



Vice-President (Research)
&
Office of Research Services
Annual Report
2013 - 2014



Table of Contents:

Representation	4	IP, Technology Transfer	17
Organizational Chart	5	Research Ranking	19
Research Revenue	6	Research Outputs	20
Research Expenditures	10	School of Graduate Studies	21
Indirect Costs of Research	11	Representation	20
Tri-Council Funding	12	Organizational Chart	21
Institutional Funding	13	University Research Scholars	22
NBIF Funding	15	Success Stories	24
NBHRF	15	New Grants Funded	33
IRAP (NRC) Funding	16		

Highlights from the year in research...

- NSERC CRD grant success rate at 100%
- NSERC RIT grant success rate up by 11.3%
- SSHRC Insight grant success rate up by 5.6%
- CIHR non-Operating grant success rate up by 5%
- AIF awards for UNB led projects totaling \$5.9 million
- Seven CFI projects awarded at a total value of \$1.29 million
- Royalty revenues continued to increase
- Drs. Marcelo Santos and Nancy Nason-Clark join the ranks of our University Research Scholars
- Dr. Sandra Byers wins prestigious international award for groundbreaking work on human sexuality
- Fred Eaton donates \$1 million to establish the Frederik S. Eaton Chair in Canadian Army Studies
- Several more highlights are described in the Success Stories section of the report.

Message from the Vice-President (Research)

During this last year, I have had an opportunity to visit all of the departments at UNB in order to hear faculty members' needs. With a better understanding of the challenges UNB researchers are facing, I have been working to address concerns and provide better opportunities to achieve our research goals. The following annual report illustrates some of the challenges we face and strengths we possess.

Our overall funding for 2013-2014 has taken a hit of more than 10% overall as compared to our earlier highs in 2009-2012 (page 6). Though research contract levels have steadily increased over the years, our funding from grants has significantly decreased. Most of this decrease can be seen as coming from federal sources and in categories not normally compared between universities. We appear to have had similar funding challenges as other comprehensive universities in common categories (page 7), with only Simon Fraser showing a steady increase over the years. Likewise, our funding per faculty member has continued to stay over the \$100K and we have maintained our rank of number 4 amongst other comprehensive universities (page 10).

An important consideration for the university is our success in Tri-Council funding, since other federal sources are tied to these numbers (e.g. CRC, CFI, Indirect Costs program). Our results show a large decrease (>20%) over the 2009-2014 period (page 11). We have

found that the major factors that have contributed to the decrease are the completion of several highly-funded Strategic Networks, and a reduced success rate in the Discovery Grants competition. The reduced success in Tri-Council funding resulted in a decreased funding level from the federal Indirect Costs of Research Program. This reduced funding makes it more difficult to support the research effort. During the past year, we have been working to address our lack of success in the Tri-Council competitions (page 12) by examining commonalities in reviews of unsuccessful proposals, adding support in the Office of Research Services to help proposals address programs' requirements, providing additional grant preparation support where possible, and obtaining seed funding for programs such as the URF social policy supplement program.

Our overall graduate student enrollment has shown a leveling off over our steady increases in the past few years (page 21). Most of the change has been due to large graduating classes in some programs and completion of professional degree cohorts. Our thesis-based graduate programs have been reasonably stable. The Faculty of Graduate Studies has taken action to determine where future growth is possible and has examined our potential capacity across disciplines, along with determining student satisfaction in our offerings. Active recruitment into these programs, together with development of focused professional programs should allow us

to reach the goals we have set in the university's Strategic Plan.

Fortunately, the challenge of funding has not dampened our commitment to providing research scholarships (pages 22-35). Our students and faculty continue to produce high quality work that is recognized worldwide. Enjoy reading the small selection of the many outstanding contributions our faculty have made and recognitions they have won. Not always does our scholarly work get the amount of recognition that is deserved. To better promote our work to the world, the VPR's office is working with the Office of the Vice-President Advancement to communicate our results and nominate our researchers for awards. Together with the action items to increase our funding, this communication effort should help enhance our status as an outstanding comprehensive university.



David Burns
Vice-President (Research)



VP (Research) Representation

The VP (Research) holds the following positions on and off campus as part of the office mandate:

Chairperson / President, Board of Directors:

- Canadian Research Institute for Social Policy
- Chronic Illness Research Institute
- Institute of Biomedical Engineering
- Springboard Atlantic Inc.
- NB Social Policy Research Network

Member, Board of Directors:

- AARMS
- ACENet
- Canadian Rivers Institute
- Fredericton Knowledge Park
- Huntsman Marine Science Centre
- McKenna Fund Advisory Board
- Muriel McQueen Ferguson Centre for Family Violence Research
- New Brunswick Health Research Foundation
- Pond-Deshpande Centre for Entrepreneurship & Innovation
- Wallace McCain Institute
- New Brunswick Innovation Foundation
- Canadian Consortium of Ocean Research Universities
- Canadian Rivers Institute Management Board
- Research Productivity Council

- Planet Hatch Advisory Board
- Halifax Marine Research Institute
- Centre for Nuclear Energy Research

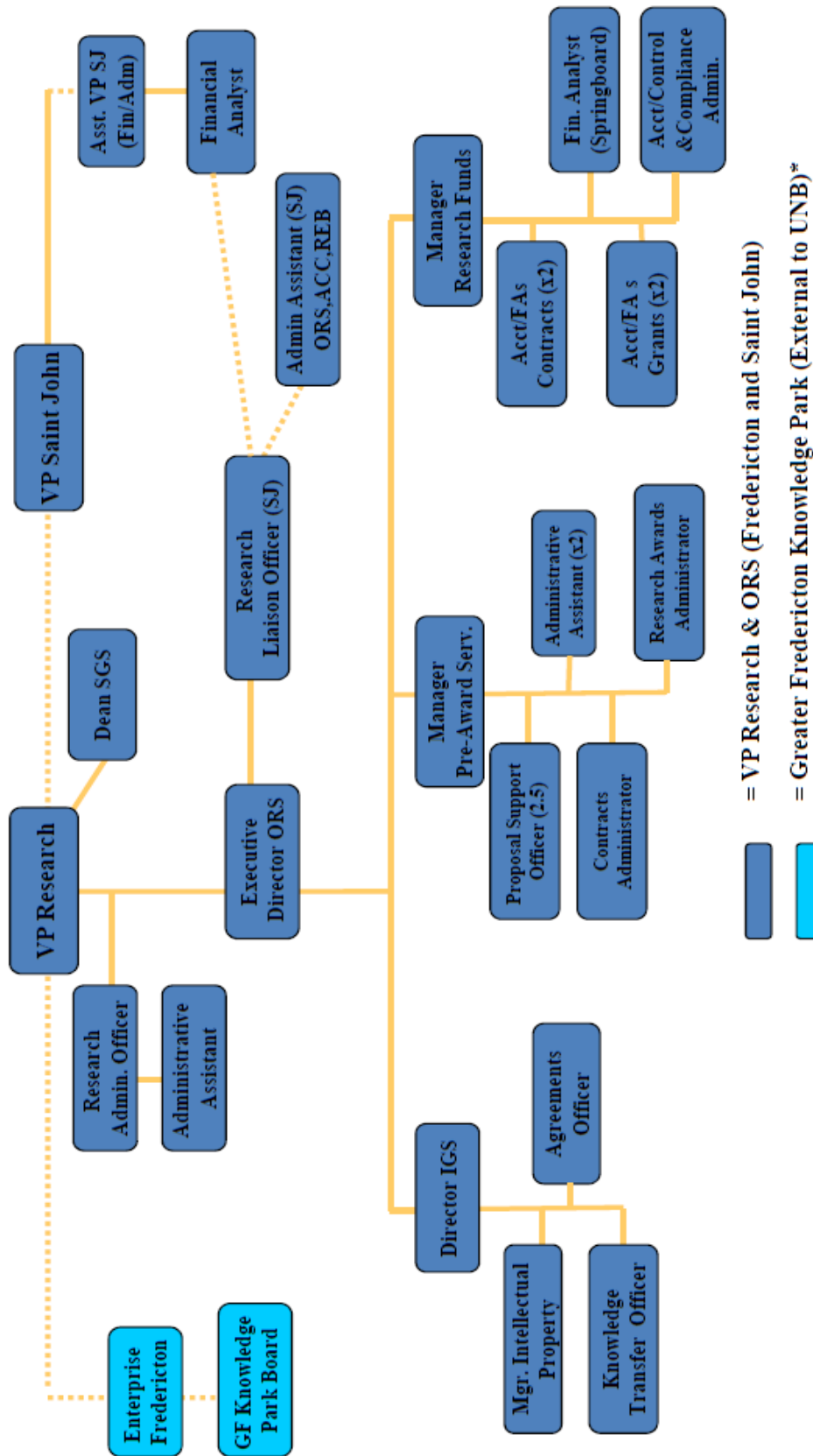
Member:

- Steering Committee, Canadian Association of Postdoctoral Administrators
- NSERC Atlantic Advisory Council
- Fredericton, Vision 2020 Committee
- Post Secondary Education Training & Labour “Making it Happen” Committee
- Capture Fisheries Research Network
- Atlantic Regions VPR’s
- Mobile First Technology Advisory Group (NBCC)
- Research Data Centre Management Committee
- CIMTAN Steering Committee
- Atlantic Policy Congress of First Nations Chiefs Secretariat Steering Committee



VP (Research) and Office of Research Services Organizational Chart

Vice President (Research) and ORS - Organizational Chart



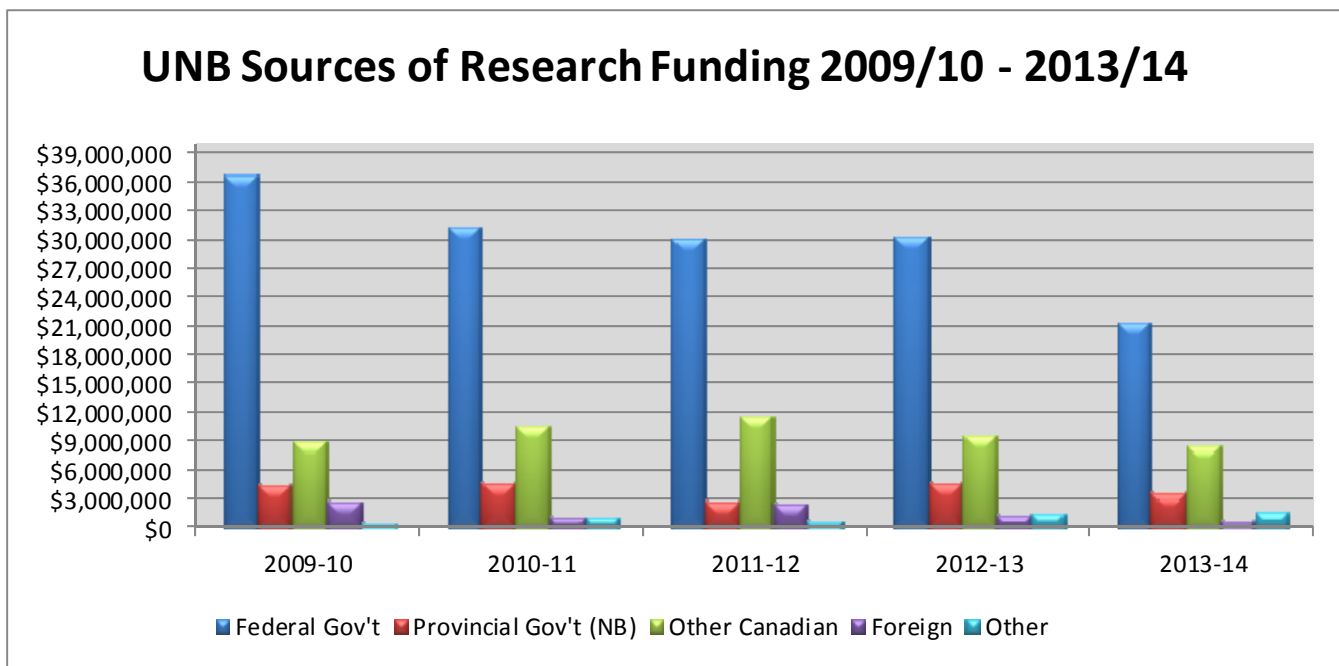
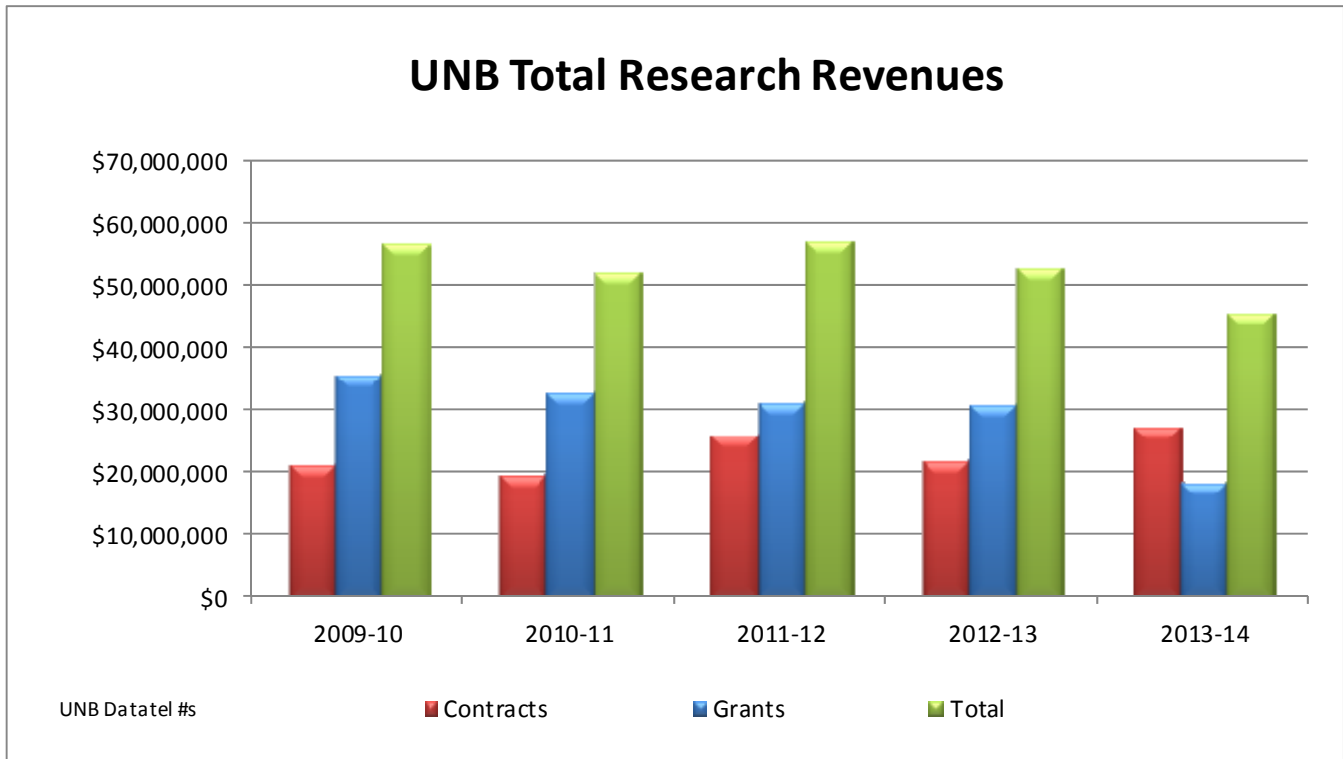
■ = VP Research & ORS (Fredericton and Saint John)

