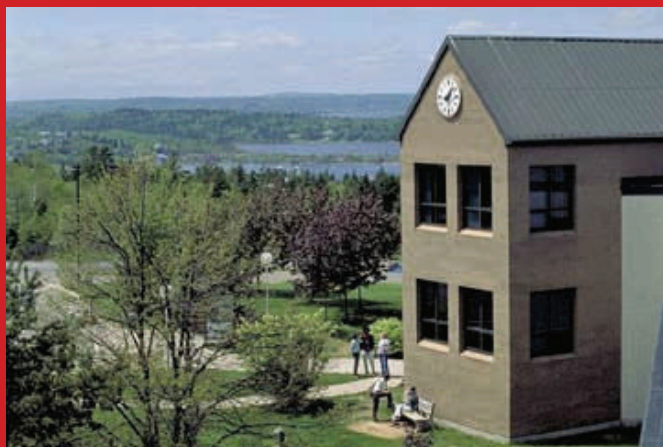


# Vice-President (Research) & Office of Research Services Annual Report 2008-2009





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## Highlights from the year in research...

- Research revenue surpasses the \$55-million mark
- UNB ranked first in research publication growth amongst Canadian comprehensive universities between 2002 and 2007.
- Google Earth is using Dr. Yun Zhang's automated image-fusion technique.
- UNB researchers receive one of nine Knowledge Impact in Society (KIS) grants awarded by SSHRC.
- Andy Scott leads new Social Policy Research Network at UNB.

## Message from the Vice-President (Research)

2008-09 was another good year for research at UNB. Our researchers have pushed our total external research funding up by almost 9% to a total of almost \$56 million. The pages that follow chart our progress.

In 2008-09, we also welcomed our newest Research Institute, the Chronic Illness Research Institute (CIRI), led by Dr. Barbara Paterson of the Faculty of Nursing.

As we move forward together, however, there are clouds on the research horizon. The deep recession, which has

led to significant federal and provincial budget deficits, does not augur well for future governmental research investments. Cuts in this sphere would be short-sighted and detrimental to Canada's and New Brunswick's economic future. We shall need to be diligent in our lobbying efforts to insure that all levels of government understand that research and development are crucial investments for a prosperous and successful society. In addition, such investments must cover all



*Dr. Gregory S. Kealey  
Provost Vice-President  
(Research)*

aspects of innovation, not just a narrowly construed commercialization focussed on widgets. We need a Research and Development strategy for the 21<sup>st</sup> century, not the 19<sup>th</sup>.



*Dwight Ball  
Executive Director (ORS)*

Remarkably, the 2008-09 fiscal year ended with very impressive research revenue growth over the previous year. At 8.95%, this growth has put UNB's research revenues at \$55.75 million. This is notable because this was accomplished in the face of fiscal challenges that unfolded worldwide half way through the year. As in previous years, a concerted effort by UNB's research community generated this

## Message from the Executive Director

success. See pages 17–29 of this report for a sampling of the research success stories that we have enjoyed over the year.

My office is often criticized for focusing too much on dollars and cents. While my standard response is that research costs, even if only for pens, paper and an internet link, I am sensitive to the point being made. I understand that it is outputs that are important. Thus, I draw your attention to the fact that we are also seeing growth in academic outputs. UNB ranked first in research publication growth amongst Canadian comprehensive universities between 2002 and 2007. Over the same period, UNB was ranked in the top three of the same group in research revenue growth. Compiling these statistics

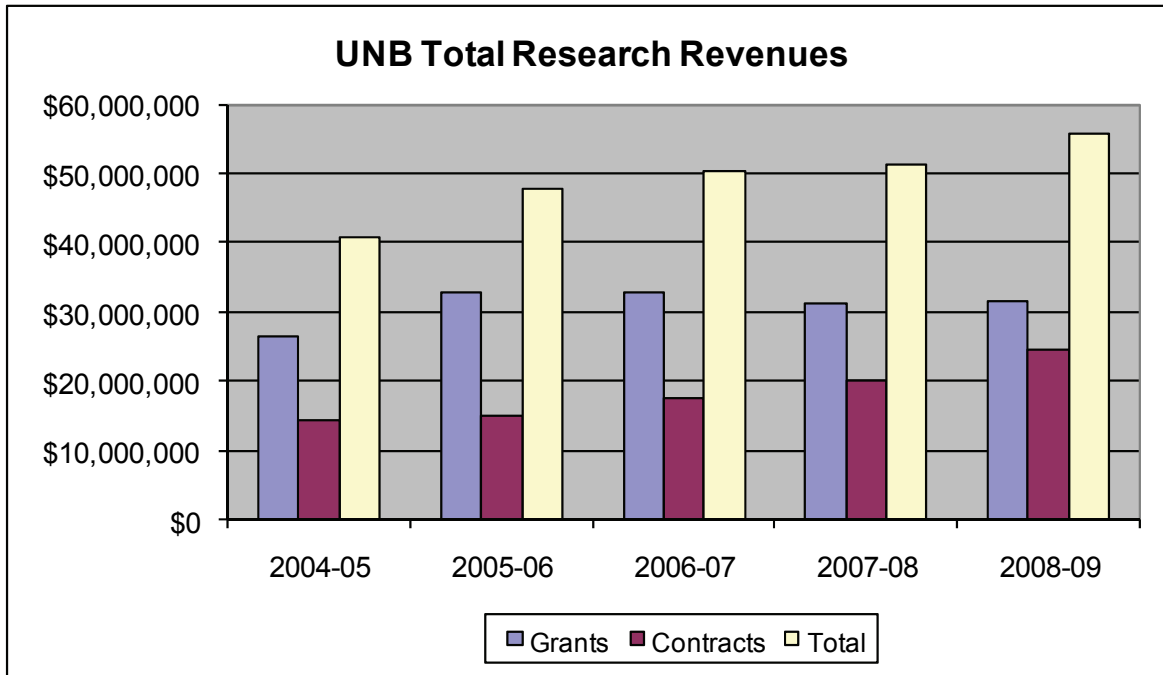
results in reporting delays, so Research InfoSource Inc. has only recently made these announcements.

The challenges continue; two research funding programs, one federal, the ACOA Atlantic Innovation Fund, and one provincial, the New Brunswick Innovation Foundation, are dealing with considerable fiscal constraints. If their mandates and funding are not renewed, UNB's research enterprise will be significantly impacted.

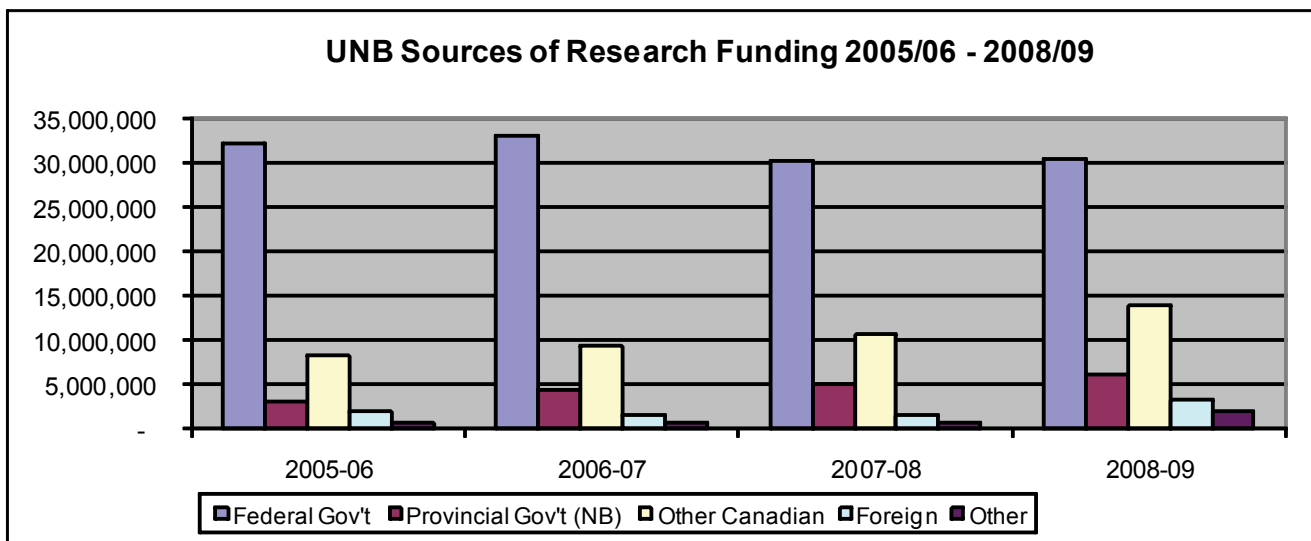
Without doubt, the current year and beyond holds major challenges for UNB and its research enterprise. We look increasingly to non-traditional research partners as a base for our research activities—partners that look to UNB as a source of solutions for their daily issues.

## Research Revenue

Despite its many challenges, the University has managed again to grow its research revenues in the 2008-09 fiscal year. The year ending April 30, 2009, saw an annual growth of 8.95%, up to \$55,751,214 from \$51,170,519. The decrease in grant revenues that occurred in 2007-08 has been halted and significant growth in contract revenues occurred.

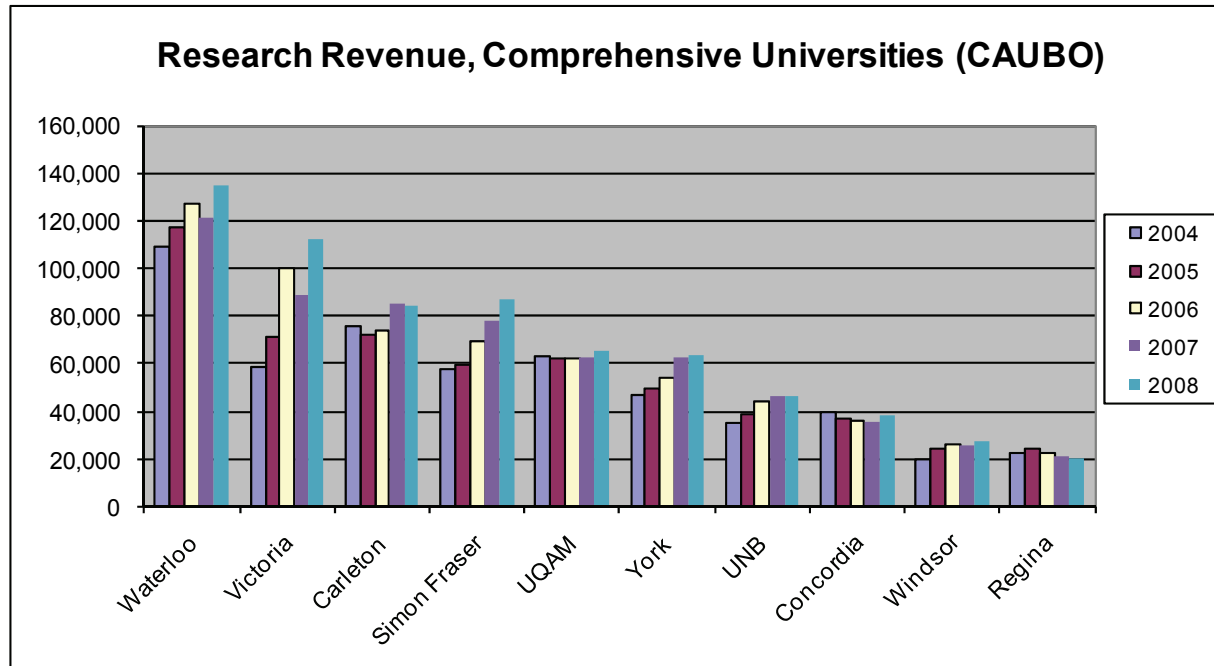


As the graph depicting the magnitude of our various sources of research funding indicates, the university has stemmed the decline in our receipt of federal government funds and sustained the growth in provincial government and “Other Canadian” research funding. Modest growth was seen in our foreign accounts and “other” categories.

