

# RESEARCH FOR HEALTH

SUPPORT ▶ SCIENCE ▶ IMPACT



**SHRF**  
SASKATCHEWAN  
HEALTH RESEARCH  
FOUNDATION



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# SHRF ACHIEVEMENT AWARD 2014

The Saskatchewan Health Research Foundation (SHRF) is pleased to present the Achievement Award to Dr. John Gordon. Dr. Gordon's scientific contributions at the national level have led to widespread recognition of his expertise and judgement. His many leadership roles continue to foster the research enterprise and its application to improving human health. Dr. Gordon is a most worthy candidate for this year's award.

**Congratulations Dr. Gordon!**

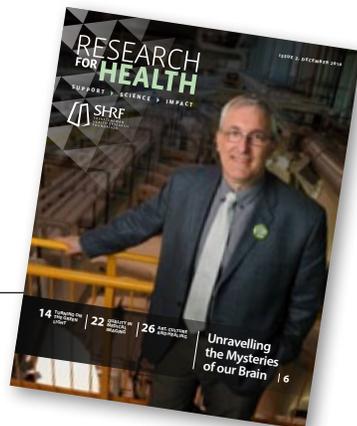
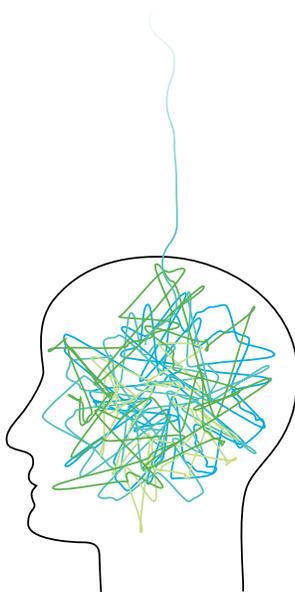


***Building a healthy Saskatchewan  
through health research***

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## Collaboration, Partnerships, Impact

These are exciting and interesting times for health research in Saskatchewan. Never before have we had the infrastructure (such as the new Health Sciences building at the U of S, the Synchrotron, and the newly constructed Research and Innovation Centre at the U of R), the capacity (found across the outstanding faculties at the U of S, U of R, Saskatchewan Polytechnic, and the provincial health regions), and the committed engagement to research by our provincial government, Board of Directors, stakeholders and end users in addressing and resolving key issues in a truly Saskatchewan way.

SHRF has embraced the challenges and welcomed the opportunities that go along with change. We are developing a new strategic plan that will position this agency as a catalyst, driver, and leader across the health research enterprise in Saskatchewan. We will continue to invest in strategies to build health research capacity, to increase stakeholder engagement, to measure the impact of health research, and to develop additional funding partnerships and programs. As well as building on current strategies, we are constantly exploring and integrating new ideas critical for the flexibility and responsiveness we strive for at SHRF. An example of this is the recent launch of our new funding program aimed at 1) increasing collaboration between researchers and end users, 2) generating innovative ideas to solve today's health issues and, 3) creating opportunities for ideas to succeed on the national stage. This pilot program, titled Collaborative Innovation Development Grants, has been received extremely well by the research community and other stakeholders across the province. In another new initiative, SHRF is planning to convene a 2015 forum for provincial funders of health research so that we might create synergies and help each other meet common goals and challenges.

This edition of *Research for Health* brings inspiring stories about health research impact on the lives of Saskatchewan residents. Readers will note that many of these stories are possible because of SHRF funding partnerships, from the community-based research conducted with Aboriginal partners to our cover story about Dr. Darrell Mousseau, the Saskatchewan Research Chair in Alzheimer's Disease and Related Dementias, whose chair position is possible because of the partnership with the Alzheimer Society of Saskatchewan (ASOS). Dr. Mousseau is studying the link between Alzheimer's disease and depression and *Research for Health* is proud to feature his work. You will also find an editorial in this issue by the ASOS CEO Joanne Bracken, which explains how the funding partnership advances such important research, bringing hope for better treatments and delaying the onset of the disease. In fact, as part of a new feature, we are pleased to present messages from other funding partners as well, so that readers may gain a sense of the significant research currently being conducted across our province.

This publication aims to demonstrate how health research advances science and expedites exciting new discoveries in major areas of health important to Saskatchewan residents. I hope you enjoy reading SHRF's *Research for Health*, a showcase of health research, partnerships, and impact.

Patrick Odnokon  
Interim CEO

# Community Partner

Research provides hope for people living with dementia. The Alzheimer Society vision is, “a world without Alzheimer’s disease and related disorders.” Supporting research is a priority for the Alzheimer Society of Saskatchewan (ASOS) and every year we fund research into a cause, cure and improving the lives of people affected by dementia.

The ASOS funds research through the Alzheimer Society Research Program (ASRP), a successful collaboration of Alzheimer Societies across Canada. Since 1989, the ASRP has invested over \$43 million in dementia research that has helped lead to critical discoveries that shape dementia research around the world. More importantly, it has brought help and hope to those currently living with the disease.

Understanding that partnerships are key to finding the cause and cure for dementia, in 2010 the Alzheimer Society of Saskatchewan turned their attention to a new Saskatchewan-based research initiative. In April 2010, University of Saskatchewan researcher Dr. Darrell Mousseau was awarded the Saskatchewan Research Chair, worth \$1 million over five years, to study a link between Alzheimer’s disease and depression. The Chair is a partnership including the Alzheimer Society of Saskatchewan, the Saskatchewan Health Research Foundation and the University of Saskatchewan. The two funding partners each provide \$100,000 per year for five years, while the University of Saskatchewan provides the necessary infrastructure and support for the Chair.

Created from requests by their donors, the Alzheimer Society was interested in the partnership because,

“Our supporters wanted their donations to stay in Saskatchewan, to not only support people and families in our province, but Saskatchewan-based research as well,” says Joanne Bracken, Chief Executive Officer for the Alzheimer Society of Saskatchewan. “In doing so, we work towards making Saskatchewan a centre for excellence in dementia research,” Bracken adds.

Along with the Research Chair, the Alzheimer Society of Saskatchewan has many different research partnerships with organizations including the University of Regina Centre on Aging and Health, as well as the Rural Dementia Action Research (RaDAR) at the University of Saskatchewan. “Through these vital research partnerships, it is our hope that we can better understand this disease so we can better help people living with dementia, and hopefully, find a cause and cure,” adds Bracken.

To learn more about the dementia research and the Alzheimer Society of Saskatchewan, please visit [www.alzheimer.ca/sk](http://www.alzheimer.ca/sk). 

**Alzheimer Society**  
SASKATCHEWAN

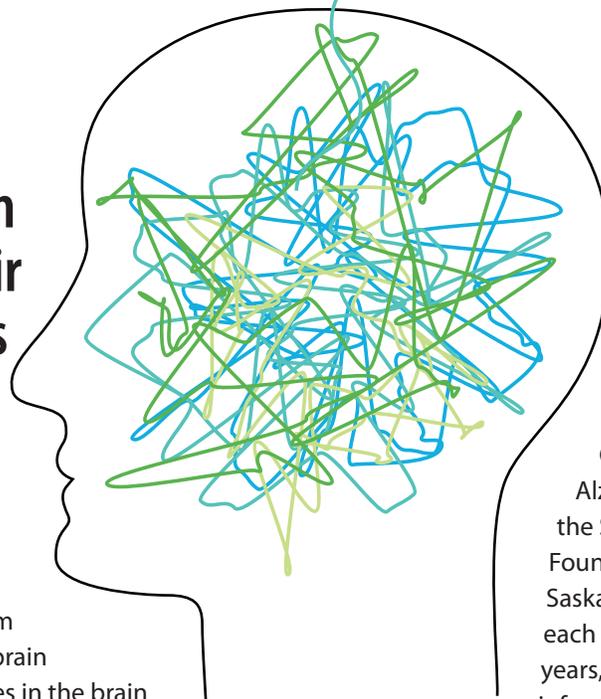


# Unraveling the Mysteries of our Brain

## The Saskatchewan Research Chair in Alzheimer's Disease and Related Dementia

Dementia is a general term that refers to a variety of brain disorders. Physical changes in the brain cause dementia. Alzheimer's disease (Alzheimer's) is the most recognized form of dementia. According to the Alzheimer Society of Saskatchewan, it is a fatal, progressive, and degenerative disease that destroys brain cells and, as the most common form of dementia, accounts for 64 per cent of all dementias in Canada.

Since April of 2010, it has also been the focus of the research being undertaken by the Saskatchewan Research Chair in Alzheimer's Disease and Related Dementia.



