



Cape Breton University Annual Research Funding Report 2020

Introduction

The Annual Research Funding Report presents a snapshot of the state of research funding at Cape Breton University. CBU has been recording this data for the past eight years, and the record shows a consistent level of success in attracting funding from some of the most competitive and highly sought-after sources. CBU researchers continually apply themselves to the pursuit of funding to support both fundamental and applied research and to ensure that we are training the next generation of researchers to the highest standard.

The Annual Research Report uses the fiscal year as the reporting period, using the Canadian Association of University Business Officers' (CAUBO) annual financial reports to analyze CBU's research indicators. The report covers the period from **April 1, 2019 to March 31, 2020**. Data in the report is shown in year-by-year graphics and tabular breakdowns, and much of the data is also reported in three-year rolling totals. These figures better indicate trends in CBU's research climate and tend to take account of large grants that can have an inordinate effect on a single year's total.

Last year CBU developed its 2020-2025 Strategic Research Plan. This document connects with the Strategic Plan and the Academic Plan in important ways and underscores an institution-wide commitment to both fundamental and applied research, as well as to the ongoing community connections that are the hallmark of so much of CBU's research. It is with real enthusiasm that we move towards implementing the SRP and seeing how our research can continue to grow, and how we can continue to connect that research to community, industry, and the world. The SRP invites CBU researchers to imagine new avenues of pursuit and collaboration, while reaffirming our strengths. The SRP empowers staff and faculty to see how we can work intentionally to celebrate our strong and equitable research culture, and to push forward to achieve our best potential.

This year the Annual Research Report bears an important difference: the Verschuren Centre for Sustainable Energy and Environment has grown to become its own entity, and is no longer reported alongside CBU's research numbers. In order to show a clear start, we are reporting 2019-20 as CBU-only. We look forward to working in tandem with our VCSEE to develop Cape Breton's research strengths.

The Annual Research Report provides an overview of some of the exemplary research work at CBU, which continues to demonstrate a research environment of innovation, collaboration and commercial pursuits. The research highlights, as well as the data presented, offer a clear indication of the excellent research taking place at CBU.

Financial data were taken from the CAUBO website (Financial Information of Universities and Colleges Reports 2009-2018) and procured from the CBU Finance Office in preparation of the 2019-20 CAUBO report. Industry engagement metrics were taken from the annual Springboard Atlantic reports. Faculty numbers were obtained from the Statistics Canada University College Academic Staff Survey.

1. Research Highlights

The past year has provided CBU with many examples of research and innovation to share and celebrate both internally and within surrounding communities. The following research initiatives offer a few examples of these outstanding achievements:

Learning About the L'nu Way
 Birch Oil
 EDI Research
 Discovery Award Finalists
 Canada Research Chairs
 Homelessness Strategy

2. Research Funding

A direct comparison of research funding between universities is not always possible because the situation at every university is unique. However, despite the challenges of comparing universities, this practice is still meaningful as it allows us to get a sense of CBU's standing in relation to similar institutions both regionally and nationally.

As a comparison group, we chose universities with mainly undergraduate programs on the basis that they may be 'peers' of CBU because they provide a similar range of programs or are of a similar size in terms of overall student numbers. We have selected six Atlantic institutions as well as three from farther afield. These are: Acadia University (NS), Bishop's University (QC), Brandon University (MB), Mount Allison University (NB), Mount Saint Vincent University (NS), Nipissing University (ON), Saint Francis Xavier University (NS), Saint Mary's University (NS) and Université de Moncton (NB). The ready access to major research hubs, clusters, availability of graduate studies, access to research infrastructure, support and research assistants varies from province to province and across the primarily undergraduate universities in our comparison group, and in many ways, it shapes the research programs and progress that is possible at CBU and elsewhere.

The data for these individual universities is presented in non-identifiable form in the following tables and charts. The total research funding presented below was taken from Table 3.1 of the annual CAUBO reports. The number of faculty at each university was taken from the Statistics Canada University College Academic Staff Survey^[1] in the absence of any current consistent sources of such information. Enrolment information was obtained from the Universities Canada website, sourced from the Association of Atlantic Universities, Council of Ontario Universities, and individual institutions.

