBC School of Biomedical Engineering	50,000	0	0
	UBC Department of Anesthesiology, Pharmacology and Therapeutics	39,227	50,000	50,000
	UBC VP Students	37,500	0	0
	UBC Department of Computer Science	37,500	0	0
	UBC Faculty of Science	37,500	0	0
	UBC Department of Obstetrics and Gynaecology	32,994	-3,245	0
	University of Victoria	25,937	3,645	80,615
	UBC VPR Research Development Fund	25,000	34,167	33,333
	Triumpf	25,000	25,000	50,000
	UBC Strategic Excellence Fund	20,000	318,000	40,000
	University of Saskatchewan	19,176	8,304	0
	UBC Faculty of Graduate and Postdoctoral Studies	14,000	6,000	0
	UBC Department of Family Practice	11,500	0	0
	Kwantlen Polytechnic University	7,965	0	0
	University of Calgary	6,565	64,725	2,600
	Queen's University	3,680	8,705	36,000
	UBC Northern Scientific Training Program	3,500	0	0
	UBC Centre for Molecular Medicine and Therapeutics (CMMT)	1,687	0	50,000
	McMaster University	395	1,310	28,415
Foreign Educational Institution	Non-Profit	136,558	134,314	343,389
	University of Oslo	120,000	0	0
	National Taiwan University	21,968	0	0
	University of Rochester	9,400	7,295	15,654
	University of California San Diego USA	3,570	0	0
	Vanderbilt University Medical Center	-18,380	5,475	4,800
<b>Grand Total</b>		<b>134,292,906</b>	<b>152,418,527</b>	<b>131,522,583</b>

## APPENDIX 3 BC CANCER FUNDING SOURCES

BC CANCER FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
CANADIAN FOUNDATIONS & NON-PROFITS	<b>NON-PROFIT</b>	<b>26,273,708</b>	<b>26,718,576</b>	<b>24,811,378</b>
	British Columbia Cancer Foundation	12,885,122	11,291,980	8,276,310
	Terry Fox Research Institute	5,168,257	6,769,911	5,676,424
	Canadian Cancer Society	2,295,525	748,873	10,000
	Canadian Cancer Society Research Institute	1,774,809	2,208,953	3,186,080
	NCIC Clinical Trials Group	898,343	1,041,691	1,075,841
	Canadian Partnership Against Cancer	677,525	752,745	1,831,548
	Prostate Cancer Canada	448,945	1,733,252	1,151,596
	Lotte & John Hecht Memorial Foundation	425,000	196,434	448,603
	Vancouver Prostate Centre	375,341	157,000	185,879
	Leukemia & Lymphoma Society of Canada	275,000	435,002	239,998
	Canadian Cancer Trials Group	257,402	0	0
	VGH and UBC Hospital Foundation	220,800	220,800	729,600
	National Sanitarium Association	175,000	0	175,000
	Vancouver Coastal Health Research Institute (VCHRI)	144,576	0	0
	Brain Canada	62,500	62,500	125,000
	Pancreas Centre BC	58,925	77,900	0
	Carcinoid-Neuroendocrine Tumour Society Canada	30,000	0	0
	Cancer Research Society	30,000	390,000	600,000
	Prostate Cancer Fight Foundation	20,000	0	5,990
	Ontario Clinical Oncology Group	16,380	13,780	8,670
	MITACS, Inc.	12,500	0	0
	Myeloma Canada Research Network (MCRN)	10,000	0	0
	Lung Cancer Canada	5,000	0	0
	Lawson Health Research Institute	4,200	170,501	13,167
	Canadian Breast Cancer Research Alliance	1,490	1,225	6,440
Guide Outfitters Association of BC	1,067	0	0	
Major Canadian Funding Entity	Government	16,210,136	14,605,794	17,143,880
	Canadian Institutes of Health Research (CIHR)	11,297,152	10,470,913	12,785,938
	Genome British Columbia	2,574,841	2,384,062	0
	NSERC	950,329	785,908	918,286
	MSFHR	743,525	562,815	682,417
	Genome Canada	644,288	402,097	0
	Genome Canada and Provincial Genome agencies	0	0	2,744,389



