

The Annual Report

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HEALTH RESEARCH. INNOVATION. SCIENCE. KNOWLEDGE.



People and Patients
at the **Heart** of Health Research

New Brunswick
Health Research
Foundation



Fondation de la
recherche en santé
du Nouveau-Brunswick

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Dr. Bruno Battistini
President, Chief Executive
Officer and Scientific Director,
New Brunswick Health
Research Foundation

Message from the Chairperson

2016-2017. NBHRF once again delivers a solid year of capacity building in the New Brunswick health research enterprise.

New Opportunities for Patients, Researchers and Sponsors. Patients, their families and communities are more and more engaged in healthcare and health research as they find themselves enrolling in research projects and strategies of patient-oriented research. Adding to previous partnering records, NBHRF hosted meetings during the year and facilitated valuable connections between governments, national organizations and innovative industry to foster collaborations and scientific breakthroughs. The annual conference celebrated who we are and celebrated leaders, providing attendees with unique perspectives on the opportunities and complex challenges ahead for our province.

Principles. The Foundation stands fast to a set of principles, its programs, its flexibility to opportunities and its strategic investments in value demonstration initiatives, in all four pillars of health research. The NBHRF Team works to foster workforce development, diversity and inclusion throughout our province.

Where do we go from here? This incoming 10th year, we shall consult you – our stakeholders – to prepare the next sequence to success. We shall engage in real world evidence, further linking research, policies, practices and services to our datasets on epidemiology, health economics and health benefits. We shall continue to focus, partner and support grants and awards of excellence in the face of scarcity through national funding.

Ms Monique Imbeault
Chairperson,
Board of Directors



2016-2017, OPERATING FOR 9TH FISCAL YEAR

Message from the President, CEO & Scientific Director



Dr. Bruno Battistini

Five years ago, when I took the helm of the Foundation close to the end of its 4th fiscal year (2011-2012), I did not tell you it was going to be easy, I told you and I am still telling you, it is going to be worth it. And here we are reporting on 2016-2017, a completed 9th fiscal year, entering the anniversary year of our first decade.

We have made significant progress, program-wise, partnership-wise, budget-wise. We developed the first 5 year strategic investment plan, which ends this year, 2017-2018. The imperative changes and transformation of our in-house programs have been implemented and we have evolved. We have focused on capacity building with significant return on investments. The numbers don't lie. We changed our ways. We have created jobs for highly qualified personnel through the Health Research Chair, Clinical Scholarship and Establishment Grant Programs. Strategic Initiative projects were key in all of this. We fortified and are now facilitating the process of creating new health research institutions such as the New Brunswick Centre for Precision Medicine. There is no innovation without creativity. When the odds are stacked against you, you need creativity and determination to stand out.

Now, more-than-ever, we are partnering with federal agencies (all SPORs being part of them). This creates opportunities for additional national partnerships with health charities and the private sector. We may not always lead, but we can always join.

NBHRF is now getting noticed as the recent funding announcement by the province illustrates. In the coming years, we shall continue to prosper. I believe that this year is a turning point in the country for science, per the Fundamental Science Review and new leadership at CIHR and CFI. In addition, by the end of 2017-2018, we anticipate federal re-investment in scientific research that will define the next decade, just as much as the transition from the Medical Research Council of Canada / MRCC to the Canadian Institutes of Health Research / CIHR, as part of the tri-council, was at the turn of the millennium, seventeen years' ago. We cannot miss this opportunity.

Your Foundation is here to co-ordinate, support and promote health research and health innovation in New Brunswick. I am urging all stakeholders of the New Brunswick Health Research Enterprise to engage, think big, lead now.

FINANCIAL HIGHLIGHTS OF FY09 / 2016-2017

In numbers: A year of continuous growth

Financing Profile	% Variation	2016-2017
Budget Line from GNB	- 4.10%	\$3,884,040
Direct Investment by NBHRF through HRP, HRI and SIHRI	+ 1.94%	\$2,736,165
Matching & Leveraging from Partners	+39.60%	\$5,037,217
Total Funds invested as Salary Awards and Operating Grants by NBHRF and Partners	+23.54%	\$7,773,382
Total Funds raised as Salary Awards and Operating Grants by New Brunswick Health Researchers by themselves (see NOTE below)	-0.58%	\$2,610,192
Overall Investments in the New Brunswick Health Research Enterprise	+16.43%	\$10,383,575
List of Trainees and HQP / highly qualified personnel supported by NBHRF in 2016-2017	Variations	n=73
Summer Studentships (NBHRF, BHCRI, NSERC)	+42%	37
MSc Studentships (NBHRF, BHCRI, MSSU, NSERC)	-20%	8
PhD(c) Studentships (NBHRF, BHCRI, NSERC, MSSU, NSERC)	-11%	8
Post-doctoral Fellowships (NBHRF, BHCRI, MSSU)	-17%	5
Clinical Scholarships (NBHRF, CIHR-ECRA)	+50%	3
Health Research Chairs (NBHRF with: Jarislowski-Dunn Foundation, Diabetes Canada, CFMNB-U de Moncton, CRC, and CCS-NB, NBIF)	+20%	12

NOTE: NBHRF does not include in its calculations the awards and grants given by ACOA (-AIF), NIH or other similar sources, direct funding programs from New Brunswick-based hospital Foundations, other Foundations, Regional Health Authorities Funds, nor funding generated by the two New Brunswick Regional Health Authorities-Research Services over clinical trials, nor funding obtained independently by NB-based Institutes such as ACRI.

- ACOA = Atlantic Canada Opportunities Agency
- ACRI = Atlantic Cancer Research Institute
- AIF = Atlantic Innovation Fund
- BHCRI = Beatrice Hunter Cancer Research Institute
- CCS-NB = Canadian Cancer Society - New Brunswick
- CFI = Canada Foundation of Innovation
- CIHR = Canadian Institutes of Health Research Innovation
- HRI = Health Research Initiatives
- HRP = Health Research Programs
- MSSU = Maritime SPOR Support Unit
- NBHRF = New Brunswick Health Research Foundation
- NBIF = New Brunswick Innovation Foundation
- NIH = National Institutes of Health
- NSERC = National Science and Engineering Council
- SIHRI = Strategic Investment in Health Research Innovation

The EXACTIS Personalize-My-Treatment (PMT) Program Comes to New Brunswick:

Improving cancer survivorship through personalized innovative research

Enabled by a partnership between the private biopharmaceutical sector, a national health charity and a national business-led NCE / Networks of Centres of Excellence, this pan-Canadian network initiative engages cancer patients to create a comprehensive database of tissue samples, genomic data and clinical data. PMT will increase the knowledge around the tumour and the actionable mutations, and promote better care for all cancer patients in New Brunswick.

Pictured left to right:

Andy Chabot, Cancer Research Society; Bruno Battistini, New Brunswick Health Research Foundation; Jennifer Chan, Merck Canada; The Honourable Victor Boudreau, NB Minister of Health; Gerald Batist, Exactis Innovation; The Honourable Brian Gallant, NB Premier; Chirfi Guindo, Merck Canada; Rodney Ouellette, Atlantic Cancer Research Institute.

To enable molecular profiling, new sequencing panels are being developed that will accelerate the PMT clinical trial matching. As part of the PMT project a liquid biopsy technology developed at the ACRI / **the Atlantic Cancer Research Institute**, located within the Pavilion Hotel-Dieu of CHUD / Dr. Georges-L.-Dumont University Health Centre, part of the Vitalité Health Network - will serve to complement the profiling of patients' samples during the course of their treatment and the evolution of their disease.

The liquid biopsy technology involves the capture of cell-derived nanovesicles called extracellular vesicles (EVs), containing a cargo of information, using a minimally-invasive sampling of blood or other biological fluids from the patient in order to identify the

state of the disease. The research has shown that it can improve the sensitivity of cancer biomarkers present in body fluids by enrichment via EV capture. This unique proprietary liquid biopsy-enabling technology opens up many opportunities for cancer management from early detection, diagnosis, monitoring and treatment.

The Institutions. A consortium of partners launch PMT in New Brunswick: MCI / Merck Canada Inc., SRC / Société de recherche sur le cancer, Exactis Canada, and the NBHRF invested CA\$4M to improve survival and the quality of life of New Brunswickers. In New Brunswick, half the funds were assigned to ACRI, partnering with the Jewish General Hospital, part of MUHC / McGill University Health Center.



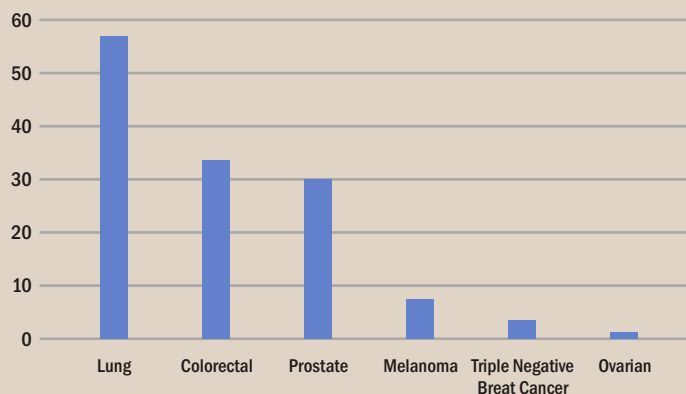
The Vision. Via the comprehensive cancer database of tissue samples, genomic data and clinical data of cancer patients, we shall be in a much better position to match patients to available clinical trials based on the molecular profile of their cancer and defined study inclusion criteria. The initiative aims to reduce barriers to personalized medicine by making Canada's rich scientific resources accessible to the research community. In summary, accelerate discoveries and expand treatment opportunities so that we can really make a difference.

The People. Dr. Rodney Ouellette, the President and Scientific Director of the ACRI. Dr. Gerald Batist, Co-Founder and Scientific Director of Exactis Innovation and of Q-CROC and Director, The Segal Cancer Centre at the Jewish General Hospital. The Team at Exactis, (then and now: Dr. Thérèse Gagnon-Kugler, then CEO and now Richard Fajzel, Dr. Dajan O'Donnell (CSO), and Dr. Martin Gagnon (COO)). The team at the Société de recherche sur le cancer (SRC), then and now: Mr. Andy Chabot, then CEO and now Mr. Max Fehlmann and Dr. Lucille Beudet (Scientific Advisor).



The Co-Funding Partners. Merck reaffirms its commitment to developing cutting-edge treatments for Canadians living with cancer," said Chirfi Guindo, President and Managing Director, Merck Canada Inc. "When we bring leading research institutions across Canada together, including established hubs such as the ACRI in New Brunswick, we can more effectively respond to promising discoveries in cancer research."

Progress-to-Date. At the CHUD / Dr. Léon-Richard Oncology Centre, PMT has enrolled 132 patients with breast, lung, and colorectal, ovarian, prostate and melanoma cancer have been invited and enrolled in the PMT initiative.



The mentoring of trainees and high quality personnel has also picked-up remarkably with the recruitment of several Master students, PhD candidates and post-doctoral Fellows at ACRI / Université de Moncton, which funding supports salary awards up to 70%, the remaining of which is co-pay via grants from ACOA-AIF and NBIF.

Trainees	2015-2016	2016-2017	2017-2018
Summer student	0	0	1
Master student	4.5	7	7
PhD (c)	2.25	2.5	3.5
Post-doc Fellow	2.5	3.5	3.5
Total HQP	9.25	13	15



“*Connected Voices*” Bouctouche

e-Health / m-Health for a Healthy Heart Initiative

The team led by Professor Michel Johnson from the École de kinésiologie et de loisir, Faculté des sciences de la santé et des services communautaires, Université de Moncton, explored mobile health solutions (e-Health / m-Health). The collaborative research project of \$225,000 brought together the Université de Moncton, Vitalité Health Network, the Collège communautaire du Nouveau-Brunswick (CCNB), the University of New Brunswick (UNB) and the local community, co-funded by Pfizer Canada Inc. and NBHRF, as a Value Demonstration Initiative.

The project assisted and studied over 220 participants over two (2) years, examining the use of mobile technology to manage chronic disease and promote smoking cessation. The project delivered a 12-week face-to-face pulmonary and cardiac rehabilitation program in the Bouctouche

region supported by a distance education program from an inter-professional health team (dietician, pharmacist, kinesiologist, physician, and nurse). ***Connected Voices Bouctouche*** used telephones, smartphones and tablets to help connect patients with their health professionals. We observed that overall, older participants preferred face-to-face and telephone interactions with their interprofessional health team. This held true even if participants had previous experience with communication technology and were offered sessions to help connect. We also noted that, even between the interprofessional team, face-to-face interactions remained the preferred method of communication.