Research Funding Averages in the Comparison Group: Examining the three-year average research funding across the comparison group (Table 2.1), CBU has gained maintained a steady position in the middle-of-the-pack throughout the decade. CBU is demonstrating a consistency in its ability to secure research funding. This momentum is built on efficiency in processes, as well, driven by continued success in meeting or exceeding the anticipated research outcomes/outputs.

^[1] The survey was discontinued after 2010-2011 and released again in 2016-2017. Some institutions updated their faculty numbers for all years considered in this report. For others, only data for 2011-2012 were updated. For those universities, average of 2011-2012 and 2016-2017 numbers were used to estimate the data for missing the years between 2012-2013 to 2015-2016. This leads to slight inaccuracies in the comparisons. The number of university academic staff members for Cape Breton University's reporting includes both CBUFA and NSGEU faculty.

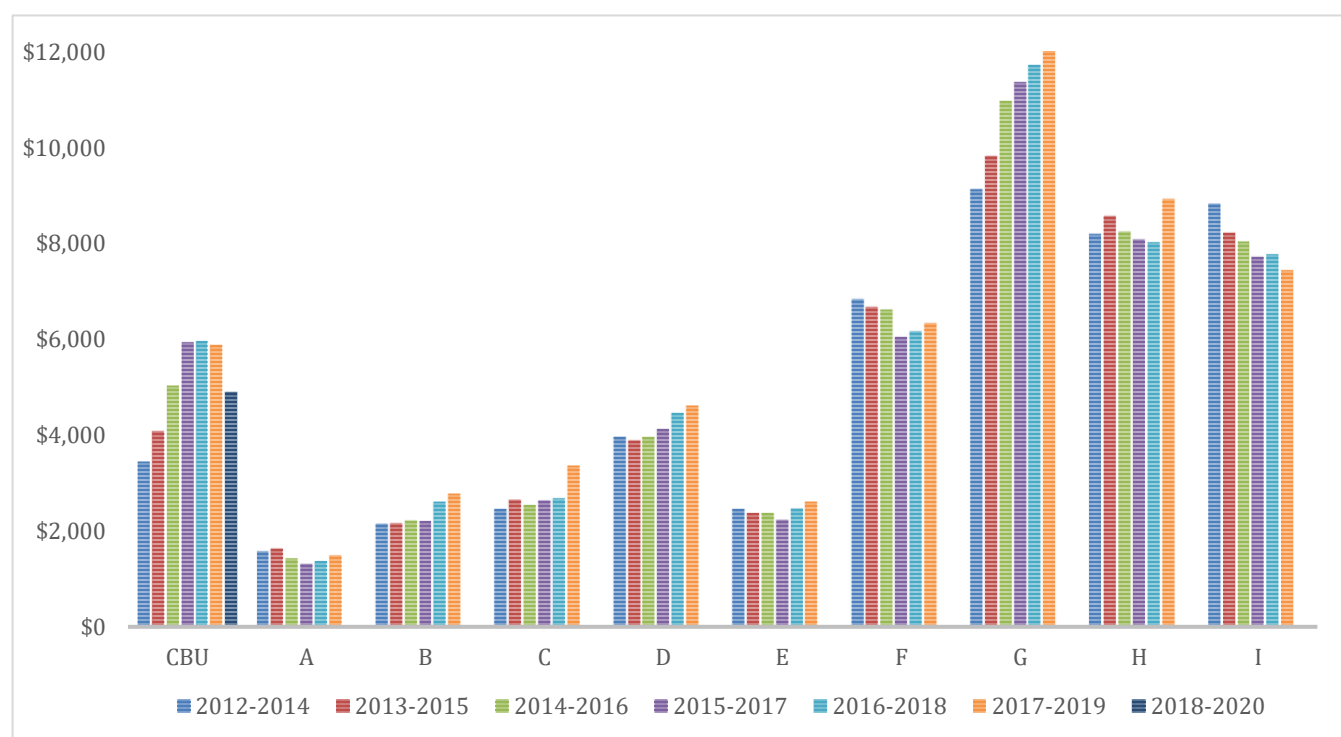
Table 2.1 Total Research Funding: Three-Year Average Annual Research Funding per University (in 000's) ^a