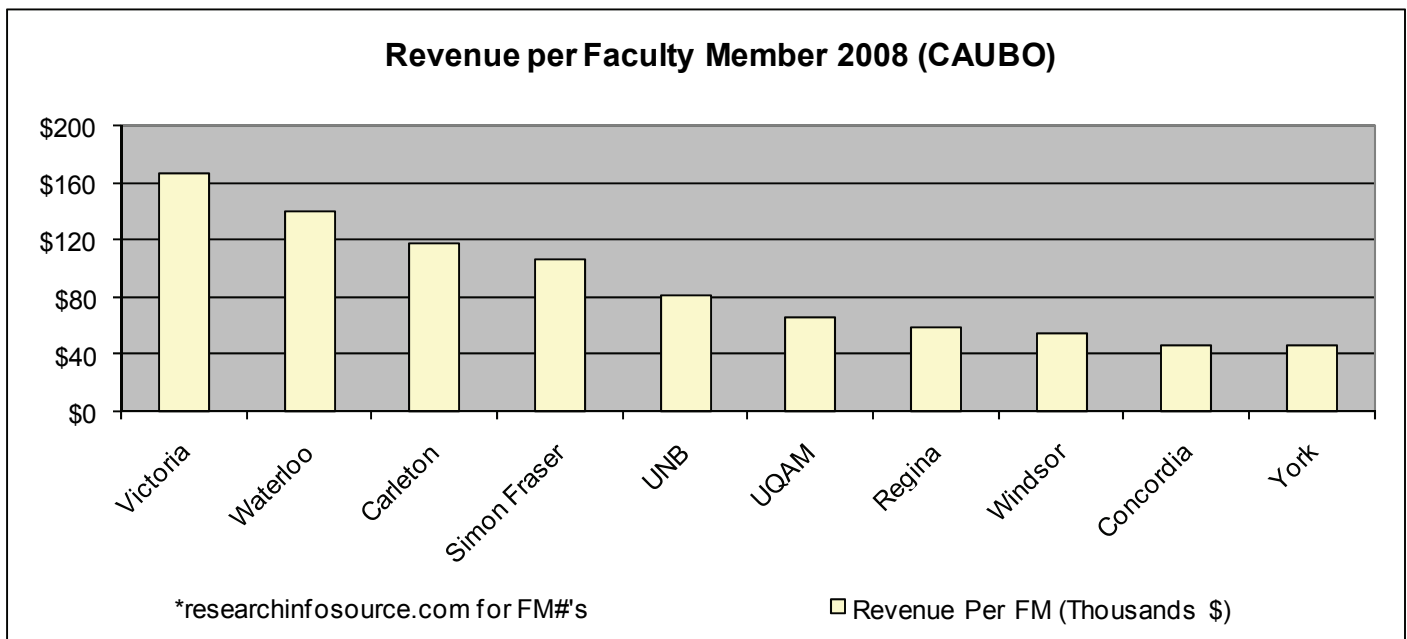


Research Revenue (continued)

In terms of the research-related funding reported to the Canadian Association of University Business Offices (CAUBO) for the 2008-09 fiscal year, the University of New Brunswick stands at \$52,525,398. Due to the delay in the compilation of these statistics, comparisons between institutions must be based on year-old values. Therefore, based on the 2007-08 fiscal year, UNB continues to rank seventh amongst its peer group of comprehensive universities.

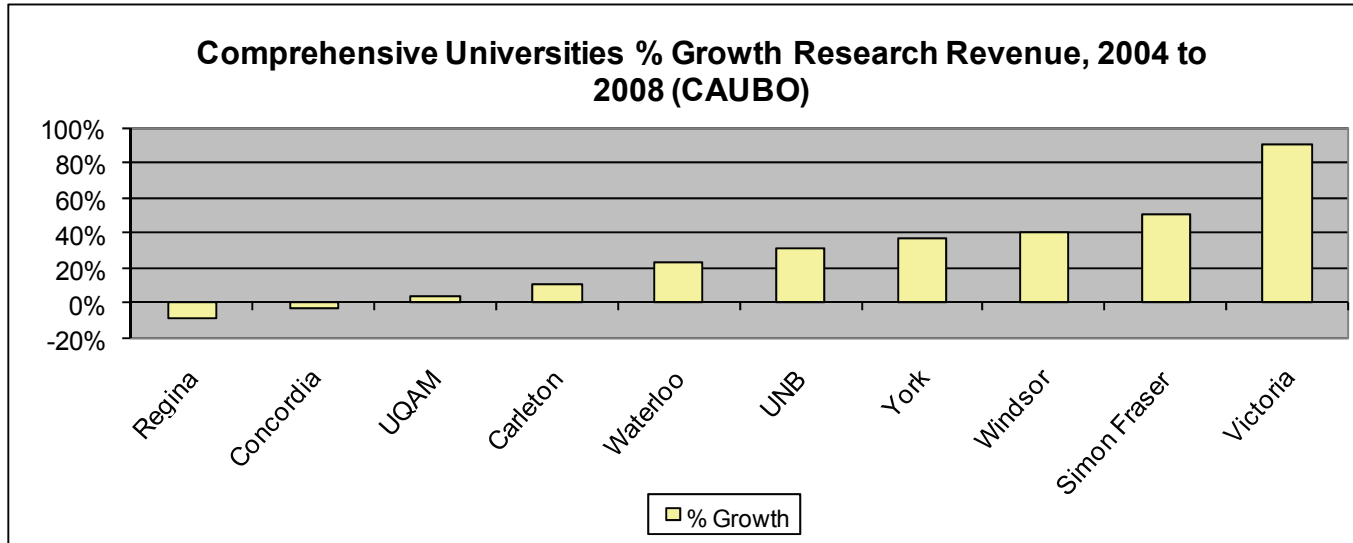


Normalizing UNB's research revenues for faculty size yields a figure of \$82,000 per full-time faculty member. When compared to our peer group of comprehensive universities, UNB ranks fifth.



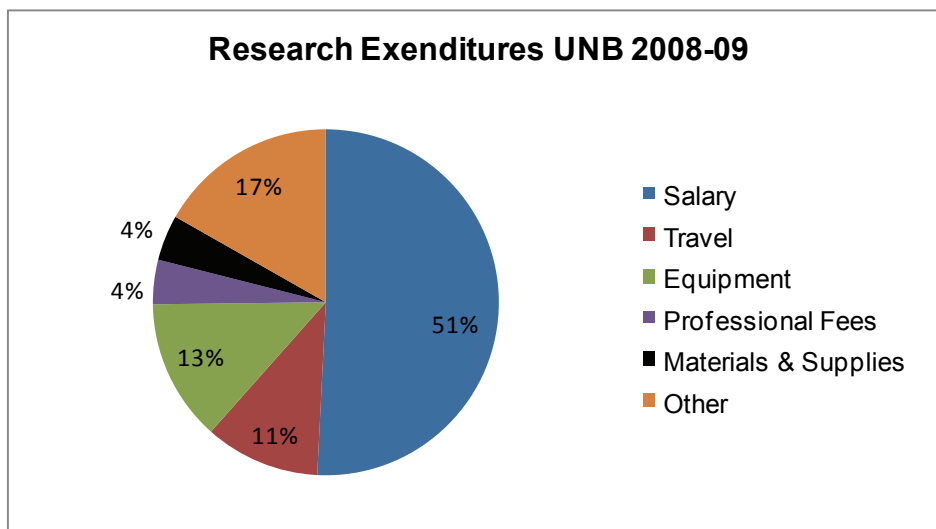
**Research Revenue (continued)**

Based on CAUBO statistics, UNB ranks well amongst its peer group of comprehensive universities in terms of longer-term growth. A comparison of percentage growth of these institutions between 2004 and 2008 indicates that UNB ranks fifth at 31.6%.



**Research Expenditures**

The majority of the research funding received by UNB goes back into the New Brunswick economy through salaries. In 2008-09, \$28.4 million was spent on student and non-student salaries, up by over \$6 million from the previous year. Equipment, materials and supplies consumed almost \$9.5 million and travel \$6.1 million.



NOTE: 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.