Managing one's health is complex, and there can be several barriers to accessing healthcare. ***Connected Voices Bouctouche*** looked primarily at health literacy and driving (transportation) factors. The ability to understand health information is critical. Low health literacy remains a very strong indicator of low overall health. Part of the research team



evaluated health literacy, preferred learning delivery, attitudes towards learning, numeracy, and lifestyle habits that could impact learning in participants. An interactive tablet based questionnaire with text, pictures, animations, and sound was designed and piloted. Research partners in Ontario helped with the validation prior to use with **Connected Voices Bouctouche** participants. The shorter interactive app was well correlated with longer pencil and paper questionnaires, and could be a valuable tool to assist health-related education and information transfer.

The low health literacy scores observed in many participants remain important barriers to self-management that need to be taken into consideration. New Brunswick still retains a large rural population, and lack of transport has the potential to negatively impact the ability of older adults to access health services.

Several projects examined driving performance and monitoring in various populations of younger and older adults. Many physical, social, and psychological factors related to cardiovascular disease can negatively impact driving performance. However, our research supports the positive influence of cardiac rehabilitation on driving performance. This also has implications for professional drivers (truck, taxi, etc.) who spend long hours sitting and who experience high rates of cardiovascular and metabolic disease. Data on driving habits and perceptions from **Connected Voices Bouctouche** participants continue to be analyzed. A further study on stroke and driving is also planned for the upcoming year.

Connected Voices Bouctouche and its associated projects have generated large data sets that continue to be analyzed. Since 2014, the project has generated 10 publications and



numerous presentations in different disciplines, and has supported undergraduate (6) and graduate (2 PhDs) student projects. Overall, we expect the project to generate over 20 peer-reviewed publications. The project has also generated additional funding and partnership initiatives in driving rehabilitation, physiological monitoring, and education.

In 2015, **Connected Voices Bouctouche** received a “National Connected to the Community Award” from the Canadian Wireless Telecommunications Association (www.cwta.ca).

From the onset of **Connected Voices Bouctouche**, we explored strategies for sustainability with the community. A committee was quickly set up by the town council to look at long-term support for the rehabilitation program. This essentially resulted in a multi-sectorial (community, government, industry, academic) Community of Practice. Thus far, the town of Bouctouche and the communities in Kent County have raised over \$370,000 toward further health research and support for the rehabilitation program. The Vitalité Health Network will also be providing a new regional cardiopulmonary rehabilitation program in the region.



NB Centre for Precision Medicine

A New Facility for the Université de Moncton, next to ACRI, attached to the CHU-Dumont

Recently, the Government of Canada, the Government of New Brunswick and the Université de Moncton (UdeM) announced funding for the New Brunswick Centre for Precision Medicine (NBCPM). This project is a transformative infrastructure for health and biomedical research that will deliver significant R&D impacts as well as positive socio-economic benefits to the province for decades. This new concept research Centre will be New Brunswick's first transdisciplinary health research centre situated in an academic hospital.

Led by the UdeM, in collaboration with its partners, the Atlantic Cancer Research Institute (ACRI), the Vitalité Health Network and the Centre de formation médicale du Nouveau-Brunswick, the Centre will be situated adjacent to the Centre hospitalier universitaire Dr-Georges-L.-Dumont. The proposed 5-story, 40,000 sq.ft. building will consist of leading edge biomedical research laboratories with equipment required to pursue research and innovation in the field of precision and personalized medicine. The facility will also include dedicated clinical research space, an accredited molecular diagnostic laboratory, a data repository and analysis centre, a molecular imaging facility, an animal care facility as well as incubator space for start-ups and biotech collaborators.

The NBCPM will welcome researchers and clinicians from our hospitals together in a collaborative environ-

ment that will be adapted to patient-oriented research. This research will span the spectrum from the discovery of better detection and diagnostic tests to real-time analysis of patient biopsies that will guide optimal decision-making in personalized clinical trials.

Specifically, the Centre will enable further advances in our knowledge of the genomic, proteomic and metabolic changes that occur as a result of disease and in response to treatment. Building on discoveries and intellectual property developed by the research team, the objective will be to improve early detection and diagnosis of disease which will guide more targeted and precise therapies. The concept of personalized medicine will be central to all activities in the Centre. Additionally, access to provincial population datasets will enable researchers to associate molecular knowledge of disease with epidemiological patterns of disease progression and responses to therapy. This access to population-based big data will facilitate the development of a more comprehensive approach that will radically improve patient care decisions and healthcare service delivery, and support health policy decisions.

The timing of this new research Centre is critical. In the Moncton area laboratory space at the UdeM Faculty of Science and ACRI are decades old; both are at full capacity due to the unprecedented growth in the area's health research sector in the last

decade. The infrastructure issue is limiting the teams' ability to recruit new students and staff as well as to receive additional research funding. The NBCPM will allow for continued growth for the next decade or more.

This project will combine the two largest biomedical research groups in the province into one single Centre. Once open, over 20 researchers recruited to Moncton over the last 10 years from around the world will relocate their activities and research teams to the new facility. Additionally, the new space will accommodate clinician scientists from both Vitalité and Horizon Health Networks who wish to collaborate on clinical trials and research projects. From day one there will be approximately 110 research and additional staff that will occupy the new facility. It is anticipated that this number will nearly double in five years.

The lead researchers that will make up the NBCPM all receive peer-reviewed funding from either national and/or provincial research granting agencies, federal programs, charitable health organizations as well as other public and private sources. These funds are used to hire highly qualified personnel (HQP) – undergraduate and graduate students, postdoctoral fellows, research technicians, etc. –, to purchase equipment and supplies, and to disseminate results. When its doors open in 2018, based on the current research activity the NBCPM will operate at 70% of its capacity. Remaining

Funding was announced for the NB Centre for Precision Medicine (NBCPM). This new concept research Centre will be the province's first transdisciplinary health research centre situated in an academic hospital.

space is required to account for anticipated future growth of the research team as well as to allow for incubation opportunities for private sector companies and start-ups and for clinical trial space for pharmaceutical companies. Revenues generated from these sources, as well as fees for companies using the facility will also support operation and maintenance costs.

As New Brunswick seeks to diversify its economic base to include knowledge and innovation it is worthwhile to highlight how the new Centre will contribute to the Province. Last year, UdeM and ACRI supported \$6.2 mil-

lion worth of biomedical research activity making it the largest biomedical research cluster in New Brunswick. Based on the historical growth rate of the existing research team and the additional opportunities presented by this growth-enabling infrastructure, the NBCPM will enable research revenue to rise to over \$12 million after the first five years.

The growth in biomedical research related to the NBCPM will impact the economy and ultimately provide a solid tax-based return on investment of the project's initial establishment costs. The economic impact model predicts provincial GDP contribution will rise to nearly \$15 million by 2023. Labour income will be boosted to more than \$10 million as the total of full time well-paid equivalent jobs increases from the current 110. This estimate does not include secondary effects such as the impact of new spinoff companies or increased non-research related spending.

The economic impact model estimates a more than \$5 million tax boost over the first five years from the incremental biomedical research in large part enabled by NBCPM. Combining this with the taxes generated from the initial construction activity provides a five-year boost in taxes of \$9 million.

In conclusion, it is clear that the NBCPM will enable health R&D in New Brunswick and Atlantic Canada. This unique model will in turn become a magnet for attracting talent and investment and will ultimately improve patient outcomes. Indeed, we believe that this crucial infrastructure will be a transformative cornerstone in the growth of research and innovation in New Brunswick. Construction began in 2016 with the NBCPM being fully operational in 2018.



NB Centre for Healthy Living

A New Facility for the Faculty of Kinesiology at UNB Fredericton

The Centre for Healthy Living will be a three floor, 60,000 sq. ft. facility that will house academic space for teaching and for basic and applied health research. The Centre for Healthy Living has at its core a triad between academic programs, healthy living research and community outreach, and entrepreneurial opportunities. It will facilitate multidisciplinary and interdisciplinary training of highly qualified personnel (HQP) at the undergraduate, graduate and postdoctoral level. The spaces in the building have been designed to promote a culture for collaboration and experiential learning in educating the next generation of health and wellness professionals and clinical researchers. The classrooms are bright and functional adjoining to common spaces for students and faculty to interact.

RESEARCH: The Centre for Healthy Living clusters the Faculty of Kinesiology's research spaces which include the Centre for Recreation and Sport in Society (CRSS); the Cardiometabolic Health, Exercise and Lifestyle Labo-

ratory (CELL); the Occupational Performance Laboratory (OPL); and a Motor Control and Learning Laboratory. The connection of the Centre for Healthy Living with the Richard J. Currie Centre provides a corridor to the Faculty's Andrew and Marjorie McCain Human Performance Laboratory (HPL). This will create a nationally significant research cluster with expertise in community development, community wellness, chronic illness, obesity, fitness, aging, rehabilitation, occupational wellness and ergonomics. The establishment of the research cluster will:

- help develop a highly skilled workforce that will drive innovation, allowing Kinesiology to attract top researchers and train the next generation of innovators, problem solvers and clinicians. For example, the Canadian Chiropractic Research Foundation / NBHRF Research Chair in Musculoskeletal Health will be joining the Faculty in July 2017.
- increase opportunities for collaboration between public institutions

and the private sector, supporting the transfer of innovative technologies and research to market. The Centre will enable UNB to commercialize health and wellness research, creating marketable technologies, therapeutic processes, and models of care; and spinning off new social enterprises.

- enhance UNB's capacity to develop and transfer new knowledge through leading – edge basic and applied research and teaching. The Centre will enhance the University's ability to prepare students for physiotherapy, occupational therapy, chiropractic medicine, ergonomics, medical school and dentistry; and to produce kinesiologists, certified fitness consultants, and professional fitness and lifestyle consultants. The Centre also will prepare students for career paths in policy and program development.
- assist in delivering a broader public benefit: helping governments reduce the cost of health care by generating effective, evidence – based approaches to life – long fitness and disease prevention.



New Brunswick Centres, Institutes and Networks: The Stan Cassidy Centre for Rehabilitation

The Stan Cassidy Centre for Rehabilitation (SCCR) is a specialty, tertiary, Centre equipped and staffed to treat the most complex neurological conditions. These conditions include stroke, brain injury, spinal cord injury, and neuromuscular disorders such as muscular dystrophy, amyotrophic lateral sclerosis (ALS) - Lou-Gehrig's Disease and cerebral palsy. The Centre also provides treatment for the most complex forms of autism spectrum disorder. The goal of SCCR is, by including patients as part of the team, to achieve as much independence and self-direction for the patient as possible. This is done by combining medical and therapeutic skills as well as rehabilitation technologies.

The Research Department at SCCR is led by staff Psychiatrist Dr. Colleen O'Connell, who has been its Chair since 2006.



Dr. O'Connell has been involved in over 40 research studies since she began working at SCCR in 2000, and has over 25 peer-reviewed research publications to date. Dr. O'Connell is



currently the Co-Chair of the Canadian ALS Research Network, and currently holds an NBHRF New Brunswick Clinical Research Scholarship.

Over the past year, SCCR has been involved in 25 research studies, of which 13 were initiated by SCCR staff. There are currently more than 40 staff members at SCCR who are involved in research.

The SCCR Research Department has supervised 8 students over the past year, including 2 from the Dalhousie Medicine NB (DMNB) and 1 from the NBHRF Summer Studentship program.

Among the research studies ongoing at SCCR there are two Canadian patient registries: (1) the Rick Hansen Spinal Cord Injury Registry (RHSCIR) and (2) the Canadian Neuromuscular Disease Registry (CNDR). SCCR became a participating site for

RHSCIR in 2011, and since then there have been 72 participants enrolled locally to add to the growing data of over 5000 participants recruited nationally to date. SCCR has been a member of the CNDR since 2012, with over 100 participants enrolled locally.

SCCR has also formed a close research partnership with the University of New Brunswick, in particular with the Institute of Biomedical Engineering (IBME). SCCR and IBME were recently successful in a Canada Foundation for Innovation (CFI) joint grant application to purchase an Ekso Bionics robotic exoskeleton walking device for use as a research tool. Research staff using the Ekso are excited about the many potential benefits that patients with neurological injuries could receive from early robotic walking following an injury.

Physical Activity and Chronic Disease – The MATCH Project

Dr. Mathieu Bélanger



Project Summary

Dr. Belanger's lab is devoted to developing new knowledge required to improve, test and implement better interventions to address physical inactivity, the most preventable risk factor for chronic disease and mortality in Canada. One of the lab's projects, the "Monitoring Activities of Teenagers to Comprehend their Habits" (MATCH) aims at generating a better understanding of how sport and physical activity participation evolve during childhood and adolescence.

In this regard, the MATCH study is unique in the world since it collects more detailed information than other studies and does so on a much greater frequency. Approximately 1000 students across New Brunswick were recruited for this study. Participants complete self-report questionnaires every four months from grade 5 or 6 until the end of grade 12. The frequent follow-ups are important to enable characterising behaviours specifically during this period of important changes and development.