	2011 - 2013	2012 - 2014	2013 - 2015	2014 - 2016	2015 - 2017	2016 - 2018	2017 - 2019
CBU	\$2,771	\$3,448	\$4,082	\$5,035	\$5,934	\$5,970	\$5,887
A	\$1,792	\$1,582	\$1,635	\$1,432	\$1,324	\$1,379	\$1,495
B	\$1,884	\$2,147	\$2,164	\$2,222	\$2,204	\$2,614	\$2,774
C	\$2,467	\$2,458	\$2,646	\$2,547	\$2,644	\$2,685	\$3,356
D	\$3,827	\$3,960	\$3,888	\$3,962	\$4,131	\$4,455	\$4,619
E	\$2,264	\$2,459	\$2,371	\$2,377	\$2,234	\$2,477	\$2,605
F	\$6,406	\$6,832	\$6,668	\$6,620	\$6,048	\$6,167	\$6,342
G	\$8,366	\$9,126	\$9,813	\$10,966	\$11,363	\$11,731	\$12,027
H	\$7,846	\$8,190	\$8,567	\$8,240	\$8,082	\$8,029	\$8,934
I	\$8,366	\$8,823	\$8,215	\$8,044	\$7,718	\$7,775	\$7,442
CBU Rank	6	6	5	5	5	5	5
Average	\$4,599	\$4,903	\$5,005	\$5,145	\$5,168	\$5,328	\$5,548
NS Average ^b	\$15,261	\$15,302	\$15,507	\$15,139	\$15,803	\$15,811	\$16,441

^a Average over the three-year period indicated.

^b Provincial Nova Scotia average per University (12 institutions in 2011, 2012; 11 institutions since 2013)

Chart 2.1 Total Research Funding: Three-Year Average Annual Research Funding per University (Comparison Group) (in 000's) ^a



^a Only CBU data available for 2018-2020 average; 2019-2020 data for other universities will be available in June 2021. CBU annual funding averaged over 2018-2020 was \$4,895,000.

Research Funding Per Faculty Member: As always, CBU continues to demonstrate a noteworthy level of success when considering annual research funding per faculty member (Table 2.2). The trend over the last four years has seen CBU's research funding increase above the peer group average.