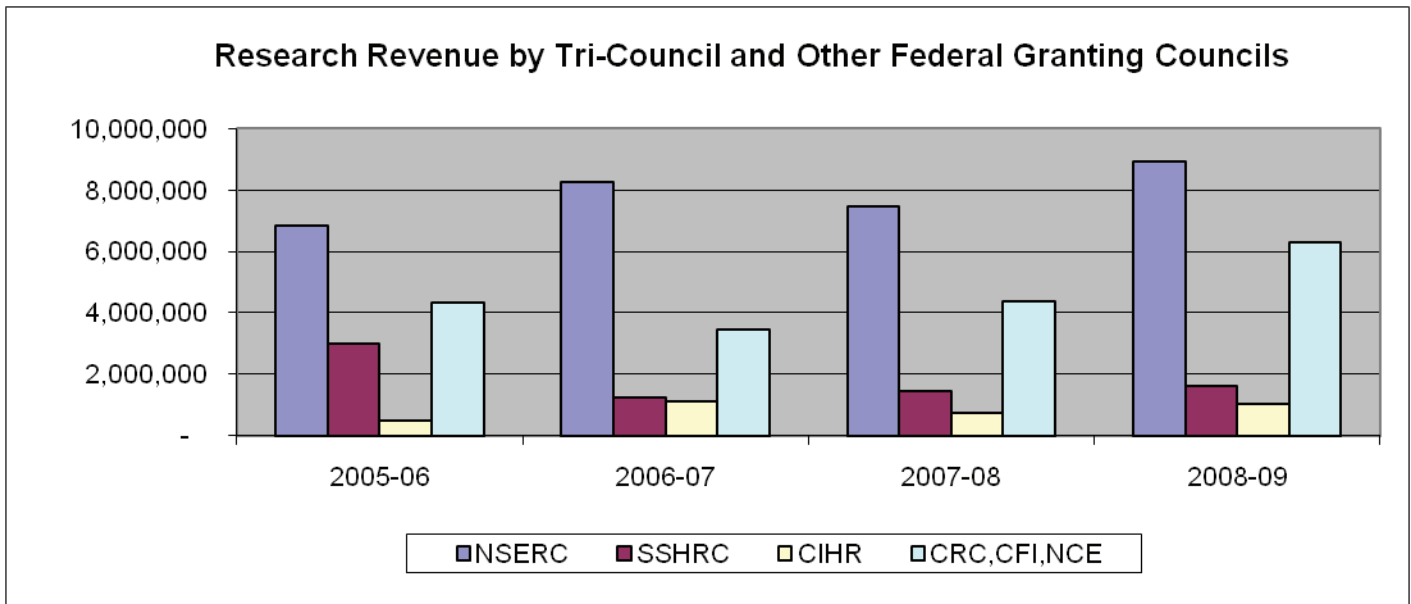
## Indirect Costs of Research



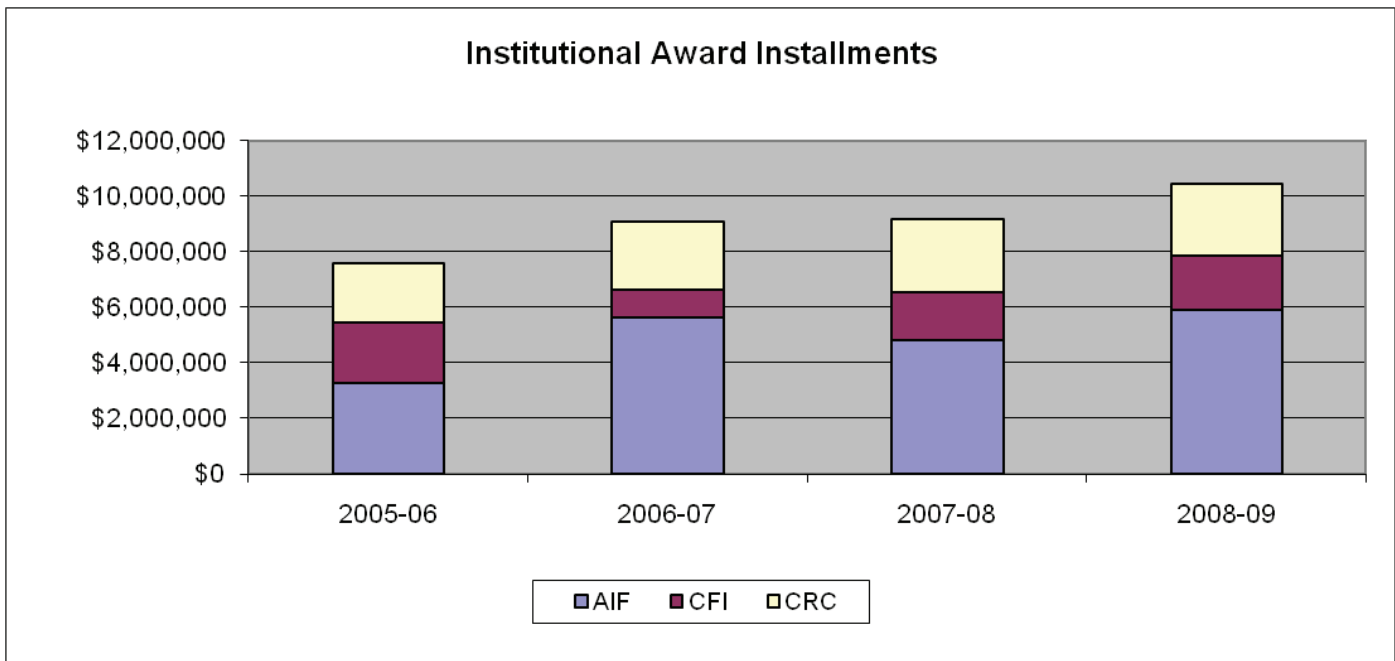
The Indirect Costs of Research program provides funding for research facilities, resources, management and administration, regulatory requirements, accreditation and intellectual property management. The amount UNB receives from this program is contingent on our level of tri-council funding based on a three-year running average. The university's allocation for 2008-09 was \$3,510,654, and the allocation for the coming year is \$3,543,060.

## Tri-Council Funding

Funding from the federal research councils drives fundamental research and applied research at UNB. In 2008-09, NSERC supported 222 projects led by UNB faculty members, SSHRC supported 37 projects and CIHR supported 17 projects. It must be pointed out that the total tri-council awards are used to determine the level of funding UNB receives for the Indirect Costs of Research Program as well as UNB's allocation for the Canadian Research Chairs program.



## Institutional Funding



### Atlantic Innovation Fund (AIF)

The Atlantic Canada Opportunities Agency announced project approvals for the Round 6 applications in January 2009. Three UNB-led projects were approved. Dr. Liuchen Chang (Electrical & Computer Engineering) was awarded \$1.4 million towards a \$2.2-million project to develop and commercialize energy conservation technologies for renewable energy systems. Dr. Kecheng Li (Chemical Engineering) was awarded \$1.6 million as part of a \$3.2-million project aimed at utilizing biotechnology in mechanical and chemical pulping to reduce energy inputs and improve fibre quality.

Dr. John Spray (Geology) will mount a \$7-million project,

with \$2.9 million in support from ACOA, to establish a high-speed impact research and technology facility. As well, Dr. Tillman Benfey (Biology—F) will participate in two corporate-led aquaculture AIF projects and Dr. Dan Quiring will be involved in an AIF project aimed at enhancing commercial Christmas tree production.

### Canada Foundation for Innovation (CFI)

In 2008-2009, UNB was successful in having seven new CFI projects approved valued at \$1.956 million, including \$456,000 in Infrastructure Operating Funds. UNB researchers are leading 34 active CFI infrastructure projects involving \$6.2 million from CFI and \$8.6 million from matching sources.



## Institutional Funding (continued)

## Canada Research Chairs (CRC)

UNB received almost \$2.6 million for the 16 active Canadian Research Chairs in 2008-09. During the fiscal year, due to a change in allocation policy at the CRC, UNB lost its three "Special Chairs" while being awarded a new SSHRC Tier 2 CRC on the basis of institutional merit. During the fiscal year, Dr. Bruce Balcom (Physics) was successful in the renewal of his Tier 1 Chair for a second seven-year term. In 2008-09, the university initiated the process to nominate two Tier 2 Chairs in Education and Social Policy. The cancellation of the Special Chairs is being accommodated through a combination of retirements and non-renewal of two Tier 2 Chairs at the end of their existing terms.

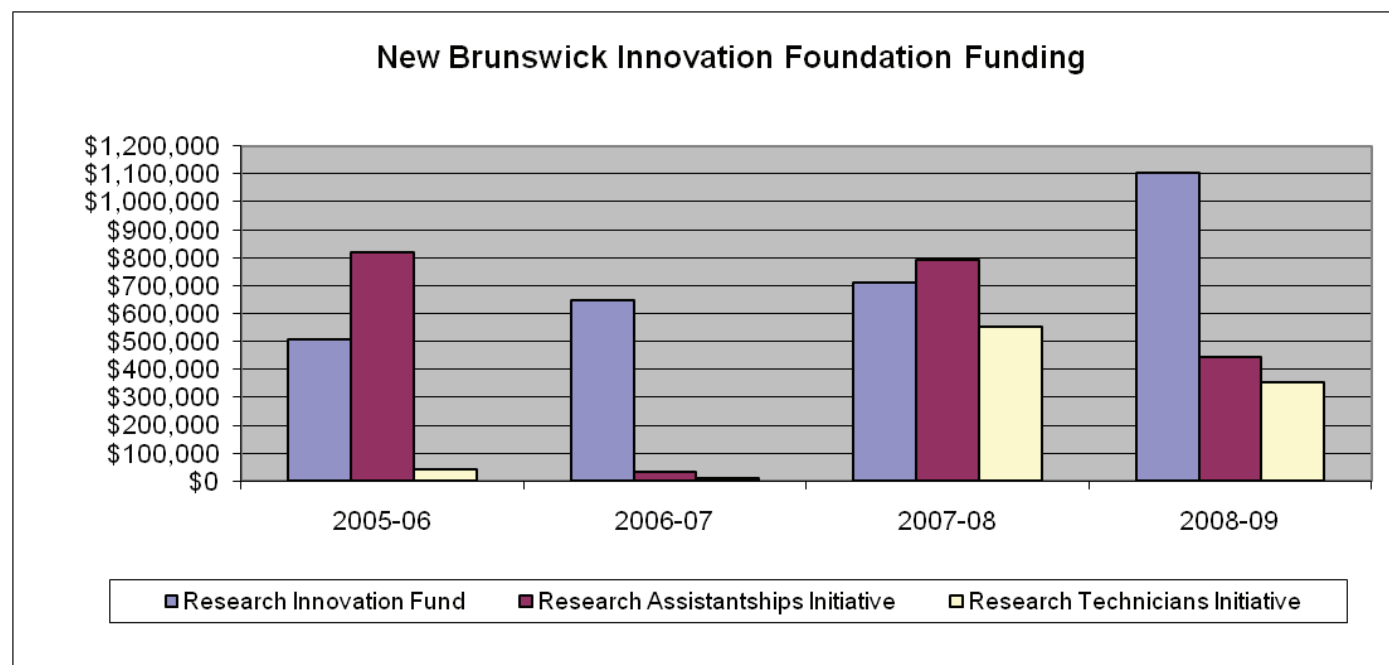
UNB's CRC contingent as of April 30, 2009:

|    | Name              | Department/ Faculty      | CRC in...  | Tier |
|----|-------------------|--------------------------|--|------|
| 1  | Bruce Balcom      | Physics/Chemistry        | Materials Science MRI                                  | 1    |
| 2  | Margaret Conrad   | History                  | Atlantic Canada Studies                                | 1    |
| 3  | Rick Cunjak       | Biology (F)              | River Ecosystem Science                                | 1    |
| 4  | Karen Kidd        | Biology (SJ)             | Chemical Contamination of Food Webs                    | 2    |
| 5  | Nicole Letourneau | Nursing                  | Healthy Child Development                              | 2    |
| 6  | Kerry MacQuarrie  | Civil Eng.               | Groundwater-Surface Water Interaction                  | 2    |
| 7  | Kelly Munkittrick | Biology (SJ)             | Ecosystem Health Assessment                            | 1    |
| 8  | Yonghao Ni        | Chem./Chem. Eng.         | Pulp and Paper Science and Engineering                 | 1    |
| 9  | Lucia O'Sullivan  | Psychology               | Adolescent Sexual Health Behaviour                     | 2    |
| 10 | Barbara Paterson  | Nursing                  | Chronic Illness  | 1    |
| 11 | Om Rajora         | Forestry & Env. Mgmt.    | Forest and Conservation Genomics and Biotechnology     | 1    |
| 12 | Gary Saunders     | Biology (F)              | Molecular Systematics and Biodiversity                 | 2    |
| 13 | John Spray        | Geology                  | Planetary Materials                                    | 1    |
| 14 | Mihaela Ulieru    | Computer Science         | Adaptive Information Infrastructures for the e-Society | 2    |
| 15 | Douglas Willms    | Education                | Human Development                                      | 1    |
| 16 | Yun Zhang         | Geodesy & Geomatics Eng. | Advanced Geomatics Image Processing                    | 2    |



## New Brunswick Innovation Foundation

While down slightly from the previous year, overall funding from the New Brunswick Innovation Foundation for the fiscal year 2008-09 remained strong. UNB continued to enjoy a high success rate for its applications to the Foundation's Research Innovation Fund (RIF). Eight Innovation Capacity Development Grants were made and three Start-up Grants were awarded. The Research Assistantship Initiative (RAI) provided 36 awards and the Research Technician Initiative (RTI) funded five positions.



## Intellectual Property Management, Technology Transfer 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 2008-09, IGS:

- Obtained the following awards to assist in moving technologies through the commercialization process:
  - three \$10,000 patent awards and two \$20,000 proof-of-concept project awards from Springboard Atlantic Inc. for technologies from Chemical Engineering (3) and Electrical and Computer Engineering (2)
  - a \$10,000 Technology Assessment Committee award, leveraged by an \$8,000 award from the LearnSphere Canada Commercialization Consulting and Mentoring Program (Computer Science)
  - a \$116,750 NSERC Idea to Innovation grant (Mechanical Engineering);
- Entered into 15 technology transfer agreements;
- Provided services to Université de Moncton and Mount Allison University, including reviewing and drafting agreements and developing the direction of a NB university industry liaison program; and
- Saw 6 patents issued.

| Technology and Knowledge Transfer |           |           |           |           |
|-----------------------------------|-----------|-----------|-----------|-----------|
|                                   | 2005-06   | 2006-07   | 2007-08   | 2008-09   |
| Disclosures                       | 21        | 21        | 18        | 16        |
| Patents Filed                     | 19        | 19        | 22        | 22        |
| Patents Issued                    | 1         | 8         | 7         | 6         |
| Total Patents Pending             | 35        | 46        | 56        | 64        |
| License Agreements                | 8         | 16        | 10        | 15        |
| Gross Revenue Received            | \$204,813 | \$303,701 | \$269,107 | \$448,991 |
| Start-Ups Created                 | 1         | 0         | 2         | 2         |

### Accomplishments: UNB's Intellectual Property Management Program—a Decade Later

Since the establishment of the Intellectual Property Management program within the Office of Research Services in 1999, UNB has been active in transferring technologies into the marketplace, with a strong focus on industry collaboration. In the 10-year period from FY2000 to FY2009, UNB has:

- Managed 177 invention disclosures;
- Filed 39 US Provisional, 28 Canadian, 37 US Non-Provisional, and 23 other (European, PCT, etc.) patent applications (127 total) for 51 separate technologies;
- Seen 23 patents issued to date;
- Completed 79 technology transfer deals;
- Assisted in the creation of 13 UNB spin-off companies; and
- Seen UNB start-up companies raise over \$60 million in venture capital investments.