University of Saskatchewan researcher Dr. Darrell Mousseau was awarded the Chair worth \$1 million over five years. The Chair is a partnership between the Alzheimer Society of Saskatchewan, the Saskatchewan Health Research Foundation, and the University of Saskatchewan. The two funding partners each provide \$100,000 per year for five years, while the University provides infrastructure and support.

"Our ability to treat people early could have tremendous benefits," says Mousseau. "If we can affect and have some sort of an impact on even 10 per cent of the population, that's going to ultimately help a lot of people, not only the patients themselves, but caregivers and the healthcare system."

"Alzheimer's disease is not a normal part of aging," says Joanne Bracken, Chief Executive Officer of the Alzheimer Society of Saskatchewan. "Symptoms include having difficulty remembering things, making decisions and



## Dr. Darrell Mousseau

Professor at the Department of Psychiatry, College of Medicine at the University of Saskatchewan Neuropsychiatric Research Unit, and Saskatchewan Research Chair in Alzheimer's Disease and Related Dementia

performing everyday activities. These changes can affect the way a person feels and acts. There is currently no way to stop the disease but research is improving the way we provide care. Our support for this Research Chair is critical as we continue to search for a cure."

Dr. Mousseau, a professor in the College of Medicine's Department of Psychiatry and former vice-president of the Alzheimer Society of Saskatchewan, says that he and his team have already found some important new discoveries related to Alzheimer's disease.

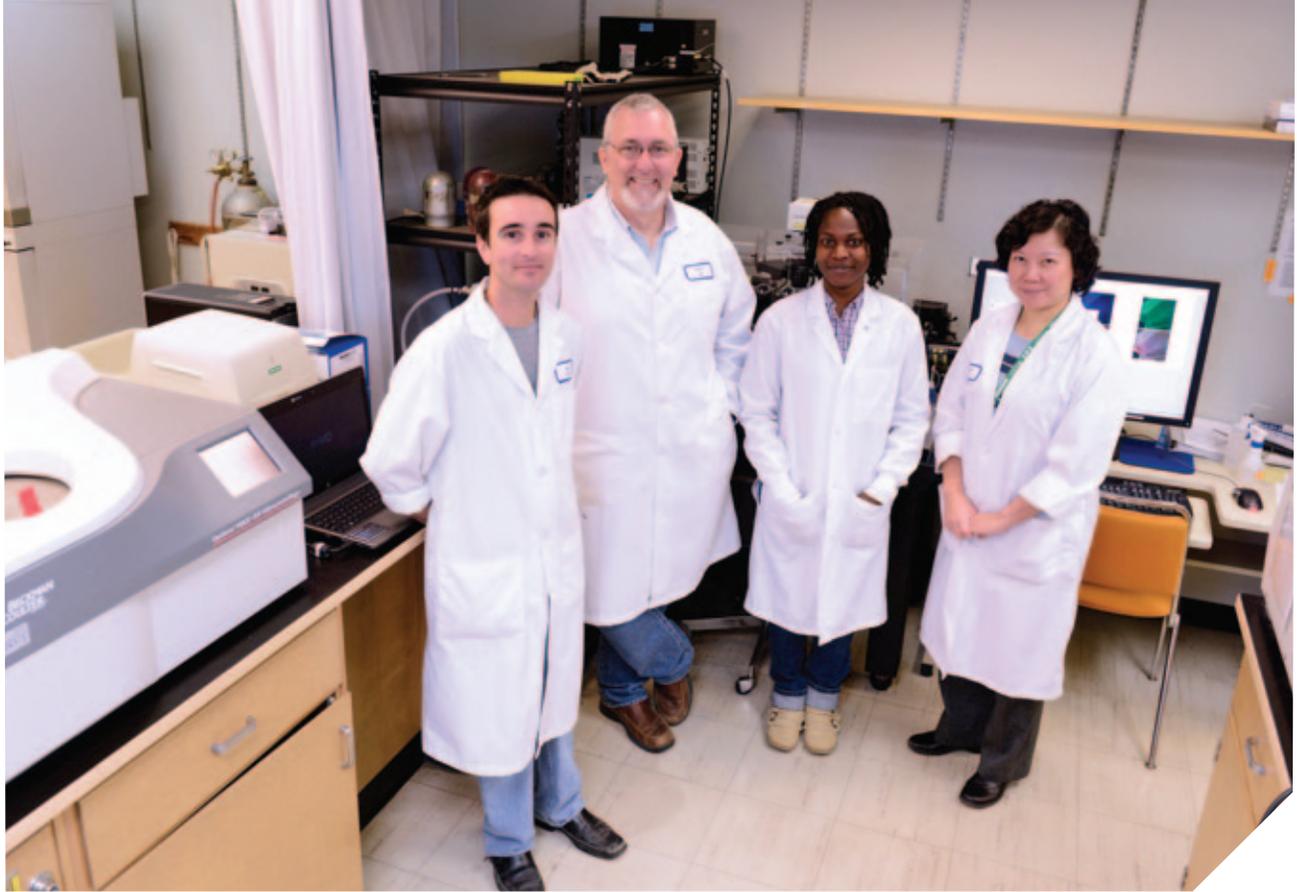
"We have found that an enzyme that plays an important role in depression can severely weaken brain cells and perhaps trigger the neurodegenerative processes that lead to Alzheimer's," says Mousseau.

The team's research has now expanded into possible gender differences between depression and Alzheimer's. Using brain tissue from people who developed Alzheimer's disease, the team found that molecules that are more often associated with depression are affected differently in the brains of men and women. This suggests that there might be several types of depression involved and that having one type of depression could

increase your risk of developing Alzheimer's disease. This could be important to future treatment regimens and may point to different drug treatments for men and women with Alzheimer's.

"As a part of this stream of research our team is also looking at the role of antidepressants in this process," Mousseau says.

When the team began to look into the effects of depression and antidepressants as risk factors for developing Alzheimer's, they came to the realization that the associated literature was flawed. As such, they had to take a step back and re-examine the basic theory of Alzheimer's. Their work has recently revealed that the disease process that ultimately leads to dementia that is diagnosed as Alzheimer's very likely follows different pathways in men and women. Mousseau and his team, which includes students, technicians, postdoctoral researchers and some Faculty members, have found that men and women's brains make different amounts of the sticky amyloid molecule that often forms the plaques found in the Alzheimer's brain. This simple observation does not mean that the literature is incorrect; it simply



*Dr. Darrell Mousseau (second from the left) and his team (Paul R. Pennington (Laboratory Manager); Dr Jennifer N. Nyarko (Post-Doctoral Researcher); Dr Zelan Wei (Junior Faculty))*

**MOUSSEAU AND HIS TEAM, WHICH INCLUDES STUDENTS, TECHNICIANS, POSTDOCTORAL RESEARCHERS AND SOME FACULTY MEMBERS, HAVE FOUND THAT MEN AND ON WOMEN'S BRAINS MAKE DIFFERENT AMOUNTS OF THE STICKY AMYLOID MOLECULE THAT OFTEN FORMS THE PLAQUES FOUND IN THE ALZHEIMER'S BRAIN.**



means that researchers may have been misinterpreting some of their data. Mousseau's observations might explain why Alzheimer's seems to be more prevalent in women and might also explain why researchers are having difficulty managing, let alone developing a one-size-fits-all cure, for this devastating brain disease.

"Depression doesn't necessarily cause more Alzheimer's, but what it does is it causes Alzheimer's to happen earlier," Mousseau says. "Depression is doing something to the brain that makes it much more vulnerable to developing Alzheimer's earlier on."

The team is also trying to determine the impact of antidepressants on young people. Mousseau believes some antidepressants could put younger patients at greater risk of developing Alzheimer's much earlier in their lives.

These are some of accumulating advancements in knowledge taking place thanks to the Research Chair and its associated team.

“Our enthusiasm for our results is a delicate balance,” adds Mousseau. “Our data will be useful in establishing a personalized medicine approach to the diagnosis and treatment of Alzheimer’s and, indirectly, depression, but we have to be careful that our results are not over-interpreted and acted upon by individual patients. We don’t want people discontinuing a medication regimen or starting to self-medicate because of our findings.”

However, Mousseau stresses his finding is still preliminary. Many more brain tissue samples from across the country need to be examined and the next step is testing his hypothesis in mice in his lab.

Ironically, a spin off from the current research on Alzheimer’s may have another significant finding for women.

