our philosophy

The MANITOBA MEDICAL SERVICE FOUNDATION (MMSF) provides funding for the advancement of scientific educational and other activities to improve the health and welfare of Manitobans.

The Manitoba Medical Service Foundation is the most important source of medical research funding to help establish medical research in Manitoba, focussing on support of first time researchers.

We are inspired by the accomplishments of the researchers who have received funding through the Manitoba Medical Service Foundation and we look forward to continuing our goal of supporting health-related research and education in Manitoba.

Since 1971, THE MANITOBA MEDICAL SERVICE FOUNDATION has provided almost 17 MILLION towards furthering research and education in Manitoba.

Through its dedication and enduring support of research, the MMSF continues to make tremendous contributions, not only to individual researchers, but also to the improvement of health and health care for all Manitobans.

www.mb.bluecross.ca
As our population ages, as new health care challenges present themselves, medical science becomes increasingly more important. Research projects examining everything from the food we eat to how the brain communicates with the heart reveal exciting and new insights while opening up more questions about human health. You don’t have to look too far to find the dedicated people working on these quests for knowledge; important medical research happens everyday, right here in Manitoba.

Manitoba Blue Cross is a provider of health and wellness benefits, as well as travel insurance coverage for Manitobans. We take care of our people and help to protect their futures. Defining ourselves as Manitobans helping Manitobans, we feel strongly about supporting our local medical researchers through the Manitoba Medical Service Foundation (MMSF), particularly the young scientists on the threshold of their careers. Often, the grants that are awarded by the MMSF fund the start of what goes on to be a much larger project with Manitoba roots. The success of this grant program is evident by the number of professorship recipients whose work has been further recognized with awards from larger national funding agencies such as the Canadian Institutes of Health Research. We believe in supporting these researchers in beginning their journeys to discover important findings, because as their work progresses, they will produce new and vital medical knowledge to benefit us all.

For over 35 years Manitoba Blue Cross has supported medical research projects through the MMSF. While other research funding bodies may be dedicated to a specific area of health, the MMSF opens the door to a much wider range of applicants, which means a made-in-Manitoba solution — anything from better patient care to new treatment options — can get its start. Every contribution these projects make to the global body of medical research ranges from the food we eat to how the brain communicates with the heart, progresses, they will produce new and vital medical knowledge to benefit us all.

The Manitoba Medical Service Foundation (MMSF) is the primary source of research funding for medical research projects in Manitoba. The MMSF has been providing research funding for medical research projects in Manitoba since 1976. The MMSF supports medical research projects in all areas of health, including basic science, clinical research, and translational research. The MMSF is committed to funding medical research projects that will have a significant impact on the health and well-being of Manitobans.

The MMSF is a partnership between the Government of Manitoba, Manitoba Blue Cross, and the University of Manitoba. The MMSF is governed by a board of directors that includes representatives from each of these three organizations. The MMSF board of directors is responsible for setting the policies and priorities for the MMSF and for approving the grants that are awarded.

The MMSF awards grants to medical researchers in the province of Manitoba. The MMSF awards grants to support medical research projects in all areas of health, including basic science, clinical research, and translational research. The MMSF awards grants to support medical research projects that will have a significant impact on the health and well-being of Manitobans.

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The Manitoba Medical Service Foundation is proud to recognize cooperative funding partners. See websites for details.
The Manitoba Medical Service Foundation is unique in that it helps fund first-time researchers. Like Manitoba Blue Cross, these people dedicate themselves to improving the health and wellness of Manitobans. Their enthusiasm and commitment epitomize the meaning of The colour of Caring, making us a proud supporter of their initiatives.

On behalf of Manitoba Blue Cross, I wish to congratulate the recipients of this year’s grants. The rising cost and demand for health care in Manitoba reminds us of the importance of all efforts directed towards the finding of new treatments and improving medical outcomes.

Andrew Yorke, President & CEO

Our finances for research and personnel funds remained stretched for the 2009 competition. The budget for 2009, however, has been made up by a generous donation from the Board of Manitoba Blue Cross. We are extremely grateful for this timely assistance.

We have been able to fund 19 of 29 applications in the 2009 competition including assistance with two grants shared by the Manitoba Institute of Child Health (MICH) and MMSF, two grants shared by The Winnipeg Foundation and MMSF, one grant sponsored by the Manitoba Medical College Foundation, two grants shared by the Health Sciences Centre Foundation, and two grants shared by the University of Manitoba - Office of the Vice President (Research).

Our marking system has continued to be useful with a major mark awarded for new young investigators and a separate mark for the quality of the grant project applied for. The criteria for marking may be viewed on our website - www.mmsf.ca. Details for grants funded over the past five years as well as other Foundation contributions to research and education is located on our website.

We are happy to report the successful publication of the history of the “Manitoba Medical Service Foundation: 35 Years of Promoting Health Care Research in Manitoba”. This publication became available in 2007 and copies are still accessible. If you are interested in obtaining a copy please email the MMSF at info@mmsf.ca.

Dr. John McKenzie continues as Executive Director and Dr. John Wade as Assistant Executive Director. We thank all members of the Board of Directors for their great service. Especially Chair, Mr. Allen Rouse and Vice-Chair Dr. Greg Hammond.

Dr. John McKenzie is retiring after 16 years of service dedicated to improving research in Manitoba and the health of all Manitobans. Dr. McKenzie has been Executive Director for the Foundation since 2004 and was key in establishing the cooperative funding partnerships now in place. He served to enable even more researchers to be funded through the Manitoba Medical Service Foundation. We all wish Dr. John McKenzie the very best in his retirement!

Join us in welcoming Dr. Greg Hammond stepping into the position as Executive Director, effective May 18, 2010. Dr. Hammond has been diligently serving as a Director since 1988 and as Vice-Chairman since 2008. We are honored that Dr. Hammond has accepted the position as Executive Director. Dr. Lindsay DuVal will be taking over as Vice-Chairman of the Board. Dr. DuVal has been serving the Foundation since 2003 and we look forward to her continued support in this new role.

Allen Rouse, Board Chairman

A closer look at our 2009 Awards Recipients

For this brochure the MMSF requested photos of current awardees in their own environment. The purpose was to select a grant recipient(s) to be featured on the cover. Although few submissions were received, all submissions are worthy of recognition. This personal touch to the MMSF annual brochure is a practice which will continue into the next issue. If you receive an award from the MMSF in 2010 we hope you will kindly submit a photo of you or your research group for consideration. We wish all 2009 awardees the best in their research and education.

Message From The MMSF Board of Directors

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Message from the President of Manitoba Blue Cross

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Andrew Yorke, President & CEO
The Manitoba Medical Service Foundation (MMSF) has provided almost $17 million to medical research since its incorporation in 1971. This year’s funding is approximately $770,000 in personal and research grants. This surprisingly small amount of money also supports three professorships as well as a research fellowship.

We are proud of the Foundation’s unique awarding process. Firstly, the process includes an interview with almost every applicant for research grants. After presenting their material, the grantees answer questions from the grant sub-committees which often improve the proposal.

Secondly, MMSF is particularly interested in young scientists early in their careers. We support nine B.Sc. Medicine and five B.Sc. Dental Students, who, after one or two summers, present their work, which is usually of high quality and open to awards of excellence. The experience helps launch students on their research careers. We also support salaries of graduate fellows and students who may receive awards for excellence. Our most important awards are to young and new investigators.