## APPENDIX 3 CONTINUED

BC CANCER FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	British Columbia Proteomics Network - Michael Smith Foundation for Health Research (MSFHR)	0	0	12,850
Canadian Government	Government	8,571,178	25,630,564	8,931,611
	Canada Foundation for Innovation	5,421,510	14,764,835	6,833,681
	BioCanRx - Networks of Centres of Excellence (NCE)	819,962	742,249	491,568
	British Columbia Cancer Agency (BC Cancer)	613,869	101,224	65,383
	Canada Research Chairs	600,000	700,000	700,000
	Hospital for Sick Children Toronto	228,211	68,293	80,756
	Provincial Health Services Authority	200,000	0	0
	Prostate Centre's Translational Research Initiative For Accelerated Discovery and Development (PC-TRiADD)	140,625	187,500	0
	Canadian Glycomics Network (GlycoNet) - Networks of Centres of Excellence (NCE)	120,000	60,000	0
	Cancer Care Manitoba	120,000	45,000	0
	Innovation, Science and Economic Development Canada	115,917	92,500	78,333
	Province of British Columbia	100,917	57,500	15,000
	University Health Network	31,956	181,996	422,817
	Providence Health Care	26,143	0	0
	Department of Foreign Affairs, Trade and Development	13,860	0	0
	Ovcare	8,000	28,568	0
	Foothills Hospital Calgary	5,710	0	0
London Regional Cancer Program	4,500	5,250	2,250	
Canadian Industry	Industry	9,473,442	8,786,102	6,745,607
	Pfizer Canada Inc.	2,690,887	1,741,003	331,277
	Novartis Pharmaceuticals Canada Inc.	930,830	382,944	496,695
	Bristol-Myers Squibb Co. (Canada)	912,284	1,209,780	881,631
	Roche Canada	798,739	1,237,020	1,334,590
	AstraZeneca Canada Inc.	787,318	503,142	999,884
	Merck Frosst Canada Inc.	616,614	300,141	394,278
	Trillium Therapeutics Inc.	544,712	7,238	0
	Janssen Inc.	472,088	315,136	233,970
	Sanofi-Aventis Canada Inc.	372,970	746,547	326,640
	Astellas Pharma Canada Inc.	320,525	242,967	87,333
	Canarie Inc.	194,837	246,300	0
	Pharmaplanter Technologies Inc.	124,688	117,188	0
	Eli Lilly Canada Inc.	81,951	168,314	172,522
	ESSA Pharma Inc	77,937	0	0
	Various Companies	65,580	53,624	71,864

## APPENDIX 3 CONTINUED

BC CANCER FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Hoffmann-La Roche Ltd. (Canada)	64,300	36,850	70,226
	Bayer Inc. (Canada)	63,238	75,843	144,654
	Boehringer Ingelheim (Canada) Ltd.	53,937	40,209	73,046
	Amgen Canada Inc.	48,558	44,617	59,559
	ProSafe Pharmaceuticals Inc	45,000	45,000	0
	Applied Biological Materials Inc.	45,000	60,000	30,000
	Quintiles Canada Inc.	43,281	36,615	7,800
	Zymeworks Inc.	33,000	37,000	0
	Virogin Biotech Canada Ltd.	30,000	0	0
	SignalChem Lifesciences Corporation	25,000	46,500	49,430
	Molecular You Corporation	15,000	0	0
	Almaden Resources Corp.	6,000	0	0
	Taylorred Ideas Burnaby	4,225	0	0
	Arbutus Medical Vancouver	3,000	0	0
	GlaxoSmithKline (Canada) Inc.	1,024	9,112	35,591
	AbbVie, An Abbott company	1,005	12,169	0
	Wyeth Research (CAN)	213	10,247	106
	PSI CRO Research Canada, Inc.	-300	0	0
Foreign Industry	Industry	4,206,533	5,062,379	4,494,524
	TESARO Inc.	959,384	206,236	93,671
	Leidos, Inc.	743,087	1,919,962	1,279,974
	Paul G. Allen Frontiers Group	506,535	0	0
	Millennium Pharmaceuticals Inc.	369,268	232,879	385,344
	Nanostring Technologies	315,000	0	0
	Agensys Inc.	300,903	1,286,434	453,745
	Acerta Pharma, BV	201,007	373	7,800
	AVEO Pharmaceuticals, Inc.	142,708	100,530	0
	Celgene Corp.	129,719	156,153	484,084
	Nektar Therapeutics	85,114	0	5,648
	Debiopharm International SA	68,559	0	0
	Aragon Pharmaceuticals	47,620	189,613	94,966
	Cascadian Therapeutics	40,774	0	0
	Eisai Inc.	38,520	0	0
	Seattle Genetics, Inc.	36,041	40,912	28,490
	Boston Biomedical, Inc.	33,618	0	0
	Roche Inc.	30,394	46,429	0
Medivation, Inc.	24,973	0	68,714	
Genentech Inc.	23,014	168,790	168,773	

