



The [Canadian Institute for Cybersecurity](#), an innovative hub for research, training, and industry collaboration, opened at the University of New Brunswick on January 16, 2017 with more than \$4.5 million in funding and the establishment of a research partnership with a global technology firm.

The full story can be viewed at [Canadian Institute for Cybersecurity opens at the University of New Brunswick](#).



The [Institute of Biomedical Engineering](#) (IBME) at the University of New Brunswick was recently named the province's Innovation Champion at the Knowledge and Innovation Recognition Awards, continuing a legacy of more than 50 years of leading-edge research.

The awards, known as the KIRAs, were presented May 4, 2017 at the gala event held at the Fredericton Convention Centre, saluting innovation across all sectors and industries in New Brunswick.

The full story can be viewed at [IBME saluted with Innovation Champion award](#).

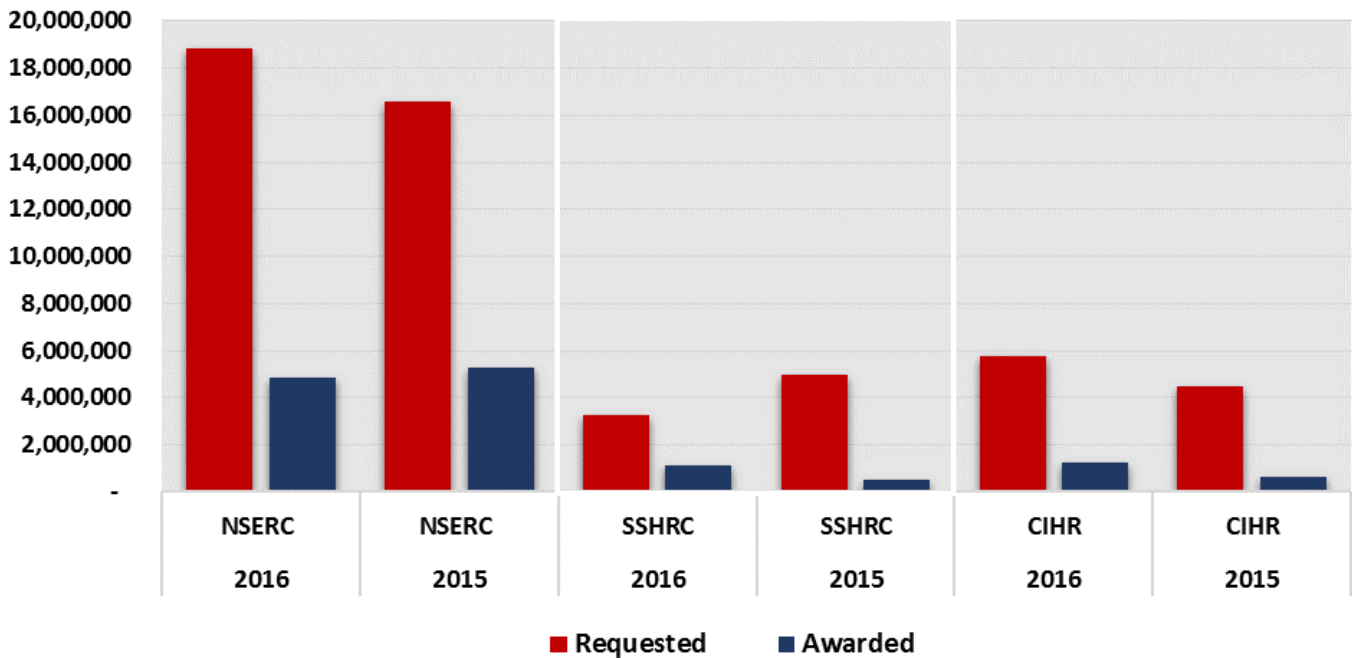
This edition of [Research Matters](#) highlights Tri-Council results and innovation activities from Fiscal Year 2016–17 as found in the Table of Contents below.