■ = Greater Fredericton Knowledge Park (External to UNB)*

* Note: UNB's VP Research is the President of the GF Knowledge Park Board.

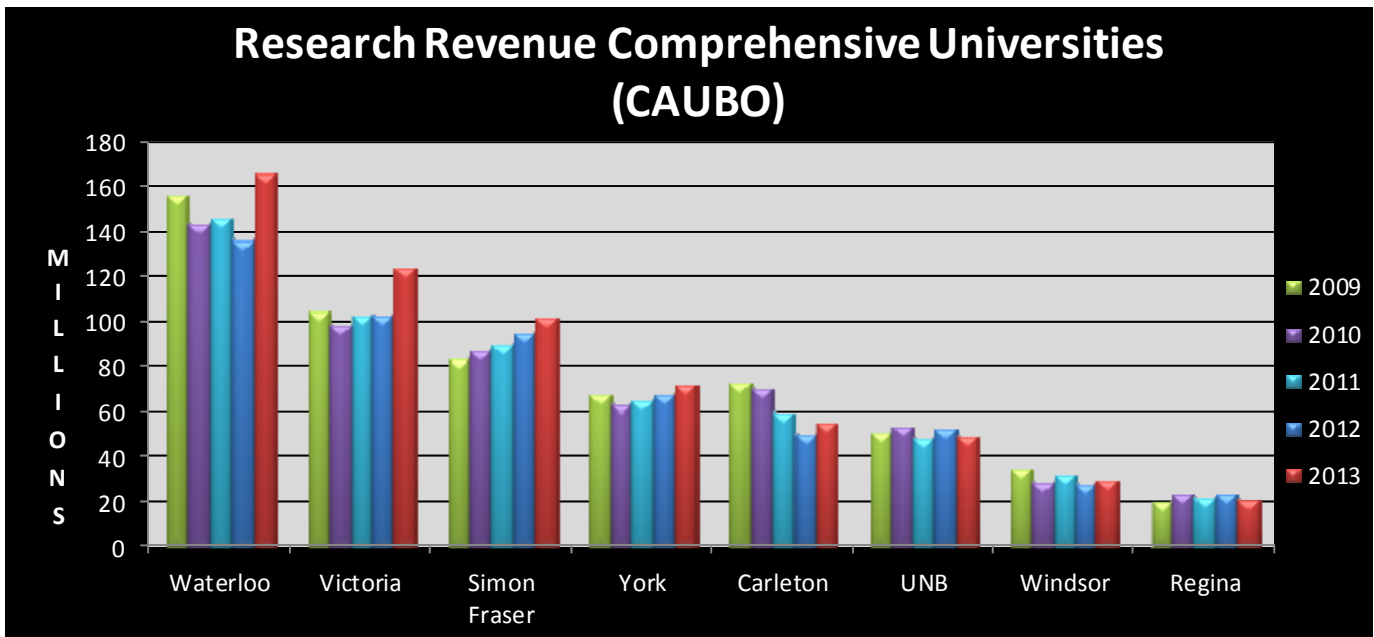
Research Revenue

The 2013-14 fiscal year saw our research revenues decrease. After the significant upswing of 2011-12 we are now back at \$45,894,594, down 13% from 2012-13. Grant and contract revenues were down on both campuses, including a 20.41% decrease in Tri-council funding from 2012-13. The number of applications/proposals continued to increase, 8.12% since 2012-13. Royalty revenues continue to increase, although there was a large spike enjoyed in 2011-12 due to the IBM buy-out of Q1 Labs.

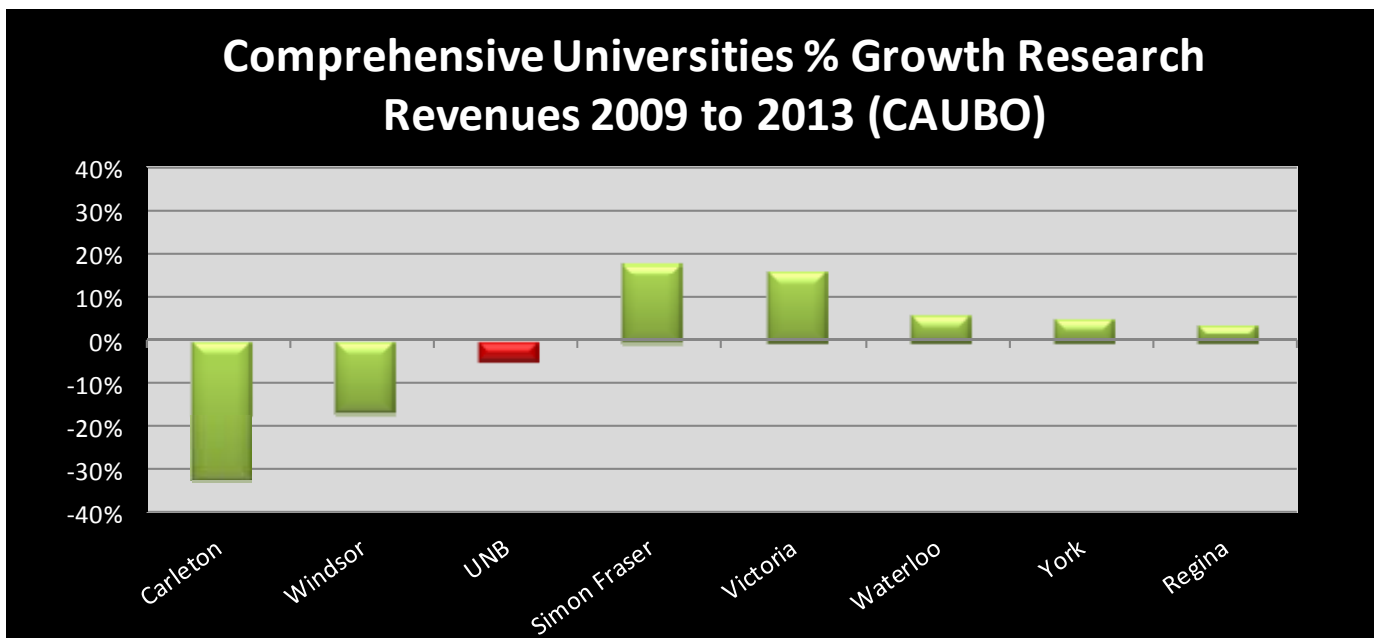


Research Revenue (continued)

The Canadian Association of University Business Officers (CAUBO) compiles research-related revenues based on mutually agreed upon definitions. It is this number that is used for inter-institutional comparisons. In the fiscal year 2013-14, UNB's CAUBO number was \$42,497,256, down 13.48% from the final CAUBO number for the previous year of \$49,115,707. The inter-institutional comparative revenues graphed below are one year in arrears due to reporting and publication delays. In 2013 UNB placed 6th, down one position from the last year in its commonly reported peer group.



We have routinely reported our percentage growth in CAUBO research revenues over a rolling five year period in comparison to our peer group of universities.



Research Revenue (continued)

Research Revenue per Generating Unit

The following table attributes research revenues by generating unit during the last fiscal year. Note that other research revenues are generated by the university, but are not reported on this table (e.g., the Indirect Costs of Research grant).

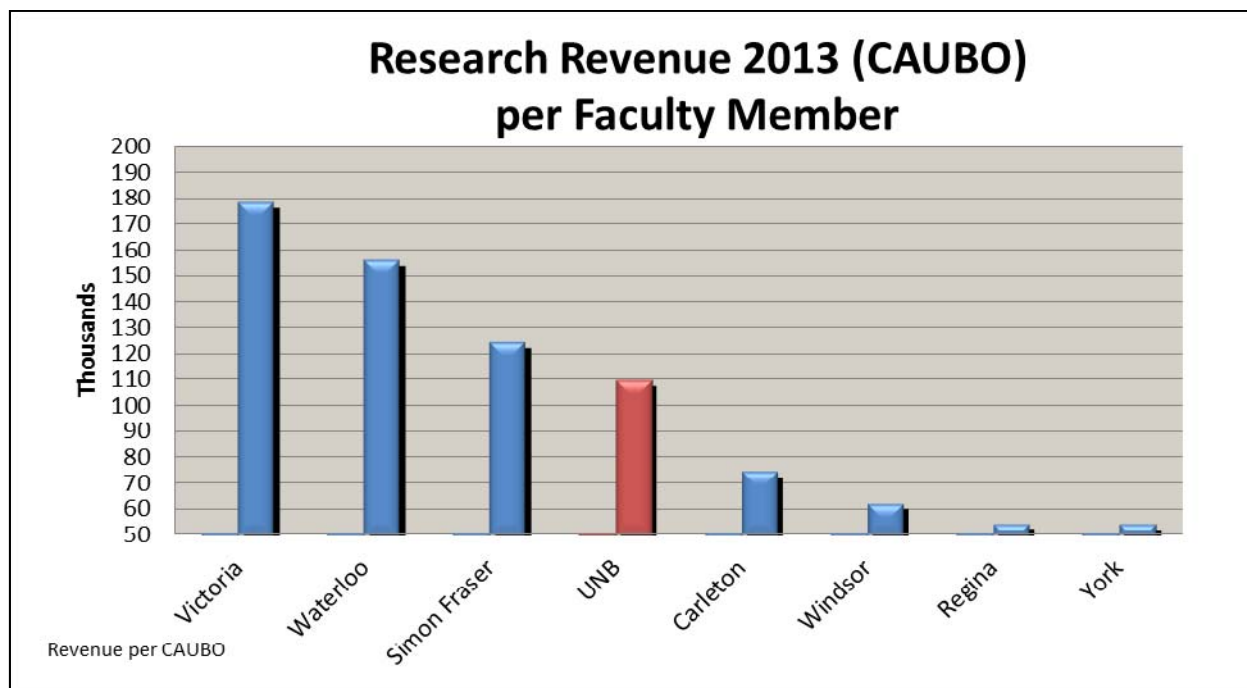
Research Revenues per Generating Unit				
UNIT	Grants	Contracts	Other	Total
ADMINISTRATION (F)	40,000	135,861		175,861
ARTS (F)	2,612,179	66,606	53,771	2,732,556
Arts	265,000	28,378		293,378
Anthropology				
Classics				
Economics	320,610	23,153		343,763
English	32,241		3,311	35,552
History	296,966	15,075	50,460	362,501
Philosophy	18,000			18,000
Political Science				
Psychology	508,538			508,538
French	32,873			32,873
Culture & Language Studies				
Sociology	1,137,951			1,137,951
COMPUTER SCIENCE (F)	1,218,302	1,993,030		3,211,332
EDUCATION (F)	418,278	57,395		475,673
ENGINEERING (F)	5,440,319	4,169,059	277,810	9,887,188
Chemical Engineering	2,434,741	1,672,538	93,785	4,201,064
Civil Engineering	526,812	447,503	26,778	1,001,093
Electrical Engineering	510,510	518,862	5,192	1,034,564
Mechanical Engineering	581,348	619,711		1,201,059
Geodesy & Geomatics	853,658	910,445		1,764,103
J Herbert Smith ACOA Chair	533,250		152,055	685,305
FORESTRY	2,224,795	1,860,222	4,311	4,089,328
KINESIOLOGY	203,607	16,362		219,969
LAW		20,005		20,005
NURSING (F)	277,138			277,138