## APPENDIX 3 CONTINUED

BC CANCER FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Merrimack Pharmaceuticals	21,136	0	0
	Regeneron Pharmaceuticals Inc.	21,046	0	0
	Janssen Research and Development, LLC	19,601	0	0
	AbbVie Inc.	18,262	0	0
	Curvafix Inc. USA	18,202	0	0
	Clovis Oncology, Inc	17,100	0	0
	Polynoma LLC	7,567	27,165	47,010
	Tokai Pharmaceuticals, Inc.	5,719	10,893	96,358
	Onyx Pharmaceuticals, Inc.	4,299	144,773	125,072
	Pfizer Inc. (outside Canada)	1,000	0	120,313
	Beigene, Ltd.	800	0	0
	Pharmacyclics LLC			
		750	0	0
	Insight Genetics	-25,186	0	0
Foreign Foundations & Non-profits	Non-Profit	2,201,332	2,140,583	3,222,932
	Fred Hutchinson Cancer Research Center	404,468	1,144,441	69,356
	Entertainment Industry Foundation (EIF)	400,000	200,000	300,000
	Cancer Research UK	330,612	264,765	0
	American Association for Cancer Research	262,500	107,407	28,125
	Breast Cancer Research Foundation	250,000	0	0
	National Surgical Adjuvant Breast and Bowel Project	218,773	132,621	53,031
	Conquer Cancer Foundation	115,000	0	0
	Pancreatic Cancer Action Network	112,500	0	0
	Leukemia and Lymphoma Society	60,000	60,000	0
	Susan G. Komen Breast Cancer Foundation	35,000	0	60,000
	Kanae Foundation for the Promotion of Medical Science	12,130	0	0
	Orthopaedic Research and Education Foundation (OREF)	350	350	150
Foreign Government	Government	1,747,511	1,771,931	1,301,896
	NIH and its institutes (US)	1,125,686	1,352,397	786,576
	US Department of Defense	621,824	345,548	446,632
Canadian Educational Institution	Non-Profit	1,553,457	1,149,870	1,619,373
	University of British Columbia	820,476	732,985	843,413
	University of Northern British Columbia	225,923	0	100,000
	UBC Faculty of Medicine	175,000	91,667	78,300
	Simon Fraser University	85,920	22,184	158,279
	UBC Department of Pathology and Laboratory Medicine	42,426	35,000	35,000

## APPENDIX 3 CONTINUED

BC CANCER FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	UBC Department of Computer Science	37,500	0	0
	UBC Faculty of Science	37,500	0	0
	University of Victoria	25,937	3,645	80,615
	Triumf	25,000	25,000	50,000
	UBC Strategic Excellence Fund	20,000	120,000	40,000
	UBC Department of Obstetrics and Gynaecology	19,994	-3,123	0
	University of Saskatchewan	19,176	8,304	0
	Kwantlen Polytechnic University	7,965	0	0
	University of Calgary	6,565	64,725	2,600
	Queen's University	3,680	8,705	36,000
	McMaster University	395	1,310	28,415
Foreign Educational Institution	Non-Profit	136,558	134,314	242,769
	University of Oslo	120,000	0	0
	National Taiwan University	21,968	0	0
	University of Rochester	9,400	7,295	15,654
	University of California San Diego USA	3,570	0	0
	Vanderbilt University Medical Center	-18,380	5,475	4,800
Grand Total		70,373,853	86,000,114	68,513,971