“There is some evidence that the risk of developing Alzheimer’s is inversely related to the risk of getting breast cancer,” he said. Mousseau and his team hope to find clues to what triggers breast cancer, and how it can be switched off. In contrast, they hope to determine if this same trigger needs to be turned on, perhaps at a different stage of life, so as to prevent Alzheimer’s.

“Every day, 10 Saskatchewan residents develop Alzheimer’s disease or a related dementia,” says Bracken. “One Canadian develops Alzheimer’s disease or a related dementia every five minutes. By 2038 that’s more than a quarter of a million new cases of dementia every year and the total number of Canadians living with Alzheimer’s disease will rise from approximately half a million to almost 1.2 million people.”

Dr. Mousseau believes that in 10 years, we will have identified a cause for Alzheimer’s for a portion of individuals at risk for developing the disease.

“If we identify people who will start with depression and go on to develop Alzheimer’s, maybe Alzheimer’s drugs could be useful for treating people much earlier before any signs of dementia are apparent. These drugs would then be much more beneficial,” Mousseau said.

In the first five years, the first Saskatchewan Research Chair in Alzheimer’s Disease and Related Dementia has produced valuable insights.

The impact of Mousseau and his team’s work is very real. Real people – patients and caregivers – will benefit from every small step towards understanding and seeking a cure to Alzheimer’s. 



# The Chamber

Greater Saskatoon Chamber of Commerce

## The Greater Saskatoon Chamber of Commerce Health Opportunities Committee

*is proud to support the  
SHRF Santé! Awards Evening*

Image Courtesy of Grant Romancia Photography

In 10  
years



of funded  
partnership  
grants



Early childhood  
educators are critical  
to physical activity  
among children in  
rural childcare centres

# Run, Jump & Play!

## *When kids move, they feel good!*

From birth through age five, children's bodies are growing every day in every way. Being physically active improves children's overall health. But somewhere along the way, kids aren't as active as they once were – especially preschoolers.

In 2013, the 9th annual edition of the Report Card on Physical Activity for Children and Youth issued by Active Healthy Kids Canada graded key areas of physical activity across Canada. The organization found only 18% of three- to four-year-olds in Canada meet the Canadian Sedentary Behaviour Guidelines for the Early Years, which recommend daily screen time be

limited to less than 1 hour. That prompted a grade of F or failure. The same year, only seven per cent of five- to 11-year-olds in Canada meet the Canadian Physical Activity Guidelines for Children and Youth, which recommend at least 60 minutes of moderate to vigorous physical activity a day. That underwhelming statistic rated a D minus.

None of this is probably news to anyone. We know active kids are healthy kids. We are also aware of the rising concern over childhood inactivity and obesity. It's in the news almost weekly. Recently, this area has attracted more interest from health researchers.



**Dr. Amanda Froehlich Chow** (on the right) College of Kinesiology at the University of Saskatchewan and supervisor **Dr. Louise Humbert**, Associate Dean at the College of Kinesiology at the University of Saskatchewan

In 2014, Dr. Amanda Froehlich Chow from the College of Kinesiology at the University of Saskatchewan received a Postdoctoral Fellowship Grant from SHRF to look into the feasibility and effectiveness of a new, educator-focused intervention that aims to promote physical literacy in early years' children, specifically at rural childcare centres.

"The early years presents a unique window of opportunity to establish physical activity and positively influence the health of children," says Froehlich Chow. "Since many young children spend most of their day in childcare centres, early childhood educators can have

a large influence on promoting physical literacy and physical activity."

Although there is a lot of information and evidence that leads to the disappointing grades by organizations like Active Healthy Kids Canada, there's more complexity to the issue than meets the eye.

Childcare can be a broad, loosely-defined word. Generally it refers to centre-based facilities that look after young children (e.g. preschools and daycares). Because centres vary greatly, physical activity levels of children also vary greatly. Everything from the

# “THE EARLY YEARS PRESENTS A UNIQUE WINDOW OF OPPORTUNITY TO ESTABLISH PHYSICAL ACTIVITY AND POSITIVELY INFLUENCE THE HEALTH OF CHILDREN”

physical environment (e.g. space, equipment) to policies, influence activity levels. Research has also suggested that children are more active in centres where the majority of staff are college-educated and the training provided to childcare centre staff and/or awareness of physical activity behavior and promotion also has an impact.

In 2012, the Child Health and Exercise Medicine Program at McMaster University in Ontario found that physical activity is important to a child's health and motor development. In general, physical activity levels are low during a typical day in childcare. But in Canada, about half of children under the age of six are in some form of childcare away from their parents. For these preschoolers, the specific facility and the caregivers had a large impact on how much physical activity the children engage in. In another Canadian study, even in homes that provided very good environments and large spaces for moving, physical activity was very low.

Currently, physical activity remains an ambiguous component in Canadian childcare programs. While some provinces/territories have regulations regarding time spent outdoors, these are generally not specific regarding the nature of outdoor activities. At the same time, requirements for physical space indoors and outdoors are often quite limited, so the space and/or equipment to promote physical activity are often not available.

In Saskatchewan, the Child Care Act of 2000 and the Child Care Regulations of 2001 states: “The licensee of a centre must provide a safe outdoor play area of seven square metres per licensed child care space. Unless otherwise provided in the licence, at least half of the outdoor play area required ... must be adjacent to the centre and the remainder must be within walking distance of the centre, determined in relation to the youngest age category for which the centre is licensed.” But requirements outlining the time and program aspects of physical activity are not specified.

To promote the importance of health and wellness for young children and their families, the Early Years Branch of the Saskatchewan Ministry of Education has

developed information sheets for parents, facilities, and other professionals. Active Solutions is a series of information sheets that are designed to support and build awareness of the importance of physical activity for children of all ages and to enhance children's physical development and physical activity levels in the sector.

But do these or other inventions actually get used and provide an impetus to improve physical activities in childcare centres?

The primary goal of Dr. Froehlich Chow's study is to implement and evaluate an intervention aimed at increasing an educator's ability and awareness to promote physical literacy in rural childcare centres.

Over the next period of time, approximately 30-40 educators and 60-80 children from eight rural childcare centres in Saskatchewan will participate in her study. Educators from four centres will receive a 10-month intervention. They will learn how to perform and teach fundamental movement skills like throwing, catching and leaping. Educators and children in both groups will be tested three different times during the research study. Measurements will test the educator participants' self-efficacy using a combination of questionnaires and interviews. In addition the physical activity levels of educators and children using accelerometers will be tested, and children's physical literacy analyzed using a test of gross motor development. The final component of her research will also assess the childcare centre environment.

So questions about the links between childcare providers, childhood centres, and the physical activity levels of children can be looked at together.

The findings of this study should provide evidence about the feasibility and effectiveness of a new, educator-focused intervention to promote physical literacy in early years' children specifically in rural childcare centres. Its ultimate goals are to support healthy development among early years' children in rural communities and to provide a foundation for a lifetime of being active.

After all, we know that when kids move, they feel good! And healthy kids lead to healthy communities. [1]

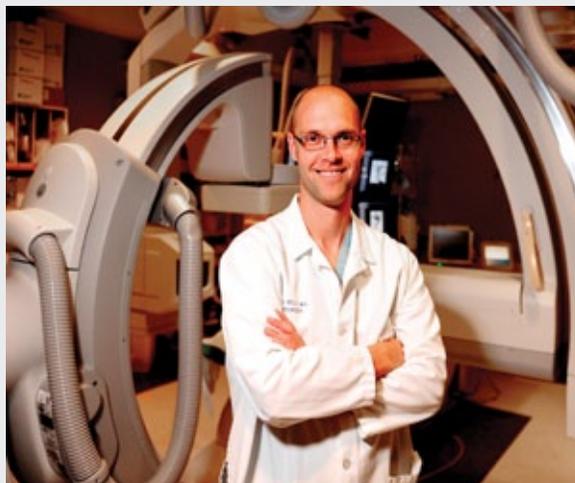
## Research at work: Investing to create survivors

The Heart and Stroke Foundation currently funds more than 1,500 researchers and teams across the country to drive discoveries that will eliminate heart disease and stroke and enhance recovery for those living with these diseases. Every seven minutes in Canada, one life is taken by heart disease and stroke. By investing in strategic research that supports the Foundation's three mission pillars – prevent disease, save lives and promote recovery – the Foundation is working to create more survivors.

### Enabling better stroke prevention and treatment

Dr. Michael Kelly, a neurosurgeon and the Saskatchewan Clinical Research Chair, is working to improve stroke prevention and treatment through advanced biomedical imaging at the Canadian Light Source. The Chair provides \$1 million over five years, jointly funded by the Heart and Stroke Foundation and SHRF. With this funding, Dr. Kelly uses synchrotron technology to track neural stem cells injected into the brain – cells that can potentially develop into new tissue at the site of a stroke.