The professorships have proven themselves to be great stepping stones to the Canadian Institute of Health Research (CHIR) and other national awards by awardees.

Researchers in the area of health are encouraged to apply, including those in basic health research, clinical research and population health. Previous applicants included social workers, epidemiologists, pharmacists and physiotherapists.

Through MMSF, Manitoba gains by being able to attract high-caliber leaders in clinical medicine and allied health. We want to do our part in expanding knowledge which can be translated to effective action through health action and health care. Despite huge advances in the area of genetics in disease, there remains a large gap in how to prevent or correct genetic defects. There will always be challenges in understanding.

Another challenge in recent years has been a shortage of funds which we are making plans to improve. One method has been to successfully co-operate with The Winnipeg Foundation, the Manitoba Medical College Foundation, the Manitoba Institute of Child Health, the Health Sciences Centre Foundation and the University of Manitoba - Office of the Vice President (Research). We continue to pursue new partnerships in research on a consistent basis.

The MMSF is proud to announce their new partnership with the Manitoba Health Research Council. Through this partnership two professorships are now offered. These being the MMSF/MHRC Dr. F. W. DuVal Clinical research Professorship (formerly named the Dr. F. W. DuVal Clinical research Professorship) and the MMSF/MHRC Clinical Research Professorship in Population Medicine (formerly named the Clinical research Professorship in Population Medicine). All of these awards still continue to provide a first year Grant-in-Aid of $20,000 and $50,000 per year for the three year term. For more information visit our website.

The MMSF Board is also interesting for the content of its members which is comprised of approximately half medical research professionals and half members from the wider community but all of whom are volunteers.

Please take the time to view our website www.mmsf.ca
The BSc (Dentistry) Summer Student Program in the Faculty of Dentistry introduces dental students to research during their undergraduate careers. The majority of funding for this program is provided by MMSF. The specific aim is to develop within the student skills at experimental design, hypothesis testing, critical evaluation of data and effective communication of result.

The program runs during the summer recess between years I, II and III. All students receive stipendiary support, presently $4,500.

The MMSF currently provides stipendiary support to this program of $22,500 yearly, which is approved annually by the Board of Directors. Since 1994 the MMSF has contributed almost $300,000.

**2009 STUDENTS SUPPORTED BY THE MMSF**

- **2nd Year**
  - Tracy Kolson
- **1st Year**
  - Igal Margolin
  - Nathan Jeal
  - Nirvani Umadat
  - Geoff Shaffer

- KOLSON, Tracy
- MARGOLIN, Igal
- JEAL, Nathan
- SHAFFER, Geoffrey
- UMADAT, Nirvani
Bioavailability studies of selected components of flaxseed in plasma of patients with peripheral arterial disease (PAD).

Dr. Michel Aliani – $25,000 (MMSF $12,500, U of M $12,500)

Nutritional interventions are gaining in popularity as legitimate therapeutic strategies to combat cardiovascular disease. A common dietary intervention used to alter cardiovascular disease today is supplementing the diet with Omega-3 fatty acids. Flaxseed is a plant source for these fatty acids and will also offer a source of fibers which do not exist in animal sources of these fatty acids. The flaxseed fibers are metabolized in the body and generating metabolites which are believed to be effective as a lipid-lowering and antioxidant agent.

This project intends to investigate the bioavailability of flaxseed selected fiber’s metabolites in plasma of patients with peripheral arterial disease enrolled in the human clinical trial with flax conducted at St. Boniface Hospital.

Our research today means solutions and cures tomorrow.
Investigation of fish oils, aspirin, and aspirin-triggered lipoxin as protective modulators of inflammation in murine model of acute graft versus-host disease (GVHD).

Dr. Geoff Cuvelier, Dr. Cynthia Ann Ellison and Dr. Curtis Oleschuk – $25,000

Blood and marrow transplant (BMT) therapy involves the collection of stem cells from a healthy donor (the “graft”) with infusion of these stem cells into another individual with a disease (the “host”). A number of complications limit the success of BMT, with acute graft-versus-host disease (aGVHD) being the most significant complication contributing to morbidity and mortality. Acute GVHD occurs when immunologic cells from the graft recognize recipient tissues as foreign, inciting an immunologic attack against the host. Systemic inflammation underlies both the initiation and maintenance of aGVHD.

Our research focuses on ways to reduce aGVHD through the use of therapies that reduce inflammation in the early post-transplant period. These experiments have been designed to set the stage for translation into a clinical trial in human BMT subjects.

Regulation of Thromboxane receptor hypersensitivity in persistent pulmonary hypertension of the newborn.

The newborn lung is very sensitive to low oxygen levels. In the lungs of infants who do not receive sufficient oxygen at birth, low oxygen makes the lung blood vessels go into spasm, so blood cannot flow through the lung for gas exchange. This causes persistent pulmonary hypertension of the newborn (PPHN), a lethal disease.

Our lab has shown that in low oxygen, muscle cells in lung blood vessels quickly become hypersensitive to agents of inflammation, such as thromboxane. This sensitivity does not reverse even after oxygen is restored. Sensitized muscle cells are prone to cause blood vessel spasm.

Further studying into lung blood vessel spasm may result in improved treatment options for the one-third of PPHN patients who cannot respond to current therapies.
Insulin resistance and the regulation of myocardial calcium-transport in models representative of the Type 2 diabetic heart.

Dr. Todd Duhamel – $25,000

Calcium is important in the regulation of cardiac contraction. Notably, the diabetic heart is characterized by cardiac dysfunction, which may be attributed, at least in part, to a loss of calcium regulation. My laboratory focuses particular attention on understanding the basic biological mechanisms that explain how diabetes adversely influences the movement of calcium within the heart and, ultimately, contributes to the development of diabetes-induced heart disease. Information derived from this research program may provide the basic information required to guide the future development of novel therapeutic interventions to prevent diabetes-induced heart disease.

Improving infectious disease treatment outcomes among vulnerable populations.

My research interest is in improving infectious disease treatment outcomes in vulnerable populations. Specifically, my research program has two main areas of focus: improving the treatment outcomes from HIV and other sexually transmitted infections (STIs); and improving understanding of influenza and its treatment outcomes. This research will be conducted in both Manitoba and India. Although developing and developed countries are different, the underlying causes of infectious disease epidemics are similar and lessons learned in either setting can benefit each other.

In 2009, the MMSF and the MHRC formed an ongoing agreement to fund Clinical Research Professorships at the University of Manitoba.

For more information about professorships please visit our website: www.mmsf.ca
Phenotypic and Genotypic Characterization of Patients with Ritscher-Schinzel Syndrome.
Dr. Alison Elliott – $25,000 (MMSF $12,500, MICH $12,500)

Approximately three per cent of babies are born with a birth defect that requires medical attention. Ritscher-Schinzel syndrome (RSS) is a genetic syndrome and affected children have malformations involving the heart, brain and face. We have identified a group of Manitoba paediatric patients who have RSS. Routine testing has not determined the cause of their disorder. This study will use a combination of two cutting-edge clinical and molecular technologies to further characterize RSS. By studying RSS families with a powerful new research tool, “Single nucleotide polymorphism” (SNP) array analysis, we will be able to identify genetic regions of interest and eventually uncover the underlying genetic changes.

Neuroprotective mechanisms of atypical antipsychotics in the treatment of Alzheimer phenotype n transgenic mouse model.