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Tri-Council – 2016 Results

Submissions	Program	Submitted	Requested	Successful	Awarded	Success Rate	Funding Rate
NSERC	CRD	4	1,641,432	4	1,641,432	100.0%	100.0%
	Strategic Project	1	776,900	0	0	0.0%	0.0%
	RTI	10	1,519,812	0	0	0.0%	0.0%
	Discovery	43	12,494,161	23	2,945,000	53.5%	23.6%
	Engage & Engage Plus	13	312,439	10	234,500	76.9%	75.1%
	Other	17	2,055,695	6	32,085	35.3%	1.6%
	<b>Total NSERC</b>		<b>88</b>	<b>18,800,439</b>	<b>43</b>	<b>4,853,017</b>	<b>48.9%</b>
SSHRC	Insight	8	1,641,650	3	359,347	37.5%	21.9%
	Other	27	1,608,401	14	761,103	51.9%	47.3%
	<b>Total SSHRC</b>	<b>35</b>	<b>3,250,051</b>	<b>17</b>	<b>1,120,450</b>	<b>48.6%</b>	<b>34.5%</b>
CIHR	Foundation Scheme	0	0	0	0	0.0%	0.0%
	Transitional OG	12	4,320,000	1	424,298	8.3%	9.8%
	Other	8	1,463,897	4	802,015	50.0%	54.8%
	<b>Total CIHR</b>	<b>20</b>	<b>5,783,897</b>	<b>5</b>	<b>1,226,313</b>	<b>25.0%</b>	<b>21.2%</b>

Tri-Council 2015 vs. 2016



# Institutional Funding

## Canada Research Chairs

UNB received \$1.9 million for our 12 active Canada Research Chairs (CRCs) in 2016-17. During the year, UNB submitted a successful CRC renewal for Dr. Yonghao Ni (Chemical Engineering) as the Tier 1 Chair in Pulp and Paper Science and Engineering, making him UNB's second 3rd-term Canada Research Chairholder.

### UNB's CRC contingent as of May 1, 2017:

	Name	Department/Faculty	CRC in...	Tier
1	Bruce Balcom	Physics	Materials Science Magnetic Resonance Imaging	1
2	José Domene	Education	School to Work Transition	2
3	Ali Ghorbani	Computer Science	Cybersecurity	1
4	Karen Kidd	Biology	Chemical Contamination of Food Webs	1
5	Elizabeth Mancke	History	Atlantic Canada Studies	1
6	Yonghao Ni	Chemical Engineering	Pulp and Paper Science and Engineering	1
7	Scott Pavey	Biology	Aquatic Molecular Ecology and Ecological Genomics	2
8	Paul Peters	Sociology	Spatial and Social Inequalities in Health and Health Service Delivery	2
9	John Spray	Earth Sciences	Planetary Materials	1
10	Doug Willms	Education	Literacy and Human Development	1
11	Yun Zhang	Geodesy & Geomatics Engineering	Advanced Geomatics Image Processing	2
12	Ying Zheng	Chemical Engineering	Chemical Process and Catalysis	2

## Intellectual Property Management, Technology and Knowledge Transfer

The Industry-Government Services (IGS) division of the Office of Research Services connects business to researchers and guides research to market. In fiscal year 2016/17, IGS:

- Secured 5 new, and extended 4 existing, Springboard Innovation Mobilization funding projects to assist in moving technologies through the commercialization process, and to engage industry;
- Managed 21 new invention disclosures;
- Entered into 11 option agreements with industry;
- Entered into 14 technology transfer agreements with industry;
- Filed 13 patent applications;
- Had 10 previous patent applications issue as registered patents;
- Received licensing revenues of \$94,257;
- Hosted or assisted with 10 industry workshops.