## Research Ranking

The Research Ranking exercise, completed on a biannual basis, has become an important tool that assists the Office of the Vice-President (Research) in measuring research output of faculties at the University of New Brunswick. This exercise exists in the form of an electronic questionnaire that is completed by each person with the designations of Professor, Associate Professor, Assistant Professor, Adjunct Professor, Honorary Research Professor, Post Doctoral Fellow, Senior Research Associate and Research Associate. Once the data is collected, a committee reviews the submissions per academic unit and give a ranking of 1 through 10 to each unit based on their submission. A

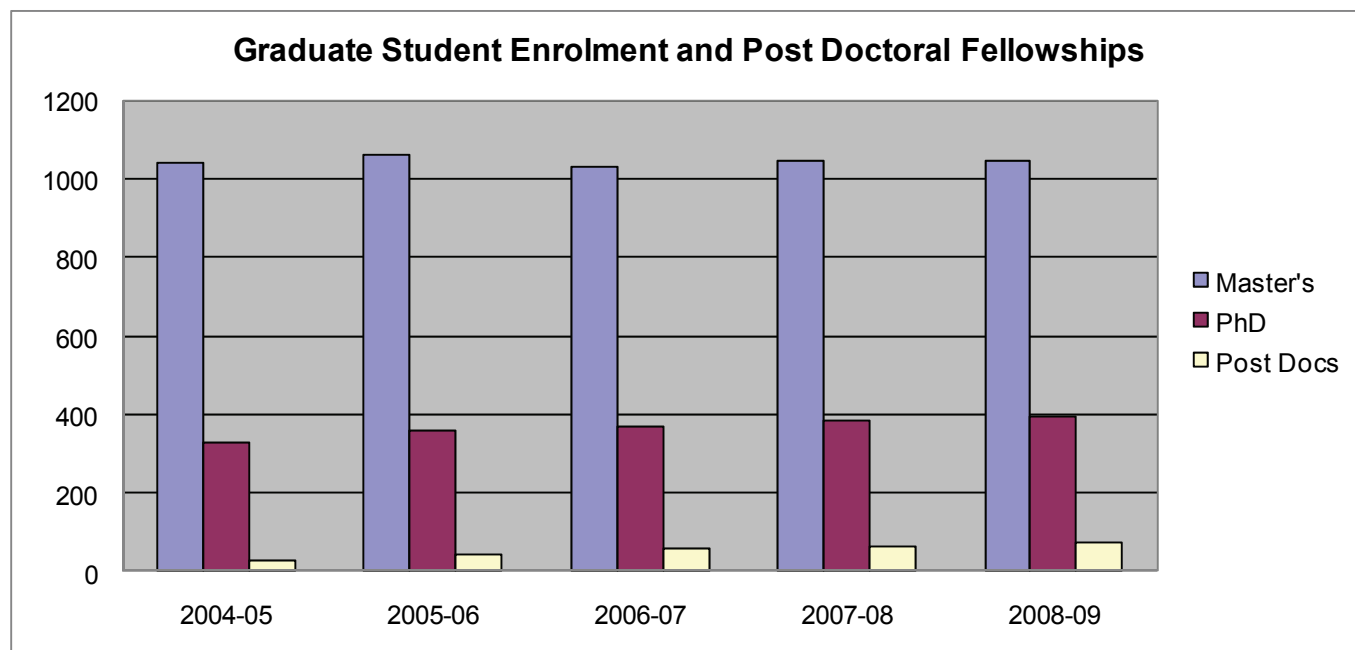
ranking of 1 signifies research excellence, while a ranking of 10 signifies extremely low research performance.

The Research Ranking results for the period of July 1, 2007, to June 30, 2009, are being compiled and will be published in next year's Annual Report. The on-line portal for the coming ranking period (July 1, 2009–June 30, 2011) will be made available during the winter term 2010.

| Saint John Campus                     |               |         |         |                          |               |         |         |
|---------------------------------------|---------------|---------|---------|--------------------------|---------------|---------|---------|
| Department/Faculty                    | Final Ranking |         |         | Department/Faculty       | Final Ranking |         |         |
|                                       | 2001-03       | 2003-05 | 2005-07 |                          | 2001-03       | 2003-05 | 2005-07 |
| Biology                               | 1             | 1       | 1       | Mathematical Sciences    | 5             | 5       | 3       |
| Business                              | 7             | 6       | 6       | Nursing                  | 7             | 7       | 6       |
| Computer Science & Applied Statistics | 2             | 2       | 2       | Physical Sciences        | 5             | 5       | 6       |
| Engineering                           | 4             | 5       | 5       | Psychology               | 5             | 5       | 5       |
| History & Politics                    | 4             | 4       | 4       | Social Sciences          | 5             | 5       | 6       |
| Humanities & Languages                | 5             | 5       | 5       |                          |               |         |         |
| Fredericton Campus                    |               |         |         |                          |               |         |         |
| Department/Faculty                    | Final Ranking |         |         | Department/Faculty       | Final Ranking |         |         |
|                                       | 2001-03       | 2003-05 | 2005-07 |                          | 2001-03       | 2003-05 | 2005-07 |
| Anthropology                          | 4             | 5       | 5       | French                   | 5             | 6       | 5       |
| Biology                               | 2             | 2       | 1       | Geodesy & Geomatics Eng. | 1             | 1       | 1       |
| Business Administration               | 5             | 4       | 4       | Geology                  | 1             | 1       | 1       |
| Chemical Eng.                         | 1             | 2       | 1       | History                  | 1             | 1       | 1       |
| Chemistry                             | 1             | 1       | 1       | Kinesiology              | 4             | 4       | 4       |
| Civil Eng.                            | 2             | 2       | 2       | Law                      | 4             | 5       | 4       |
| Classics & Ancient History            | 7             | 8       | 7       | Mathematics & Statistics | 5             | 4       | 3       |
| Computer Science                      | 2             | 2       | 3       | Mechanical Eng.          | 1             | 1       | 1       |
| Culture and Language Studies          | 7             | 10      | 6       | Nursing                  | 5             | 4       | 4       |
| Economics                             | 5             | 4       | 4       | Philosophy               | 6             | 7       | 6       |
| Education                             | 4             | 4       | 3       | Physics                  | 3             | 2       | 1       |
| Electrical & Computer Eng.            | 3             | 2       | 2       | Political Science        | 5             | 3       | 3       |
| English                               | 2             | 2       | 2       | Psychology               | 3             | 3       | 2       |
| Forestry & Env. Mgmt.                 | 2             | 1       | 1       | Sociology                | 5             | 3       | 4       |

## School of Graduate Studies

Master's student enrolment has remained fairly constant over the past several years. Doctoral enrolment, however, has shown consistent growth through the same period, as have the number of postdoctoral fellows.



## VP (Research) Representation

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

### President:

- Fredericton Knowledge Park

### Chairperson:

- Board of Directors, Canadian Rivers Institute
- Board of Directors, Canadian Research Institute for Social Policy
- Board of Directors, Chronic Illness Research Institute
- Board of Directors, Institute of Biomedical Engineering

### Member:

- Board of Directors, Muriel McQueen Ferguson Centre for Family Violence Research
- Board of Directors, Kings Landing
- Board of Directors, New Brunswick Research and Productivity Council
- Board of Directors, BioAtlantech
- Board of Directors, Canadian Council on Social Development
- Board of Directors, Huntsman Marine Science Centre
- Board of Directors, International Aquaculture Innovation Centre

(Memberships continued...)

- Board of Directors, Populomix Cancer Research Institute
- Board of Directors, Canadian Research Knowledge Network
- Board of Directors, New Brunswick Innovation Foundation
- SSHRC Council
- Executive Committee, SSHRC

In addition, the VP (Research) holds several positions related to his academic interests:

- Treasurer, Canadian Committee on Labour History
- Chair, Publications Committee, Canadian Committee on Labour History
- Treasurer, International Association of Social History
- Editor, Canadian Social History Series, University of Toronto Press
- Member, Editorial Board, *Labour/le Travail*
- Member, Editorial Board, *Acadiensis*
- Member, Advisory Board, *Labour History* (Australia)
- Member, Advisory Board, *Socialist History* (UK)
- Member, H-Canada Editorial Board

## Executive Director Representation

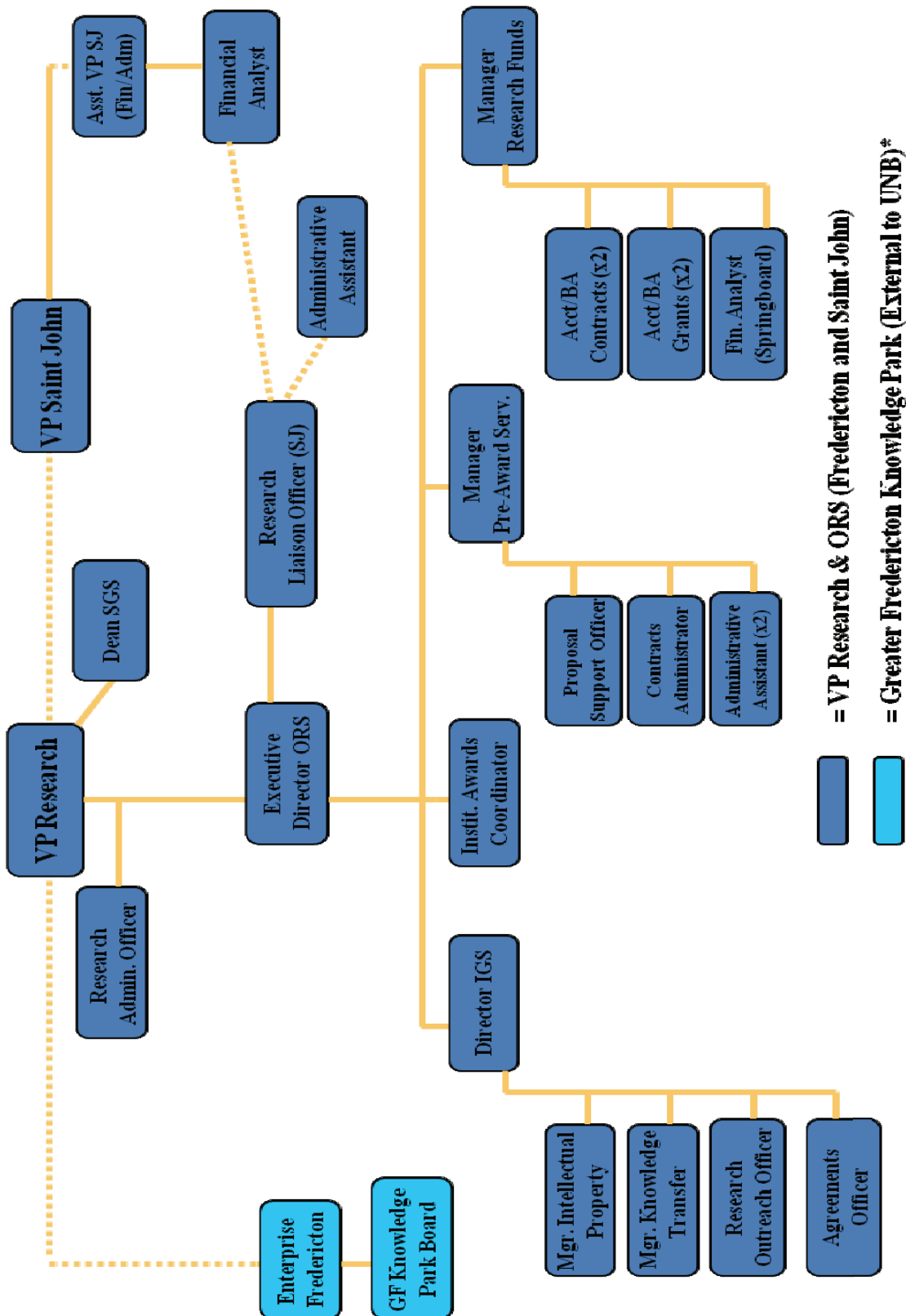
The Executive Director of the Office of Research Services represents the Office and/or the University in the following university functions:

- Chair, UNBF Asbestos Steering Committee
- Chair, Biohazards Safety Committee, UNB
- Member, Directors Plus
- Member, Board of Directors, Construction Technology Centre Atlantic
- Member, Board of Directors, CADMI Microelectronics Inc.
- Representative of the VP Research, Board of Directors, Centre for Nuclear Energy Research
- Representative of the VP Research, Advisory Board, Wood Science and Technology Centre

In addition, the Executive Director holds positions related to his professional and personal interests:

- Member, Society of Research Administrators International
- Member, Canadian Association of University Research Administrators
- Member, Admissions Committee, Association of Professional Engineers and Geoscientists of New Brunswick
- Fellow, Canadian Institute of Mining, Metallurgy and Petroleum
- Member, Association of Professional Engineers & Geoscientists of New Brunswick
- Certified Geologist, State of Maine

VP (Research)/Office of Research Services Organizational Chart



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

## University Research Scholars 2008: Dr. Sandra Byers & Dr. Demetres Tryphonopoulos

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. Sandra Byers

Professor Sandra Byers is an internationally-renowned expert on human sexuality, sexual health and intimate partner relationships. Her research has garnered high acclaim at the national and international level. Her commitment to social-action research has made a major contribution to how Canadian children and adolescents are educated about sexual behaviour and health. In many respects she has been a pioneer in her field of research. She is, in fact, credited with publishing the first empirical study on date rape which, in turn, led to a major reconceptualization of this serious social problem.