To complement its quantitative component, MATCH also has a sub-sample of 23 adolescents who take part in individual interviews annually. Parents (or guardians) of students took part in a telephone-administered questionnaire in the first year of the study. Finally, a school environment assessment was conducted for every school in collaboration with school representatives at two different times.

Knowledge Transfer Strategy and Participants Retention

To promote retention of participants and partners and to encourage implementation of findings in practice, MATCH has

developed and adopted a strong knowledge transfer strategy from the beginning. Each year, every participating school receives a personalised school report with data from their students and a newsletter talking about trending topics on physical activity. The MATCH study team also publishes animated videos to communicate gratitude to participants, the schools and the funding agencies. One video also explains some results from the MATCH study to date. These videos and a portion of the annual reports are presented on the MATCH study Facebook Page (www.facebook.com/projectMATCHproject) which is updated frequently.

MATCH has many collaborators that come from different institutions: Université de Sherbrooke, Université de Moncton, University of Toronto, Université de Montréal, Université du Québec à Montréal, University of Ottawa, University of Windsor, Children's Hospital of Eastern Ontario, Carleton University.

Research Results

Here are some results from the first six years, which have already appeared in over a dozen scientific publications:

- People who report taking part in physical activity because they enjoy it, typically take part in more organised physical activity. People who want to be active to improve their skills often take part in group-based physical activity and are more likely to attain the recommended level of physical activity every day.
- There are internal (ex: "I don't have time") and external barriers (ex: "I don't have the equipment") to physical activity but only internal barriers are susceptible to keep youth away from physical activity.
- Active commuting environments helped girls and boys be more active.
- There are theories that say that one needs to have positive social interactions during physical activity as well as positive feelings of competence and finally, feelings of autonomy such as being able to do what you want when you want to. Basically MATCH researchers found that the more these needs were satisfied over time, the more active people were.
- Children who take part in a wide variety of sports are more likely to pursue participation in physical activity as they become adolescents. In contrast, children who specialize into a sport are at greater risk of dropping out of sports when they get older.



Dr. Shelley Doucet & Dr. Rima Azar: NaviCare/SoisNavi

NaviCare/SoisNavi – A NB Navigation Centre for Children with Complex Health Conditions

In January 2017, Drs. Doucet and Azar, in partnership with their post-doctoral fellow Dr. Alison Luke, launched a navigation centre for children with complex health conditions called NaviCare/SoisNavi. The services offered are based on a needs assessment conducted by their team in 2015-2016, which involved over 120 interviews with families, as well as with health, social, and educational stakeholders. The team also did multiple site visits with navigation programs across North America and conducted an environmental scan of services available for children with complex health conditions in NB. The primary aim of the centre is to help facilitate more convenient and integrated care to support the physical, mental, emotional, and social needs of the children and their families. Children are assigned a patient navigator – a role that is relatively new in Canada. The patient navigator, a registered nurse, helps families coordinate access to appropriate services and resources for their children. In addition, the navigator acts as a resource for the child's care team so that the care remains integrated. To help ensure that NaviCare/SoisNavi meets the needs of children and families, they have a Family Advisory Council, which includes five volunteers. These are parents of children with complex health conditions or youth/young adults who have experienced growing up with a complex health condition. They meet monthly or as needed to advise the research team, our staff and the Patient Navigator.

CHILD-BRIGHT: A CIHR SPOR – Chronic Disease Network

A Pan-Canadian research team learned about the navigation project and invited Drs. Doucet and Azar's research team to become a partner in a network application with over 100 stakeholders across Canada to lead an innovative pan-Canadian network named CHILD-BRIGHT (www.child-bright.ca). The aim of this network is to improve life outcomes for children with brain based developmental disabilities and their families. The network is 1 of 5 nationwide projects that are being funded by CIHR under their SPOR Networks in Chronic Disease program. Their network received a \$25M grant over five years,

with \$12.5M from CIHR that was equally matched by other funding partners, including \$250K from NBHRF. They were invited by the research team to be the Atlantic Canadian hub for a clinical trial, which involves addressing whether an online health/transition coach or navigator results in improved transition processes at lower costs in youth 16-18 years of age with neurodevelopmental disorders compared to the standard of care transitioning from pediatric to adult health care systems. Transition is critical for growing populations of youth with lifelong conditions including congenital heart disease, cerebral palsy, autism, and spina bifida.



Caring Near & Far



A multi-province investigation of remote monitoring technologies connecting community-based older adults and their care team

With older adults representing 20% of the New Brunswick population, our province has the fastest aging population in Canada. Therefore, healthy aging strategies and innovations to support seniors' health, wellbeing, and independence, are critical priorities for New Brunswick.

In-home remote monitoring technologies can link clients, informal caregivers, and health care providers with the goal of supporting older adults to



Dr. Paul Peters



Dr. Emily Read

age in their homes. The purpose of this study is to examine the use of remote monitoring technologies in the home as a means of supporting older adults to safely remain in their home and avoiding or delaying higher levels of care. This study will also evaluate the cost effectiveness of remote monitoring as part of a technology-enabled model of home care focused on complex care older adults and family/friend caregivers.

The goal of the study is to test out the effectiveness of remote sensors in real-world conditions. Therefore, participants in the study will be able to choose whether they want to be in the control or intervention group. In the control group clients will receive usual home care services determined in consultation with Social Workers from the Department of Social Development, or other home care services providers. Those in the intervention group will receive usual care *plus* in-home remote monitoring technology that meet their needs. This technology will be provided by CareLink Advantage for up to one year and includes several choices for seniors and their caregivers to choose from. Remote monitoring system options include the ability to remind clients to take their medication and monitor medication use, assess movement within the home (e.g., falls, wandering), and assess eating patterns (e.g., cupboard, refrigerator use). A secured monitoring system provides "notifications" of atypical client behavior to family / friend caregivers allowing the most appropriate

member(s) of the health care team to respond in person or remotely to the needs of the client.

Active recruitment of older adults and their caregivers to participate in the study is expected to happen soon, starting in the Saint John region of the province. To be eligible to participate, seniors must be between the ages of 65-80, have been receiving home care services for at least 2 months, be at risk of requiring higher levels of care, have a family member or friend willing and able to receive notifications from remote sensors on their phone or by email, and be able to read and write in English or French. Caregivers must be at least 19 years old, be willing and able to receive notifications from remote sensors on their phone or by email, and be able to read and write in English or French.

This CIHR and NBHRF-funded study is being led by Dr. Lorie Donnell and Dr. Sandra Regan from the Arthur Labatt Family School of Nursing at Western University in London, Ontario. This research will take place within three provinces (NS, NB, ON) in Canada.

The New Brunswick arm of the project is being conducted through collaboration between the Department of Social Development, CareLink Advantage, and two university researchers: Dr. Paul Peters, Associate Professor in Sociology and Economics, and Dr. Emily Read, Assistant Professor in the Faculty of Nursing, both at the University of New Brunswick in Fredericton.

Interdisciplinary Research Chair in Children and Youth Mental Health

Dr. Jimmy Bourque



A NEW RESEARCH GROUP

Scientific Animation

Conferences – Seminars – Training –
Journal Clubs – Mentoring

Research Areas

Epidemiological Research – Clinical Research –
Public Administration Research

Goals

- Influence interventions and policies through better understanding of children and youth mental health in New Brunswick.
- Contribute to capacity building in research on children and youth mental health in New Brunswick.
- Mobilise new knowledge on children and youth mental health with partners in health promotion, service provision, and policymaking.



*Jimmy Bourque
Chair Holder*



*Danielle Doucet
Research Coordinator*

The Université de Moncton was awarded a new research chair in 2016-2017: the Interdisciplinary Research Chair in Children and Youth Mental Health. This privately-funded Chair is headed by Dr. Jimmy Bourque, PhD, of the Faculty of Education, and employs a full-time research coordinator, Danielle Doucet. Funds have been contributed

by the New Brunswick Health Research Foundation, the Centre de formation médicale, and the Université de Moncton.

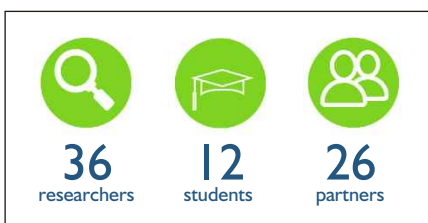
The Chair's goals are to:

1. Influence interventions and policies through better understanding of children and youth mental health in New Brunswick;
2. Contribute to capacity building in research on children and youth mental health in New Brunswick;
3. Mobilize new knowledge on children and youth mental health with partners in health promotion, service provision, and policy-making.

The Chair led to the creation of a research group, the Interdisciplinary Research Group on Children and Youth Mental Health.

The group currently consists of 36 researchers, 12 students, and 26 government and community partners. Research areas include epidemiological research, clinical research, and public administration research.

Some of the scientific animation activities offered by the research group are conferences, seminars, training, journal clubs, mentoring for students and new researchers, and a news bulletin.



Diabetes Research Chair

Dr. Neeru Gupta



New Brunswick
Health Research
Foundation



Fondation de la
recherche en santé
du Nouveau-Brunswick

Dr. Neeru Gupta, an associate professor of Sociology at the University of New Brunswick, was appointed as the inaugural chairholder of the Canadian Diabetes Association – New Brunswick Health Research Foundation (CDA-NBHRF) Diabetes Research Chair. Prior to joining the UNB faculty in 2016, she spent six years as senior epidemiolo-



gist at the New Brunswick Department of Health, and five years as analyst at the World Health Organization in Geneva (Switzerland). – www.unb.ca/fredericton/arts/departments/sociology/people/gupta.html

Dr. Gupta's research vision for the five-year term of the chair is a reduced burden of diabetes through new research evidence to inform actions for prevention and management. The focus here is not biomedical or clinical research to find better treatments or even a cure, but the effectiveness and efficiency of the healthcare system and other social programs to improve the health of the population and vulnerable groups. In a context where an estimated 1 in 10 New Brunswickers is living with diabetes, sound evidence is needed on what actually works to improve the physical, mental and social well-being of persons with diabetes while ensuring sustainability of the healthcare system.

The work involves leading multi-disciplinary health research, data analytics and knowledge exchange to track the progression of diabetes in the population as well as related risk factors, impacts, coexisting health conditions and social determinants. The research approach leverages the multiple data sources newly available at the New Brunswick Institute for Research, Data and Training (NB-IRDT). – www.unb.ca/fredericton/arts/nbirdt/

Dr. Gupta is currently working with UNB researchers and graduate students as well as stakeholders at the New Brunswick Department of Health to advance the research agenda to support evidence-informed policy decisions. Actions to reduce the burden of diabetes are likely to have a positive impact on other chronic health conditions with shared risk factors and on overall healthcare costs.



From L to R: Dr. Bruno Battistini, President, CEO & Scientific Director NBHRF; Hon. Victor Boudreau, Minister of Health, GNB; Jake Reid; Senior Leader, Government Relations, CDA; Dr. Neeru Gupta, CDA-NBHRF Research Chair in Diabetes, UNB; Dr. David Burns, VP Research, UNB; Dr. Eddy Campbell, President, UNB; Hon. Stephen Horsman, Deputy Premier, Minister of Families & Children, Minister of Military Affairs

Dr. Thomas Pulinilkunnil



Early Career Investigator Scholar Award and Grantee

Role of the Lysosome Nutrient Sensor Transcription Factor EB in Diabetic Heart Disease

Obesity, diabetes, and their impact on the heart are problems too many New Brunswickers face. They are also problems that Dr. Thomas Pulinilkunnil wants to better understand.

"The question is why are we so susceptible to diabetes and obesity complications, and why the heart specifically," he said.

Pulinilkunnil began his career as a junior scientist in India with a masters in pharmacology. A desire to learn more led him to study with some of the best and brightest in his field at the University of British Columbia, Harvard Medical School and the University of Alberta.

Five years ago, he was one of the first researchers hired at Dalhousie Medicine (New Brunswick), located on the University of New Brunswick Saint John campus. Today, the program has four researchers, around 20 staff and has set its sights on transforming Saint John into the hub for cardio-metabolic research.

"We recently found something very interesting in the lab," said Pulinilkunnil. "Our body generates waste. At the micro level, each cell that generates waste is taken care of by a very important organelle called lysosome." In recent years it has been discovered that in many disorders the lysosome has been compromised, so the waste is strewn across the cell. In diabetes and obesity, the waste accumulates in the heart cells, causing the heart to malfunction. "That is our hypothesis and we have some preliminary evidence to support this hypothesis," he said.



Based on those findings, Pulinilkunnil applied for and was awarded a 3 year operating grant from Diabetes Canada. He was also awarded the Diabetes Canada Early Career Investigator Scholar Award for a duration of five years. *"This was the first grant ever given for diabetes research in New Brunswick."*

The second arm of his research, funded by the National Sciences and Engineering Research Council of Canada, is based on understanding how proteins, specifically branched amino acids, move about in the cell. He believes the answers they find there will help them be better able to study metabolic disease.