Alzheimer’s disease, a neurodegenerative disorder, comprises cognitive and memory deterioration, progressive impairment of activities of daily living, and several neuropsychiatric symptoms. Atypical antipsychotics including quetiapine and olanzapine effectively alleviate positive and negative symptoms as well as cognitive impairment in schizophrenia patients. Atypical antipsychotics are widely used to treat psychosis, aggression, and agitation associated with Alzheimer’s. Although there is increasing evidence on the neuroprotective effects of atypical antipsychotics, it is not known if it can reverse the pathological alterations and memory impairment in Alzheimer’s disease. This project will evaluate the action of atypical antipsychotics in the Alzheimer’s disease brain and will be useful for addressing the pathophysiology of Alzheimer’s and the mechanisms underlying the possible preventive and therapeutic effects of atypical antipsychotics. It will also be helpful in developing novel treatment strategies in the treatment of Alzheimer’s, thus improving quality of life for people suffering from the disease.

Role of tyrosine phosphorylation in the crosstalk between O-GlcNAc modification and serine/threonine phosphorylation in insulin signalling.

Insulin is a hormone which is produced from the pancreas that helps body controls the level of glucose (sugar) in the blood and ensures that the body’s energy needs are met. In diabetes, glucose builds up in the blood instead of being used for energy because the pancreas does not produce enough insulin or the body does not effectively use the insulin it makes. The inability of insulin to work normally (also known as insulin resistance) is a hallmark of type 2 diabetes. Emerging evidence suggests that increased incorporation of glucosamine in proteins involved in insulin action is associated with insulin resistance. However, the mechanism involved in this process is not known. In this project I will test the hypothesis that phosphorylation and glycosylation of insulin signaling intermediates affect each other. The decline in insulin action and increased insulin resistance that occurs in type 2 diabetes is a consequence of impaired interactions between glycosylation and phosphorylation of proteins involved in insulin action. The proposed experiments will advance our knowledge of underlying mechanisms involved in the pathogenesis of type 2 diabetes and may provide new therapeutic targets for the prevention and treatment of type 2 diabetes.
A randomized double-blinded, placebo-controlled, cross-over trial assessing the effect of tadalafil (Cialis) on the cardiovascular response in men with complete spinal cord injury at or above the sixth thoracic level.

Dr. Karen Ethans & Dr. Alan Casey
$25,000 (MMSF $10,000, HSCF $15,000)

Erectile Dysfunction is the inability to achieve and/or maintain an erection sufficient for sexual intercourse, and is a common issue among men with spinal cord injury. The main treatment for erectile dysfunction in men with spinal cord injury is a class of drugs called phosphodiesterase type-5 (PDE-5) inhibitors. Both Sildenafil (Viagra) and the more recently available and longer lasting tadalafil (Cialis) have been shown to be helpful in men with spinal cord injury. Our concern is that the low blood pressure that people with spinal cord injury often have can be greatly exaggerated with the PDE-5 medications. There are obvious safety issues if someone has to deal with drops in blood pressure for an extended period of time after taking a medication, which is why we feel it is important to clarify whether this blood pressure drop does happen in the spinal cord injured population with Cialis, the PDE-5 drug that stays in the body much longer.

The results of this study will be of importance to physicians and other health care professionals treating men with spinal cord injury to help ensure it is being prescribed safely and with full knowledge of potential side effects.
Mutations in the MeCP2 gene result in white matter defects that occur in childhood disorders of the brain.
Dr. Emma Frost and Dr. Mike Namaka – $25,000

Formation of the white matter of the brain is dependent on the interactions of many different molecules during gestation. We have identified a novel role for a molecule that was previously thought to only regulate neurons. By further understanding the role that this molecule plays during development of the white matter, we hope to better understand the cause of many brain disorders including autism, Schizophrenia and mental retardation.

Development of gene-loaded nanoparticles and collagen scaffolds for bone regeneration.
Dr. Malcolm (Mengqui) Xing – $25,000

No other area in the healthcare of the elderly is more complex than orthopedics. Important research areas include bone repair and reconstruction. My research will develop implants for bone regeneration based on nanomedicine, biomaterial scaffolds and rat mesenchymal stem cells. The research is expected to lead to the development of products to be used in clinical practice for the repair of bone defects.

We know research holds the promise of healthy, active and intelligent lives and that health related research will help tailor the health care system to the needs of Manitobans.

The Manitoba Medical Service Foundation fosters research to combat disease and disability to improve the health of Manitoba residents.
Combining clinic data on fetal alcohol spectrum disorder (FASD) with administrative data on health, education and social services.
Dr. Ana Hanlon-Dearman, Dr. Marni Brownell and Dr. Albert Chudley – $25,000 (MMSF $12,500, MICH $12,500)

Fetal Alcohol Spectrum Disorder (FASD) includes a range of conditions resulting from prenatal alcohol exposure, which can cause intellectual disabilities as well as behavioral, emotional and social difficulties. A lack of good information on who has FASD in Canada has made it difficult to determine how common the condition is, but estimates suggest that at least one in every 100 births is affected, and in some countries and small populations within Canada, rates are much higher. There is also little information on what happens to children with FASD once they are diagnosed with the condition. The objective of this project is to examine rates of health and social outcomes for children identified with FASD. This information would help determine what services these children are accessing and help answer questions related to the burden of this disorder on health and social services systems. By making use of two unique existing sources of information, this project has the potential to inform policies as well as provide a valuable resource for subsequent research on children with FASD.

Vascular events in noncardiac surgery patients cohort evaluation study and thoracic substudy (T-VISION).
Dr. Sadeesh Srinathan, Dr. Duane Funk and Dr. Clare Ramsey $25,000

The VISION study will answer three important questions. What is the risk of a heart attack, stroke or blood clots in adult patients who are undergoing surgery (except heart surgery)? What specific factors in an individual patient predict those at risk of having these events after surgery? And finally, does a specific blood test help us to identify those patients who are having a heart attack, but do not have symptoms? To answer these questions for the period of one year after their operation we will follow 40,000 patients around the world (2,000-3,000 in Winnipeg) who are undergoing surgery. The T-VISION sub-study will specifically examine all patients undergoing lung surgery world-wide as they are likely to have a higher risk of these events occurring. This information will help make these operations safer.
Hormone use, estrogen receptor expression, and survival of women with non-small cell lung cancer: A Manitoba perspective.
Dr. Gary Harding, Dr. Sri Navaratnam, Dr. Leigh C. Murphy and Dr. Alain Demers – $25,000 (MMSF $12,500, WF $12,500)

Lung cancer is the most common cause of cancer death in the world. Research indicates that there are gender differences in non-small cell lung cancer (NSCLC) incidence and survival. The mechanism for these gender differences is unclear, however Scientists feel estrogen may play a role. There is little published literature that exists on the specific study and mechanisms of actual estrogen hormone receptors on lung cancer cells, hormone replacement therapy, oral contraceptive therapy, and NSCLC. Given the low survival, high incidence and high cost of treatment, it would be of significant importance to identify risk and prognostic factors for NSCLC survival. We will analyze a large group of female NSCLC patients in Manitoba and study possible connections in patient survival, history of hormone replacement therapy use, oral contraceptive use and the presence of estrogen receptors in the lung cancer tissues. We expect to find a group of women within our whole group that exhibit a survival difference in their cancers based on the above factors interacting with each other.