Technology and Knowledge Transfer (Last 5 Fiscal Years)					
Fiscal Year (May 1 – April 30)	2012-13	2013-14	2014-15	2015-16	2016-17
Disclosures	13	15	14	20	21
Patent Applications Filed	30	19	13	7	13
Patents Issued	6	6	8	15	10
License Agreements	3	5	12	12	14
License Revenue	\$64,801.38	\$107,625.06	\$106,713.23	\$91,410.43	\$94,257
Spin-offs Created	0	1	1	0	0

*Note: Spin-offs represent companies created through licensing of IP assigned to UNB by inventors, not all UNB-related start-up companies. IGS assisted a number of UNB-related spin-offs through the provision of advice and template agreements during the period.*

Since the establishment of the Intellectual Property Management Program within the Office of Research Services in late 1999, UNB has been active in transferring technologies into the marketplace, with a strong focus on industry collaboration. In the period from May 1, 2000 to April 30, 2017, UNB has:

- Managed 297 invention disclosures;
- Filed patent applications for 98 separate technologies (many of these technologies involved filing one technology/patent in multiple jurisdictions);
- Had 86 patents issued;
- Filed 18 Section 9 trade-marks for the University;
- Completed 150 technology transfer deals;
- Secured licensing revenues and patent reimbursements worth over \$4.5 million;
- Assisted in the creation of 20 UNB spin-off companies.

## Industrial Research Assistantship Program (National Research Council)

Since 2006, the National Research Council (NRC), through UNB’s Office of Research Services (ORS), has been providing short-term scientific or technical assistance to Canadian, for-profit, small-to-medium enterprises (SMEs) under the NRC-IRAP Contribution to Organization (CtO) Program.

The objective of the CtO Program is to support the innovative needs of Canadian SMEs through the provision of short-term technical assistance from faculty, staff, and students at UNB. The CtO Program helps build and integrate innovation capacity in Canada and encourages investment in R&D activities that have clear commercialization goals.

UNB works with individual companies to provide applied research services on a project within, but not limited to, the following areas:

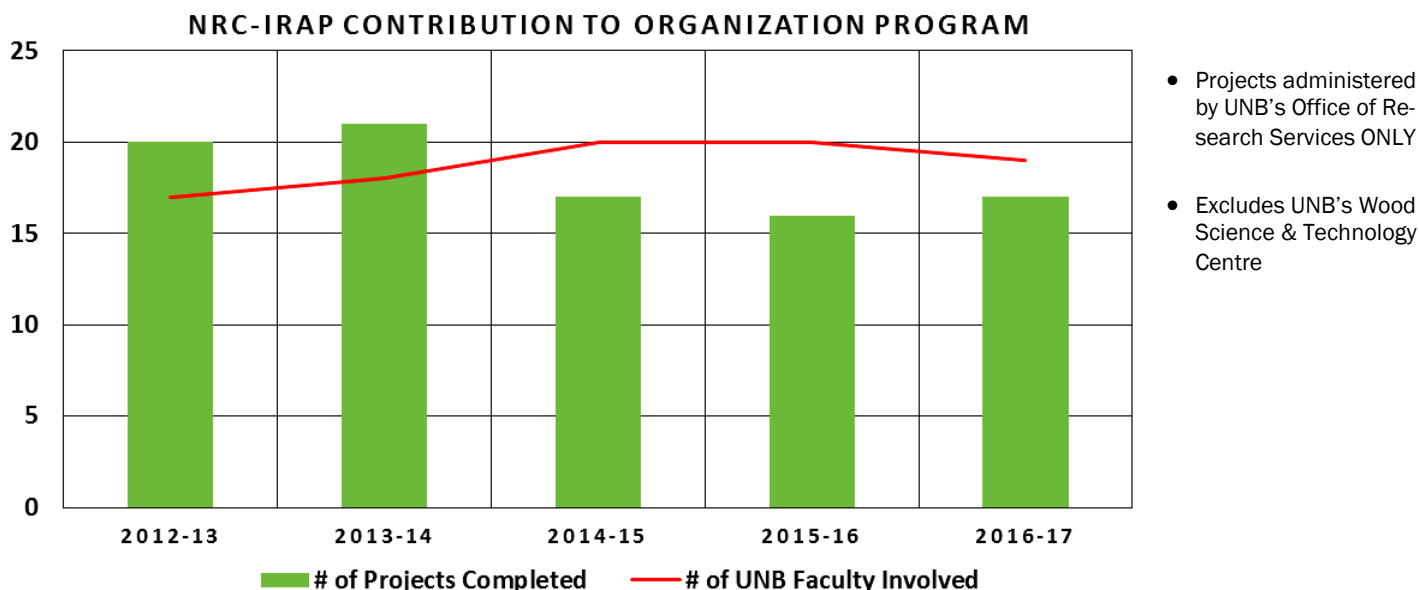
- Scientific or technical business advice;
- New product/process development or improvement;
- On-site troubleshooting of issues (in manufacturing, etc.);
- Prototype/proof of concept evaluation;
- Reliability/quality improvement;
- Product testing;
- Technology and/or literature searches/reviews;
- Technical training of company staff;
- Seminars/conferences on specific technical issues of interest to industry;
- Ad-hoc advice.