Funding is a key component of research and Pulinilkunnil said the New Brunswick Health Research Foundation played an important role

in getting his research where it is today. *"That type of support is absolutely essential for the investigator to build a program that enables them to get larger funding from the national agencies."*

Pulinilkunnil is grateful for the opportunity to do this work. *"You get up in the morning and think, 'What question am I going to ask today in my research?' And how will I go about answering that question with the help of my crew," he said. "My greatest inspiration is that I get to see the science transform people's lives."*

He's also inspired by the people he hopes to help, those suffering from diabetes and obesity. *"In my own family, for example, my mom, her four siblings are all diabetic. I just cannot escape it because it's in my genetics. All that inspires me to keep going."*

Dr. Tracey Rickards

CIHR-Embedded Clinician Researcher Awardee

Vulnerable and Priority Populations' Health

Dr. Tracey Rickards is working in the community to make health care better. She is an embedded clinician researcher at the Fredericton Downtown Community Health Centre, a position funded by the Canadian Institute for Health Research and the New Brunswick Health Research Foundation.

“The intention is to look at research that improves primary health care,” she said, “taking into account things like poverty, education level, early childhood development, culture, and race.”

Her research focuses on improving health-care outcomes for vulnerable populations and currently includes four projects:

I. The first is an evaluation of the role of the nurse practitioner in New Brunswick. Nurse practitioners have been in New Brunswick since 2002, but no one has asked whether they are improving the health-care system and saving the system money. To answer these questions, Rickards and a nurse practitioner conducted a survey of nurse practitioners and clients. They are now analyzing the results.

II. Another project, *Diabetic Soles*, brings together footcare and mental health care. For this project, researchers partnered with Risteen's Landing and Evelyn Grove Manor to connect with isolated seniors.

“We said, let's provide footcare to 20 seniors once a month for five months and let's also do a little bit of education and counselling around what sorts of things would help them to feel

less isolated,” said Rickards. “What we're hoping to demonstrate is how important footcare as an outreach service is for some of these really isolated seniors.”

III. A third project got underway this summer and involves Rickards and a first-year medical student, who will look at the influence stable housing has on health outcomes.

IV. The fourth project will be conducted by a nurse and a respiratory therapist and is based on their pilot project. Together, the nurse and respiratory therapist – overseen by a primary care provider – will guide the care of non-complicated chronic obstructive pulmonary disease (COPD) clients.

“What they discovered in their pilot project was it really decreases the number of times people with COPD end up waiting at the emergency room or in the after-hours clinics and their quality of life is better because they're being closely watched and things aren't left to get out of control.”

Over the course of her career, Rickards has done many different kinds of nursing, but her heart has always been in the community. “My parents were tree-hugger activists. They were always pushing for how we can make things better,” she said. “As a nurse, I can do this and this and this and make things better for people, or I can change the way this is done.”

Rickards likes that every day is different and that she works with colleagues who are passionate about helping others.

“We really do feel like we belong to something unique and special. I think the fact that (the clinic is) a partnership between UNB and Horizon Health Network is the perfect mix of both worlds. We're getting together the educational and research opportunity, but we're also doing the health-care piece and being supported by a health-care system.”



Dr. Carole Goodine

NCE-AGE-WELL Post-Doctoral Fellow

A Polypharmacy App to Improve Outcomes for Seniors in Long Term Care

These days there seems to be "an app" for just about everything, which could be good news for polypharmacy. Carole Goodine, the Age-Well NBHRF Postdoctoral Fellow, explains that polypharmacy is the use of four or more medications and is problematic for seniors.

"Because they're older, they have lots of medical conditions and with each medical condition comes another medicine. That doesn't necessarily mean that they're receiving poor care," said Goodine. "What it means is that every time we add on another medication, it increases their risk for a drug interaction or an adverse drug reaction."

As well, as people age, their bodies change and they become more sensitive to the side effects of medications. These effects can be subtle and add up over time, and they are different for everyone.

Currently there are no standardized processes for monitoring and assessing medication use in New Brunswick long-term care homes.

Although several tools have been developed to identify medications associated with increased risks in older adults, compre-

hensive medication reviews are time consuming and the tools are not routinely used.

That's where the research being done by Goodine's group comes in. "What we're trying to achieve is a better way to monitor the effects of medications and particularly focus in on those that have higher incidence of side effects in older adults," she said.

They want to ensure pertinent questions are being asked: "Is this medication still needed? Is it still as beneficial as it was when it was started? Can it be stopped or reduced?", and they want to leverage technology to do this by designing what is called a polypharmacy app.

"It's really a computer application to identify these high-risk medications and the seniors that are taking them, then provide the physicians information to stimulate that conversation," said Goodine.

The goal of the project is to improve the health of seniors in long-term care and implement a quality control system to track what happens when medications are adjusted or discontinued. A handheld app for residents and families will also be developed to complement the computer program.

Goodine has been a pharmacist since 1990 and through past experience working in long-term care has seen firsthand the impact when you start to reduce some medications.

"I think it's really important work that needs to be done. There are lots of challenges, it's not going to be easy to figure out the best way to do it, but any improvement we can make is positive," she said.

The New Brunswick Health Research Foundation is helping fund the two-year project. Though it's still in the early phases, it has the potential to be so rewarding.

"As the researcher, I'm probably not going to see the benefits to the residents," said Goodine, as her group is developing the tools for health-care providers to use. "I'm maybe going to see the benefits to using the tools and know that somewhere along the line there is a person that's going to benefit."



Dr. Étienne Hébert Chatelain

Alzheimer Society of Canada / Brain Canada Foundation Grantee

Role of mitochondrial c-Src kinase in Alzheimer's Disease

In a lab at the Université de Moncton, a team of researchers led by Dr. Étienne Hébert Chatelain is studying something small and powerful.

“Mitochondria are the cellular powerhouses. They are able to take the energy that is contained in nutrients and transform it into ATP (adenosine triphosphate), which is a kind of fuel for our cells,” said Hébert Chatelain.

That is just one example of the important cellular processes mitochondria are capable of.

“In the lab, we are studying the fundamental physiological functioning of mitochondria and then when we discover new mechanisms that are able to regulate mitochondria, we check, we examine, we evaluate the role of these pathways in the development of different mitochondrial related diseases, such as cancer, metabolic diseases, neurodegenerative diseases like Alzheimer and so on,” he said.

Hébert Chatelain first became interested in mitochondria when he worked in a lab while doing his bachelors degree.

“I discovered even at that time some people were proposing mitochondria were major agents of the aging process,” he said. That led to his master's project, where he focused on trying to understand how mitochondria adapted to different temperatures using several animal models, from fruit flies to sea worms. When he finished his masters, he wanted to shift his focus to research on human diseases, so he moved to France.

“I started to work on the subject I'm working on now because over there,

there was much more experience in mitochondrial related disease than we have, or at least that we had by that time in Canada,” said Hébert Chatelain. “For me, studying mitochondria was interesting because it's kind of a central hub in the cells. If everything goes well with the mitochondria, the cells go well.”

The research he is currently doing is helping to develop fundamental knowledge to better understand how our cells are working, which they hope will eventually lead to discoveries of treatments for different diseases.

“I just love the work in research,” he said, which can encompass everything from working in the lab to transmitting his passion for research to those he works alongside. “It's really for me a fantastic job because you have to discover every day.”

He compares it to being a detective. “It's really like you have an open question, you make some experiments, you try to answer it or address these questions, then you discover something you were really not expecting and it brings you other questions, and so on and so on and so on,” said Hébert Chatelain. “It's a never-ending story. That's what I think is most fascinating in this job.”

The New Brunswick Health Research Foundation plays an important role in his work, offering support for students, operating grants and more.

“They organize the NBHRF meeting each year which allows us to meet other researchers, which is good for me because I'm not from here and I still don't know many people in New Brunswick. It's the kind of thing that can help us develop a network.”



Dr. Jalila Jbilou

MOVEMBER Foundation of Canada Grantee

Mind-The-Heart

Dr. Jalila Jbilou's interest in doing research on men's health was motivated by a couple of startling facts.

"One is that men in New Brunswick and in Canada and even all over the world, they live seven to 15 years less compared to women," she said. "When a girl and a boy are born, the boy begins his life with a handicap of seven to 15 years less."

On top of that, men die younger than women – especially in New Brunswick. "Here we have an indicator that is called PYLL or **potential years of life lost**. Men in New Brunswick compared to women in New Brunswick, compared to women and men in Canada, are dying younger," she said. "We are losing more PYLLs compared to the rest of Canada. We're losing double the number of years in men compared to women in New Brunswick."

These numbers and what they mean for men were the starting point for Jbilou's interest.

"Moreover, I have a clinical background, I'm a medical doctor by training and I used to have men in my consultation, they usually come when it's too late. While I'm working with women to prevent, with men I'm treating complications," she said. "And we see it at the hospital. Men are using emergency rooms more often compared to women, they have longer stays in hospital, they have higher rates of non-communicable chronic disease – the disease that

we can prevent, such as cardiovascular disease, diabetes, COPD. Moreover, new statistics have come out recently on suicide rates, and it's three times more in men compared to women."

Yet we're not talking about these numbers and what they mean for our society. "In clinics, we know how to talk to women, but we don't know how to talk to men. We usually adopt what we call the engendered approach. It's much more a one size fits all approach, while research and health systems are promoting person-centered and individualized care."

This needs to change, and Jbilou hopes her research will help. Her project is called Mind-The-Heart and is funded by the MOVEMBER Foundation of Canada and the New Brunswick Health Research Foundation.

"This project's overarching aim is prevention, early detection and treatment of mental health issues such as depression, anxiety and PTSD in men who recently experienced an acute coronary syndrome, which is a severe cardiac event like a heart, stroke, or cardiac arrest," she said.

The participatory/action-based research project is being implemented in New Brunswick, Quebec and Ontario thanks to \$3 million from the MOVEMBER Foundation of Canada, with a further \$450,000 from the New Brunswick Health Research Foundation in support of the New Brunswick project.

Mind-The-Heart is a three-year project with three major components. "One is raising awareness in the community and at workplaces about common mental illness in men in general and in cardiac men more specifically," she said. "As an individual, we can do small things to reduce our risk, and as a community, we can support each other, be there to talk about mental illness, be sensitive to small red flags that we can see in a colleague, an employee, a friend, or a family member. Creating such social safety net is the cornerstone of the Mind-The-Heart interventions aiming to reduce the burden of mental illness."

The project has a clinical component, as well. In New Brunswick, Jbilou is implementing non-pharmacological therapies for men in need of cardiac care as part of a pilot project at clinics in Saint John and Moncton.

"I expect to enroll 1,000 men during this year and follow them for 12 months. This is to bring evidence on this model of care and show how easily it can be implemented and delivered at no added cost," she said. "If we're able to show positive results and especially cost-effective interventions, we expect to scale up the project and have it delivered in the whole province."

The clinical component is linked to the third component, which is training health professionals to ensure that the intervention is well implemented. This is what Jbilou is doing now.



While I'm working with women to prevent, with men I'm treating complications. And we see it at the hospital. Men are using emergency rooms more often compared to women, they have longer stays in hospital, they have higher rates of non-communicable chronic disease.

“Usually, when men have a cardiac event, for them it's like their life stops, while it is the total opposite. They are survivors and have a new chance to live, but the transition is not done effectively, so they are not aware of all the things they still can do and how they can do them,” she said. “The health system is seeing them as a weak heart while they are still strong men — strong with their personalities, strong with their histories, strong with their accomplishments, and strong with more years to come ahead.”

The project recently began its second year and Jbilou is already seeing positive changes.

“The people I'm working with for nearly a year, their discourse is changing,” she said.

The health professionals are telling her they are no longer viewing their male patients in the same way. They are asking them more questions and are digging deeper when they say everything is OK.

“They're finding out that OK was only the tip of the iceberg,” she said.

Jbilou is passionate about her research, admitting that being a doctor and helping others has been her dream since she entered medical school. Now that she is dedicating her time to health research, her work has turned out to be even better than she imagined.

“Every day for me is a battle, but every day I go back home, I feel like I won this battle because I did something for men, I did something with real people for real people. My projects are giving voices to numbers and that is how epidemiological statistics should be understood. Together with men, we write the individuals' stories that are underlying these numbers to better inform clinical practices and health-care services,” she said.

Every day she gets to see how she is making a difference. “You see that you leave footprints in your community. That's what makes every single day a special day.”

Newest Health Research Recruits in New Brunswick



Dr. J. R. Jocelyn
PARÉ,
MSM, B.Sc., Ph.D., FCIC
ACRI



Dr. Emily A.
READ,
RN, CPT, PhD
UNB-Nursing

Dr. Tyler
BANCROFT,
BA, MSc, PhD (WLU)
STU-Gerontology

Dr. J. R. Jocelyn Paré, MSM, joined the Atlantic Cancer Research Institute (ACRI) in June 2015 after being awarded a 5-year New Brunswick Innovation Research Chair in Medical Technologies (http://nbif.ca/en/portfolio/jr_jocelyn_pare/).