A simple urinary test to predict hospitalization for congestive heart failure.
Dr. Manish Sood and Dr. Shelly Zieroth – $25,000

Numerous patients with heart failure also develop kidney disease. We are investigating whether a simple urinary test can predict worsening heart function, kidney function and the need for hospitalization in heart failure patients.

Supporting health through research and education in Manitoba.
Understanding the biological differences between juvenile and adult patients undergoing orthodontic treatment.
Dr. Wellington Jose Rody, Dr. Getulio Nogueira and Dr. William Wiltshire – $20,000

Is it safe to move teeth in older patients? Why is the response to orthodontic treatment slower in adults than in juveniles? Are the adults more prone to side effects during tooth movement? These are questions that usually come up to the minds of everyday people seeking orthodontic care. Despite the controversies, we saw a tremendous increase in the demand for adult orthodontic therapy in the past decades. Therefore, the present study will be undertaken to investigate the biological mechanisms underlying the effect of age on tooth movement, as well as to consider any implications of the findings for clinical procedures and decision-making. Instead of using conventional methods, such as x-rays, the differences between young and older patients will be assessed by looking at proteins expressed in the fluid that comes out from the gums during orthodontic treatment. This novel approach could potentially offer advantages of sensitivity, non-invasiveness as well as no radiation exposure.

Quetiapine, as a novel therapeutics in Alzheimer’s disease.
Dr. Jue He – $25,000 (MMSF $10,000, HSCF $15,000)

Alzheimer’s disease, a neurodegenerative disorder, comprises cognitive and memory deterioration, progressive impairment of activities of daily living, and several neuropsychiatric symptoms. Atypical antipsychotics including quetiapine and olanzapine effectively alleviate positive and negative symptoms as well as cognitive impairment in schizophrenia patients. Atypical antipsychotics are widely used to treat psychosis, aggression, and agitation associated with Alzheimer’s. Although there is increasing evidence on the neuroprotective effects of atypical antipsychotics, it is not known if it can reverse the pathological alterations and memory impairment in Alzheimer’s disease. This project will evaluate the action of atypical antipsychotics in the Alzheimer’s disease brain and will be useful for addressing the pathophysiology of Alzheimer’s and the mechanisms underlying the possible preventive and therapeutic effects of atypical antipsychotics. It will also be helpful in developing novel treatment strategies in the treatment of Alzheimer’s, thus improving quality of life for people suffering from the disease.
The relationship between injury to surgery (I-S) time and the incidence of secondary joint injury in an ACL injured population.
Dr. Jeff Leiter, Dr. Peter MacDonald and Dr. Jason Peeler – $24,000

This study has been designed to determine if the length of time between a knee injury, specifically anterior cruciate ligament (ACL) rupture, and surgery is associated with additional damage to the knee joint. Our research will provide further evidence as to the time frame of when ACL reconstruction surgery should be performed to prevent further damage to the injured knee that may leave individuals at a greater risk of developing osteoarthritis in the future.

The generation and characterization of an in vitro culture system to expand distinctive human mammary epithelial progenitor cells.
Dr. Afshin Raouf – $25,000

We now understand that human breast tumours are maintained by rare cancer stem cells in the tumour. This concept suggests that while the current therapies may eradicate most of the tumour cells, they might not eliminate the more relevant cancer stem cells, which can slowly generate new tumours. We have developed methods for isolating normal human breast stem cells but the further study of these cells is hampered by the small numbers that can be isolated. This project seeks to develop a cell culture system that enables the expansion of human breast stem cells in petri dishes in such a way that their unique biological functions are preserved. This system will greatly facilitate the study of breast stem cell functions and be a source of breast cancer stem cells. Ultimately, this research can facilitate the development of more effective and possibly curative breast cancer therapies.
Does geography influence the treatment and outcomes of colorectal cancer in the Province of Manitoba?
Dr. Andrew McKay, Dr. Debrah Wirtzfeld and Dr. Donna Turner
$25,000 (MMSF $12,500, WF $12,500)

Our research team is planning to analyze whether the place that people live in Manitoba has any impact on the type of care that they might receive for colorectal cancer (CRC). This study will look for differences in access to medical care, differences in the quality of medical care, differences in the actual medical treatments that are offered, and differences in survival and recurrence rates for Manitobans with CRC. With the large geographic impositions faced by many cancer patients in the Province of Manitoba, it is very important to know if this translates into differences in access to care, quality of care, and important outcomes such as survival and recurrence after treatment for CRC. This research will be of great interest for physicians across Canada and abroad, since the same issues are encountered in all provinces in Canada and in many other countries around the world. While this study will not be able to determine the exact reasons why such regional differences might exist, it would be important to demonstrate whether these differences do exist.

The efficacy of rTMS in treatment of obsessive compulsive disorder, a pilot study.
Dr. Mandana Modirrousta, Dr. Murray Enns and Dr. Jittender Sareen – $25,000

Obsessive Compulsive Disorder (OCD) is a devastating disease characterized by recurrent and unwanted intrusive thoughts, repetitive and ritualistic behaviors, or by combinations of such thoughts (obsessions) and behaviors (compulsions). Despite the available therapies, only one fifth of the treated patients achieve full remission and two thirds will continue to experience symptoms. We will investigate the effect of repetitive Transcranial Magnetic Stimulation (TMS), a new, non-invasive technique of brain stimulation, in treatment of OCD. rTMS has been successfully used for treatment of refractory depression, yet its efficacy for treating anxiety disorders, including OCD, is unknown. This study could result in a much needed new treatment option for OCD.
Investigation into viral evasion of the human innate immune response to infection.
Dr. Sean A. McKenna – $25,000

This project seeks to investigate how viruses specifically inhibit the human innate immune response to infection via biochemistry and structural biology approaches. Unfortunately, viruses can undermine the innate immune response by encoding protein and nucleic acid molecules that directly inhibit PKR (RNA-dependent protein kinase), allowing viral replication and the disease state to persist. The goal of the current proposal is to understand the molecular mechanism of how inhibitors of PKR allow evasion of the host-cell immune response. We propose to examine, at the molecular level, the features that govern the interaction between PKR and its viral inhibitors using innovative biochemistry and structural biology approaches. The results are anticipated to significantly expand the fundamental understanding of how viral infection is sensed by human cells and will thus be of importance to both clinical and academic health scientists. Furthermore, the results obtained will provide the foundation for the design of novel therapeutics to combat viral infection.

Magnetic nanoparticles for enhanced drug delivery to the brain.
Dr. Donald W. Miller, Dr. Johan van Lierop and Dr. Torsten Hegmann – $25,000 (MMCF)

One of the major challenges in treating various diseases of the brain is the inability to deliver the drug or therapeutic agent to its site of action. This is due to the restrictive nature of the brain capillary endothelial cells that form the blood-brain barrier. The overall objective of this research project is to develop magnetic nanoparticles that can be used as drug carriers to enhance the delivery of drugs to the brain. The project will examine the transport and permeability properties of various magnetic nanoparticle formulations in cultured brain capillary endothelial cells. It is anticipated these studies will ultimately lead to a drug delivery platform for the treatment of brain disorders including stroke, brain tumours and neurodegenerative diseases.
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Does geography influence the treatment and outcomes of colorectal cancer in the Province of Manitoba?
Dr. Andrew McKay, Dr. Debrah Wirtzfeld and Dr. Donna Turner
$25,000 (MMSF $12,500, WF $12,500)

Our research team is planning to analyze whether the place that people live in Manitoba has any impact on the type of care that they might receive for colorectal cancer (CRC). This study will look for differences in access to medical care, differences in the quality of medical care, differences in the actual medical treatments that are offered, and differences in survival and recurrence rates for Manitobans with CRC. With the large geographic impositions faced by many cancer patients in the Province of Manitoba, it is very important to know if this translates into differences in access to care, quality of care, and important outcomes such as survival and recurrence after treatment for CRC. This research will be of great interest for physicians across Canada and abroad, since these same issues are encountered in all provinces in Canada and in many other countries around the world. While this study will not be able to determine the exact reasons why such regional differences might exist, it would be important to demonstrate whether these differences do exist.