Each project is assessed by NRC-IRAP for its plan and challenges, the researcher’s capacity to achieve success, and the potential impact the project will have on the business and Canada. There must be a viable business opportunity and the company must plan to commercialize the results.

For the 2016-17 fiscal year, UNB administered 30 NRC-IRAP CtO projects involving 21 different UNB faculty, staff or students. The projects were worth a total of \$146,932:

- UNB’s Office of Research Services administered 17 consultation projects, worth \$66,959.
- UNB’s Wood Science & Technology Centre administered 11 consultation projects and 2 seminars, worth \$79,973.

Since its inception in 2006, a total of 201 projects have been completed under this program through the Office of Research Services.





## Mitacs Academic Partner Report – F2016-17 Results

As a [Mitacs](#) full partner, **University of New Brunswick** accessed the following programs in 2016-17:

- **Accelerate:** 58 Accelerate internship units submitted, valued at **\$860,000**;
- **Elevate:** No Fellowships awarded, valued at **\$0** over two years;
- **Globalink Research Internship:** 11 international interns hosted at University of New Brunswick in Summer 2016, valued at **\$132,000**;
- **Globalink Graduate Fellowships:** 2 Fellowships awarded, valued at **\$30,000**;
- **Globalink Research Awards:** No project awarded, valued at **\$0**;
- **Globalink Partnership Awards:** No projects awarded, valued at **\$0**;
- **Step:** 99 graduate students and postdoctoral fellows attended professional skills training workshops, valued at **\$39,600**.

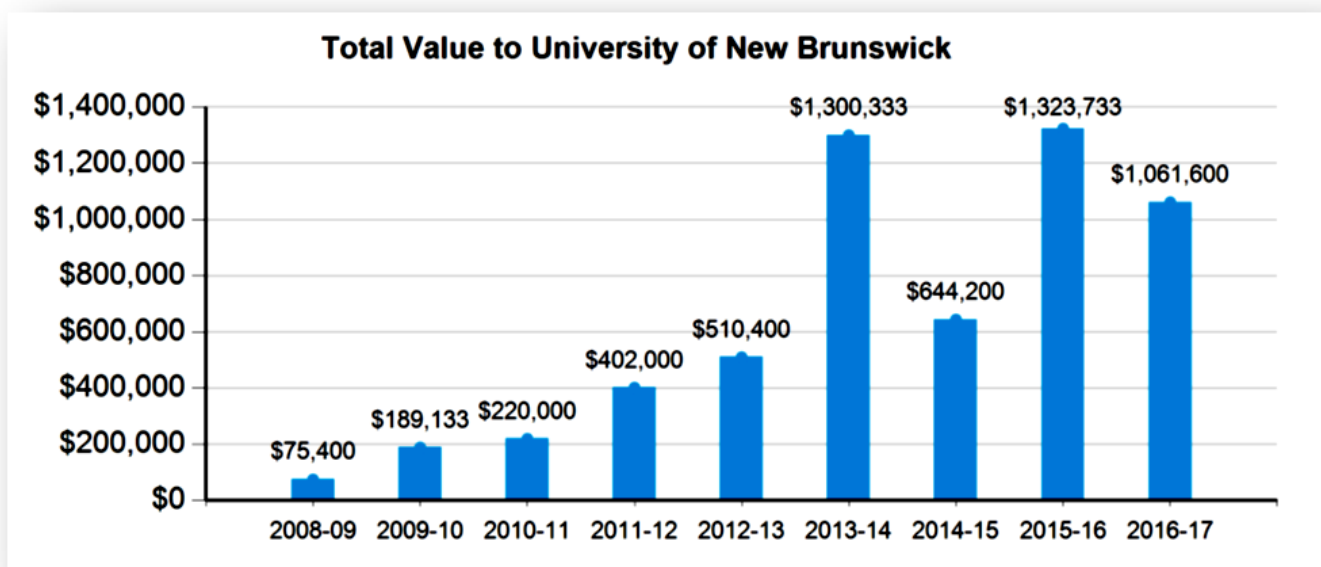
The total value to the University of New Brunswick in 2016-17 is **\$1,061,600**.