His research and development activities focus on cancer treatment and detection. His work aims at furthering the understanding of the fundamental aspects and the underlying principles of microwave-assisted ablation and broadening its applicability to currently untreatable tumours. He believes that this knowledge will provide additional benefits and features for microwave-assisted ablation. Shorter recovery times characterize this approach. Together, these factors should lead to increased use of the technology along with the associated increased market penetration. Significant economic impact on the health system is also expected.

Dr. Paré has secured microwave ablation equipment unavailable in New Brunswick until now. His laboratory houses a number of unconventional tools used to farther understand and characterize the necrotic processes that occur under ablative conditions. While focusing on cancer, the applications are also shared in other medical fields that include atrial fibrillation, coagulometry, as well as intelligent textiles to be used in the medical field. The main objective is to create human resources and infrastructure capacity that will make New Brunswick a leader in that area.

Research shows that in any given year Canadian nurses are twice as likely to experience a major depressive disorder as workers in other occupations with higher rates among those working outside of hospitals. Yet, the mental health and wellbeing of nursing home employees has received little attention until recently and studies have focused primarily on nursing staff only.

To support employee health and wellbeing, many organizations, including all nursing homes in New Brunswick, offer Employee and Family Assistance Programs. Initial evidence shows that these programs can be an effective intervention for depression*, however, the extent to which Canadian nursing home employees with depression are using these programs is unknown.

Funded by Healthy Minds Canada, Dr. Read is leading a research study with Dr. Sue O'Donnell (UNB Nursing), Dr. Patrick Bruning (UNB Business Administration), and Jennifer Donovan (York Care Centre) that aims to understand NB nursing home employees' experiences with their workplace Employee and Family Assistance Program with a particular focus on its effectiveness for early identification and treatment of depression.

* *References available upon request*

Dr. Tyler Bancroft's area of research is on human memory; primarily, on the ability to control what is encoded into memory.

"I use experimental and theoretical techniques from both neuroscience and psychology," said Dr. Bancroft. "At the moment, I am nearing the end of several basic research projects."

These research projects include theoretical modeling of encoding control in long-term memory, theoretical modeling of serotonergic communication in the Merkel disc, ability to control the encoding into long-term memory of complex, naturalistic information, and genetic influences on memory encoding control. He is also in the process of establishing a research project on memory encoding control in chronic disease populations.

Dr. Bancroft intends to begin with diabetics as they are an easily-accessible group who have previously been shown to suffer some cognitive issues related to the disease.

8th Annual Health Research Conference

Patients at the Heart of Health Research



Speakers and panelists of Development of the Health Research Enterprise in New Brunswick. From left to right: Dr. Bruno Battistini; Mr. Bill Tholl, President & CEO, HealthCareCan and H10; Dr. Rodney Ouellette, President & Scientific Director, ACRI; Dr. David Burns, VP Research, UNB; Dr. Edouard Hendriks, VP Medical, Academic & Researcher Affairs, HHN; Mr. Russell Williams, VP Government Relations & Public Policy, Diabetes Canada



Keynote speaker Dr. Norman Campbell on the topic of Unhealthy Diets, with Dr. Ansar Hassan, Conference President



Minister of Finance, Dr. Cathy Rogers and NBHRF Board Chairperson Monique Imbeault along with Drs. D'Orleans-Juste and Battistini announce the 2016 NB Young Health Researcher of the Year



The traditional family photo of dedicated attendees in the last hour of the last day of the 2016 New Brunswick Health Research Conference held in Saint John, NB

ANNUAL CONFERENCE IN NUMBERS:



181
Registered
Attendees



20
Companies
Attended



29
Institutions &
Health Charities
Represented



55
Poster
Presentations



8
Plenaries
& Workshops



4
Keynote
Speakers

CONFERENCE SPONSORS:



4th Gala of Excellence – Young Health Researcher of the Year

Congratulations to Dr. Jonathan Sensinger

Associate-Professor in Electrical & Computer Engineering and
Associate-Director at UNB-IBME / Institute of Biomedical Engineering

The Gala Banquet celebrated 16 clinicians active in health research. At the end of a national peer-review process, Dr. Sensinger was selected as the
2016 New Brunswick Young Health Researcher-of-the-Year

Dr. Sensinger's team pursues research to aid persons with a physical deficit, such as a missing limb or a spinal cord injury. He designs prosthetic devices and exoskeletons, with an emphasis on clinician-friendly, lightweight, rugged designs. His team has recently focused on the interaction between humans and these machines, trying to develop simple mathematical models that explain the human's perspective in interacting with autonomous robotic devices.

In upper limb prostheses, this focus has resulted in a set of actionable outcome measures that can be used by clinicians to identify the bottleneck in a given user's performance, and provide better devices or training depending on that bottleneck. These outcome measures are being funded by international agencies such as DARPA, and being used as part of an international collaboration.

In lower limb exoskeletons, this focus is geared towards designing control strategies that enable a person to walk quickly and naturally, but without fear of falling over when they encounter unanticipated obstacles in real-life environments.

Dr. Sensinger strives to transition his technology to clinical practice. He is a co-founder of a successful start-up company, Coapt Engineering LLC, who can trace its heritage back to UNB, and he actively pursues patents and tech-transfer to enable his new advances to improve the lives of persons with impairments.



NEW INVESTIGATORS
YOUNG MINDS.
2016 NEW FINDS.



PRESENTING THE TOP 16

Re-Inventing The Future of HealthCare



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Total Allocated and Leveraged Funds into the New Brunswick Health Research Enterprise in 2016-17

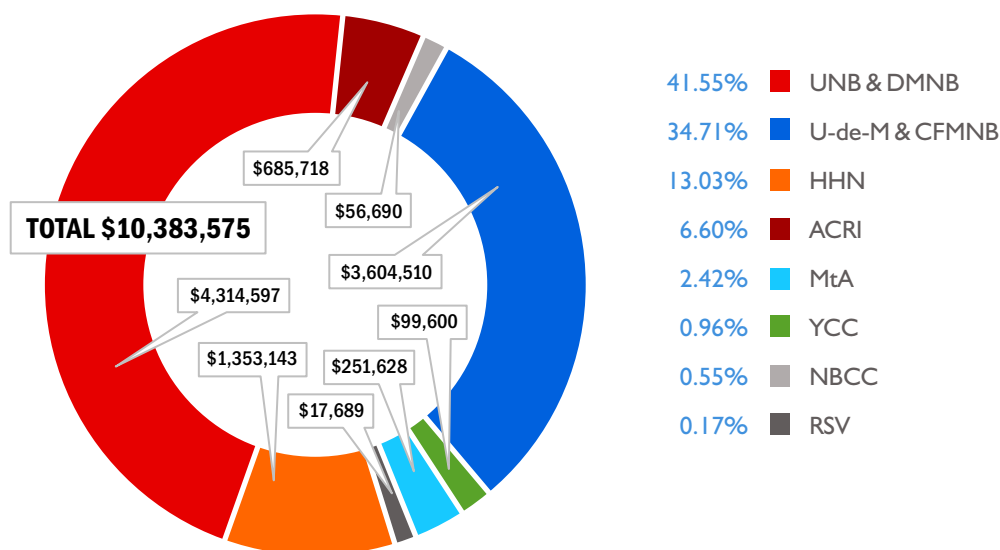
The table below presents the revenues and allocated funds by NBHRF and partners. Funds are invested via two categories: Salary Awards & Operating Grants.

Financing Profile		2015-16	2016-17
A	Funds received from GNB		
	GNB-RDC (Total Development Fund)	\$ 3,450,000	\$ 3,484,040
	GNB-DoH (Fund for Research)	\$ 400,000	\$ 400,000
	GNB-DSD (Wellness Research Fund)	\$ 200,000	\$ 0
	TOTAL	\$4,050,000	\$ 3,884,040
		(\$5.40 per capita)	(\$5.20 per capita)
B	NBHRF Directed Funds INVESTED in Salary Awards and Operating Grants (see NOTE below)	\$2,683,963	\$ 2,736,165
C	Additional Funds Matched and/or Leveraged through partnering with NBHRF		
	Federal Tri-Councils:	\$ 1,487,097	\$ 1,506,073
	CIHR	\$ 1,487,097	\$ 1,506,073
	NSERC	\$ 0	\$ 0
	SSHRC	\$ 0	\$ 0
	Canada Foundation for Innovation (CFI)	\$ 0	\$ 104,620
	Canada Research Chair (CRC)	\$ 0	\$ 100,000
	Networks of Centres of Excellence (NCE)	\$ 0	\$ 93,264
	Health Charities & Foundations	\$ 1,111,139	\$ 1,838,267
	Private Sector	\$ 861,769	\$ 857,993
	Various Other Public Sector	\$ 148,250	\$ 537,000
	TOTAL	\$3,608,255	\$ 5,037,217
D	Total Funds invested as Salary Awards and Operating Grants by NBHRF and PARTNERS (B+C)	\$6,292,218	\$ 7,773,382
E	Total Funds raised as Salary Awards and Operating Grants by New Brunswick Health Researchers by Themselves (see Table 15 for details)		
	Federal Tri-Councils:	\$ 1,198,413	\$ 1,248,267
	CIHR	\$ 229,163	175,951
	NSERC	\$ 969,250	1,039,621
	SSHRC	\$ 0	32,695
	Canada Foundation for Innovation (CFI)	110,722	50,000
	Networks of Centres of Excellence (NCE)	\$ 0	\$ 0
	Health Charities & Foundations	\$ 1,316,398	\$ 1,311,925
	TOTAL	\$2,625,533	\$ 2,610,192
F	Total Funding invested into the New Brunswick Health Research Enterprise	\$ 8,917,751	\$10,383,575
G	NBHRF expenditures		
	Administrative salaries & benefits	\$ 237,468	\$ 245,588
	Research programming salaries & benefits	\$ 195,730	\$ 225,868
	Balance administration	\$ 386,979	\$ 344,406
	TOTAL	\$ 820,177	\$ 815,862
	% of A	20.3 %	21.0 %
	% of D	13.0 %	10.5 %
	% of F	9.2 %	7.9 %

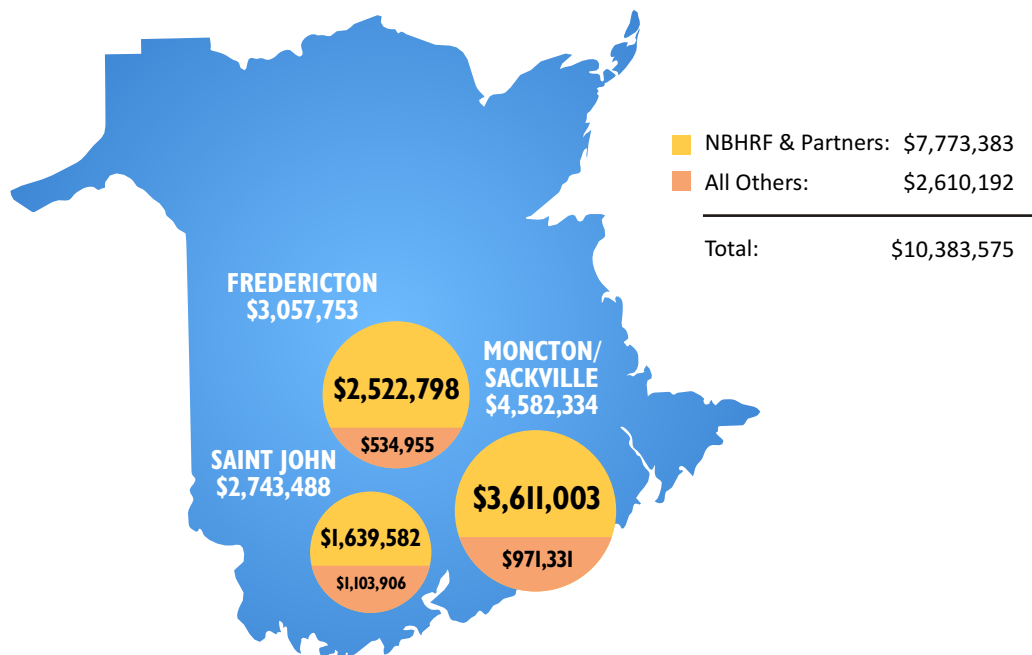
NOTE: The reduced 4.5% difference between the sum of funds invested hereby in this table (\$2,736,165) and the value in the verified financial statements (\$2,864,203) is attributed to revenue and expenses recognition, relative to the return of funds from previous year.