The efficacy of rTMS in treatment of obsessive compulsive disorder, a pilot study.
Dr. Mandana Modirrousta, Dr. Murray Enns and Dr. Jittender Sareen – $25,000

Obsessive Compulsive Disorder (OCD) is a devastating disease characterized by recurrent and unwanted intrusive thoughts, repetitive and ritualistic behaviors, or by combinations of such thoughts (obsessions) and behaviors (compulsions). Despite the available therapies, only one fifth of the treated patients achieve full remission and two thirds will continue to experience symptoms. We will investigate the effect of repetitive Transcranial Magnetic Stimulation (TMS), a new, non-invasive technique of brain stimulation, in treatment of OCD. rTMS has been successfully used for treatment of refractory depression, yet its efficacy for treating anxiety disorders, including OCD, is unknown. This study could result in a much needed new treatment option for OCD.
The relationship between injury to surgery (I-S) time and the incidence of secondary joint injury in an ACL injured population.

Dr. Jeff Leiter, Dr. Peter MacDonald and Dr. Jason Peeler - $24,000

This study has been designed to determine if the length of time between a knee injury, specifically anterior cruciate ligament (ACL) rupture, and surgery is associated with additional damage to the knee joint. Our research will provide further evidence as to the time frame of when ACL reconstruction surgery should be performed to prevent further damage to the injured knee that may leave individuals at a greater risk of developing osteoarthritis in the future.

The generation and characterization of an in vitro culture system to expand distinctive human mammary epithelial progenitor cells.

Dr. Afshin Raouf - $25,000

We now understand that human breast tumours are maintained by rare cancer stem cells in the tumour. This concept suggests that while the current therapies may eradicate most of the tumour cells, they might not eliminate the more relevant cancer stem cells, which can slowly generate new tumours. We have developed methods for isolating normal human breast stem cells but the further study of these cells is hampered by the small numbers that can be isolated. This project seeks to develop a cell culture system that enables the expansion of human breast stem cells in petri dishes in such a way that their unique biological functions are preserved. This system will greatly facilitate the study of breast stem cell functions and be a source of breast cancer stem cells. Ultimately, this research can facilitate the development of more effective and possibly curative breast cancer therapies.

Our mission is to promote and assist in the promotion of scientific, educational and other activities for the maintenance and improvement of the health and welfare of residents of Manitoba.
Alzheimer’s disease, a neurodegenerative disorder, comprises cognitive and memory deterioration, progressive impairment of activities of daily living, and several neuropsychiatric symptoms. Atypical antipsychotics including quetiapine and olanzapine effectively alleviate positive and negative symptoms as well as cognitive impairment in schizophrenia patients. Atypical antipsychotics are widely used to treat psychosis, aggression, and agitation associated with Alzheimer’s. Although there is increasing evidence on the neuroprotective effects of atypical antipsychotics, it is not known if it can reverse the pathological alterations and memory impairment in Alzheimer’s disease. This project will evaluate the action of atypical antipsychotics in the Alzheimer’s disease brain and will be useful for addressing the pathophysiology of Alzheimer’s and the mechanisms underlying the possible preventive and therapeutic effects of atypical antipsychotics. It will also be helpful in developing novel treatment strategies in the treatment of Alzheimer’s, thus improving quality of life for people suffering from the disease.

Is it safe to move teeth in older patients? Why is the response to orthodontic treatment slower in adults than in juveniles? Are the adults more prone to side effects during tooth movement? These are questions that usually come up to the minds of everyday people seeking orthodontic care. Despite the controversies, we saw a tremendous increase in the demand for adult orthodontic therapy in the past decades. Therefore, the present study will be undertaken to investigate the biological mechanisms underlying the effect of age on tooth movement, as well as to consider any implications of the findings for clinical procedures and decision-making. Instead of using conventional methods, such as x-rays, the differences between young and older patients will be assessed by looking at proteins expressed in the fluid that comes out from the gums during orthodontic treatment. This novel approach could potentially offer advantages of sensitivity, non-invasiveness as well as no radiation exposure.
Hormone use, estrogen receptor expression, and survival of women with non-small cell lung cancer: A Manitoba perspective. Dr. Gary Harding, Dr. Sri Navaratnam, Dr. Leigh C. Murphy and Dr. Alain Demers – $25,000 (MMSF $12,500, WF $12,500)

Lung cancer is the most common cause of cancer death in the world. Research indicates that there are gender differences in non-small cell lung cancer (NSCLC) incidence and survival. The mechanism for these gender differences is unclear, however Scientists feel estrogen may play a role. There is little published literature that exists on the specific study and mechanisms of actual estrogen hormone receptors on lung cancer cells, hormone replacement therapy, oral contraceptive therapy, and NSCLC. Given the low survival, high incidence and high cost of treatment, it would be of significant importance to identify risk and prognostic factors for NSCLC survival. We will analyze a large group of female NSCLC patients in Manitoba and study possible connections in patient survival, history of hormone replacement therapy use, oral contraceptive use and the presence of estrogen receptors in the lung cancer tissues. We expect to find a group of women within our whole group that exhibit a survival difference in their cancers based on the above factors interacting with each other.

A simple urinary test to predict hospitalization for congestive heart failure. Dr. Manish Sood and Dr. Shelly Zieroth - $25,000

Numerous patients with heart failure also develop kidney disease. We are investigating whether a simple urinary test can predict worsening heart function, kidney function and the need for hospitalization in heart failure patients.

Supporting health through research and education in Manitoba.
Vascular events in noncardiac surgery patients cohort evaluation study and thoracic substudy (T-VISION).
Dr. Sadeesh Srinathan, Dr. Duane Funk and Dr. Clare Ramsey $25,000

The VISION study will answer three important questions. What is the risk of a heart attack, stroke or blood clots in adult patients who are undergoing surgery (except heart surgery)? What specific factors in an individual patient predict those at risk of having these events after surgery? And finally, does a specific blood test help us to identify those patients who are having a heart attack, but do not have symptoms? To answer these questions for the period of one year after their operation we will follow 40,000 patients around the world (2,000-3,000 in Winnipeg) who are undergoing surgery. The T-VISION sub-study will specifically examine all patients undergoing lung surgery world-wide as they are likely to have a higher risk of these events occurring. This information will help make these operations safer.