Research Revenues per Generating Unit (continued)

Research Revenues per Generating Unit				
UNIT	Grants	Contracts	Other	Total
SCIENCE (F)	5,428,903	1,909,470	61,363	7,399,736
Math & Stats	382,900			382,900
Biology	2,668,852	179,717	24,250	2,872,819
Chemistry	433,570	141,534	1,727	576,831
Earth Sciences	1,029,986	1,111,949	35,386	2,177,321
Physics	913,595	476,270		1,389,865
INSTITUTE OF BIOMEDICAL ENGINEERING (IBME)	331,843	1,128,231		1,460,074
CHRONIC ILLNESS RESERCH INSTITUTE (CIRI)				NIL
CANADIAN RESEARCH INSTITUTE FOR SOCIAL POLICY (CRISP)	263,241	2,117,592		2,380,833
CDN. RIVERS INSTITUTE (CRI) (F & SJ)	679,612	596,359	22,488	1,298,459
SCHOOL OF GRAD STUDIES	205,484	1,529,073		1,734,557
RENAISSANCE COLLEGE	106,634			106,634
HIL		5,100		5,100
CADMI MICROELECTRONICS				NIL
ARTS (SJ)	8,000			8,000
History & Politics				
Social Science	8,000			8,000
Criminal Justice Studies				
Psychology				
BUSINESS (SJ)				NIL
SCIENCE & ENGINEERING (SJ)	2,485,351	417,409		2,902,760
Biology	2,183,455	281,178		2,464,633
Science		110,000		110,000
Physical Sciences	114,168			114,168
Nursing/Health Sciences	5,128			5,128
Engineering				
Computer Science and Applied Stats	29,000	26,231		55,231
Mathematical Sciences	23,000			23,000
DAL MEDICAL ED PROGRAM	130,600			130,600

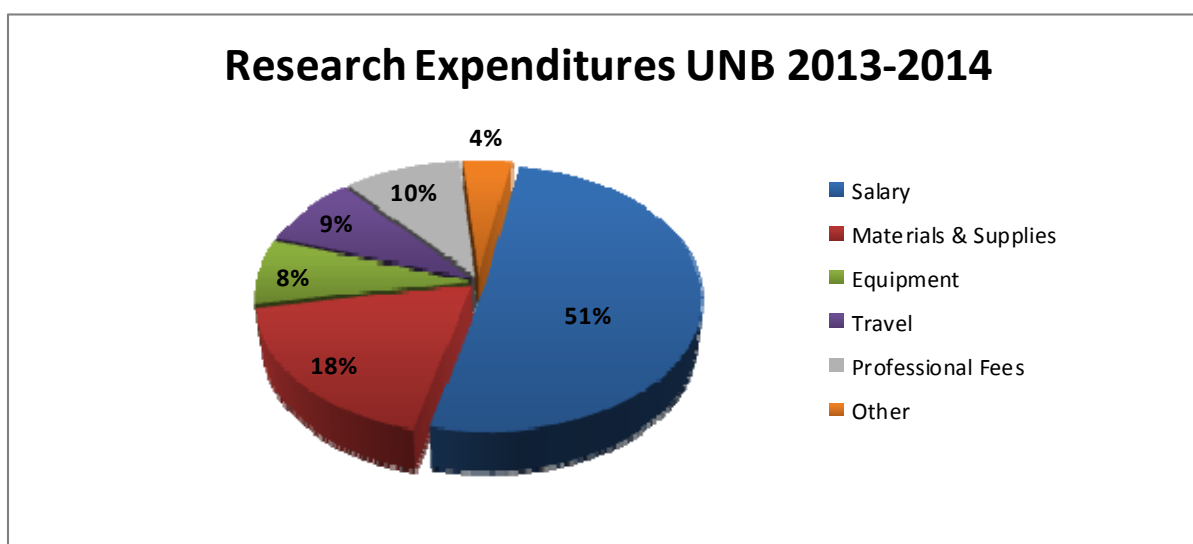
Research Revenue (continued)

A metric that is commonly cited when comparing the research intensity at universities is the research revenue generated per faculty member. In order to make such a comparison credible, independent sources are required for the two metrics. For our purposes, we use Re\$earch Info Source Inc. and CAUBO. In 2013 UNB ranked fourth, having broken through the \$100k per faculty member barrier in 2011.



Research Expenditures

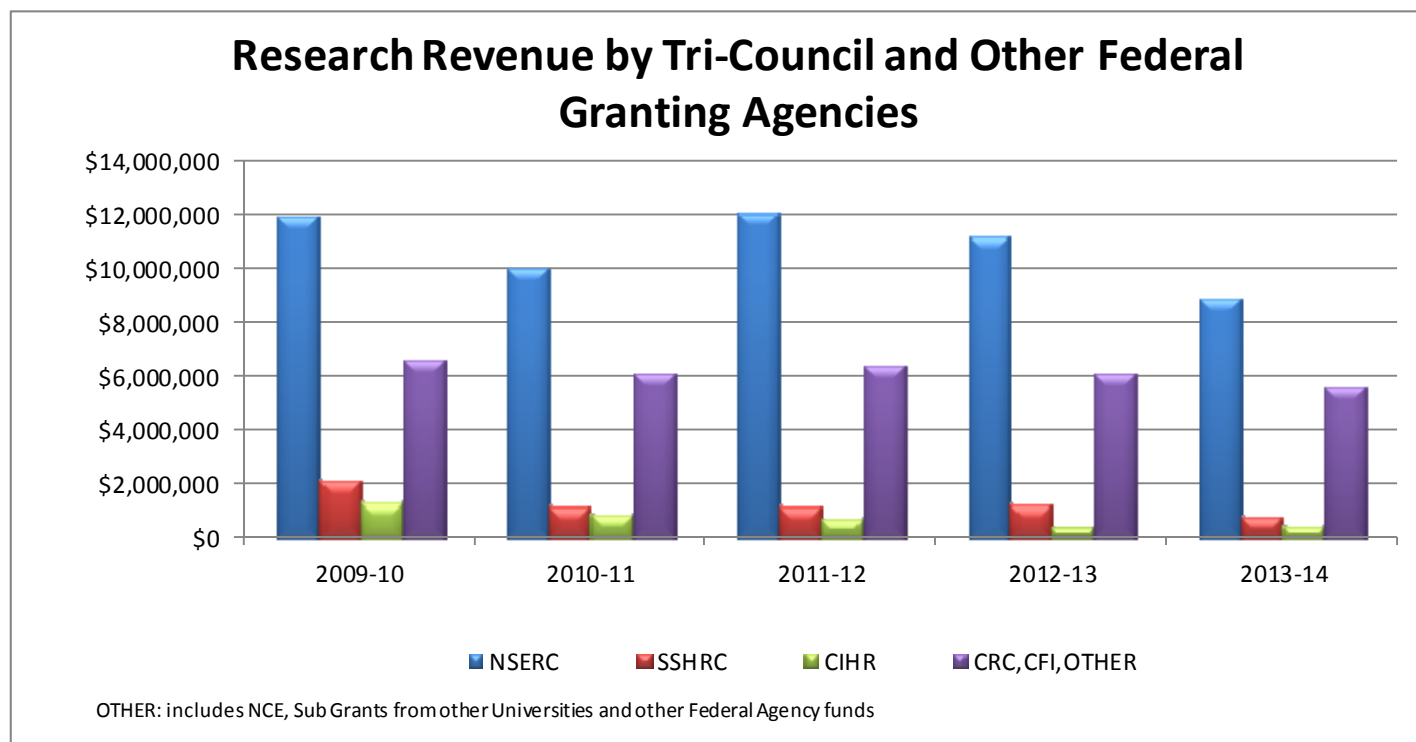
The majority of the research funding received by UNB goes back into the New Brunswick economy through salaries. In 2013-14, \$25 million was spent on student and non-student salaries. Equipment, materials and supplies consumed \$10.8 million and travel \$3.6 million.



NOTE: The bulk of all research revenues eventually flow back out as expenses. Due to the timing of different accounting tasks, however, total research expenditures will not equal total research revenues for the fiscal year.

Tri-Council Funding

The University's tri-Council (NSERC, SSHRC, CIHR) revenues in 2013-14 decreased by 20.41% overall to \$10.2M from the \$12.8M level of 2012-13. Other Federal granting agency (CRC, CFI, other) grants dropped from \$6.1M in 2012-13 to \$5.6M in 2013-14.



As indicated, grants from Tri-Council are a very important component of UNB's research activities. The details of our successes or lack thereof are being continuously scrutinized. To that end, details of our submissions to and awards from NSERC, SSHRC and CIHR for the calendar year 2013 are depicted on the following table (totals will differ from those presented for *fiscal year 2013-14*).

In order to facilitate comparisons, we have also provided last year's (2012) metrics.

Indirect Costs of Research

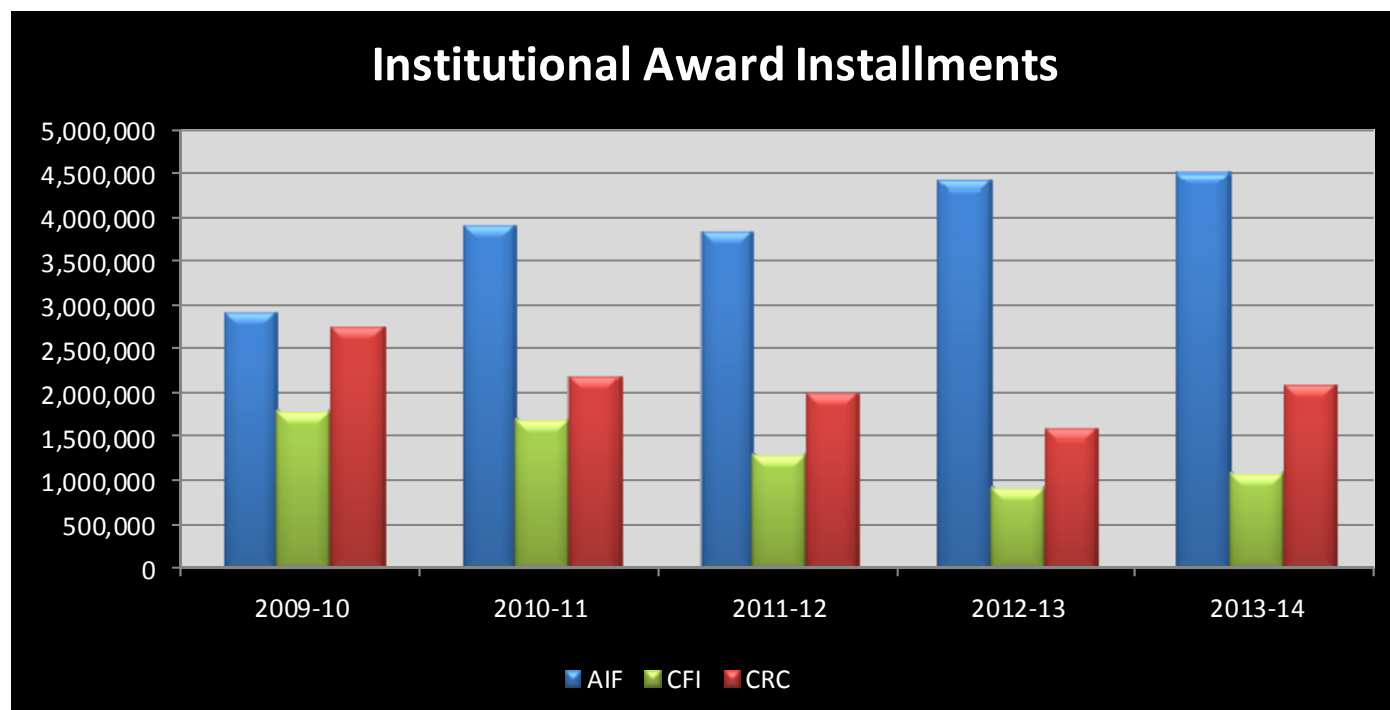
The Indirect Costs of Research grant provides funding for research facilities, resources, management and administration, regulatory requirements, accreditation and intellectual property management. The amount universities receive from this program is contingent on their level of tri-Council funding based on a three-year rolling average. The university's allocation for 2013-14 was \$3,559,359, and the allocation for the 2014-15 fiscal year is \$3,513,513.