Distribution of Health Research Funding across New Brunswick

Profile of total Health Research Funding in New Brunswick



Total Funds Invested in the New Brunswick Health Research Enterprise and in New Brunswick "BioMed" Cities



Health Research Programs (HRP) / SALARY AWARDS

2016-17 SUMMER STUDENTSHIPS

Student	Supervisor	Affiliation	Project Title	Pillars	Areas	NBHRF Funding
Devin LeBlanc	Dr. Martin Senechal	UNB-F	Plasma Irisin Secretion in Youth: Is Exercise Intensity Important?	1	Obesity	\$6,592
Khoi Dao	Dr. T. Puliniikunnil	DMNB / UNB-SJ	Role of branch chain amino acid metabolizing enzyme in myocardial insulin resistance and glucolipotoxicity	1	Diabetes	\$6,592
Luke Duffley	Dr. T. Puliniikunnil	DMNB / UNB-SJ	Role of Amino Acid Metabolizing Enzymes in Triple Negative Breast Cancer	1	Cancer	\$6,592
Elise Vaillancourt	Dr. Anthony Reiman	HNN - SJRH / UNB-SJ	Investigating the Role of Exosomes in Myeloma Disease Progression	1	Cancer	\$6,592
Jason Chang	Dr. Erik Scheme	UNB-F	A Comparison of Quality Assessment Strategies for Surface Electromyography	3	Mobility	\$6,592
Ben Tremblay	Dr. J. Sensinger	UNB-F / IBME	Self-aligning powered hip orthosis: co-optimization of passive and active joints	3	Mobility	\$6,592
Sam Campbell	Dr. J. Sensinger	UNB-F / IBME	Development of an assistive control strategy for a powered orthosis	3	Mobility	\$6,592
Ricarda Konder	Dr. Sasha Mullally	UNB-F	Therapeutic Craft in the Sanatoria: creativity, productivity and early occupational therapy, 1909-1919	4	Occupational Health	\$4,944
Alissa Moore	Dr. Carmen Poulin	UNB-F	Healthy or not? The perils of firefighting for women	4	Occupational Health	\$6,592
Jacob Leger	Dr. Luc Boudreau	U de M	Modulatory effects of cell-derived microparticles on immune cells	1	Cancer	\$6,592
Patric Page	Dr. Sandra Turcotte	U de M	The role of VHL-regulated miR-382 and miR-2355 in Renal Cell Carcinoma	1	Cancer	\$6,592
Sarah Wilson	Dr. Karen Crosby	MtA	The impact of stress on synaptic transmission in the rat dorsomedial nucleus of the hypothalamus	1	Obesity	\$6,592
Erin Steeves	Dr. Karen Crosby	MtA	Effect of intra-hypothalamic administration of corticosterone on food intake in rats.	1	Obesity	\$6,592
Forrest Gallagher	Dr. S. Westcott	MtA	Embedded Clinician Research Assistant: Improving Health Outcomes of Vulnerable Populations	4	Vulnerable Population Health	\$6,592
Jeremy Slater	Dr. C. O'Connell	HNN-SCCR	Spinal Cord Injury Knowledge Mobilization Network	3	Mobility	\$4,944
Candice Dude	Dr. Tracey Rickards	UNB-F	Bioactive Gallium Compounds: The Undiscovered Country	1	Cancer	\$4,944
TOTAL						\$100,528

2016-17 GRADUATE STUDENT HEALTH RESEARCH AWARDS

Graduate Student	Supervisor	Affiliation	Project Title	Pillars	Areas	NBHRF Funding
Candace Colpitts - MSc Studentship	Dr. Amirkianoosh Kiani	UNB-F	Enhancement of the Biocompatibility of Silicon using Laser Texturing for biosensors, bio-MEMS and bionic devices	3	Mobility	\$17,000
Camille Champigny - MSc Studentship	Dr. Mathieu Bélanger	U de M / CFMNB	Étude pilote randomisée explorant l'innocuité et l'effet synergique d'un traitement combiné lovastatine/minocycline sur le comportement des individus avec le syndrome du X fragile	1	Cognitive Impairment	\$17,000
Sarah Balcom - PhD (c) Studentship	Dr. Shelley Doucet	UNB-SJ	All Together Now: An Exploration of Professionalism and Collegiality between Practical and Registered Nurses	3	Nursing	\$24,500
Lyndsay Crump - PhD (c) Studentship	Dr. Diane Lachapelle	UNB-F	The impact of chronic pain on relationship building skills	4	Psychology	\$2,000
TOTAL						\$60,500

2016-17 MSSU STUDENT HEALTH RESEARCH AWARDS

Student	Supervisor	Affiliation	Project Title	Pillars	Areas	NBHRF Funding	CIHR-SPOR-Support Unit Leveraged Funding	Total Funding
Hepsi Swarna - MSc	Dr. Weiqiu Yu	UNB-F	Conduct Disorder among Low-Income Children in Canada: A Focus on Childhood-Onset Conduct Disorder	4	Mental Health	\$8,500	\$8,500	\$17,000
Brittany Rioux - MSc	Dr. Martin Senechal	UNB-F	Association between Outdoor Time Physical Activity and Metabolically Healthy Obese Youth	4	Obesity	\$8,750	\$8,750	\$17,500
Brent Cruikshank - MSc	Dr. Ted McDonald	UNB-F	The health outcomes and health service use of immigrants in New Brunswick: an investigation using linked administrative data	3	Health Services	\$8,500	\$8,500	\$17,000
Janet Forsyth - PhD(c)	Dr. Ted McDonald	UNB-F	An integrated health sector information framework for better health sector decision support and big data analytics, with illustrations from New Brunswick and Ontario, 1991-2015	4	Data	\$10,000	\$10,000	\$20,000
Dr. Sherif Eltonsy - PDF	Dr. Mathieu Bélanger	U de M / CFMNB	The impact of metformin and physical exercise interaction on HbA1c, lipid profile, functional capacity and micro and macrovascular patient-oriented outcomes	2	Obesity	\$25,000	\$25,000	\$50,000
Dr. Patrick Abi Nader - PDF	Dr. Mathieu Bélanger	U de M / CFMNB	Predictors of Adolescent Physical Activity	4	Obesity	\$25,000	\$25,000	\$50,000
Dr. Anne Dezetter - PDF	Dr Ann Beaton	U de M	Coûts et bénéfices des services de santé mentale auprès des jeunes du Nouveau-Brunswick, dans le cadre du programme ACCESS	3	Mental Health	\$25,000	\$25,000	\$50,000
TOTAL						\$110,750	\$110,750	\$221,500

2016-17 BHCRI SALARY AWARDS

Graduate Student	Research Supervisor	Affiliation	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Jordan Bartlett, Summer Student	Dr. Thomas Pulinilkunnil	DMNB / UNB-SJ	Role of BCAA Signaling and Metabolism in Breast Cancer	1	Cancer	\$3,250	\$3,250	\$6,500
Elise Vaillancourt, Summer Student	Dr. Anthony Reiman	HHN-SJRH / UNB-SJ / DMNB	Lentiviral-mediated Silencing of Transcription Factor Oct2 as a Potential Treatment for Multiple Myeloma	1	Cancer	\$3,250	\$3,250	\$6,500
Wendenmi T. M. Dao, Summer Student	Dr. Pier Morin	U de M	Deciphering the Role of the lncRNA Hotair in Glioblastoma Multiforme	1	Cancer	\$3,250	\$3,250	\$6,500
Kayla Beck, Summer Student	Dr. Krista Wilkins	UNB-F	Life After Childhood Cancer: The Partner's Lived Experience of Romantic Relationships with Adult Survivors of Childhood Cancer	4	Cancer	\$3,250	\$3,250	\$6,500
Brandon Hannay, Summer Student	Dr. Gilles Robichaud	U de M	The Role of Pax-5 in Breast Cancer Cell Transendothelial Cell Migration	1	Cancer	\$3,250	\$3,250	\$6,500
Tanya Daigle, Summer Student	Dr. Étienne Hébert-Chatelain	U de M	Impact of EGFR Signaling on the Mitochondrial Src Kinase in Breast Cancer	1	Cancer	\$3,250	\$3,250	\$6,500
Logan Slade, PhD (c)	Dr. Thomas Pulinilkunnil	DMNB / UNB-SJ	Transcription factor EB	1	Cancer	\$8,925	\$8,925	\$17,850
Roxann Guerrette, PhD (c)	Dr. Gilles Robichaud	U de M	Functional Characterization of Mammaglobin-1 isoforms in Breast Cancer Aggressiveness	1	Cancer	\$8,925	\$8,925	\$17,850
Stacy Grieve, PDF	Dr. Anthony Reiman	HHN-SJRH / UNB-SJ / DMNB	Identification of an Immunohistochemical Biomarker Panel to Predict Lung Cancer Patient Outcomes and Treatment Response	1	Cancer	\$27,562	\$27,562	\$55,124
TOTAL						\$64,912	\$64,912	\$129,824

2016-17 CLINICAL SCOLARSHIPS

Researcher	Affiliation	Area of Research	Pillars	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Ansar Hassan	HHN / NBHC	Cardiovascular Health	2	\$50,000	\$ -	\$50,000
Dr. Colleen O'Connell	HHN / SCCR	Rehabilitation	1, 3	\$32,500	\$ -	\$32,500
TOTAL				\$82,500	\$ -	\$82,500

2016-17 NBHRF HEALTH RESEARCH CHAIRS

Chair Title	Funding Partner	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Interprofessional Patient Centred Care	Jarislowsky Foundation / Dunn Foundation	3,4	Patient Care	\$100,000	\$300,000	\$400,000
Health and the Environment	Canada Research Chair - T1	4	Population Health	\$0	\$100,000*	\$100,000
Interdisciplinary Chair in Child & Youth Mental Health	U de Moncton / Centre Formation Médicale du NB	4	Diabetes	\$100,000	\$400,000	\$500,000
Diabetes Canada Research Chair	Diabetes Canada	4	Mental Health	\$100,000	\$100,000	\$200,000
TOTAL				\$300,000	\$900,000	\$1,200,000

*leveraging is reported on the full duration of the project

Health Research Programs (HRP) GRANTS

2016-17 ESTABLISHMENT GRANTS

Researcher	Affiliation	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Kathleen Valentine	UNB-F	Building Capacity for Transforming Healthy Aging Care Delivery	3	Seniors' Health	\$45,000	\$ -	\$45,000
Dr. Martin Senechal	UNB-F	Personalized Exercise: Are Myokines a Response to our Problem in New Brunswick	2	Clinical Exercise	\$49,000	\$ -	\$49,000
Dr. Erik Scheme	UNB-F	Innovation Research Chair in Medical Devices	1	Mobility	\$ -	\$25,000*	\$25,000
TOTAL					\$94,000	\$25,000	\$119,000

*leveraging is reported on the full duration of the project

2016-17 BRIDGE GRANTS

Health Researcher	Affiliation	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Sandra Byers	UNB-F	Factors Affecting Sexual Well-Being of Men and Women with Fibromyalgia	4	Sexual Health	\$24,000	\$7,000	\$31,000
Dr. Alain Simard	U de M	Characterizing the Anti-Inflammatory and disease-modifying potential of novel alpha 7 nicotine acetylcholine receptor silent agonists	1	Biomedical	\$25,000	\$ -	\$25,000
Dr. Luc Boudreau	U de M	Platelet-derived microparticles and their role in multiple sclerosis	1	Multiple Sclerosis	\$15,000	\$15,000	\$30,000
Dr. Stephen Lewis	ACRI	Characterization of the mechanism by which the translation initiation factor eIF3e regulates epithelial-to-mesenchymal transition (EMT) in breast cancer	1	Cancer	\$25,000	\$ -	\$25,000
Dr. Ted McDonald	UNB-F	Evaluating the impact of rural hospital closures on access to hospital services and health outcomes in New Brunswick: A matched case-control study	3	Health Services	\$29,400	\$ -	\$29,400
Dr. Thomas Pulinilkunnil	DMNB / UNB-SJ	Proteotoxic basis for diabetic cardiomyopathy	1	Diabetes	\$ -	\$35,000*	\$35,000
TOTAL					\$118,400	\$57,000	\$175,400

*leveraging is reported on the full duration of the project

2016-17 WORKSHOP GRANTS

Health Researcher	Affiliation	Workshop Title	Number of Attendees	NBHRF Funding	Leveraged Funding	Total Funding
NBHRF	Provincial	8th Annual New Brunswick Health Research Conference	181	\$30,466	\$67,943	\$98,409
Dr. Natalie Wall	HHN-Moncton Hospital	The Moncton Hospital Research Day	60	\$1,000	\$4,100	\$5,100
Dr. Anil Adisesh	UNB-SJ / DMNB	Advances in Concussion: Diagnosis and Management	175	\$5,000	\$8,460	\$13,460
Mr. Barry Strack	HHN-SJRH	Interprofessional Health Research (iHR) Day	200	\$750	\$5,250	\$6,000
Dr. Kevin Englehart	UNB-F / IBME	MEC17: A Sense of What's to Come / Myoelectric Controls Symposium	250	\$5,000	\$155,988	\$160,988
Dr. Georges Jabbour	U de M	9ième Journée de Recherche interdisciplinaires en santé / JRIS	150	\$1,500	\$20,300	\$21,800
TOTAL			835	\$43,716	\$262,041	\$305,757