Currently, the Saskatchewan Cerebrovascular Centre, founded and directed by Dr. Kelly, is participating in 13 clinical studies, two pre-clinical studies, and various other projects and techniques that are in developmental stages. The Centre focusses on providing world-class, patient-centred care built on cutting edge clinical and basic science research to those in Saskatchewan experiencing stroke and cerebrovascular disorders.



### Putting the spotlight back on patient-centred care

Dr. Jennifer Kryworuchko, an Assistant Professor at the University of Saskatchewan's College of Nursing, is working to improve outcomes for patients and bring the focus back on patient-centred care. Through her grant-in-aid, she is developing a novel cardiopulmonary resuscitation (CPR) video decision aid to promote shared decision-making with seriously-ill patients and their families. She says, for seriously-ill patients in hospital, CPR doesn't work very well and patients typically end up on life support for a period of time. Ultimately, she hopes to ensure healthcare teams are creating a space where patients can make informed decisions on how they want to pass. Dr. Kryworuchko is involved in a number of other research projects focussed on patient care and teaching the next generation of nurses at the U of S.



### Making a difference in the lives of Canadians

The work of Drs Kelly and Kryworuchko are just two examples of how the Foundation's funded researchers are working to prevent disease, save lives and promote recovery. Without the continued support of world-class research such as this, more Canadians will die. Our goal is to reduce the rate of death from heart disease and stroke in Canada by 25 per cent by 2020, which amounts to 10,000 survivors each and every year. For more information about the ways the Heart and Stroke Foundation is making a tangible impact here in our province and across the country, visit [heartandstroke.ca](http://heartandstroke.ca).



**HEART &  
STROKE**  
FOUNDATION

# TURNING ON THE Green Light

How communities  
create population health  
research success

There's a green light shining on the porch of a Saskatoon house whose front yard is covered in leaves from elms along this city street. Green's an usual color for a porch light.

"It means our house is smoke free," says a young boy standing on the sidewalk.

And that one simple explanation is a celebration.

As of August 31, 2014, 87 communities in Saskatchewan, two communities in Alberta and two communities in Manitoba are participating in the Green Light Program. Green light bulbs have been provided to 1,848 homes that are now smoke-free. Of those who had smoke-free homes, 66 per cent indicated that they did not currently mis-use (non-traditional use) tobacco. Of those who were currently mis-using tobacco, 76 per cent indicated that they were interested in becoming free from tobacco misuse. Residing within these homes, and thus protected from



## Dr. Vivian Ramsden

Professor and Research Director in the Department of Academic Family Medicine, College of Medicine at the University of Saskatchewan



second-hand smoke at home, were 1266 children and 1047 older adults/Elders. Of the 1266 children, 90 per cent are under the age of 18 years.

The success of the Green Light Program is a story of the power of community and how communities can prioritize their health needs, create a research opportunity, and work towards translating the outcomes into healthier people, healthier homes and healthier communities.

“For community engagement to succeed, the interests of the community must be taken into account and researchers must become facilitators,” says Dr. Vivian Ramsden, Professor and Research Director in the Department of Academic Family Medicine, College of Medicine at the University of Saskatchewan.

“We’ve worked to create meaningful and sustainable relationships over time with Elders, community members,

health care providers, and researchers. And it was through this commitment to community engagement that the Green Light Project had its genesis.”

The idea was a simple one. Increase the number of smoke-free homes within communities thereby reducing the number of people exposed to the harmful effects of environmental tobacco smoke. When you sign up to participate in the Green Light Program, and place the environmentally-friendly green light bulb at your door, porch or balcony, it lets others know that you have chosen to live in a smoke-free home.

“But the important success of this program is the fact that it is community designed, community-chosen and community-driven,” adds Ramsden. “It’s an example of how community-based participatory research, especially within primary health, should work.”

**STURGEON LAKE REPORTS THE COMMUNITY IS NOW ABOUT 67% SMOKE-FREE IN HOMES AS A RESULT OF THE COMMUNITY EDUCATION PROGRAM ASSOCIATED WITH THE GREEN LIGHT PROGRAM.**



Community-based participatory research approaches are designed to improve health and well-being in and with communities and to minimize health disparities in general. This partnership approach equitably involves community members, organizational representatives and researchers in all aspects of the research process and everyone contributes their expertise, decision-making and ownership. The process and the results/findings provide ways that the communities are able to enhance their health and wellness, increase capacity, and be empowered to direct their education, research and service activities towards addressing and meeting the health priorities of the community.

The process began with community members being invited to share what issues they felt were critical to community health. The results from community-based surveys undertaken in Saskatchewan were returned to each of the communities for discussion and reflection. In all of the community-based surveys, tobacco misuse was identified as the most common modifiable risk factor. Within the context of this work, tobacco misuse was defined as non-traditional use of tobacco by First Nations and Métis peoples.

In reflecting upon the results, a framework specific to tobacco misuse was developed by Elders, individuals in the communities, and researchers. It was designed to build on strengths that already existed in the communities and facilitate the development of a chronic disease prevention and management program that would result in healing (individuals, families, and communities) thus minimizing the misuse of tobacco and enhancing health and well-being. As a result, the Green Light Program was born.

Twenty-five community members received training as peer counselors and began implementing the Green Light Program within their communities. These counselors provided information on the program, materials to implement the program, and collected and submitted data.

The results have been a great success.

For example, the Health Director in Sturgeon Lake reports the community is now about 67 per cent smoke-free in homes as a result of the community education program associated with the Green Light Program. In addition, the Band has introduced a policy keeping every Band-owned facility smoke-free.

“All my friends’ houses are smoke free,” says the young bystander. The green light shines through the fading evening light. No longer just a green light, it’s a beacon of community wellness. 



# Developmental Risk Factors and Schizophrenia

Schizophrenia is a severe, disabling brain disease that affects about one per cent of the population.

Recently, cognitive impairments such as deficits in learning and memory have been emphasized as fundamental features of the disorder. However, the mechanisms through which developmental risk factors for the disorder lead to the cognitive impairments are not known.

Dr. Lei An from the College of Medicine at the University of Saskatchewan was recently awarded a SHRF Postdoctoral Fellowship Grant to further explore the body of knowledge related to development risk factors and schizophrenia.

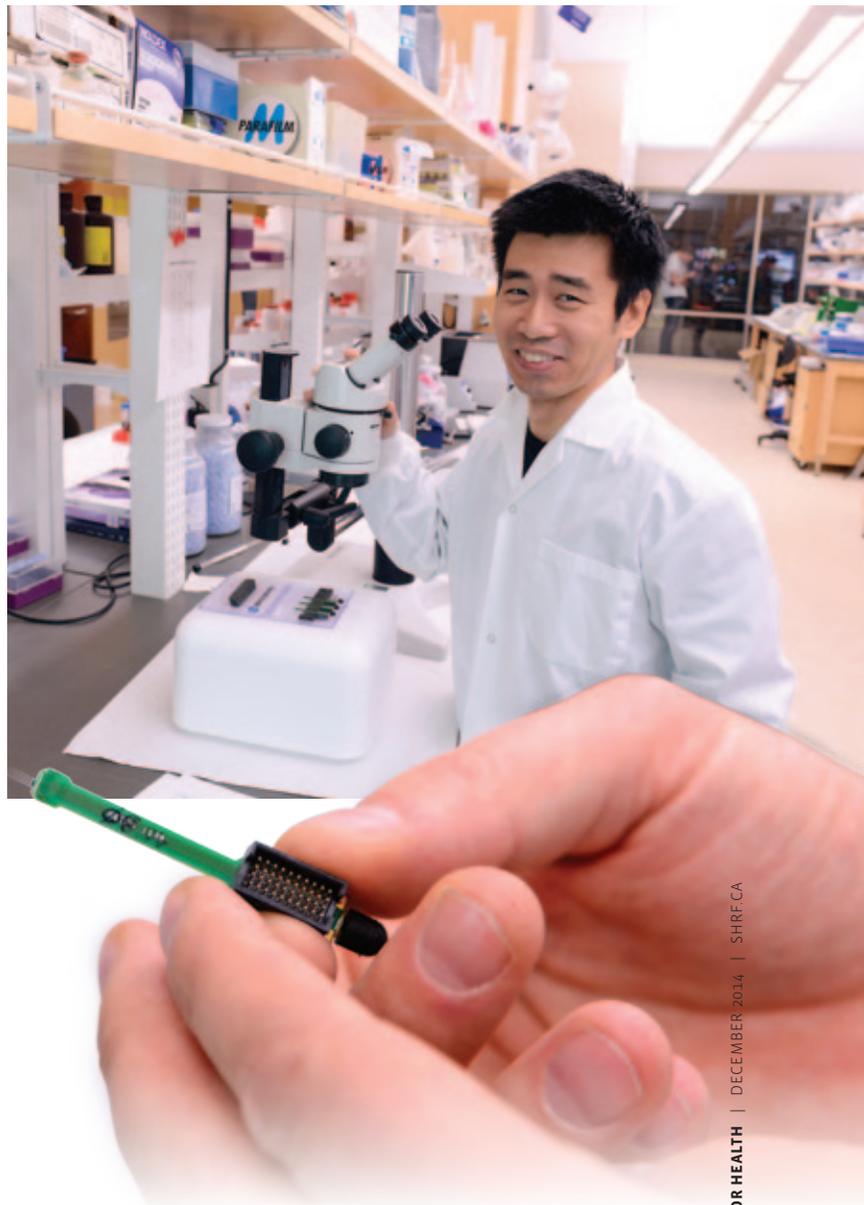
Dr. An plans to use a well-validated rat model of maternal infection during pregnancy an established environmental risk factor for schizophrenia to assess the specific changes in brain activity that may underlie cognitive symptoms of the disorder. His team will test whether the offspring of pregnant rats exposed to a simulated viral infection during pregnancy display altered working memory, specifically in capacity and span.