Combining clinic data on fetal alcohol spectrum disorder (FASD) with administrative data on health, education and social services.
Dr. Ana Hanlon-Dearman, Dr. Marni Brownell and Dr. Albert Chudley - $25,000 (MMSF $12,500, MICH $12,500)

Fetal Alcohol Spectrum Disorder (FASD) includes a range of conditions resulting from prenatal alcohol exposure, which can cause intellectual disabilities as well as behavioral, emotional and social difficulties. A lack of good information on who has FASD in Canada has made it difficult to determine how common the condition is, but estimates suggest that at least one in every 100 births is affected, and in some countries and small populations within Canada, rates are much higher. There is also little information on what happens to children with FASD once they are diagnosed with the condition. The objective of this project is to examine rates of health and social outcomes for children identified with FASD. This information would help determine what services these children are accessing and help answer questions related to the burden of this disorder on health and social services systems. By making use of two unique existing sources of information, this project has the potential to inform policies as well as provide a valuable resource for subsequent research on children with FASD.
Mutations in the MeCP2 gene result in white matter defects that occur in childhood disorders of the brain.

Dr. Emma Frost and Dr. Mike Namaka - $25,000

Formation of the white matter of the brain is dependent on the interactions of many different molecules during gestation. We have identified a novel role for a molecule that was previously thought to only regulate neurons. By further understanding the role that this molecule plays during development of the white matter, we hope to better understand the cause of many brain disorders including autism, Schizophrenia and mental retardation.

We know research holds the promise of healthy, active and intelligent lives and that health related research will help tailor the health care system to the needs of Manitobans.

Development of gene-loaded nanoparticles and collagen scaffolds for bone regeneration.

Dr. Malcolm (Mengqui) Xing - $25,000

No other area in the healthcare of the elderly is more complex than orthopedics. Important research areas include bone repair and reconstruction. My research will develop implants for bone regeneration based on nanomedicine, biomaterial scaffolds and rat mesenchymal stem cells. The research is expected to lead to the development of products to be used in clinical practice for the repair of bone defects.

The Manitoba Medical Service Foundation fosters research to combat disease and disability to improve the health of Manitoba residents.
A randomized double-blinded, placebo-controlled, cross-over trial assessing the effect of tadalafil (Cialis) on the cardiovascular response in men with complete spinal cord injury at or above the sixth thoracic level.

Dr. Karen Ethans & Dr. Alan Casey
$25,000(MMSF $10,000, HSCF $15,000)

Erectile Dysfunction is the inability to achieve and/or maintain an erection sufficient for sexual intercourse, and is a common issue among men with spinal cord injury. The main treatment for erectile dysfunction in men with spinal cord injury is a class of drugs called phosphodiesterase type-5 (PDE-5) inhibitors. Both Sildenafil (Viagra) and the more recently available and longer lasting tadalafil (Cialis) have been shown to be helpful in men with spinal cord injury. Our concern is that the low blood pressure that people with spinal cord injury often have can be greatly exaggerated with the PDE-5 medications. There are obvious safety issues if someone has to deal with drops in blood pressure for an extended period of time after taking a medication, which is why we feel it is important to clarify whether this blood pressure drop does happen in the spinal cord injured population with Cialis, the PDE-5 drug that stays in the body much longer.

The results of this study will be of importance to physicians and other health care professionals treating men with spinal cord injury to help ensure it is being prescribed safely and with full knowledge of potential side effects.
Phenotypic and Genotypic Characterization of Patients with Ritscher-Schinzel Syndrome.
Dr. Alison Elliott - $25,000 (MMSF $12,500, MICH $12,500)

Approximately three per cent of babies are born with a birth defect that requires medical attention. Ritscher-Schinzel syndrome (RSS) is a genetic syndrome and affected children have malformations involving the heart, brain and face. We have identified a group of Manitoba paediatric patients who have RSS. Routine testing has not determined the cause of their disorder. This study will use a combination of two cutting-edge clinical and molecular technologies to further characterize RSS. By studying RSS families with a powerful new research tool, “Single nucleotide polymorphism” (SNP) array analysis, we will be able to identify genetic regions of interest and eventually uncover the underlying genetic changes.

Neuroprotective mechanisms of atypical antipsychotics in the treatment of Alzheimer phenotype in transgenic mouse model.

Alzheimer’s disease, a neurodegenerative disorder, comprises cognitive and memory deterioration, progressive impairment of activities of daily living, and several neuropsychiatric symptoms. Atypical antipsychotics including quetiapine and olanzapine effectively alleviate positive and negative symptoms as well as cognitive impairment in schizophrenia patients. Atypical antipsychotics are widely used to treat psychosis, aggression, and agitation associated with Alzheimer’s. Although there is increasing evidence on the neuroprotective effects of atypical antipsychotics, it is not known if it can reverse the pathological alterations and memory impairment in Alzheimer’s disease. This project will evaluate the action of atypical antipsychotics in the Alzheimer’s disease brain and will be useful for addressing the pathophysiology of Alzheimer’s and the mechanisms underlying the possible preventive and therapeutic effects of atypical antipsychotics. It will also be helpful in developing novel treatment strategies in the treatment of Alzheimer’s, thus improving quality of life for people suffering from the disease.

Role of tyrosine phosphorylation in the crosstalk between O-GlcNAc modification and serine/threonine phosphorylation in insulin signalling.

Insulin is a hormone which is produced from the pancreas that helps body controls the level of glucose (sugar) in the blood and ensures that the body’s energy needs are met. In diabetes, glucose builds up in the blood instead of being used for energy because the pancreas does not produce enough insulin or the body does not effectively use the insulin it makes. The inability of insulin to work normally (also known as insulin resistance) is a hallmark of type 2 diabetes. Emerging evidence suggests that increased incorporation of glucosamine in proteins involved in insulin action is associated with insulin resistance. However, the mechanism involved in this process is not known. In this project I will test the hypothesis that phosphorylation and glycosylation of insulin signaling intermediates affect each other. The decline in insulin action and increased insulin resistance that occurs in type 2 diabetes is a consequence of impaired interactions between glycosylation and phosphorylation of proteins involved in insulin action. The proposed experiments will advance our knowledge of underlying mechanisms involved in the pathogenesis of type 2 diabetes and may provide new therapeutic targets for the prevention and treatment of type 2 diabetes.
Insulin resistance and the regulation of myocardial calcium-transport in models representative of the Type 2 diabetic heart.

Dr. Todd Duhamel - $25,000

Calcium is important in the regulation of cardiac contraction. Notably, the diabetic heart is characterized by cardiac dysfunction, which may be attributed, at least in part, to a loss of calcium regulation. My laboratory focuses particular attention on understanding the basic biological mechanisms that explain how diabetes adversely influences the movement of calcium within the heart and, ultimately, contributes to the development of diabetes-induced heart disease. Information derived from this research program may provide the basic information required to guide the future development of novel therapeutic interventions to prevent diabetes-induced heart disease.

Improving infectious disease treatment outcomes among vulnerable populations.

My research interest is in improving infectious disease treatment outcomes in vulnerable populations. Specifically, my research program has two main areas of focus: improving the treatment outcomes from HIV and other sexually transmitted infections (STIs); and improving understanding of influenza and its treatment outcomes. This research will be conducted in both Manitoba and India. Although developing and developed countries are different, the underlying causes of infectious disease epidemics are similar and lessons learned in either setting can benefit each other.

Dr. Marissa Becker

2010 – 2013

Improving infectious disease treatment outcomes among vulnerable populations.

In 2009, the MMSF and the MHRC formed an ongoing agreement to fund Clinical Research Professorships at the University of Manitoba.

For more information about professorships please visit our website: www.mmsf.ca
Investigation of fish oils, aspirin, and aspirin-triggered lipoxin as protective modulators of inflammation in murine model of acute graft versus-host disease (GVHD).