Health Research Initiatives (HRI)

2016-17 CO-FUNDING WITH CIHR-SPOR / CIHR-CCNA

Health Researcher	Affiliation	Program	Year	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Ted McDonald	UNB-F / NB-IRDT	CIHR-SPOR-Support Unit / MSSU / Maritime SPOR Support Unit	Y4 / 6	All	Datasets, epidemiology, health economics	\$331,173	\$689,647	\$1,020,820
Dr. Baukje Miedema / Dr. Shelley Doucet	UNB-SJ	CIHR-SPOR-PIHCI / Primary and Integrated Health Care Innovations Network	Y3 / 5	All	Primary Care	\$100,000	\$100,000	\$200,000
Dr. Ann Beaton	U de M	CIHR-SPOR-TRAM-ACCESS-Open Minds - NB	Y3 / 7	All	Adolescent & Youth Mental Health	\$121,666	\$266,261	\$387,927
Dr. Sarah Pakzad	U de M	CIHR-CCNA-Theme 3-Team 19 Memory Clinics	Y3 / 5	3	Seniors' Health - Cognitive decline, dementia	\$110,050	\$69,859	\$279,909
Dr. Pam Jarret	HHN-SJRH	CIHR-CCNA-COMPASS	Y3 / 5	2	Alzheimer - clinical trial	\$50,000	\$ -	\$50,000
Dr. Mathieu Belanger	U de M / CFMNB	CIHR-SPOR-Chronic Disease Network - DIABETES	Y2 / 5	4	Diabetes	\$75,000	\$83,144	\$158,144
Dr. Shelley Doucet	UNB-SJ	CIHR-SPOR-Chronic Disease Network - CHILD-BRIGHT	Y2 / 5	4	Child Health	\$50,000	\$50,000	\$100,000
Dr. Shelley Doucet	UNB-SJ	CIHR-PIHCI Operating Grant	Y1 / 2	4	Primary Care	\$15,625	\$15,625	\$31,250
Dr. Paul Peters / Dr. Emily Read	UNB-F	CIHR-e-HIPP / electronic-Health Information Partnership Program	Y2 / 4	4	Seniors' Health	\$31,250	\$45,787	\$77,037
Dr. Tracy Rickards	UNB-F	CIHR-ECRA / Embedded Clinician Research Award	Y1 / 4	04-Mar	Public Health - Marginalized Population Health	\$25,000	\$75,000	\$100,000
TOTAL						\$909,764	\$1,495,323	\$2,405,087

2016-17 CO-FUNDING WITH NETWORK CENTRES OF EXCELLENCE / PUBLIC HEALTH AGENCY OF CANADA

Student	Supervisor	Partner	Affiliation	Type	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Carole Goodine	Dr. Chris McGibbon	NCE-AgeWell	UNB-F / HHN / YCC	PDFellowship	A Polypharmacy App to Improve Outcomes for Seniors in Long Term Care	3	Seniors' Health	\$7,188	\$7,188	\$14,376
Emily MacDonald	Dr. Rose McCloskey	NCE-CFN	UNB-SJ	Master's Award	Adult Day Program	3	Seniors' Health	\$12,500	\$12,500	\$25,000
Mylene Michaud	Dr. Sarah Pakzad	NCE-CFN	U de M	PhD Award	Frailty Index	3	Seniors' Health	\$17,500	\$17,500	\$35,000
Mathilde Theriault	Dr. Sarah Pakzad	NCE-CFN	U de M	Summer Studentship	Early Cognitive Assessment	3	Seniors' Health	\$4,500	\$2,092	\$6,592
Courtney Busson	Dr. Kathleen Valentine / Dr. Rosemary Kohr	NCE-CFN	UNB-F	Summer Studentship	Adult Day Program	3	Seniors' Health	\$4,500	\$2,092	\$6,592
Karen Philpott	Joan Kingston	NCE-CFN	UNB-F	Summer Studentship	Frail Elderly Patients with Complex Health Issues	3	Seniors' Health	\$4,500	\$2,092	\$6,592
Jennifer Donovan	Dr. Carole Goodine	CABHI	YCC	SPARK Grant	Development of Criteria for Polypharmacy Management and Reduction	3	Seniors' Health	\$49,800	\$49,800	\$99,600
TOTAL								\$100,488	\$93,264	\$193,752

2016-17 HEALTH CHARITIES & FOUNDATIONS

Researcher	Affiliation	Partner(s)	Type	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Jalila Jbilou	U de M	MOVEMBER	Grant	Mind the Heart: Best Practices for Prevention, Early Identification and Treatment of Mood and Anxiety Disorders in Men with Heart Disease	2,3,4	Mental Health	\$150,000	\$1,098,366	\$1,248,366
Dr. Thomas Pulinilkunnil	DMNB / UNB-SJ	Diabetes Canada	Grant	Role of the Lysosome nutrient sensor transcription factor EB in diabetic heart disease	1	Diabetes	\$20,000	\$99,989	\$119,989
Dr. Étienne Hébert-Chatelain	U de M	Alzheimer Society of Canada + Brain Canada + U de M	Grant	Role of mitochondrial c-Src kinase in Alzheimer's disease	1	Alzheimer's Disease	\$20,000	\$55,000	\$75,000
Dr. Stephen Lewis	ACRI	Canadian Cancer Society - CCSRI	Grant	Use of a novel extracellular microvesicle capture method for enrichment and identification of pancreatic cancer biomarkers	1	Cancer	\$25,000	\$25,000	\$50,000
Shane McCullum	HHN / SCCR	Stan Cassidy Foundation	Grant	Spinal Cord Injury Knowledge Mobilization Network	3	Mobility	\$5,000	\$5,000	\$10,000
Dr. Gilles Robichaud	U de M	Beatrice Hunter Cancer Research Institute	Grant	The Role of Pax-5 in NFAT dependent Breast Cancer Progression	1	Cancer	\$15,000	\$15,000	\$30,000
TOTAL							\$235,000	\$1,298,355	\$1,533,355

2016-17 VALUE DEMONSTRATION INITIATIVES WITH THE PRIVATE SECTOR

Researcher(s)	Affiliation	Partner	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Mary Catherine MacSween & Dr. Rémi LeBlanc	HNN, RSV	IMC-HRF, Novo-nordisk, Eli Lilly, Sanofi, Janssen, Boehringer Ingelheim	Provincial Deployment of Diabetes Clinical Order Set (DCOS)	2	Diabetes	\$21,300	\$14,077	\$35,377
Dr. Ted McDonald	UNB-F	AstraZeneca Canada Inc	New Brunswick - CHIP (COPD Health Information Platform)	3	COPD	\$50,000	\$50,000	\$100,000
Dr. Danielle Bouchard	UNB-F	Plasma Nutrition Inc.	Novel Protein Supplement	4	Seniors' Health	\$10,000	\$20,000	\$30,000
Dr. Grant Handrigan	U de M	Coeur en mouvement, Ville de Bouctouche	Balance control, postural hypotension and participation in a community based cardiac rehabilitation program	2	Cardiac Rehabilitation	\$15,000	\$41,000	\$56,000
Dr. Emily Read	UNB-F	Healthy Minds Canada & Pfizer Canada	Examining the use and effectiveness of workplace Employee Family Assistance Programs for the identification and treatment of employee depression	3	Mental Health	\$8,333	\$25,000	\$33,333
Dr. Anthony Reiman	HNN-SJRH	PicoMole, NRC-IRAP	Analysis of volatile chemicals in the breath of lung cancer patients using infrared spectroscopy	1	Cancer	\$24,724	\$143,000	\$167,724
Dr. Martin Senechal	UNB-F	RBC, Sport-Go NB	Does Physical Literacy Associated with Childhood Obesity, Fitness and Physical Activity Levels among Children in New Brunswick?	4	Obesity	\$ -	\$12,000	\$12,000
Dr. Andrew Brilliant	HNN-SJRH	AstraZeneca Canada Inc	2T Pharmacist COPD Intervention: Phase One	3	COPD	\$ -	\$25,000	\$25,000
Dr. Edward Yuzda	HNN-SJRH	Irving Shipbuilding Ltd, Desjardins Group, Support-our-Troops, SJRH-Foundation	Second Phase: Shaping Purpose Inc. Program for Canadian Armed Forces members transition to civilian life	3	Mental Health	\$47,750	\$139,750	\$187,500
TOTAL						\$177,107	\$469,827	\$646,934

Strategic Investment in Health Research Innovations (SIHRI)

2016-17

Researcher	Affiliation	Partner	Project Title	Pillars	Areas	NBHRF Funding	Leveraged Funding	Total Funding
Dr. Rodney Ouellette	ACRI	Merck Canada Inc. (MCI) + Société de recherche sur le cancer (SRC)	Personalized-My-Treatment: NCE-Exactis Inc. - Personalized Medicine in Oncology	1	Cancer	\$250,000	\$256,125	\$506,125
Dr. Chris McGibbon	UNB-F	Canada Foundation for Innovation (CFI) - John R. Evans Leaders Fund	Robotic Exoskeleton	1	Mobility	\$25,000	\$104,620	\$129,620
Dr. Patricia Peterson	UNB-F	GNB-DSD-WRF	New Brunswick Positive Workplace Initiative	4	Mental Health	\$63,500	\$ -	\$63,500
TOTAL						\$338,500	\$360,745	\$699,245

Funds Obtained Without NBHRF Contribution (Salary Awards and Grants)

Researcher	Affiliation	Program	Project Title	Pillars	Areas	Period	Duration	Total Funding	2016-17 Funding	Funding Year
Health Charities & Private Foundations										
Shelley Doucet & Rima Azar	UNB & MtA	New Brunswick Children Foundation / NBCF	Strategic collaborative partnership for children with complex health needs	3 & 4	Children's Health	2014-15 to 2018-19	5 years	\$750,000	\$160,000	Y3
Thomas Pulnikunnil	DMNB / UNB-SJ	NBIF grant	Development of a new zebrafish platform to support commercial screening of environmental and biomedical chemicals, pollutants, and toxins in New Brunswick	1	Environmental Health	2015-16 to 2018-19	4 years	\$85,000	\$28,750	Y2
Petra Kienesberger	DMNB / UNB-SJ	Banting Research Foundation	Role of the adipokine autotaxin in obesity-associated insulin resistance	1	Diabetes	2015-16 to 2016-17	2 years	\$25,000	\$12,500	Y2
Sandra Turcotte	U de M / ACRI	NB Chapter - Canadian Cancer Society, Health Research Chair	To characterize VHL function in autophagy to develop a therapeutic strategy based on synthetic lethality to target renal cancer cells	1,3	Cancer	2015-16 to 2019-20	2 nd term 5 years renewal	\$440,000	\$110,000	Y2
Anthony Reiman	HHN-SJRH	NB Chapter - Canadian Cancer Society, Health Research Chair	To advance the quality of life and survival of patients receiving cancer drug therapy, focusing on lung cancer, lymphoma, and multiple myeloma by bridging the gap between the laboratory and the clinic	1,3	Cancer	2015-16 to 2019-20	2 nd term 5 years renewal	\$440,000	\$110,000	Y2
Thomas Pulnikunnil	UNB-SJ / DMNB	Diabetes Canada	Role of the lysosome nutrient sensor transcription factor EB in diabetic heart disease	1	Diabetes	2016-17 to 2020-21	5 years	\$150,000	\$50,000	Y1
Jalila Jbilou	CFMNB	Société Santé en Français	Maintien à domicile des aînés vulnérables: Plan d'intervention pour assurer la sécurité, le soutien et la qualité des services cliniques et sociaux	3	Seniors' Health	2016-17 to 2018-19	2 years	\$80,000	\$40,000	Y1
A. Utzschneider, M. Bélanger	CFMNB	Consortium national de formation en santé	Formation des professionnels de la santé en français au N-B: qu'est-ce qui motive les médecins, infirmières, formés en français au N-B à s'impliquer dans la formation de la relève	3	Health Services	2016-17 to 2017-18	1 year	\$40,000	\$40,000	Y1
H. Vatanparast, M. Bélanger	CFMNB	Heart & Stroke Foundation of Canada	The impact of Healthy Start-Départ Santé intervention on improving dietary intake of 3-5 year old children attending childcare centres in Saskatchewan and New Brunswick	4	Obesity	2015-16 to 2018-19	4 years	\$266,076	\$66,519	Y2
Anthony Reiman	HHN-SJRH	Terry Fox Research Institute	The Terry-Fox pan-Canadian Multiple Myeloma Molecular Monitoring Cohort Study	1	Cancer	2016-17 to 2020-21	5 years	\$3,034,150	\$606,830	Y1
Neil Branch, B. Robinson, D. Crouse, C. McGibbon et al	HHN-SJRH	Trauma Research Program Fund	Outcomes in Older Adults with isolated hip Fractures: A Comprehensive Study across regional hospitals in New Brunswick	3	Hip Fractures	2016-17	1 year	\$9,992	\$9,992	Y1
Thomas Pulnikunnil	DMNB	Chesley Research Fund	Role of Anti-Oxidant Metabolism in Doxorubicin Cardiotoxicology and its Impact of Life Quality	1	Heart Disease	2016-17	1 year	\$20,000	\$20,000	Y1
Keith Brunt	DMNB	Heart & Stroke Foundation of Canada	Reduced Infarct Size and Preserved Cardiac Function by a Novel Reactive Pharmacological Intervention After Infarction	1	Heart Disease	2016-17	3 years	\$134,500	\$44,834	Y1
Keith Brunt	DMNB	Chesley Research Fund	Erythropoietin (EPO) Glycosylation in Obese Cardiac Surgery Patients: Exploring the Potential Novel Modification of EPO and Implications to Anemia in Cardiac Surgery Patients	1	Heart Disease	2016-17 to 2017-18	2 years	\$25,000	\$12,500	Y1
SUB-TOTAL									\$1,311,925	