In a second series of experiments, An's team will record the activities of single unit and local field potentials in the brains of control and infection-exposed rats while they perform the working memory test. These results will enable the research team to describe the alterations in brain activity that occurs during cognition on a single cell level for the first time.

Dr. An hopes that his research enables the development of novel therapeutics for schizophrenia that could improve the cognitive symptoms of the disorder. [↗](#)

## Dr. Lei An

Department of Physiology, College of Medicine at the University of Saskatchewan



Dr. Carrie Bourassa describes herself as a community-based researcher. It's a community the Saskatchewan Métis researcher knows well. From 2010 until March 2014 she was the Nominated Principal Investigator for the CIHR-funded Indigenous Peoples' Health Research Centre, the major collaborative research centre for Aboriginal health research in Saskatchewan. Her community-based and directed research has been of incredible depth and breadth, but one area of critical importance has focused on Aboriginal end-of-life care.

# At the End of Life

## Comfort, Care and Aboriginal People

"A friend, a relative or a community member dying is of special significance to First Nations and Métis Peoples," says Ken Goodwill, one of the advising Elders in the video *Completing the Circle: End of Life Care with Aboriginal Families*. "It evokes special responsibilities and obligations that the living have toward those who are about to enter the spirit world. We hope this video will give health-care providers some insight into those feelings, and find ways to respect these traditions."

The video, a powerful tribute to First Nations People and a powerful education tool for healthcare providers, is one result of Dr. Bourassa's research.

"When we began this project more than 10 years ago, it was clear to us why this work needed to happen," says Bourassa. The statistics are devastating.

Canada's Aboriginal population grew by 45 per cent between 1996 and 2006 – almost six times faster than the general Canadian population. First Nations people continue to suffer from high rates of chronic and infectious disease and higher mortality and infant mortality rates



compared to the general Canadian population. The primary causes of death among Aboriginal populations are cardiovascular disease, diabetes, obesity, cancer, stroke, suicide, motor vehicle accidents and homicide. The combined impact of these causes results in a life expectancy of First Nations peoples estimated at 68.9 years for males and 76.6 years for females, reflecting differences of 7.4 and 5.2 years, respectively, from the Canadian population's life expectancies. Preventable deaths due to circulatory diseases (23 per cent of all deaths) and injury (22 per cent of all deaths) account for a near staggering 50 per cent of all deaths in the First Nations population.

"As we began to work with healthcare providers we realized that they were in fact, seeking information about Aboriginal people," adds Bourassa. "They were wondering why when an Aboriginal person was dying there were 30 to 50 people in the waiting room. They wondered who Elders were and why smudging and certain items such as stones and bundles seemed so important to the patient and the family. They were wondering how best to communicate with the family."

The need for research into the importance of end-of-care for Aboriginal People could never have been clearer. Given the population health statistics and the questions for which healthcare providers were already seeking answers, the environment seemed ready for translational research.

Previous research has suggested that cultural barriers often discourage ethnic minority patients from using services based on a palliative care philosophy that promotes the idea of a “good death”: a patient-centered approach to relieving symptoms and meeting the goals of terminally-ill people for their end-of-life care. The research suggested that Aboriginal families in Canada are a group in particular need of these services.

The research project, *Completing the Circle: End of Life Care with Aboriginal Families*, aimed to act on the recommendations suggested in the academic literature for cross-cultural end-of-life care. The objectives were threefold: to enhance health-care workers’ awareness of Aboriginal families’ end-of-life care needs; to increase awareness of the available end-of-life care services; and to increase Aboriginal families’ access to palliative care services.

IN SEPTEMBER OF 2014, DR. CARRIE BOURASSA, PROFESSOR OF INDIGENOUS HEALTH STUDIES AT THE FIRST NATIONS UNIVERSITY OF CANADA IN REGINA WAS NAMED A MEMBER OF THE INAUGURAL COHORT OF THE ROYAL SOCIETY OF CANADA’S COLLEGE OF NEW SCHOLARS, ARTISTS AND SCIENTISTS. SHE JOINED 90 OTHER COLLEAGUES FROM 51 CANADIAN UNIVERSITIES AND THE NATIONAL RESEARCH COUNCIL AND TOGETHER THEY REPRESENT CANADA’S EMERGING GENERATION OF SCHOLARLY, SCIENTIFIC AND ARTISTIC LEADERSHIP.

**Dr. Carrie Bourassa** (left) Professor of Indigenous Health Studies at the First Nations University of Canada, **Karen Schmidt** Community Partner (right)





**IN ORDER TO EDUCATE HEALTH CARE PROVIDERS ABOUT CULTURALLY APPROPRIATE AND SAFE END-OF-LIFE CARE FOR ABORIGINAL FAMILIES, SASKATCHEWAN ELDERS WERE INTERVIEWED AND ASKED TO SHARE THEIR EXPERIENCES AND BELIEFS ABOUT DEATH AND DYING IN THE ABORIGINAL WORLD.**

"I take my direction from First Nation and Métis communities," says Bourassa. "When the community comes to me and says, "We want to engage in this kind of research," that's what I do. And the Aboriginal community had a strong desire to work together on this research project. In this case, however, I want to clearly acknowledge and thank Drs. Mary Hampton, Angelina Baydala and the late Elder Ken Goodwill who engaged me in the work when I was a new faculty member and it became very clear that this was, indeed, a community-driven need."

"We had a large learning community of practitioners, consultants and researchers working together. We have developed a strong network of collaborators in the Regina Qu'Appelle Health District in Saskatchewan, including palliative care services, native health services, Elders and other Aboriginal community members, including most recently the File Hills Qu'Appelle Tribal Council, and many community-based service agencies," explains Bourassa. "It was these partners that were involved in designing curricula, videos, and fact sheets, as well as serving as strong proponents of this project."

In order to educate health care providers about culturally appropriate and safe end-of-life care for Aboriginal families, Saskatchewan Elders were interviewed and asked to share their experiences and beliefs about death and dying in the Aboriginal world. Research assistants, graduate students from the First Nations University of Canada and from surrounding First Nations, travelled to powwows throughout southern Saskatchewan to ask Elders what messages they would like to share with health-care providers. The work of the research assistants and graduate students in gathering the stories and messages from the Elders was absolutely integral and aligned with Indigenous research methodologies.

With that knowledge, a curriculum package was produced that consisted of a 23-minute video, a PowerPoint presentation, and lecture material for a presentation on culturally sensitive and appropriate protocols for providing support to Aboriginal families.

The Elders interviewed for the video provided information in a non-threatening and honest manner. They speak from the heart and it resonates strongly with health care providers. Elders address the issue of kinship and explain that many Aboriginal family ties are based upon extended family, rather than upon a nuclear family model. In a kinship system, family ties are not limited to bloodlines. It is common for large extended families to gather when there is a health crisis within a family. This gathering of extended family is a demonstration of respect and support for the ill or dying individual and provides support for those family members most affected.

