

# Annual Report on Research Activities at Saint Mary's University - 2014

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## Preface

This report conforms to the template agreed upon by universities in Nova Scotia and the Department of Labour & Advance Education in September 2013. It is intended to report each January on the research activity of the previous year. In some items, the reporting period is the previous fiscal year (1 April 2013 to 31 March 2014; e.g. funding statistics), the academic year (1 September 2013 to 31 August 2014; e.g. enrolments) or the previous calendar year 2013 (e.g. publications).

## Contents:

Introduction	1
Research Activities	2
Research Highlights	2
Research Funding	3
Highly Qualified Personnel (HQP) Training	7
Industry Engagement	11
Knowledge Creation and Mobilization	12
Research Collaborations	13
Research Environment	15
Other success stories	15
Appendix 1 (internal only)	18

## Introduction

The *Research Mission* of Saint Mary's University is to engage in research that applies to, and is valued by communities from around the corner, to around the world, and that cultivates intellectual curiosity and creativity of our faculty and students.

The *Major Research Objectives* of Saint Mary's University 2012-17 Strategic Research Plan (SRP) are:

- To carry out high quality research that builds on existing strengths and partnerships, with particular emphasis on interdisciplinary endeavours;
- To develop research programs that are valued by, relevant to, and engage communities - locally, regionally, nationally and internationally;
- To ensure that students, both undergraduate and graduate, benefit from research activities at the University.
- To disseminate and translate the outcomes of our research to receptor communities who can best benefit from them.

The five *Major Research Themes* of Saint Mary's SRP are:

- Research for Atlantic Canada Communities
- Innovation in Business and Workplace Studies
- The Environment and Natural Resources
- Astronomy, Computational Sciences, and Subatomic Physics
- International Development and Human Migration Issue

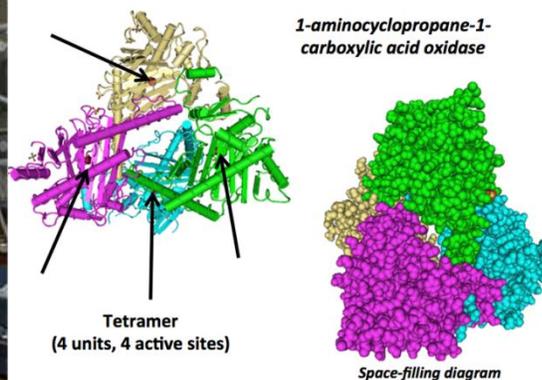
## Research Activities

### 1. *Research Highlights (Academic Year 2013-14; maximum 3)*

- **Saint Mary's University Graduate Student Takes Second Place at National 3 Minute Thesis (3MT) Competition for his cultural studies research presentation:** Kyle Massia has earned second place in the 2014 Canada's 3MT competition. Chosen from a field of 11 finalists, the master's History student presented what judges called a "refreshing social commentary" through his explanation of the enduring appeal of Ampelmann, a pedestrian traffic light figure popular in the former East Germany. Massia was videotaped before a live audience at the regional competitions. His 3 Minute Thesis video presentation was judged by Nobel laureate Dr. John Polanyi, CBC journalist Kady O'Malley, and University of Waterloo Dean of Arts Doug Peers.



- **Saint Mary's scientists isolate most fragile complex of CO<sub>2</sub>:** The scientific community is buzzing about the recent discovery of cyanofornate by researchers at Saint Mary's University and the University of Jyväskylä, Finland. Formed when cyanide (CN<sup>-</sup>) bonds to carbon dioxide (CO<sub>2</sub>), cyanofornate [NCCO<sub>2</sub>]<sup>-</sup> is a by-product of the fruit ripening process that has previously evaded detection. This discovery has many potential applications, including carbon capture/sequestration to help decrease greenhouse gas emission. While investigating weakly bonded carbon dioxide compounds, the research team led by Saint Mary's Dr. Jason Clyburne and Dr. Heikki M. Tuononen, University of Jyväskylä, isolated the fragile and elusive cyanofornate anion. With the support of an international team of scientists, including Dr. Ulrike Werner-Zwanziger, Dalhousie University; Dr. Christa Brosseau, Saint Mary's University; and Master of Science students Luke Murphy and Scott Harroun, they characterized cyanofornate's structure using crystallography, spectroscopy, and computational chemistry.



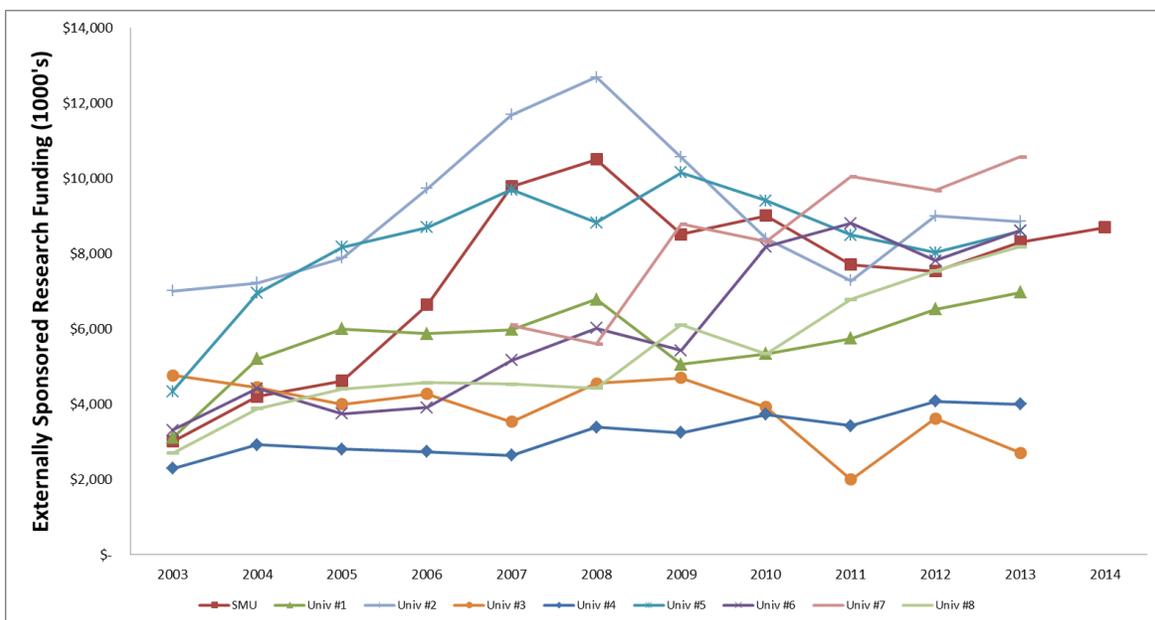
Structure from: Zhang, Z.; Ren, J.; Clifton, I.; Schofield, C. *Chem. Biol.* (2004) 11 p.1383 via National Center for Biotechnology Information  
Rendered using: Cn3D 4.3.1 3-D structure viewer

- Entrepreneurship Professor's Open Door Policy Opens Door to Prestigious Nomination:** Dr. Ellen Farrell, Department of Management, was among six finalists for the 2014 Business Development Bank of Canada Mentorship Award. Over the past 25 years, the Saint Mary's University professor has mentored hundreds of students in the Sobey School of Business, sharing her knowledge, experience, and business savvy. Farrell is known for her open door policy, which includes sharing her personal business network. The collage of success stories of former students displayed in Dr. Farrell's office include Leah Skerry, Managing Partner for Norex; Duncan Enman, founder of @CanStockPhoto fame; Greg Whynot, president of Maverick Communications; and Clark Swimm, Co-CEO of Avive Naturals.