## APPENDIX 4 BCCHR FUNDING SOURCES

BCCHR FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
CANADIAN FOUNDATIONS & NON-PROFITS	<b>NON-PROFIT</b>	<b>15,925,831</b>	<b>18,788,818</b>	<b>21,405,712</b>
	BC Children's Hospital Research Institute	6,532,192	4,818,392	3,189,758
	British Columbia Children's Hospital Foundation	9,299,990	9,090,855	9,609,716
	The Canadian Paediatric Society	431,212	565,217	584,108
	Brain Canada	368,007	674,132	745,017
	Crohn's and Colitis Canada	364,700	379,000	211,600
	Cystic Fibrosis Canada	203,495	200,117	229,405
	Arthritis Society	151,108	100,000	114,984
	Heart and Stroke Foundation of Canada	140,245	253,477	85,695
	Canadian Blood Services	129,285	96,964	0
	Parachute Canada	118,000	20,778	38,222
	Juvenile Diabetes Research Foundation Canadian Clinical Trial Network	108,700	316,456	135,000
	Multiple Sclerosis Society of Canada	105,500	100,000	103,250
	Weston Brain Institute	103,620	452,353	781,757
	Leukemia & Lymphoma Society of Canada	100,000	80,000	80,000
	Huntington Society of Canada	100,000	0	77,500
	Terry Fox Research Institute	95,747	0	0
	Vancouver Foundation	80,000	100,000	107,500
	R. Howard Webster Foundation	80,000	80,000	80,000
	Canadian Association of Gastroenterology	73,500	50,000	8,571
	Canadian Cancer Society Research Institute	62,500	310,672	470,797
	Cancer Research Society	60,000	120,000	60,000
	Canadian Dermatology Foundation	55,000	0	0
	Canadian Donation and Transplantation Research Program (CDTRP; formerly CNTRP)	50,000	0	0
	Kidney Foundation of Canada	50,000	50,000	0
	The Alva Foundation	46,000	64,870	95,295
	Donations for Health Science Research	43,413	5,108	11,788
	Canadian Orthopedic Foundation	30,000	0	0
	Dravet Canada	29,000	0	0
	British Columbia Lung Association	25,000	50,000	25,000
	Transplant Research Foundation of British Columbia	25,000	50,000	50,000
	Sick Kids Foundation	21,929	0	0
The W. Garfield Weston Foundation	20,769	0	0	
Ontario Institute for Cancer Research	17,900	0	0	