**\$636,667** in cash was disbursed to the University of New Brunswick during the 2016-17 fiscal year. This total includes program funding that had been awarded (but not disbursed) in previous fiscal years, as well as funding installments that are disbursed over multiple years.

The **total estimated value** to the University of New Brunswick in the last nine years is **\$5,726,799**. A total of **\$3,092,292** in cash has been sent to the University of New Brunswick over the past nine years.

Mitacs thanks the **University of New Brunswick**, the Government of New Brunswick, and the Government of Canada for their support.

### Mitacs Programs: 2008–2017

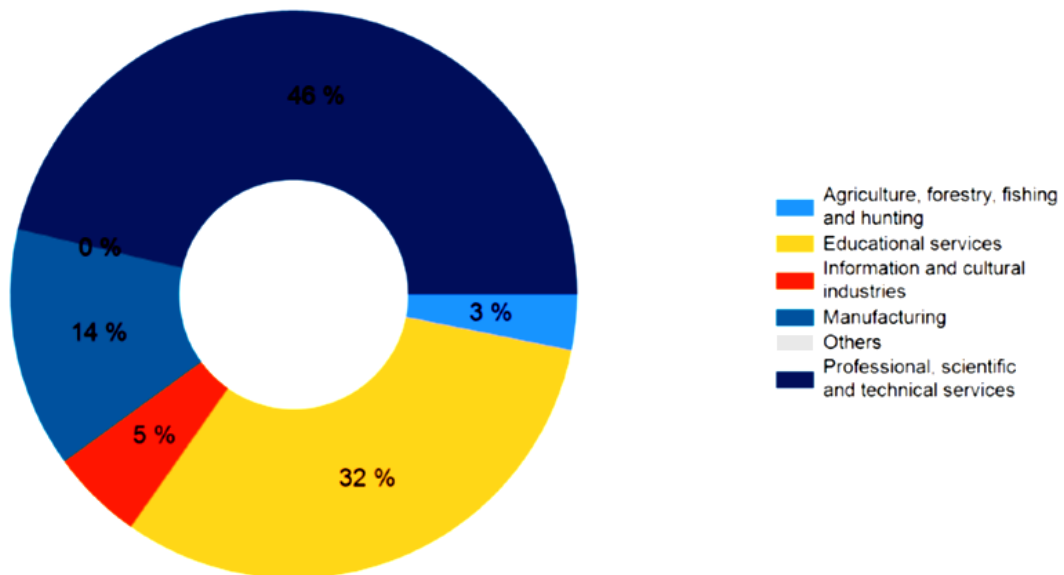




## Mitacs Accelerate Statistics – 2016-2017

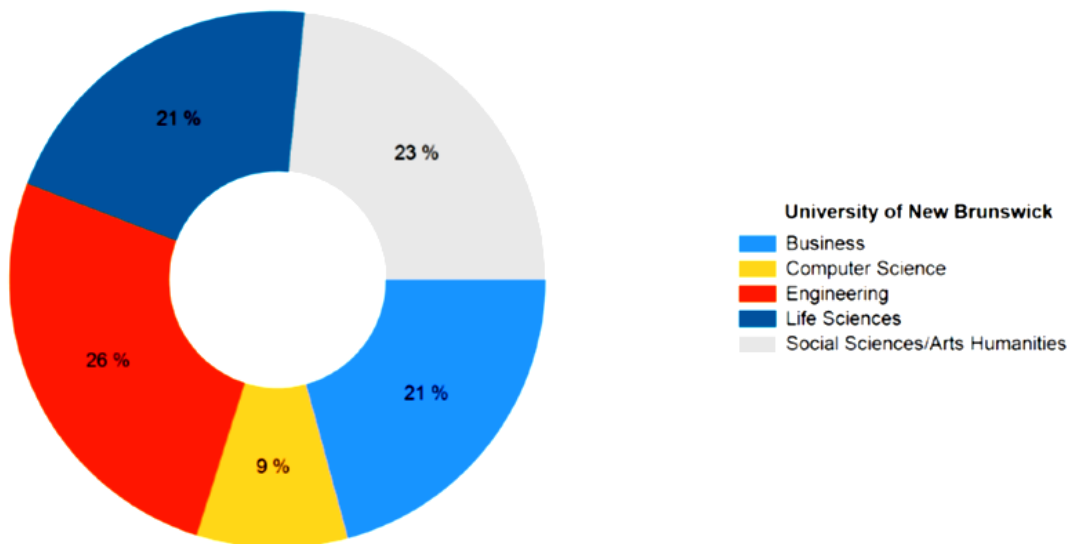
Mitacs tracks a number of details relating to Accelerate internships. The following charts summarize data pertaining to the University of New Brunswick’s past Accelerate projects submitted in 2016–2017.

Industry Sector\* - University of New Brunswick



\* Industry sector as defined by NAICS code

Academic Disciplines - University of New Brunswick





## New Brunswick Innovation Foundation (NBIF) – 2017 UNB RAI Report

The Research Assistantships Initiative (RAI) is a joint initiative between [NBIF](#) and the New Brunswick Department of Post-Secondary Education, Training and Labor (PETL). It provides applied researchers some of the funding they need to hire undergraduate and graduate student research assistants. Researchers may apply for more than one assistant.