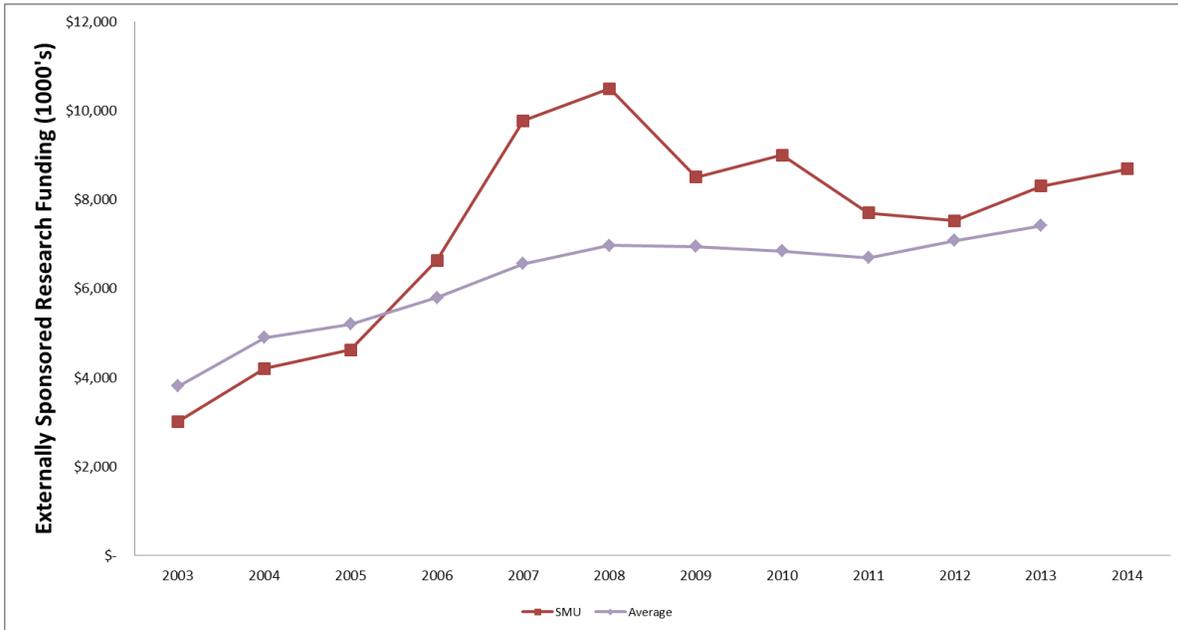
## 2. Research Funding

- Total externally sponsored research at SMU relative to eight "comparator" Canadian Universities (fiscal years ending 2003 to 2013).** Comparator universities were selected based upon levels of research funding in 2003 and/or regional considerations (key to the comparator universities can be found in Appendix 1; the key is for internal use only and not to be circulated outside of SMU).



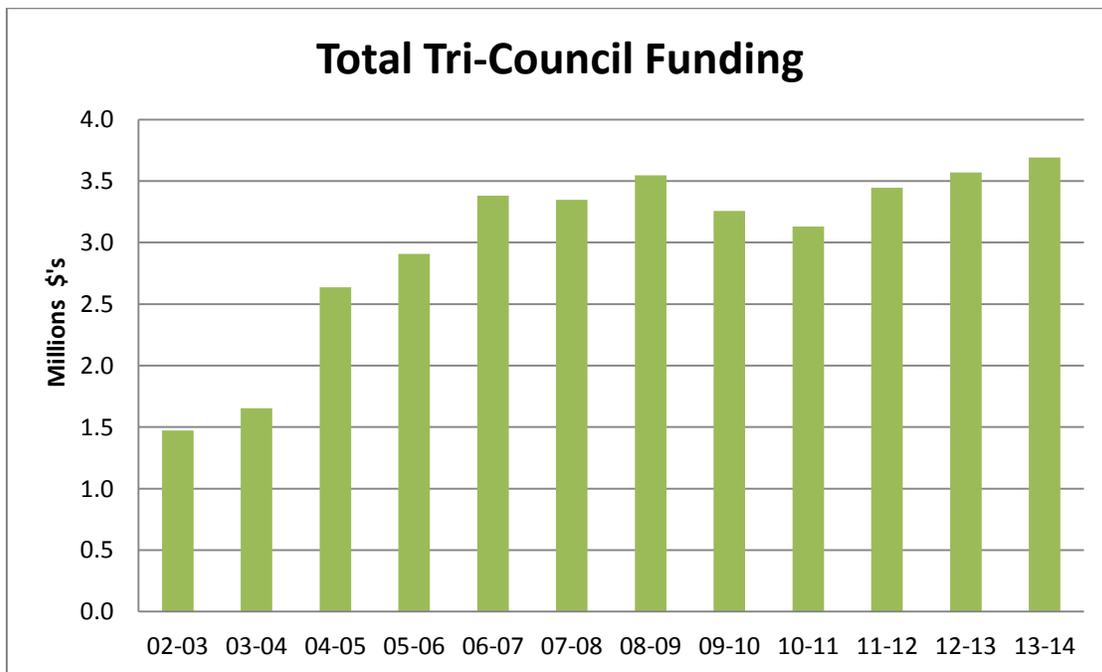
Source: CAUBO

**Total externally sponsored research at SMU relative to average of eight “comparator” Canadian Universities (fiscal years ending 2003 to 2013).**

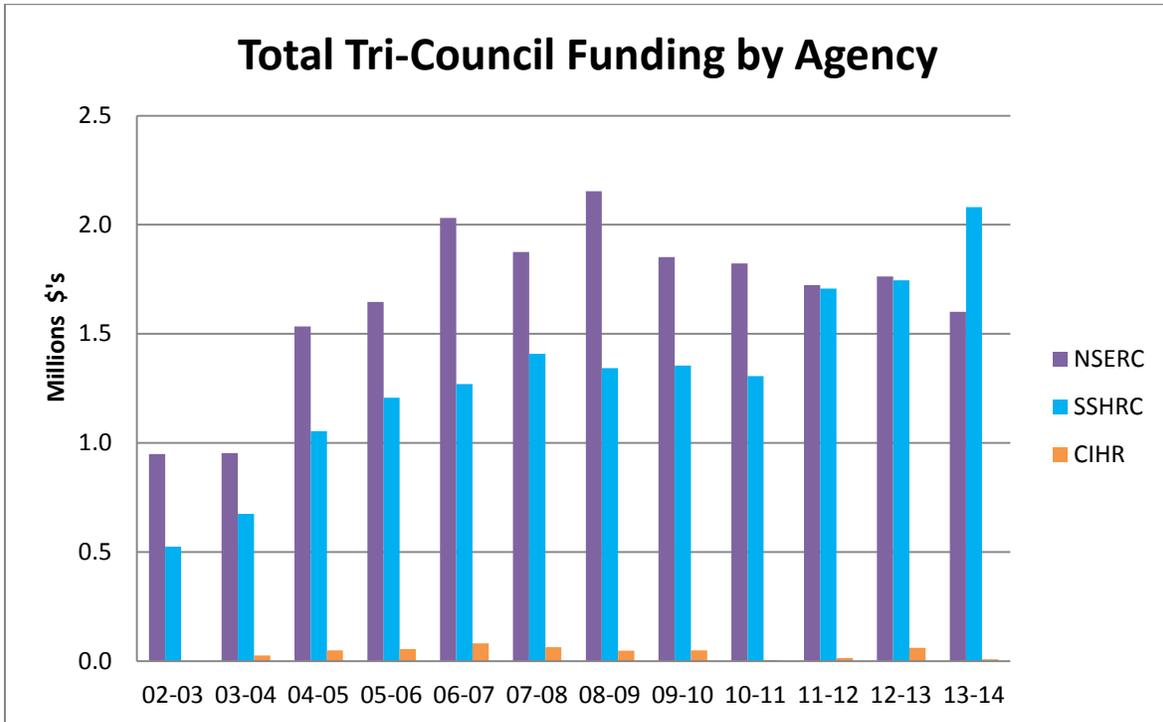


Source: CAUBO. NB: Peak in funding in 2007-2008 due to large CFI and NSERC institutional grants.