Table 2.2 Research Intensity: Annual ^a Research Funding per Faculty Member

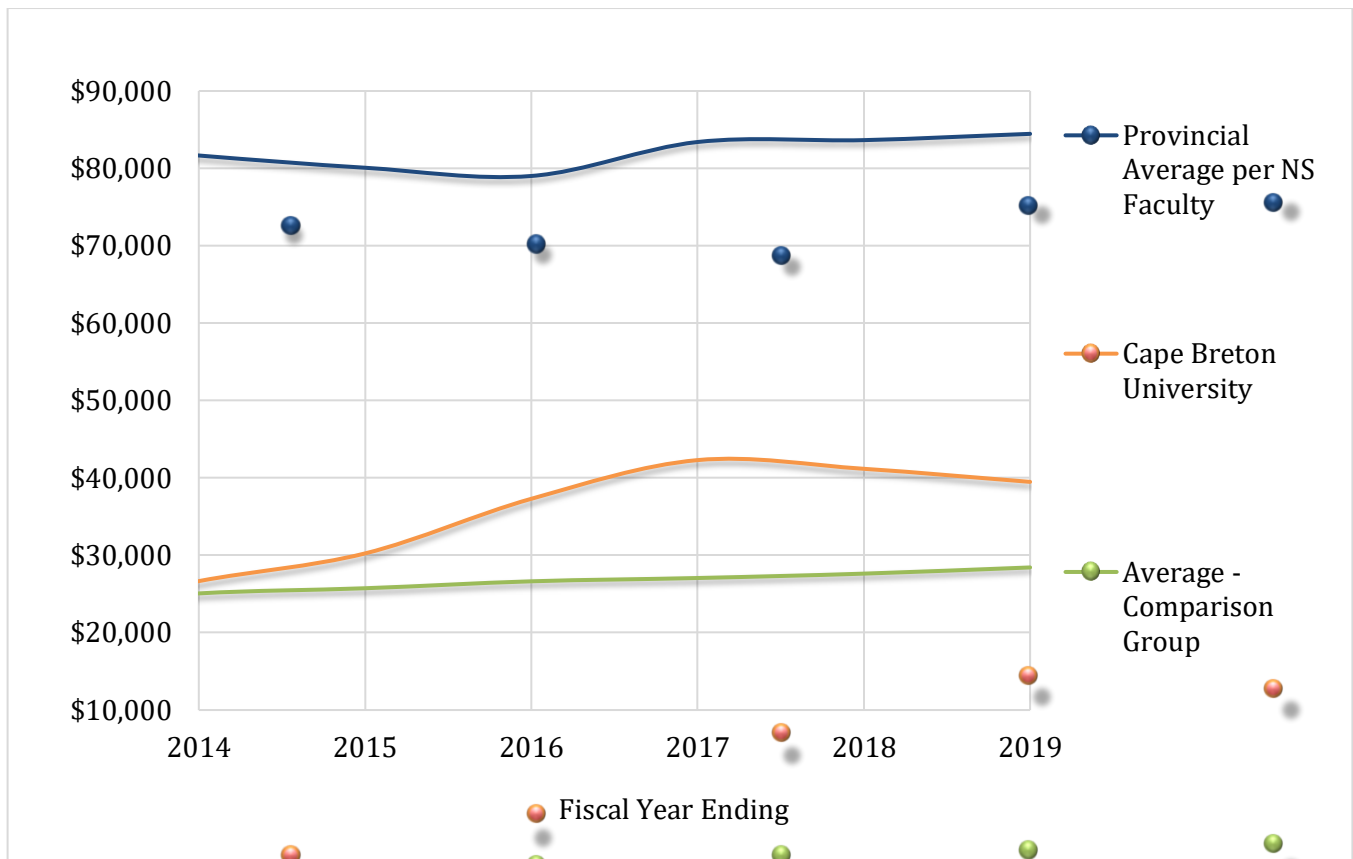
	2011 - 2013	2012 - 2014	2013 - 2015	2014 - 2016	2015 - 2017	2016 - 2018	2017 - 2019
CBU	\$22,122	\$26,658	\$30,240	\$37,296	\$42,299	\$41,173	\$39,485
A	\$15,719	\$13,877	\$14,339	\$12,561	\$11,617	\$12,094	\$13,405
B	\$10,576	\$12,011	\$11,740	\$12,734	\$12,957	\$15,639	\$15,999
C	\$19,117	\$18,900	\$20,514	\$19,747	\$20,657	\$21,185	\$26,383
D	\$26,365	\$27,310	\$27,807	\$29,401	\$31,293	\$33,221	\$34,739
E	\$13,668	\$14,672	\$13,867	\$13,899	\$12,862	\$13,876	\$14,298
F	\$32,828	\$36,022	\$35,851	\$35,593	\$33,169	\$33,455	\$33,060
G	\$27,189	\$31,978	\$34,512	\$38,647	\$40,754	\$39,935	\$38,373
H	\$31,757	\$32,874	\$34,130	\$32,815	\$32,187	\$31,844	\$35,165
I	\$33,646	\$36,415	\$34,371	\$33,658	\$32,810	\$33,830	\$33,371
Average ^b	\$23,299	\$25,072	\$25,737	\$26,635	\$27,060	\$27,625	\$28,428
Provincial ^c	\$83,564	\$81,663	\$80,083	\$79,016	\$83,406	\$83,649	\$84,463

^a Average over the three-year period indicated.

^b The comparison group average is calculated as a sum of the total research funding for the comparison group over total faculty members in the comparison group.

^c Provincial average calculated as total provincial research funding per total Nova Scotia university faculty.