## APPENDIX 4 CONTINUED

BCCHR FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Saskatchewan Health Research Foundation	15,930	0	0
	Canadian Association of Paediatric Surgeons	10,000	0	0
	Pacific Otolaryngology Foundation	5,000	0	0
	Canadian Institute for Advanced Research	4,000	125,750	136,250
	Fondation Centre de cancerologie Charles-Bruneau	3,000	0	0
Major Canadian Funding Entity	Government	23,037,165	15,510,792	15,363,919
	Canadian Institutes of Health Research (CIHR)	16,284,316	11,983,719	12,191,483
	Genome British Columbia	2,608,825	849,311	0
	Genome Canada	1,917,108	521,201	0
	MSFHR	1,502,667	1,325,993	1,274,506
	NSERC	721,500	821,317	1,046,314
	Genome Quebec	2,750	9,250	0
	British Columbia Proteomics Network - Michael Smith Foundation for Health Research (MSFHR)	0	0	25,700
	Genome Canada and Provincial Genome agencies	0	0	825,916
Canadian Government	Government	7,489,431	9,249,646	6,543,646
	Kids Brain Health Network - Networks of Centres of Excellence (NCE)	1,254,671	2,717,465	1,185,362
	Canada Research Chairs	1,210,000	1,100,000	1,100,000
	British Columbia Ministry of Health	891,070	616,070	616,070
	Canada Foundation for Innovation	675,012	2,206,914	1,383,398
	Allergy, Genes and Environment Network (AllerGen) - Networks of Centres of Excellence (NCE)	666,884	286,547	330,869
	Provincial Health Services Authority	480,118	43,000	0
	Transport Canada	361,791	158,954	0
	Grand Challenges Canada	285,452	178,563	-48,718
	Public Health Agency of Canada	277,829	248,594	80,655
	Government of Canada	202,134	165,665	139,054
	British Columbia Ministry of Children and Family Development	192,815	190,135	187,587
	Stem Cell network (SCN) - Networks of Centres of Excellence (NCE)	180,000	392,000	387,667
	Communities Against Preventable Injuries Association	125,488	0	0
	British Columbia Knowledge Development Fund (BCKDF)	123,818	313,892	245,800
	City of Surrey	91,856	44,159	27,587
	International Development Research Centre	86,476	92,135	0
	BC Healthy Living Alliance	70,000	-111,493	422,000
	Innovation, Science and Economic Development Canada	56,080	27,500	25,833
	Province of British Columbia	56,080	27,500	25,000
	Government of Nunavut	56,050	56,050	-137,111
Alberta Innovates	50,200	0	0	
British Columbia Immunization Committee	32,096	138,731	100,321	

## APPENDIX 4 CONTINUED

BCCHR FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Canada First Research Excellence Fund	26,010	0	0
	Providence Health Care	22,500	0	0
	British Columbia Centre for Disease Control	15,000	65,251	0
Foreign Foundations & Non-profits	Non-Profit	2,662,402	7,088,421	4,584,093
	Bill and Melinda Gates Foundation	1,257,711	4,533,038	2,760,524
	Juvenile Diabetes Research Foundation International	709,701	602,421	734,364
	The Leona M. and Harry B. Helmsley Charitable Trust	156,486	340,780	0
	Children's Hospital of Philadelphia	149,544	167,993	150,031
	International Hip Dysplasia Institute (IHDI)	78,450	74,352	79,200
	The Waterloo Foundation	63,270	0	0
	Pediatric Orthopaedic Society of North America	59,376	64,665	0
	Kenneth Rainin Foundation	58,469	-25,980	246,850
	EveryLife Foundation for Rare Diseases	40,755	26,376	0
	Thrasher Research Fund	32,280	2,780	30,534
	Jacobs Foundation	24,000	0	0
	International Life Sciences Institute North America	18,899	0	0
	American Association of Orthodontists Foundation	18,194	19,901	0
	Gateway for Cancer Research	16,162	0	0
	Cystic Fibrosis Foundation Therapeutics Inc.	14,413	26,512	32,364
	Institute of Coaching	10,027	7,026	24,174
	Pediatric Blood and Marrow Transplant Consortium	5,885	3,164	6,140
	Pediatric Epilepsy Research Foundation	4,251	0	0
	National Institute for Health Research (UK)	3,779	3,613	0
AO Foundation	2,446	0	0	
CURE Childhood Cancer	1,944	3,688	0	
American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Rhoads Research Foundation	-13,638	30,000	0	
Brain Aneurysm Foundation	-50,000	0	0	
Foreign Industry	Industry	2,365,358	3,857,776	4,509,854
	Tx Cell SA	473,486	473,486	290,743
	Nestec Ltd. (US Research Centre)	366,090	214,405	433,901
	Vertex Pharmaceuticals inc.	222,559	194,384	303,010
	Zogenix International Limited	221,746	306,882	61,678
	Uniqure Biopharma BV	125,950	125,949	365,947
	Biogen MA Inc	115,419	150,132	78,884
	Shire Human Genetic Therapies Inc.	104,988	52,768	120,028
	BioMarin Pharmaceutical Inc.,	101,527	0	0
	Bristol-Myers Squibb Co. (US)	65,905	132,580	259,640