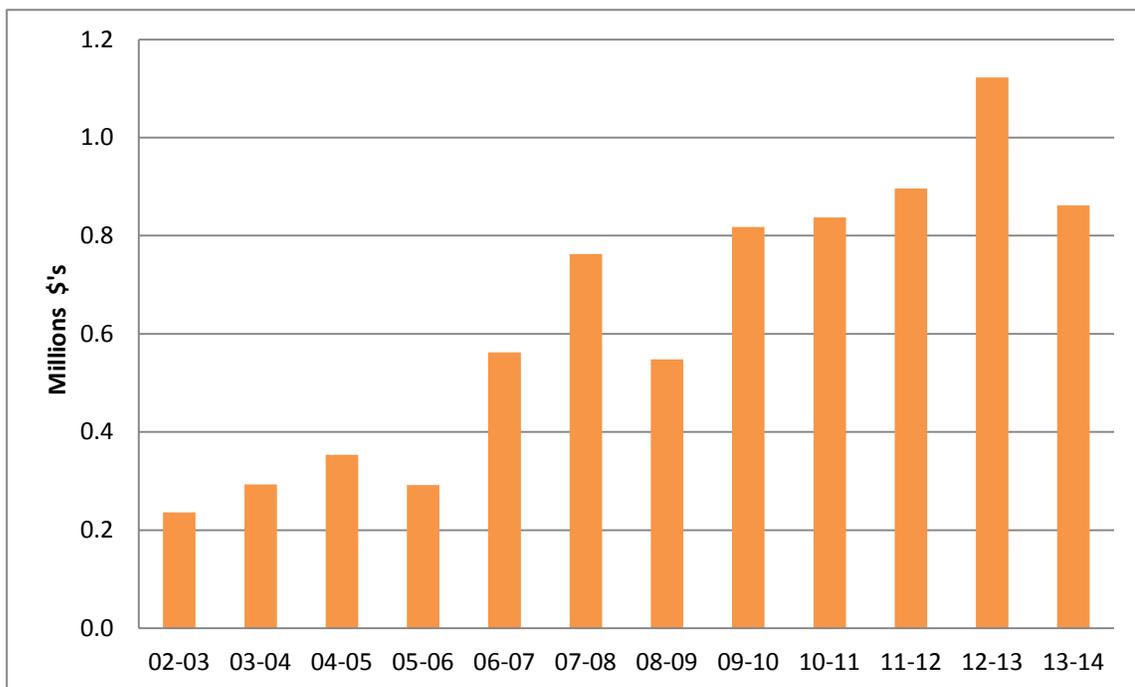
**b) Total Tri-Council (NSERC, SSHRC and CIHR) funding at SMU (fiscal years ending 2003 to 2014)**



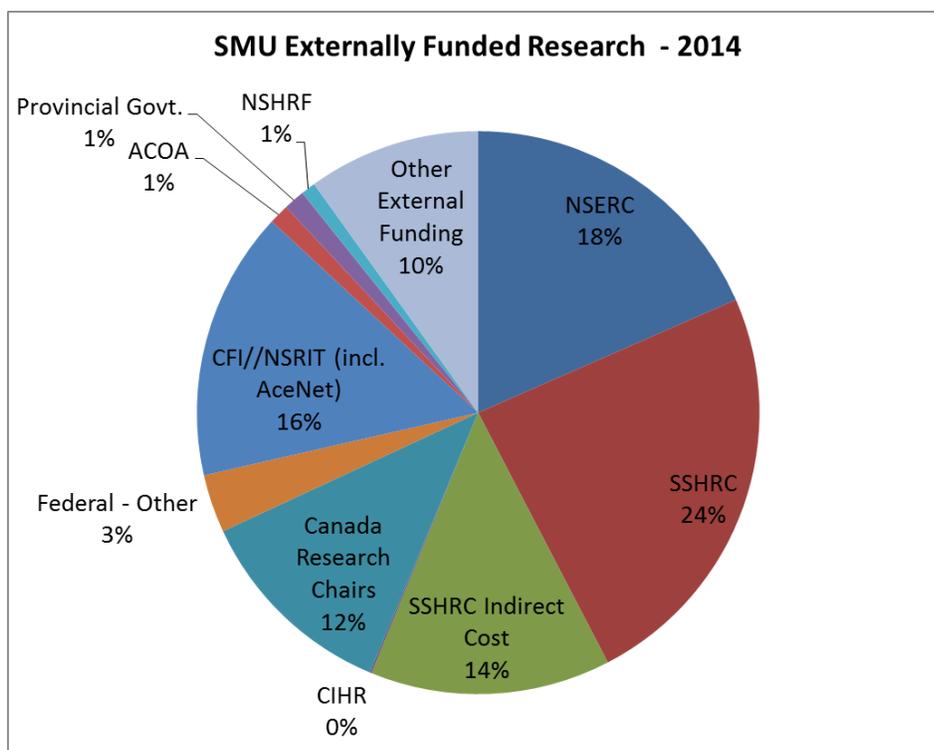
Tri-Council (NSERC, SSHRC and CIHR) funding at SMU (fiscal years ending 2003 to 2014)



Total grant and contract funding from “other” sources (industry; NGO; government departments, etc.) (fiscal years ending 2003 to 2014).



**Sources of external support for research – Fiscal year ending 31 March 2014:**



c) **Research Infosource Rankings** (<http://www.researchinfosource.com/>): Research Insource annually creates its “Top 50 Research Universities” and “Research Universities of the Year” (RUY) lists for Canada. The Top 50 list is simply based upon universities’ externally sponsor research income while the RUY rates universities in terms of research impact relative to research funding. RUY rankings take into account both financial inputs, research outputs and impact/quality measures. The financial input measures are: total sponsored research income and research intensity. The research output and impact/quality measures are: total number of publications, publication intensity and publication impact.