The Elders also addressed questions surrounding Elders and healers. They explained that Elders are integral to providing support and guidance to the family. They noted that ceremonies and healing are special gifts given by the Creator and, like languages, there are also many different healing methods used among Aboriginal peoples and that individuals who



have special gifts of healing (e.g., Elders, healers, ministers, community members) may be requested by the family in their time of need. Healers, Medicine Men, and Medicine Women facilitate communication between the ill person and spirit world through ceremonies, prayer, and other rituals. Moreover, sacred and ceremonial items are integral to many peoples' healing process. Common healing sacred items include: feathers, tobacco, sweet-grass, cloth, special stones, bundles, as well as medicines in the form of teas. The Elders explained that even though someone may be dying, they may be doing the most mental, emotional and spiritual healing that they have ever done and the Elders or healers and the ceremonies they perform are essential to that healing.

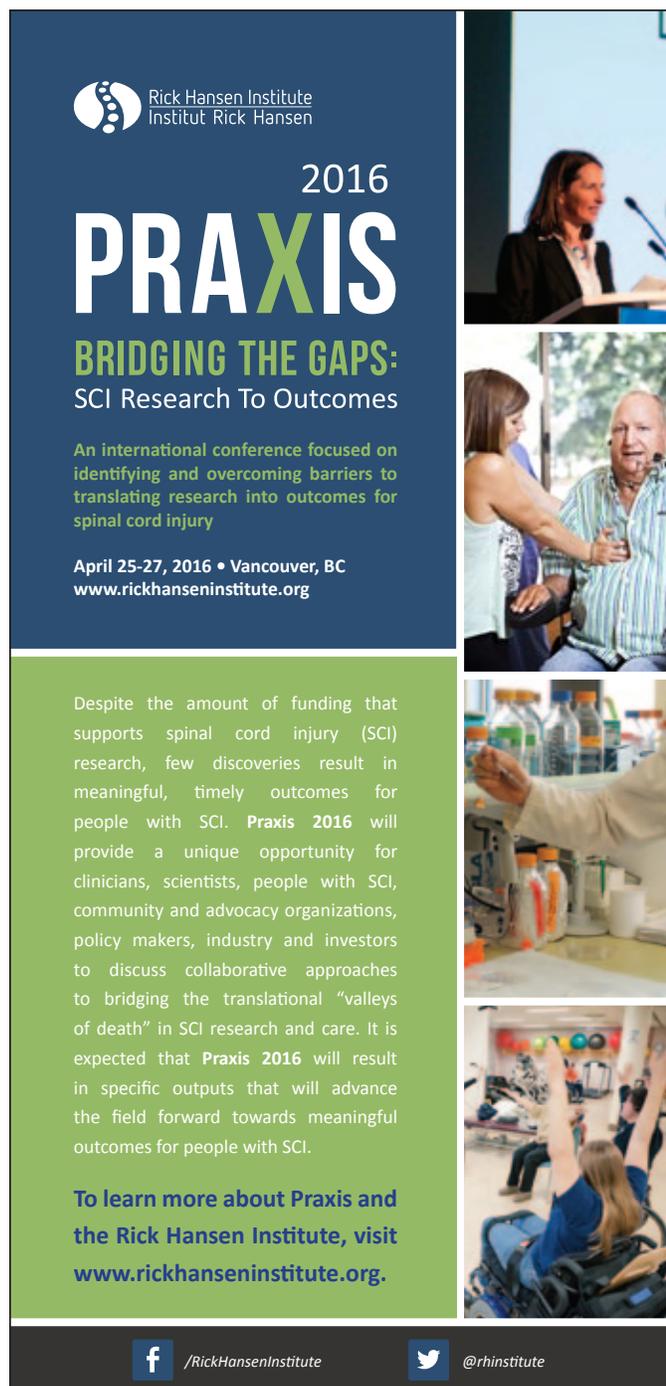
The Elders also spoke forthrightly about how the sacred items must be treated with respect. If a health care practitioner or hospital staff member needs to move an item, they must discuss this with the patient and/or family members. Many items are blessed and therefore people are asked to respect that blessing and refrain from handling such items. In addition, women who are on their moontime (menstrual cycle) are asked not to handle sacred items or even be in the same room as the items. This is because menstruation is a very powerful time for women. It is viewed as a gift from the Creator that must be respected and protected. In many Aboriginal societies, women refrain from participating in ceremonies or touching traditional medicines and spiritual items because they are so powerful that they actually will draw that energy to themselves instead of the family member in need.

The videos have become powerful tools. They are now hosted on the Canadian Virtual Hospice website and have the most hits of any palliative care information. In addition, work on end-of-life care has led to the creation of a ceremony room in one hospital to allow Aboriginal patients a cultural area for prayers or smudging.

"We feel that we have had such great success because of our guiding Elders on the project – the late Elder Ken Goodwill and Elder Betty McKenna," says Bourassa. "Everything we do was approved by them and we rely on ceremony and prayer to guide us. We thank you wise Elders for your prayers, patience and wisdom as we endeavour to create culturally safe health care for Aboriginal families."

The video packages have met with great success. Health regions and various organizations, including universities, across Canada have purchased the video. Recently an additional video was completed geared towards Aboriginal families entitled *Completing the Circle: Healing Words About End of Life Spoken to Aboriginal Families*. This video contains messages from Elders to help families deal with end of life care for loved ones. Several other videos geared towards various audiences including other researchers who are undertaking research in this area are now available to order at [aboriginalendoflifecare.com](http://aboriginalendoflifecare.com).

Clearly, when it comes to supporting end-of-life care, research has created a dialogue that continues. 



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PotashCorp MRI Centre

# Quality in Medical Imaging

Working on a clearer  
picture of diagnostics

By Roger Francis

I'm standing in a darkened room with my physician as he scrolls through an electronic list of files on a computer screen. One click of the mouse and next to him on the viewing screen are images of my big toe.



**Dr. Sonia Vanderby**

Holds joint appointments in Mechanical Engineering and Medical Imaging at the University of Saskatchewan

"I WONDER HOW HE KNOWS THAT'S MY TOE, I DON'T SEE ANY NAME ON THIS PICTURE."



As he points out the bony spurs on the proximal phalange and explains the arthritic pain that I've been experiencing, simple questions pop into my head.

"I wonder how he knows that's my toe, I don't see any name on this picture." "What if those two little bumps are just bumps and not arthritis?" "What if those bumps are growing faster than he knows and it's something worse?" "Will I have to have my toe removed?"

I don't actually ask him any of these questions, and like most patients, just nod and as I am leaving try to remember what he said I was supposed to do.

I've never had a CT scan or an MRI, but I'm familiar with x-rays and ultrasound and I seem to go through these mental exercises every time. Is it just me?

Well, perhaps my questioning mind belies a stronger concern in today's healthcare system.

The whole area of quality in medical imaging has many aspects to it – not just the potential for misinterpreting images. There are, however, technical and practical challenges to putting in place "better" systems to monitor and improve the quality of diagnostic imaging services.

Dr. Sonia Vanderby of the University of Saskatchewan understands these challenges all too well.

"A key area of interest these days is whether exams being conducted are appropriate," says Vanderby. "Are people getting MRIs who don't need them? Or CT scans? Or ...? Conducting unnecessary exams, where

the results won't be helpful or alter patient care, for example, increases demand, and correspondingly can increase wait times, delaying access for those that truly need it."

With a doctorate in Industrial Engineering and a background in Healthcare Engineering, Dr. Vanderby currently holds joint appointments in the Department of Mechanical Engineering in the College of Engineering and in Medical Imaging in the College of Medicine. Her Quality in Medical Imaging (QiMI) research team has recently been funded by SHRF to improve the quality of medical imaging in Canada.

"High quality care means patients receive the right exam at the right time using the right resources in the right manner, yielding the right results; in a system in which providers, patients, and policy makers are equipped with the right knowledge to ensure resources are used appropriately," says Vanderby.

Currently, it is difficult to determine what is "right" due to gaps in evidence and knowledge relating to medical imaging. The QiMI team aims to address this shortcoming by focusing on research relating to each aspect of quality with the ultimate goal of improving the quality of medical imaging for all Canadians.

Medical imaging refers to processes and technologies that are used to visualize the anatomy and physiology within the human body. That 'look inside' provides information that significantly contributes to a diagnosis of a variety of medical conditions. The technology used, or the combination of technologies used, will depend on a person's symptoms and the body area that is being examined. Conventional X-rays, computed tomography (CT), nuclear medicine (e.g. PET, that is, positron emission tomography), magnetic resonance imaging (MRI), and ultrasound are all types of medical imaging that may be requested by an ordering physician, or other qualified healthcare providers where permitted under provincial or territorial law.