Tri-Council Success

Tri-Council - 2013 Results							
Submissions	Program	Submitted	Requested	Successful	Awarded	Success Rate	Funding Rate
NSERC	CRD	5	683,932	5	683,932	100%	100%
	Strategic Project	2	582,200	0	0	0%	0%
	RTI	7	628,423	1	112,372	14.3%	17.9%
	Discovery	39	11,373,059	14	380,000	35.9%	3.3%
	Engage & Engage Plus	34	813,837	28	669,359	82.4%	82.2%
	Other	9	196,696	3	5,011	33.3%	2.5%
	Total NSERC	96	14,278,147	51	1,850,674	53%	13%
SSHRC	Insight	18	3,544,321	1	485,625	5.6%	13.7%
	Other	19	2,873,745	5	185,085	26.3%	6.4%
	Total SSHRC	37	6,418,066	6	680,710	16.2%	10.6%
CIHR	OOG	15	4,640,957	0	0	0%	0%
	Other	6	364,267	1	25,000	16.7%	6.9%
	Total CIHR	21	5,005,224	1	25,000	4.8%	0.5%

Tri-Council - 2012 Results							
Submissions	Program	Submitted	Requested	Successful	Awarded	Success Rate	Funding Rate
NSERC	CRD	4	562,157	3	452,157	75.0%	80.4%
	Strategic Project	1	296,000	0	0	0.0%	0.0%
	RTI	16	932,023	1	61,915	6.3%	6.6%
	Discovery	53	14,478,352	25	3,190,200	47.2%	22.0%
	Engage	25	618,540	25	614,540	100.0%	99.4%
	Other	12	757,060	6	231,926	50.0%	30.6%
	Total NSERC	111	17,644,132	60	4,550,738	54.1%	25.8%
SSHRC	Insight	20	3,184,850	2	259,311	10.0%	8.1%
	Other	10	530,816	5	295,591	50.0%	55.7%
	Total SSHRC	30	3,715,666	7	554,902	23.3%	14.9%
CIHR	OOG	9	2,160,297	2	175,170	22.2%	8.1%
	Other	11	1,457,716	2	28,000	18.2%	1.9%
	Total CIHR	20	3,618,013	4	203,170	20.0%	5.6%

Institutional Funding



Atlantic Innovation Fund (AIF)

The Atlantic Canada Opportunities Agency announced project approvals for Round 10 applications in May 2013. Three UNB-led projects were approved:

Dr. Bruce Balcom (Physics) was awarded \$2.5 million for his project to develop advanced MRI techniques for oil exploration.

Dr. Ali Ghorbani (Computer Science) was awarded \$1.8 million for his project intended to adapt models, techniques and instruments to ensure the necessary level of safety and security in operationally-critical software, hardware, and firmware infrastructure systems.

Dr. Yonghao Ni (Chemical Engineering) was awarded \$1.5 million for his project to improve the strength and reliability of paper-based straps for wrapping bundles to be more recyclable and less dangerous than steel band wraps.

As well, Dr. Deepa Pureswaran (Biology) and Dr. David MacLean (Forestry and Environmental Management) are playing important roles in an AIF project led by Forest Protection Limited (Early Intervention Strategies to Suppress a Spruce Budworm Outbreak).

Canada Foundation for Innovation (CFI)

In 2013-14, UNB was successful in having seven new CFI projects approved at a total value of \$1,286,818, plus an additional \$386,045 in Infrastructure Operating Funds to help maintain the equipment. UNB researchers are currently leading 26 active CFI infrastructure projects involving \$4.3 million from the CFI and \$6.3 million from matching sources.

Institutional Funding (continued)

Canada Research Chairs

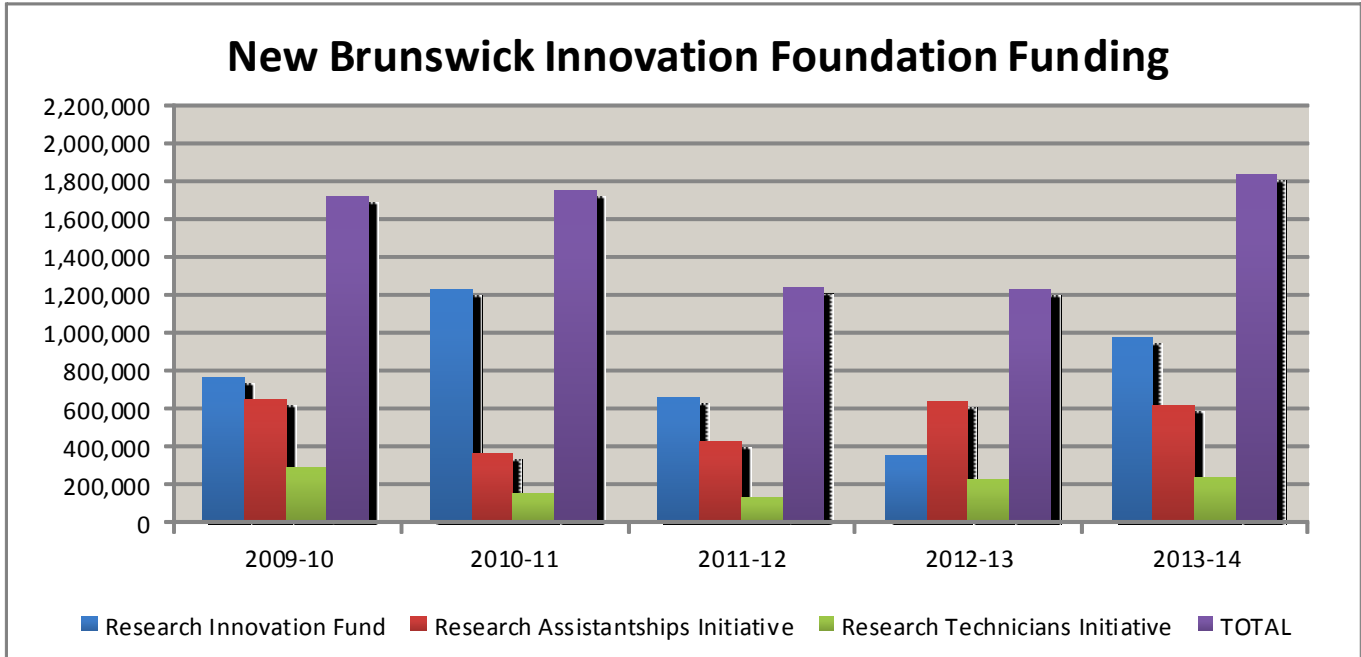
UNB received \$2.1 million for our 14 active Canada Research Chairs (CRCs) in 2013-14. Just before and during the fiscal year, there was a great deal of activity in the CRC portfolio. UNB enjoyed three successful CRC renewals: Dr. José Domene (Education)—Tier 2 Chair in School to Work Transition, Dr. John Spray (Earth Sciences)—Tier 1 Chair in Planetary Materials, and Dr. Yun Zhang (Geodesy & Geomatics Engineering)—Tier 2 Chair in Advanced Geomatics Image Processing. Dr. Paul Peters was awarded a new Tier 2 Chair in Spatial and Social Inequalities in Health and Health Service Delivery. The second term of Dr. Kerry MacQuarrie (Civil Engineering) was completed, thus ending his Tier 2 Chair in Groundwater-Surface Water Interaction, and Dr. Christopher Martyniuk (Biology, SJ) left the university during his first term as a Tier 2 Chair in Aquatic Molecular Ecology.

UNB's CRC contingent as of April 30, 2014:

	Name	Department/Faculty	CRC in...	Tier
1	Bruce Balcom	Physics/Chemistry	Materials Science MRI	1
2	Rick Cunjak	Biology (F)	River Ecosystem Science	1
3	José Domene	Education	School to Work Transition	2
4	Michael Haan	Sociology/Economics	Population and Social Policy	2
5	Karen Kidd	Biology (SJ)	Chemical Contamination of Food Webs	2
6	Elizabeth Mancke	History	Atlantic Canada Studies	1
7	Kelly Munkittrick	Biology (SJ)	Ecosystem Health Assessment	1
8	Yonghao Ni	Chemical Engineering	Pulp and Paper Science and Engineering	1
9	Lucia O'Sullivan	Psychology	Adolescent Sexual Health Behaviour	2
10	Paul Peters	Sociology	Spatial and Social Inequalities in Health and Health Service Delivery	2
11	John Spray	Earth Sciences	Planetary Materials	1
12	Doug Willms	Education	Literacy and Human Development	1
13	Yun Zhang	Geodesy & Geomatics Engineering	Advanced Geomatics Image Processing	2
14	Ying Zheng	Chemical Engineering	Chemical Process and Catalysis	2

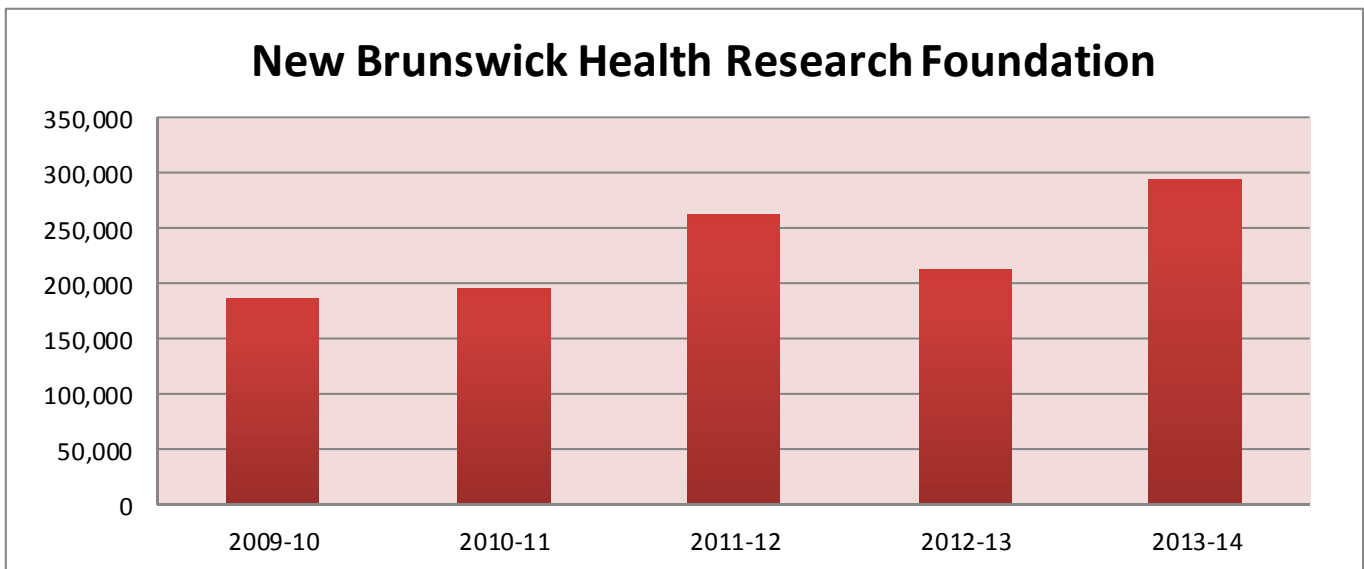
New Brunswick Innovation Foundation

The New Brunswick Innovation Foundation continued to be a strong supporter of research at UNB. UNB saw increases in all three of the NBIF programs, for a total increase of 49.65% over last year.