Chart 2.2 Research Intensity – Annual Research Funding per CBU Faculty Member compared to the Comparison Group Average and Provincial Average per NS Faculty



Research Funding By Source: It is also informative to analyze the distribution of CBU research funding, and to note that we continue to be strong in attracting Tri-Agency funding. Table 2.3 shows the breakdown of funding by source. This year we see a noted increase in CIHR funding, which represents an important breakthrough in the direction of health and community health research at CBU. Our CRC allocation of five Tier-Two Chairs is currently full, which represents the highest CRC funding to date. We are well-positioned to make the most of this Tri-Agency funding, especially through the implementation of our Strategic Research Plan, which aims to build on existing strengths by facilitating the ignition of six CBU Collaborative Research Networks.

Decreases in non-Tri-Agency funding can be attributed, in large part, to the difference in reporting for this year following the independence of the VCSEE.

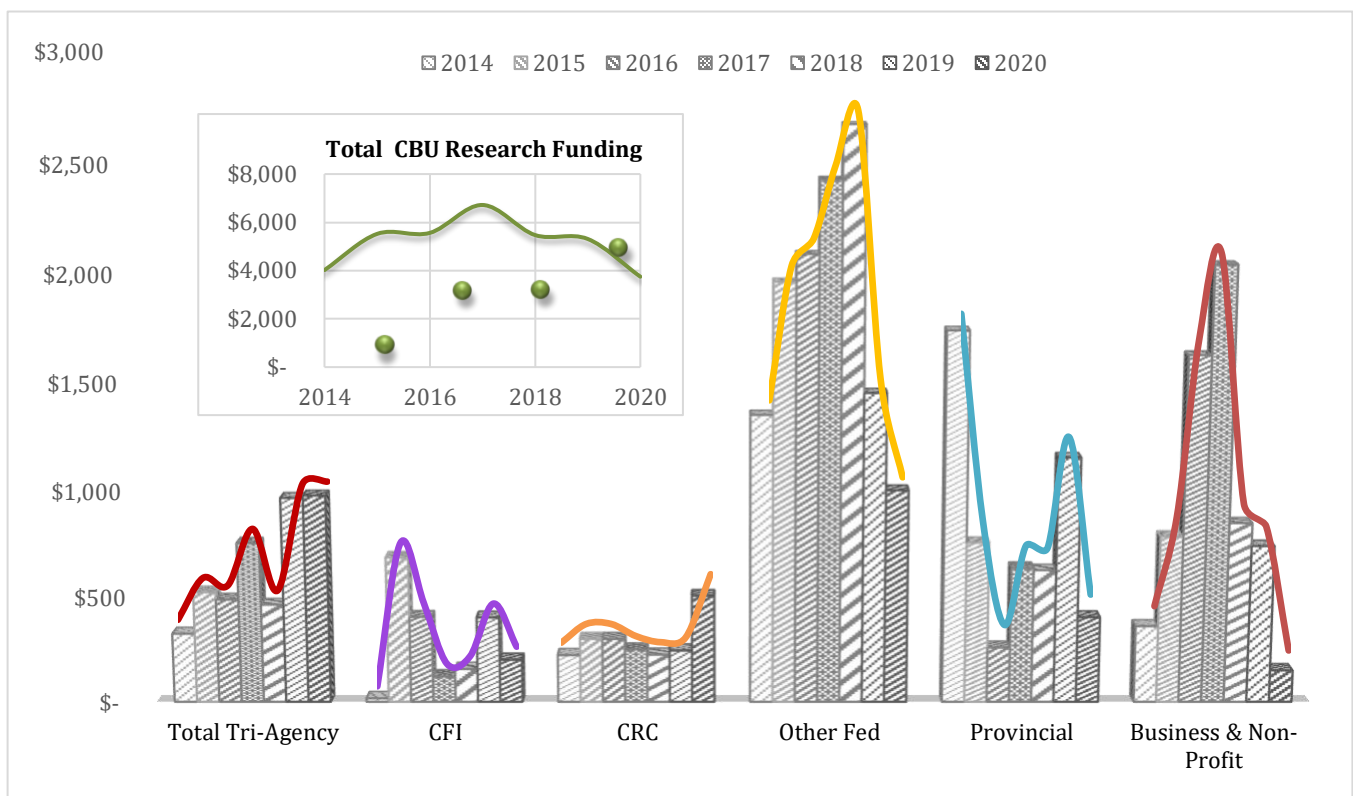
Table 2.3 CBU Annual Research Funding by Source (in 000's)