*Dr. Sandra Byers  
with Dr. John McLaughlin*

In addition, her research on sexual coercion, as well as on sexual functioning and satisfaction, has redefined how these important aspects of human adaptation are understood and measured. Dr. Byers' scholarly contributions have had a far-reaching impact. Her textbook on human sexuality, with co-authors Janet Hyde and John DeLamater, is in its third edition and has been adopted widely by universities across Canada.

She was Founding Director of the Muriel McQueen Fergusson Centre for Family Violence Research, one of UNB's premier research institutes. She has been honoured by her peers with election as a Fellow of the Canadian Psychological Association, and of the Society for the Scientific Study of Sex. She has received distinguished service awards from the Canadian Sex Research Forum, and from the "Women and Psychology" section of the Canadian Psychological Association.

Dr. Byers has published some 75 refereed journal articles, 9 book chapters, 1 edited book, and 1 textbook, and she has made over 135 refereed conference presentations. Much of this scholarly work has been coauthored with her graduate students, an example of the high premium she places on mentoring her students.

Sandi is widely sought after as an academic and public speaker. She has often been invited to give presentations, colloquia, and workshops at universities across the country, and as far afield as China. She has also given numerous interviews on national and regional radio and television. Her work has often been cited in the popular media, and she is frequently invited to make presentations at community and health organizations. In sum, Dr. Byers' research has had a direct impact at every level—regional, national and international; it is a model of knowledge transfer that has been forward thinking at the time of its inception.

Dr. Byers has been very successful in competing for external funding at both the national and provincial level, with total research funding that exceeds a million dollars, including four SSHRC and three Status of Women grants.

At the same time, she has demonstrated a strong commitment to student education—and to student research—supervising 15 doctoral students, 12 MA students and 15 Honours students, and serving on countless thesis and comprehensive committees.

Sandra Byers possesses all the qualities we attribute to excellence in faculty research, and she has achieved this standard of excellence while committing herself to her duties as departmental Chair, and before that as Director of Clinical Training. In all respects she has demonstrated the exemplary leadership in research, teaching and service which makes her a professor "par excellence"—and which today makes her an outstanding University Research Scholar.

## University Research Scholars 2008 (continued)

**Dr. Demetres Tryphonopoulos**

Dr. Demetres Tryphonopoulos is an internationally respected authority on Ezra Pound, H.D. (Hilda Doolittle), and other American modernist poets in their milieu, having published eight books and numerous articles in this area.

His first book, *The Celestial Tradition* (a study of Pound's *Cantos*, published in 1992), is well known in Pound circles and has been recently translated into Italian. Subsequently, he co-edited two collections of scholarly articles on modernist poets: *Literary Modernism and the Occult Tradition* (with Leon Surette, 1996) and *William Carlos Williams and Language* (with Burton Hatlen, 2002).

The Pound community is grateful to him for his critical edition of Ezra Pound's letters to Olivia Rossetti Agresti (co-edited with Leon Surette, 1998) and for his internationally acclaimed *Pound Encyclopedia* (with Stephen J. Adams, 2005), which is currently being translated into Japanese. They are also anticipating his critical edition of Ezra Pound's *Letters to H.L. Mencken*, which is forthcoming from Oxford University Press.

In addition, Dr. Tryphonopoulos has also recently completed an annotated edition of H.D.'s unpublished novel *The Majic Ring*, and has written a teaching text on Pound, *Teaching Ezra Pound's Poetry and Prose*, scheduled for publication in 2009. At present he is working on a modern-Greek edition and translation of the *Cantos*, writing a book on Pound's prosody, and editing a second collection of essays on occult modernism.

Demetres' research is also disseminated in other forms as well. He has published more than twenty refereed papers in scholarly journals and in edited book collections, and he has given over fifty conference papers and invited lectures.

While carrying on his own research, he also serves as associate editor and as book review editor of the two leading scholarly journals devoted to the works of Pound and other modernist poets. Earlier he served as poetry editor for *The Fiddlehead*, UNB's own literary magazine, and he was one of the co-editors of *Fiddlehead Gold*, the fiftieth-anniversary volume of our major Canadian journal.

Dr. Tryphonopoulos' publishing projects have been supported by grants from national funding agencies, including two large SSHRC Standard Research Grants, and his opinion is sought by other universities with regard to promotion and tenure decisions. In short, Demetres has established an enviable record of research excellence, and UNB has recognized his achievements by awarding him not one but two University Merit Awards (in 1993 and 2005).

In addition to being an exceptionally well published scholar recognized internationally by his peers, Demetres is also deeply committed to teaching here at UNB, at both the graduate and undergraduate levels. He has supervised some twenty graduate theses in the English Department, and his courses on American literature are regularly full to capacity. He is one of the most popular teachers in the English Department, again and again successfully introducing his students to one of English literatures' most intellectually challenging bodies of poetry.

While not researching or teaching, He also undertakes numerous administrative responsibilities. He has served as departmental Director of Graduate Studies and, since 1999, has been Associate/Assistant Dean of Graduate Studies. Despite his extensive duties in this position, he is unstinting in his service on departmental committees and various university bodies (including Senate and the Executive Committee of the Board of Governors).

In sum, while mentoring emerging scholars among the English department's graduate students and being generous with his time as a very capable administrator, Dr. Demetres Tryphonopoulos has distinguished himself as a prolific researcher and scholar of international stature, richly deserving of this recognition as a University Research Scholar.



*Dr. Demetres Tryphonopoulos  
with Dr. John McLaughlin*



## UNB Research Success Stories in 2008-09

### Yun Zhang Is Improving Quality Of Far Off Images

June 17, 2008

UNB Fredericton News Release: E359

NASA uses it. So do Google Earth and Canada's Department of National Defence.

An automated image-fusion technique developed by the University of New Brunswick's Yun Zhang is changing the way these, and other organizations, are collecting and using geospatial data — information about the location and characteristics of bodies surrounding the Earth's surface.

Dr. Zhang's fusion technique combines original high-resolution black and white geospatial images with low-resolution colour images to produce high-resolution colour images. These fused images provide users with more accurate geospatial information.

Dr. Zhang was recently appointed Canada Research Chair (CRC) in Advanced Geomatics Image Processing at UNB. As a Tier 2 chair, he will receive \$100,000 per year for five years from the Canada Research Chairs Program. He will also receive a Canada Foundation for Innovation (CFI) research infrastructure grant of \$74,770 for 2008-09.

"This funding and the chair appointment will significantly speed up the process of transforming my research ideas into breakthrough technologies," said Dr. Zhang.

The technology developed by Dr. Zhang and his team will help the Canadian government and academics improve how they collect geospatial

information. It will reinforce Canada's leading position in geomatics research, education and application.

Dr. Zhang's CRC appointment was part of a national announcement by the federal government earlier this month. It is investing \$113 million to fund 127 Canada Research Chairs at 35 universities across the country. CFI is also contributing \$4.8 million to fund research infrastructure essential to the work being performed by 33 of the chair holders. "Our government recognizes the key role that the Canada Research Chairs Program plays in building on Canada's growing reputation as a global leader in research and innovation," said John Baird, Minister of the Environment, on behalf of Jim Prentice, Minister of Industry and Minister responsible for the Canada Research Chairs Program. "Guided by the Science and technology Strategy, and reinforced in Budget 2008, our government is working to mobilize science and technology to our country's long-term economic and social advantage."

As much as 80 per cent of the information used in civilian and military decision-making processes has a geospatial context. Geospatial information is also used in urban planning, road access management, disaster monitoring and natural resource management.

Billions of dollars have been invested to collect satellite images for obtaining updated geospatial information. However, there is a substantial lack of effective technologies for acquiring the desired geospatial information in a timely and cost effective manner.

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*Fact: As much as 80 per cent of the information used in civilian and military decision-making processes has a geospatial context. Geospatial information is also used in urban planning, road access management, disaster monitoring and natural resource management.*

Dr. Zhang is reducing this gap by developing breakthrough technologies that convert remote sensing image data into useful geospatial information. His work will increase the capacity of the Canadian geomatics industry to export remote sensing image processing software.

A professor in the department of geodesy and geomatics engineering at UNB Fredericton, Dr. Zhang is the recipient of several international prizes and developer of several patent technologies which have been licensed to world-leading geomatics companies.

His automated image-fusion technique has made a significant impact on the world's remote sensing applications. In addition to NASA, Google Earth and DND, Dr. Zhang's technique is also being used by the National Oceanic and Atmospheric Administration, the US Geological Survey, and Natural Resources Canada. Dr. Zhang's Canada Research profile can be viewed at [www.chairs.gc.ca/web/chairholders/viewprofile\\_e.asp?id=2228](http://www.chairs.gc.ca/web/chairholders/viewprofile_e.asp?id=2228).

## UNB Graduate to Receive Recognition for Work in Radio Science

July 3, 2008

UNB Fredericton News Release: E365

Samaneh Sadighi, a University of New Brunswick graduate student in physics, is one of five Canadian student winners of the Canadian National Committee (CNC) of International Union of Radio Science (URSI) award.

As an award winner, Mrs. Sadighi will present her paper at the URSI general assembly in Chicago this August.

Her paper includes the research of UNB professor P.T. Jayachandran and is about collaborating and validating data for a German satellite called CHAMP, which was launched on July 15, 2000. One of the main goals of the CHAMP Satellite is to perform global

occultation of a part of the Earth's upper atmosphere called ionosphere. Mrs. Sadighi's paper validates the data obtained from CHAMP by comparing it to the data of CADI, which is another radar type device called the ionosonde that affects radio communication.

Mrs. Sadighi says this award would mean a great deal to her.

"As a graduate student, I am being trained and strive to become an independent researcher," she said. "I consider this competition a positive step in this direction."

Radio science encompasses the knowledge and study of all aspects of electromagnetic fields and waves. URSI is a non-governmental and non-

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*"As a graduate student, I am being trained and strive to become an independent researcher. I consider this competition a positive step in this direction."*

- Samaneh Sadighi, University of New Brunswick graduate student in physics

profit organization under the International Council for Science and is responsible for stimulating and coordinating studies, research, applications, scientific exchange and communication in the fields of radio science.

For more information, please contact Mrs. Sadighi at s.sadighi@unb.ca.

## UNBSJ Student Receives Garfield Weston Award For Northern Research

July 23, 2008

UNB Fredericton News Release: 08-026



Heidi Swanson's research on pollutants in Arctic char, a dietary staple in northern Canada, has won her a prestigious Garfield Weston Award, one of only seven in the country.

Ms. Swanson is a doctoral student at the University of New Brunswick in Saint John.

She is investigating how stressors such as climate change and industrial development affect Arctic char, a fish species that migrates annually from coastal lakes to the sea. She is also

looking at how this species may be bringing pollutants and nutrients into northern lakes from the ocean.

Her research supervisor is Karen Kidd, who holds the Canada Research Chair in Chemical Contamination of Food Webs at UNB Saint John.