## APPENDIX 4 CONTINUED

BCCHR FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
	Parexel International Corp.	61,407	223,005	0
	NeuroWave Systems Inc.	57,854	62,632	161,221
	ReveraGen BioPharma, Inc.	56,036	0	0
	CRISPR Therapeutics AG	53,593	0	0
	Tusker Medical, Inc.	50,401	0	0
	Sarepta Therapeutics, Inc.	28,273	0	0
	Italfarmaco SpA	26,250	0	0
	Amgen Inc.	26,212	35,553	3,922
	NUREDIS Inc.	26,104	0	0
	BioCeryx Inc.	22,663	10,795	0
	Meridian Bioscience, Inc.	21,069	88,306	0
	Patient-Centered Outcomes Research Institute	20,176	67,247	0
	ProQR Therapeutics I B.V.	19,434	56,903	0
	Cytokinetics, Inc.	18,413	85,243	0
	DBV Technologies S.A.	18,394	183,291	137,807
	Ajinomoto Co. Inc.	16,398	0	0
	Swedish Orphan Biovitrum AB	12,502	8,030	0
	Bioverativ Inc.	10,327	0	0
	LifeAssay Diagnostics (Pty) Ltd.	9,868	0	17,010
	Loxo Oncology	9,202	0	0
	Incyte Corp.	5,898	0	0
	Merck Sharp & Dohme Corp.	4,300	61,039	43,221
	Halt Medical Inc.	4,042	10,766	0
	Bristol Myers Squibb Medical Imaging	4,002	8,965	1,566
	Millennium Pharmaceuticals Inc.	3,946	9,618	5,410
	F. Hoffmann-La Roche Ltd.	2,500	0	5,230
	Ascendis Pharma A.S.	2,436	21,680	0
	Bayer Healthcare LLC	2,000	0	0
	Savara Inc.	655	17,647	0
	Pfizer Inc. (outside Canada)	-26,667	265,267	198,899
Foreign Government	Government	2,864,448	1,535,110	1,316,594
	NIH and its institutes (US)	2,030,659	1,402,662	1,096,352
	Medical Research Council (UK)	623,782	0	54,920
	National Science Foundation (US)	124,198	123,493	47,140
	Netherlands Organization for Scientific Research	80,069	0	0
	Royal Embassy of Saudi Arabia - Cultural Bureau in Ottawa	5,000	0	15,000
	National Health and Medical Research Council	836	0	71,419
	European Society for Paediatric Infectious Diseases	-95	8,955	0



## APPENDIX 4 CONTINUED

BCCHR FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
Canadian Industry	Industry	1,173,261	1,078,477	887,835
	VBI Vaccines Inc.	215,515	0	0
	Astellas Pharma Canada Inc.	117,912	117,912	117,912
	Dairy Farmers of Canada	110,680	0	0
	Janssen Inc.	96,060	34,248	17,351
	Merck Canada Inc.	95,969	0	0
	Pfizer Canada Inc.	94,170	34,576	77,765
	Novartis Pharmaceuticals Canada Inc.	74,097	41,308	87,054
	GenePOC Inc.	52,052	0	0
	Synaptitude Brain Health Inc.	38,339	0	0
	Emerald Health Therapeutics Inc.	37,960	0	0
	Dynacare	32,506	32,506	0
	Medtronic of Canada Ltd.	30,000	0	0
	Concord Pacific Developments Ltd.	25,058	13,466	1,513
	LifeLabs	25,000	0	0
	GlaxoSmithKline (Canada) Inc.	22,440	37,497	10,500
	Sanofi-Aventis Canada Inc.	20,807	0	0
	Sandoz Canada Inc.	18,313	1,875	0
	Abbott Nutrition Canada	17,500	0	-17,500
	Pharmaceutical Research Associates Inc.	15,199	0	0
Genzyme Canada Inc.	12,684	19,133	122,365	
Katenies Research and Management Services	12,000	0	0	
Marigold Foundation Ltd.	9,000	0	9,000	
Canadian Educational Institution	Non-Profit	1,147,722	670,394	459,876
	UBC VP Research & Innovation	399,794	20,000	20,000
	UBC Unrestricted Research Funds	220,101	40,425	50,000
	UBC Department of Surgery	159,000	0	0
	UBC Faculty of Medicine	100,000	60,000	65,000
	UBC Department of Medical Genetics	75,000	75,000	75,000
	UBC Peter Wall Institute for Advanced Studies	60,000	0	0
	UBC School of Biomedical Engineering	50,000	0	0
	UBC VP Students	37,500	0	0
	UBC VPR Research Development Fund	25,000	25,000	25,000
	UBC School of Population and Public Health	10,640	13,845	15,843
	UBC Faculty of Graduate and Postdoctoral Studies	6,000	6,000	0
	UBC Department of Obstetrics and Gynaecology	3,000	1,439	0
	UBC Centre for Molecular Medicine and Therapeutics (CMMT)	1,687	0	50,000
	Foreign Educational Institution	Non-Profit	0	0
<b>Grand Total</b>		<b>56,665,620</b>	<b>57,779,434</b>	<b>55,172,149</b>