Funding Source	2013	2014	2015	2016	2017	2018	2019	2020
SSHRC	\$ 81	\$187	\$320	\$230	\$371	\$238	\$526	\$421
NSERC	\$179	\$138	\$202	\$257	\$233	\$225	\$440	\$414
CIHR	\$33	\$0	\$0	\$0	\$150	\$0	\$0	\$143
CFI	\$320	\$16	\$686	\$405	\$121	\$157	\$402	\$201
CRC	\$250	\$223	\$300	\$300	\$250	\$225	\$245	\$505
Other Federal	\$525	\$1,353	\$1,965	\$2,091	\$2,429	\$2,675	\$1,455	\$1,002
Provincial	\$245	\$1,743	\$756	\$259	\$637	\$783	\$1,155	\$404

Not-for-Profit Grants	\$140	\$199	\$129	\$467	\$671	\$432	\$415	\$140
Business Contracts	\$446	\$162	\$656	\$1,162	\$1,373	\$416	\$325	\$10
Donations	\$0	\$0	\$0	\$100	\$0	\$0	\$0	\$20
Miscellaneous	\$485	\$0	\$508	\$291	\$484	\$478	\$349	\$488
Total Tri-Agency	\$293	\$325	\$522	\$487	\$754	\$463	\$966	\$977
Total Federal	\$1,388	\$1,917	\$3,473	\$3,283	\$3,554	\$3,520	\$3,068	\$2,685
Total	\$2,704	\$4,021	\$5,522	\$5,562	\$6,719	\$5,629	\$5,312	\$3,746

NOTE: Averages and percentage figures may not add to totals due to rounding.

Chart 2.3 CBU Research Funding by Source (in 000's)



3. Partnership Projects and Workshops

During the last year, CBU faculty and researchers engaged in meaningful research and development projects. Partnerships have been forged with small and medium sized enterprises, community groups and the public sector within Nova Scotia, throughout Atlantic Canada and

beyond. These partnerships help answer questions and challenges in emerging projects, providing industry with access to CBU's high caliber faculty and exceptional laboratory resources. Students are often part of the research teams, providing them with the opportunity to apply classroom learning to applied projects, gain career experience, and earn money to support educational costs.

Faculty from across the institution are sought after to lead applied projects due to the diverse nature of the research and development portfolio. Researchers in all disciplines at CBU extend their knowledge to help partners solve pressing problems, enhance operations or move towards new and exciting milestones.

In addition to building on existing partnerships, CBU supports business startups. CBU faculty and researchers provide their expertise to new ventures, allowing startups to navigate research and development challenges and opportunities.

Table 3.1. Industry Engagement and Other Non-Industry External Partners Activities

Activity	2015-16	2016-17	2017-18	2018-19	2019-20
NRC-IRAP Projects	22	21	16	12	12
Tri-Agency Partnership Grants	6	12	8	9	7
Provincial Funded Industry Projects	6	7	8	15	16
R&D Contracts (no sponsored funding)	9	17	17	13	17
ACOA AIF Projects /subcontract	1	1	1	2	2
Industry Workshops	12	14	9	8	7

Student Research (from the employment contract numbers)

In 2016-2017: 208 Total Student Contracts (includes graduate students + work-study)
 128 Unique students employed as research assistants
 10 Work-study program students
 11 Graduate Contracts (7 unique students)

In 2018-2019: 225 Total Student Contracts (includes graduate students + work-study)
 151 Unique students employed as research assistants
 31 Work-study program students
 16 Graduate Contracts (7 unique students)