Researchers can be funded for more than one graduate research assistantship in any specific round. Graduate Research Assistantships are awarded at \$10,000 each. Undergraduate Assistantships are \$5,000 each. RAI contributions can be used to top up other funding sources and can be allocated to one or more students. Funding is advanced to the college or university first, and then disbursed to the student(s) in the form of a salary, fellowship, or stipend. Ideally, all funds are to be used within one year, however, any unused funding is automatically extended for one additional year with NBIF approval. RAI funding is not transferable to other colleges or universities.

- ◆ Total applicants: 49 (\$1,185,000) / total students applied 139
- ◆ Total funded: 17 (\$430,000) / 52 students funded
- ◆ Total undergraduate students funded: 18
- ◆ Total graduate level students funded: 34

Overall (including all NB Universities and Colleges) NBIF was able to fund 41% of the applications in the 2017 round.

Institution	Traditional RAI	Number of Undergrads	Number of Grads	Total \$
UNB	\$430,000	18	34	\$430,000





## NB Health Research Foundation (NBHRF) - Financial Contributions to UNB

Included are the financial contributions of the [New Brunswick Health Research Foundation](#) (NBHRF) to UNB as a post-secondary institution in the Province of New Brunswick during fiscal years 2015-2016 and 2016-2017.

NBHRF is the primary funder for the health research enterprise in the province of New Brunswick. For specific information regarding each programs (given for one up to three years), visit [funding opportunities](#).