## APPENDIX 5 BCMHSUS FUNDING SOURCES

BCMHSUS FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
Major Canadian Funding Entity	Government	1,089,477	1,147,008	1,491,011
	Canadian Institutes of Health Research (CIHR)	992,770	993,841	1,262,536
	MSFHR	96,707	153,167	183,625
Canadian Foundations & Non-profits	Non-Profit	0	381,035	150,785
	BC Children's Hospital Research Institute	0	377,814	150,785
	British Columbia Children's Hospital Foundation	0	3,221	0
Canadian Government	Government	118,889	141,944	136,667
	Canada Research Chairs	100,000	100,000	100,000
	British Columbia Mental Health & Substance Use Services	10,000	10,000	10,000
	Province of British Columbia	4,444	15,972	13,333
	Innovation, Science and Economic Development Canada	4,444	15,972	13,333
Canadian Industry	Industry	145,944	182,389	56,667
	Emerald Health Therapeutics Inc.	81,500	49,000	0
	Cannevert Therapeutics Limited (CTL)	54,444	113,610	56,667
	Global Cannabis Applications Corporation	10,000	0	0
Foreign Government	Government	78,096	74,323	71,941
	NIH and its institutes (US)	78,096	74,323	71,941
Foreign Foundations & Non-profits	Non-Profit	64,527	30,390	113,589
	Brain & Behavior Research Foundation (formerly NARSAD)	64,527	30,390	33,528
Foreign Industry	Industry	0	39,272	0
	Axim Biotechnologies	0	39,272	0
<b>Grand Total</b>		<b>1,496,934</b>	<b>1,996,361</b>	<b>2,020,660</b>