New Brunswick Health Research Foundation

The New Brunswick Health Research Foundation continued to contribute to UNB research. As the graph below indicates, since 2009-10 NBHRF contributions to our research enterprise have been in the \$200K–\$300K range.



Industrial Research Assistantship Program (National Research Council)

Since 2006, UNB, through ORS, has been providing short-term technical assistance to Canadian companies under the NRC IRAP Contribution to Organization (C2Org) Program, and (from 2012-14) through the Digital Technology Adoption Pilot Program (DTAPP).

The objective of the C2Org initiative is to support the innovative needs of Canadian SMEs through the provision of short term technical assistance from faculty and staff of the University. UNB provides the expertise of its faculty, staff and associates to meet industry needs for advice on technical issues that include, but are not limited to:

- On-site troubleshooting of issues in manufacturing, packaging, testing, etc.
- Initial assessment of new product concepts or standards
- Literature searches
- Technology searches and reviews
- Selection of equipment
- Assisting with preparation of technical research methodologies
- Preliminary market research as part of a product development process
- Technical training of company staff
- Seminars on specific technical issues of interest to industry
- Ad-hoc advice

The DTAPP initiative was to support productivity growth of Canadian SMEs across all sectors through the adoption of digital technologies.

UNB is able to provide these services thanks to the support of the National Research Council's Industrial Research & Assistance Program (NRC-IRAP).

For the 2013-14 fiscal year, a total of 20 consultation projects, involving 18 researchers were completed worth a total of \$84,974. IRAP was also able to help support the Atlantic Workshop on Semantics and Services (AWoSS) 2014 – Semantics and Big Data.

Since inception a total of 159 projects have been completed under this program.

NRC-IRAP Contribution to Organization					
	2009-10	2010-11	2011-12	2012-13	2013-14
Projects Completed	25	18	19	*22	23
# of UNB Faculty Involved	21	16	15	17	18

* One DTAPP project included in IRAP funding

It is important to note that separate from the NRC- IRAP C2Org Program administered by ORS and reported above, the Wood Science & Technology Centre in the Faculty of Forestry & Environmental Management administers a C2Org Program specific to its industry sector.

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 2013-14, IGS:

- Obtained the following awards (\$30,572.25 total) from Springboard Atlantic Inc. to assist in moving technologies through the commercialization process: three Marketing Support awards supporting the Departments of Geodesy and Geomatics Engineering and Mechanical Engineering (totalling \$23,772.25): a Patent & Legal Award (totalling \$5,000) for Geodesy and Geomatics Engineering; and an Industry Engagement award (totalling \$1,800).
- Facilitated 23 IRAP Network Member Agreements and 1 IRAP DTAPP project with faculty.
- In support of the Pre-Awards office, assisted with 3 NSERC Interaction grants, 26 NSERC Engage grants, 8 NSERC CRD grants, and 22 industry-related New Brunswick Innovation Foundation awards.
- Managed 13 new invention disclosures.
- Entered into 3 technology transfer agreements with industry.
- Assisted with the creation of 2 new UNB start-up companies.
- Filed 18 patent applications.
- Had 6 previous patent applications issue as registered patents.
- Received revenues (licensing income) of \$119,856.
- Hosted 8 workshops with industry

Technology & Knowledge Transfer						
	2009-10	2010-11	2011-12	2012-13	2013-14	2000-2014
Disclosures	14	16	12	13	13	244
Patents Filed	27	23	19	30	18	246*
Patents Issued	4	4	5	6	6	52
Total Patents Pending	68	71	80	73	n/a	n/a
License Agreements	15	7	7	3	3	112
Gross Revenue Received**	\$287,190	\$281,390	\$1,954,029	\$78,772	\$131,755	\$4,624,743
Start-ups Created	3	0	1	0	2	20
Note #1: FY2000–FY2008 not shown in Chart						
*Note #2: 246 filings for 89 separate technologies (e.g. 1 technology could have multiple patent filings)						
Note #3: Gross Revenues = Licensing Income + Patent Reimbursements						

Intellectual Property Management, Technology Transfer and Knowledge Transfer (continued)

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 14-year period from May 1, 2000 to April 30, 2014, UNB has:

- Managed 244 invention disclosures;
- Filed 70 US Provisional, 60 Canadian, 69 Non-Provisional US and 47 Other (European, PCT, etc.) patent applications (246 total) for 89 separate technologies;
- Seen 52 patents issued;
- Filed 18 Section 9 trademarks for the University;
- Completed 112 technology transfer deals;
- Secured licensing revenues and patent reimbursements of over \$4.5 million;
- Assisted in the creation of 20 UNB spin-off companies.

Research Ranking

The Research Ranking exercise, completed on a bi-annual basis, has become an important tool that assists the Office of the Vice-President (Research) in measuring research output of academic units at the University of New Brunswick. This exercise exists in the form of an electronic questionnaire that is completed by each person with the designation of Professor, Associate Professor, Assistant Professor, Honorary Research Professor, Research Associate and Senior Research Associate. Researchers in other designations (such as Postdoctoral Fellows, Adjunct Professors, etc.) may also choose to participate. Once the data is collected, a committee reviews the submissions from each academic unit

and assigns a ranking of 1 through 7 to each unit based on their submission. A ranking of 1 signifies research excellence, while a ranking of 6 signifies extremely low research performance (7 signifies non-compliance).

The on-line portal for the next ranking period (July 1, 2013–June 30, 2015) is scheduled to open in January 2015. The results from the last round which closed on August 31, 2013 are reported below.

UNB Fredericton Campus									
Department / Faculty	2005-07	2007-09	2009-11	2011-13	Department / Faculty	2005-07	2007-09	2009-11	2011-13
Anthropology	5	5	4	4	Forestry & Env. Mgmt.	1	1	1	2
Business Administration	4	5	5	4	French	5	5	5	4
Biology	1	1	1	1	GGE	1	1*	1	1
Chemical Eng.	1	1	2	2	History	1	1	1	2
Chemistry	1	2*	2	2	Kinesiology	4	3	4	2
Civil Eng.	2	2	2	2	Law	4	4	4	4
Classics & Ancient History	7	6	5	6	Mathematics & Statistics	3	3	3	2
Computer Science	3	3	3	2	Mechanical Eng.	1	2*	2	2
Culture & Language Studies	6	4	4	5	Nursing	4	4	3	3
Earth Sciences	1	1	2	2	Philosophy	6	4	4	4
Economics	5	5	5	4	Physics	1	1	2	2
Education	3	4	3	3	Political Science	3	4	4	4
Electrical & Computer Eng.	2	1	1	1	Psychology	2	2	2	1
English	2	2	2	2	Sociology	4	3	2	2
UNB Saint John Campus									
Department / Faculty	2005-07	2007-09	2009-11	2011-13	Department / Faculty	2005-07	2007-09	2009-11	2011-13
Biology	1	1*	1	1	Mathematical Sciences	4	3	2	4
Business	6	6	5	5	Nursing & Health Science	6	6	5	3
Computer Science & App Stats	2	3	3	3	Physical Sciences	6	n/a	n/a	n/a
Engineering	5	6	6	6	Psychology	5	4	5	4
History & Politics	4	5	5	4	Social Sciences	6	5	4	4
Humanities & Languages	5	5	4	5					

n/a – department no longer exists

* – special designations available in 2007-09 Research Ranking years only

Research Outputs

The Research Output Indicators measure 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 ReSearch 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. ReSearch 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 ReSearch 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 science, and social science and humanities.
2. "Publication Intensity" is defined as the total number of publications per full-time faculty (full, associate and assistant faculty positions only were 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 (ie direct impact), but rather, is a measure of the probability of being cited (ie perceived impact). OST developed the ARIF to compare the impact factor from several specialities because 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											
2010	10	16	18	17	20	19	24	25	21	26	28
2011	11	16	18	17	21	19	24	25	22	27	28
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
Publication Intensity - RANK											
2010	6	12	14	13	19	25	37	22	24	21	28
2011	6	12	14	13	24	29	37	21	22	23	20
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
Publication Impact - RANK											
2010	17	11	13	3	21	10	14	42	36	25	33
2011	17	16	18	3	11	15	24	38	22	34	37
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

School of Graduate Studies

The growth seen over the past several years in graduate student enrollment and Post Doctoral engagements ceased in 2012-13 although numbers did not fall back to the 2010-11 levels.

The decline in graduate student enrollment from the previous year is partly due to the ending of one-off programs (e.g. Irving MBA Program) and large numbers of graduate students graduating in the May and October ceremonies.

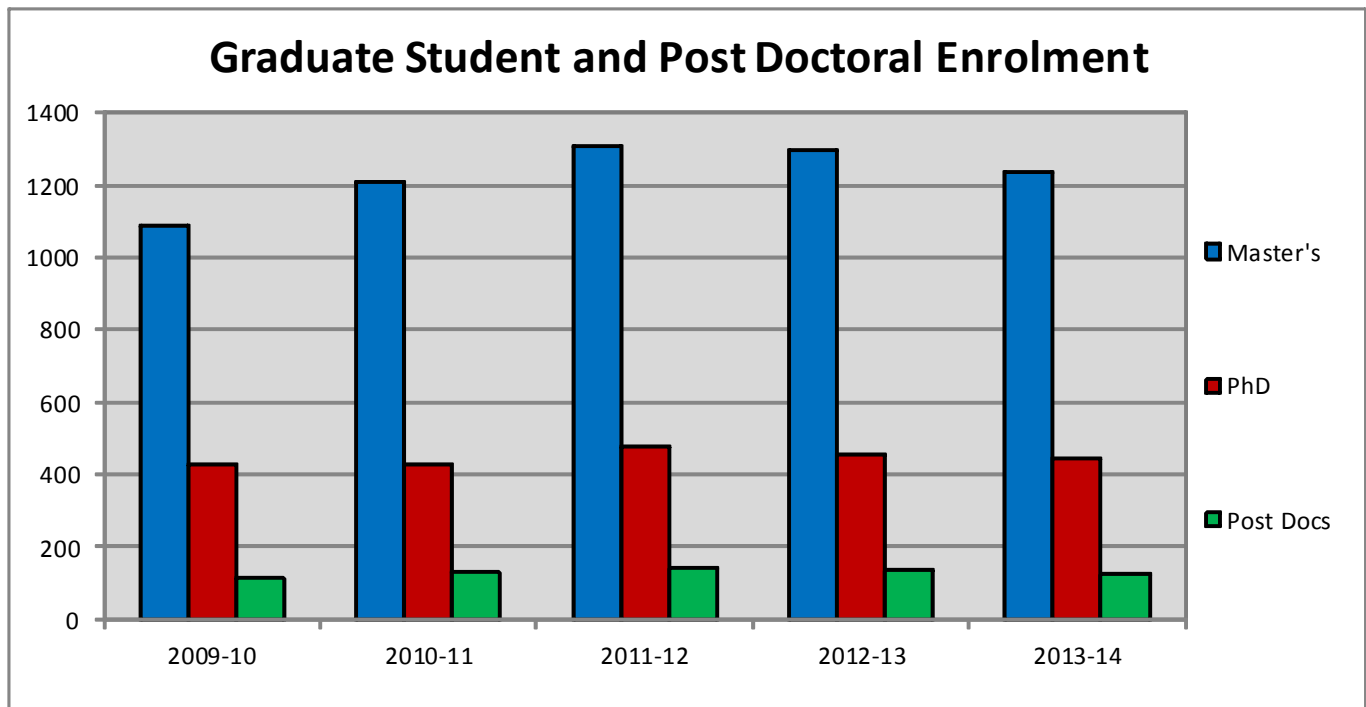
Masters students enrolled totalled 1235, down from 1295 the previous year but still above the 2010-11 level of 1208. Doctoral student numbers slightly dropped from 455 in 2012-13 to 443 in 2013-14. In-

creased recruitment activities and additional funding opportunities such as the NBIF (New Brunswick Innovation Foundation) top-up scholarships are expected to reverse these trends in 2015 and 2016.

There were 123 Post-Doctoral Fellows at the university in 2013-14 compared to 134 in 2012-13. With the various professional development programs being launched in 2014-15, we expect numbers to start increasing.



(L-R) Dr. Hamid Khoda Bakhsh (research scientist), Ms. Stacy Murray (MSc graduate student) & Dr. Thierry Chopin (Scientific Director, Canadian Integrated Multi-Trophic Aquaculture Network) contemplating their first freshwater integrated multi-trophic aquaculture (FIMTA) production. A variety of edible, ornamental and medicinal plants are being tested at the pilot-scale system at UNBSJ for their efficiency at growing using commercial salmon hatchery effluent water as their source of nutrients (photo credit: Adrian Hamer).