**SMU’s Rank in the Top 50 List**

Year	Research \$'s	Rank
2002	\$ 1,924,000	52
2003	\$ 3,007,000	50
2004	\$ 4,198,000	50
2005	\$ 4,619,000	48
2006	\$ 6,634,000	47
2007	\$ 9,775,000	44
2008	\$ 10,497,000	44
2009	\$ 8,507,000	49
2010	\$ 9,005,000	46
2011	\$ 7,703,000	48
2012	\$ 7,528,000	50
2013	\$ 8,306,000	48

**SMU’s Rank in the RUY List**

Year	Rank
2002	Not ranked
2003	48
2004	47
2005	47
2006	41
2007	37
2008	36
2009	36
2010	35
2011	42
2012	39
2013	41

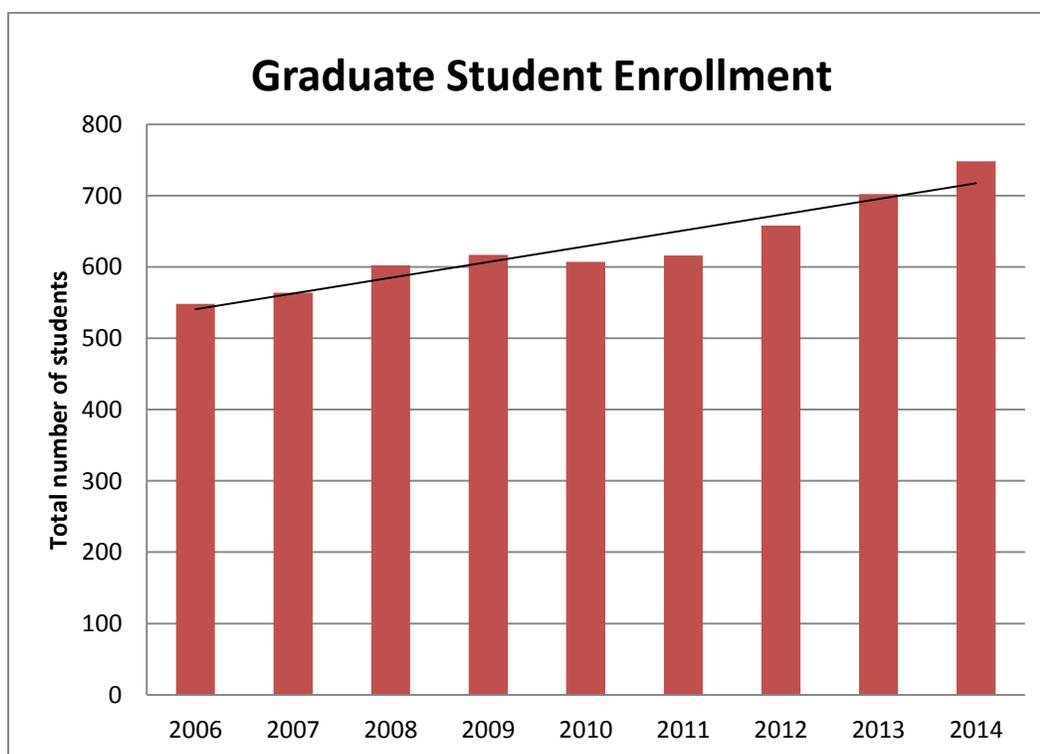
In 2014, Research Infosource did a special analysis of international research in Canada as measured by research collaboration, i.e., the proportion of total publications at each institution during the period 2008-2012 that were co-authored with researchers outside of Canada (<http://www.researchinfosource.com/pdf/2014Spotlight.pdf>). Saint Mary's University was listed the highest among predominantly "Undergraduate" universities and numerically, had the highest percentage of papers published with international co-authors (53.8%) across Canada.

Rank	Medical/Doctoral	% Intl.	Tier Rank	Comprehensive	% Intl.	Tier Rank	Undergraduate	% Intl.
1	McGill University	49.9	1	University of Regina	51.3	1	Saint Mary's University	53.8
2	University of British Columbia	48.4	2	University of Victoria	51.2	2	St. Francis Xavier University	48.4
3	University of Toronto	48.1	3	Simon Fraser University	50.2	3	Royal Military College of Canada	43.7
	Tier Average (16)	44.9		Tier Average (12)	44.2		Tier Average (22)	37.6

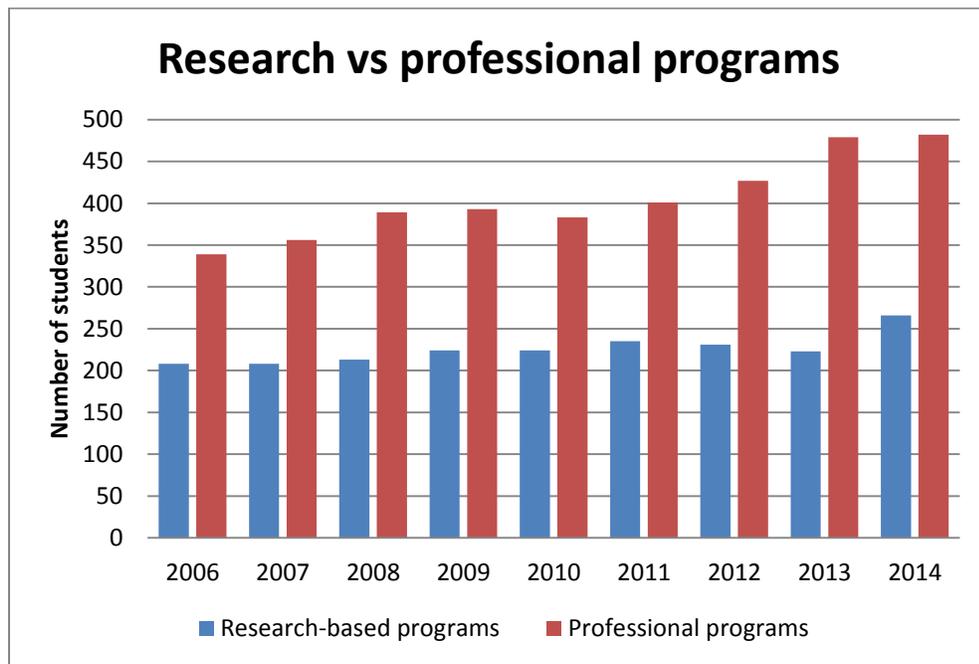
### 3. Highly Qualified Personnel (HQP) Training

Saint Mary's University offers 23 graduate programs across a wide range of fields in the Arts, Commerce and Science discipline. These include 4 PhD programs, 18 Master programs and 1 graduate diploma program.

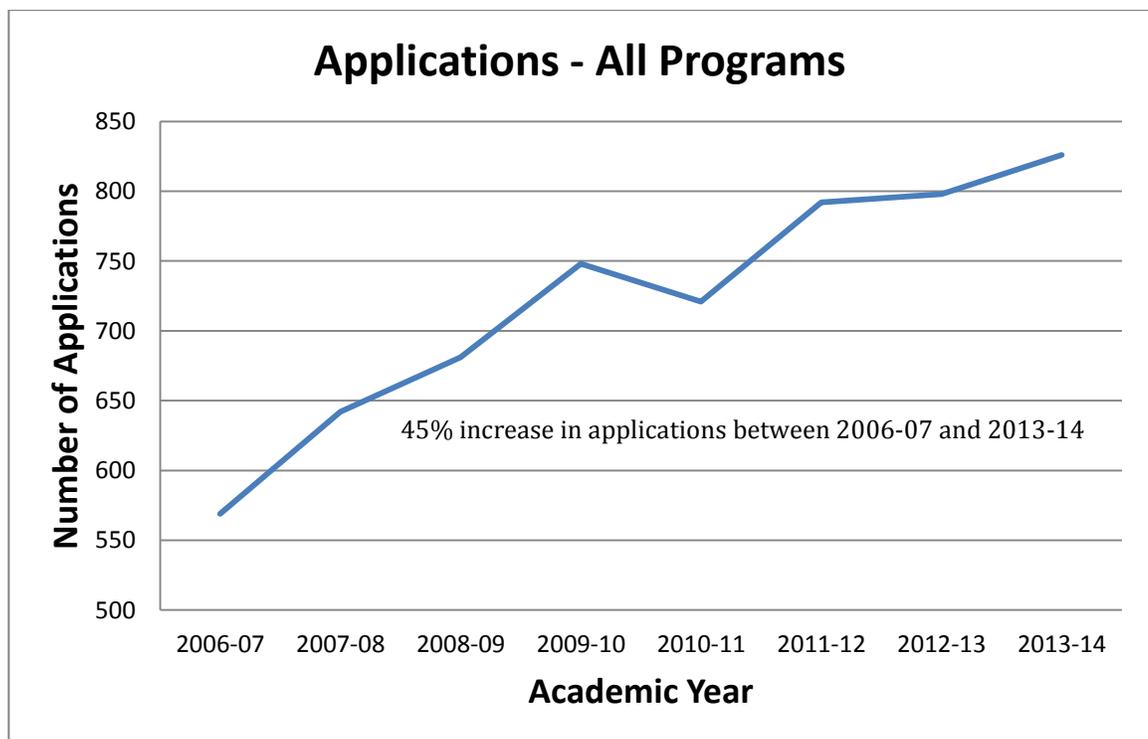
- Total graduate student enrolment (based upon winter (Jan-Apr) term, 2006-2014)