CONVENTIONAL X-RAYS, COMPUTED TOMOGRAPHY (CT), NUCLEAR MEDICINE, MAGNETIC RESONANCE IMAGING (MRI), AND ULTRASOUND ARE ALL TYPES OF MEDICAL IMAGING THAT MAY BE REQUESTED BY AN ORDERING PHYSICIAN.

Medical imaging has become essential to medical care and treatment in Canada. In 2012, Canadians underwent 1.7 million magnetic resonance imaging (MRI) exams and 4.4 million computed tomography (CT) exams, nearly double the number of such exams performed in 2003.

Determining the appropriateness of every individual medical imaging procedure is complex. Appropriateness may vary with the age, sex, size, and physical limitations of the patient. It also depends on the condition and symptoms with which the patient presents, along with availability of a piece of desired technology. In addition, technology keeps advancing and new tests and tools continue to offer new diagnostic options. Inappropriate CT exams, however, unnecessarily expose patients to substantial doses of radiation. Inappropriate imaging can include imaging in cases where it's not needed, or using the incorrect modality (perhaps MRI instead of ultrasound or CT, for example), and even the duplication of exams.

Numerous factors have an impact on the quality and appropriateness of medical imaging.

"That's why, in the short-term, we intend to further develop a multidisciplinary research group and conduct initial research to establish a baseline of the quality of medical imaging services in Saskatchewan and Canada," explains Vanderby.

In the longer term Vanderby envisions a multi-disciplinary team of researchers conducting practical, coordinated, and complimentary research aimed at improving all aspects of quality in medical imaging. She foresees developing and implementing methods, tools, and strategies that ensure patients receive high quality, appropriate imaging, and raising awareness of the importance of addressing quality in medical imaging all healthcare environments.

"Our team is committed to pursuing this research to benefit all Canadians: patients, through appropriate, timely and safe care, and through rationalized, value-added health care spending," says Vanderby.

By bringing together operations research, clinical, imaging appropriateness and quality assurance knowledge, the QiMI team will have the skills, expertise and contacts to both grow the team and ensure their research is successful.

My big toe? Yes, I trust my physician. The image was clearly one that showed a problem, the diagnosis was correct, and through intervention, it's become much less of a problem.

I place strong trust in the quality of the diagnostics I received. 

## Dr. Thomas Hadjistavropoulos

Associate Professor in the Department of Psychology,  
Faculty of Arts at the University of Regina

# Enhancing the Quality of Life of Older Adults



According to Statistics Canada, in 1950 eight per cent of Canadians were older than 65 years of age. Today, 14 per cent of Canadians are over 65, a proportion that is expected to exceed 20 per cent by 2030 and to reach 30 per cent by 2056. With this increase comes a higher prevalence of health conditions that accompany old age and underscores the necessity of research focusing on seniors.

Dr. Thomas Hadjistavropoulos has a close affinity for research related to older adults. As a University of Regina Research Chair in Aging and Health and a recipient of a SHRF group grant, Hadjistavropoulos leads the Community and Research Alliance for Quality of Life in Older Adults (QOL) research team. The team includes investigators from both the University of Regina and the University of Saskatchewan as well as partners from the Regina Qu'Appelle Health Region and the Saskatoon Health Region.

"The QOL Team is motivated by the need to improve quality of life for older adults who live both independently and in long-term care," explains Hadjistavropoulos. "Our team is inter-disciplinary and includes experts in medicine, nursing, physiotherapy, psychology, biostatistics, pharmacy, nutrition, and health care ethics. But we all have one focus – improving the quality of life for older adults."

The QOL Team hopes to accomplish its research goal by developing a better understanding of the contributors to functional decline in older adults. In addition, the Team is looking at the development, implementation, and evaluation of programs aimed at improving health and quality of care. Specific areas of interest within this broad spectrum include: nutrition and its effects on health; falls prevention; risk factors for cognitive decline; improved pain management; additional programming to improve quality of life in long-term care; and the impacts on long-term care staff stress and quality of care.

For older adults today, quality of life can include many aspects of care, but also of society and community. QOL hopes to also investigate housing options and programming for seniors who are transitioning from independent living to requiring care. The Team is interested in finding out more about the availability of suitable programming as well as factors that influence decisions about housing options during these transitions.

Despite the breadth and depth of the research, outcomes are expected to inform and impact programming aimed at the needs of older persons. 

## Jo-Ann Episkenew

Director of the Indigenous Peoples' Health Research Centre and Phase III group grant leader at the University of Regina



# Art, Culture and Healing

The creative arts play a big part in how we define culture. When we ask someone to detail the “cultural” or creative activities of a city or place, we come away with a long list of theatres, galleries, and festivals. We also know creative arts play a key role in psychological health as well. There are many creative and instructive art and activity programs embedded in our health system. But art, culture and healing are inextricably linked for First Nations’ people.

“Every day when I walk into my office at the Indigenous Peoples’ Health Research Centre, some part of me asks, “How the heck did this happen?”” says Jo-Ann Episkenew, Director of the Centre. “You see all of my training and all of my degrees are in English. Yet, I know I belong here and that my training in English has prepared me for this work in health research.”

Episkenew talks passionately about what she does – a stream that overflows its banks with the richness of life and one which celebrates the interconnections between art, creative pursuits, literature, and health research. It’s hard not to get caught up in the enthusiasm.

Part storyteller, part mentor, Episkenew has described herself as a “discipline shifter”, someone who has shed light on the contributions of literary studies to health research.

**THE FHQTC IS A STRONG VIBRANT ORGANIZATION THAT IS COMMITTED TO BEING A LEADER AND AN ADVOCATE FOR THE DELIVERY OF QUALITY SERVICES FOR THE SUSTAINABILITY, SELF-SUFFICIENCY AND AUTONOMY OF THEIR FIRST NATIONS MEMBERSHIP.**

At the core of this shift has been the consistent importance of creativity and human well-being, especially the well-being of Indigenous people.

The Indigenous Peoples' Health Research Centre (IPHRC) - a partnership between the University of Regina, University of Saskatchewan, and First Nations University of Canada - under Episkenew's leadership has received SHRF funding under its group grant program for a number of years and has researched the impact of art and healing in Indigenous culture.

Reviewing the breadth and depth of the research that has been undertaken by IPHRC, three themes quickly arise: art as a form of health intervention and its therapeutic benefits; art as a protective factor that strengthens individuals and communities; and how the vitality of creative expression improves

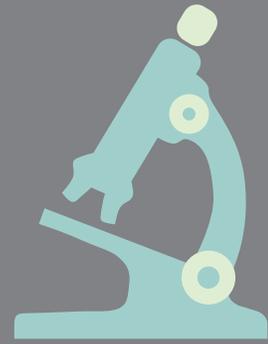
community well-being. Art, culture and healing are linked.

One research project that demonstrates this link is Kitinikêwin Misiwanachisowin. This project is researching arts-based wellness promotion as a tool to prevent suicide among Aboriginal youth in Saskatchewan.

Youth suicide is a very real and visual example of the inequalities that exist between the health of Aboriginal People and of other Canadians. Suicide rates among Aboriginal youth are much higher than those of their non-Aboriginal peers and Aboriginal youth in Canada have the highest suicide rate among all Indigenous groups in the world. Since youth comprise more than half of the Aboriginal population in Canada, youth suicide is a serious health issue needing to be addressed. Funded by the Canadian Institutes for Health Research Institute of Aboriginal Peoples' Health, the project builds on an existing arts-based research project in partnership with the Five Hills Qu'Appelle Tribal Council (FHQTC) Health Services.

The FHQTC is a strong vibrant organization that is committed to being a leader and an advocate for the delivery of quality services for the sustainability, self-sufficiency and autonomy of their First Nations membership. They are a not-for-profit organization providing a variety of service delivery programs to member First Nations which include Carry the Kettle, Little Black Bear, Muscowpetung, Nekaneet, Okanese, Pasqua, Peepeekisis, Piapot, Standing Buffalo, Star Blanket and Wood Mountain First Nations.

The team is composed of FHQTC health professionals and a diverse group of researchers with



More than  
**640**

researchers working in health research in Saskatchewan today



expertise in Aboriginal youth health, arts-based methods, public policy, and quantitative research. Key to success has been the contributions of Gail Boehme, Director of Health and Karen Schmidt, Health Educator. The project builds the capacity of Aboriginal youth, community members, knowledge users, and researchers to investigate, identify, and address conditions leading to Aboriginal youth suicide and other self-harming behaviors through the development of culturally appropriate arts-based methods of research. The team is also studying the short- and long-term effectiveness

of arts-based approaches in supporting Aboriginal youth wellness. Lastly, this study aims to formulate policy recommendations on Aboriginal youth suicide that are culturally appropriate and have the potential to increase the health and well-being of Aboriginal peoples over the coming generations.