University Research Scholars 2013: **Dr. Nancy Nason-Clark & Dr. Marcelo Santos**

The award of University Research Scholar is intended for University of New Brunswick researchers who have demonstrated a consistently high level of scholarship, and whose research is, or has the potential to be, of international stature. The award shall honour leading researchers at the University. Recommendations for this award are made by a selection committee and approved by the Board of Governors.



Dr. Nancy Nason-Clark

Dr. Nancy Nason-Clark has published a total of 10 authored and edited books, 45 book chapters, and 90 articles in academic refereed journals and religious periodicals. She has been successful in procuring over 4.6 million dollars from external granting agencies and internal grants. Of these, over 50 were successful as principal investigator and/or co-applicant. She headed the RAVE project which received funding from the U.S. Lilly Endowment of \$502,000 (Canadian) providing an online practical resource for clergy, other religious leaders, and community service providers to help abused women within religious communities. This project is an example of knowledge transfer beyond academia to the wider communities at local, national and international levels. She was the editor of the international journal for *Sociology of Religion: A Quarterly Review* from 1995 to 2000, and associate editor of the *Review of Religious Research* and *JORA* from 2005-2008. Dr. Nason-Clark has supervised two post-doctoral students, a number of graduate students at UNB, and is currently mentoring young multidiscipline graduate students on a SSHRC funded research 7 year 2.5 million dollar project. She has also been invited to over 250 speaking engagements in Canada, the United States, and abroad.

University Research Scholars 2013 (continued):

Dr. Marcelo Santos

Dr. Marcelo Santos has been with the Department of Geodesy and Geomatics Engineering since January 2000. His field of expertise is Geodesy, particularly gravity field and geodetic applications of the Global Navigation Satellite Systems (e.g. GPS).

Since joining UNB Dr. Santos has led 10 research projects attracting research funds in the amount of \$2,752,925. He participated in 2 others bringing additional \$157,000 in research funds. The grand total is \$2,909,925.00.

Since joining UNB Dr. Santos has supervised or co-supervised a total of 18 graduate students, being 8 at Ph.D. level. He has also supervised a total of 49 undergraduate students among activities such as NSERC URSA, Work-Study and senior undergraduate technical reports. A number of 3 PDF have been under his direct supervision or co-supervision.

Since joining UNB Dr. Santos has authored or co-authored a total of 58 refereed papers, with an equivalent number of conference papers and abstracts.

Dr. Santos has led a number of projects related to geodetic applications of GPS and to gravity field. A summary of major accomplishments is enumerated below.

1. Development of the precise point positioning package GAPS (its online version has been used by over 50 thousand users worldwide).
2. Development of the UNB ray-tracer.
3. Development of the UNB VMF1 service.
4. Development of the theory related to the rigorous determination of Helmert orthometric heights.
5. Enhancements in the modelling of regional geoid and with the UNB package SHGeo.
6. Beta-testing of NASA geopotential model EGM08.
7. Update the map of crustal movements in Canada.
8. Contributions to the modernization of GPS by pioneering a study on the L2C signal.
9. Development of a collocation approach to modelling the distortions of geodetic network (used by Service New Brunswick)
10. Modernization of the geodetic infrastructure in Brazil.
11. Development of a dual-antenna approach for modelling multipath.
12. Study on long-range carrier-phase kinematic positioning.



During last year's General Assembly of the International Union of Geodesy and Geophysics, Dr. Santos was re-elected as president of the International Association of Geodesy (IAG) Sub-Commission 4.3 on Modelling and Remote Sensing of the Atmosphere for a four-year term. He is a member of IAG Study-Group on Coordinate Systems in Numerical Weather Prediction models and also a member of the International GNSS Service (IGS) Working Group on the Troposphere. He is a (non-funded) participant of the proposal "Advanced Global Navigation Satellite Systems tropospheric products for monitoring severe weather events and climate" for the European Cooperation in the field of Scientific and Technical Research (COST). He is also corresponding-member of IAG Joint Working Group on Assessment of GOCE Geopotential Models. In the past, Dr. Santos was a member of the Canadian National Council to the IUGG (CNC-IUGG), and president of the Geodesy Section of the Canadian Geophysical Union. Dr. Santos is Fellow of the IAG.

Success Stories

Theoretical physicist wins major grant to study time

Posted by UNB on 9/26/13

A postdoctoral researcher in the University of New Brunswick's department of mathematics and statistics has been awarded a major grant of over \$139,000 to study the fundamental nature of time in the universe.

"'What is time?' is an ancient question that has puzzled human beings since the beginning of civilization, and remains unsolved today," says Dr. Tim Koslowski, a member of the math department's [gravity group](#).

Koslowski's research investigates whether the modern understanding of time as "objective change" is a satisfactory answer to the age-old question above. He joined UNB as a postdoctoral researcher in September 2012. He received his PhD from the Universität Würzburg, Germany in 2008.

Koslowski is joined by Dr. Flavio Mercati (Perimeter Institute, Waterloo), and Dr. Julian Barbour (Oxford University), author of *The End of Time*, where he advances the controversial view that time is merely an illusion.

Their grant was awarded by the [Foundational Questions Institute](#) (FQXi), which catalyzes, supports, and disseminates research on questions at the foundations of physics and cosmology.

Postdoctoral researcher, Tim Koslowski has won a major grant to investigate the nature of time in the universe.



Alumnus unveils latest prototype of world's first mind-controlled bionic leg

Posted by UNB on 9/27/13

Three-time University of New Brunswick graduate, Levi Hargrove and his colleagues at the Rehabilitation Institute of Chicago unveiled the latest prototype in their development of the world's first bionic leg this week. Their groundbreaking results were published in the *New England Journal of Medicine* on Thursday.

Hargrove and his research team made headlines last year when Zac Vawter climbed the stairs of the 103-story Willis Tower wearing the revolutionary bionic leg. Vawter lost his leg in a motorcycle accident in 2009.

When Vawter wants to move his leg, signals travel from his brain, down his spine and hamstring muscle, and are picked up by electrodes in the bionic leg. This allows him to walk up stairs and inclines as if the leg and foot were his own ([watch the video](#)).

Hargrove studied at UNB with Profs. Kevin Englehart and Bernie Hudgins, who were also instrumental in developing intelligent control for artificial arms. Research conducted by Englehart's students, Roua Razak and Dan Rogers from UNB's Institute of Biomedical Engineering, contributed to the sophisticated neural control of the smart leg. Englehart is currently director of UNB's world-renowned [Institute of Biomedical Engineering](#).

Hargrove grew up in Bath, N.B, and was exposed to electrical engineering at a very young age, as his father and grandfather are both engineers. After taking a biomedical engineering course at UNB during his undergraduate years, he realized he had found the area in which he wanted to make a long-term career.



Levi Hargrove

Success Stories...continued

Fred Eaton donates \$1 million to UNB, establishes Fredrik S. Eaton Chair in Canadian Army Studies

Posted by UNB on 10/24/13

One of UNB's most committed and generous alumni has provided funding that looks to foster a better understanding about the roles and impact of the Canadian Army.

Dr. Fredrik S. Eaton, O.C., O.Ont., former chancellor of UNB, and the Catherine and Fredrik Eaton Charitable Foundation have donated \$1 million to establish the Fredrik S. Eaton Chair in Canadian Army Studies. The chair will be housed within the Brigadier Milton F. Gregg, VC, Centre for the Study of War and Society on UNB's Fredericton campus.

The chair, which will be held by the Deputy Director of the Gregg Centre, will build on the Centre's internationally recognized undergraduate and graduate teaching, public outreach, scholarly publications, and its expertise in all aspects of modern conflict. The focus of the chair will be to connect citizens to the Canadian Forces and to further the professional development of the Canadian Army.

"Our Armed Forces have enjoyed a long and rich history, complete with acts of bravery in the face of the greatest conflicts," Dr. Eaton said. "Understanding their role and mission and communicating that to Canadians is critical today and into

the future. This focus, through the development of the Chair for Canadian Army Studies, will assist in reaching those goals."

A UNB alumnus, Fredrik S. Eaton served as the university's chancellor from 1993 to 2003. He is the former High Commissioner for Canada to the United Kingdom of Great Britain and Northern Ireland and the former chairman, president and CEO of the T. Eaton Co. An unfailing supporter of the university, Dr. Eaton received a bachelor of arts in 1962 and an honorary doctor of laws degree in 1983 from UNB.

"UNB is proud of the role it plays in the broader Canadian community," said Dr. Eddy Campbell, UNB's president and vice-chancellor. "This funding, from one of UNB's most esteemed friends and community members, will assist us in further advancing Canadian history, citizenship and our collective understanding of conflict and war."

UNB is strongly positioned for research in this area having a 40 year partnership with the Combat Training Centre at

CFB Gagetown and The Royal Canadian Regiment.

"This funding in an important vehicle that will allow New Brunswickers and Canadians to engage in meaningful discussions about the importance of the Canadian Army," said Lee Windsor, inaugural Fredrik S. Eaton Chair in Canadian Army Studies. "It is a challenging time for military services and this funding will allow us to create a positive dialogue in regard to the role of the Canadian Army."

The announcement was made during the annual convocation celebrations taking place at the University of New Brunswick.



Fredrik D. Eaton, Lee Windsor, Fredrik S. Eaton, Eddy Campbell

UNB's Kevin Englehart leads the world in prosthetic research

Posted by UNB on 3/17/14

Dr. Kevin Englehart, director of University of New Brunswick's [Institute of Biomedical Engineering](#), is one of three New Brunswick researchers to be honoured at this week's [New Brunswick Innovation Foundation's R3 Gala](#).

Dr. Englehart's work has led to the development of hardware and software that allows people with artificial limbs to operate them with advanced utility and dexterity.

Englehart is a three-time UNB alumnus, receiving his bachelor's, master's and doctoral degrees at the University of New Brunswick in Fredericton, where he was born and raised.

Englehart, along with UNB's Dr. Felipe Chibante and Dr. Rodney Ouellette of the Atlantic Cancer Research Institute, will receive the R3 Innovation Award for Excellence in Applied Research at the award gala on March 20, 2014 at the Fredericton Convention Centre.

Success Stories...continued

UNB scientists awarded \$1.9 million in research funding

Posted by UNB on 11/22/13

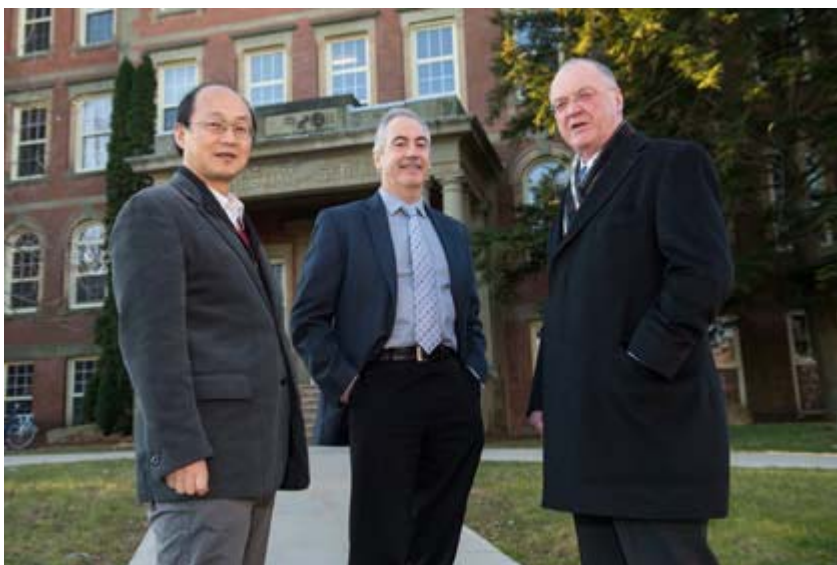
The Honourable Keith Ashfield, member of Parliament for Fredericton, was at the University of New Brunswick in Fredericton yesterday to congratulate Dr. John Spray and Dr. Yun Zhang on funding of \$1.9 million from Industry Canada through the Canada Research Chairs Program.

“Through programs such as the Canada Research Chairs, we are supporting cutting-edge research at Canadian universities and fostering innovation by helping researchers bring their ideas to the marketplace, benefiting Canadians and improving their quality of life,” said Ashfield.

The University of New Brunswick is receiving \$1,900,000 to support the work of two chairholders. [Dr. John Spray](#), Canada Research Chair in Extreme Deformation and Planetary Materials, will be examining the exploration, evolution, and resource evaluation of planetary bodies. Dr. Spray’s research is leading to a science-driven, technology-enabled exploration of Earth and other planets via the creation of a unique, world-class centre for research, training, and enterprise in planetary materials. [Dr. Yun Zhang](#), Canada Research Chair in Advanced Geomatics Image Processing, will be developing new technologies for gathering geospatial information from remote sensing imagery to strengthen Canada’s role in the geomatics industry.