- Graduate student enrolment in research versus professional programs (based upon winter (Jan-Apr) term, 2006-2014)



- Applications for graduate programs (Academic years 2006-07 to 2013-14)



- **HQP Highlights**
  - **Saint Mary's University Graduate Student Takes Second Place at National 3 Minute Thesis (3MT) Competition for his cultural studies research presentation:** Kyle Massia has earned second place in the 2014 Canada's 3MT competition. Chosen from a field of 11 finalists, the master's History student presented what judges called a "refreshing social commentary" through his explanation of the enduring appeal of Ampelmann, a pedestrian traffic light figure popular in the former East Germany. Massia was videotaped before a live audience at the regional competitions. His 3 Minute Thesis video presentation was judged by Nobel laureate Dr. John Polanyi, CBC journalist Kady O'Malley, and University of Waterloo Dean of Arts Doug Peers.
  - **Meghjit Kaur proud to be Saint Mary's recipient of the TD Insurance Meloche Monnex/CMC-Canada Student Scholarship:** The Canadian Association of Management Consultants (CMC-Canada) and TD Insurance Meloche Monnex joined forces in 2012 to create an annual MBA scholarship for Saint Mary's University's Sobey School of Business. Originally from Hyderabad, India, Meghjit Kaur, a computer science engineer, followed her heart and gained experience in software development, life sciences and digital marketing. She is pursuing a Management Consultant designation through the Sobey School of Business' MBA program. "In the end it was a good decision," she says. "That breadth of experience helps me look at problems from many perspectives."
  - **Chemistry Department Celebrates ChemCon Wins:** Saint Mary's Department of Chemistry has good reason to celebrate: chemistry students took home seven awards at this year's Science Atlantic/CIC Chemistry Conference held at Acadia University. The Science Atlantic Conference, better known as ChemCon, acknowledges the research excellence of students across the Maritimes. Here's the full list of student award winners and their presentation titles:
    - Trevor McGrath - Murray Brooker Award for Best Undergraduate Oral or Poster Presentation in Chemical Education: Ionic Organocatalysis
    - Ashley Robinson - Science Atlantic Undergrad Research Award:-Development of a fabric-based surface-enhanced Raman spectroscopy (SERS) sensor for rapid detection of biomolecules
    - Sasha Power - CIC Award for Best Undergraduate Presentation in Analytical Chemistry – Poster: Rapid Detection of Amyloid Protein Aggregation Using a Variety of Spectroscopic and Microscopy Techniques
    - Kirstin Doyle - CIC Award for Best Undergraduate Presentation in Organic Chemistry – Poster: Reactivity of Carbon Dioxide and Sulfur Dioxide with Diethylenetriamine and its Salts
    - Luke Murphy - E. Gordon Young Award for Best Pedagogical Graduate Oral Presentation:
      - The Formation of a Weak Carbon-Carbon Bond and its Sensitivity to Solvent Polarity
      - Scott Harroun - Best Graduate Oral Presentation: Electrochemical SERS biosensor using DNA aptamers for detection of heme proteins as biomarkers for disease
      - Reem Karaballi - Best Graduate Poster Presentation: Investigation of the Interaction of Biomimetic Membrane with Protein Aggregates Using Various Spectroscopic Techniques
  - **SMU Doctoral Student' Message for Warning Labels on Alcohol Generates Great Interest:** A recent editorial in the Journal of Public Health Policy by Saint Mary doctoral student Mohammed Al-hamdani calls for testing the effectiveness of tobacco-like

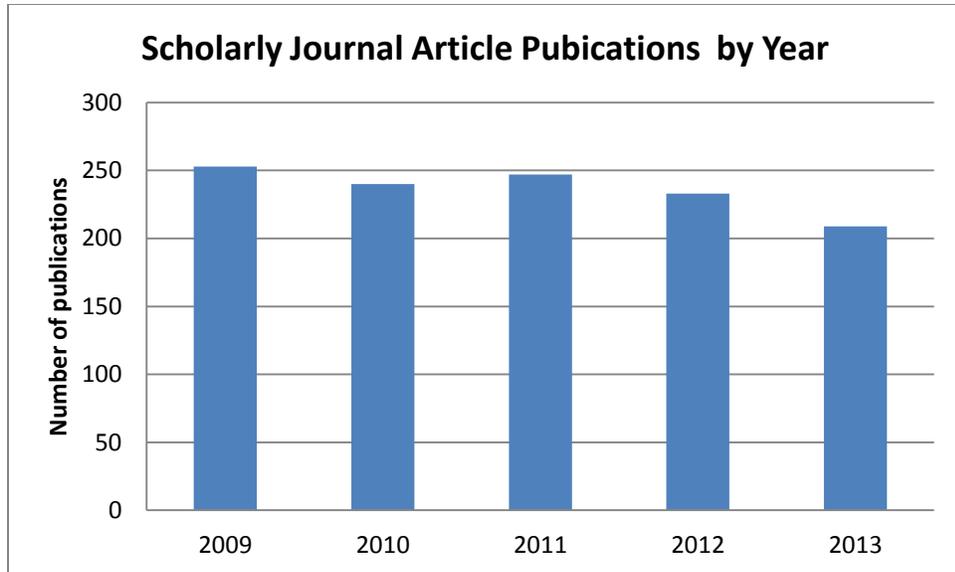
cautions on products to counter the industry's marketing toward young people, and alter consumer perceptions regarding heavy and risky drinking patterns. The Canadian Public Health Association, which represents the country's public-health doctors, has recommended at least considering the idea. The editorial struck a chord. Since its publication, Al-hamdani has been interviewed by numerous newspapers and interviewed by radio stations from Saint John to Calgary, including the National Post and Global TV.