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Researcher	Affiliation	Program	Project Title	Pillars	Areas	Period	Duration	Total Funding	2015-16 Funding	Funding Year
CFI										
Dr. Keith Brunt	DMNB	Infrastructure Operating Fund	A new laboratory to create innovative experimental therapeutics and establish regenerative medicine capacity for cardiovascular disease in New Brunswick	1	Cardio-vascular Disease	2014-15 to 2018-19	5 years	\$125,000	\$25,000	Y3
Dr. Thomas Puliniikunnil	DMNB	Infrastructure Operating Fund	A new laboratory aimed at establishing a Cardiac Metabolism and function pheotyping program at the Dalhousie Medicine New Brunswick Cardiovascular Research Center	1	Cardio-vascular Disease	2014-15 to 2018-19	5 years	\$125,000	\$25,000	Y3
SUB-TOTAL									\$50,000	
CIHR										
Dr. Kelly Scott-Storey	UNB-F	Operating Grant	Masculinities, Lifetime Violence and Health	4	Men's Health	2014-15 to 2018-19	5 years	\$383,676	\$76,765	Y3
Dr. Sandra Turcotte	U de M / ACRI	Operating Grant	Exploiting synthetic lethality in Renal Cell Carcinoma: Targeting the loss of the von Hippel-Lindau tumor suppressor gene through autophagy for the development of anticancer therapy	1	Kidney Cancer	2014-15 to 2018-19	5 years	\$495,930	\$99,186	Y3
SUB-TOTAL									\$175,951	
SSHRC										
Dr. Mathieu Bélanger	CFMNB	Operating Grant	Monitoring Activities of Teenagers to Comprehend their Habits (MATCH): An eight-year study on sport participation and its determinants	4	Obesity	2014-15 to 2017-18	4 years	\$130,781	\$32,695	Y4
SUB-TOTAL									\$32,695	
NSERC-AWARDS										
Catherine Bannon	MtA	University Undergraduate Student Research Awards	Saturated Mutagenesis of Skeletonema marinoi ROSAC for Genes Involved in Biogeochemical Cycles	1	Biology	2016-17	4 months	\$4,500	\$4,500	Y1
Sébastien Blanchard	U de M	University Undergraduate Student Research Awards	Nouveaux analogues d'acides phénoliques avec des activités anti-inflammatoires	1	Cardio-vascular Disease	2016-17	4 months	\$4,500	\$4,500	Y1
Anna Caulfield	UNB	University Undergraduate Student Research Awards	Three-dimensional kinematics of the multisegment foot	1	Mobility	2016-17	4 months	\$4,500	\$4,500	Y1
Nathalie Cecire	UNB	University Undergraduate Student Research Awards	High Density Electromyography and Neuromuscular Function	1	Mobility	2016-17	4 months	\$4,500	\$4,500	Y1
Irina Chan	UNB	University Undergraduate Student Research Awards	Exploiting cancer's evolutionary vulnerabilities	1	Biology	2016-17	4 months	\$4,500	\$4,500	Y1
Luke Duffley	DMNB	University Undergraduate Student Research Awards	Role of Branch Chain Amino Acid Metabolism in Liver Insulin Resistance	1	Diabetes	2016-17	4 months	\$4,500	\$4,500	Y1
Emily Franklin	UNB	University Undergraduate Student Research Awards	Interaction of a Pseudomonas syringae sigma factor with RNA polymerase	1	Biology	2016-17	4 months	\$4,500	\$4,500	Y1
Lauren Forgrave	UNB	University Undergraduate Student Research Awards	Bioactive natural products from endophytic fungi	1	Medicinal Chemistry	2016-17	4 months	\$4,500	\$4,500	Y1
Nadia Kashetsky	UNB	University Undergraduate Student Research Awards	Three-dimensional kinematics and kinetics of the multisegment foot	1	Mobility	2016-17	4 months	\$4,500	\$4,500	Y1
MinJi Kim	UNB	University Undergraduate Student Research Awards	Bioactive natural products from endophytic fungi	1	Medicinal Chemistry	2016-17	4 months	\$4,500	\$4,500	Y1
Jason Hearn	UNB	University Undergraduate Student Research Awards	Validation of an intelligent assistive device	1	Biomedical Engineering	2016-17	4 months	\$4,500	\$4,500	Y1
Carly Smith	UNB	University Undergraduate Student Research Awards	Motivating Training and Calibration of Upper-Limb Prostheses through Gamification	1	Mobility	2016-17	4 months	\$4,500	\$4,500	Y1

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Researcher	Affiliation	Program	Project Title	Pillars	Areas	Period	Duration	Total Funding	2015-16 Funding	Funding Year
Sébastien Blanchard	U de M	Alexander Graham Bell Canada Graduate Scholarships - Master's	Investigation de la cible biologique de certains polyphénols dotés d'activité anti-inflammatoire	1	Cardio-vascular Disease	2016-17	1 year	\$17,500	\$17,500	Y1
Jason Robertson	UNB	Postgraduate Scholarships - Doctoral	Myoelectric control of a prosthetic limb	1	Mobility	2016-17	1 year	\$21,000	\$21,000	Y1
Trevor Clark	UNB	Alexander Graham Bell Canada Graduate Scholarships - Doctoral	Application of Nuclear Magnetic Resonance(NMR) and High-resolution/Mass Spectrometry(HRMS) based metabolomics to bioactive natural product discovery	1	Medicinal Chemistry	2016-17	1 year	\$35,000	\$35,000	Y1
Andrew Flewelling	UNB	Alexander Graham Bell Canada Graduate Scholarships - Doctoral	Discovery of natural product based efflux inhibitors from endophytic fungi of North Atlantic marine macroalgae	1	Medicinal Chemistry	2016-17	1 year	\$35,000	\$35,000	Y1
Pamela Stevenson	UNB	Alexander Graham Bell Canada Graduate Scholarships - Doctoral	Do the symptoms associated with Fibromyalgia interfere with basic attentional processing?	1	Fibro-myalgia	2016-17	1 year	\$35,000	\$35,000	Y1
SUB-TOTAL									\$197,500	
NSERC-GRANTS										
Wayne Albert	UNB-Kinesiology	Discovery Grant	Manual material handling performance and fatigue	1	Mobility	2015-16 to 2019-20	5 years	\$125,000	\$25,000	Y2
Stephen Westcott	MtA	Discovery Grant	To B-E or not to B-E?: Developing New Boranes and Boration Reactions	1	Medicinal Chemistry	2015-16 to 2019-20	5 years	\$300,000	\$60,000	Y2
Luc Boudreau	U de M	Connect Grants Level 1	The role of bee venom on immune cells participating in the inflammatory response	1	Cardio-vascular Disease	2016-17	4 months	\$1,431	\$1,431	Y1
William McIver	NBCC	Industrial Research Chairs for Colleges Grants	NSERC Industrial Research Chair for Colleges in Mobile First Technology	3,4	Mobility/Seniors' Health	2011-12 to 2016-17	5 years	\$161,052	\$32,210	Y5
William McIver	NBCC	Applied Research and Development Grants - Level 1	Integration of Voice Activated Technology with Adaptive Driving Device	3	Mobility	2016-17	1 year	\$24,480	\$24,480	Y1
Victoria Chester	UNB	Discovery Grants Program - Individual	The development of kinematic and kinetic multisegment foot models for gait analysis	1	Mobility	2016-17	1 year	\$27,000	\$27,000	Y1
Denise Clark	UNB	Discovery Grants Program - Individual	Genome evolution through RNA-based gene duplication	1	Cancer	2016-17	1 year	\$35,000	\$35,000	Y1
Karen Crosby	MtA	Discovery Grants Program - Individual	Cellular and Synaptic Physiology of the Dorsomedial Hypothalamus	1	Cancer	2016-17	1 year	\$28,000	\$28,000	Y1
Kevin Englehart	UNB	Discovery Grants Program - Individual	Myoelectric Control of Powered Upper Limb Prostheses	1	Mobility	2016-17	1 year	\$30,000	\$30,000	Y1
Christopher Gray	UNB-SJ	Discovery Grants Program - Individual	Combining bioactivity and metabolomic profiling in the discovery of antibiotic natural products from endophytic fungi	1	Medicinal Chemistry	2016-17	1 year	\$30,000	\$30,000	Y1
Trevor Hanson	UNB	Discovery Grants Program - Individual	Developing planning and forecasting tools for age-friendly rural and community transportation alternatives: a focus on volunteer driver programs to facilitate older person mobility and safety	4	Seniors' Health	2016-17	1 year	\$23,000	\$23,000	Y1
Etienne Hebert-Chatelain	U de M	Discovery Grants Program - Individual	Exploring the mitochondrial phospho-proteome during metabolic stress	1	Seniors' Health	2016-17	4 months	\$32,000	\$32,000	Y1
Usha Kuruganti	UNB	Discovery Grants Program - Individual	Advanced Myoelectric Control for Improved Prosthetic Function	1	Mobility	2016-17	1 year	\$22,000	\$22,000	Y1
Usha Kuruganti	UNB	Engage Grants Program	Biomedical Engineering Research for Insole Wearable Sensors	1	Seniors' Health	2016-17	1 year	\$25,000	\$25,000	Y1
Luc Martin	U de M	Research Tools and Instruments	Acquisition of a CE-MS-TOF system for quantification of steroids, miRNAs and metabolites	1	Cancer	2016-17	1 year	\$150,000	\$150,000	Y1
Luc Martin	U de M	Engage Grants Program	Elucidation of the action mechanism of TBP on the endocrine function of male mice under high fat diet	1	Cancer	2016-17	1 year	\$25,000	\$25,000	Y1
Luc Martin	U de M	Discovery Grants Program - Individual	Sox transcription factors: Regulatory mechanisms and impact on steroidogenesis	1	Cancer	2016-17	1 year	\$33,000	\$33,000	Y1
Pier Morin, Jr	U de M	Discovery Grants Program - Individual	microRNA dynamics in a freeze tolerant insect	1	Cancer	2016-17	1 year	\$29,000	\$29,000	Y1

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Erik Scheme	UNB	Engage Grants Program	Evaluation of Respiratory Rate Measurements using the CloudDX Pulsewave Device	1	Senior's Health	2016-17	1 year	\$25,000	\$25,000	Y1
Erik Scheme	UNB	Discovery Grants Program - Individual	Improving the Performance, Robustness and Reliability of Myoelectric Control	1	Mobility	2016-17	1 year	\$25,000	\$25,000	Y1
Jonathan Sensinger	UNB	Discovery Grants Program - Individual	Exploration of optimal prosthesis feedback information using computational motor control	1	Mobility	2016-17	1 year	\$31,000	\$31,000	Y1
Connie Stewart	UNB	Discovery Grants Program - Individual	New statistical tools for quantitative fatty acid signature analysis and the development of an accompanying R package	1	Individual	2016-17	1 year	\$11,000	\$11,000	Y1
Mohamed Touaibia	U de M	Discovery Grants Program - Individual	Design and synthesis of phenolic acid analogues as inhibitors of fatty acid metabolism	1	Cardio-vascular Disease	2016-17	1 year	\$30,000	\$30,000	Y1
Luc Tremblay	U de M	Discovery Grants Program - Individual	Impacts de la matière organique sur le cycle du carbone révélés par des méthodes novatrices de caractérisation moléculaire	1	Medicinal Biochemistry	2016-17	1 year	\$27,000	\$27,000	Y1
Stephen Westcott	MtA	Discovery Grants Program - Individual	To B-E or not to B-E? Developing New Boranes and Boration Reactions	1	Medicinal Chemistry	2016-17	1 year	\$61,000	\$61,000	Y1
SUB-TOTAL – NSERC									\$842,121	
GRAND TOTAL								\$8,268,568	\$2,610,192	