"Heidi is a perfect choice for this scholarship because she has an unwavering commitment to northern issues and to working with, and communicating her findings to northerners and she has the skills and fortitude required to conduct research in a remote location, under very demanding conditions," said Dr. Kidd.

The W. Garfield Weston Foundation sponsors seven scholarships in Canada, each valued at \$40,000 over two years, and are awarded by the Association of Canadian Universities for Northern Studies. To be eligible for the award, students must be enrolled in a doctoral program in the natural sciences and their research must be about the Canadian north. The students must also demonstrate academic excellence and strong

leadership skills.

"Heidi's research is generating a lot of interest within the scientific community because she is showing how important char are to the health of lakes along the Arctic coast," said Dr. Kidd. "This is one of the many species being threatened by climate change, and her study is providing invaluable information on what could happen to char as climate change continues."

Ms. Swanson, of Saskatoon, SK, has a master's degree in biology and 10 years of fisheries and biological field experience in locations ranging from Costa Rica to the Arctic. She has worked out of remote camps in northern Ontario, Manitoba, Saskatchewan and Alberta, as well as the Northwest Territories and Nunavut.

"I was extremely happy to receive this funding," said Ms. Swanson. "I spend many months living, camping, and working on the tundra in the far north, and these sites are only accessible by helicopter and float plane. It's a costly endeavor, and receiving this award will help me complete my research."

## Flooding in Fredericton and UNB Teaching and Research

July 28, 2008

UNB Fredericton News Release

Canada's newest satellite RADARSAT-2 was used for the first time during the May 2008 flooding in the Fredericton, N.B. area. It was used by Public Safety Canada, the New Brunswick's Emergency Measures Organization and the City of Fredericton as a disaster management tool.

RADARSAT-2 images from the Fredericton-area flood can be viewed at [www.disasterscharter.org/disasters/CALLID\\_201\\_e.html](http://www.disasterscharter.org/disasters/CALLID_201_e.html).

RADARSAT-2 is a new generation of Earth's observation satellite that collects horizontal and vertical polarized, or polarimetric, radar images at very fine spatial resolutions.

"These images, known as synthetic

aperture radar (SAR) images, can be acquired whatever the weather conditions," said Brigitte Leblon, professor in the faculty of forestry and environmental management at the University of New Brunswick.

"Polarimetric images allow special image processing to more easily detect Earth's features. They are particularly suitable for sea ice mapping and for detecting man-made targets like ships over the sea, bridges, buildings. They also have applications in agriculture, hydrology, forestry and geology."

Prof. Leblon has developed an online course that teaches the theory and applications of RADARSAT-2. The course is sponsored by the Canadian Space Agency and is unique in Canada. It is available both at the undergraduate and graduate levels

and is taught only in English but will soon be available in French and in Spanish.

Prof. Leblon has already developed several bilingual online courses in basics remote sensing and in photo interpretation. Students from across Canada and around the world have taken her courses.

With her team and colleagues from the European Union Joint Research Centre, Michigan Technical University, MacDonald Dettwiler and Associates Ltd., Royal Military College of Canada and Canada Centre of Remote Sensing, she has also developed applications for these new images. She has received numerous prestigious awards for her remote sensing research.

## Health Promotion Research Fund Grants Announced

July 31, 2008

UNB News Release

The Health Promotion and Research Fund (HPRF) provides Atlantic Health Sciences Corporation (AHSC) staff and community partners with increased opportunity for financial support of projects and initiatives deemed worthy of support.

In recognition of the intent to further strengthen the research relationship between AHSC and the University of New Brunswick, financial support for this fund is received annually from both AHSC and UNB.

The HPRF provides increased focus on research activity and partnerships.

"The fund is an essential means to increase health promotion and research activity through the region, and facilitates collaboration among our staff, UNB and community research partners," said Jane Breckenridge, director of AHSC Research Services. "Our overarching objective is to translate research findings into improved health and health care for our citizens."

"We are delighted with our research collaboration with Atlantic Health Sciences Corporation," said Greg Kealey, UNB's vice-president research. "This will help UNB to continue to build its health research agenda. With a renewed focus on research in New Brunswick and the creation of a partnership with Dalhousie for medical education at UNBSJ, we are looking forward to ever deeper partnerships in this area."

Barb McGill, acting president and CEO of Atlantic Health Sciences Corporation stressed the importance of research.

"Research is essential to the future health care, not only in this region, but in the entire province," she said.

Seed and Operating funding totaling \$269,163 was available this year. In

total, 15 health promotion and research initiatives were awarded funding throughout Health Region 2. These submissions clearly demonstrate collaborative approaches with the research partners and the community at large. Fund recipients were selected by a committee made up of representatives from each of the partner organizations.

Proposals that will receive Tier 1 (maximum \$7,000) or seed grant funding are either in the idea stage and require funds to support further development, or relate to a health promotion initiative of limited scope. Tier 2 (maximum \$30,000) grants are awarded to support health promotion and health research proposals that are of considerable scientific merit and demonstrate the potential for sustained funding and peer-reviewed adjudication.

Successful Tier 1 projects include:

- Progressive exercise to address impaired balance and mobility of older adults referred for home care physiotherapy services. Is it beneficial to target vestibular control and lower limb muscle strength?
- Childhood Obesity – the effects of a community centered youth activity initiative. Development of a Multimodal Cognitive Rehabilitation Intervention for the Treatment of acquired deficits in attention in stroke and traumatic brain injury. A feasibility and pilot study.
- Employment matters – measuring employer attitudes towards hiring individuals living with mental illness in health region 2.
- The development of a Community Health Centre Outcomes Evaluation Framework.
- Selective Nerve Root Injection: Preventing Surgery for Lumbar Spine Pathology Causing Radiculopathy.
- 40 Developmental Asset Survey: Assessing the Impact of School District 6's Celebrate what's TIGHT with the world initiative.

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*"The fund is an essential means to increase health promotion and research activity through the region, and facilitates collaboration among our staff, UNB and community research partners."*

- Jane Breckenridge, director of AHSC Research Services

- Attitudes to use of low-dose opioids for treatment of dyspnea in advanced lung disease. A pilot study to family physicians and respiratory therapists in NB.
- The Effectiveness of using Goal Attainment Scaling as a tool to measure individualized outcomes for patients on a geriatric evaluation and management unit.

Successful Tier 2 projects include:

- A Randomized Superiority Intervention Study Comparing Two Methods of Managing the Methadone Treatment Waiting List in Region 2 of New Brunswick: Interim Methadone vs. No Methadone.
- Community Based Needs Assessments: Building a Determinants of Health Community Profiling and Comparison Tool. Effect of a Diabetes Refresher/Update to enhance the management practices of extra mural program nurses.
- Randomized controlled trial of chlorhexidine gluconate, intranasal mupirocin, rifampin and doxycycline versus chlorhexidine gluconate and intranasal mupirocin alone for the eradication of methicillin-resistant *Staphylococcus aureus* colonization among an ambulatory patient population.
- Community Voices Talking Diabetes: Dodging Diabetes via Peer Development in Two Low-Income Neighbourhoods.
- Type and Consistency of use of Anticoagulation in Acute Coronary Syndrome Patients in New Brunswick.

## World-Leading Upper Limb Prosthetics Experts Coming to UNBF Conference

August 8, 2008

UNB Fredericton News Release: 08-036

Cutting edge research and development in upper limb prosthetics is coming to the University of New Brunswick in Fredericton from Aug. 10 to Aug. 15.

The international tri-annual Myoelectric Controls Symposium will be hosted by UNB's world leading-Institute of Biomedical Engineering (IBME).

"The IBME has an international reputation and the symposium will only enhance what we're doing here at UNB," said Peter Kyberd, a Canada Research Chair in Rehabilitation Cybernetics with the IBME. "We are anticipating an exceptional conference with the quality of individuals who will be presenting."

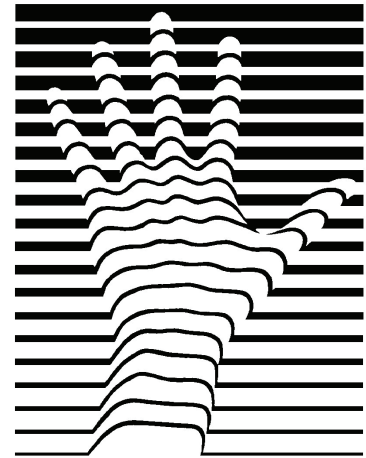
The lineup is indeed impressive in the fascinating world of prosthetic arms. The symposium will feature present-day marvels and research and

development papers from an international lineup of guest speakers on prosthetics, muscle reinnervation, hardware and outcome measures.

Dr. Kyberd is renowned as one of the world's leading researchers in cybernetics and prosthetic limb development.

He will be joined by a number of world-renowned experts, one of whom is Milomir Ninkovic, the head of plastic surgery at the University of Innsbruck. Dr. Ninkovic is a pioneer in the field of hand-transplant surgery. In 2000, Dr. Ninkovic performed the second transplant of its kind in the world when he performed bilateral hand transplantation on a police officer who had lost his hand in an explosion. In 2003, he was the first to transplant an entire forearm and hand from a deceased donor onto a living patient.

The theme for this year's symposium is Measuring Success. This topic is very timely given the rapid pace of development in the area of upper limb prosthetics and its clinical



implications. It is important to be able to measure the impact of new ideas and developments in prosthetic limb design and control.

For further information on the conference, contact Dr. Kyberd at 506-458-7025 or e-mail [pkkyberd@unb.ca](mailto:pkkyberd@unb.ca). To view the symposium schedule, see <http://www.unb.ca/biomed/mec.php>

## Robert MacKinnon and Nancy Mathis Receive Support from Government of Canada

August 29, 2008

UNB Fredericton News Release: 08-041

The University of New Brunswick's Robert MacKinnon and Nancy Mathis have received nearly \$300,000 from the Social Sciences and Humanities Research Council (SSHRC) in support of their Knowledge Impact on Society project.

This three-year, multi-disciplinary project, will provide analysis of, and workable options for, New Brunswick's changing demographic and economic picture. It will do this through interdisciplinary analysis, development of business case studies and community outreach initiatives.

"I am very excited to begin work on this project, said Dr. MacKinnon, UNB Saint John's vice-president. "It will build upon UNB's commitment to conduct research that influences New Brunswick's social, cultural and economic development. This national research grant acknowledges the very significant role that UNB plays in research and development in New Brunswick. The funding will allow us to hire undergraduate and graduate students to work with our faculty members and community partners to complete the various components of the project."

The UNB KIS team will focus its examination around four themes: human resources development, social development, innovation and access to

capital. The project will utilize UNB's existing research strengths in management, business, finance, economics, history, political science and education to develop best practices for business development.

If New Brunswick's economy is to grow, or at the very least maintain its current level of activity, the province will need more workers and its businesses will need greater access to capital. This fact, combined with the aging population, falling birth rate and strong economic performances in central and western Canada, has forced policy makers to consider significant reforms. Developing public policy to address these issues, at provincial, federal and municipal levels will require a broad-based understanding of the strengths and weaknesses within New Brunswick society.

"This project will capture knowledge that exists in the heads of a handful of leaders and make it accessible to others," said Dr. Mathis, executive director of the G. Wallace F. McCain Institute for Business Leadership at UNB. "Harvard-style business cases will be written for MBA use and then edited for use in K to 12 as well as for the general public. The grant funding from SSHRC will leverage funding received by UNB from Francis McGuire, chairman of NB Power and President of Major Drilling in Moncton."

Rounding out the research team is freelance journalist Lisa Hrabluk. As the project's administrative coordinator,

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*"This national research grant acknowledges the very significant role that UNB plays in research and development in New Brunswick."*

**- Dr. Robert MacKinnon, UNB Saint John's vice-president**

Ms. Hrabluk will act as a bridge between the academic community and the wider provincial community.