According to Episkenew, the impact to date has been positive. "This is so important to our communities. We want to help youth feel good about their futures, not hopeless."

Another example of research in action is Acting Out! Acting Out! But in a Good Way is a research project that offers workshops that use theatre and other arts-based practices to Indigenous youth in the FHQTC area. In these workshops, theatre games are played, images are constructed, and short plays are created to examine the choices that affect health and wellness. The games provide youth with an opportunity to practice leadership and to test different behaviours in a supportive environment. Youth who have participated in the workshops have said they help develop self-esteem.

But the workshops are also a two-way street. The youth who participate teach the researchers about their views on health and wellness and about the challenges youth face on the path to become healthy adults. The workshops also create the conditions for youth to become health researchers who better understand the choices they make and their consequences.

To date, over 300 youth in the FHQTC area have participated in workshops called "Exploring and Re-creating Indigenous Identity through Theatre-based Workshops."

The sharing of many success stories occurred in October of 2013, when IPHRC hosted a weekend-long symposium – Miywâyâwin Wâhkôtawin: A Symposium to Build Relationships and Exchange Knowledge of Arts-based Innovations in Aboriginal Health Research. Over 30 health researchers, applied arts practitioners, health professionals, and students from North America were in attendance. Some of the many notable guests included Dr. Suzanne Christopher, Director of the Centre for Native Health Partnerships in Montana, Dr. Rosemary Jolly, Weiss Chair of Literature and Human Rights at Penn State University, and Tony Gee, puppeteer, and artistic director of the Moveable Feast Workshop Company from Devon, England.

The research symposium launched the awarding of a new CIHR grant to a team of researchers from across Canada with principal investigators Dr. Jo-Ann Episkenew, Director of IPHRC, Dr. Linda Goulet, First Nations University of Canada, Dr. Warren Linds, Concordia University, and Dr. Greg Marchildon,



**ACCORDING TO EPISKENEW, THE IMPACT TO DATE HAS BEEN POSITIVE. "THIS IS SO IMPORTANT TO OUR COMMUNITIES. WE WANT TO HELP YOUTH FEEL GOOD ABOUT THEIR FUTURES, NOT HOPELESS."**

University of Regina, in the amount of \$535,556 over three years. The grant builds on the existing CIHR arts-based research project described previously with the FHQTC Health Services on suicide prevention.

One highlight of the symposium was a puppet play by high school students from Peepeekisis First Nation who, through their puppets, conveyed their views of youth health and answered questions from the audience. The puppets and the play were created in a workshop earlier in the week offered by Tony Gee, Warren Linds, community partner Karen Schmidt, and research assistant David Benjoe, as part of the CIHR research project.

For two days, symposium participants engaged in arts-based knowledge generation techniques and shared research development, barriers and successes, and impacts and methods of communicating and learning with others including community members. The successful event concluded with participants viewing a 116-page visual report of the weekend's activities. This multi-media report was a compilation of art pieces, journal entries, and photos taken by the weekend's videographer, Gabriel Yahyahkeekoot, and was compiled by documenter Kit Malo. All participants were given an electronic copy of the report to take with them, and a DVD of all collected video footage from the entire symposium.

"I loved the laughter that this project and the symposium inspired," says Episkenew. "It's the laughter that engages youth and adults, and it's laughter that gives us a feeling of freedom – freedom to be silly, not self-conscious." 

Laughter and connections continue to play a key role in linking art, culture and Indigenous health. Art works, adds Episkenew, in innovative ways to connect people to health research and health promotion.

Health and healing is complex. It's individual, it's family-connected, it's community, it's culture. Innovation aimed at producing knowledge that can address issues in Indigenous health is vibrant in Saskatchewan thanks to researchers like Dr. Jo-Ann Episkenew and others at IPHRC.

Better health may just be a painting, a play, a song, or a poem away. 

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in cancer-  
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## Cancer Research

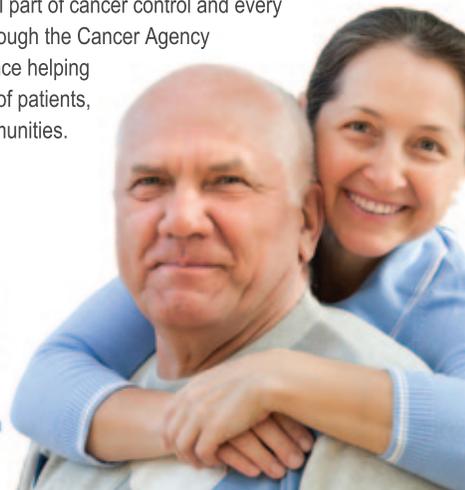
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Research is a vital part of cancer control and every dollar donated through the Cancer Agency stays in the province helping improve the lives of patients, families and communities.



# Inflammatory Bowel Disease Treatment and Maternal and Fetal/ Infant Outcomes

**Dr. Sharyle Fowler**

Department of  
Gastroenterology,  
College of Medicine  
at the University of  
Saskatchewan



Very little information exists about the effects of chronic inflammatory conditions and the medications used to treat them during pregnancy and lactation on maternal and fetal/infant outcomes. But thanks to recent Establishment Grant from SHRF, Dr. Sharyle Fowler of the College of Medicine at the University of Saskatchewan is hoping to change that.

“Inflammatory bowel disease is a disease that can affect patients during childbearing years,” says Dr. Fowler. “Poorly controlled disease can have a negative impact on fertility and pregnancy. But, the good news is, if IBD is well controlled, pregnancy outcomes are good. So, appropriate management of inflammatory bowel disease during pregnancy has important consequences for the mother, but can also have both immediate and long-term consequences for her baby.”

Dr. Fowler will conduct her research within the established infrastructure of the Saskatchewan Multidisciplinary IBD Clinic. The clinic, in the Saskatoon Health Region, is composed of an interdisciplinary team of health care professionals who work with patients and their families to assess, treat, and manage IBD. Individual treatment plans are developed through collaboration between the patients and their health care team.

Working with the clinic allows Dr. Fowler to establish a patient registry housing both clinical data and biological specimens from pregnant and lactating women with inflammatory bowel disease. This patient registry will help answer the multitude of outstanding issues regarding the care of patients with inflammatory bowel disease during pregnancy and lactation to determine how the disease and its treatments affect the health of the mother, and her children.

Dr. Fowler’s study objectives are threefold: 1) Improve the accessibility, quality, and safety of health services for patients with inflammatory bowel disease in Saskatchewan; 2) Characterize the vaginal microbiome in pregnancy and inflammatory bowel disease and assess correlations with outcomes; and 3) Assess the effect of inflammatory bowel disease and disease therapies on breast milk micronutrients. 

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establishment grants awarded for new and developing researchers

# People and Places



1



4

- 1 | 2013 Achievement Award winner Greg Marchildon and family
- 2 | SHRF was proud to participate in the Canadian Light Source open house, "See the Light: Health Research at the Canadian Light Source", October 2014
- 3 | Interim CEO, Patrick Odnokon engages the delegates at Hacking Health Hackathon Saskatoon 2014
- 4 | Rob Norris, Minister of Advanced Education addresses the audience at Santé! 2013
- 5 | Exciting conversations at the 2014 Health Quality Summit
- 6 | Strategic planning at the September 2014 SHRF Board meeting
- 7-8 | Every year, the research community gathers at Santé! to celebrate the successes of Saskatchewan's health research enterprise.



2



3



5



6



7



8

**OVER \$6.2m**  
invested in seniors' related health research



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ALEX, DIAGNOSED WITH MS IN 2007



Realize. A better **quality of life** for older Canadians.



Dr. Darren Candow

Dr. Shanthi Johnson

University  
of Regina



Dr. Shanthi Johnson and Dr. Darren Candow are just two of the researchers at the University of Regina's Faculty of Kinesiology and Health Studies working to improve the quality of life for older Canadians.

Among her areas of study, Johnson examines the role nutrition and exercise regimens play in improving physical capabilities and prevention of falls among seniors in community and long-term care settings. Candow is working to develop effective resistance training and nutritional routines to improve aging muscle and bone health. They both work in partnership with community and industry to improve the lives of older Canadians and save health care costs.

The University of Regina has established a proud tradition in population health research. Our researchers are collaborating with others across Canada and around the world to expand the frontiers of knowledge and improve the quality of life for Canadians.

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