“For more than 10 years, the Canada Research Chairs Program has served to attract the highest calibre of researchers across disciplines to Canadian post-secondary institutions,” said Janet Walden, chief operating officer of the Natural Sciences and Engineering Research Council of Canada and member of the Canada Research Chairs Steering Committee. “The program is a magnet for expertise, talent and creativity. Through teaching and mentorship, the chairholders foster research excellence among the next generation of scholars.”

Spray is director of UNB’s Planetary and Space Science Centre and a professor in the department of earth sciences. Zhang is a professional engineer and professor in UNB’s department of geodesy and geomatics engineering.



The Honourable Keith Ashfield (right) congratulates UNB's Dr. John Spray (middle) and Dr. Yun Zhang (left). (Rob Blanchard photo)

Success Stories...continued

ACOA AIF invests \$5.9 million in UNB research

Posted by UNB on 5/24/13

The Government of Canada recently announced that three research projects at the University of New Brunswick will be awarded a total of \$5.9 million.

The Atlantic Canada Opportunities Agency (ACOA) Atlantic Innovation Fund (AIF) will assist the university to carry out three projects: develop hardware, software and MRI measurement tools to help detect and extract oil and gas; develop an IT toolset to identify potential risks and threats to computer systems; and develop natural fibre-based wraps for pulp baling and carton box strapping, as a renewable and cost-effective packaging alternative.

The UNB projects were among 17 new R&D projects in Atlantic Canada selected to receive AIF funding, as announced on May 14, in Summerside, PEI, by Prime Minister Stephen Harper. In total, the Government of Canada will invest \$39.9 million under the AIF to transform promising ideas into marketable innovations. The combined value of these projects is over \$71.1 million.

A list of the UNB projects is below. For media interview requests, contact [Natasha Ashfield](#).

Bruce Balcom, director of UNB's MRI Research Centre and professor of physics received approximately \$2.5 million to develop hardware, software and MRI measurement tools to be used by industry to enhance detection and extraction of hydrocarbons, including oil, gas, shale oil and gas, most notably from unconventional and marginal reservoirs.

Yonghao Ni, chemical engineering professor and director of UNB's Limerick Pulp and Paper Centre received approximately \$1.5 million to develop a stronger, less expensive, natural fibre-based packaging alternative to plastics, wire, and less durable paper products traditionally used in the packaging manufacturing sector.

Ali Ghorbani, dean of the faculty of computer science and director of UNB's Information Security Centre received approximately \$1.8 million to address security breaches and vulnerabilities that compromise critical information system infrastructure. The project involves developing an intelligent toolset for automated security analysis and risk management for large-scale computer systems.

These research initiatives would not be possible without the collaboration of our partners, including Q1Labs/IBM working with Dr. Ghorbani; Oval International working with Dr. Ni; and Green Imaging, Saudi Aramco and Conoco Phillips working with Dr. Balcom.

Success Stories...continued

Prof. Sandra Byers wins prestigious international award for groundbreaking work on human sexuality

Posted by UNB on 11/19/13



Dr. Sandra Byers is a professor and chair of UNB's psychology department in Fredericton.

Internationally renowned scholar, Dr. E. Sandra Byers, professor of psychology at the University of New Brunswick, was recently awarded the 2013 Alfred C. Kinsey Award by the Society for the Scientific Study of Sexuality (SSSS).

The Kinsey Award acknowledges individuals from around the world for their outstanding contributions to the field of sex research, sex therapy, or sexology. Byers was unanimously approved as the award winner

"Dr. Sandra Byers has made the most important and broadest empirical contributions to the understanding of the complexity of women's and men's socialization, social interactions and sexual experience of any sexual scientist I know in this century or the last," said Dr. Naomi McCormick, who previously served as president of SSSS.

Dr. Byers is a licensed psychologist and teaches in the fields of human sexuality, clinical psychology, and ethics and professional issues in psychology. She has published more than 125 refereed journal articles and book chapters and is co-author of the most popular undergraduate textbook, *Understanding Human Sexuality*, which is now in its 5th edition. She has been chair of UNB's psychology department in Fredericton since 2003.

"Dr. Byers has had a long and distinguished career as a leading researcher on sexuality, and her receipt of this prestigious award brings much-deserved recognition to her work," says Dr. John Ball, acting dean of arts at UNB in Fredericton. "We in the faculty of arts are very proud of her latest achievement. "

[Lucia O'Sullivan](#), a professor and Canada Research Chair in adolescent sexual health in UNB's psychology department, was mentored by Byers as an undergraduate and masters' student, before going on to complete a PhD in the United States. "Dr. Byers is an inspired mentor, and has helped launch the careers of countless new professionals in the field, and strongly influenced those of many more in myriad ways—something that is highly apparent at every conference we attend," says O'Sullivan.

"Her courses are some of the most popular among students and she consistently earn high praise for her energized, humorous, and informed teaching style. She is much admired and respected in her role as a chair in the department of psychology, showing exceptional leadership in representing psychology's interests at UNB and beyond, as well as helping advance the work and promoting meaningful collaborations among her faculty colleagues."

Byers accepted her award at the Society for the Scientific Study of Sexuality's annual meeting in San Diego, CA from November 14-17, 2013.

Success Stories...continued

UNB research contributes to world's first thought-controlled prosthetic leg

Posted by [UNB](#) on 8/30/13

The University of New Brunswick's state-of-the-art Andrew and Marjorie McCain Human Performance Lab is enabling researchers and surgeons in Atlantic Canada to develop treatment strategies for children living with cerebral palsy.

Dr. Victoria Chester, professor in the faculty of kinesiology, is conducting gait analysis trials with surgeons from the Horizon Health Network and partners at the Stan Cassidy Centre for Rehabilitation. Gait analysis is used to assess, plan and treat patients with conditions affecting their ability to walk.

"The gait lab provides a unique 3-dimensional assessment of movement, which is not available anywhere else in the Maritimes," says Nicole Desaulniers, a physiotherapist at the Stan Cassidy Centre. "Rehabilitation treatments, medical and surgical procedures are planned according to reports generated at the lab. It is an incredible opportunity for our patients to have this type of technology so close to home, and ultimately, it improves their chances at better day-to-day mobility and independence.

While gait analysis can be conducted on both children and adults, children affiliated with the Stan Cassidy Centre—and especially those with the most severe conditions—are currently given priority.

"This is one of the most fulfilling and rewarding aspects of our work," says Chester. "We have the opportunity – thanks to this technology and our partnership with the Stan Cassidy Centre – to help these children move as freely and independently as possible."

In practical terms, this might mean empowering a child to improve their walking skills, get in and out of the bathtub,

or transfer in and out of a car, by him or herself.

UNB's motion capture technology system – the same technology used in movie production – allows researchers to place reflective markers on subjects' skin to analyze their movements. In the case of children living with cerebral palsy or other movement-related conditions, the technology provides surgeons with data on weight-bearing patient movement – something that cannot always be appreciated from clinical tests or visualized in an operating room when a patient is under anesthesia.

Chester and her colleague, Dr. Usha Kuruganti, aided in the design and commissioning of the infrastructure and facilities within the world-class Andrew and Marjorie McCain Human Performance Lab facility located in the Richard J. CURRIE CENTER at UNB in Fredericton.

The lab houses the world's most advanced 16 megapixel Vicon motion capture system to accurately track and record movement. The high resolution of the cameras enables researchers to study the details of locomotion and mobility impairment, and is used by private companies and researchers across North America as an industrial standard.

The world-class technology of the human performance lab, as well as the expertise of a multi-disciplinary team of researchers and clinicians in the fields of biomechanics, neuromuscular physiology and chronic disease management, has established UNB as a leader in health and wellness research in the Canada.



State-of-the-art technology at UNB's Andrew and Marjorie McCain Human Performance Lab is helping researchers and health care professionals empower patients with cerebral palsy.

Extra Stories...

UNB research helps Alberta manage environment

Posted by UNB on 6/13/13

Researchers from the [Forest Watershed Research Center](#) of the faculty of forestry and environmental management at UNB were recently recognized for their contributions to environmental stewardship in the province of Alberta. Their work on the Centre-inspired Wet-Areas Mapping Initiative (WAM) was instrumental in helping the Alberta Department of Environment and Sustainable Resource Development (ESRD) win an [Emerald Award](#) for environmental leadership and innovation on June 6th in Calgary.

Developed at UNB as a forest management tool, WAM is now being used by researchers, industry, environmental consultants, governments and NGOs across Canada—most recently by Alberta Tourism, Parks and Recreation, and most noticeably so here in New Brunswick. The modeling and mapping processes of WAM are used to automatically map streams and wetland borders, and delineate areas subject to soil erosion and flooding.

By providing high-resolution imaging of potential water flows above and below the soil surface, WAM facilitates road and trail planning, and can be used to minimize intrusion into sensitive areas that would not be detected otherwise. This means better land-use planning and development, building better-placed infrastructure, and protecting sensitive habitats and resources.

Researcher's work captures attention south of the border

Posted by UNB on 6/12/13

UNB Saint John Professor Thierry Chopin's work to develop more effective aquaculture practices was recently featured in various media outlets in the United States.

Using the entire ecosystem of a fish farm – including the waste generated by salmon and used by seaweeds and invertebrates – is known as an Integrated Multi-Trophic Aquaculture (IMTA) approach. Dr. Chopin's IMTA method reduces and reuses fish waste that would otherwise be lost.

"What we are doing is nothing more than recycling nutrients," Chopin explains. "Instead of looking at them as waste, we look at them as nutrients for the next species."

His research was prominently covered by a number of media outlets recently, both in Canada and the United States.



Members of the CHAIN research team

UNB researchers map weather in space

Posted by UNB on 7/24/13

Researchers Richard Chadwick and Todd Kelly are on a [14-day tour around the Canadian North](#) to install Global Positioning System (GPS) receivers built to map space weather in the Canadian Arctic.

The equipment collects GPS signals from space and transmits it to a climate-controlled server station at the University of New Brunswick in Fredericton as part of the [Canadian High Arctic Ionospheric Network](#) (CHAIN)—a research project designed to help scientists better understand planetary environments.

Once the data is processed and mapped by UNB researchers and scientists, it is made available to clients across the globe – including the Department of National Defense.

Extra Stories...continued

Research examines roots of bilingualism in New Brunswick

Posted by UNB on 6/20/13

A bilingual and interdisciplinary team from three New Brunswick universities has launched a research project to examine the roots of bilingualism in the province.

The project, under the direction of principal investigator Dr. Chantal Richard from the University of New Brunswick (UNB), brings together academics from the departments of history and French at l'Université de Moncton, the University of New Brunswick (Fredericton and Saint John) and St. Thomas University to examine the emergence and development of Acadian and Loyalist identities in New Brunswick.

Their first task is to digitize texts from twenty-three newspapers over a period of 60 years to create an online database. The researchers will then use text analysis software to analyze the evolution of vocabulary and discursive strategies in both languages from 1880-1940.

Their bilingual database of newly digitized texts will open up new research possibilities in the fields of culture studies, history, linguistics, literature, and media studies, and will be made available to the public in 2014-15.

The project is funded by an Insight grant from the Social Sciences and Humanities Research Council of Canada (SSHRC) and was ranked second nationally in its category. The team is working in partnership with the Electronic Text Centre and the Atlantic Canada Studies Centre, based on the UNB Fredericton campus.



Back row, left to right: Cécilia Francis, Sheila Andrew, Gwendolyn Davies, Sasha Mullally. Front row: Margaret Conrad, Chantal Richard, Anne Brown. Absent: Bonnie Huskins, Denis Bourque, Sylvia Kasparian, Greg Marquis

Will C. van den Hoonaard featured in National Geographic

Posted by UNB on 2/3/14

Dr. Will C. van den Hoonaard's newest book, *Map Worlds: A History of Women in Cartography* (Wilfred Laurier University Press) was recently the subject for an [interview by the National Geographic](#).

Dr. van den Hoonaard's other research interests include research ethics, for which he was presented with an Award for Lifetime Achievement at the Health Improvement Institute's Awards for Excellence in Human Research Protection in December 2013. His 2011 book, *The Seduction of Ethics*, received honourable mention in 2012 from the Society for the Study of Symbolic Interactionism. He is internationally known for his work on ethics in research.

He has been previously honoured with a UNB President's Medal, a Merit Award, and the United Nations Association of Canada Global Citizen Award for his exceptional record in teaching, research and community service.

Dr. van den Hoonaard is professor emeritus at the University of New Brunswick and research associate at the Atlantic Centre for Qualitative Research and Analysis, St. Thomas University.