In recent years, UNB has expanded its definition of the community of scholars to include researchers and practitioners, both within and outside UNB, who actively apply their knowledge to address the problems within our society. This project will collaborate with researchers from a number of institutions and organizations, including l'Université de Moncton, Harvard Business School, Vibrant Communities Saint John, Policy Link NB, the Saint John Human Development Council, the New Brunswick Securities Commission and the New Brunswick Innovation Foundation. In addition, UNB graduate and undergraduate students will have opportunities to participate.

For more information on the Knowledge Impact on Society project, contact Dr. MacKinnon at (506) 648-5696 or Dr. Mathis at (506) 721-3820.

## UNB Researchers Receive \$1 Million to Study Effects of Space Weather

September 9, 2008

UNB Fredericton News Release: 08-043

Researchers at the University of New Brunswick in Fredericton have received more than \$1 million from the Canadian Space Agency (CSA) for their research, which will provide information on space weather and improve the accuracy of navigation devices based on the Global Positioning System (GPS).

P. T. Jayachandran is the principal investigator and Richard Langley and A. M. Hamza are co-investigators on the Canadian High Arctic Ionospheric Network (CHAIN) project.

CHAIN is a network of continuously operating radars and GPS receivers, which will pick up radio signals from the constellation of navigation satellites. The data collected from this network will supplement the information now available from existing systems, used to study the upper atmosphere.

"We need additional receivers because the upper atmosphere, known as the ionosphere, is quite different above the Arctic, compared to lower latitudes," said Dr. Langley,

an applied physicist and geodesy and geomatics engineering professor at UNB in Fredericton. "The signals from the GPS satellites travel through the atmosphere – the ionosphere and the lower atmosphere – on their way to receivers on the Earth's surface. By analyzing these signals we can figure out how the atmosphere has affected them, and actually deduce some of the atmosphere's properties."

To adjust for the discrepancies in GPS measurements, Dr. Langley and his colleagues have developed mathematical models that correct errors caused by atmospheric conditions, including those resulting from space weather. These models produce more accurate readings.

Dr. Jayachandran said that scientists require this information because of the peculiarities of the ionosphere in the Canadian north.

"We don't have enough receivers in the far north," said Dr. Jayachandran. "Most of the world is covered with GPS receivers, so other countries get this kind of information, but in Canada, we don't have that many receivers."

The scientists have just returned from the Arctic where they installed

receivers at six sites, from Iqaluit on Baffin Island to Eureka, on Ellesmere Island, one of the most northerly science research stations in the world.

The information gathered from these receivers may also be useful to Natural Resources Canada, Environment Canada and to the U.S. National Weather Service. It will help improve their conventional weather forecasts and it will also help with navigation and surveying around the world.

The network is being installed throughout northern Canada in collaboration with Natural Resources Canada, NavCanada, Environment Canada, the University of Western Ontario and the University of Alberta.

The funding for the CHAIN network was one of 10 research projects to receive a total of \$6.5 million in funding from the CSA. It was established in 1989 to coordinate all civil, space-related policies and programs on behalf of the Government of Canada. By leveraging international cooperation, the CSA generates world-class scientific research and industrial development for the benefit of humanity.

## Andy Scott To Lead New Social Policy Research Network at the University of New Brunswick

October 22, 2008

UNB Fredericton News Release: 08-072



Andy Scott

Photo by: Josh O'Kane

Andy Scott, recently retired member of parliament for Fredericton, will lead the Social Policy Research Network at

the University of New Brunswick. The network will combine the most current information and expertise available on social policy issues in New Brunswick.

Appointed to a two-year term as the Andrews Senior Fellow in Social Policy in the department of sociology, Scott begins his new role on October 27, 2008.

“Andy Scott’s outstanding abilities as a communicator, a negotiator and a team leader will be a great asset in getting this ambitious project off the ground,” said James Murray, the Dean of Arts at UNB’s Fredericton campus.

The goals of the network include cataloguing current social policy research and creating an easily accessible New Brunswick database of information for use by public, researchers and other interested parties. Scott will seek new ways to bridge social policy research at institutions across the province and promote awareness of important social policy issues in New Brunswick.

“It’s a great feeling to come to the University of New Brunswick, the

research engine of the province,” said Scott. “I’m looking forward to finding new ways to encourage more collaboration opportunities for researchers all across our province.”

A generous bequest from the estate of J. William Andrews, a graduate of the arts faculty at UNB, made this position possible. Mr. Andrews, originally from Milltown, NB, was a lifelong employee with CIL Canada, a producer of specialty products and paints in Montreal, PQ.

Established in 1785, UNB is one of the oldest public universities in North America. One of the top five comprehensive universities in Canada, according to Maclean’s, UNB has almost 12,000 students from more than 100 countries. As the largest research institution in New Brunswick, UNB conducts 80 per cent of the province’s research. The university has more than 3,500 faculty and staff, and an annual operating budget of more than \$160 million. UNB’s two main campuses are located in Fredericton and Saint John, New Brunswick.



## UNB Partnership Recognized With Natural Science and Engineering Research Council of Canada AWARD

November 27, 2008  
UNB News Release



*Dr. Thierry Chopin*

An innovative approach for making the world's aquaculture industry more sustainable and profitable has seen a team of scientists and industry recognized with the 2008 Natural Sciences and Engineering Research Council of Canada (NSERC) Synergy Award.

Full details about the award and a video about the research may be found at [www.nserc.gc.ca/news/2008/p081018-UNB.htm](http://www.nserc.gc.ca/news/2008/p081018-UNB.htm)

The Integrated Multi-Trophic Aquaculture (IMTA) research project, co-led by Drs. Thierry Chopin (University of New Brunswick Saint John) and Shawn Robinson (Fisheries and Oceans Canada St. Andrews Biological Station), with industry partners Cooke Aquaculture Inc. and Acadian Seaplants Limited have received this national award for their innovative research in the Bay of Fundy. The award includes a \$200,000 research grant and the opportunity to hire an industrial research and development fellow for two years for each industry partner.

IMTA is rooted in an age-old, common sense, recycling and farming practice in which the by-products from one species become nutritional inputs for another: fed aquaculture (e.g. finfish)

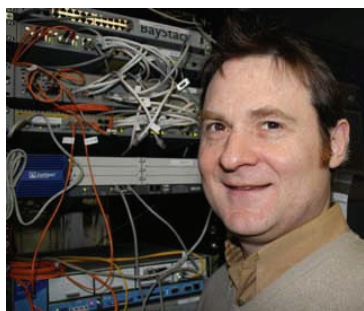
is combined with inorganic extractive (e.g. seaweeds such as kelps) and organic extractive (e.g. filter-feeding invertebrates such as mussels) aquaculture. This process allows farmers to diversify their crops and results in an aquaculture industry that is more environmentally and economically sustainable.

Practices like IMTA can help the industry meet increasing demands, diversify product lines, provide local employment, and help answer environmental concerns raised by regulators or the public.

Since their inception in 1995, the NSERC Synergy Awards have honoured the most outstanding achievements of university-industry collaboration.

## Innovatia Research Chair Established at UNB Saint John Brings International Information Expertise to Province

December 4, 2008  
UNB Fredericton News Release: 08-179



Respected researcher, Dr. Christopher J. O. Baker is the first Innovatia Research Chair at the University of New Brunswick Saint John. Dr. Baker brings to the province the vision and know-how to build new web solutions for enterprise using Semantic Web, Web 2.0, and Web 3.0 technologies.

Beginning his new position on Dec. 1, Dr. Baker will establish a new team to build cutting-edge information integration systems that will aid scientists, knowledge workers and non-technical experts in the testing of new hypotheses and in data integration.

The appointment of the Chair is the result of a partnership between the Atlantic Canada Opportunities Agency (ACOA), UNB and Innovatia.

ACOA's support of the Innovatia Research Chair came through an Atlantic Innovation Fund investment to Innovatia in January 2008.

"The partnership between Innovatia, ACOA and UNB to bring Dr. Baker to New Brunswick is a perfect example of what deep partnerships can accomplish for our province," said Dr. Robert MacKinnon, Vice-President of UNB Saint John. "Dr. Baker's expertise has applications across a wide spectrum of interests, from health care to information technology, and we are thrilled to have him join our community."

As a Research Chair, Dr. Baker will lead research on a number of related projects while holding an official position as Principal Scientific Researcher with Innovatia, and also teaching at UNB Saint John.

"Innovatia is pleased to be forging new ground with this collaboration between UNB Saint John and ACOA," said Roxanne Fairweather, COO, Innovatia. "We have been working for over a year to bring someone with Dr. Baker's international expertise to this region. Innovatia shares Dr. Baker's desire to create better and more efficient information management systems and we have no doubt it can be accomplished right here in New Brunswick."

The potential of bio-informatics and semantics as a new growth area affects many sectors in New Brunswick, including health research, education and industrial applications. Previous to his appointment as Innovatia Research Chair, Dr. Baker was head of the Semantic Technology Group in the Data Mining Department, Institute for Infocomm Research (Singapore), where his team developed knowledge navigation infrastructure based on semantic technologies.

ACOA's Atlantic Innovation Fund (AIF) encourages the commercialization of research in Atlantic Canada and has been a key driver for many Atlantic Canadian businesses, universities and research institutions. It has enhanced Atlantic Canada's reputation for innovation and, through the success of the projects it has funded, the AIF has contributed significantly to the region's research, development and economic performance.

Innovatia Inc, a wholly owned subsidiary of Bell Aliant (bell.aliant.ca), offers an expansive set of Next Generation Knowledge Solutions, including an eLearning content library,

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*"Innovatia is pleased to be forging new ground with this collaboration between UNB Saint John and ACOA."*

- Roxanne Fairweather, COO, Innovatia

documentation, technical support, professional services, knowledge management delivery solutions and knowledge business process outsourcing. Innovatia is a recognized leader in transforming information through a single source methodology, to reuse knowledge in multiple formats. Innovatia employs more than 300 people globally and serves over 1,500 customers in 29 countries world-wide.

Established in 1785, UNB is one of the oldest public universities in North America. One of the top five comprehensive universities in Canada, according to Maclean's, UNB has more than 12,000 students from more than 100 countries. As the largest research institution in New Brunswick, UNB conducts 80 per cent of the province's research. The university has more than 3,500 faculty and staff, and an annual operating budget of more than \$160 million. UNB's two main campuses are located in Fredericton and Saint John, New Brunswick.

For more information please contact:  
Dan Tanaka, University of New Brunswick, 506-648-5697  
dtanaka@unb.ca  
Isabelle Robinson, Innovatia, 506-694-6762  
isabelle.robinson@bell.aliant.ca  
Paul LeBlanc, Atlantic Canada Opportunities Agency, 506-452-3310,  
paulc.leblanc@acoa-apeca.gc.ca

## Canadian Foundation for Innovation Supports Advanced Materials and Transportation Research at UNB

December 18, 2008

UNB News Release: 08-210

Researchers at UNB have received \$500,000 from the Canada Foundation for Innovation (CFI) to support their research into areas ranging from automated driving systems for vehicles to safer and more robust spacecraft. John Spray, director of the Planetary and Space Science Centre and his research group are working to make aerospace materials safer. His \$398,260 award will be used to purchase an accelerator to simulate the high-speed collision of objects in space, and on Earth, and an ultrafast digital camera to record the impact. These kinds of collisions are a significant hazard in the aerospace industry and this research will help to develop new protective shielding technologies.

Chemistry professor Sara Eisler was awarded \$83,216 toward her research in two major areas: on creating materials that are capable of responding to their environment, with potential applications in engineering and medicine, and on developing semiconductors to be used in inorganic solar cells. This research could help to develop safer building materials and simplify surgical procedures.

Engineering professor Howard Li received \$18,307 for his research on intelligent transportation systems (ITS), which will allow vehicles to process data that will indicate geographic location and placement on

the highway, road conditions, other important information. This research could pave the way in the development of automatic driving systems.

"We are so pleased to see New Brunswick-based research supported by the Canadian Foundation for Innovation," said UNB president John McLaughlin. "There is so much talent in this province and this funding will help to develop new avenues of research."