## APPENDIX 6 BCCDC/UBC FUNDING SOURCES

BCCDC/UBC FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
Major Canadian Funding Entity	Government	1,687,585	2,326,157	1,620,996
	Canadian Institutes of Health Research (CIHR)	1,372,189	1,629,717	949,898
	Genome British Columbia	231,737	604,999	0
	MSFHR	83,659	62,667	97,677
	Genome Canada and Provincial Genome agencies	0	0	508,421
	Genome Canada	0	28,774	0
Canadian Government	Government	141,196	739,779	1,073,729
	Canada Research Chairs	120,000	100,000	100,000
	British Columbia Centre for Disease Control	8,577	433,831	312,898
	Canada Foundation for Innovation	5,119	-862	6,521
	Province of British Columbia	3,750	3,750	0
	Innovation, Science and Economic Development Canada	3,750	3,750	0
Canadian Foundations & Non-profits	Non-Profit	215,881	404,436	295,096
	BCCDC Foundation for Population and Public Health	109,631	222,936	130,096
	Canadian HIV Trials Network	50,000	0	0
	Transplant Research Foundation of British Columbia	25,000	0	25,000
	British Columbia Lung Association	25,000	50,000	100,000
	Community-Based Research Centre Society	7,500	7,500	0
	Canadian Network on Hepatitis C (CanHepC)	-1,250	120,000	40,000
Foreign Government	Government	250,824	140,634	157,637
	NIH and its institutes (US)	138,824	140,634	157,637
	United States Department of Agriculture	102,000	0	0
	Royal Embassy of Saudi Arabia - Cultural Bureau in Ottawa	10,000	0	0
Canadian Educational Institution	Non-Profit	145,454	132,000	50,000
	UBC Department of Pathology and Laboratory Medicine	88,954	77,000	0
	UBC Unrestricted Research Funds	44,000	0	0
	UBC School of Population and Public Health	7,500	0	0
	UBC VP Research & Innovation	5,000	0	0
Foreign Foundations & Non-profits	Non-Profit	238,233	-67,507	42,124
	Bill and Melinda Gates Foundation	228,233	19,053	0
	Wellcome Trust (UK)	10,000	0	0
Foreign Industry	Industry	71,692	0	0
	Vedanta Biosciences, Inc.	71,692	0	0
Canadian Industry	Industry	26,696	0	0
	Canarie Inc.	21,785	0	0
	Qu Biologics Inc.	4,911	0	0
<b>Grand Total</b>		<b>2,777,563</b>	<b>3,675,499</b>	<b>3,239,581</b>

## APPENDIX 7 WHRI FUNDING SOURCES

WHRI FUNDING SOURCES				
FUNDING SOURCE CATEGORY	RISE SECTOR/FUNDING SOURCE NAME	2018-19	2017-18	2016-17
Major Canadian Funding Entity	Government	1,690,292	1,917,057	1,418,357
	Canadian Institutes of Health Research (CIHR)	1,487,922	1,697,816	1,431,301
	MSFHR	202,370	219,241	-142,172
	Genome Canada and Provincial Genome agencies	0	0	129,228
Canadian Government	Government	385,587	852,002	854,085
	Canada Research Chairs	200,000	200,000	200,000
	Public Health Agency of Canada	125,606	78,275	0
	Canada Foundation for Innovation	26,919	153,977	104,085
	British Columbia Ministry of Health	24,187	412,500	550,000
	International Development Research Centre	4,875	4,000	0
	Elizabeth Fry Society of Greater Vancouver	4,000	3,250	0
Foreign Government	Government	493,643	32,967	1,372
	NIH and its institutes (US)	493,643	32,967	1,372
Foreign Foundations & Non-profits	Non-Profit	184,330	30,383	115,124
	Bill and Melinda Gates Foundation	99,898	0	0
	Society of Family Planning	84,431	17,876	115,124
Canadian Educational Institution	Non-Profit	114,827	97,639	112,352
	UBC School of Population and Public Health	42,600	40,200	17,352
	UBC Department of Anesthesiology, Pharmacology and Therapeutics	39,227	50,000	50,000
	UBC Department of Family Practice	11,500	0	0
	UBC Department of Obstetrics and Gynaecology	10,000	-1,561	0
	UBC Faculty of Graduate and Postdoctoral Studies	8,000	0	0
	UBC Northern Scientific Training Program	3,500	0	0
Canadian Foundations & Non-profits	Non-Profit	85,547	12,175	47,258
	BC Women's Hospital and Health Centre Foundation	77,147	0	0
	Lloyd Jones Collins Foundation	6,000	3,000	2,000
	Women's Health Research Institute (WHRI)	2,200	0	0
	Donations for Health Science Research	200	175	0
Canadian Industry	Industry	0	15,400	24,313
	GlaxoSmithKline (Canada) Inc.	0	10,400	2,868
	Bristol-Myers Squibb Co. (Canada)	0	5,000	21,445
Foreign Industry	Industry	24,711	9,496	3,360
	Allergan Inc.	21,170	0	0
	ViiV Healthcare	3,541	9,496	3,360
<b>Grand Total</b>		<b>2,978,936</b>	<b>2,967,120</b>	<b>2,576,221</b>