Dr. Will C. van den Hoonaard is professor emeritus at UNB Fredericton.

Extra Stories ...continued

Province's aging population "an opportunity" says UNB economist

Posted by UNB on 11/29/13

Dr. Michael Haan, Canada research chair in population and social policy at the University of New Brunswick, says that New Brunswick should look at its rapidly aging population as an opportunity, not a problem.

Haan was interviewed by Chris Morris of the Telegraph Journal following a recent Statistics Canada report that NB's population is greying at a higher rate than almost every other province.

You can read Chris Morris' article on the front page of the November 28 edition of the Telegraph Journal.

Michael Haan teaches in UNB's department of economics.

******Baby boom trend comes full circle**

New Brunswick Telegraph-Journal
Thu Nov 28 2013

Byline: Chris Morris (Legislature Bureau)

FREDERICTON – New numbers from Statistics Canada show that New Brunswick's population is greying at a higher rate than almost every other province and territory in the country.

Only Nova Scotia has a slightly larger proportion of seniors in its demographic makeup, according to 2013 population and age distribution figures released by Statistics Canada.

The numbers show that 17.6 per cent of New Brunswick's total population (756,050) is made up of people 65 years of age and older. Nova Scotia has a marginally higher ratio at 17.7 per cent.

The four Atlantic provinces round out the top four spots in the country in terms of having the most seniors – all more than 17 per cent. Alberta and the territories have the lowest percentages of seniors – all less than 12 per cent.

New Brunswick also has the second highest median age in Canada at just under 44 years of age. Newfoundland and Labrador has the highest median age at just over 44 years.

Michael Haan of the University of New Brunswick said Wednesday the province should look at its rapidly aging population as an opportunity instead of a problem.

"There needs to be a change in mentality around our older population," said Haan, Canada research chair in population and social policy at UNB.

"These are interesting people who have lived full lives. I think young, entrepreneurial people should see opportunity here. You have this large population of aging boomers who are wealthy and have time on their hands."

Haan said the baby boomers, who began retiring in 2011, are the richest cohort in human history. They also are relatively healthy and are living longer than seniors in earlier generations.

"Baby boomers have had a pretty good run," he said. "They were young during the period of unprecedented economic expansion and they did well in the housing market. So they will drive public policies that will ensure they continue to do well into retirement."

He said that by 2036, almost 30 per cent of the population of New Brunswick will be 65 years and older.

Pensions, health care, public transportation and low-maintenance, well-situated housing are among the issues New Brunswick governments will have to address as they try to cope with a growing population of seniors.

"Urban infrastructures will have to reflect the populations they serve," Haan said.

Premier David Alward said his Tory government is well aware of the fact that New Brunswick has a population aging faster than most other provinces.

"It sends a message about the impact on social policy, such as health care and seniors' care," Alward said of the latest Statistics Canada figures.

"That's why we've been doing significant work with the various parts of our society that deal with our seniors, looking at things like home-first policies and how we can ensure that seniors are able to live more vibrantly in their communities longer. Making the right decisions on what the needs will be for housing, accessibility, and so on are all important issues."

Alward said the province's controversial pension reform process – under fire from

many retired public servants – is a recognition by government of the challenges posed by an aging population.

"It's about making decisions today to ensure that we're going to be strong as a society for the future."

Haan said what is now happening in New Brunswick is the flip side of what happened in the province and the rest of Atlantic Canada during the post-war baby boom of the late 1940s and early 1950s.

At that time, the four provinces led Canada in fertility rates. For instance, in 1951, the average woman in New Brunswick had five children.

The fertility rate for the province now is 1.4 children.

"We can become a laboratory for understanding how to work with older populations, just as in the 1950s we showed Canada how to deal with a booming population of children," Haan said.

"It was, in many ways, Atlantic Canada that drove our education infrastructure – all those schools that were built because we had such high fertility rates. New Brunswick and the other Atlantic provinces were figuring out these things first. We could do the same thing with seniors."

Ironically, Haan said many of those old school buildings now could be converted into community centres with facilities for seniors.

"We had the largest baby boom in Canada. Here we are 60 or so years later and we are seeing these people who have gone through their entire lives and they are now retiring."

New Grants Funded at UNB, 2013-14

AB Innovates Bio-Solution

Chui, Y. H.

American Genetic Association

Nedelcu, Aurora

Apex Industries

Chen, Zengtao

Atlantic Association for Research in the Mathematical Sciences

Ma, Renjun

Watmough, James

Atlantic Lobster Sustainability Foundation

Rochette, Rémy

Atlantic Region Canadian Association of University Nursing Schools

Yetman, Linda

Atlantic Salmon Conservation Foundation

Curry, Allen

Atomic Energy of Canada Ltd.

Cook, William

Autonomous~ID

McGibbon, Chris

Beatrice Hunter Cancer Research Institute

Reiman, Anthony

Wilkins, Krista

Biosign Technologies Inc.

Brunt, Keith

Blue Zone Technologies Ltd.

Eic, Mladen

B-Temia Inc.

McGibbon, Chris

Canada Foundation for Innovation

Cunjak, Richard

Eisler, Sara

Gerber, Andrew

Zhang, Yun

Zheng, Ying

Canada Research Chair Secretariat

Spray, John

Zhang, Yun

Canadian Cancer Society

Hamilton, Ryan

Canadian Institutes of Health Research

Biden, Edmund

Bulman, Donna

Byers, Sandra

Getty, Grace

McDonald, Ted

Ronis, Scott

Weaver, Kathryn

Wuest, Judith

Yetman, Linda

Canadian Space Agency

Jayachandran, P. T.

Spray, John

Ward, William

Canadian Tree Fund

MacLean, David

Cape Breton University

Culp, Joseph

Centre for Aquaculture Technologies Canada

Benfey, Tillmann

China Ministry of Foreign Affairs

Torri, Maria Costanza

Clean Current Power Systems Inc.

Holloway, Gordon

Coaching Association of Canada

Edwards, Jonathon

Cooperative de Gestion Forestiere des Appalaches

Afzal, Muhammad

Corporate Trade Network Inc.

Du, Weichang

Corridor Resources Inc.

Romero-Zeron, Laura

C-Therm Technologies Ltd.

Castillo-Guerra, Eduardo

Dietrich von Hildebrand Legacy Project

Bell, Jason

Ducks Unlimited Canada

Barbeau, Myriam

Envenio Inc.

Aubanel, Eric

Gerber, Andrew

Forest Protection Ltd.

Li, Howard

New Grants Funded at UNB, 2013-14 (continued)**Foundational Questions Institute**

Koslowski, Tim

Fredericton Police Force

Gill, Carmen

Hatch Company

Gerber, Andrew

Health & Life Science New Brunswick

Brunt, Keith

Pulinikunnil, Thomas

Heart & Stroke Foundation of Canada

McKenna, Mary

Husky Injection Molding Systems

Dubay, Rickey

Indiana University

Bell, Jason

Inland Technologies Inc.

McGrady, Sean

Isomass Scientific Inc.

Cunjak, Rick

J.D. Irving Limited

MaGee, David

Katholieke Universiteit Leuven

Bell, Jason

LuminUltra

Zhang, Huajie

Moncton Flight College

Li, Howard

Muriel McQueen Fergusson Foundation Inc.

Gill, Carmen

Murray Brook Minerals

Lentz, David

Natural Sciences & Engineering Research Council

Afzal, Muhammad

Alderson, Timothy

Aubanel, Eric

Benfey, Tillmann

Castillo-Guerra, Eduardo

Chang, Liuchen

Chen, Zengtao

Chibante, Felipe

Chui, Y. H. (2)

Cole, Jacqueline

Coleman, David

Cook, William

Crawford, Bryan

Du, Weichang

Dubay, Rickey (4)

Durnford, Dion (2)

Eic, Mladen

El Naggar, Hany (2)

Englehart, Kevin

Fleming, Michael (2)

Gegenberg, Jack

Gerber, Andrew

Gray, Christopher

Hall, Joseph

Holloway, Gordon (2)

Houlahan, Jeff

Jayachandran, P. T.

Kubien, David

Kuruganti, Usha

Li, Howard (2)

Li, Kecheng

MacLean, David

MacLellan, Shawn

MaGee, David

Martyniuk, Christopher

Mastikhin, Igor

McGibbon, Chris (2)

McGrady, Sean (3)

Nedelcu, Aurora

Rangipour, Bahram

Saleh, Saleh (2)

Santos, Marcelo

Saunders, Gary

Stefanakis, Emmanuel

Vanicek, Petr

Wachowicz, Monica

Wang, Lin

Ward, William

Zhang, Huajie

Nautilus Environmental

Martyniuk, Chris

NB Department of Justice

Gill, Carmen

NB Department of Post Secondary Education, Training & Labour

Haan, Michael

Morrison, William

Needham, Ted

Waugh, Lloyd

New Grants Funded at UNB, 2013-14 (continued)**NB Health Research Foundation**

Baker, Christopher
 Brunt, Keith
 Bulman, Donna
 Englehart, Kevin (2)
 Gray, Christopher (3)
 Hanson, Trevor
 Low, Jacqueline
 McDonald, Ted
 Reiman, Anthony
 Scott-Storey, Kelly (2)
 Secco, Loretta
 Sherman, Ann
 Wilkins, Krista

NB Innovation Foundation

Addison, Jason
 Afzal, Muhammad
 Aubanel, Eric
 Baker, Christopher
 Benfey, Tillmann
 Bremner, David
 Chen, Zengtao (2)
 Chui, Y. H. (3)
 Cunjak, Richard
 Deslongchamps, Ghislain
 Dubai, Rickey (2)
 Dueck, Gerhard
 Dyker, Adam
 Eic, Mladen
 Eisler, Sara (2)
 El Naggar, Hany
 Englehart, Kevin (3)
 Gerber, Andrew
 Ghorbani, Ali (2)
 Gong, Meng
 Gray, Christopher
 Haan, Michael
 Hudgins, Bernie
 Jayachandran, P. T.
 Jeans, Tiger
 Johnson, John
 Kent, Kenneth
 Kershaw, John
 Kieffer, James
 Kyberd, Peter
 Langley, Richard
 Leblon, Brigitte
 Lentz, David
 Li, Howard
 MaGee, David
 Martyniuk, Christopher
 Mastikhin, Igor
 McGrady, Sean (2)
 Ni, Yonghao (2)
 Nickerson, Bradford

Patten, Cheryl
 Quiring, Dan
 Romero-Zeron, Laura
 Simoneau, Andy (2)
 Smith, Ian
 Stakhanova, Natalia
 Villemure, Gilles
 Xiao, Huining
 Zhang, Yun
 Zheng, Ying (2)

NB Regional Development Corporation

Floyd, Donald

Net Direct Inc.

Gerber, Andrew

**Networks Centres of Excellence/
MITACS**

Aubanel, Eric
 Chibante, Felipe
 Colpitts, Bruce
 Gong, Meng
 Jeans, Tiger
 Kidd, Karen
 Martyniuk, Christopher
 Murdock, Karen
 Ni, Yonghao (2)
 Nickerson, Bradford
 Reiman, Anthony
 Romero-Zeron, Laura

NORCAN Hydraulic Turbine Inc.

Chang, Liuchen

Northern Hardwoods Research Institute

Kershaw, John

Nova Chemicals Corporation

Holloway, Gordon

Olivier Soaps

McGrady, Sean

Pfizer Inc.

Balcom, Bruce

**R. F. Langler Chemistry Research Grant
Foundation**

Deslongchamps, Ghislain

RCMP

Gill, Carmen

ROPAK Canada Inc.

Dubay, Rickey

Sabian Ltd.

Kuruganti, Usha

Saint John Police Force

Gill, Carmen

Siemens Corporate Research

Saleh, Saleh

Smart Skin Technologies Inc.

Englehart, Kevin

**Social Sciences & Humanities Research
Council**

Bell, Jason
 Cichocki, Wladyslaw
 Domene, Jose
 Gill, Carmen
 Haan, Michael (2)
 McNally, Jeffrey
 Richard, Chantal
 Rideout, Vanda

Solanum Genomics International Inc.

MacLellan, Shawn

Solarvest (PEI) Inc.

McGrady, Sean

Soricimed Biopharma Inc.

Gray, Christopher

Southern Illinois University

Bell, Jason

Springboard Atlantic

Gerber, Andrew

Zhang, Yun (3)

Thibault & Associates

Cook, William

Thunder Process Group Inc.

Dubay, Rickey

Tire Recycling Atlantic Canada Corp.

Dubay, Rickey

El Naggar, Hany

University College Dublin

Bell, Jason

**University of Ontario Institute of Tech-
nology**

Dubay, Rickey