"The Canada Foundation for Innovation's investment in the University of New Brunswick is helping to enhance research opportunities locally, and making New Brunswick a leading destination for cutting-edge research," said the Honourable Greg Thompson, the Minister of Veterans Affairs and Government of Canada representative for New Brunswick. "I would like to congratulate UNB on this great news and I look forward to the real and lasting results that will come from this support for innovative new research."

This funding was part of a \$45 million investment provided to a total of 312 researchers at 44 institutions across Canada. The funds were awarded under the CFI's Leaders Opportunity Fund (LOF), a program designed to help universities attract talented faculty to Canadian institutions and to retain the very best researchers in Canada.

The Canada Foundation for Innovation

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**- Honourable Greg Thompson, the Minister of Veterans Affairs and Government of Canada representative for New Brunswick**

(CFI) is an independent corporation created by the Government of Canada to fund research infrastructure. Its mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians.

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## Studying the Immigrant Experience in Greater Saint John

January 26, 2009

UNB News Release: 09-067

Researchers at the University of New Brunswick in Saint John and Enterprise Saint John will examine the immigrant experience in that city after receiving a \$20,000 grant from the Atlantic Metropolis Centre.

The project, The Immigrant Experience in Saint John: A look at how different cultures have adapted to a mid-sized Maritime city, will identify the challenges immigrants have faced, now and in the past, as they settle into the greater Saint John community.

“Saint John has literally been built by immigrants,” said Greg Marquis, the principal investigator of the research project and acting chair of UNBSJ’s department of history and politics. “Immigrants from around the world have helped our community grow in the past, and will continue to be important to our future. A better understanding of their experience – both past and present – may present some important lessons for New Brunswick policy-makers.”

The immigrant study will consist of two principal parts: (1) a historical examination of 20th century settlement trends in Saint John, with an emphasis on comparing the immigrant experience of different cultural groups; (2) a qualitative assessment of the provincial government’s current nominee program, which has helped bring hundreds of immigrant families to Saint John.

Dr. Marquis will lead the historical examination and UNBSJ urban researcher Kurt Peacock and staff at Enterprise Saint John will supervise the second part of the research project. They will survey up to 100 new permanent residents who have come to the area under the Provincial Nominee Program.

The survey will look at the prospects of long-term settlement in New Brunswick, the challenges of starting a business or gaining employment, and the ability to integrate socially, economically, and culturally in Saint John. The researchers hope that the historical survey, and the examination of the present-day immigrant experience, will help to strengthen the retention of immigrants in the Saint John community.

“We have ambitious targets to grow both our local and provincial population,” said Steve Carson, CEO of Enterprise Saint John. “And we need to make sure we’re providing a welcoming environment, with relevant services for newcomers. Examining how immigrants, coming through the Provincial Nominee Program, are settling in Saint John will help us to make recommendations to the government, and will improve our own settlement programs. This examination will also help us to increase our retention rates, and position us as a community that inspires people, ideas, and investment.”

In addition to producing academic

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*“Immigrants from around the world have helped our community grow in the past, and will continue to be important to our future. A better understanding of their experience – both past and present – may present some important lessons for New Brunswick policy-makers.”*

**- Dr. Greg Marquis, principal investigator of The Immigrant Experience in Saint John**

reports for the national Metropolis research network, the project will conclude in 2010 with a public workshop where results will be presented and immigration issues discussed. The researchers will work in cooperation with the newly established Saint John Multicultural & Newcomers Resource Centre and the YMCA-YWCA Settlement Services.

Established in 1785, UNB is one of the oldest public universities in North America. One of the top five comprehensive universities in Canada, according to Macleans, UNB has more than 12,000 students from more than 100 countries. As the largest research institution in New Brunswick, UNB conducts 80 per cent of the province’s research. The university has more than 3,500 faculty and staff, and an annual operating budget of more than \$160 million. UNB’s two main campuses are located in Fredericton and Saint John, New Brunswick.

## UNB Researchers Receive Canadian Foundation for Innovation Awards

April 7, 2009

UNB News Release: 09-085

Two researchers at the University of New Brunswick in Fredericton have received a total of \$567,822 in support of their research from the Canada Foundation for Innovation (CFI). Geologist Christopher McFarlane received \$327,204, and biologist Gary Saunders, who holds the Canada Research Chair in Molecular Systematics & Biodiversity, received \$240,618 for his research.

Dr. McFarlane's grant will be used to purchase a next-generation laser-ablation mass spectrometry instrument, which will allow his research team to produce high-quality and very accurate measurements of the chemical composition of Earth materials such as minerals, rocks, and fluids. This first of its kind facility in New Brunswick will also benefit mineral exploration locally and nationally. Recently, mineral production in the province represented at \$1.5 billion a year boost to the economy.

Dr. Saunders will use the funding to establish a state-of-the-art genomics facility in support of the International Barcode of Life (iBOL) Marine Initiative. This initiative will create a genetic inventory of all life on Earth and will make it faster to accurately identify biological specimens. Dr. Saunders' research will produce a global seaweed inventory and a comprehensive record of marine life in the Bay of Fundy.

The CFI continues to support cutting-edge research infrastructure that helps stimulate various sectors of our economy associated with such capital projects. It is estimated that every

dollar invested directly in research yields over seven dollars in economic benefits, including spin off jobs.

The CFI announced a total of \$26,712,283 in new funds to support 117 projects at 29 institutions across Canada. The investment was approved by the CFI's Board of Directors in March, following a rigorous merit-review process.

"These awards are a strategic boost to the research capacities of the University of New Brunswick," said Keith Ashfield, Member of Parliament for Fredericton. "Investments like this have allowed UNB to compete as an international leader, and helped to make this region a destination of choice for the world's best researchers."

A total of \$20,559,448 was awarded under the Leaders Opportunity Fund, which provides infrastructure support to Canadian institutions so they can attract and retain the very best of today and tomorrow's leading researchers at a time of intense international competition for knowledge workers. The remaining \$6,152,835 was awarded under the Infrastructure Operating Fund, a complementary program that assists research institutions with the incremental operating and maintenance costs associated with new infrastructure projects.

"The investments being announced today at UNB will further enhance our country's reputation as a destination of choice for outstanding researchers," said Dr. Eliot Phillipson, President and CEO of the CFI. "They will make our universities even more competitive when it comes to attracting the best and brightest researchers from around

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*"Investments like this have allowed UNB to compete as an international leader, and helped to make this region a destination of choice for the world's best researchers."*

**- Honourable Keith Ashfield, Member of Parliament for Fredericton**

the world."

For a complete list of the projects awarded, please visit [www.innovation.ca](http://www.innovation.ca).

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The Canada Foundation for Innovation is an independent corporation created by the Government of Canada to fund research infrastructure. The CFI's mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians. Since its creation in 1997, the CFI has committed almost \$4.5 billion in support of more than 6,000 projects at 129 institutions in 64 municipalities across Canada.

## New Grants Funded at UNB, 2008-09

### Association of Universities and Colleges of Canada (AUCC)

Yegven Biletskiy

### Atlantic Association for Research in the Mathematical Sciences

Viqar Husain

### Atlantic Health Sciences Corporation

Marilyn Hodgins (2)

### Bat Conservation International

Tony Diamond

### Canadian Health Services Research Foundation

Ed Biden

### Canadian Institutes of Health Research (CIHR)

Michael Farnworth

Marilyn Hodgins

Karen Kidd

Peter Kyberd

Fred Mason

Barbara Paterson (3)

### CANARIE Inc.

P.T. Jayachandran

### CANDU Owners Group

Derek Lister

### CFI

Bruce Balcom

Brian Crawford

Rick Cunjak

Sara Eisler

Howard Li

John Spray

### CRC

Bruce Balcom

### DFAIT

Allen Curry

### DIAND (INAC)

Les Cwynar

### Engel Canada Inc.

Rickey Dubay

### Grand Lake Meadows

Allen Curry

Andy Didyk

David Kubien

Darka Mioc

### Harrison McCain Foundation

Lisa Best

Juan Carretero

Keith Culver

Weichang Du

Thom Erdle

Heather Hunt

Ross Leckie

Ben Newling

Elaine Perunovic

Charlene Shannon

Kate Weaver

Joanne Wright

### HSM Systems, Inc.

Sean McGrady (2)

### IDRC

Sandra Byers

### Imperial Oil Foundation

Ying Zheng (2)

### Island Community Justice Society

Loretta Secco

### Lawson Foundation

Marilyn Hodgins

### Margaret & Wallace McCain Family Foundation

William Morrison

### Mindcare

David Clark

### National Cancer Institute

William Morrison

### Natural Sciences and Engineering Research Council (NSERC)

Wayne Albert

Myriam Barbeau

Tillmann Benfey

Karl Butler

Juan Carretero

Thierry Chopin

Y.H. Chui

Jacqueline Cole

Rickey Dubay

Michael Duffy

Dion Durnford

H.A. Eiselt

Sara Eisler (2)

Patricia Evans

Jack Gegenberg

Fritz Grein

Rameshwar Gupta

Joseph Hall

Stephen Heard

Jeff Houlahan

P.T. Jayachandran

Santosh Kabadri

David Kubien

Richard Langley

Howard Li

Kecheng Li (2)

Derek Lister

Matthew Litvak

Joanna Lumsden

Chris Mathis

Sean McGrady (2)

Aurora Nedelcu

Yonghao Ni (2)

Jack Passmore

Dan Quiring (2)

Bahram Rangipour

Remy Rochette

Stephen Ross

Gary Saunders

Antonio Sousa

Biljana Stevanovski

Ajit Thakkar

Mihaela Ulieru

Petr Vanicek

Lin Wang

Zhirun Yuan

Ming Zhong

### NB Dept. of Agriculture, Fisheries and Aquaculture

Yvan Pelletier (2)

### NB Dept. of Education & Training

William Morrison

### NB Dept. Wellness, Culture and Sport, Wellness Branch

William Morrison

(List continued on next page)

**New Grants Funded at UNB, 2008-09 (continued)****Networks of Centers of Excellence (NCE)**

Wayne Albert  
 Paul Arp  
 Y.H. Chui  
 Zengtao Chen  
 John Hughes Clarke (2)  
 Hossam Kishawy  
 Richard Langley (2)  
 Van Lantz  
 Matthew Litvak  
 Kelly Munkittrick (2)  
 Yonghao Ni  
 Jeffrey Picka  
 Petr Vanicek  
 James Watmough (2)  
 Melanie Wiber  
 Huining Xiao

**New Brunswick Innovation Foundation (NBIF)**

Francois Anton  
 Christopher Baker  
 Tillmann Benfey  
 Lisa Best  
 Ed Biden  
 Yevgen Biletskiy  
 Larry Calhoun  
 Juan Carretero (2)  
 Felisa Chan  
 Liuchen Chang  
 Zengtao Chen  
 Y.H. Chui  
 Jacqueline Cole  
 Brian Crawford  
 Rickey Dubay  
 Sara Eisler  
 Christopher Gray  
 Jeff Houlahan  
 John Hughes-Clarke  
 P.T. Jayachandran  
 David Kubien  
 Briget Leblon  
 Howard Li  
 Kecheng Li  
 Christopher McFarlane

Sean McGrady  
 Darka Mioc (2)  
 Yonghao Ni  
 Jack Passmore  
 Om Rajora (2)  
 Laura Romero-Zeron  
 Kripa Singh  
 Ian Smith  
 John Spray  
 Karen Sullenger  
 Yun Zhang  
 Ying Zheng  
 Ming Zhong

**New Brunswick Medical Research Fund**

Barbara D'Entremont

**Portland Cement Association**

Michael Thomas (2)

**Quebec/New Brunswick Cooperation Advanced Education and Research**

Owen Kaser  
 Ben Newling

**Region Health Authority 3**

Richard Nicki

**Social Sciences and Humanities Research Council (SSHRC)**

John Ball  
 Sandra Byers  
 Christa Canitz  
 Richard Cho  
 Neil Craik  
 Carmen Gill  
 Deborah Harrison  
 Dongmin Kim  
 Jacqueline Low  
 Robert MacKinnon  
 William Parenteau  
 David Townsend  
 Nicholas Tracy  
 David Wagner

**Storenzo Port Hawkesbury Ltd.**

Kecheng Li