4. Industry Engagement (Springboard Atlantic Inc. performance indicators)

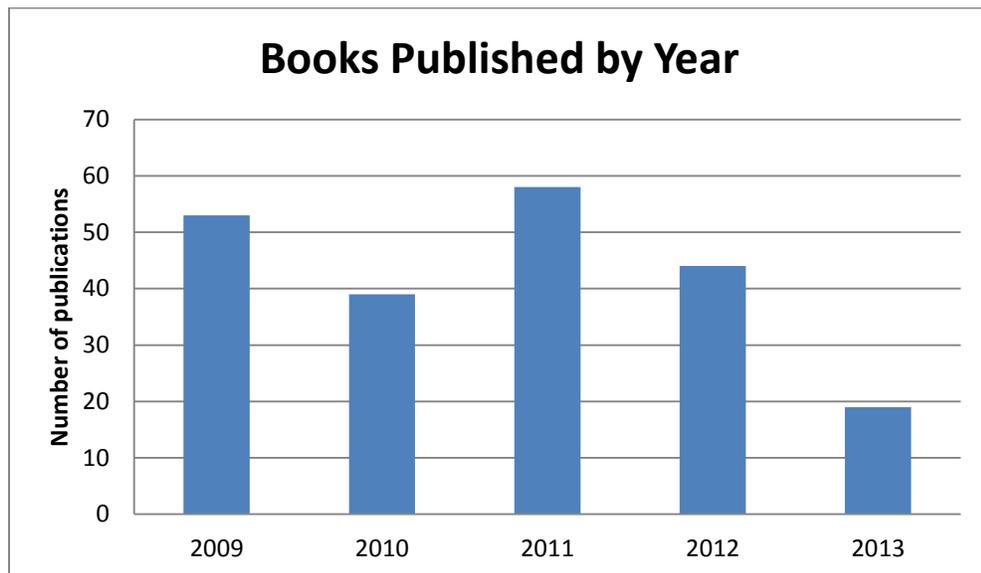
<b>Saint Mary's University</b>					
	Year 3 - 2013/2014				
	Q9	Q10	Q11	Q12	YTD
<b>1. Total Research Revenues (Annual)</b>				8047766.25	8047766
<b>2. Industry Engagement Activity</b>	7	5	9	12	33
Total IRAP NMA Projects: (#)	1	1			2
IRAP DTAPP Projects (#)					0
Tri-Council Industry Partnerships (#)	3	0	0	0	3
-Interaction - #					0
-Engage - #	1				1
-IE(CCI), ARD - #					0
-ARTi #					0
-CRD - #					0
-I2I - Pre-Market/Phase 1/1b/2a/2b - #					0
Industry Partnership Scholarships (IPS, I-USRA, IRDF) - (#)	2				
-CIHR POP - #					0
-SSHRC Partnerships (industry only) - #					0
Provincial Funds (Industry Project related):					
# of projects			3	3	6
\$ raised for those projects			55000	483990	538990
<b>Industry R&amp;D Contracts (no sponsored funding) - (#)</b>	2	4	6	8	20
Leases - Lab or incubation - (#)					0
Funds from industry contracts - (\$)	5000	96548	58000	339642	499190
Admin Overhead generated - (\$)		12958	6260	9364	28582
Industry Internships generated by ILOs/TTOs - (#)	1			1	2
<b>3. Workshops with Industry (#):</b>					
Number of Workshops: (#)	1	2	1	2	6
<b>4. ACOA AIF Projects:</b>					
Number of AIF Projects Leading: (#)					0
Number of AIF Projects as Suncontract: (#)					0
Industry Funds leveraged: (\$)					0
<b>Total Project Dollars: (\$)</b>					0
<b>5. Technology Transfer:</b>					
Number of Tech Transfer Agreements: (#)					0
Revenues from Assignment, Option, Licensing and Royalty Agreements - \$					0
New Spin Off Companies: (#)				1	1

5. Knowledge Creation and Mobilization

- **SMU scholarly journal article publications<sup>1</sup>:** Searches were performed on Web of Science, EBSCO, and Proquest databases held by Saint Mary's, and Science Direct databases for the publication (calendar) years 2009 to 2013.

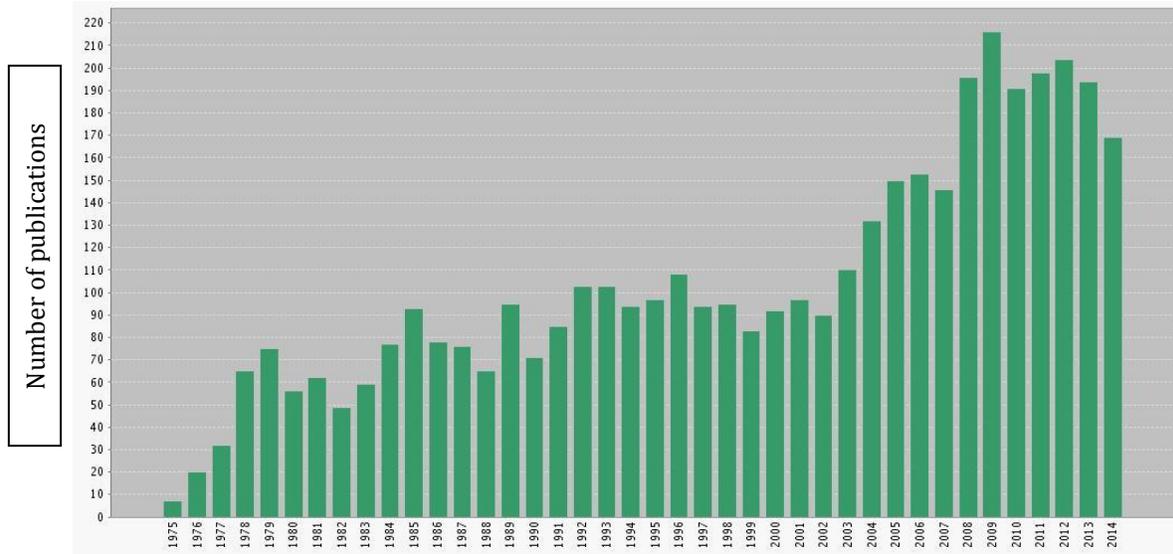


- **SMU Book Publications<sup>1</sup>:** Searches were carried out in the OCLC WorldCat Local database for publication (calendar) years 2009 to 2012 and from the Ingram Oasis publication database for 2013, configured for Saint Mary's University. Complete books, and non-article publications, such as government reports were identified. Book chapters were also identified where possible.

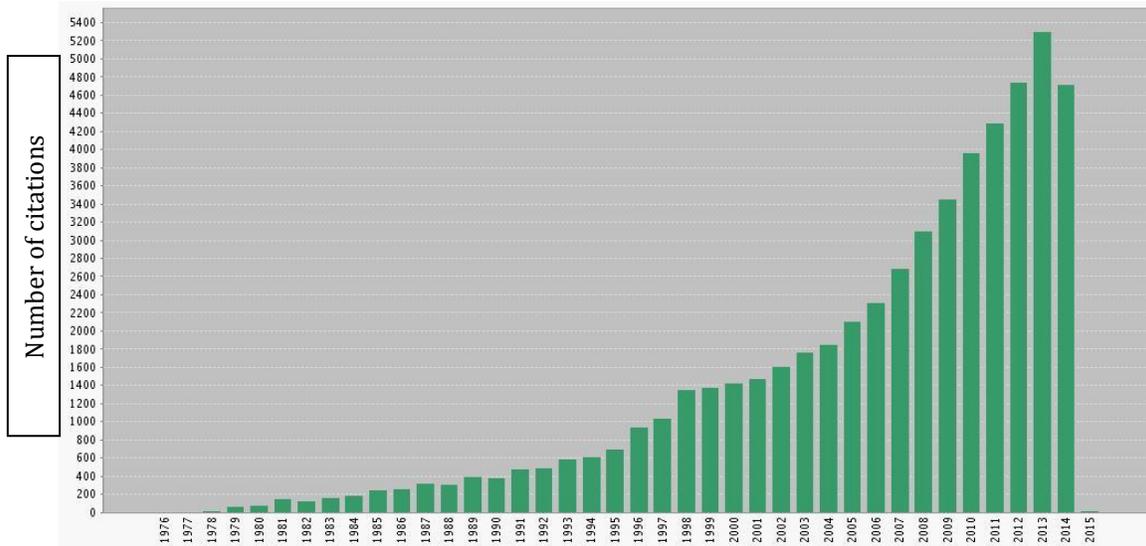


<sup>1</sup>Compiled by staff at the Patrick Power Library.