Dr. Geoff Cuvelier, Dr. Cynthia Ann Ellison and Dr. Curtis Oleschuk - $25,000

Blood and marrow transplant (BMT) therapy involves the collection of stem cells from a healthy donor (the “graft”) with infusion of these stem cells into another individual with a disease (the “host”). A number of complications limit the success of BMT, with acute graft-versus-host disease (aGVHD) being the most significant complication contributing to morbidity and mortality. Acute GVHD occurs when immunologic cells from the graft recognize recipient tissues as foreign, inciting an immunologic attack against the host. Systemic inflammation underlies both the initiation and maintenance of aGVHD.

Our research focuses on ways to reduce aGVHD through the use of therapies that reduce inflammation in the early post-transplant period. These experiments have been designed to set the stage for translation into a clinical trial in human BMT subjects.

Regulation of Thromboxane receptor hypersensitivity in persistent pulmonary hypertension of the newborn.

The newborn lung is very sensitive to low oxygen levels. In the lungs of infants who do not receive sufficient oxygen at birth, low oxygen makes the lung blood vessels go into spasm, so blood cannot flow through the lung for gas exchange. This causes persistent pulmonary hypertension of the newborn (PPHN), a lethal disease.

Our lab has shown that in low oxygen, muscle cells in lung blood vessels quickly become hypersensitive to agents of inflammation, such as thromboxane. This sensitivity does not reverse even after oxygen is restored. Sensitized muscle cells are prone to cause blood vessel spasm.

Further studying into lung blood vessel spasm may result in improved treatment options for the one-third of PPHN patients who cannot respond to current therapies.
Bioavailability studies of selected components of flaxseed in plasma of patients with peripheral arterial disease (PAD).

Dr. Michel Aliani - $25,000 (MMSF $12,500, U of M $12,500)

Nutritional interventions are gaining in popularity as legitimate therapeutic strategies to combat cardiovascular disease. A common dietary intervention used to alter cardiovascular disease today is supplementing the diet with Omega-3 fatty acids. Flaxseed is a plant source for these fatty acids and will also offer a source of fibers which do not exist in animal sources of these fatty acids. The flaxseed fibers are metabolized in the body and generating metabolites which are believed to be effective as a lipid-lowering and antioxidant agent.

This project intends to investigate the bioavailability of flaxseed selected fiber’s metabolites in plasma of patients with peripheral arterial disease enrolled in the human clinical trial with flax conducted at St. Boniface Hospital.

Our research today means solutions and cures tomorrow.
The BSc (Dentistry) Summer Student Program in the Faculty of Dentistry introduces dental students to research during their undergraduate careers. The majority of funding for this program is provided by MMSF. The specific aim is to develop within the student skills at experimental design, hypothesis testing, critical evaluation of data and effective communication of result.

The program runs during the summer recess between years I, II and III. All students receive stipendiary support, presently $4,500.

The MMSF currently provides stipendiary support to this program of $22,500 yearly, which is approved annually by the Board of Directors. Since 1994 the MMSF has contributed almost $300,000.

2009 STUDENTS SUPPORTED BY THE MMSF

2nd Year
Tracy Kolson

1st Year
Igal Margolin
Nathan Jeal
Nirvani Umadat
Geoff Shaffer

KOLSON, Tracy
MARGOLIN, Igal
JEAL, Nathan
SHAFFER, Geoffrey
UMADAT, Nirvani
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Another challenge in recent years has been a shortage of funds which we are making plans to improve. One method has been to successfully co-operate with The Winnipeg Foundation, the Manitoba Medical College Foundation, the Manitoba Institute of Child Health, the Health Sciences Centre Foundation and the University of Manitoba - Office of the Vice President (Research). We continue to pursue new partnerships in research on a consistent basis.

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The McLaughlin/MMSF Research Fellowship

This award was split between the following candidates:

Dr. Kanwal Kumar

Can medical therapy alter the natural history of bioprosthetic valves?

Surgery for heart valve disease is the second most common heart surgery procedure performed on an annual basis, both in Manitoba and worldwide. When an individual has a diseased heart valve it is often replaced with an artificial one. Tissue valves are the most common type of artificial valves implanted. However, these valves are prone to failure, particularly in younger individuals. The only option for a failed artificial valve is repeat high-risk open-heart surgery. The aim of this project is to better understand the mechanisms leading to artificial tissue valve failure. Furthermore, the use of medications to prevent this from happening is also being investigated. With a better understanding of how artificial tissue valves fail, we may be able to develop a more durable valve, avoiding the need for repeat high-risk open-heart surgery.

Dr. Yoav Keynen

Evaluating humoral and cellular immune response to influenza virus and influenza vaccines.

Influenza virus causes an illness that ranges from mild to severe and leads to substantial morbidity and mortality. Current vaccine strategies provide protection against strains included in the vaccine, but are of limited effectiveness against emerging strains. Understanding the cross-reactive antibody and cellular immunity may assist in generation of prevention strategies that will be able to improve the outcome of future influenza epidemics.

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The professorships have proven themselves to be great stepping stones to the Canadian Institute of Health Research (CIHR) and other national awards by awardees.

Researchers in the area of health are encouraged to apply, including those in basic health research, clinical research and population health. Previous applicants included social workers, epidemiologists, pharmacists and physiotherapists.

Through MMSF, Manitoba gains by being able to attract high-caliber leaders in clinical medicine and allied health. We want to do our part in expanding knowledge which can be translated to effective action through health action and health care. Despite huge advances in the area of genetics in disease, there remains a large gap in how to prevent or correct genetic defects. There will always be challenges in understanding.

Another challenge in recent years has been a shortage of funds which we are making plans to improve. One method has been to successfully co-operate with The Winnipeg Foundation, the Manitoba Medical College Foundation, the Manitoba Institute of Child Health, the Health Sciences Centre Foundation and the University of Manitoba - Office of the Vice President (Research). We continue to pursue new partnerships in research on a consistent basis.

The MMSF is proud to announce their new partnership with the Manitoba Health Research Council. Through this partnership two professorships are now offered. These being the MMSF/MHRC Dr. F. W. DuVal Clinical research Professorship (formerly named the Dr. F. W. DuVal Clinical research Professorship) and the MMSF/MHRC Clinical Research Professorship in Population Medicine (formerly named the Clinical research Professorship in Population Medicine). All of these awards still continue to provide a first year Grant-in-Aid of $20,000 and $50,000 per year for the three year term. For more information visit our website.

The MMSF Board is also interesting for the content of its members which is comprised of approximately half medical research professionals and half members from the wider community but all of whom are volunteers.

Please take the time to view our website www.mmsf.ca

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**The McLaughlin/MMSF Research Fellowship**

**This award was split between the following candidates:**

- **Dr. Kanwal Kumar**

  Can medical therapy alter the natural history of bioprosthetic valves?

Surgery for heart valve disease is the second most common heart surgery procedure performed on an annual basis, both in Manitoba and worldwide. When an individual has a diseased heart valve it is often replaced with an artificial one. Tissue valves are the most common type of artificial valves implanted. However, these valves are prone to failure, particularly in younger individuals. The only option for a failed artificial valve is repeat high-risk open-heart surgery. The aim of this project is to better understand the mechanisms leading to artificial tissue valve failure. Furthermore, the use of medications to prevent this from happening is also being investigated. With a better understanding of how artificial tissue valves fail, we may be able to develop a more durable valve, avoiding the need for repeat high-risk open-heart surgery.