Programs	CA\$ 2015-16	CA\$ 2016-17	Number of Investigators	Number of Undergrads	Number of Graduates
<b>Grants</b>					
Establishment	225,500	94,000	2	na	na
Bridge	50,000	95,400	3	na	na
Strategic Initiative	240,258	343,057	5	na	na
Workshop	6,623	183,897	2	na	na
CIHR-SPOR-MSSU	1,082,276	1,070,123	group	na	na
CIHR-SPOR-PIHCI	200,000	200,000	group	na	na
CIHR-SPOR-NCD-CHILD	100,000	100,000	1	na	na
CIHR-PHSI	0	0	0	na	na
CIHR-eHIPP	426,388	401,435	1	na	na
<b>Salary Awards</b>					
Summer Studentship	46,052	62,624	na	10	na
MSc Studentships	87,550	17,000	na	0	1
PhD Studentships	20,000	26,500	na	0	2
Postdoctoral Fellowships	38,250	0	na	0	0
MSSU awards	87,000	71,500	na	1	4
Chair	515,000	700,000	3	na	na

Overall, NBHRF and partners funded \$3,124,897 in 2015-2016 and **\$3,365,536 in 2016-17** to UNB health researchers and their undergraduate and graduate students. Those funds also supported projects and created jobs such as, but not limited to: technicians, research assistants and/or research associates.

The value of those grants and awards includes the matching and leveraging portion of funds obtained by other parties such as private partners, federal granting bodies, national agencies, and health charities.

## Research Outputs

The Research Output Indicators measures each institution’s success in publishing in the peer reviewed academic literature. We are reporting comparative rankings in the total number of publications produced by UNB based on Re\$earch Infosource Inc’s statistics. The ranking position is based on all universities assessed, however, we are only reporting the rankings for our selected peer group of comprehensive universities. Re\$earch Infosource Inc’s statistics are based on publication data obtained from Observatoire des sciences des technologies’ (OST) Canadian bibliometric which contains data from SCI-Expanded, SSCI, and AHCI databases of Thompson Reuters; and faculty data obtained from Statistics Canada and the Re\$earch Infosource University R&D Database.

1. “Total Number of Publications” includes articles, notes, and reviews published by researchers affiliated with Canadian universities and research hospitals in 12,232 peer-reviewed scientific international journals covering natural sciences, health sciences, and social sciences and humanities.
2. “Publication Intensity” is defined as the total number of publications per full-time faculty (full, associate, and assistant faculty positions are only included). It is estimated that there is, on average, a minimum 2-year publication lag time.
3. “Publication Impact” points are based on the Average Relative Impact Factor (ARIF) which was developed and provided by OST. It is based on a measure of perceived impact of research through a calculation of citations received by journals. The impact factor does not measure the specific number of citations per article (i.e. direct impact), but rather, is a measure of the probability of being cited (i.e. perceived impact). OST developed the ARIF to compare the impact factor from several specialities as an article’s probability of being cited is not the same for all fields. The ARIF does not include journals on the humanities.

Research Output Indicators											
YEAR	Waterloo	Guelph	Victoria	Simon F	Carleton	York	UQM	UNB	Concordia	Windsor	Regina
Total Number of Publications - RANK											
2012	10	16	18	17	21	19	24	26	22	27	30
2013	10	17	18	16	20	19	24	26	22	27	28
2014	10	15	18	15	20	19	24	27	23	26	29
2015	10	16	18	17	21	19	24	26	22	28	29
2016	10	16	18	17	20	19	24	26	22	27	28
Publication Intensity - RANK											
2012	6	11	13	14	19	33	37	21	22	23	25
2013	6	12	13	14	19	34	39	20	25	27	22
2014	7	12	15	14	20	30	37	24	26	25	21
2015	6	13	14	15	21	31	38	23	37	26	24
2016	5	11	14	15	19	28	39	21	23	24	20
Publication Impact - RANK											
2012	12	18	15	4	28	11	26	45	27	39	34
2013	17	20	14	6	31	11	27	43	34	39	19
2014	22	25	9	4	30	16	33	42	31	37	20
2015	19	25	12	10	30	26	24	37	35	27	33
2016	10	25	9	11	31	27	22	46	28	29	20