- Thomson Reuters “Web of Knowledge” Database Citation Reports Publication Analysis (run on 23 Dec. 2014)



Total number of SMU publications by year.



Total number of papers published citing SMU publications by year.

6. Research Collaborations - Internal, regional (Atlantic), national and/or international

- **New Funding for Healthy Coastal Communities (29 August 2014):** Dr. Tony Charles has received \$83,000 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for studies he will be undertaking within a new research collaboration called the OceanCanada Partnership. The new funding will help Dr. Charles and his colleagues examine social, economic and environmental issues concerning Canada’s oceans, coasts, and coastal communities, with a focus on improving their future health and economic potential. OceanCanada is a six-year research collaboration that

includes 15 Canadian universities, non-governmental organizations, and Fisheries and Oceans Canada (DFO). Supported by the SSHRC Partnership Grants program, the project will look at both the challenges and opportunities facing Canada's oceans and coastal communities.

- **New Accolades for Saint Mary's Psychology Professor** (22 July 2014): Saint Mary's University congratulates Dr. Kevin Kelloway on his recent election during the International Congress of Applied Psychology in Paris, France as a Fellow of the International Association of Applied Psychology (IAAP). "The IAAP represents applied psychologists from more than 80 countries around the world," notes Dr. Kelloway. "It is a real honour to have my work recognized by this group." Dr. Kelloway is a member of Saint Mary's Psychology Department and Canada Research Chair in Occupational Health Psychology.
- **Alternative Trade: Critical Approaches and New Directions in Trade and Development** (1 November 2013) The International Development Studies program and the Canada Research Chair in International Development Studies at Saint Mary's University held an Alternative Trade workshop on November 1 & 2, 2013, organized by Dr. Gavin Fridell, Dr. Henry Veltmeyer, and Dr. Kate Ervine. Experts from around the world discussed everything from fair trade to carbon trading, the rise of Asia to the vulnerability of small states. Presentations and discussion cover various topics, including New Dynamics of North-South Relations, North-South Relations and the New Extractivism, Beyond Trade Economics, and New Approaches to Trade & Food.
- **Atlantic Canada Study of Youth Mental Health Study Officially Launched** (23 December 2013): An Atlantic Canadian study looking at treatment barriers for young people suffering with mental health disorders like autism, anorexia and depression was launched recently with a two-day workshop held in Halifax. Dr. Michael Zhang, Associate Professor of Finance, Information Systems & Management Science at Saint Mary's University, is part of the four-person team looking at the impact of the disorders on individuals, the community and the existing services in place. Dr. Rick Audas of Memorial University is the team leader for the \$2.5 million federally-funded research project. He told the group gathered for the launch that the research will brighten the prospects for one of the most vulnerable populations in Canada. Working with a wide-range of government and non-governmental organizations, Dr. Audas said the research will look at the barriers to coordinated approaches and examine how various conditions are managed in each of the Atlantic provinces.
- **NSCC and SMU collaborate on Green Roof Technology** (19 November 2013): NSCC Research Scientist Alain Joseph knew about the innovative green roof research being done by Saint Mary's University's native plant ecologist Jeremy Lundholm, and saw great potential for collaboration. "We needed a pilot site where we could study the performance of native plants on pre-grown, green roof vegetation mats," says Saint Mary's MSc candidate Stephanie Appleby-Jones, "and what better place than the NSCC waterfront campus' new Centre for the Built Environment (CBE), a building designed to showcase sustainable technologies and collaborative learning." "Our Applied Research Office at NSCC was approached by Gina Funicelli, Director of Saint Mary's Industry Liaison Office, and quickly coordinated a meeting with our facilities management team to confirm the possibility of using our new CBE building as a pilot site," says Dr. Joseph, a specialist in applied and sustainable energy research. "NSCC's Waterfront Campus already had one green roof, and I knew that the CBE was engineered to carry the roof load for another." Building on investigations conducted in Saint Mary's nationally-funded green roof testing facility, the project is supported by Dr. Lundholm's approximately \$235,000 in combined research funding from the Natural Sciences and Engineering Research Council of Canada (NSERC), the Halifax Regional Municipality, and Vitaroofs, one of the country's largest green roof companies.
- **The Modernization of Buddhism** (5 November 2013): The face of Buddhism in North America is changing and Saint Mary's Religious Studies Professor Alec Soucy wants to know why. With a grant of \$260,000 from the Social Science and the Humanities Research Council, and working with colleagues John Harding from University of Lethbridge and Victor Hori of McGill University, the

project will look at how traditional Asian Buddhism has been changing at a global level as a result of the colonial encounter in Asia and subsequent introduction to the West. “Buddhism in Canada is represented by a diverse collection of different forms of Buddhism that originate in different Asian countries, like Japan, China, Vietnam and Sri Lanka. There are also a number of groups mostly made up of non-Asians who have converted to Buddhism or were born to convert families,” says Dr. Soucy. “One thing that is clear is that the way that almost all of these groups practice Buddhism is not the same as it was traditionally practiced in Asia a hundred years ago. It is not so clear, though, in what ways it is changing and why.” The project is entitled *The Modernization of Buddhism in Global Perspective*. The effort will not only contribute to the public understanding of the place of Buddhism in the religious life of Canada, it will also train graduate students in research methods and create opportunities for students to do research that also will be applicable to their own theses.

## 7. Research Environment

- **Saint Mary’s Office of Innovation and Community Engagement Welcomes New Director** (17 July 2014): Mr. Kevin Buchan is Saint Mary’s University’s new Director, Office of Innovation and Community Engagement (formerly the Industry Liaison Office). Mr. Buchan comes to Saint Mary’s after working for seven years in the Industry Liaison and Innovation Office at Dalhousie University. He has also served as the Network Manager of Springboard Atlantic Inc., and as Director of Business Development for a medical device start-up company. A member of Springboard Atlantic Inc., a regional commercialization and industry liaison network, Saint Mary’s Office of Innovation and Community Engagement (OICE) supports joint research initiatives; provides industry/community engagement and technology/knowledge-transfer services to NSCAD University and Mount Saint Vincent University; and assists Saint Mary’s faculty in research contract development, intellectual property protection and sponsorship from both private and public sector partners. As well, the OICE aids in the start-up of commercial enterprises based upon University intellectual property, licenses technologies to industry, and assists in the transfer of other sorts of University-based intellectual property to external partners.
- **New Funding Advances Research in Air Quality** (6 June 2014): For Dr. Aldona Wiacek, a respected researcher in the area of atmospheric toxins such as trace gas and aerosol pollutants, has received recent support from NSRIT and CFI of \$237,246 for the purchase of a ground-based, remote sensing instrument called an open-path Fourier transform infrared spectrometer. A central piece to Dr. Wiacek’s growing Tropospheric Remote Sensing Laboratory at Saint Mary’s, the spectrometer will provide real-time data that tracks harmful chemicals emitted into the atmosphere from factories, trains, planes, automobiles, and natural processes.
- **New Funding Advances Research in Offshore Resources** (6 June 2014): Dr. Jacob Hanley has received \$239,000 from NSRIT, CFI and private sector partners towards the purchase of a laser Raman microscope. Dr. Hanley expects the new technology to have far-reaching applications for mineral exploration, both in and beyond Nova Scotia. This equipment will potentially make it easier to predict where that gold will be found as companies are renewing interest in historic mining districts in Nova Scotia. The new technology also takes some of the guesswork out of drilling for offshore oil and gas.