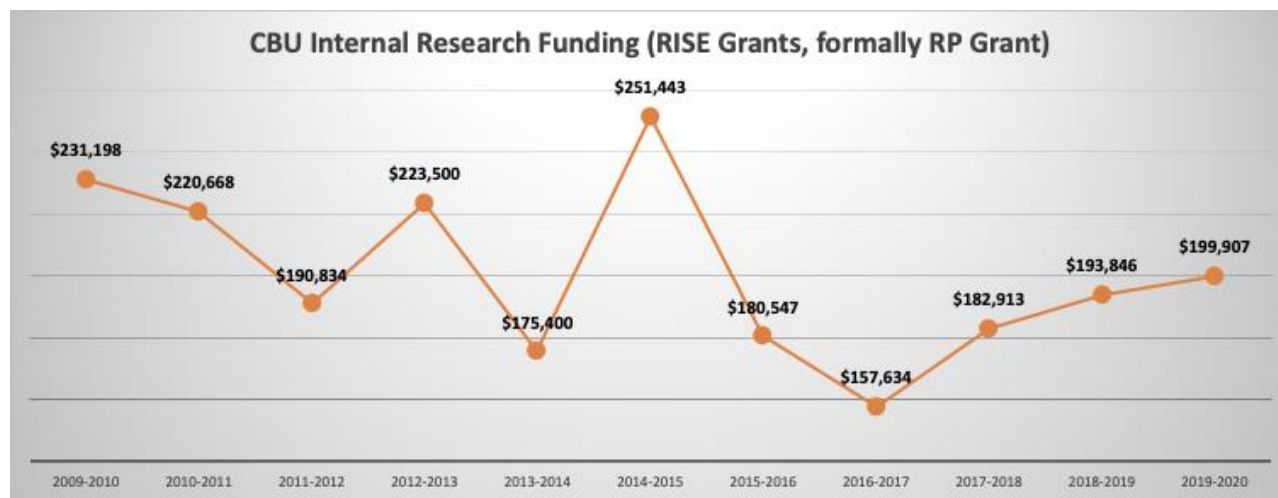
In 2019-2020: 234 Total Student Contracts (includes graduate students + work-study)
 172 Unique students employed as research assistants
 114 Work-study program students
 23 Graduate Contracts (18 unique students)

Internal Funding

The CBU research environment provides support to researchers via its internal grant process which is vetted by the Research Assistance Committee of Senate, and which provides funding for both Start-up Research Grants and Research, Innovation, Scholarship, and Exploration (RISE) Grants. Start-up grants, aimed at new tenure-track faculty, provide up to \$10,000. RISE grants are

managed in a calendar year, with up to two rounds of funding awards (spring and fall terms) to a maximum of \$8,000 per applicant per calendar year. A total of 23 RISE projects and 4 University Research Chair Awards were funded through in 2019-20. Through these internal funding programs, \$199,907 of internal research funding was awarded to CBU researchers.

Chart 4.1



4. Concluding Remarks

CBU continues to demonstrate its consistency as a research active, primarily undergraduate university. CBU researchers have continued success with Tri-Agency funding.

Over the next year we will continue to implement our Strategic Research Plan, and by next year's reporting time we will have a clearer picture of the way the Plan is helping CBU research to extend farther, make more meaningful links internally, apply for more ambitious funding from a more diverse range of sources, and communicate its research success and ambition regionally and well beyond.

List of Abbreviations

ACOA AIF	Atlantic Canada Opportunities Agency – Atlantic Innovation Fund
CAUBO	Canadian Association of University Business Officers
CBUFA	Cape Breton University Faculty Association
CFI	Canada Foundation for Innovation
CIHR	Canadian Institutes of Health Research
CRC	Canada Research Chair
NRC-IRAP	National Research Council – Industrial Research Assistance Program
NSERC	Natural Sciences and Engineering Research Council
NSGEU	Nova Scotia Government Employees Union
ORGS	Office of Research & Graduate Studies
RNS	Research Nova Scotia
RP	Research Policy
SSHRC	Social Sciences and Humanities Research Council
VCSEE	Verschuren Centre for Sustainability in Energy and the Environment