- **Dr. Yoav Keynen**

  Evaluating humoral and cellular immune response to influenza virus and influenza vaccines.

Influenza virus causes an illness that ranges from mild to severe and leads to substantial morbidity and mortality. Current vaccine strategies provide protection against strains included in the vaccine, but are of limited effectiveness against emerging strains. Understanding the cross-reactive antibody and cellular immunity may assist in generation of prevention strategies that will be able to improve the outcome of future influenza epidemics.
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Canadian Student Health Research Forum
MMSF Sponsored Poster Awards Winners

Ami Patel
Evan Booy
Jennifer Juno
Pamela Miller

Richard Hoeschen Memorial Award

This award was split between the following candidates:

Dr. Ana Hanlon-Dearman
Dr. Eric Sigurdson
A closer look at our 2009 Awards Recipients

For this brochure the MMSF requested photos of current awardees in their ‘own’ environment. The purpose was to select a grant recipient(s) to be featured on the cover. Although few submissions were received, all submissions are worthy of recognition. This personal touch to the MMSF annual brochure is a practice which will continue into the next issue. If you receive an award from the MMSF in 2010 we hope you will kindly submit a photo of you or your research group for consideration. We wish all 2009 awardees the best in their research and education.

Message From the MMSF Board of Directors

Our finances for research and personnel funds remained stretched for the 2009 competition. The budget for 2009, however, has been made up by a generous donation from the Board of Manitoba Blue Cross. We are extremely grateful for this timely assistance.

We have been able to fund 19 of 29 applications in the 2009 competition including assistance with two grants shared by the Manitoba Institute of Child Health (MICHI) and MMSF, two grants shared by The Winnipeg Foundation and MMSF, one grant sponsored by the Manitoba Medical College Foundation, two grants shared by the Health Sciences Centre Foundation, and two grants shared by the University of Manitoba – Office of the Vice President (Research).

Our marking system has continued to be useful with a major mark awarded for new young investigators and a separate mark for the quality of the grant project applied for. The criteria for marking may be viewed on our website - www.mmsf.ca. Details for grants funded over the past five years as well as other Foundation contributions to research and education is located on our website.

We are happy to report the successful publication of the history of the “Manitoba Medical Service Foundation: 35 Years of Promoting Health Care Research in Manitoba”. This publication became available in 2007 and copies are still accessible. If you are interested in obtaining a copy please email the MMSF at info@mmsf.ca.

Dr. John McKenzie continues as Executive Director and Dr. John Wade as Assistant Executive Director. We thank all members of the Board of Directors for their great service. Especially Chair, Mr. Allen Rouse and Vice-Chair Dr. Greg Hammond.

Dr. John McKenzie is retiring after 16 years of service dedicated to improving research in Manitoba and the health of all Manitobans. Dr. McKenzie has been Executive Director for the Foundation since 2004 and was key in establishing the cooperative funding partnerships now in place. He served to enable even more researchers to be funded through the Manitoba Medical Service Foundation. We all wish Dr. John McKenzie the very best in his retirement!

Dr. J ohn Hammond stepping into the position as Executive Director, effective May 18, 2010. Dr. Hammond has been diligently serving as a Director since 1988 and as Vice-Chairman since 2008. We are honored that Dr. Hammond has accepted the position as Executive Director. Dr. Lindsay DuVal will be taking over as Vice-Chairman of the Board. Dr. DuVal has been serving the Foundation since 2003 and we look forward to her continued support in this new role.

Allen Rouse, Board Chairman

Message from the President of Manitoba Blue Cross

The Manitoba Medical Service Foundation is unique in that it helps fund first-time researchers. Like Manitoba Blue Cross, these people dedicate themselves to improving the health and wellness of Manitobans. Their enthusiasm and commitment epitomize the meaning of The colour of Caring, making us a proud supporter of their initiatives.

On behalf of Manitoba Blue Cross, I wish to congratulate the recipients of this year’s grants. The rising cost and demand for health care in Manitoba reminds us of the importance of all efforts directed towards the finding of new treatments and improving medical outcomes.

Andrew Yorke, President & CEO
The Manitoba Medical Service Foundation is proud to recognize cooperative funding partners. See websites for details.
As our population ages, as new health care challenges present themselves, medical science becomes increasingly more important. Research projects examining everything from the food we eat to how the brain communicates with the heart reveal exciting new insights while opening up more questions about human health. You don’t have to look too far to find the dedicated people working on these quests for knowledge; important medical research happens everyday, right here in Manitoba.

Manitoba Blue Cross is a provider of health and wellness benefits, as well as travel insurance coverage for Manitobans. We take care of our people and help to protect their futures. Defining ourselves as Manitobans helping Manitobans, we feel strongly about supporting our local medical researchers through the Manitoba Medical Service Foundation (MMSF), particularly the young scientists on the threshold of their careers. Often, the grants that are awarded by the MMSF fund the start of what goes on to be a much larger project with Manitoba roots. The success of this grant program is evident by the number of professorship recipients whose work has been further recognized with awards from larger national funding agencies such as the Canadian Institutes of Health Research. We believe in supporting these researchers in beginning their journeys to discover important findings, because as their work progresses, they will produce new and vital medical knowledge to benefit us all.

For over 35 years Manitoba Blue Cross has supported medical research projects through the MMSF. While other research funding bodies may be dedicated to a specific area of health, the MMSF opens the door to a much wider range of applicants, which means a made-in-Manitoba solution – anything from better patient care to new treatment options – can get its start. Every contribution these projects make to the global body of medical research is a reason to celebrate.

Manitoba Blue Cross has a mandate to enrich and protect people’s lives, and the MMSF has a history of providing us with a means to do this. As an example, to help improve health service to Manitoba’s widely scattered rural population, the Foundation financed the development of rural satellite centres of Manitoba cancer research and a mobile teaching lab for the nursing faculty of the University of Manitoba. In 1990, the MMSF granted funds to Doctor Rabia Bose and Doctor Deepak Bose who went on to develop a simple blood test for screening patients who might suffer devastating and often fatal reactions to anesthesia. Prior to this, the only screening method available was painfully complex. This year there are again projects that have the potential to bring exciting new discoveries to life in Manitoba. We have projects that involve Manitoba grain products, Manitoba health centres and Manitoba databases. Projects like these couldn’t take place anywhere else although the results could impact the lives of people everywhere. Through the MMSF, Manitoba Blue Cross is able to ensure The Colour of Caring is seen and felt in every corner of the Keystone Province, and that it radiates beyond our borders.

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The MANITOBA MEDICAL SERVICE FOUNDATION (MMSF) provides funding for the advancement of scientific educational and other activities to improve the health and welfare of Manitobans.

The Manitoba Medical Service Foundation is the most important source of medical research funding to help establish medical research in Manitoba, focusing on support of first-time researchers.

We are inspired by the accomplishments of the researchers who have received funding through the Manitoba Medical Service Foundation and we look forward to continuing our goal of supporting health-related research and education in Manitoba.

Since 1971, the MANITOBA MEDICAL SERVICE FOUNDATION has provided almost 17 MILLION towards furthering research and education in Manitoba.

Through its dedication and enduring support of research, the MMSF continues to make tremendous contributions, not only to individual researchers, but also to the improvement of health and health care for all Manitobans.
MANITOBA MEDICAL SERVICE FOUNDATION

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