## 8. Other success stories:

- **Saint Mary’s Professor Elected President of the Canadian Psychological Association** (17 June 2014): A Saint Mary’s Psychology professor took top honours in early June in an election held in Vancouver at the 75th Annual Convention of the Canadian Psychological Association (CPA), Canada’s largest psychology association. After one year as President-Elect, he will assume the position of CPA President in June 2015. The first Saint Mary’s professor to be elected to this position, Dr. Kelloway is the Canada Research Chair in Occupational Health Psychology at Saint Mary’s and the former director of the University’s CN Centre for Occupational Health and Safety, a facility that’s home to

North America's largest collection of occupational health psychologists in a university-based centre. Tasked with establishing a focus for CPA during his term, he has opted to concentrate on the relationship between work and mental health, an area that reflects his extensive research in occupational health and safety and the Psychology Department's reputation as Eastern Canada's preeminent leader in Industrial/Organizational Psychology.

- **Saint Mary's Takes Lead Role in Supporting Science Fairs** (1 May 2014): Forty of Nova Scotia's best and brightest young scientists and innovators gathered at Saint Mary's University from May 1 to 3 for Team Nova Scotia Showcase. The members of Team Nova Scotia won their respective region's junior and senior-high school science fairs. The three-day Team Nova Scotia Showcase is designed to prepare the team for success at the upcoming Canada-wide Science Fair. This is the eighth year that Saint Mary's has hosted the Team Nova Scotia Showcase, which is the signature event of Nova Scotia Youth Experiences in Science (NS YES!), a not-for-profit society that initiates, promotes, and supports science experiences for the province's youth. In line with its goals of the support of youth involvement in science and community outreach, Saint Mary's Faculty of Science also provides office space and administrative support to NS YES!
- **Provincial Funding to Spark Some Serious Play in Saint Mary's New Sandbox** (19 March 2014): A three-year funding deal announced today by the Province provides Saint Mary's University, NSCAD University and Mount Saint Vincent University with \$150,000 per year to establish an innovative learning environment called a Community Sandbox. Based on a concept developed at the Massachusetts Institute of Technology (MIT), sandboxes are loosely structured, entrepreneurial spaces where students come together to experiment with new business ideas and connect with industry to take those ideas to the next level. Michael Sanderson, Manager of Skills Development & Training for the Sobey School Business Development Centre, likens the business sandbox to the sandbox we played in as children. The essential difference is that the students in Saint Mary's Community Sandbox will emerge with the skills and mindset to launch a successful business.
- **Class Project Turns Green Crabs into Green Business** (10 February 2014): Turning an invasive species of green crabs into an eco-friendly polymer might mean riches for four of Saint Mary's University's aspiring entrepreneurs. The green crab tale began last fall on Saint Mary's campus when Sobey School of Business students Jessica Herron, Kirsten Osmond, Patrick Mitchell and Danny Williams partnered for an assignment in Dr. Ellen's Farrell's New Venture Opportunities class. Green crabs arrived in Nova Scotia waters about 30 years ago from the ballast water of a ship. Since then they've grown in number and voracity, aggressively attacking eelgrass, raiding lobster traps, and reducing the number of soft-shell clams. With the global chitosan market projected to reach \$21 billion by 2015 and with interest in the project expressed by the Department of Fisheries and Oceans, Herron and her teammates are clearly onto a good thing. Even more impressive, they've launched a company called BioMer Innovations and are presently testing the waters with a team of researchers and a chemical engineer. BioMer Innovations went on to win first place at the Boyne Clark Innovative Ideas Competition on 20 March 2014.
- **Saint Mary's Signs MOU with Innu Nation to Collaborate on Research** (5 February 2014): Dr. Trudy Sable had just begun a 6-day stay to work with the Innu community of Sheshatshiu when the call came to meet with Grand Chief Prote Poker for the official signing of an MOU with Saint Mary's University. A 40-minute drive on winding, icy roads took Dr. Sable to Goose Bay, Labrador and the fruition of 15 years of work with the Innu Nation. Described by Sable as a groundbreaker in terms of recognizing intellectual property rights of indigenous communities in co-researching and participating in major research grants, the new MOU lays the foundation for a collaboration that supports the Innu Nation's process of self-governance. Sable worked for more than a year crafting the document with Gina Funicelli of Saint Mary's Industry Liaison Office and Richard Nuna of the Innu Nation Environment Office. Support throughout the project came from David Gauthier, Saint Mary's V.P. Academic, and Kevin Vessey, Dean, Faculty of Graduate Research.

- **Dr. Christa Brosseau Named Discovery Centre's Emerging Professional** (4 December 2013): Dr. Christa Brosseau, Assistant Professor in the Department of Chemistry, was recently named the 2013 Emerging Professional at the Discovery Centre's 11th Annual Discovery Awards for Science and Technology. The Emerging professional award honours individuals under the age of 35 who demonstrate outstanding intellectual achievements, excellence, and potential for ongoing growth and development. Dr. Brosseau's research uses the relatively new technique of surface-enhanced Raman spectroscopy (SERS) as a tool for accurate, sensitive, and portable analysis of human diseases. Dr. Brosseau is part of a large global effort dedicated to developing SERS into a portable system that can be used in developing nations to rapidly and accurately detect tuberculosis, malaria, and HIV. She is also interested in using SERS to improve the understanding of Alzheimer's disease.
- **Canadian Map of Mercury Concentrations Created** (5 November 2013): A new map of mercury concentrations in fish across Canada raises an environmental red flag for loons and certain sport fish - especially in the east. Working as part of a university-government partnership, with funds from Environment Canada, and a Discovery Grant from the National Science and Engineering Research Council of Canada, Dr. Linda Campbell, an Environmental Science professor at Saint Mary's University and Environment Canada scientists Neil Burgess and David Depew analysed the data gathered from 230,000 yellow perch, popular prey for wildlife like common loons and walleye. Using samples from lakes and rivers across Canada, the team produced the first map of mercury concentrations for an entire country. The value of a national map, according to Campbell, is that it demonstrates the variations in mercury concentrations in a very clear way. Mercury enters the atmosphere from the burning of fossil fuels and other industrial processes. Mercury levels in aquatic wildlife are determined by a variety of factors including long-range atmospheric transport of mercury air pollution, tree cover around lakes and rivers, local soil conditions, and general geography. "Our map will help to identify regions at risk and it has great potential for use by wildlife protection groups, provincial governments and Environment Canada" says Dr. Campbell.
- **Dr. Jason Clyburne Wins President's Award for Excellence in Research** (1 October 2013): Chemistry professor Dr. Jason Clyburne was honoured with the President's Award for Excellence in Research during the recent Convocation ceremonies. A Canada Research Chair in Environmental Science, Dr. Clyburne is widely recognized as a leader in the study of green chemistry, particularly in the field of ionic liquids. His pioneering research, which involves the application of designer chemicals and materials to the removal of environmentally hazardous substances from industrial processes, has the potential to mitigate a wide range of environmental issues. Both on- and off-campus, Dr. Clyburne demonstrates unwavering commitment to sustainability. His leadership was instrumental in the establishment of Saint Mary's Atlantic Centre for Green Chemistry, which aims to advance basic and applied research in the area of sustainable chemistry. Together with his colleagues, Dr. Clyburne has developed the Centre into a nexus for green chemical research, outreach, and education.